

Annual Report 2021– 2022



Cochin University of Science and Technology
Kochi – 682 022, Kerala, India

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Cochin University of Science and Technology

Kochi – 682 022, Kerala

Contents

PART I

1.	Aims and Objectives	
2.	University Authorities	7
3.	Members of the Syndicate	9
4.	Members of the Senate	10
5.	Members of Academic Council	13
6.	Deans of Faculty	26

PART II

1.	Department of Applied Chemistry	27
2.	Department of Applied Economics	82
3.	Department of Atmospheric Science	97
4.	Department of Biotechnology	116
5.	Department of Chemical Oceanography	147
6.	Department of Computer Applications	157
7.	Department of Computer Science	192
8.	Department of Electronics	213
9.	Department of English and Foreign Languages	235
10.	Department of Hindi	242
11.	Department of Instrumentation	267
12.	Department of Marine Biology, Micro Biology & Biochemistry	281
13.	Department of Marine Geology and Geophysics	344
14.	Department of Mathematics	354
15.	Department of Physics	370
16.	Department of Physical Oceanography	385
17.	Department of Polymer Science and Rubber Technology	399
18.	Department of Ship Technology	427
19.	Department of Statistics	463
20.	School of Engineering	487
21.	School of Environmental Studies	583
22.	School of Industrial Fisheries	626
23.	School of Legal Studies	643
24.	School of Management Studies	668
25.	KunjaliMarakkar School of Marine Engineering	685
26.	International School of Photonics	697
27.	Cochin University College of Engineering, Kuttanad	718

PART III

1.	Central office for University Hostels	733
2.	Centre for Information Resource Management (CIRM)	735
3.	Centre for Science in Society (C-SiS)	741
4.	University Employment Information and Guidance Bureau (UEIGB)	747
5.	University Library	750
6.	International Relations	753
7.	Directorate of Admissions	755
8.	Planning and Development Division.	
9.	Directorate of Public Relations and Publications. (DPR &P)	756
10.	Sophisticated Test and Instrumentation Centre (STIC)	757
11.	Department of Physical Education	764

12.	Department of Youth Welfare	769
13.	Centre for the Study of Social Exclusion and Inclusive Policy (CSSEIP)	784
14.	DeenDayalUpadhyayKaushal Kendra (DDUKK)	787
15.	Centre for Excellence in Advanced Materials (CEAM)	808
16.	Centre for Budget Studies (CBS)	819
17.	Cochin University Union	821
18.	National Centre for Aquatic Animal Health (NCAAH)	823
19.	Inter University Centre for Nanomaterials and Devices (IUCND)	845
20.	Inter University Centre for IPR Studies (IUCIPRS)	862
21.	Advanced Centre for Atmospheric Radar Research (ACARR)	883
22.	Centre for Innovation, Technology Transfer & Industrial Collaboration (CITTIC)	918
23.	Inter University Centre for Development of Marine Biotechnology (ICDMB)	937
24.	School of Marine Science	941
25.	Women's Studies Centre (WSC)	944
26.	V. R. KrishnaIyer Chair on Human Rights Studies	947
27.	Centre for Integrated Studies	948
28.	Centre for Neuro Sciences	955
29.	Centre for Particle Physics	978
30.	Inter University Centre for the Studies on Kerala Legacy of Astronomy and Mathematics (IUCKLAM)	981
31.	IUCAA Centre for Astronomy Research and Development (ICARD)	984
32.	CUSAT-NCPOR Centre for Polar Sciences	987
33.	Centre for Employee Empowerment and Skill Acquisition (CEESA)	992
34.	Prof. N. R. MadhavaMenon Interdisciplinary Centre for Research Ethics and Protocols (ICREP)	973

PART IV

1.	Annual Accounts of the University	1001
2.	Engineering Departments	1004
3.	Recognized College / Institutions	1033
4.	Academic Programmes	1035
5.	Exam Results	1041
6.	List of Ph. D Degree Awardees	1043
7.	Recognized Research Centres of CUSAT	1061
8.	Details of Endowments, Prizes, Awards, Medals, Scholarships and Fellowships	1069

THE YEAR IN RETROSPECT

This report presented as required under Section 37 (i) of Chapter VI of the Cochin University of Science and Technology Act, 1986 covers the academic activities of the University during the period from April 1, 2021 to March 31, 2022.

The year under report witnessed steady progress in the effort of various University Departments / Schools / Institutions towards higher levels of excellence in teaching and research and in organising a series of academic activities.

Vision

The University aims to become an Institution of Global Standard by continuously improving its quality of academic activities, taking up research and innovation in the frontier areas and by ensuring conducive state-of-the-art infrastructural facilities.

Mission

CUSAT will continuously strive to generate a human resource of global competence by imparting most modern knowledge and training to its student community and to take up Research and Development activities in the frontier areas so as to contribute positively to the progress of the society and the Nation. The University shall have the following objectives as its mission:

1. to encourage and promote research and innovation in applied science, technology, industry, commerce, management and social science for the advancement of knowledge and for the betterment of society;
2. to provide facilities and offer opportunities for graduate and post-graduate education in applied science, technology, industry, commerce, management and social science by instruction, training, research, development, innovation and extension and by such other means as the University may deem fit;
3. to devise and implement programmes of education in applied science, technology, industry, commerce, management and social science that are relevant to the changing needs of society, in terms of breadth of diversity and depth of specialization;
4. to serve as a centre for fostering co-operation and exchange of ideas between the academic and research community on the one hand and industry on the other;
5. to organize exchange programmes with other institutions of repute in India and abroad with a view to keeping abreast of the latest innovation and developments in relevant areas of teaching and research.

UNIVERSITY AUTHORITIES

VICE CHANCELLOR

Dr. K.N. Madhusoodanan

PRO-VICE CHANCELLOR

Dr.P.G Sankaran

REGISTRAR

Dr.Meera V.

CONTROLLER OF EXAMINATIONS

Dr. Benjamin Varghese P.

FINANCE OFFICER

Sri.Sudheer M .S .

MEMBERS OF SYNDICATE

Ex-officio Members

1. The Vice Chancellor
2. The Pro-Vice Chancellor
3. The Director of Technical Education, Directorate of Technical Education, Padmavilasom Road, Thiruvananthapuram-695023
4. The Secretary to Government, Higher Education Department, Govt. Secretariat, Thiruvananthapuram-695 001.
5. The Finance Secretary, Finance Department, Government of Kerala, Thiruvananthapuram – 695 001
6. The Executive Vice President, Kerala State Council for Science, Technology and Environment, SasthraBhavan, Pattom P.O. Thiruvananthapuram – 695004.

Deans of Faculty

7. Dr. V. SivananthanAchari, Dean Faculty of Environmental Studies.
8. Dr. K Ajitha, Dean Faculty of Humanities.
9. Dr. K.C. Sunny (Dean Faculty of Law.) Vice-Chancellor, NUALS, Kalamassery.

Industry and Commerce Expert

10. Sri.C.J.George, Managing Director, Geojit Financial services Ltd., 34/659-P, Civil Line road, Padivattom, Kochi-682 024.

Members of Senate

11. Dr. SasiGopalan, Professor, School of Engineering, CUSAT, Kochi-682 022.
12. Dr.Poornima Narayanan R. “Ranjini”, Pozhoth Lane, Kaloorkadavanthra Road, Kochi-682017
13. Dr. Sunoj. S.M., Professor, Department of Statistics, CUSAT, Kochi-22
14. Sri Alexander K Samuel, Kattunilam, Muthoor P.O., Thiruvalla, Pathanamthitta District- 689 107.
15. Smt. Shyni Paul, Associate Professor, Department of Electrical & Electronics, CUCEK, Kuttanad, Alappuzha – 688 504
16. Prof Dr. Sreejith P.S, Principal, Rajgiri School of Engineering and Technology, Kochi.
17. Dr. K.K. Saju, Professor, Mechanical Engineering, Director, IRAA CUSAT, Kochi-682 022
18. Dr. R. Sasidharan, Professor, Department of Hindi, CUSAT, Kochi-682022

Information Technology Expert

19. Sri.Krishna Kumar K K., Centre for Socio- Economic & Environmental Studies (C.S.E.C) Khadi Federation Building, Padivatoom, N.H. Bye Pass, Kochi – 682024

Student Representative

20. Sri. Prajul. K.V., Certificate in French Programme, Department of English and Foreign Languages, CUSAT, Kochi-22

MEMBERS OF SENATE

1. The Hon'ble Chancellor, Kerala Raj Bhavan, Thiruvananthapuram – 695099
2. The Pro-Chancellor and Minister for Education, Government Secretariat, Thiruvananthapuram – 695 001
3. The Vice Chancellor
4. The Pro-Vice- Chancellor
5. The Municipal Chairperson, Kalamassery Municipality, Kochi-22
6. The Mayor of Kochi, Corporation of Kochi, Ernakulam-682 011
7. V.Biju Assistant Professor, Department of Physics, University of Kerala, Kariavattom, Thiruvananthapuram-695034
8. Dr. Muhammadali N, Associate Professor & HOD, Dept of Journalism & Mass Communication, University of Calicut, Calicut University P O, Malappuram-673 635
9. Dr. Sadasivan, Professor, Dept of Biotechnology & Microbiology, School of Life Sciences, Kannur University, Thalassery Campus.Palayad, Kannur District, Pin-670567
10. Dr. Harikumar Nair G.S Professor of Radiology (on deputation to KUHS),Kerala University of Health sciences Thrissur-680 596
11. Sri Anson P. Antony, Section Officer, Department of Polymer Science & Rubber Technology, CUSAT, Kochi-682022
12. Dr.N.Asok, Director of Academics & Research (in-Charge), Kerala Veterinary and Animal Sciences University, Lakkidi P.O, Pookode,Wayanad-673576
13. Sri.K.V.Sasi, Asst.Professor, SamskaraPaithrukaPadanaVibhagam, ThunchathEzhuthachanMalayalasarvakalasalala, Vakadu P.O, Tirur, Malappuram -676502
14. Dr.V.PJoshi, Assistant Professor, Department of Education, Central University of Kerala, Thejaswini Hills, Periyar, Kasargod-671316
15. The Director of Technical Education, Directorate of Technical Education, Padmavilasom Road, T.V.M-695023
16. The Executive Vice-President, Kerala State Council For Science, Technology and Environment, SasthraBhavan, Pattom, Thiruvananthapuram-695004
17. Dr. K.K.Saju,Professor in Mechanical Engineering, School of Engineering, CUSAT, Kochi-22
18. Sri.C.J.George, Managing Director, Geojith Financial Services Limited, 34/659-E. Civil Line Road, Padivattom, Kochi-24
19. Dr. K.C.Sunny, Dean Faculty of Law.
20. Dr. V. SivananthanAchari, Dean Faculty of Environmental Studies.
21. Dr.K.Ajitha, Dean Faculty of Humanities.
22. K.K.Krishnakumar, Centre for Socio-Economic & Environmental Studies (C.S.E.S), Padivattom, Khadi Federation Building, N.H.Bye pass, Kochi-682024.

23. Adv. P. Rajeev MLA, Kalamassery Legislative Assembly.
24. The Chairman, University Students Union, University Union Office CUSAT, Kochi-682022
25. Dr.M.JunaidBushiri, Head, Department of Physics, CUSAT, Kochi-22
26. Dr. P. G. Romeo, Head, Department of Mathematics, CUSAT, Kochi-22.
27. Dr.G.Santhosh Kumar, Head Department of Computer Science CUSAT, Kochi-22.
28. Dr. A. Mujeeb, Director, International School of Photonics CUSAT, Kochi-22
29. Dr. K.Sreekumar, Professor, Department of Applied Chemistry, CUSAT, Kochi-22
30. Dr. Supriya.M.H, Professor, Department of Electronics, CUSAT, Kochi-22
31. Smt. C.K.Asha, (MLA), KiranNivas,Kudavenchoor P.O., Vaikkom, Kottayam-686144
32. Dr. Dipak Kumar Sahoo, Professor, School of Engineering, CUSAT, Kochi-22
33. Dr.N.Manoj,Associate Professor, Department of Applied Chemistry, CUSAT, Kochi-22.
34. Dr. Mathew Cherian,Associate Professor, Cochin University College of Engineering Kuttanad, Pulincunoo, Alappuzha-688 504
35. Dr. Mridula. S, Professor, School of Engineering, CUSAT, Kochi-22
36. Dr. Rajesh.P.Nair, Assistant Professor Department of Ship Tehcnology, CUSAT, Kochi-22
37. Dr.Sajeevan T.P, Assistant Professor, NCAAH,CUSAT,Kochi-16
38. Dr. Sangeetha K Prathap, Assistant Professor, School of Management Studies, CUSAT, Kochi-22
39. Dr.SasiGopalan, Professor, School of Engineeing, CUSAT, Kochi-22
40. Dr. S.M.Sunoj, Professor, Deparment of Statistics, CUSAT, Kochi-22
41. Dr. Zakkariya K.A,Professor, School of Management Studies, CUSAT, Kochi-22
42. Sri. K. J. Jacob,(President, ErnakulamJilla Head Load & General Workers Union), Kuttipurath House, Vylloppilly Lane, Kochi-17
43. Sri. M Rajan, [President, KozikodeSarvodayaSangam Employees Association (INTUC)], INTUC Office, Silk Street, Kozhikode-673001
44. Padmakumar P.K, Assistant Librarian, Department of Electronics, CUSAT, Kochi-22
45. Sebastian M.G,Senior Grade Assistant, Planning 'B' Section, Administrative Office, CUSAT-Kochi-22
46. Dr. S. Sijikumar,Scientific Engineer, SPL, VSSC, Trivandrum-695022
47. Smt. Sasikala,Cochin Cultural Centre, Sangamam, ManikathRoad Kochi-682016
48. Ms. ThanujaBhattathiri,AdimuttatuMadom,House No.68, Mampilly Lane,Erroor South, Tripunithura-682301
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50. Adv. Asok M. Cheriyan, M.M Cheriyan Law Chambers, St. Benedict Road, Kochi-682018
51. Dr. M. Jathevedan, Emeritus Professor, Department of Computer Applications, CUSAT, Kochi-682022
52. Dr. K.P. Narayanan, Kanjiramparayil, Sreemoolanagaram, Aluva-683580
53. Dr. Poornima Narayanan. R, Ranjini, Pozhoth Lane, Kaloor-Kadavanthra Road, Kaloor, Cochin-682017
54. Dr. R. Sasidharan, Professor, Department of Hindi, CUSAT, Kochi-22
55. Prof. Alexander K. Samuel, Kattunilathil House, Muthur P.O, Thiruvalla, Pathanamthitta-689107
56. Smt. Shiny Paul, Associate Professor, Department of Electrical and Electronics, CUCEK, Kuttanadu, Alappuzha-688 504
57. Sri. Abhayachandran K, Assistant Professor, The National University of Advanced, Legal Studies, NUALS Campus, HMT Colony P.O, Kalamassery, Kochi-683503
58. Prof. (Dr.) Jayachandran. K, Member, Syndicate, Mahathma Gandhi University Priyadarshini Hills, Kottayam-686560
59. Dr. Paslithil, Professor & Head, Department of History, Sree Sankaracharya University of Sanskrit, Kalady, Kalady Post- 683574
60. Dr. K. P Sudheer, Professor (Agricultural Engineering) & Associate Director of Research i/c (Agricultural Engineering), College of Horticulture, Thrissur-680656
61. Abbad Lutfi. A, II Year, MSc. Meteorology, Department of Atmospheric Sciences, CUSAT, Kochi-22
62. Binil G.D, S5, B. Tech. Civil Engineering, School of Engineering, CUSAT, Kochi- 682022
63. Prajul K.V., III Year, B. Tech, Department of Ship Technology, CUSAT, Kochi-22
64. Rahmathullah. M, IX Semester, BBA LLB (Hons.), School of Legal Studies, CUSAT, Kochi-22
65. Secretary to Government, Higher Education Department, Government Secretariat, TVM, Pin: 695001
66. The Secretary to Govt, Finance Department, Government Secretariat, TVM, Pin: 695001
67. Dr. Bindu .V, Associate Professor, Department of Electrical & Electronics Engineering, Model Engineering College, Thrikkakkara- 682021
68. Dr. R. Sajeev, Associate Professor, Department of Physical Oceanography, CUSAT, Kochi-16
69. Dr. Shinoj P. V, Lecturer (English) UGC, Kerala Kalamandalam (Deemed to be University) for Arts & Culture, Vallathol Nagar, Cheruthuruthy P. O., Thrissur-679531
70. Sri Hibi Eden (Member of Parliament).

LIST OF ACADEMIC COUNCIL MEMBERS		
1	The Vice- Chancellor	
2	The Pro-Vice-Chancellor	
3	Dr.Asha V Director and Associate Professor SDE, University of Kerala Thiruvananthapuram 695 034	W.e.f 17-11-2015 upto ashaharindranath@gmail.com
4	Dr.P.R.SreemahadevanPillai Dean , Faculty of Engineering, University of Calicut) Professor and Head, Department of Civil Engineering, NSS College of Engineering Akathethara Palakkad-678 008	W.e.f 17-11-2015 upto sreemahadevanpillai@gmail.com
5	Dr. C George Thomas Professor Department of Agronomy College of Horticulture, Vellanikkara Thrissur-680 656	W.e.f 17-11-2015 upto adhort@kau.in
6	Dr.S. BijoyNandan Professor Department of Marine Biology, Microbiology & Biochemistry CUSAT, Kochi- 16	Dean Faculty of Marine Sciences w.e.f 19.06.2021 to 4 years bijoynandan@cusat.ac.in ,
7	Dr. Narayanan Namboothiri V. N Professor Division of Mechanical Engineering, School fo Engineering, CUSAT, Kochi-16	Dean Faculty of Engineering w.e.f. 14-05- 2022 to 13-05-2025 nnamboothiri@cusat.ac.in +9349895949
8	Dr.V. SivanandanAchari Professor School of Environmental Studies CUSAT Kochi-22	Dean Faculty of Environmental Sciences w.e.f 14-05-2022 to 13-05-2025 vsachari@gmail.com vsachari@cusat.ac.in

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11	Dr.KAjitha Professor, Department of Hindi CUSAT, Kochi-22	Dean Faculty of Humanities w.e.f 08.06.2022 to 07-06-2025 ajiravi@cusat.ac.in
12	Dr.K.C Sunny Vice Chancellor NUALS Campus HMT Colony P O Kalamaserry, Kochi	Dean Faculty of Law w.e.f 08.06.2022 to 07-06-2025 sunnydr2003@gmail.com
13	Dr. RanjiniBhattathiripad Professor in Architecture School of Architecture Government Engineering College Thrissur-680 009	Dean Faculty of Architecture w.e.f 06.07.20 for 3 yrs ranjinibt@yahoo.com
14	Dr.PraveenLal K. Principal Jubilee Mission Medical College & Research Centre Thrissur- 680 006	Dean. Faculty of Medical Sciences w.e.f 06.07.20 for 3 yrs prof.praveenlal@gmail.com
15	Dr.M. Kailasnath Professor International School of Photonics CUSAT, Kochi-22	Dean faculty of Technology w.e.f 14.05.2022 to 13-05-2025 Kailas@cusat.ac.in +91-9447213863
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17	The Secretary to Government, Higher Education Department, Government Secretariat, Thiruvananthapuram – 695 001	secy.hedu@kerala.gov.in

18	The Secretary to Government, Finance Department, Government Secretariat, Thiruvananthapuram-695 001 Email :prlsecy.fin@kerala.gov.in	
19	The Executive Vice-President, Kerala State Council for Science Technology and Environment, SasthraBhavan, PattomP.O.,Thiruvananthapuram – 695 004 evp.kscte@kerala.gov.in	
20.	Dr. Poornima Narayanan R. 'Ranjini', Pozhoth Lane Kaloor - Kadavanthra Road Kochi - 682 017	poornimanarayan4@gmail.com
21	Prof. Alexander K. Samuel Kattunilam, Muthoor P.O. Thiruvalla PathanamthittaDist Pin - 689 107	alexkattunilam54@gmail.com
22	Sri. C.J George Managing Director, Geojith Financial Ltd 34/659 – P Civil Line Road Padivatom, Kochi - 682024	As per notification EL.17(1)/2018 Vol(i) dated 6.6.2019 cjgeorge@geojit.com
23	Student Representative	vacant
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26 C	Dr.SasiGopalan Professor School of Engineering CUSAT, Kochi-22	sgcusat@gmail.com

27	Dr. Shiny Paul Associate Professor Department of Electrical & Electronics CUCEK, Kuttanad Alapuzha-688 504	shinypaulj@yahoo.co.in
28	Dr.R.Sasidharan Professor(Rtd) Department of Hindi CUSAT, Kochi-22	As per notification EL.17(1)/2018 Vol(i) dated 6.6.2019 sreeragamsasi@gmail.com
29	Sri.K.KKrishnakumar Centre for Socio – Economic & Environmental Studies (C.S.E.S), Padivattom , Khadi Federation Building , N.H Bye pass, Kochi – 682 024 Email id:krishnakumarkolassery@gmail.com	
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31	The Director School Of Environmental Studies CUSAT,Kochi-22 ses@cusat.ac.in	
32	The Director School Of Legal Studies CUSAT,Kochi-22 slcusat@gmail.com	
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35	The Director School of Industrial Fisheries Cochin University of Science and Technology, Kochi – 16. indfish2012@gmail.com	

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37	The Principal Cochin University College of Engineering, Kuttanad Pulincunnu 688 504. principalcucek@cusat.ac.in
38	The Principal School of Engineering Cochin University of Science & Technology Kochi – 22 principal_soec@cusat.ac.in
39	The Head Department of Computer Applications CUSAT, Kochi-22 dcahod@cusat.ac.in
40	The Head Department of Hindi Cochin University of Science & Technology, Kochi – 22 hodhindi@cusat.ac.in
41.	The Head Department of English and Foreign Languages Cochin University of Science and Technology, Kochi – 22 defl@cusat.ac.in
42	The Head Department of Statistics Cochin University of Science and Technology Kochi – 22. statistics@cusat.ac.in
43	The Head Department of Mathematics Cochin University of Science and Technology, Kochi – 22. mathscusat@gmail.com
44	The Head Department of Biotechnology Cochin University of Science and Technology Kochi – 22.

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45.	The Head Department of Physics Cochin University of Science and Technology Kochi – 22. phycusat@gmail.com
46	The Head Department of Applied Chemistry Cochin University of Science and Technology, Kochi – 22. chem@cusat.ac.in
47.	The Head Department of Applied Economics Cochin University of Science and Technology Kochi – 22. appliedeconomics@cusat.ac.in
48	The Head Department of Ship Technology Cochin University of Science and Technology Kochi – 22. ship@cusat.ac.in
49.	The Head Department of Electronics Cochin University of Science and Technology, Kochi – 22. doe@cusat.ac.in
50	The Head Department of Instrumentation Cochin University of Science and Technology Kochi – 22. instrumentation@cusat.ac.in
51	The Head Department of Polymer Science and Rubber Technology Cochin University of Science and Technology, Kochi – 22 hodpsrt@gmail.com
52	The Head Department of Computer Sciences Cochin University of Science and Technology, Kochi – 22 csdir@cusat.ac.in
53	Assistant Director & Head Department of Physical Education

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54	The Head Department of Marine Biology, Microbiology & Biochemistry Cochin University of Science and Technology, Kochi – 16. marinebiology@cusat.ac.in	
55	The Head Department of Marine Geology & Geophysics Cochin University of Science and Technology, Kochi – 16. marinegeo@cusat.ac.in	
56	The Head Department of Physical Oceanography Cochin University of Science and Technology, Kochi – 16. oceans@cusat.ac.in	
57	The Head Department of Atmospheric Science Cochin University of Science and Technology Kochi – 16. atmos@cusat.ac.in	
58	The Head Department of Chemical Oceanography Cochin University of Science and Technology Kochi – 16. chemoc@cusat.ac.in	
59	Dr.K.AZakkariya Director,DDUKK CUSAT, Kochi-22	Chairman Bos in Business Process & data analytics W.e.f 10.05.2022 to 09.05.2026 zakkariya@gmail.com
60	Dr.SasiGopalan Professor, Department of Mathematics CUSAT, Kochi-22	Chairman Bos in Mathematics W.e.f 28.05.2021 to 4 years sasigopalan@cusat.ac.in
61	The Director Center for Techno-strategic Studies, (C-TESS) CUSAT Kochi-22	Chairman Bos in Defence Science and technology W.e.f 28.05.2021 to 4 years ctess@cusat.ac.in

61	The Director Center for Techno-strategic Studies(C-TESS) CUSAT Kochi-22	Chairman Bos in Defence Science and technology W.e.f 28.05.2021 to 4 years ctess@cusat.ac.in
62	Sabu.M.K Professor, Department of Computer Applications CUSAT, Kochi-22	Chairman BOS in Computer Applpications w.e.f. 22-10-2021 to 21-10-2025 sabumk@cusat.ac.in
63.	Dr. AshaGopalakrishnan Professor Department of Statistics CUSAT, Kochi-682022	Chairperson, BOS in Statistics w.e.f 13-01-2022 to 12-01-2026 asha@cusat.ac.in
64	Dr. S.M. Sunoj Professor Department of Statistics CUSAT, Kochi-22	Chairman, BOS Physical and mathematical Science w.e.f.10-05-2022 to 09-05.2026 smsunoj@cusat.ac.in
65	Dr.Sarita G Bhat Professor, Department of Biotechnology CUSAT, Kochi-22	Chairman Bos in Biotechnology W.e.f 28.05.2021 to 4 years saritagbhat@gmail.com
66	Dr.N.Manoj Professor Department of Applied Chemistry CUSAT, Kochi-22	Chairman, BOS in Chemical and Biological Science W.e.f 10.05.2022 to 09-05-2026 manoj.n@cusat.ac.in
67	Dr.Valsamma Joseph Director and Associate Professor, NCAAH CUSAT, Kochi-16	Chairman, BOS in Marine Biotechnology W.e.f 05.04.2019 to 04.04.2023 jvalsamma@gmail.com
68	Dr.Sabu M.K Associate Professor Department of Computer Applications CUSAT, Kochi-22	Chairman, BOS in Forensic science W.e.f 11.03.2020 to10.03.2024 sabumk@cusat.ac.in
69	Dr. Beena C University Librarian (i/c) University Library CUSAT, Kochi-22	B Chairman, BOS in Library and Information Science w.e.f 02.02.2019 to 01.02.2023 beenacherukuth@gmail.com

70	Dr. RajanVarughese Ayrathu House Maradu P.O Kochi-682 304	Member nominated to AC.CL as per provisions of Kerala State Higher Education Council rajanvarghese60@gmail.com
71	Dr. Glory Joseph Professor Division of Civil Engineering School of Engineering CUSAT, Kochi-22	w.e.f 23-10-2019 to 22-10-2023 for 4 years BOS in Civil Engineering josephglory1@gmail.com
72	Dr.Renumol V. G Professor Division of Information technology School of Engineering CUSAT, Kochi-22	BOS in CSE and Information Technology w.e.f 23-10-2019 to 22-10-2023 From 25.06.2022 to 22-10-23 Dr. Renumol V. G in place of Dr. Sheena Mathew renumol@gmail.com
73	Dr. Mridula S Professor Division of Electronics Engineering School of Engineering CUSAT, Kochi-22	BOS in EE & EC w.e.f 23-10-2019 to 22-10-2023 for 4 years mridulahari@gmail.com
74	Dr. M R RadhakrishnaPanicker Professor Division of Mechanical Engineering School of Engineering CUSAT, Kochi-22	BOS in MechEngg and Marine Engg w.e.f 23-10-2019 to 22-10-2023 for 4 years mrrpanicker@cusat.ac.in
75	Dr. G Madhu Professor Division of Chemical Engineering & Division of Safety and Fire Engineering School of Engineering CUSAT, Kochi-22	BOS in Chemical Engg& SF w.e.f 23-10-2019 to 22-10-2023 for 4 years profmadhugopal@gmail.com
76	Dr.AnnieKurian c/o Assisi Institute of Foreign Languages Bharanganam Kottayam(Dist) Kerala-686 578	w.e.f 4-11-2019 for 4 years Chairman, BOS in Foreign Languages kurian.annie@gmail.com

77	Dr.KGirish Kumar Professor Department of Applied Chemistry CUSAT, Kochi-22	w.e.f4-11-2019 for 4 years Chairman, BOS in Applied Chemistry giri&cusat.ac.in
78	Dr. P S Sunil Associate Professor Department of Marine Geology and Geophysics CUSAT, Koch-16	w.e.f 4-11-2019 for 4 years Chairman, BOS in Marine Geology sunilps@cusat.ac.in
79	Dr. BijoyNandan Professor Department of Marine Biology CUSAT, Kochi-16	w.e.f 4-11-2019 for 4 years Chairman, BOS in Marine Biology bijoynandan@cusat.ac.in
80	Dr. Titus K Mathew Professor in Physics Department of Physics CUSAT, Kochi-22	w.e.f 4-11-2019 for 4 years Chairman, BOS in Physics titus@cusat.ac.in
81	Dr. R Sasidharan Professor(Rtd) Department of Hindi CUSAT, Kochi-22	w.e.f 4-11-2019 for 4 years Chairman, BOS in Hindi
82	Dr. James Kurian Professor Department of Electronics CUSAT, Kochi-22	w.e.f 4-11-2019 for 4 years Chairman, BOS in Electronics and Communication Systems james.cusat@gmail.com
83	Dr. A Mathiazhagan Professor Department of ship Technology CUSAT, Kochi-22	w.e.f 4-11-2019 for 4 years Chairman, BOS in NA and SB alagan@cusat.ac.in
84	The Director, CIFNET Fine Arts Avenue Kochi-16	w.e.f 4-11-2019 for 4 years Chairman, Board of UG Studies in Marine Sciences cifnet@nic.in
85	Sri Baby Chakrapani' AssosiateProfessor Department of Atmospheric Sciences CUSAT, Kochi-16	w.e.f4-11-2019 for 4 years Chairman, BOS in Atmospheric Sciences bcpaani@cusat.ac.in

86	Dr. Johney Isaac Associate Professor Department of Instrumentation CUSAT, Kochi-22	w.e.f.25.09.2019 for 4 years Chairman, BOS in Instrumentation johney@cusat.ac.in
87	Dr. G Santhosh Kumar Professor Department of Computer Science CUSAT, Kochi-22	Chairman, BOS in Computer Science w.e.f.03.08.2019-2.08-2023 san@cusat.ac.in
88	Dr. Sunil Edward Head Department of Architecture College of Engineering, Thiruvananthapuram	Chairman, BOS in Architecture w.e.f 18.10.2019 to 24.03.2023 suniledward@gmail.com
89	Dr.Shaju.S.S Assistant Professor & Head Department Chemical Oceanography, CUSAT, Kochi-16	Chairman, BOS in Chemical Oceanography w.e.f 28.10.2022 to 27-10-2026 shaju@cusat.ac.in
90	Dr. M Bhasi Professor School of Management Studies CUSAT, Kochi-22	Chairman, BOS in Business/industrial Management w.e.f 01.02.22 to 31.01.24 mbhasi@gmail.com
91	Dr. S Rajitha Kumar Professor School of Management Studies CUSAT, Kochi-22	Chairman, BOS in Commerce w.e.f 01.02.2020 to 31.1.24 rajithakumar@cusat.ac.in
92	Dr.P. Arunachalam Professor Department of Applied Economics CUSAT, Kochi-22	Chairman, BOS in Applied economics w.e.f 01.02.2020 to 31.01.2024 arunachalam14@yahoo.co.uk
93	Dr. VaniKesari A Assistant professor School of Legal Studies CUSAT, Kochi-22	Chairman, BOS in Law(UG) w.e.f 01-02-2020 to 30-01-2024 vanikesaria@cusat.ac.in
94	Dr.P.SSeema Associate Professor School of Legal Studies CUSAT, Kochi-22	Chairman, BOS in Law (PG) 01.02.2020 to 30-01-2024 pss_sls@yahoo.co.in

95	Dr.SivanandanAchari Professor School of Environmental Studies CUSAT,Kochi-22	Chairman, BOS in EVS w.e.f 1.2.2020 to 31.01.2024 vsachari@gmail.com
96	Dr.MHarikrishan Professor School of Industrial of Industrial Fisheries, CUSAT, Kochi-16	Chairman, BOS in Industrial Fisheries w.e.f 1.2.2020 to 31.01.2024 mahadevhari@hotmail.com
97	Dr M Kailasnath Professor ISP, CUSAT, Kochi-22	Chairman,BOS in Photonics 05.01.21 to 4 years kailas@gmail.com
98	Dr Sunil K Narayanankutty Professor, Department of Polymer science and Rubber Technology, CUSAT, Kochi-22	Chairman Board of studies in Polymer Science and Rubber Technology w.e.f. 05.01.2021 up to 4 years sncusat@gmail.com
99	Dr. Zakkariya .K.A Professor & Director , Deendayal Upadyay Kaushal Kendra, CUSAT	Chairman Board of studies in Technology And Management Consulting w.e.f. 05.01.2021 up to 4 years zakkariya@gmail.com
100	Rear Admiral George Kuruvilla VSM (Retd) Hb-66, Panabilly Nagar, Kochi-682036	Chairman Board of studies in Aeronautical Science And Technology w.e.f -06.08.2020 to 5.08.2024 Ph:- 9447508936 admiralgk@gmail.com
101	Dr.James Varghese Professor Division of Mechanical Engineering School of Engineering CUSAT, Kochi-22	Nominated by VC w.e.f. 22.07.2022 to 21.07.2024 jamesvar@cusat.ac.in
102	Dr.Mujeeb A. Senior Professor International School of Photonics CUSAT, Kochi-22	Nominated by VC w.e.f. 22.07.2022 to 21.07.2024 mujeeb@cusat.ac.in

103	Dr. Santhosh Kumar S. Professor School of Management Studies CUSAT, Kochi-22	Nominated by VC w.e.f. 22.07.2022 to 21.07.2024 drsan@cusat.ac.in
104	Sri Praneetha P. Associate Professor Department of Hindi CUSAT, Kochi-22	Nominated by VC w.e.f. 22.07.2022 to 21.07.2024 dr.praneetha.p@cusat.ac.in
105	Dr. Sajeevan T.P Associate Professor National Centre for Aquatic Animal Health(NCAAH),CUSA T, Kochi-16	Nominated by VC w.e.f. 22.07.2022 to 21.07- 2024 sajeev@cusat.ac.in
106	Dr. SujaHaridas Associate Professor Department of Applied Chemistry CUSAT, Kochi-22	Nominated by VC w.e.f. 22-07-2022 to 21-07- 2024 sujaharidas@cuast.ac.in
107	Dr.R.Sajeev Associate Professor Department of Physical Oceanography CUSAT, Kochi-16	Chairman, Board of studies in Physical Oceanography w.e.f- 16.01.2020 to 4 years rsajeev@yahoo.co.in
108	Sri.M.Vijin, MLA(Kalliasseri) 504, Periyar Block MLA Hostel, Palayam Thiruvananthapuram 695034	mvijinmlaoffice@gmail.com vijinmedat@gmail.com
109	Smt.C.K.Asha, MLA 804, Chandragiri Block MLA Hostel, Palayam Thiruvananthapuram 695034	ashaviakm@gmail.com

DEANS OF FACULTIES

1. Architecture.

Dr. T. RanjiniBhattathiripad, Professor in Architecture, Govt. Engineering College, Trissur-680 009.

2. Engineering

Dr. K. S. Beena, Professor, Civil Engineering, School of Engineering, CUSAT, Kochi-682 022.

3. Environmental Studies

Dr. V. SivanandanAchari, Professor, School of Environmental Studies, CUSAT, Kochi-682 022.

4. Humanities

Dr. K. Ajitha, Professor, Department of Hindi, CUSAT, Kochi-682 022.

5. Law

Dr. K. C. Sunny, Vice Chancellor, NUALS, HMT Colony P.O., Kalamassery, Kochi – 683 503

6. Marine Sciences

Dr. S. BijoyNandan, Professor, Department of Marine Biology, Microbiology & Biochemistry, CUSAT, Kochi-682 016.

7. Medical Science and Technology

Dr. Praveen Lal K., Principal, Jubilee Mission Medical College & Research Centre, Thrissur-680 005.

8. Science

Dr. K. Girish Kumar, Professor, Department of Applied Chemistry, CUSAT, Kochi-682 022.

9. Social Science

Dr. S. HarikumarGovind, Geethanjali, Opposite Changampuzha Library, Edapally, Kochi-682 024.

10. Technology

Dr. C. K. Aanandan, Professor (Rtd.), Department of Electronics, CUSAT, Kochi-682 022.

Department of Applied Chemistry

ANNUAL REPORT 2021-22

Name of the Department: Applied Chemistry

Brief History of the Department

The Department of Applied Chemistry was established in 1976 with the support of UGC envisaged to play an important role in the further development of the industrial belt in the Greater Cochin area by providing scientific support and trained personnel to the existing industries and by acting as a catalyst for starting up of new industries. The Department started M.Sc. programme in Applied Chemistry in 1977 (since 2015, the course has been renamed as M. Sc. Chemistry), M. Phil. programme in Chemistry in 1986, and M.Tech. programme in Industrial Catalysis in 1996 (approved by UGC and AICTE).

The Department has acted as a nucleus for starting the Department of Polymer Science and Rubber Technology and the Department of Biotechnology by initiating B.Tech. and M.Sc. in the respective areas. After the initial problems of infancy, the Department has grown and emerged as one of the best centres of Chemistry and has been fortunate to produce the first Bhatnagar Award Winner in Chemical Sciences in the entire State of Kerala. The UGC has identified it as one of the national centres to conduct refresher courses for University and College teachers in Chemistry.

The Department has been receiving support under the “Fund for improvement of S&T Infrastructure” (FIST) programme of Department of Science and Technology, Government of India Special Assistance Programme” (SAP) of University Grants Commission. The Department is now selected for funding at the third level of support under SAP programme.

The Department has carried a number of research projects, supported by Central and State Government agencies such as DST, MHRD, UGC, AICTE, CSIR, DRDO and KSCSTE.

In the last five years department has received research schemes stand completed valued at Rs.391.99 lakhs.

The Department has conducted several national seminars/symposia, the major ones being, a Seminar and Mass Education programme in Environmental Awareness (1988), the National Symposium on Current Trends in Co-ordination Chemistry (1995), CTRIC (2004, 2008, 2011, 2014, 2015, 2018, 2020, 2022) Frontiers in Chemistry (2006) and International Seminar series, MATCON (2001, 2007 and 2010, 2016, 2019, 2021). The Department is currently organizing two series of conferences, MATCON (the international conference series) and CTRIC (a national conference series). The Department has over 180 research publications to its credit during the last five years in addition to a few monographs. In the last five years, 46 students have taken their Ph.D. from the department. Almost all the students who had successfully completed the M.Sc Applied Chemistry and M.Tech Industrial Catalysis courses have found employment in industries, R & D institutions or colleges, some of them have pursued a career in research and have been awarded Ph.Ds. A few of them have also gone abroad and are well settled in industrial establishments, universities and other institutions.

Programmes of Study/Research

1. M.Sc. (Chemistry)
2. Ph.D.

1. Faculty Members

Sl. No.	Name	Designation	Qualification	Specilisation
1	Dr. K.Sreekumar	Senior Professor & Head of the Department	M.Sc., Ph.D.	Industrial Catalysis
2	Dr. K.Girish Kumar	Senior Professor & Dean- Faculty of Science	M.Sc., Ph.D.	Analytical Chemistry
3	Dr. N. Manoj	Professor	M.Sc., Ph.D.	Organic Chemistry
4	Dr. P.M. Sabura Begum	Professor	M.Sc.,M.Phil Ph.D.	Organic Chemistry

5	Dr. P.V. Mohanan	Professor	M.Sc., Ph.D.	Enzyme Technology & Bio inorganic Chemistry
6	Dr. Yoosaf K	Professor	M.Sc, Ph.D	Nano materials and Spectroscopy
7	Dr. Anitha C Kumar	Associate Professor	M.Sc, Ph.D	Material Science
8	Dr. Jayasree E.G	Associate Professor	M.Sc, Ph.D	Computation/Theoretical Chemistry
9	Dr. Leena R.	Assistant Professor	M.Sc., Ph.D.	Analytical Chemistry
10	Dr. Kala R.	Assistant Professor	M.Sc., Ph.D	Material Chemistry
11	Dr. Susmita De	Assistant Professor	M.Sc., Ph.D.	Computation/Theoretical Chemistry
12	Dr. Sebastian Nybin Remello	Assistant Professor	M.Sc., Ph.D.	Inorganic - Physical Chemistry
13	Dr. Suja Haridas	Assistant Professor	M.Sc., Ph.D.	Physical Chemistry
14	Dr.Sindhu Mathai	Assistant Professor	M.Sc., Ph.D.	Organic Chemistry
15	Dr. E.Manoj	Assistant Professor	M.Sc., Ph.D.	Inorganic Chemistry
16	Dr. Shandev P P	Assistant Professor	M.Sc., Ph.D.	Organic Chemistry

2. Emeritus Professor/Scientist (if any)

Sl. No.	Name	Designation	Qualification	Specilisation
1	Dr. S. Prathapan	Professor	M.Sc., Ph.D.	Organic Chemistry

3. Research/Project Staff

Sl. No.	Name	Designation	Qualification	Specilisation
1	Dr. Geethu R	UPDF	Ph. D	Inorganic or Organic Hetero junction for Solar Cell Application
2	Dr. S. Kaviya	PDF Dr. D.S Kothari(UGC)	Ph. D	Analytical Chemistry
3	Dr. Shalini Menon	RA- CSIR	Ph. D	Analytical Chemistry- Development of wireless integrated biosensors for point - of -care diagnostic applications
4	Unnikrishnan V	KSCSTE Project Assistant	M.Sc. Chemistry	Polymer Chemistry

5	Priya K. Shenoy	ISRO Project	M.Sc. Chemistry	Polymer Chemistry
6	Aiswarya Balan	DoEcc Project	M.Sc. Chemistry,	Organic chemistry
7	Sithara Soman	DST-SERB	M.Sc Chemistry, NET	Graphene Quantum dots imprinted nano polymer composite based Electrodes for the sensing of toxic heavy metals.

4. Research Scholars

Sl. No.	Name	Funding Agency	Guide	Area of Work
1	Vineetha M.C	-	Dr. M.R.P. Kurup	Structures and Spectral Characterization of Co-ordination compounds
2	Devika S.R.	UGC	Dr. K. Girish Kumar	Development of sensors
3	Manna Rachel Mathew	UGC	Dr. K. Girish Kumar	Development of Chemical Sensors
4	Sanu K. Anand	UJRF	Dr. K. Girish Kumar	Development of sensors
5	Lecy. V. Theresa	UJRF	Dr. K. Sreekumar	Low melting mixture as an efficient catalyst and reaction medium for organic synthesis
6	Anjaly Jacob K.	CSIR	Dr. K. Sreekumar	Solid Phase organic synthesis
7	Shaibuna M.	MANF	Dr. K. Sreekumar	Organic synthesis in alternate reaction media
8	Shebitha A. M.	UJRF	Dr. K. Sreekumar	Dendrimer catalysed organic reactions
9	Avudaiappan G.	UGC	Dr. K. Sreekumar	Dendrimer catalysed organic reactions

10	Hiba K.	UGC	Dr. K. Sreekumar & Dr. S. Prathapan	Heterogeneous catalysis using periphery modified dendrimers
11	Parvathy O. C.	UGC	Dr. S. Prathapan	Organic Synthesis
12	Mohammed Sadik N.K.	UJRF	Dr. S. Prathapan	Organic chemistry
13	Reshma Joseph	UJRF	Dr. S. Prathapan	Development of artificial photosynthesis system for the Conversion of solar energy into chemical fuels based on fundamental science underlying photosynthesis
14	Sumi P.M.	CSIR	Dr. S. Prathapan	Development of drug conjugated Metal Organic Frameworks for cancer theranostics
15	Jesna A.	CSIR	Dr. S. Prathapan	Organic Synthesis
16	Seena Sebastian		Dr. N. Manoj	Organic Chemistry
17	Vineetha P. K.	UGC	Dr. N. Manoj	Organic Synthesis
18	Rani Mathew	CSIR	Dr. N. Manoj	Organic Synthesis
19	Kiran James (PT)		Dr. N. Manoj	Organic Synthesis
20	Aswathy Ajayakumar (PT)		Dr. N. Manoj	Organic Synthesis
21	Midhun T. R.	CSIR	Dr. N. Manoj	Organic Synthesis
22	Haritha J.R.	UGC	Dr. N. Manoj	Synthesis and Study of metal-nano particle tethered donor-acceptor systems
23	Seena K.Thomas(PT)	-	Dr. P. M. Sabura Begum	Polymer composites

24	Sameeha A. P.	CSIR	Dr. P. M. Sabura Begum	Inorganic coordination complexes
25	Manjari Jayendran	UGC	Dr. P. M. Sabura Begum (Dr. M.R.P. Kurup-Co-guide)	Syntheisis of Metal Complexes
26	Nimya Ann Mathews	UGC	Dr. P. M. Sabura Begum	Synthesis and characterization of some multidentale ligands and its transition metal complexes
27	Maria Augustine (PT)		Dr.P.V.Mohanan	Enzyme Technology
28	Savitha DP	UJRF	Dr.P.V.Mohanan	Synthesis of Metal Organic frame works for enzyme immobilization
29	Geetha G.	UJRF	Dr.P.V.Mohanan	Biochemistry
30	Aswathi.C. S.	RGNF	Dr. P. A. Unnikrishnan	Synthesis and reaction of enone appended 1,3-dienes
31	Remya T.M.	CSIR	Dr. P. A. Unnikrishnan	Synthesis and evaluation of optoelectronic properties of a few 1,3,4-oxadiazole based donor – acceptor systems.
32	Gopika Sabu	CSIR	Dr. Susmita De	A molecular level understanding of the reactivity of molecules and macro molecules – A structure and Bonding Perspective
33	Sonia Sam	CSIR	Dr. K Girish Kumar	Development of Chemical sensors
34	Swathi S	CSIR	Dr. K Girish Kumar	Development of Chemical sensors

35	Athira P	UJRF	Dr. Kala R	Functionalized Carbon Nano Materials for energy related applications.
36	Unnikrishnan V	Project Fellow	Dr. K Sreekumar	Catalysis by polymer supported dendrimers, their metal complexes and nano particle conjugates
37	Sithara Soman	Project fellow	Dr. Kala R	Graphene Quantum dots imprinted nano polymer composite based Electrodes for the sensing of toxic heavy metals.
38	Anjima James	UJRF	Dr. Susmita De	Quantum mechanical and molecular Dynamics study biologically relevant molecules.
39	Anju Maria Baby	CSIR	Dr. K Sreekumar	Design and synthesis of thiophene based low band gap conjugated polymers and their Optoelectronic applications
40	Merin Joseph	UJRF	Dr. Suja Haridas & Dr. Sebastian Nybin Remello	SBA encapsulated metallo porphyrins for catalytic applications.
41	Aswathy P.V	UJRF	Dr. Kala R	Functionalised Carbon Nano Materials for fluroscent sensors.
42	Deepa Sebastian	UJRF	Dr. Kala R	Functionalized Carbon Nano Materials for energy related applications.
43	Shijo Francis	UJRF	Dr. Leena R	Synthesis and photo voltaic studies of various porphyrins and metallo porphyrins.

44	Arya Sethu M	UJRF	Dr. Leena R	Electro chemical determination of parabens using BDD and modified BDD Electrodes.
45	Haritha Baby	UJRF	Dr. Sebastian Nybin Remellow	Development of molecular catalyst systems for artificial photo synthesis.
46	Dhanya T M	UJRF	Dr. P.V Mohanan	Bio-inorganic Chemistry
47	Rosmy Joy	UJRF	Dr. Suja Haridas	Modified grapheme quantum dots for catalytic and energy applications.
48	Anjali Krishna G	UJRF	Dr. P.V Mohanan	Transition metal complexes and its Bio-chemical applications.
49	Ganga S	UJRF	Dr. Leena R	Porphyrin based Electro Chemical Sensors
50	Goldamol S Pallam	UGC	Dr. K Girish Kumar	Development of sensors
51	Priya K Shenoi	Project fellow	Dr. K Sreekumar	Energetic propellant binders based on polyphosphaenes
52	Linta Mary Jose	Teacher fellow	Dr. Susmita De	Computational Modeling of complex molecular system.
53	Sajeena K N	INSPIRE	Dr. Suja Haridas	Heteropolyacides for heterogenous acid catalysis
54	Akhila M	DAT	Dr. Sebastian Nybin Remello	Artificial photo synthesis
55	Neethu P.D	CSIR-JRF	Dr. Sebastian Nybin Remello	Porphyrin based photo catalyst systems for artificial photo synthesis

56	Arun R	UGC-JRF	Dr. Suja Haridas, Dr. Sebastian Nybin	Supported Sulphonic Acid Catalysts for fine Chemical Synthesis
57	Keerthi K	UGC-JRF	Dr. K Girish Kumar	Development of Sensors
58	Amoolya Chandran	KSCSTE	Dr. K Girish Kumar	Development of Sensors
59	Divya K M	DAT	Dr. P.V Mohanan	Study on the Physical and Biological Properties of New Curcuminoid Formulations
60	Gopika Jagannivasan	DAT	Dr. Suja Haridas	Supported Metalloporphyrins for Catalytic Applications
61	Athira M P	DAT	Dr. Suja Haridas	Direct Synthesis of SO ₃ H 15 as catalysts for fine chemical synthesis.
62	Bulkees A V	DAT	Dr. P.V Mohanan	Metal Porphyrin Incorporated Metal Organic Framework Materials for Energy and Environmental Applications
63	Deepthi Anna David	DAT	Dr. P.M Sabura Begum	Polymer composites- Synthesis and characterizations of Carbon Quantum dots and their Application in Rubber
64	Mohammed Hashim K K	CSIR	Manoj E	Synthesis structural and spectral studies of novel metal complexes of multi-dentate Schiff base ligands and their biological applications.

65	Neenu K V	DAT	Dr. P.M Sabura Begum	Polymer Composites- Its Preparation, Properties and application
66	Anjali N Kamath	DAT	Dr. Sebastian Nybin Remello	Metal Organic Framework Based Catalyst Material for Nitrogen Fixation
67	Aswathy K G	DAT	Dr. Sebastian Nybin Remello	Metal Organic Frameworks as Catalyst material for Carbondioxide fixation.
68	Meema Rasheed	DAT	Dr. N Manoj	Carrier Selective Materials and Dyes for Photovoltaic applications
69	Ansa Santu	DAT	Dr. Manoj E	Synthesis and Structural studies of Novel transition Metal complexes of Multi-Dentate-Schiff base ligands and their biological applications.
70	Bastin K Jose	DAT	Dr. Sindhu Mathai	Novel 1,3- Dipolar Cycloaddition Reactions of Azomethine Imines with Various Dipolarophiles:Synthesis Strategies Towards Biologically Active Heterocycles.
71	Saranya P.K	DAT	Dr. Sindhu Mathai	Investigations towards the Synthesis and development of novel-bis-benzotriazole based D-A Copolymers for Photovoltaic applications.

72	Athulya Simon	DAT	Dr. Sindhu Mathai	Novel Heterogeneous Palladium Catalysts based on N-Heterocyclic Carbenes: Synthesis Characterization and Catalytic Applications.
73	Animasree V P	DAT	Dr. Manoj N	Development of Photocatalysts for Solar Energy Applications
74	Lakshmi V Menon	DAT	Dr. Manoj E	Investigations on Multi-Nuclear Transition Metal Complexes of Novel NNS and NNO Donor Ligands and their Applications.
75	Athira Mohan	DAT	Dr. Sebastian Nybin Remello	Expanded Porphyrin Based Catalyst Materials for Artificial Photosynthesis.
76	Shamna S	UGC	Dr. Leena R	Development of Fluorescent Probes for Selective and Specific Sensing of Biomolecules.
77	Sooraj M	DAT	Dr. Manoj E	Designing Novel Metal Organic Frameworks: Structural Studies and Applications.
78	Lubna M	CSIR	Dr. N Manoj	Design and Synthesis of Stable and Efficient Carrier Transport Materials for Photovoltaic Applications.
79	S. Nayanalakshmi	DAT	Dr. Shandev P P	Synthesis of Functionalization of Organic Chromophores towards Organic Electronics.

80	Amrutha Mohan	DAT	Dr. Anitha C Kumar	Synthesis of Polymeric Materials for Biomedical Applications.
81	Athulya K.R	DAT	Dr. Anitha C Kumar	Synthesis of PEG-ylated Polymersomes for Biomedical Applications
82	Dhanyasree P	DAT	Dr. P.M Sabura Begum	Polymer Nanocomposites
83	Sachin Philip	DAT	Dr. Shandev P P	Synthesis of Functionalization of Organic Chromophores
84	Athira K S	DAT	Dr. Shandev P P	6,7-dihydro-2H-isoindol-4ones as a Valuable Starting Point for the Synthesis of Polyheterocyclic Structures
85	Arathy Chandran	DAT	Dr. Anitha C Kumar	Design and Synthesis of Peptide Hydrogels for Biomedical Applications
86	Sruthi Remeshan	DAT	Dr. P.M Sabura Begum	Polymer Nanocomposites.

5. Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer	1
2	Junior Librarian	1
3	Assistant	2
4	Office Superintendent	1
5	Computer Assistant	1
6	Office Attendant	1
7	Sweeper cum Cleaner	2

6. Technical Personnel

Sl.No.	Designation	No. of Posts
1	Technical Officer	1
2	Technical Assistant	2 (Contract)
3	Storekeeper	1 (Contract)
4	Laboratory Assistant	1

7. Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1	M.Sc. I Year	7	16	23
2	M.Sc. II Year	6	17	23
3	M.Phil.	-	11	11

8. Research Facilities

a. Laboratories

Sl. No.	Laboratory	Numbers
1	M.Sc. Lab	2
2	Research Laboratory-Organic Chemistry	3
3	Research Laboratory-Physical Chemistry	1
4	Research Laboratory-Inorganic	1
5	Research Laboratory-Polymer Chemistry	2
6	Computational Laboratory	1
7	Bioinorganic Laboratory	1
8	Analytical Chemistry Laboratory	1
9	Material Chemistry Laboratory	1

b. Major equipment

Sl. No.	Generic Name of Equipment	Model, Make & year of purchase	Remarks including accessories available and current usage of equipment
1	Chemistry Diaphragm Pump	M22CMT 2 stage certification 230V/50-60Hz 06.02.2012	Working properly
2	UV-Vis Ocean Optics Spectrophotometer	Ocean Optics Inc. (25.10.2012)	Accessories for recording UV Visible Working properly
3	Stereoscopic Microscope	Motic	To view the crystal closely Working properly
4	Magnetic Susceptibility Balance	Sherwood 20.10.2009	Measurement of magnetic susceptibility Working properly
5	Conductivity meter	Conductivity meter-304 25.09.2020	Measurement of conductivity of complexes in solution state Working properly
6	Electrochemical Workstation	[CH Instruments (20.03.2017)	Working properly
7	Fluorescence Spectrometer	Horiba Instrument Inc. New jersey (14.12.2017)	Working properly
8	Electrochemical Workstation (2Nos)	CH Instruments (19.10.2013)	Working properly
9	UV-Vis-NIR OceanOptics Spectrophotometer (Fiber Optic Sensor)	Ocean Optics Inc. SD 2000, 2003	Accessories for recording UV Visible, fluorescence, Diffused reflectance spectroscopy Working properly
10	Atago Polarimeter	Atago AD100, 2004	Measurement of Specific rotation Working properly
11	HPLC	Shimadzu (20.01.2010)	Purification of organic compounds Working properly

12	Xenon Infinite Global Line 2750 HCL workstation.	HCL,2002	Theoretical calculation, Working properly
13	IBM workstation (Quard Core System X 3400)	IBM, 2007	Theoretical calculation, Working properly
14	Supermicro Server with 48 Core processor	Supermicro, 2013	Computational chemistry, working properly
15	Keithley Source meter	Keithley, USA	Conductivity measurement
16	AFM	Nanosurf Inc, Germany (21.01.2011)	Material surface study
17	Solar simulator	Photoemission, USA (21.07.2011)	Solar cell activity study
18	Spin Coater	Laurell, USA (21.12.2018)	Thin film coating
19	Hall measurement system	Ecopia, Korea (12.10.2011)	Measurement of Hall coefficient
20	HPLC-MS	Waters 19.11.2009	Working properly
21	GC-MS	Agilent (04.06.2012)	Working properly
22	Atomic Absorption Spectrometer	Thermo	Working properly
23	FT-IR	FTIR-4100Jasco, Thermo 07.12.2006	Working properly
24	Flame photometer	Elico (04.12.2009)	Working properly
25	Electronic Balances	Sartorius (20.04.2017)	Working properly
26	Vacuum Ovens, Hot air ovens and MuffleFurnaces	Labline,	Working properly
27	Vacuum pumps, Chemical Resistant Diaphragm Vacuum pumps	Precivac, Ilvac, Buchi, Vacuubrand, Heidolph 03.10.2001	Working properly
28	Rotary Evaporators	IKA, Buchi, Heidolph (25.11.2006)	Working properly
29	Electrochemical Workstation	CH Instruments Inc., USA (10.04.2012)	Working properly

30	Universal Testing Machine	M/s. Tinius Olsen In India Pvt. Ltd., UP (15.10.2017)	Working properly
31	Steady- State and Time Resolved Fluorescence Spectrometer	Horiba Instruments 17.07.2017)	Working properly Working properly
32	Shimadzu I- series Gel permeation Chromatography system with UV_Vis Detector & Refractive Index detector Accessories.	Shimadzu (Asia Pacific) PTE Ltd., (2018)	Working properly
33	Automated Flash Chromatography system	AL-580S, Yamazen corporation (10.09.2018)	Working properly
34	TGA	PYRIS 6 Perkin Elmer 14.06.2004	Working properly

c. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
4752	19

d. Others

9. Distinguished visitors

Sl. No.	Name	Affiliation	Period of Visit
1	Prof. V.N Rajasekaran Pillai	Vice Chancellor, Somaiya Vidyavihar University, India	March 11-12 ,2022
2	Dr. K.V Radhakrishnan	Senior Principal Scientist CSIR-NIIST, India	March 11-12 ,2022
3	Dr. Benny K George	Deputy Director, ISRO-VSSC, India	March 11-12 ,2022
4	Dr. Rahna Shamsudeen	Scientist F, NPOL, India	March 11-12 ,2022
5	Dr. Daly Davis	Assistant Professor, Somaiya Vidyavihar University, India.	March 11-12 ,2022

10. Ph.Ds Awarded

Sl. No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	"Congeneric, Monomeric and Polymeric Complexes from Isoniazid Scaffolds: Exploring Structure, Properties and Applications"	Lincy Tom	Dr. M.R.P Kurup
2	" Studies on 1,3-dipolar cycloaddition reaction of nitrones and a few reactions of nitrones as aldehyde surrogates"	Jesna A	Dr. S Prathapan
3	Synthesis of a Few Pyran Based Bipodal D- π -A- π -D Triads and Studies on their Excited State Dynamics: applications in Photovoltaics, Nonlinear Optics and Metal Ion Sensing	Vineetha P.K	Dr. N Manoj
4	"Studies of Few Heterocyclic D- π -A Systmes:Structure and Medium Effects in Aggregation Induced Emission, Metal Ion Sensing and Mechanochromism"	Parvathy O C	Dr. S Prathapan
5	Zn (II and Cu (II) Complexes of Ons Donor Thiosemicarbazones: Synthesis, Structures,Spectrual studies and Biological applications	Nimmya Ann Mathews	Dr. Sabura Begum
6	Sensors for Individual, Dual and Simultaneous Determination of some Clinically Sginificant Molecules- Electrochemical and Optical Approaches	Sanu K Anand	Dr. K Girish Kumar
7	Low melting measures: A green chemical approach for organic reactions	Lecy V Theresa	Dr. K. Sreekumar

8	Development of Porphyrin Cored Dendritic Polymers for Catalysis and sensing Applications	Avudaiappan G	Dr. K. Sreekumar
9	"Optical and Electrichemical Sensors for Individual and Simultaneous Determination of Some DNA Bases, Their Derivatives and a Purine Nucleoside.	Manna Rachel Mathew	Dr. K Girish Kumar

11. Publications

a. Papers

Sl. No.	Title of the Paper	Author(s)	Impact Factor, if any
1	,"A Nanohybrid system based on covalently functionalized Graphene Quantum dots with Dithienopyrrole derivative for the sensitive and selective fluorometric detection of Pb (II) ions", Luminescence, vol 36, issue 7,pp.1743-1750, August 2021	Deepa Sebastian, Sithara Soman, Kala Ramakrishnan	2.46
2	,"Covalently modified graphene quantum dot using a thiourea based imprinted polymer for the selective electrochemical sensing of Hg(II) ions",Journal of Polymer Research,vol 28,issue 9,September 2021 Deepa Sebastian, Kala Ramakrishnan., Neethu Parvathy K.P.,Savitha D. P., "A fluorescent probe based on visible light-emitting functionalized Graphene Quantum dots for the sensitive and selective detection of Pb (II) ions", Journal of Material Science,vol 56,issue 32,pp.18126–18146, September 2021	Sithara Soman,Aswathy P.V., Kala Ramakrishnan	3.09

3	"A fluorescent probe based on visible light-emitting functionalized Graphene Quantum dots for the sensitive and selective detection of Pb (II) ions", <i>Journal of Material Science</i> , vol 56, issue 32, pp.18126–18146, September 2021	Deepa Sebastian, Kala Ramakrishnan., Neethu Parvathy K.P., Savitha D. P.,	4.22
4	"A novel manganese(II) bithiocarbohydrazone complex: Crystal structures, Hirshfeld surface analysis, DFT and molecular docking study with SARS-CoV-2", <i>Journal of Molecular Structure</i> , vol 1246, pp.131125 August 2021	Hashim K.K., Manoj E., M.R Prathapachandra Kurup,	3.19
5	"Thermoplastic starch nanocomposites using cellulose-rich <i>Chrysopogon zizanioides</i> nanofibers", <i>International Journal of Biological Macromolecules</i> , vol 191, pp. 572-583, September 2021	Midhun Dominic C.D., Derval dos Santos Rosa, Paulo Henrique Camani, Athira S. Kumar, Neenu K.V., P.M. Sabura Begum, Divya Dinakaran, Effina John, Donna Baby, Meenu Mariya Thomas, Jaison M. Joy, Jyotishkumar, Parameswaranpillai, Mohammad Reza Saeb	6.95
6	"Palladium Loaded Dendronized Polymer as Efficient Polymeric Sustainable Catalyst for Heck Coupling Reaction" <i>Catalysis letters</i> , (just published), 1-16.	Hiba K., Anjali K.G., Prathapan S., K. Sreekumar,	3.19
7	, "Efficient synthesis of piperidine derivatives using dendrimer based catalytical pockets", <i>Journal of Heterocyclic chemistry</i> , 1, 1-11, September 2021	Unnikrishnan V., Avudaiappan G., Kiran James., Ajay A., Sreekumar K.	2.19
8	"Ethylene Glycol: Urea: NH ₄ Cl Low Melting Mixture-Assisted Reactions	Lecy V. T., Saranya P., Anju M. B., Krishnapillai S.,	2.1

	between Aromatic Aldehydes and Activ Methylene Compounds", ChemistrySelect, 6, 7150 –7157, September 2021		
9	"A novel and cost effective isatin based Schiff base fluorophore: a highly efficient ‘‘turn-off’’ fluorescence sensor for the selective detection of cysteine in an aqueous medium", New Journal Of Chemistry, vol.45, issue 16, pp.306-312, August 2021	Savitha D. P., Pradeep, Deepa Sebastian., Anjali K. G., Mohanan P.V	3.59
10	Vineetha P. K., Aravind Krishnan., A. Aswathy., Parvathy O.C., Manoj N., " Pyran based bipodal D- π -A systems: colorimetric and ratiometric sensing of experimental and theoretical approach"., New Journal of Chemistry., 1-9, July 2021	Vineetha P. K., Aravind Krishnan., A. Aswathy., Parvathy O.C., Manoj N.,	3.59
11	, "Lawson derived Zn(II) and Fe (III) metal organic frameworks with pH dependent emission for controlled drug delivery"., New Journal of Chemistry., 45,35, 14589-14597, July 2021	Sirajunnisa P., Liz H.G., Manoj N., Prathapan S., Sailaja. G. S.	3.59
12	" Synthesis, Characterization, DNA binding, antibacterial, antidiabetic, molecular docking and DFT studies of Ni(II), Cu(II) and Zn(II) complexes derived from heterocyclic Schiff base", Journal Of Inorganic and Nano-Metal Chemistry, Aug 2021 (In Press)	Shanty A.A., Mohanan P.V.,	0.827
13	"Deep Eutectic Solvent Assisted Synthesis of Dihydropyrimidinones/ thiones via Biginelli Reaction: Theoretical Investigations on their Electronic and Global Reactivity	Shaibuna M., Muhammed Jeneesh Kariyottu Kuniyil, and Krishnapillai Sreekumar,	

	Descriptors", New Journal of Chemistry, Vol 45, 20765-20775, Oct 2021.		
14	"Sustainable multicomponent one pot synthesis of pyranopyrazole derivatives in the presence of Lactic acid: Urea: NH ₄ Cl", Current Research in Green and Sustainable Chemistry, Vol 4, 100194, Oct 2021.	Lecy V. Theresa, Savitha D. Pradeep, Deepa Sebastian, K. Sreekumar,	N/A
15	"Amine Functionalized Dendronized Polymer as a Homogeneous Base Catalyst for the Synthesis of Polyhydroquinolines and 4-Arylidene-3-Methylisoxazol-5(4H)-Ones", Catalysis letters, Oct 2021.	Hiba K., Prathapan S., Krishnapillai Sreekumar,	3.186
16	"Novel Carboxylic Acid Functionalized Dendronized Polymer: A Homogeneous, Reusable Metal Free Acid Catalyst for the Synthesis of Symmetric and Unsymmetric Xanthene Derivatives", Chemistry select, vol 6,13832, 2021.	Kottayil Hiba, Machingal Shaibuna, Sreedharan Prathapan, and Krishnapillai Sreekumar,	2.1
17	Effect of ancillary ligand on DNA and protein interaction of the two Zn (II) and Co (III) complexes: experimental and theoretical study, Journal of Biomolecular Structure and Dynamics	Manik Das, Paola Brandao, Soumya Sundar Mati, Saikat Roy, Anakuthil Anoop, Anjima James, Susmita De, Uttam Kumar Das, Soumik Laha, Jisu Mondal, Bidhan Chandra Samanta & Tithi Maity	3.39
18	"Crystal structure, DFT studies, Hirshfeld surface and energy framework analysis of 4-(5-nitro-thiophen-2-yl)-pyrrolo [1, 2-a] quinoxaline: A potential SARS-CoV-2 main protease inhibitor", Journal of Molecular Structure, November 2021.	Divya K. M., Savitha D. P., Anjali K. G., Dhanya T. M., Mohanan P. V.,	3.59

19	Design of primary amine-functionalized polymer containing chiral isosorbide in the main chain for the asymmetric synthesis of isoquinuclidine derivatives, <i>New Journal of chemistry</i> , 46, 3658-3666, January 2022	Hiba K., K.Sreekumar,	3.15
20	Synthesis, Characterization and DFT-D Studies of 2-Aminoethoxycalix[4]resorcinarenes: A Novel Heterogeneous Organocatalyst, <i>Catalysis letters</i> 152,3017-3030 (2022)	Shebitha A. M., Shaibuna M., Hiba K., K. Sreekumar,	2.81
21	“Neoteric deep eutectic solvents: history, recent developments, and catalytic applications, <i>Soft Matter</i> , 18, 2695–2721, March 2022	Shaibuna M., Letcy V. Theresa, K. Sreekumar,	3.67
22	Chlorine-free extraction and structural characterization of cellulose nanofibers from waste husk of millet (<i>Pennisetum glaucum</i>), <i>International Journal of Biological Macromolecules</i> , Elsevier, Vol 206, 1 May 2022	Krzysztof Formela, Mohammad R.S., Deepak D. P., Poornima V. P., T., G. Ajithkumar., Jyotishkumar Parameswaranpillai, Midhun C. D., Vandita Raj., K.V. Neenu. Sabura B.P.M.,	6.953
23	Sustainable Kerala rice husk ash for formulation of basic tyre tread: Taking first step, <i>Sustainable Materials and Technologies</i> , Elsevier, Vol 32, July 2022	C.D. Midhun Dominic., Aiswarya Balan., K.V. Neenu., P.M. Sabura Begum., Daisy Joseph., P. Dileep., Rani Joseph., M.J. Jaison., Mariya Mathew., C.S. Dhanya., Michael Badawi., Jyotishkumar Parameswaranpillai,	7.053
24	A Simple Electropolymer Based Voltammetric Sensor for the Simultaneous Determination of Melanoma Biomarkers- L-Dopa and L-Tyrosine, <i>Journal The electrochemical</i>	Sonia S, Manna R. M., K. Girish Kumar,	4.316

	society, Volume 169, Numer-2, February 2022		
25	Development of Molecularly Imprinted poly(Phenol) Membrane Based Electrochemical Sensor for The Selective Determination of Guanine Journal of The Electrochemical Society, Volume 169, Number-3, March -2022.	Keerthi K., K. Girish Kumar,	4.316
26	"An Investigation on the Effect of Extended Conjugation on the Photophysical Properties of Graphene Quantum Dot-Porphyrin Dyads", ChemistrySelect, 6, 12224-1223, November 2021	Athira Pallikkara, Deepa Sebastian, Kala Ramakrishnan,	2.109
27	Sustainable synthesis of 1,8-dioxooctahydroxanthenes in deep eutectic solvents (DESs)† This journal is © The Royal Society of Chemistry and the Centre National de la Recherche Scientifique 2021 New J. Chem., 2021, 45, 8335–8344	M. Shaibuna, Anshad Abbas, Muhammed Jeneesh Kariyottu Kuniyil and K. Sreekumar	3.591
28	Deep eutectic solvent for the synthesis of (E)- Nitroalkene via microwave assisted Henry reaction Current Research in Green and Sustainable Chemistry 4 (2021) 100187	M. Shaibuna, K. Hiba, K. Sreekumar	4.71
29	Sustainable and selective synthesis of benzimidazole scaffolds using deep eutectic solvents Current Research in Green and Sustainable Chemistry 5 (2022) 100285	M. Shaibuna, K. Hiba, A.M Shebitha, Muhammed Jeneesh Kariyottu Kuniyil P.B. Sherlymole K. Sreekumar	4.71

b. Books: Nil**12. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students**

Name of Participant	Name of Seminar / Conference/ Workshop	Role	Venue & Date
Anjima James	AMDS Summerschool	Participation	IISER Pune & Kathmandu, University, Nepal (online), 5-16 June-2021
Anjima James	AMDS Winterschool	Participation	International school of Photonics, Kathmandu Uty., Nepal (online) 6-17 Sep'2021
Amina Marzeena	AMDS Winterschool	Participation	International School of Photonics, Kathmandu Uty., Nepal, (online)
Deepthi Anna David	Advanced Materials	Participation	JSS Science and Technology University, Mysuru, 6-7 July 2021
Deepthi Anna David	Role of Nanotechnology for Alternative Energy Sources	Participation	Dept. Of Physics, University college of Science and Informatics, Nalgonds, Telangana, 09.08.2021
Neenu K V	Composites Research, Technology and Innovations Talks: Biocomposite for Advanced Applications	Participation	Online July 12,2021

Seena K. Thomas	Advances in Material Science-ICAMS-2021	Oral Presentation	Dept. Of Chemistry, University of Calicut, Sep 11-12
Gopika Jagannivasan	ETCSCP – 2021	Participation	Ramaiah Institute of Technology 26-28 Aug'2021
Shaibuna M.	Two days virtual international conference on Advanced materials (IVCAM-2021)	Oral Presentation	Online 6-7 July 2021
Anju Maria Baby	International Online Conference on Macromolecules: Synthesis, Morphology, Processing, Structure, Properties and Applications (ICM 2021) 2021,	oral Presentation	M.G University (online) 10 th -12th sep.'2021
Ansa Santu	AMDS Winterschool	Participation	International School of Photonics, CUSAT Sep'6-17,2021
Lakshmi V Menon	AMDS Winterschool	Participation	International School of Photonics, CUSAT Sep'6-17,2021
Dr. Leena R	FDP on Novel tools and Methodologies	Participation	HRDC Punjab University 3.08.2021 to 09.08.2021
Shamna S.	Recent Trends in Computational Chemistry	Participation	S.K Somaiya College 11.08.2021 to 12.08.2021
Ganga S.	Recent Trends in Computational Chemistry	Participation	S.K Somaiya College 11.08.2021 to 12.08.2021

Arya Sethu.M	Recent Trends in Computational Chemistry	Participation	
Mohammed Hashim K K	National Webinar on Recent Advances in Solid State Chemistry and Allied Sciences	Oral Presentation	Central University of Kerala, Kasargod, 17.08.2021 to 18.08.2021
Arya Sethu .M	FDP on Smart and Functional Nanomaterials	Participation	
Arya Sethu .M	Certificate course on HPLC MASS TECHNOLOGY	Participation	
Divya K.M.	"Managing online classes and Co-creating MOOCS 7.0"	Participation	CMS College, Kottayam 05-19 August 2021
Shijo Francis	Recent Trends in Computational Chemistry	Participation	S.K Somaiya College 11.08.2021 to 12.08.2021
Dr. Suja Haridas	RSC -IISER Desktop Seminar with crystEngComm	Participation	(online) iiser, Kolkatta, 22-23 rd Sep. 2021.
Dr. Sindhu Mathai	FDP Best practice for online teaching: classroom, courseware and tools.	Participation	Kerala State Higher Education Council 8 th -14 th July 2021
Dr.Kala R.	Recent advance in energy material and catalysis, organised by Dept.of Applied chemistry in association with Merck lifesciencePvt.Ltd.	Coordinator	Dept.of Applied Chemistry, CUSAT 28.07.2021 to 04.08.2021

Dr. Sindhu Mathai	Recent advance in energy material and catalysis, organised by Dept.of Applied chemistry in association with Merck lifesciencePvt.Ltd.	Coordinator	Dept.of Applied Chemistry, CUSAT 28.07.2021 to 04.08.2021
Athulya Simon	RSC- Is chemical Recycling of plastic the future?	Participation	Royal Society of Chemistry 13 th August 2021
Athulya Simon	Advances in synthetic organic chemistry and their application in modern medicinal chemistry	Participation	NIT Calicut, under CEP, 23.8.2021 to 27.8.2021
Saranya PK	Recent Trends in Computational Chemistry	Participation	S.K Somaiya College 11.08.2021 to 12.08.2021
Bastin K jose	Recent Trends in Computational Chemistry	Participation	S.K Somaiya College 11.08.2021 to 12.08.2021
Athulya Simon	SGT- University- A catalyst for scientific transformation	Participation	Dept. Of Chemistry, SGT, University, 23.8.2021 to 28.8.2021
Athulya Simon	Recent Trends in Computational Chemistry	Participation	S.K Somaiya College 11.08.2021 to 12.08.2021
Haritha Baby	In-Situ Electrochemical Studies with Bruker FT-IR Spectrometer	Participation	Bruker 15.07.2021 (online)

Haritha Baby	Workshop on X-Ray Diffraction	Participation	ACCIC (online)30.-31 July 2021, 2 nd Aug.2021
Haritha Baby	ACS Science Talks onLight- mediated, Directed Placement of DNA Ligands on Gold Nanoparticles	Participation	ACS India (online)10.09.2021
Anjali N. Kammath	Workshop on X-Ray Diffraction	Participation	ACCIC (online)30.-31 July 2021, 2nd Aug.2021
Anjali N. Kammath	IVCAM-2021	Participation	(Online) 06.07.2021 to 07.07.2021
Aswathy K. G.	IVCAM-2021	Participation	(Online) 06.07.2021 to 07.07.2021
Athira Mohan	HPLC Mass Technology	Participation	(Online) 06.7.2021 to 07.7.2021
GopikaJagannivasan	Virtual Conference on Nanomaterials: Recent deveopments and new directions	Oral presentation	B.K Colege for Woman, Amalagiri, Kottayam, 22.10.2021 to 23.110.202
Dhanyasree P.	Workshop on Membrane Separation Process	Participation	SES, CUSAT 08.10.2021 to 09.10.2021
Dhanyasree P.	Webinar on Organocatalysis	Participation	(online), 9 th November 2021
Dhanyasree P.	Virtual workshop on Computational Modelling in Chemistry, Biology and Materials - Making it mainstream	Participation	(online), 28.11.2021 to 29.11.2021

Anjali krishna G	Virtual workshop on Writing Quality Research Articles and Identifying Relevant journals to Read and Publish In	Participation	(online), 28.11.2021 to 29.11.2021
Dhanya T. M.	Virtual workshop on Writing Quality Research Articles and Identifying Relevant journals to Read and Publish In	Participation	(online), 28.11.2021 to 29.11.2021
Anju Maria Baby	International Conference on Emerging Trends in Basic and Applied Science	Paper presentation	(Online) SCMS School of Engineering, Karalkudy, 16-17 December ,2021
Lecy V. Theresa	International Conference on Emerging Trends in Basic and Applied Science	Paper presentation	(Online) SCMS School of Engineering, Karalkudy, 16-17 December ,2021
Hiba K.	International Conference on Emerging Trends in Basic and Applied Science	Paper presentation	(Online) SCMS School of Engineering, Karalkudy, 16-17 December ,2021
Gopika Sabu	ChemSci2021: Leaders in the Field Symposium	Poster Presentation	(online) INCASR, Bangaluru, 13.12.2021
Divya K.M.	International Conference on 'Engrossing Trends in Chemistry	Paper presentation	

Susmita De	Computational Modeling in Chemistry, Biology and Materials: Making it mainstream	Participation	(Online) DAC, CUSAT 2.1.2021 to 28.1.2021
Gopika Sabu	Computational Modeling in Chemistry, Biology and Materials: Making it mainstream	Participation	(Online) DAC, CUSAT 2.1.2021 to 28.1.2021
Anjima James	Computational Modeling in Chemistry, Biology and Materials: Making it mainstream	Participation	(Online) DAC, CUSAT 2.1.2021 to 28.1.2021
Mohammed Sadik N.K.	Computational Modeling in Chemistry, Biology and Materials: Making it mainstream	Participation	(Online) DAC, CUSAT 2.1.2021 to 28.1.2021
Linta Mary Jose	Computational Modeling in Chemistry, Biology and Materials: Making it mainstream	Participation	(Online) DAC, CUSAT 2.1.2021 to 28.1.2021
Amina Marzeena S	Computational Modeling in Chemistry, Biology and Materials: Making it mainstream	Participation	(Online) DAC, CUSAT 2.1.2021 to 28.1.2021

Athira M P	Virtual Conference on Nanomaterials: Recent developments and new directions	Oral presentation	B.K Colege for Woman, Amalagiri, Kottayam, 22.10.2021 to 23.110.202
Merin Joseph	The 22nd RIES-HOKUDAI International Symposium	Poster Presentation	(Online) Hokaido University, 6-7 December 2021
Rosmy Joy	The 22nd RIES-HOKUDAI International Symposium	Poster Presentation	(Online) Hokaido University, 6-7 December 2021
Arun R	EMERGING FRONTIERS IN CHEMICAL SCIENCES	Poster Presentation	Dept. Of Chemistry, Calicut University, 01.02.2023 to 03.02.2023
Dr. Leena R.	Computational Modelling in Chemistry, Biology and Materials - Making it mainstream	Chair	DAC, CUSAT, 22-23 Novemebr 2021
Shamna S.	Computational Modelling in Chemistry, Biology and Materials - Making it mainstream	Participation	DAC, CUSAT, 22-23 Novemebr 2021
Shamna S.	Spectroscopic Techniques: A Tool for Structure Elucidation	Participation	Sophia Girls Colege , Ajmer 21-22 October 2021
Haritha Jayaraj	Computational Modelling in Chemistry, Biology and Materials - Making it mainstream	Participation	DAC, CUSAT, 22-23 Novemebr 2021

Haritha Jayaraj	Spectroscopic Techniques: A Tool for Structure Elucidation	Participation	Sophia Girls Colege , Ajmer 21-22 October 2021
Swathy S	Neoteric Advances in Chemical Sciences (NACS 2021)	Oral presentation	(online) 30-31 December 2021
Sonia Sam	Neoteric Advances in Chemical Sciences (NACS 2021)	Oral presentation	(online) 30-31 December 2021
Keerthi K.	Neoteric Advances in Chemical Sciences (NACS 2021)	Oral presentation	(online) 30-31 December 2021
Amoolya Chandran	International Conference on Emerging trends in Basic and Applied Science	Oral presentation	
Amoolya Chandran	Neoteric Advances in Chemical Sciences (NACS 2021)	Oral presentation	(online) 30-31 December 2021
Goldamol S Pallam	Neoteric Advances in Chemical Sciences (NACS 2021)	Oral presentation	(online) 30-31 December 2021
Devika S.R	Neoteric Advances in Chemical Sciences (NACS 2021)	Oral presentation	(online) 30-31 December 2021
Dr.Sindhu Mathai	NANAOicon 2022	Chair	IUCND, CUSAT 1-15 January 202
Dr.Sindhu Mathai	“Computational Modelling in Chemistry, Biology and Materials - Making it mainstream”	Chair	DAC, CUSAT, 22-23 Novemebr 2021

Athulya Simon	“Computational Modelling in Chemistry, Biology and Materials - Making it mainstream”	Participation	DAC, CUSAT, 22-28 Novemebr 2021
Athulya Simon	J-Gate @E-Shodhsindhu	Participation	CUSAT & IPL Banglore 21 st October 2021
Saranya P.K	J-Gate @E-Shodhsindhu	Participation	CUSAT & IPL Banglore 21 st October 2021 October 2021
Saranya P.K	Spectroscopic Techniques: A Tool for Structure Elucidation	Participation	Sophia Girls Colege , Ajmer 21-22 October 2021
Athulya Simon	Spectroscopic Techniques: A Tool for Structure Elucidation	Participation	Sophia Girls Colege , Ajmer 21-22 October 2021
Aswathy P V	GOLDEN JUBILEE CELEBRATORY AUTHOR WORKSHOP on “Writing Quality Research Articles & Identifying Relevant Journals to Read and Publish In”	Participation	(online) CUSAT, University Library 14.12.2021
Sithara Soman	GOLDEN JUBILEE CELEBRATORY AUTHOR WORKSHOP on “Writing Quality Research Articles & Identifying Relevant Journals to Read and Publish In”	Participation	(online) CUSAT, University Library 14.12.2021

Athira P	GOLDEN JUBILEE CELEBRATORY AUTHOR WORKSHOP on “Writing Quality Research Articles & Identifying Relevant Journals to Read and Publish In”	Participation	(online) CUSAT, University Library 14.12.2021
Dr. Kala R	Computational Modeling in Chemistry, Biology and Materials: Making it mainstream	Chair	Dept of Applied Chemistry, CUSAT 2-23 November 2021
Aswathy P V	Computational Modeling in Chemistry, Biology and Materials: Making it mainstream	Participation	Dept of Applied Chemistry, CUSAT 2-23 November 2021
Athira P	Computational Modeling in Chemistry, Biology and Materials: Making it mainstream	Participation	Dept of Applied Chemistry, CUSAT 2-23 November 2021
Deepa Sebastian	Computational Modeling in Chemistry, Biology and Materials: Making it mainstream	Participation	Dept of Applied Chemistry, CUSAT 2-23 November 2021

Sithara Soman	Computational Modeling in Chemistry, Biology and Materials: Making it mainstream	Participation	Dept of Applied Chemistry, CUSAT 2-23 November 2021
Haritha J. R	RYSO- 2021	Participation	(Online)ISP , CUSAT 22.11.2021 to 30.11.2021
Meema Rasheed	RYSO- 2021	Participation	(Online)ISP , CUSAT 22.11.2021 to 30.11.2021
Animasree V. P	RYSO- 2021	Participation	(Online)ISP , CUSAT 22.11.2021 to 30.11.2021
Lubna. M	RYSO- 2021	Participation	(Online)ISP , CUSAT 22.11.2021 to 30.11.2021
Haritha J. R	RIES- HokudaiInternatinal Symposium	Poster Presentation	(Online) 6-7 December 2021
AswathyAjaya kumar	RIES- HokudaiInternatinal Symposium	Poster Presentation	(Online) 6-7 December 2021
Animasree V. P	International Multidisciplinary Webinar Series	Participation Only	R Sankar Memorial SNDP Yogam Arts and Science Coleg, 20.101.2021
Animasree V. P	RAiSE- 2021	Participation Only	DST-HTM -IT Madras 2-4 December 2021
Arathy Chandran	Webinar on Organocatalysis	Participation Only	University of Kerala, Dept of Chemistry, 09/11/2021

Arathy Chandran	Computational Modeling in Chemistry, Biology and Materials: Making it mainstream	Participation	Workshop, DAC, CUSAT 22-28 November 2021
Arathy Chandran	Webinar on ESR, theory, instrumentation and applications	Participation	KSCSTE - Srinivasa Ramanujan Institute for Basic Sciences, Pampady 202-21 November 2021
Athulya K R	Webinar on Organocatalysis	Participation	University of Kerala, Dept of Chemistry, 09/11/2021
Athulya K R	Computational Modeling in Chemistry, Biology and Materials: Making it mainstream	Participation	Workshop, DAC, CUSAT 22-28 November 2021
Amrutha Mohan	Computational Modeling in Chemistry, Biology and Materials: Making it mainstream	Participation	Dept. Of Applied Chemistry, CUSAT 22-28 November 2021
Anju Maria Baby	International Conference on Current Trends in Chemistry, Ctric-2022	Poster presentation	DAC, CUSAT March 11-12, 2022
Shaibuna M.	International Conference on Current Trends in Chemistry, Ctric-2022	Poster presentation	DAC, CUSAT March 11-12, 2022

Priya Shenoi	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	DAC, CUSAT March 11-12, 2022
Dr. Kala R	4th International Conference on Material Science & Nanotechnology	Oral	DAC, CUSAT March 11-12, 2022
Deepa Sebastian	International Conference on Current Trends in Chemistry, Ctric-2022	Oral	DAC, CUSAT March 11-12, 2022
Aswathy P V	International Conference on Current Trends in Chemistry, Ctric-2022	Poster	DAC, CUSAT March 11-12, 2022
Athira P	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	DAC, CUSAT March 11-12, 2022
Sithara Soman	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	DAC, CUSAT March 11-12, 2022
Athira P	International Conference NANOicon 2022	Oral	Interuniversity centre for nanomaterial & Devices, CUSAT, 11-15 Jan 2022

Deepa Sebastian	International Conference NANOicon 2022	Oral	Interuniversity centre for nanomaterial & Devices, CUSAT, 11-15 Jan 2022
Merin Joseph	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	DAC, CUSAT March 11-12, 2022
Rosmy Joy	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	DAC, CUSAT March 11-12, 2022
Arun R	International Conference on Current Trends in Chemistry, Ctric-2022	Oral	DAC, CUSAT March 11-12, 2022
Gopika Jagannivasan	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	DAC, CUSAT March 11-12, 2022
Athira M P	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	DAC, CUSAT March 11-12, 2022
Dr. Leena R.	International Conference on Current Trends in Chemistry, Ctric-2022	chair	DAC, CUSAT March 11-12, 2022
Shijo Francis	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	DAC, CUSAT March 11-12, 2022

Shamna Salim	International Conference on Current Trends in Chemistry, Ctric-2022	Poster	DAC, CUSAT March 11-12, 2022
Dr. Leena R.	“Women and Research”, Webinar in connection with International day of women and girls in science	Invited talk	Vimala College, Thrisur 11.02.2022
Arya Sethu M	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	DAC, CUSAT
Athira M P	International conference Frontiers in chemical sciences	Oral	University of Calicut, 03-05 March 2022
Gopika Jagannivasan	NSAFM-2022	Oral	Dept. of Chemistry, University of Kerala, 23-25 March 2022
Arun R	NSAFM-2023	Oral	Dept. of Chemistry, University of Kerala, 23-25 March 2022
Merin Joseph	World Sensor Congress	Poster	(Online) C-MET, Thrisur, 8-10- March 2022
Dr. Leena R.	“Current developments in science research”, Webinar in connection with National Science Day	Invited talk	NSS College, Ottapalam 05-03.2022

Dr.Leena R.	“Instrumental methods of analysis”, Webinar, NSS College, Ottapalam	Invited talk	NSS College, Ottapalam 05.03.2022
Mohammed Sadik N K	International Conference on Current Trends in Chemistry, Ctric-2022	Oral	(Online) ,DAC, CUSAT 11-12 March 2022
Linta Mary Jose	International Conference on Current Trends in Chemistry, Ctric-2022	Oral	(Online) ,DAC, CUSAT 11-12 March 2022
Anjima James	International Conference on Current Trends in Chemistry, Ctric-2022	Poster	(Online) ,DAC, CUSAT 11-12 March 2022
Athira K. S.	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	DAC, CUSAT 11-12 March 2022
Sachin Philip	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	DAC, CUSAT 11-12 March 2022
Arathy Chandran	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	DAC, CUSAT 11-12 March 2022

Athulya K.R	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	DAC, CUSAT 11-12 March 2022
Amrutha Mohan	International Conference on Current Trends in Chemistry, Ctric-2022	Poster	DAC, CUSAT 11-12 March 2022
Dr.Sindhumathai	International Conference on Current Trends in Chemistry, Ctric-2022	Chair	DAC, CUSAT 11-12 March 2022
Dr.Sindhumathai	NANO icon 2022	Chair	IUCND, CUSAT 11-15 January 2022
Athulya Simon	International Conference on Current Trends in Chemistry, Ctric-2022	Oral	DAC, CUSAT 11-12 March 2022
Saranya P.K.	International Conference on Current Trends in Chemistry, Ctric-2023	Poster presentation	DAC, CUSAT 11-12 March 2022
Saranya P.K.	NANO icon 2022	Participation	IUCND, CUSAT 11-15 January 2022
Athulya Simon	NANO icon 2022	Poster presentation	IUCND, CUSAT 11-15 January 2022
Saranya P.K.	icMKJ	Participation	Dept. Of Physics, CUSAT, 17-18 March 2022

Athulya Simon	International webinar on empowering diversity in science	Participation	Dept. Of Chemistry, Kamala Nehru Mahavidyalaya, Nagpur 16.02.2022
Dr. Manoj E.	International Conference on Current Trends in Chemistry, Ctric-2022	Chair	Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022
Dr. Manoj E.	NANO icon 2022	Chair	IUCND, CUSAT 11-15 January 2022
Mohammed Hashim K. K.	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022
Ansa Santu	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022
Lakshmi V. Menon	International Conference on Current Trends in Chemistry, Ctric-2022	Oral	Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022
Sooraj M.	International Conference on Current Trends in Chemistry, Ctric-2022	Poster	Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022
Dr. Kala R	International Conference on Current Trends in Chemistry, Ctric-2022	Convener	Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022

Deepthi Anna David	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022
Dhanyasree P.	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022
Neenu K V	International Conference on Current Trends in Chemistry, Ctric-2023	Participation	Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022
Dr. Kala R	NANO icon 2022	Chair	IUCND, CUSAT 11-15 January 2022
Dr. N. Manoj	NANO icon 2022	Chair	IUCND, CUSAT 11-15 January 2022
Dr. N. Manoj	International Conference on Current Trends in Chemistry, Ctric-2022	Chair	Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022
AswathyAjaya kumar	NANO icon 2022	Paper	(online) IUCND , CUSAT 11.01.2022 to 15.01.2022
Haritha J.R	NANO icon 2022	Paper	(online) IUCND , CUSAT 11.01.2022 to 15.01.2022
Meema Rasheed	NANO icon 2022	Participation	(online) IUCND , CUSAT 11.01.2022 to 15.01.2022

Animasree V.P	NANO icon 2022	Participation	(online) IUCND , CUSAT 11.01.2022 to 15.01.2022
Lubna M	NANO icon 2022	Participation	(online) IUCND , CUSAT 11.01.2022 to 15.01.2022
AswathyAjaya kumar	International Conference on Current Trends in Chemistry,Ctric- 2022	Participation	(online) Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022
Haritha J.R	International Conference on Current Trends in Chemistry,Ctric- 2022	Poster	(online) Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022
Meema Rasheed	International Conference on Current Trends in Chemistry,Ctric- 2022	Participation	(online) Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022
Animasree V.P	International Conference on Current Trends in Chemistry,Ctric- 2022	Participation	(online) Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022
Lubna M	International Conference on Current Trends in Chemistry,Ctric- 2022	Participation	(online) Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022
Meema Rasheed	Workshop on Liquid Chromatography & Mass Spectrometry- CLIF	Participation	CLIF, University of Kerala, 01.03.2022 to 11.03.2022

Animasree V.P	SIET KERALA-TECH TALENT PROGRAMME	Co-ordinator	IUCND-CUSAT
Sonia Sam	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022
Devika S. R.	International Conference on Current Trends in Chemistry, Ctric-2022	Oral	Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022
Swathy S	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022
Goldamol S Pallam	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022
Amoolya Chandran	International Conference on Current Trends in Chemistry, Ctric-2022	Poster	Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022
Keerthi K.	International Conference on Current Trends in Chemistry, Ctric-2022	Poster	Dept. of Applied Chemistry, CUSAT 11.03.2022 to 12.03.2022

Devika S. R.	34th KERALA SCIENCE CONGRESS 2022	Oral	Online, 10.02.2022 to 12.02.2022
Goldamol S Pallam	34th KERALA SCIENCE CONGRESS 2022	Oral	Online, 10.02.2022 to 12.02.2022
Keerthi K.	34th KERALA SCIENCE CONGRESS 2022	Oral	Online, 10.02.2022 to 12.02.2022
Amoolya Chandran	34th KERALA SCIENCE CONGRESS 2022	Oral	Online, 10.02.2022 to 12.02.2022
Sonia Sam	34th KERALA SCIENCE CONGRESS 2022	Poster	Online, 10.02.2022 to 12.02.2022
Swathy S	34th KERALA SCIENCE CONGRESS 2022	Poster	Online, 10.02.2022 to 12.02.2022
Dr. Nithya Mohan	34th KERALA SCIENCE CONGRESS 2022	Poster	Online, 10.02.2022 to 12.02.2022
Dr.Nithya Mohan	International Conference on Current Trends in Chemistry,Ctric-2022	Participation	DAC,CUSAT 10.02.2022 to 12.02.2022
Savitha D. P.	International Conference on Current Trends in Chemistry,Ctric-2022	Participation	DAC,CUSAT 10.02.2022 to 12.02.2022
Anjali krishna G.	International Conference on Current Trends in Chemistry,Ctric-2022	Participation	DAC,CUSAT 10.02.2022 to 12.02.2022

Dhanya T. M.	International Conference on Current Trends in Chemistry, Ctric-2022	Poster	DAC, CUSAT 10.02.2022 to 12.02.2022
Divya K. M.	International Conference on Current Trends in Chemistry, Ctric-2022	Poster	DAC, CUSAT 10.02.2022 to 12.02.2022
Haritha Baby	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	DAC, CUSAT 10.02.2022 to 12.02.2022
Anjali N Kamath	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	DAC, CUSAT 10.02.2022 to 12.02.2022
Aswathy KG	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	DAC, CUSAT 10.02.2022 to 12.02.2022
Athira Mohan	International Conference on Current Trends in Chemistry, Ctric-2022	Participation	DAC, CUSAT 10.02.2022 to 12.02.2022
Haritha Baby	NanO icon 2022	Oral	IUCND, CUSAT 11.01.2022 to 15.01.2022
Anjali N Kamath	NanO icon 2022	Poster	IUCND, CUSAT 11.01.2022 to 15.01.2022

Aswathy KG	NanO icon 2022	Poster	IUCND, CUSAT 11.01.2022 to 15.01.2022
Athira Mohan	NanO icon 2022	Participation	(online) IUCND, CUSAT 11.01.2022 to 15.01.2022

13. Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Dr.Kala R.	Board of Studies in Chemistry, CUSAT	Member
Dr. Leena R	Board of Studies in Biological and Chemical Sciences, CUSAT	Member
Dr. Susmita De	Board of Studies in Chemistry CUSAT	Member
Dr. P. M. Sabura Begum	CUSAT Women's Welfare Organization	Executive Member
Dr. P. M. Sabura Begum	Academic Committee, CUSAT	Member
Dr. P. M. Sabura Begum	Placement committee, CUSAT	Member
Dr. SujaHaridas	Board of studies in Chemistry, CUSAT	Member
Dr. SujaHaridas	Board of studies in Forensic science, CUSAT	Member
Dr. SujaHaridas	Academic Committee, CUSAT	Member
Dr. SujaHaridas	Faculty of science, CUSAT	Member
Dr. K. Girish Kumar	Faculty of Science, CUSAT	Dean of faculty
Dr. K. Girish Kumar	IQAC, CUSAT	Director
Dr. K. Girish Kumar	Board of studies, CUSAT	Chairman
Dr. K. Girish Kumar	STIC - Executive Committee, CUSAT	Member
Dr. K. Girish Kumar	Academic council, CUSAT	Member
Dr. N. Manoj	Senate, CUSAT	Member
Dr. N. Manoj	Board of Studies in Chemistry, CUSAT	Member
Dr. N. Manoj	Academic Council, CUSAT	Member

Dr. N. Manoj	Board of Studies in Chemistry CUSAT	Member
Dr. N. Manoj	Board of Studies in Chemistry Calicut University, Calicut	Member
Dr. N. Manoj	Board of Studies in Chemistry Assumption college (Autonomus), Changanasserry	Member
Dr. Sebastian Nybin Remello	Board of Studies in Chemistry CUSAT	Member
Dr. Sebastian Nybin Remello	Faculty of Science CUSAT	Member

14. Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Anjima James	First position in AMDS Summer School	IISER Pune & Kathmandu University Nepal
Mohammed Hashim K K	Best Oral Presentation Award	ISCAS,ACT,CU-Kerala
Dr. Sindhu Mathai	Summer research fellowship program	IASc (Bangluru),INSA (New delhi),NAS
Devika S.R.	Best Oral Presentation	Kerala
Dr. Nithya Mohan	Best Poster Presentation	Kerala
Haritha Baby	Best Paper Award	IUCND, CUSAT

15. Sponsored Research Projects

Sl. No.	Title	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
1	Nanostructure Material based photoelectrochemical	SMNRI- CUSAT	Rs.2,75,000/-	KALA R.

	sensor for the detection of biomarkers			
2	Structural and biological investigations of transition metal complexes of Schiff base ligands bearing heterocyclic systems	SMNRI-CUSAT	Rs.2,75,000/-	Dr. MANOJ E.
3	Metal Mediated Immunotoxicity – A Molecular Level Understanding of Metal Binding to MHC-Peptide Complex and T Cell Recognition	DST SERB	RS.27,00,000/-	Dr. Susmita De
4	A Molecular Level Understanding of Different Binding Modes And Blocking Action Of Quaternary Ammonium Ions With K ⁺ -Ion Channel Novel composites of natural rubber and Rice husk nano silica for green tyres; Synthesis, Characterization and property evaluation	Kerala Govt.	Rs.3,25,000/-	Dr. Susmita De
5	Novel composites of natural rubber and Rice husk nano silica for green tyres; Synthesis, Characterization and property evaluation	Directorate of Environment & Climate change	Rs.2372000/-	Dr. P. M. Sabura Begum
6	Investigation on dipolar cycloaddition reactions of azomethine imines with 1,2-diones, 1,4-diones and bisarynes : Synthesis of novel structurally important heterocycles	UGC-BSR research Start-up grant	Rs.10,00,000/-	Dr. Sindhu Mathai

7	Novel Heterocyclic Hole Transporting Materials (HTM) for Perovskite Solar Cell Applications	Indo-Taiwan	Rs.2287500/-	Dr. N. Manoj
8	Exploring the Human Gut Microbe and Metabolites in Health and Parkinson's Disease- A Window to the Gut Microbiota-Brain Axis Alterations in Parkinson's Disease	ICMR	Rs.12000000/-	Dr. N. Manoj
9	BOPAHY Based Materials for Organic Photovoltaic Device	SMNRI-CUSAT	Rs.3,00,000	Dr. Shandev P P
10	Establishment for centre for sensor devices-Performance Linked Encouragement for Academic Studies and Endeavour (PLEASE), ,	Govt. of Kerala, Higher Education Department	Rs.2,53,75,000	Dr. K Girish Kumar, Dr. Leena R Dr. Kala R

16. Research Programmes and Activities:

Sl. No.	Problem / Topic	Investigator (s)
1	Str Structures and Spectral Characterization of Co-ordination compounds	Vineetha M.C, Dr. M.R.P.Kurup
2	Hydrazone-Schiff base complexes	Daly Kuriakose, Dr. M.R.P. Kurup
3	Metal organic frameworks	Lincy Tom, Dr. M.R.P. Kurup
4	Transition metal complexes of some aroyl hydrazones	Asha T.M., Dr. M.R.P. Kurup
5	Development of sensors	Devika S.R., Dr. K. Girish Kumar
6	Development of Chemical Sensors	Manna Rachel Mathew, Dr. K. Girish Kumar

7	Development of sensors	Sanu K. Anand, Dr. K. Girish Kumar
8	Low melting mixture as an efficient catalyst and reaction medium for organic synthesis	Lecy V. Theresa, Dr. K. Sreekumar
9	Solid Phase organic synthesis	Anjaly Jacob K, Dr. K. Sreekumar
10	Organic synthesis in alternate reaction media	Shaibuna M., Dr. K. Sreekumar
11	Dendrimer catalysed organic reactions	Shebitha A. M., Dr. K. Sreekumar
12	Dendrimer catalysed organic reactions	Avudaiappan G., Dr. K. Sreekumar
13	Heterogeneous catalysis using periphery modified dendrimers	Hiba K, Dr. K. Sreekumar & Dr. S. Prathapan
14	Organic Synthesis	Parvathy O. C., Dr. S. Prathapan
15	Organic chemistry	Mohammed Sadik N.K., Dr. S. Prathapan
16	Development of artificial photosynthesis system for the Conversion of solar energy into chemical fuels based on fundamental science underlying photosynthesis	Reshma Joseph, Dr. S. Prathapan
17	Development of drug conjugated Metal Organic Frameworks for cancer theranostics	Sumi P.M., Dr. S. Prathapan
18	Organic Synthesis	Jesna A., Dr. S. Prathapan
19	Organic Synthesis	Vineetha P. K., Dr. N. Manoj
20	Organic Synthesis	Rani Mathew, Dr. N. Manoj
21	Organic Synthesis	Kiran James, Dr. N. Manoj
22	Organic Synthesis	Aswathy Ajayakumar, Dr. N. Manoj

23	Organic Synthesis	Midhun T. R., Dr. N. Manoj
24	Synthesis and Study of metal-nano particle tethered donor-acceptor systems	Haritha J.R., Dr. N. Manoj
25	Polymer composites	Seena K.Thomas, Dr. P. M. Sabura Begum
26	Inorganic coordination complexes	Sameeha A. P., Dr. P. M. Sabura Begum
27	Synthesis of Metal Complexes	Manjari Jayendran, Dr. P. M. Sabura Begum (Dr. M.R.P. Kurup-Co-guide)
28	Synthesis and characterization of some multidentate ligands and its transition metal complexes	Nimya Ann Mathews, Dr. P. M. Sabura Begum
29	Enzyme Technology	Maria Augustine, Dr.P.V.Mohanan
30	Synthesis of Metal Organic frame works for enzyme immobilisation	Savitha D P, Dr.P.V.Mohanan
31	Biochemistry	Geetha G., Dr.P.V.Mohanan
32	Synthesis and reaction of enone appended 1,3-dienes	Aswathi.C. S., Dr. P. A. Unnikrishnan
33	Synthesis and evaluation of optoelectronic properties of a few 1,3,4-oxadiazole based donor – acceptor systems.	Remya T.M., Dr. P. A. Unnikrishnan
34	A molecular level understanding of the reactivity of molecules and macro molecules – A structure and Bonding Perspective	Gopika Sabu, Dr. Susmita De
35	Development of Chemical sensors	Sonia Sam, Dr. K Girish Kumar
36	Development of Chemical sensors	Swathi S, Dr. K Girish Kumar
37	Functionalized Carbon Nano Materials for energy related applications.	Athira P, Dr. Kala R

38	Catalysis by polymer supported dendrimers, their metal complexes and nano particle conjugates	Unnikrishnan V, Dr. K Sreekumar
39	Graphene Quantum dots imprinted nano polymer composite based Electrodes for the sensing of toxic heavy metals.	Sithara Soman, Dr. Kala R
40	Quantum mechanical and molecular Dynamics study biologically relevant molecules.	Anjima James, Dr. Susmita De
41	Design and synthesis of thiophene based low band gap conjugated polymers and their Optoelectronic applications	Anju Maria Baby, Dr. K Sreekumar
42	SBA encapsulated metallo porphyrins for catalytic applications.	Merin Joseph, Dr. Suja Haridas & Dr. Sebastian Nybin Remello
43	Functionalised Carbon Nano Materials for fluorescent sensors.	Aswathy P.V, Dr. Kala R
44	Functionalized Carbon Nano Materials for energy related applications.	Deepa Sebastian, Dr. Kala R
45	Synthesis and photo voltaic studies of various porphyrins and metallo porphyrins.	Shijo Francis, Dr. Leena R
46	Electro chemical determination of parabens using BDD and modified BDD Electrodes.	Arya Sethu M, Dr. Leena R
47	Development of molecular catalyst systems for artificial photo synthesis.	Haritha Baby, Dr. Sebastian Nybin Remellow
48	Bio-inorganic Chemistry	Dhanya T M, Dr. P.V Mohanan
49	Modified grapheme quantum dots for catalytic and energy applications.	Rosmy Joy, Dr. Suja Haridas
50	Transition metal complexes and its Bio-chemical applications.	Anjali Krishna G, Dr. P.V Mohanan
51	Porphyrin based Electro Chemical Sensors	Ganga S, Dr. Leena R
52	Development of sensors	Goldamol S Pallam, Dr. K Girish Kumar

53	Energetic propellant binders based on polyphosphates	Priya K Sheno, Dr. K Sreekumar
54	Computational Modeling of complex molecular system.	Linta Mary Jose, Dr. Susmita De
55	Perovskite nano crystals for energy and catalytic applications.	Ashitha Kishore, Dr. Suja Haridas
56	Porphyrin based fluorescence sensors.	Abin Saji, Dr. Leena R
57	Heteropolyacides for heterogeneous acid catalysis	Sajeena K N, Dr. Suja Haridas

17. Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

18.

Sl.No.	Title	Duration	Coordinator	Funding Agency
1	MATCON 2021	March 15-19	Dr. Sebastian Nybin Remello	
2	CTriC 2022	March 11-12	Dr. Kala R, Dr. Shandev P P	DST
3	Recent Advances in Energy Materials & Catalysis	28 th July & 4 th August 2021	Dr. Kala R, Dr. Suja Haridas, Dr. Sindhu Mathai	
4	National Science Lecture Series	October 4	Dr. Susmita De	
5	Computational Modelling in Chemistry, Biology & Materials	22.11.2021 to 28.11.2021	Dr. Susmita De	DST-SERB CRG Project

19. Consultancy Work: Nil

Department of Applied Economics

Brief History of the Department

The Department of Applied Economics was established in the University in the year 1979. It was originally envisaged primarily as a research-oriented department with its focus on applied economic problems. Situated in a Science and Technology academic environment, the Department promotes studies and research pertaining to the economic dimensions of science, technology and society as also the economic problems of the region.

Programmes of Study/Research

The candidates for the Ph.D programme are admitted on the basis of an entrance test and an interview. The dates of which are notified by the University during the month of December. Candidates eligible for the Junior Research Fellowship from the UGC are exempted from the entrance test for the Ph.D programme.

The M.A. Applied Economics programme at the department is designed to provide advance theoretical and applied economics education, involving:

- A grounding in the principles of microeconomics
- An understanding of different schools of thought in macroeconomic theory and policy
- An appreciation of the nature of business and its role within the private enterprise system.
- The ability to use basic economic principles to analyse decision-making within the firm and identify and explain the impact of key governmental policies on business
- A familiarity with recent developments in economic approaches to business strategy.
- A range of transferable skills in task-planning, communication, research, information analysis and interpretation and team-working

Faculty Members

Sl. No.	Name	Designation	Qualification	Specilisation
1	Dr. P. Arunachalam	Professor & Head	M.A., M.Phil., Ph.D.	Quantitative Methods, International Economics
2	Dr. P. K. Manoj	Assistant Professor	Ph.D. (Mgt.); Ph.D. (Eco.); D.Litt (Eco); CAIIB.	Banking & Finance; Project Finance Business Finance
3	Dr. P. R. Suresh	Assistant Professor	M.B.E, M. Phil., Ph.D.	Quantitative Economics and Social Exclusion
4	Dr. S. Harikumar	Adjunct Faculty	M.A, Ph.D	Agricultural Economics, Environmental Economics

Emeritus Professor/Scientist (if any) – NIL

Visiting Faculty (If any) – NIL

Research/Project Staff – NIL

Research Scholars

Sl. No.	Name	Funding Agency	Guide	Area of Work
1	Raj Gopal Nayar		Dr. K. C. Sankaranarayanan	An empirical study in to the issues challenges and solution of public private participation Kerala State health care
2	Ranjith N. R.		Dr. D. Rajasenan	Food and nutritional security among the Tribal Women in Kerala.

3	Sanoj Raju		Dr. D. Rajasenan	An Interpolative analysis on budget allocation expenditure evaluation and development of SC/ST Community.
4	Emilson V. V.		Dr. P. Arunachalam	ICTT, Vallarpadam: Port Based Special Economic Zone with Boundless Economic Possibilities and Opportunities and Responsibilities
5	Shanoj C.		Dr. P. Arunachalam	Solid Waste Management broad area
6	Siby K. M.		Dr. P. Arunachalam	Shrimp in the Global community chain: A case study of Kerala
7	Jae Dong Kang		Dr. P. Arunachalam	Indian Business Environment For Korean Companies
8	Subash C.		Dr. P. Arunachalam	Air operations management
9	Franco T. Francis		Dr. P. Arunachalam	Health inequality among selected Tribal communities in Kerala
10	Freeda V Simon		Dr. K. C. Sankaranarayanan	Informal labour market in Kerala: A study of female labourers In Ernakulam District
11	Jinto John		Dr. M. Meera Bai	Land Acquisition and Evictees Settlement Packages for Infrastructural Developments in Ernakulam District Since 2000: A case study of Moolampilli Rehabilitation Package

12	Sancy K Jose		Dr. K. C. Sankaranarayanan	An analysis of consumption expenditure pattern of fixed income households in Kerala.
13	Ramees Rahman		Dr. M. Meera Bai	Impact of climate change over the Marine Fisher Folks across Kerala
14	Susan Sukanya	UGC-SRF	Dr. M. Meera Bai	Health status and health care of women in coastal communities a study of fishing villages in Kollam
15	Aswathy C	RGNF-GOI	Dr. P. K. Manoj	Pattern of Inter –General occupational mobility of SC communities of Kerala
16	Jaheer Mukthar K. P.	UGC-NET	Dr. P. K. Manoj	Affordable Housing Projects of Real Estate Developers in Kerala. A study with a Focus on Constraints of Inputs, Regulatory Compliances and Financing Issues.
17	William George		Dr. P. K. Manoj	Marketing of Housing Finance in Kerala A Study with a Focus on Commercial Banks and Housing Finance Companies
18	Ann Mary Augustine		Dr. P. K. Baby	Socio-Economic Inclusion of Transgenders in Kerala.
19	Aswathy Raveendran		Dr. P. K. Baby	Climate Change Vulnerability and Adaptation Strategies for Paddy Cultivators in Kerala
20	Ervy Joseph		Dr. P. K. Baby	Production and Productivity of Pokkali Rice Cultivation in Kerala: An Economic Analysis.

21	Vinod C.		Dr. P. K. Baby	Social Economic Shifts in Tribal Clusters: A Study of Vulnerable Tribal Groups in Kerala
22	Saritha A. K.	RGNF	Dr. D. Mavoothu	Dalit Entrepreneurship
23	Fairoose M. E.		Dr. P. K. Santhosh kumar	A Study on Economic Sustainability of Agriculture: A Special Reference to Organic Farming in Kerala
24	Sruthy Sreenivas	UGC-SRF	Dr. P. K. Santhosh kumar	Customs union and Economic development: A study with a focus on India among the ASEAN Nations.
25	Celine Merita Furtail	NET	Dr. Ancy V. P.	A Study on Sustainability Gaps in Non-biodegradable Waste Management: With Special Reference to 26 Ernakulam District
26	Vishnu M. R.		Dr. Ancy V. P.	Responsible Tourism and Environment Sustainability in Kerala
27	Arya C. M.		Dr. Ancy V. P.	The Impact of Climate Changes on Principle Crop Cultivation in Kerala
28	Neeraja J.	NET	Dr. Ancy V. P.	Assessment of Sustainable Development Goal Eleven: A Case Study of Kochi
29	Niranjana Haridas		Dr. Sangeetha K. Prathap	Natural Disasters, Response and Recovery
30	Priyanka T. R.		Dr. S. Harikumar	Food inflation and its impact on urban poor in India

31	Dhanya A.	UGC-SRF	Dr. K. C. Sankaranarayanan	An Analysis of Foreign Direct Investment in Indian Economy
32	Megha Sara Thomas		Dr. S. Harikumar	Socio Economic Status of Visually Challenged Persons in Kerala
33	Saipriya Sudarshan		Dr. Santhosh Kumar P. K.	Three Essays on Monetary Policy
34	Rahul V. Kumar		Dr. P. R. Suresh	Public Policy and the Political Economy of Alcohol in Contemporary Kerala
35	Nabila M.		Dr. P. R. Suresh	A Study on Implications of Coastal Zone Degradation on Communities with Special Reference to Kerala Coast.
36	Munappy Gayatri Gopinathan		Dr.P.R.Suresh	Internal Migration and Health: A Comparative Study on Healthcare Status of Informal Migrant Labourers in India
37	Sudev P. S.		Dr. P. R. Suresh	Exploring Intergenerational Occupational Shifts and Class-Caste Interactions among Artisan Communities in Kerala
38	Innocent Maduhu	ICCR Scholar	Dr.P.K.Manoj	
39	Changu Shapwaya	ICCR Scholar	Dr.P.Arunachalam	

Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer	1
2	Assistant Librarian	1
3	Office Superintendent	1
4	Sr.Gr.Assistant	1
5	Computer Assistant Sr.Gr	1
6	Office Attendant	1

Technical Personnel - NIL**Student Enrollment**

Sl.No.	Programme of Study	Men	Women	Total
1	MA IV	3	14	17
2	MA II	4	11	15
3	Ph.D	18	21	39

Research Facilities

- a. Laboratories : Nil
- b. Major equipments : WiFi enabled Computer Lab
- c. Library – Around 14000 books, subscriptions to international and national journals, Wi-Fi facility
- d. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
<u>2020-21</u> Books- 13965 Journals & Periodicals-30	<u>2021-22</u> Books-14001 Additions : 36 Journals & Periodicals-31

Others - NIL

Distinguished visitors - NIL

Ph.Ds Awarded

Sl. No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	Sustainability of Responsible Tourism Initiatives in Kumarakom: A Study on Local Stakeholders	Ajay Singh O. T.	Dr. P. K. Manoj
2	Tribal Sub Plan on the Human Capability formation of the Tribal Community in Kerala	Nishamol M.	Dr. D. Rajasenan
3	Infrastructure Development and Inequalities in Kerala: An Inter District Analysis	Praveena K.	Dr. S. Harikumar
4	An Assessment of Social Progress in the Context of Social Exclusion: A Study of Tribal Communities in Kerala	Sunitha A. S	Dr. D. Rajasenan

Publications

a. Papers

Sl. No.	Title of the Paper	Name of the author	Impact Factor, if any
01.	<u>“ESG Adoption by Housing Industry in India for Attaining the National Housing Goal: The Key Role of CMAs, March 2022”</u> . <i>The Management Accountant</i> , March 2022	Dr. Manoj P K	-

02.	<u>“Problems Faced By Micro Enterprises In Digital Kerala: Strategies For Their Sustained Performance in the ICT Era”</u> , <i>Stochastic Modeling & Applications</i> , Vol. 26, No.3, Special Issue, Part - 1, pp. 321-326	Dr. Manoj P K	-
03.	<u>“Fuel Pricing Policy of India and the factors Infuencing Fuel Pricing”</u> , <i>Stochastic Modeling & Applications</i> , Vol. 26, No.3, Special Issue, Part - 1, pp. 327-334.	Dr. Manoj P K	-
04.	<u>“Financial Inclusion with a Focus on Inclusive Housing Finance in India: The Need for Promoting Low Cost and Environment Friendly Housing”</u> , <i>NIU International Journal of Human Rights</i> , Vol. 8(XXI), Oct. 2021, pp. 112-123.	Dr. Manoj P K	-
05.	<u>“A Study of Uncertain and Turmoil Financial Environment”</u> , <i>Linguistica Antverpiensia</i> , May 2021. pp. 3647-3656.	Dr. Manoj P K	-
06.	<u>“Recreating the Humans through Artificial Intelligence for the Sake of the Society and the Business: Design of a Conceptual Model”</u> , <i>Design Engineering (Toronto)</i> , Issue 7, Oct. 2021, pp.14381-14387	Dr. Manoj P K	-
07.	<u>“Financial Analysis and Internal Business Growth And Performance Of Icici Bank”</u> , <i>Turkish Online Journal of Qualitative Inquiry (TOJQI)</i> , Vol. 12, Issue 7, July 2021, pp. 6261-6270.	Dr. Manoj P K	-
08.	<u>“Eco-Tourism Industry in Arunachal Pradesh: An Empirical Study”</u> , <i>Turkish Online Journal of Qualitative Inquiry (TOJQI)</i> , Vol. 12, Issue 6, July 2021, pp. 4799-4810.	Dr. Manoj P K	-
09.	<u>“E-Learning – An Elegant Source of Education during the Period of Lockdown”</u> , <i>Turkish Online Journal of Qualitative Inquiry</i>	Dr. Manoj P K	-

	(<i>TOJQI</i>), Vol. 12, Issue 7, July 2021, pp. 3838-3848.		
10.	“ <u>A Study on Customer Awareness on Merger of Indian Bank with Allahabad Bank</u> ”, <i>Turkish Online Journal of Qualitative Inquiry (TOJQI)</i> , Vol. 12, Issue 7, July 2021, pp. 3772-3783.	Dr. Manoj P K	-
11.	“ <u>Civil Society Organizations, Financial Inclusion and Balanced Socio-Economic Development: A Case Study in Kerala, India</u> ”, <i>Anvesak</i> , Vol. 51, No. 1, June 2021, pp.202-211.	Dr. Manoj P K	-
12.	“ <u>Employees Personality Traits and Organizational Commitment: An Empirical Analysis</u> ”, <i>Linguistica Antverpiensia</i> , Issue 3, May 2021. pp.3675-3682.	Dr. Manoj P K	-
13.	“ <u>Transforming Worker Owner Affiliation Through Flexible Arrangements</u> ”, <i>Linguistica Antverpiensia</i> , Issue 3, May 2021. pp.3631-3738.	Dr. Manoj P K	-
14.	“ <u>A Study of Uncertain and Turmoil Financial Environment</u> ”, <i>Linguistica Antverpiensia</i> , Issue 3, May 2021. pp.3647-3656.	Dr. Manoj P K	-
15.	Arunachalam, P (2021) “An Economic Thought over the Distorting Role of Emerging Political Consultancy Services in India” (20210630) https://doi.org/10.29121/granthaalayah.v9.i6.2021.3984 (doi: 10.29121/granthaalayah.v9.i6.2021.3984.	Dr.P.Arunachalam	-
16.	Arunachalam. P (2021), “An Economic Thought over Political Empowerment of Women in India”, <i>International Journal of Advance and Innovative Research in India</i> ” Vol. 8, Issue 2(IX) April-June, 2021, Peer Reviewed, ISSN 2394 7780.	Dr.P.Arunachalam	-

17.	Arunachalam, P. Jaedong Kang, and Jose K Puthur, (2021) “Complementarities of South Korea and India in the ICT Sector and Cooperation Model” Amal International Journal of Economics and Social Sciences, Volume V,ISSUE I, July, ISSN 2395-4913, India, Pp-78-87-	Dr.P.Arunachalam	-
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b. Books

Sl.No.	Title of Book
1	Dr.P.Arunachalam, Impact of Great Depression 1929 and COVID-19, Serials Publications (P) Ltd. 4830/24, Ansari Road, Darya Ganj, New Delhi 110 002., ISBN NO. 9788194793267
2	Dr.P.Arunachalam, “Digital Technologies in Agriculture and Rural areas, Maya Publications, New Delhi, ISBN 978 93 91286 38 5.

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
	Delivered an invite talk on “How to Write a Quality Research Paper” in a National Webinar on “Effective Research: Social Perspective” organised by the Department of Economics, NAAC and IQAC, St. Johns’s College, Palaymkottai, Tirunelveli, Tamil Nadu held on 29-07-21	Invited Talk
	Delivered an invited talk in an International Webinar on “How to write a Quality Research Paper and Publish it in the Indexed Journal” organised by the Department of Commerce,	

Dr. P. Arunachalam	Department of Management, and the Department of Humanities and IQAC, Rabindranath Tagore University, Madhya Pradesh held on 19-08-2021(IC44)	
	Participated and delivered an invited talk on Employment Opportunities for Economic Graduates in India, organised by the Department of Economics, St. Alberts college, Ernakulam held on 11-10-2021.	Invited Talk
	Delivered an invited talk on Alleviations of Poverty by Promoting Self Employment and Entrepreneurial Skills” organised by the Department of Commerce, Sri Sarada College for Women Tirunelveli 627 001 held on 25-08-2021	Invited Talk
	Delivered an Inaugural Address of 10 Days Workshop on “Data Science and Machine Learning” organised by the Department of Applied Economics, CUSAT, Cochin, Kerala held on 9-11-2021	Participant
	. Participated as an Executive Council Member in a Three Day "Indian Economic Association Conference" (IEA), organised by the IEA in collaboration with Madhya Pradesh government held in Bhopal, on December, 25-27, 2021	Participant
	Participated and organised a discussion on Industry Academia Collaboration, Department of Applied Economics,	Participant

	Cochin University of Science and Technology, Kochi-22.	
	Participated and delivered the Keynote address in a one day National Seminar on “Impact of Covid on Indian Economy” organised by the Department of economics, Vivekananda college, Madurai held on 29-3-2022	Participant
Dr.P R Suresh	FDP on Learning Management System (Moodle) and Course Design by Kerala State Higher Education Council (26-30 July 2021)	Participant
Dr. Manoj P K	<i>ICSSR Sponsored National Conference on Computational Social Science, 17-18 March 2022, MES College, Marampilly, Aluva.</i>	Invited Talk (17.03.2022 - Inaugural Session) “Azadi Ka Amrit Mahotsav Presentation on Digital India”
Dr. Manoj P K	<i>International Webinar on Applied Research, 23-24 Nov. 2021, Bharata Mata College, Thrikkakara, Kochi - 2021 (KERALA).</i>	Invited Talk (24.11.2021 - Inaugural Session) “Applied Research in Social Science”
Dr. Manoj P K	<i>Inauguration of Economics Association, Ilahia College Arts and Science, Pezhakkappilly PO, Muvattupuzha. (16 Oct 2021)</i>	Inaugural Address (16 Oct 2021) “Future Prospects of Economics Education”

Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Dr. P. Arunachalam	Arul Ananthar College, Karumathur, Madurai from 2022 to 2024.	Board of Studies Member

Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Dr. P. Arunachalam	Leading Educationist of India Award" 2021, Friendship Forum, New Delhi, 110049 (India)	
	Bharat Excellence Award 2021, Friendship Forum, New Delhi – 110049	
	Received the “Life Time Achievement Award 2022” EAST-Institute of Social Studies, Palayamkottai, Tirunelveli district, Tamil Nadu	
	Received the “Atmanirbhar Bharat Award 2022” from Swadeshi Sanathan Sangh, New Delhi.	

Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
1	Impact of Covid-19 Pandemic on Income, Employment and Livelihoods of Marine Fisher Folks in Kerala	Seed Money for New Research Initiative	Rs. 1,00,000	P R Suresh

Research Programmes and Activities:- NIL**Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department**

Sl.No.	Title	Duration	Coordinator	Funding Agency
1	Library Resource and Services	18.11.2021	University Library	
2	Soft Skill Development	09.03.2022	Dhanya Rajagopal, Axis Bank	
3	Two-day Workshop on Practical Econometric Applications	25 th July and 18 th August, 2021	Dr. P R Suresh	Nil
4	10 Days Workshop on Data Science and Machine Learning for Economists	09-13 July 2021 and 29 November- 3 December 2022	Dr. P R Suresh	NIL



Department of Atmospheric Sciences

ANNUAL REPORT FOR THE YEAR 2021-22

Brief History of the Department:

The Department of Atmospheric Sciences was formed in 1996 by bifurcating the erstwhile Physical Oceanography and Meteorology Division of the School of Marine Sciences. The Department started offering a 4-semester M. Sc programme in Meteorology since 1975 and a 4-semester M. Tech in Atmospheric Science since 1989.

Apart from teaching activities, research works in observational, diagnostic, theoretical, and modeling studies in the field of Meteorology/Atmospheric Sciences are in full swing. The Department had successfully completed phase I & II of the ambitious project under the *New Millennium Indian Technology Leadership Initiative (NMITLI)* of CSIR.

The University Grants Commission has selected the Department of Atmospheric Sciences under its Special Assistance Programme (SAP) based on the quality of teaching, academic achievements, research in the thrust area, and viable potential for future development. The essence and primary aim of SAP of the UGC is the combination of teaching and research to encourage group research efforts. The project entitled, Monsoon Cloud Characteristics under UGC – SAP - Level DRS Phase III was granted in 2013 with a financial support of Rs.64 lakhs for five years and is expected to develop the Department into a Centre of Excellence.

Department received Rs.20 lakhs as Special Assistance from UGC for the Augmentation of Infrastructure to the Department of Atmospheric Sciences during 2007-2011.

Department of Science and Technology (DST) identified the Department of Atmospheric Sciences as one of the premier centers in India in the field of Atmospheric Research and Teaching and sanctioned Rs.30 lakhs under its FIST – Level I and another Rs.165 Lakhs has released in December 2016 as Level – II of the FIST Programme.

We are very proud that the first Stratosphere Troposphere Wind Profile Radar operating on 205 MHz installed in the world is now commissioned at the Advanced Centre for Atmospheric Radar Research, CUSAT. This is the highest project funded by the Ministry of Science and Technology to a state University. ST Radars are emerging as powerful tools for Atmospheric Research in recent years around the world. They have immense applications in studies in Meteorology, Cloud Physics, Thunderstorms, Convections, Atmospheric Electricity, Climate Change, Environmental Physics, Civil aviation, communications, etc.

Seven efficient and dynamic faculties are available in the Department. Prestigious awards such as BOYSCAST, Commission of the European Communities (CEC) Fellowships, etc. were awarded to the faculties. International and national awards for academic excellence and achievements were also received. The Department has produced 50 Ph.D.s and published about 274 research papers in reputed international and national scientific journals. In addition, more than 332 research papers were presented at various national/international scientific conferences in India and abroad. Eminent Scientists and Professors are often invited to the Department for giving lectures in advanced areas.

The Department has high-speed computational facilities and a full-fledged surface weather observatory. The Department has started releasing weather balloons into the atmosphere to obtain upper-air weather information using Radio Sonde. A 2D Video Distrometer is added to our instrument lab. It has also setup a data bank, which has NCEP/NCAR, ERA-INTERIM reanalysis data, UARS data from NASA, Rocket data, MST Radar data, surface weather observations, TOMS data, IMD gridded data (1901-2013), etc.

Programmes of Study/Research

- (1) M.Sc. Meteorology
- (2) M.Tech Atmospheric Sciences
- (3) Ph.D. Programme in Meteorology/Atmospheric Science

The syllabi for both the M.Sc. Course in Meteorology and the M.Tech Course in Atmospheric Sciences are revised (2020) at par with the syllabi of international standards. Both M.Sc. and M.Tech Courses are in Credit System with 100% internal evaluation.

Faculty Members

Sl. No.	Name	Designation	Qualification	Specialisation
1.	Dr. C. A. Babu	Professor	Ph.D	Boundary Layer Meteorology
2.	Sri. B. Chakrapani	Associate Professor	M.Sc	Numerical Modelling of Atmospheric and Ocean Processes
3.	Dr. Satheesan K.	Professor & Head	Ph.D	Remote Sensing, Radar Meteorology
4	Dr. V. Madhu	Assistant Professor	Ph.D	Middle Atmospheric Dynamics

5.	Dr. Abhilash S.	Associate Professor	Ph.D	Tropical Meteorology, Climate Modelling
6.	Dr. Lekshmy P. R.	Assistant Professor	Ph.D	Isotope Hydrology, Tropical Meteorology, Paleo Climatology
7.	Dr. Midhun M.	Assistant Professor	Ph.D	Isotope Hydrology, Tropical Meteorology, Paleo Climatology
8.	Dr. Sreekala P. P.	Assistant Professor	Ph.D	Northeast Monsoon and Climate Change

Research / Project Staff

Sl. No.	Name	Designation	Qualification	Specialisation
1	Dr. Vijayakumar P	Project Scientist-IITM Monsoon Mission Ph II	Ph.D	Meteorology
2	Sri. Avinash Paul	DRDO	M Tech	Atmospheric Science
3	Dr. Smitha A	UPDF	Ph D	Meteorology
4	Sri. Sivan C	JRF – MoES Project	M Sc	Meteorology
5	Dr. Maria Emmanuel	SERB NPDF	Ph D	Meteorology

Research Scholars

Sl. No.	Name	Funding Agency	Guide	Area of Work
1	Smart K. B.	NA	Dr. C A Babu	Meteorology
2	Anu Xavier	KSCTE	Dr. K Mohankumar	Meteorology

3	Nithya K.	NA	Dr. K Mohankumar	Meteorology
4	Remya R.	Kerala Govt	Dr. K Mohankumar	Meteorology
5	Sivakumar K. U.	NA	Dr. Santosh K R	Meteorology
6	Suthin Kumar P. S.	CSIR	Dr. C A Babu	Meteorology
7	Krishnakumar E. K.	UGC	Dr. Santosh K R	Meteorology
8	Vinod Sankar N.	NA	Dr. C A Babu	Meteorology
9	Pritam Das Mahapatra	DST-Inspire	Dr. Abhilash S	Meteorology
10	Sudeep Kumar B. L.	NA	Dr. C. A. Babu	Meteorology
11	Baburaj P. P.	NA	Dr. Abhilash S	Meteorology
12	Sudheesh T. M.	NA	Dr. Santosh K R	Meteorology
13	Niyaz N. T.	NA	Dr. Santosh K R	Meteorology
14	Biswarup Das	NA	Dr. C. Babu	Meteorology
15	Sreenath A. V.	UGC	Dr. Satheesan K	Meteorology
16	Amal Joy	UGC	Dr. Satheesan K	Meteorology
17	Ahana K. K.	UJRF	Dr. Satheesan K	Meteorology
18	Sujithlal S. P.	NA	Dr. Satheesan K	Meteorology
19	Athira U. Nambeesan	UJRF	Dr. S Abhilash	Meteorology
20	Dhaneesh K.	NA	Dr. C A Babu	Meteorology
21	Stefy Thomas	DST-Inspire	Dr. Lekshmy P R	Meteorology
22	Sivan C.	MoES	Dr. K Satheesan	Meteorology
23	Roshny Theresa	NA	Dr. K Satheesan	Meteorology
24	Arun K.	UJRF	Dr. K Satheesan	Meteorology
25	Lakshmi P.	DST PURSE	Dr. C A Babu	Meteorology
26	Sebastian Joy	NA	Dr. V Madhu	Meteorology
27	Avinash Paul	DRDO	Dr. K Satheesan	Meteorology
28	Sreeshma K.	NA	Dr. Lekshmy P R	Meteorology
29	Jisha K. Vishal	NA	Dr. Midhun M	Meteorology
30	Vishnu M. Warriar	NA	Dr. V Madhu	Meteorology

31	Ancy P.	NA	Dr. C A Babu	Meteorology
32	Sreevidhya Ravi	NA	Dr. Sreekala P N	Meteorology
33	Reshma T.	NA	Dr. C A Babu	Meteorology
34	Ajilesh P. P.	NA	Dr. K Satheesan	Meteorology
35	Abbad Lutfi A.	NA	Dr. Lekshmy P R	Meteorology

Administrative Personnel

Sl. No.	Name	Designation	No. of Posts
1	Rajesh B.	Section Officer	1
2	Saraswathi Nirmala Warriar	Senior Grade Assistant	1
3	Sunitha Kumari V. S.	Office Attendant	1

Technical Personnel

Sl. No.	Name	Designation	No. of Posts
1.	Ms. Jyothis James	Technical Assistant Grade I(contract)	2
2.	Ms. Magi Thomas	Technical Assistant Grade I(contract)	

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1.	M.Sc. Meteorology	6	7	13
2.	M.Tech (Atmospheric Sciences)	2	6	8
3.	Ph.D.	3	5	8

Research Facilities

a. Laboratories

Meteorological Instrumentation Laboratory, Synoptic Lab, Computer Lab, Surface Meteorological Observatory, Modelling Lab, Atmospheric Data Bank.

b. Major equipments

High-Resolution GPS Radiosonde (GRAW), Next Generation Aethalometer, Automatic Weather Station, 20 m Meteorological Tower.

A Rack Server is installed in the Modelling lab. There is an atmospheric Data bank in the Department with Meteorological data from IMD, Re analysis Data from NCEP/NCAR, etc.

c. Library: Attached to School of Marine Science Library

Distinguished visitors: Nil

Ph.Ds Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	A Study on the Features of Monsoon Circulation and Extreme Rainfall Events using ST Radar and Complementary Datasets	Anu Xavier	Dr. K Mohankumar
2.	Tropical Easterly Jetstream over Indian Summer Monsoon Region and its Association with Adjacent and Remote Factors	Nithya K	Dr. K Mohankumar
3.	Studies on Western Disturbances Affecting North India During Winter	Vinod Sankar N	Dr. C A Babu
4.	Observational Aspects of Atmospheric Boundary Layer Features over West Coast of India with Emphasis to Southwest Monsoon	Sudeep Kumar B L	Dr. C A Babu

Publications

a. Papers

Sl. No.	Title of the Paper	Impact Factor, if any
1.	Athira U. N., Abhilash S., Ruchith R. D. (2021), “ Role of unusual moisture transport across Equatorial Indian Ocean on the extreme rainfall event during Kerala flood 2018 ”, Dynamics of Atmosphere and Ocean , Volume 95, September 2021, 101225, https://doi.org/10.1016/j.dynatmoce.2021.101225	1.319
2.	T. Reshma, Hamza Varikoden, C. A. Babu (2021), “Observed Changes in Indian Summer Monsoon Rainfall at Different Intensity Bins during the Past 118 Years over Five Homogeneous Regions”, <i>Pure Appl. Geophys.</i> 178 (2021), 3655–3672, https://doi.org/10.1007/s00024-021-02826-8	2.335
3.	Georgina Falster, Bronwen Konecky, Midhun Madhavan, Samantha Stevenson, and Sloan Coats (2021), “Imprint of the Pacific Walker Circulation in Global Precipitation $\delta^{18}O$ ”, <i>American Meteorological Society</i> , https://doi.org/10.1175/JCLI-D-21-0190.1	8.766
4.	Midhun M.; Stevenson S.; Cole J. E. (2021), “Oxygen Isotopic Signatures of Major Climate Modes and Implications for Detectability in Speleothems”, <i>Geophysical Research Letters</i> , Volume 48, Issue 1, article id. e89515, doi:10.1029/2020GL089515	4.72
5.	P. R. Lekshmy, M. Midhun, R. Ramesh (2021), “Role of moisture transport from Western Pacific region on water vapor isotopes over the Bay of Bengal”, <i>Atmospheric Research</i> , Volume 265, January 2022, 105895, https://doi.org/10.1016/j.atmosres.2021.105895	2.415
6.	Sreenath A. V., Abhilash S., K. Vijayakumar, and Brian Mapes (2022) “West coast India’s rainfall is becoming more	8.624

	convective”,.npj Climate and Atmospheric Science, 10.1038/s41612-022-00258-2	
7.	Pritam Das M., S. Abhilash and Ruchith R. D. (2022) “Aerosol Distribution during Spring and Summer and its relationship with Inter-Annual Variability of Summer Monsoon Rainfall Over Indian Region”,Geocarto International, DOI: 10.1080/10106049.2022.2058622	4.065
8.	R. Dhanya, A.. Pradeep, C.. S. Abhiram Nirmal, S. Abhilash, K. Mohankumar and P. Mohanan, "A Novel Hybrid Approach for the Identification of Clear Air and Rain Echoes in the 205 MHz ST Radar Spectrum",,IEEE Geoscience and Remote Sensing Letters, DOI: 10.1109/LGRS.2022.3149149.	3.966
9.	K. K. Baiju, Shinoj Parappurathu, S. Abhilash, C. Ramachandran, P. S. Swathi Lekshmi, Praveen Padmajan, Shelton Padua, Thomson Kaleekal, “Achieving governance synergies through institutional interactions among non-state and state actors in small-scale marine fisheries in India”,Marine Policy, https://doi.org/10.1016/j.marpol.2022.104990 .	4.173
10	Baburaj. P. P., S. Abhilash, C. S. Abhiram Nirmal, A. V. Sreenath, K. Mohankumar, A. K. Sahai, Increasing incidence of Arabian Sea cyclones during the monsoon onset phase: Its impact on the robustness and advancement of Indian summer monsoon,Atmospheric Research, https://doi.org/10.1016/j.atmosres.2021.105915 .	5.369
11	Max Martin, Abhilash S., Vijaykumar Pattathil, Harikumar R., N. T. Niyas, T. M. Balakrishnan Nair, Yatin Grover, and Filippo Osella., Should I stay or should I go? South Indian artisanal fishers’ precarious livelihoods and their engagement with categorical ocean forecasts ,Weather, Climate and Society, DOI: https://doi.org/10.1175/WCAS-D-20-0044.1	2.746
12	Sreenath, A. V., Abhilash, S., and Vijaykumar P. Variability in lightning hazard over Indian region with respect to El Niño–Southern Oscillation (ENSO) phases,Nat. Hazards Earth Syst. Sci., 21, https://doi.org/10.5194/nhess-21-2597-2021	4.345

13	A.V. Sreenath, Neelam Malap, S. Abhilash, Gayatri Urankar Kulkarni, Thara Prabhakaran, Precipitation processes over Indian region under different environmental conditions from in situ measurements, Atmospheric Research, 262, https://doi.org/10.1016/j.atmosres.2021.105775 .	5.369
14	M.G. Manoj, Sivan C., Rakesh V., Rejoy Rebello, Abhilash S., Mohankumar K. Atmospheric response to the annular solar eclipse of 26 December 2019 over Cochin, India, Advances in Space Research, 68(9), https://doi.org/10.1016/j.asr.2021.07.001	2.152
15	P. Vijaykumar, S. Abhilash, A.V. Sreenath, U.N. Athira, K. Mohanakumar, B.E. Mapes, B. Chakrapani, A.K. Sahai, T.N. Niyas, O.P. Sreejith. Kerala floods in consecutive years - Its association with mesoscale cloudburst and structural changes in monsoon clouds over the west coast of India, Weather and Climate Extremes, 33, https://doi.org/10.1016/j.wace.2021.100339	5.338
16	Syam Sankar, P. Vijaykumar, S. Abhilash, K. Mohanakumar. Influence of the strongest positive Indian Ocean Dipole and an El Niño Modoki event on the 2019 Indian summer monsoon, Dynamics of Atmospheres and Oceans, 95, https://doi.org/10.1016/j.dynatmoce.2021.101235	1.319
17	Mukhopadhyay, P., Bechtold, P., Zhu, .Krishna, R. P. M., Kumar, S., Ganai, M., Tirkey, S., Goswami, T., Mahakur, M., Deshpande, M., Prasad, V. S., Johny, C.J., Mitra, A., Ashrit, R., Sarkar, A., Sarkar, S., Roy, K., Andrews, E., Kanase, R., Malviya, S., Abhilash, S., Domkawle, M., Pawar, S. D., Mamgain, A., Durai, V. R., Nanjundiah, R. S., Mitra, A. K., Rajagopal, E. N., Mohapatra, M., & Rajeevan, M. Mechanism for Extreme Rain Events in Kerala, India, Bulletin of the American Meteorological Society, Notes Section, May 2021, https://doi.org/10.1175/BAMS-D-20-0094.1	9.384
18	Mukhopadhyay, P., Bechtold, P., Zhu, Abhilash, S., Domkawle, M., etal. Unravelling the mechanism of extreme (more than 30 sigma) precipitation during August 2018 and 2019 over Kerala, India, Weather and Forecasting , https://doi.org/10.1175/WAF-D-20-0162.1	2.950

19	Sivan. C, V. Rakesh., S. Abhilash., K. Mohanakumar: Evaluation of Global Reanalysis Winds and High Resolution Regional Model Outputs with the 205 MHz Stratosphere-Troposphere Wind Profiler Radar Observations, Quarterly Journal of the Royal Meteorological Society, https://doi.org/10.1002/qj.4041	3.471
20	Shahi, N.K., Rai, S., Sahai, A.K., S. Abhilash (2021): Prediction of dominant daily modes of the Indian summer monsoon in the NCEP GFS model. Meteorol Atmos Phys https://doi.org/10.1007/s00703-021-00793-2	2.204
21	Saranya. S, Abhilash. S, Joseph. S, Kaur. M, A. Dey, R. Mandal, R. Phani, R. Chattopadhyay, D. R. Pattanaik and A. K. Ssahai : A review of the development and implementation of a tropical cyclone prediction system for North Indian Ocean in a multi-model ensemble framework ,Mausam, 72, 1 (January 2021), 57-76	0.21
22	A southerly wind event and precipitation in Ny Ålesund, Arctic, M Nuncio, K Satheesan, A Acharya, S Chatterjee, MP Subeesh, R Athulya, Journal of Atmospheric and Solar-Terrestrial Physics, 105869, 2022	1.735
23	Tracing the convective sources of air at tropical tropopause during the active and break phases of Indian summer monsoon, C Sivan, A Kottayil, B Legras, S Bucci, K Mohanakumar, K Satheesan, Climate Dynamics, 1-18, 2022	4.375
24	Validation of the ESA Aeolus Winds in the Troposphere and Lower Stratosphere Using Atmospheric Radars in Arctic Sweden and in Antarctica, E Belova, S Kirkwood, P Voelger, S Chatterjee, K Satheesan, S Hegelin, AGU Fall Meeting, 2021, 2021	
25	Validation of Aeolus winds using ground-based radars in Antarctica and in northern Sweden, E Belova, S Kirkwood, P Voelger, S Chatterjee, K Satheesan, S Hagelin, Atmospheric Measurement Techniques 14 (8), 5415-5428, 5 202	4.176
26	Diurnal variation of deep convective clouds over Indian monsoon region and its association with rainfall A Kottayil, K Satheesan, VO John, R Antony, Atmospheric Research 255, 105540, 2021	5.369

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Francis Babu	INTROMET 2021	Oral Talk
Dr. Sreekala P. P.	INTROMET 2021	Oral Talk
Amal Joy	INTROMET 2021	Oral Talk
Dr. Liby Thomas	INTROMET 2021	Oral Talk
Dr. Smitha A.	INTROMET 2021	Oral Talk
Sujithlal S. P.	INTROMET 2021	Poster Presentation
Krishnakumar E. K.	INTROMET 2021	Poster Presentation
Ahana K. K.	INTROMET 2021	Poster Presentation
Pritam Das Mahapatra	INTROMET 2021	Poster Presentation
Arun K.	INTROMET 2021	Poster Presentation
Dr. Liby Thomas	INTROMET 2021	Poster Presentation
Dr. Smitha A.	INTROMET 2021	Poster Presentation
Avinash Paul	INTROMET 2021	Poster Presentation
Roshny Antony	INTROMET 2021	Poster Presentation
Amal Joy	INTROMET 2021	Poster Presentation
Reshma T.	INTROMET 2021	Poster Presentation
Remya R.	INTROMET 2021	Poster Presentation
Sreenath A. V.	INTROMET 2021	Poster Presentation
Athira U. Nambeesan	INTROMET 2021	Poster Presentation
Dr. Sreekala P. P.	INTROMET 2021	Poster Presentation
Suthinkumar P.S.	INTROMET 2021	Poster Presentation
Sivan C.	INTROMET 2021	Poster Presentation
Jisha K. Vishal	INTROMET 2021	Poster Presentation

Pritam Das Mahapatra	ICCP 2021	Poster Presentation
Dr. Sreekala P. P.	IWM 7	Oral Presentation
Dr. Abhilsh S.	Seminar Organized by Bishope Jerome Institute, Kollam, "Climate Change and Challenges in Disaster Management"	Invited Talk
Dr. Abhilsh S.	National workshop on "Emerging Trends In Emergency Management", Organized by Kerala Fire and Rescue Sevices , Govt. of Kerala	Invited Talk
Dr. Abhilsh S.	Webinar organized by Sendai Framework for Disaster Risk Reduction by Kerala Disaster Management Authority., "Understanding Disaster Risk : Cloudburst"	Invited Talk
Dr. Abhilsh S.	National seminar on Floods and land slides : Problems of Disaster prevention and Mitigation in Kerala" organized by Department of Political Science, University of Kerala	Invited Talk
Dr. Abhilsh S.	Workshop on "Living with Climate Change: Understanding the impacts of global warming, improvising adaptations and lessening the repercussions through skill training workshop" organized by Fatima Mata National College, Kollam	Invited Talk
Dr. Abhilsh S.	Training on "Weather and Climate services for Fishers" jointly organized by CUSAT, Sussex University, UK and Radion Monsoon	Lead Talk

Dr. Abhilsh S.	Course on "Remote Sensing and GIS for Land and Ocean Observations, and Climate Modelling" organized by KUFOS, Cochin	Lead Talk
Dr. Abhilsh S.	National E-Symposium on "Changing climate and extreme events: impacts, mitigation & Role of oceans" organized by IMS Pune	Invited Talk
Dr. Abhilsh S.	Thematic subject presentation in the Young Investors Program (YIP) by Kerala Deelopment and Innovation Startegy Council (K-DISC)	Invited Talk
Dr. Abhilsh S.	National Seminar On Reorienting the strategies towards sustainable aquaculture and fisheries Organized by Keral University of fisheries and Ocean Studies	Invited Talk
Dr. Abhilsh S.	Seminar on Solid Waste Management organized by Kunnamkulam Municipality	Invited Talk
Dr. Abhilsh S.	Short Term Program on Disaster Management organized by Human Resource Development Centre University of Hyderabad	Invited Talk
Dr. Abhilsh S.	Refresher Course in Environmental Studies is organized by the Human Resource Development Centre, Madurai Kamaraj University	Invited Talk
Dr. Abhilsh S.	International Virtual Symposium on "Outcomes of the Conference of the Parties 26 (COP26), Madurai Kamaraj University	Plenary Talk

Dr. Abhilsh S.	Pampamandan, Chenganur	Popular Lecture
Dr. Abhilsh S.	Janasamskriti, New Delhi	Popular Lecture
Dr. Abhilsh S.	The Institute of Engineers, Kochi Chapter	Invited Talk
Dr. Abhilsh S.	Social Democratic Party of India (SDPI), Kerala	Popular Lecture
Dr. Abhilsh S.	Short term course in Disatser management and Ckimate Change by UGC-HRD, Kannur University	Invited Talk (Resource person)
Dr. Abhilsh S.	Vypin Block Panchayath	Training for LS GD, Vypin
Dr. Abhilsh S.	FDP on Climate change by University of Delhi	Invited Talk (Resource person)
Dr. Abhilsh S.	Vaikom Management Associaation	Popular Lecture
Dr. Abhilsh S.	Kerala Shastra Sahitya Parishad (KSSP), Calicut	Invited Talk
Dr. Abhilsh S.	Kerala Shastra Sahitya Parishad (KSSP), Kerala State	Invited Talk
Dr. Abhilsh S.	Ozone day Celebrations, St. Thomas College, Pathanamthitta	Invited Talk
Dr. Abhilsh S.	Ozone day Celebrations, ToCH Institute of Science and Technology	Invited Talk
Dr. Abhilsh S.	Ozone day Celebrations, University of Kerala	Invited Talk
Dr. Abhilsh S.	FDP on Disaster Mangement, MES college, Malpuram	Invited Talk
Dr. Abhilsh S.	Workshop, Trivandrum Social Service Society (TSSS)	Invited Talk
Dr. Abhilsh S.	Hume Centre, Wayanad	Children Talk
Dr. Abhilsh S.	Kerala Shastra Sahitya Parishad (KSSP), Chunakkara	Invited Talk

Dr. Abhilsh S.	Short Term Course on Disaster Management conducted by UGC-Human Resource Development Centre (HRDC), University of Calicut	Invited Talk
Dr. Abhilsh S.	Short Term Course on Disaster Management conducted by UGC-Human Resource Development Centre (HRDC), University of Calicut	Invited Talk
Dr. Abhilsh S.	Webinar series conducted by M S Swaminathan Botanical Garden	Invited Talk
Dr. Abhilsh S.	UGC-Human Resource Development Centre (HRDC), Kannur University	Invited Talk
Dr. Abhilsh S.	Webinar conducted by MES College, Marampally	Invited Talk
Dr. Abhilsh S.	Annual Monsoon E-Workshop jointly organized by Indian Meteorological Society and Savitribai Phule Pune University	Invited Talk
Dr. Abhilsh S.	High-end workshop on Solar activities and their influences in the Heliosphere and Planetary Atmospheres conducted by National Institute of Technology, Calicut	Invited Talk
Dr. Abhilsh S.	Train the trainers program on “know your atmosphere you live in” conducted by Institute for Advanced Research in Science (IARSc), Bangalore	Invited Talk
Dr. Abhilsh S.	Train the trainers program on “know your atmosphere you live in” conducted by Institute for	Invited Talk

	Advanced Research in Science (IARSc), Bangalore	
Dr. Abhilsh S	Webinar organized by Indian Meteorological Society, Pune	Invited Talk

Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization/Institution	Role
Dr. Satheesan K.	Academic Council, CUSAT	Member
Dr. Satheesan K.	Reserarch Committee, SPL, VSSC, ISRO	Member
Dr. Satheesan K.	Reserarch Committee,NCESS, MoES	Member

Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Pritam Das Mahapatra	Best poster award	INTROMET 2021
Dr. Abhilash S.	Best poster award	INTROMET 2021

Sponsored Research Projects

Sl. No.	Title	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
1	Support for ST Radar facility at ACARR	MoES	Rs.925.72	Dr. Abhilash S., Dr. Satheesan K.

Research Programmes and Activities:

Sl. No.	Problem / Topic	Investigator (s)
1.	Evolution of Atmosphere on a natural satellite harboring subsurface ocean	Smart K B Dr. C A Babu
2.	Characteristics of Monsoon Boundary Layer	Sudeep Kumar B L / Dr. C. A. Babu
3.	Stratospheric QBO and Asian Summer Monsoon	Nithya K / Dr.K. Mohan Kumar
4.	Dynamical and Physical Forcing of Tropical Cyclones	Baburaj P P / Dr. S. Abhilash
5.	Characteristics of Monsoon Organized Convections Associated with Indian Summer Monsoon	Sreelekha P N/ Dr.C.A. Babu
6.	Stratosphere-Troposphere Coupling and its Role in Climate Change	Remya R. Dr.K.Mohan Kumar
7.	Jet Streams and Indian Summer Monsoon	Anu Xavier Dr.K.Mohan Kumar
8.	Study of Monsoon Clouds using Satellite Data	Vijayakumar P/ Dr. Santosh. K R
9.	Upper Tropospheric process over the Northern Arabian Sea and its impact on the Indian Summer Monsoon	Sivakumar U/ Dr.Santosh K R
10.	Investigation of the Vertical Profile of Upper Atmosphere using Radars and Predictability of Monsoon and Thunderstorms	Sudheesh T. M. / Dr. Santosh K R
11.	Study on Weather System Affecting North India during Winter Season	N. Vinod Sankar/ Dr. C. A. Babu
12.	Extreme Climate Events over South Asian Region in a Climate Change Perspective	Krishna Kumar E K/ Dr. Santosh K R
13.	Climate Variability, Change and their Impact over south India	Niyaz T. M./ Dr. C A Babu

14.	Numerical Modelling of the Dynamics of Deep Convective Systems over Indian Region using the Weather Research Forecast (WRF) Model	Smitha John/ Dr. H S Ram Mohan
15.	Rainfall characteristics and associated cloud and circulation features	Suthin Kumar P S/ Dr. C A Babu
16.	Aerosol Studies during Monsoon	Pritam Das Mahapatra Dr. Abhilash S
17.	Air-Sea interaction process over Indian Ocean region	Biswarup Das/ Dr. C A Babu
18.	Study of Small Scale Processes in the Troposphere	Ahana K K Dr.Satheesan K.
19.	Regional Climate Modelling	Amal Joy/ Dr.Satheesan K
20.	Understanding the Structure and Dynamics of Cloud Process over Indian Region	Sreenath A V Dr. Abhilash S
21.	Stratosphere – Troposphere Interactions over Tropics	Sujith lal S P/ Dr.Satheesan K
22.	Identifying the Errors in the Short and Medium Range for casting Systems over Indian Region and its Improvement	Dhaneesh K K / Dr.Abhilash S
23.	Understanding the Coupled Atmosphere-Ocean Processes – associated with different phases of Intra Seasonal Oscillations over Indian Ocean Regions	Athira U. Nambeesan/ Dr.Abhilash S
24.	Studies on Intensity and Frequency of Natural Disasters over Coastal Regions in India in a Changing Environment-Mitigation	Stefy Thomas/ Dr. Lekshmy P R
25.	Atmospheric aerosols and Indian monsoon variability	Arun K. / Dr. Satheesan K
26.	Tropical tropopause layer and high clouds over Indian monsoon region	Sivan C. / Dr. Satheesan K
27.	Study of land use/land cover pattern and a synergistic analysis of temperature and precipitation of the Indian sub-continent since 1975	Roshney Theresa / Dr.Satheesan K

28.	Indian Summer monsoon and its global teleconnections	Lakshmi P/ Dr. C A Babu
29.	Impact of Asian Monsoon on atmospheric compositions and regional air quality using Chemistry - Climate Modelling	Sebastian Joy / Dr. V Madhu
30.	Tactical Designing of Operational Oceanography	Avinash Paul / Dr. K Satheesan

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department:

Sl.No.	Title	Duration	Coordinator (s)	Funding Agency
1	INTROMET 2021	3 days	Dr. Abhilash S	

Consultancy Work

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1	CARS Consultancy Project entitled "All weather vertical Refractive Index Structure Parameter (Cn2) model development for Marine Environment using relevant meteorological parameters "	Dr. K Satheesan	NPOL



Department of Biotechnology

Report (April 2021-March 2022)

Name of the Department: BIOTECHNOLOGY

Brief History of the Department:

The mandate of the Department is to train human resources in Biotechnology and to cater to the needs of the Nation in harnessing the vast biodiversity and to promote bio industries, not only in the state of Kerala but also in the Nation. Our vision is to disseminate knowledge through research, technology-based learning and innovation, augment human resource development and contribute to societal and nation building. The department offers two MSc programs in Biotechnology and Microbiology. The M.Sc. programme in Biotechnology offers comprehensive education in all aspects of modern applied biology. The programme has been designed in such a way that the students are well trained in state-of-the-art techniques in the world of molecular biology, genetic engineering, plant biotechnology, recombinant DNA Technology, Fermentation, bioinformatics, Cell biology, neurobiology and immunology.

Since 2018, the Department offers a new program in M.Sc. Microbiology. The course is designed such that it includes areas such as Bacteriology, Virology, Mycology, Food Microbiology, Industrial Microbiology, Parasitology and medical microbiology, which are job oriented, identifying the agents of infectious diseases & devise ways to combat them. The students learn to identify bacterial and viral agents and can also monitor water and food supplies. Food and dairy microbiology provide the expertise to understand and prevent microbial spoilage of consumables, fights food borne transmission of diseases, and also make food like cheese, yoghurt and wine. In addition, the Department is also part of the New Integrated M.Sc. program, which also commenced during 2018 admissions

The theoretical and practical knowledge acquired by the student during the first three semesters is perfected through an intensive dissertation work during the fourth semester. Topically relevant problems are identified for the purpose so as to impart training in identification and execution of research problems and interpretation of data. Most of the M. Sc. students opt for research programs in national/international laboratories after they complete their program. They also find employment in industries, educational institutions and other organizations involved in R and D and also in medical, pharmaceutical, agricultural and environmental biotechnology sectors.

In addition, Ph.D program of the department is centered on various research activities, such as Microbial Technology, Medical Biotechnology, Genetic Engineering, Molecular Neurobiology, Cell Biology and Plant Biotechnology. The research students generally get absorbed as Scientists in different national and international laboratories and as lecturers in Universities/Colleges.

On an average, about 70% of the M.Sc. students clear the NET and 80% pass the GATE. 95 students have so far taken their doctoral degrees from the Department, with about 351 scientific publications from the Department.

Furthermore, the department conducts collaborative research with other Departments in the University like Dept. of Applied Chemistry, Dept. of Physics, International School of Photonics., and Dept of Polymer and Rubber Technology as well as the Inter University Centre for Nano materials and devices (IUCND), and has published several papers in international and National journals. In addition the department has working MoUs with Amrita School of medical sciences (Nano medicine) and SreeChitraTirunal Institute for Medical Sciences and Technology (SCTIMST)

Programmes of Study/Research:

- a. M. Sc. Biotechnology
- b. M.Sc. Microbiology
- c. Ph.D Biotechnology
- d. Integrated M.Sc Biological Sciences
- e. Part of the M.Sc. Forensic sciences program offered by Faculty of Sciences

Faculty Members

Sl. No	Name	Designation	Qualification	Specialization
1	Dr. Parvathi A	Professor & Head	M.F.Sc., Ph. D	Microbiology
2	Dr. Sarita G. Bhat	Professor	M.Sc. Ph.D	Microbial Genetics
3	Dr. AjithVengellur	Assistant Professor	M.Sc., Ph.D	Genetics and Cell Signaling
4.	Dr. Baby Chakrapani P.S	Assistant Professor	M.Sc., Ph.D	Molecular Neurobiology
5	Dr. BhavyaBalan Chandrika	Assistant Professor	M.Sc., Ph.D	Cancer biology
6	Dr. Rajesh P.P.	Assistant Professor	M.Sc., Ph.D	Biofuels
7	Dr. Sreekanth PM	Assistant Professor	M.Sc., Ph.D	Plant Molecular Ecology
8	Dr. SnehaYogindran	Assistant Professor	M.Sc., Ph.D	Plant biotechnology
9	Dr. Sayuj P	Assistant Professor	M.Sc., Ph.D	Plant biotechnology
10	Dr. AnushaAshokan	DST Inspire Faculty	M.Tech., Ph.D	Cancer Nanomedicine
12	Dr. Sreeja Narayanan	DBT-Welcome-Trust Fellow	M.Sc., Ph.D	Immunotherapy and vaccines
13	Dr. Unnikrishnan Sivan	DHR-HRD NRI Fellow	M.Sc., Ph.D	Stem cells and regenerative technology

Emeritus Professor/Adjunct Faculty /Scientist (if any)-5

Sl.No.	Name	Designation	Qualification	Specialization
1	Dr. K.P. Joy	INSA Senior Scientist	M.Sc., Ph.D	Endocrinology
2	Dr. M. Chandrasekaran	Adjunct Faculty	M.Sc., Ph.D	Microbial technology
3	Dr. Manjusha S.	Contract faculty	M.Sc., Ph.D	Biotechnology

Research Staff

Sl. No.	Name	Designation	Qualification	Specialization
1	Dr. Bindiya E.S	Post Doctoral Fellow - CUSAT	M.Sc., Ph.D	Biotechnology
2	Mr. Vinod S (Part time)	JRF, DST-SERB project	MSc.	Microbiology part time
3	Ms. MeeraMenon	DST-Inspire faculty project JRF	M.Sc	Cancer nano medicine
4	Dr. Dania Jose	ICMR Project RA	M.Sc., Ph.D	Biotechnology
5	TriptiRaghavendra	DBT-RA	M.Sc., Ph.D	Microbiology
6	Dr. Mohind C Mohan	CUSATECH-PDF	M Sc, Ph D	Biochemistry
7	Dr. AiswaryaDeepthi	Post Doctoral Fellow	M Sc, Ph D	Neuroscience
8	Dr. Athira Krishnan	CUSATECH-PDF	M Sc, Ph D	Biotechnology
9	Dr. Aneesa P A	ICMR-RA	M Sc, Ph D	Biochemistry
10.	Dr. SapnaKeshav	Post Doctoral Fellow - CUSAT	M.Sc., Ph.D	Biotechnology
13	Dr. Jiya Jose	ICMR-RA	M.Sc., Ph.D	Microbiology
14	Dr. Suja E	ICMR-RA	M.Sc., Ph.D	Microbiology
15	Dr. Chandini C. Mohan	UGC-Kothari PDF	M.Sc., Ph.D	Biotechnology
16	Elizabeth C Varghese	DBT-Wellcome Trust Project Assistant	M.Sc., M.Tech	Nanomedicine

Research Scholars

Sl. No.	Name	Funding Agency	Guide	Area of Work
1	RinuMadhu Puthussery	UJRF	Dr. SaritaG.Bhat	Soil metagenomics
2	Venetia 'D' Rose	UGC	Dr. SaritaG.Bhat	Metagenomics of fish gut microflora
3	Honey G.	CSIR	Dr. SaritaG.Bhat / Dr. Sunil Narayanakutty	Biofilm Formation in urinary catheter
4	Bins K.C	KSCSTE	Dr. Padma Nambisan	CNTF induced adult Neurogenesis
5	Prabha Prakash	KSCSTE	Dr. Padma Nambisan	Derivation of neurons from peripheral blood mononuclear cells
6	Sreelakshmi Sadanandan	DST-INSPIRE	Dr. AjithVengellur	Hypoxia and its effect on neurons
7	Saipriya P.P.	CSIR-JRF	Dr. AjithVengellur	The role of hypoxia inducible factors in neuronal homeostasis under Normoxia
8	Dayana Mathew	CSIR-JRF	Dr. SaritaG.Bhat	Production of bacterial melanins and their applications
9	Gayathri Krishna R	CSIR-JRF	Dr. MohananValiya Veetil/ Dr. Padma Nambisan	Functioning of glutamate and glutamate receptors in Epstein-Barr virus mediated oncogenesis
10	DivyaMenon	UJRF	Dr. AjithVengellur	Study on the BRAF mutational status and associated genetic events in Papillary

				Thyroid Cancer patients from Kerala
11	KrishnaPriya	UJRF	Dr. Baby Chakrapani PS.	The role of gut microbiota in inducing/regulating Neurogenesis in the Enteric Nervous System
12	Sumi J. Menachery	SERB Project Assistant	Dr. Sarita G.Bhat	Impact of gut inflammation on the Neurotransmitter levels in the brain in zebra fish model
13	Vinod S	DST-SERB Project-JRF	Dr. MohananValiyaVeettil	RE-1 Silencing Transcription factor (REST/NRSF) and its role in the development of EBV associated cancers
14	Parvathy Rajesh	DST-INSPIRE	Dr. SaritaG.Bhat	Engineering bacteriophages -their genes or proteins as alternative to antibiotics
15	Nidhi Krishna	UJRF	Dr. AjithVengellur	Design and development of magnetically amplified Theranosticnanoplatform for cancer diagnosis and treatment
16	PoornimaGopi	C SIR-JRF	Dr. MohananValiya Veettil	Molecular Mechanisms of Sodium/hydrogen Exchanger 1 (NHE1)

				regulation in Epstein Barr Virus Associated Cancer
17	Nivedya Mohan	CSIR-JRF	Dr. SaritaG.Bhat	Phage therapy for wound healing
18	MerinJohny	U-JRF	Dr. Unnikrishnan.Sivan	Role of gut microbiome in cancer origin progression and invasion
19	SuharaShebin		Dr. Parvathi.A	Improving the catalytic efficiency of Carbonic Anhydrase enzyme from Industrial wastes for carbon sequestration
20	Anupama Chacko		Dr. Rajesh.P.P	Identification and solation of Pseudomonas sp. Biofilm formed on the anode surface of a microbial fuel cell and its effective utilization in scalable microbial fuel cell
21	Dayamrita.K.K	U-JRF	Dr. Baby Chakrapani	Alterations in Neuroplasticity and Neurogenesis via Antibiotic-Induced Dysbiosis: Analysis of Gut-Microbiota-Brain Axis in Young and aged Mice
22	AkshayaUnnikrishnan		Dr. SnehaYogindran	Understanding the Biology of Cassava Mosaic Disease and enhancing its tolerance in <i>Manihotesculenta</i>

23	Akhila.U		Dr. Rajesh.P.P	Bioelectrogenesis with microbial fuel cells from industrial waste water using Chlamydomonas and bacterial communities and the recovery of heavy metals from waste water using microbial fuel cell
24	Thasny..K.K		Dr. Sreekanth.P.M	Identification and verification of SNP Based Genetic Markers in Mangroves using EST Database and the Development of Genetic Map for the Analysis of different populations
25	Sinoy Johnson		Dr. Sayuj.K.P	Priming for improving Pythium soft rot tolerance in Zingiberofficinale Rose
26	Rishikesh	U-JRF	Dr. Baby Chakrapani. P.S	Effect of antibiotic-induced dysbiosis during pregnancy and its effects on brain neuroplasticity in new borns.
27	Aiswarya.P	U-JRF	Dr. Sreeja Narayanan	Development and evaluation of amicrovesicularimmunostimulatory construct for potential use as an immunotherapy module.

28	TinoThampy		Dr. Bhavya.B.C	Altered glycosylation in Breast cancer cell types: Cell survival, Invasion, Metastasis, Therapy resistance and Recurrence
29	Adheena.P.B	U-JRF	Dr. Sreeja Narayanan	Innate Immune cell based cancer Immunotherapy
30	KiranBosco		Dr. Sarita.G.Bhat	Development of Bacteriophage Cocktail for the Treatment of Burn Wound infection
31	Devika Ravindranath		Dr. Bhavya.B.C	Search for potential markers for the early diagnosis and effective prognosis of pulmonary fibrosis
32	Sisira.V.S		Dr. Sarita.G.Bhat	Role of Probiotics to combact ALD & NAFLD in Zebra fish model.
33	Paul MainaMwangi		Dr. Parvathi.A	Bio-prospecting of bacteria for carbonic anhydrase for CO2 sequestration
34	Hafza.S	CSIR-SRF	Dr. Parvathi.A	Role of Microbes in Biogeochemical cycles in the Eastern Arabian sea – A Molecular Approach
35	Shruthi.P.K	UGC-SRF	Dr. Parvathi.A	Study of viral community structure and Eukaryotic and Prokaryotic Host-

				Viral Interactions in the Eastern Arabian sea
36	Krishnakumar Mohandas	U-JRF	Dr. Baby Chakrapani. P.S	Neurotrophic Factors of the Neurogenic Niches Involved in Brain Plasticity
37	MeeraMenon. T.P	U-JRF	Dr. AnushaAshokan	Metal complexed Alginate Nanoparticles as Adjuvants for Therapeutic cancer vaccines
38	Rahul Rajan	CSIR-JRF	Dr. Baby Chakrapani. P.S	Femtosecond Laser based 3D Printing of Biocompatible Scaffolds and its Application in Tissue Engineering

Administrative Personnel

Sl. No.	Designation	No. of Posts
1	Section Officer	1
2	Assistant	2 (One Regular, One Daily wage)
3	Computer Assistant GR II	1 (Regular)
4	Peon	1 (Regular)

Technical Personnel

- a. Lab attendant -Regular (1 no.)
- b. Technical assistant -Contract (2 nos.)
- c. Professional assistant (Library) -daily wage (1 no.)
- d. Sweeper-cum-cleaner -daily wage (2 nos.)

Student Enrollment (2021-23)

Sl.No.	Programmes of Study	Men	Women	Total
1	M.Sc. Biotechnology	3	12	15
2.	M.Sc. Microbiology	1	14	15
3.	Ph.D.	14	5	19

Research Facility**a. Laboratories (Major equipments available)**

1. PCR unit-Automatic Thermocycler (Applied biosystems) – 1 no.s
2. Gel documentation system (Biorad)
3. HPLC –preparative and analytical (Shimadzu)
4. Carbon dioxide incubators 4nos.
5. Protein gel electrophoretic systems (Amersham Pharmacia)
6. Chromatographic columns (Amersham Pharmacia)
7. Refrigerated Centrifuge (Heraeus)
8. Spectrophotometer (Shimadzu 2)
9. Fermenter 14 litre - Fully automated (Scigenics)
10. Mini jar fermenter (Eyela Inc. Japan)
11. Gamma Counter (ECI)
12. Phase contrast microscope (Nikon, Japan)
13. Inverted Phase Contrast Microscope (Olympus CK 40)
14. Lyophilizer (YamataNeocool, Japan)
15. Electronic balance (Mettler) 2no.s
16. Ice flaker
17. Refrigerated Centrifuge (thermo)
18. Real Time PCR-applied Biosystems)
19. Nanospectrophotometer
20. Cryostat
21. -80°C Deep Freezer (Thermo, Panasonic, Eppendorf)
22. Pulse field gel electrophoresis (PFGE)-BioRAD
23. Level II-Biosafety cabinets
24. Walk –in –cold room
25. Multimode plate reader
26. Fluorescent cell sorter- FACs-
27. Inverted microscope with camera attachments and other accessories.
28. Fluorescent microscope

b. Facilities with major equipments**I. Small Animal facility**

1. Biosafety cabinet
2. -20°C Freezer
3. Ventilated animal cage system
4. Euthanasia chambers
5. Surgery facilities
6. Guillotine
7. Trans cardial perfusion pump

II. Cell culture facility

1. Biosafety cabinet-2 nos.
2. Fluorescent microscope
3. -20°C Freezer
4. Carbon dioxide incubator
5. Automated Cell Counter
6. Refrigerated Centrifuge
7. Water bath
8. Autoclave
9. Liquid Nitrogen storage tanks
10. Hot air oven
11. -20 Deep Freezer (Blue Star)

III. Virology facility

1. BSL-2 BII Biosafety cabinet
2. Carbon dioxide incubator
3. Refrigerated Centrifuge(Sigma)
4. Inverted phase contrast microscope
5. -80°C Ultra Deep Freezer (Thermo)
6. Automatic Autoclave
7. Liquid Nitrogen storage tanks

IV. Zebra fish Facility

1. BSL-2 Biosafety cabinet
2. -20°C Freezer Celfrost
3. Refrigerated Centrifuge-Hermle
4. UV-Vis Spectrophotometer-Schimadzu
5. Zebra fish housing facility
6. Quarantine tanks

7. Inverted microscope
8. Plate reader

V. *Caenorabditiselegans* facility

1. *C.elegans* incubators-3 nos
2. BOD incubator
3. BSL-2Biosafety cabinet
4. Phase contrast microscope

c. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
Books: 2010	12
Journals :1	Nil

Distinguished visitors : NIL

Ph.Ds Awarded

Sl.No.	Topic	Name	Supervisor
1.	Salmonella lytic phages and recombinant endolysin LyspStp1 as antibacterial biocontrol agent	Sritha KS	Dr. Sarita G Bhat
2.	Bacteriophages as arsenal against biofilm forming MDR non-cholera Vibrios and <i>in-silico</i> prediction of endolysins to augment protein engineering	Nandita M	Dr. Sarita G Bhat

Publications

a. Papers

1. Shruthi P, Parvathi A, Pradeep Ram AS, Hafza S, Albin JK, Vignesh ER, Abdul J, Sime-Ngando T. Contrasting Impact of Viral Activity on Prokaryotic Populations in the Coastal and Offshore Regions of the Eastern Arabian Sea. *Diversity*. 2022; 14(3):230.
2. Parvathi, A., C. R. Vishal, N. V. Madhu, P. Anil, P. M. Mohammed Iqbal, P. Gopika, and M. F. Camey. "Bioluminescence of green Noctiluca scintillans from the coastal waters of Kochi (southwest coast of India) and in vivo experiments on bioluminescence in response to mechanical stimuli and its diurnal variations." *Marine Biology Research* 17, no. 7-8 (2021): 554-568
3. SreepriyaPrakasan, ManjushaLekshmi, ParvathiAmmini, Amjad K. Balange, BinayaBhusanNayak, Sanath H. Kumar. Occurrence, pathogroup distribution and virulence genotypes of Escherichia coli from fresh seafood, *Food Control*, (2022). 133.
4. Mukherjee, Susmita, ManjushaLekshmi, ParvathiAmmini, Binaya Bhusan Nayak, and Sanath H. Kumar. "Survival of the blaNDM-harboring Escherichia coli in tropical seawater and conjugative transfer of resistance markers." *Archives of microbiology* 203, no. 7 (2021): 4273-4279.
5. Parvathi, Ammini, Michela Catena, VijayanJasna, Nikhil Phadke, and NikhitaGogate. "Influence of hydrological factors on bacterial community structure in a tropical monsoonal estuary in India." *Environmental Science and Pollution Research* 28, no. 36 (2021): 50579-50592.
6. Vijayan, Jasna, ParvathiAmmini, and Vinod Kumar Nathan. "Diversity pattern of marine culturable heterotrophic bacteria in a region with coexisting upwelling and mud banks in the southeastern Arabian Sea." *Environmental Science and Pollution Research* 29, no. 3 (2022): 3967-3982.
7. Varela, Manuel F., Jerusha Stephen, ManjushaLekshmi, ManishaOjha, Nicholas Wenzel, Leslie M. Sanford, Alberto J. Hernandez, AmminiParvathi, and Sanath H. Kumar. "Bacterial resistance to antimicrobial agents." *Antibiotics* 10, no. 5 (2021): 593.

8. Vishal, C. R., A. Parvathi, P. Anil, P. M. Mohammed Iqbal, K. R. Muraleedharan, S. Abdul Azeez, and Camey M. Furtado. "In situ measurements of bioluminescence response of *Gonyaulax spinifera* to various mechanical stimuli." *Aquatic Ecology* 55, no. 2 (2021): 437-451.
9. Rajesh PP, Christine P, Ghangrekar MM. Optimum dose of *Chaetoceros* for controlling methanogenesis to improve power production of microbial fuel cell. *Water Science and Technology*. 2022 Jan 1;85(1):257-64.
10. Chung, PilJoong, Gajendra P. Singh, Chung-Hao Huang, SayujKoyyappurath, Jun Sung Seo, Hui-Zhu Mao, PiyaarutDiloknawarit, Rajeev J. Ram, RajaniSarojam, and Nam-Hai Chua. "Rapid Detection and Quantification of Plant Innate Immunity Response Using Raman Spectroscopy." *Frontiers in plant science* 12 (2021).
11. Mol, Beena, AnsarEreathBeeran, Prasad S. Jayaram, Prabha Prakash, Ramapurath S. Jayasree, Senoy Thomas, Baby Chakrapani, M. R. Anantharaman, and M. JunaidBushiri. "Radio frequency plasma assisted surface modification of Fe₃O₄ nanoparticles using polyaniline/polypyrrole for bioimaging and magnetic hyperthermia applications." *Journal of Materials Science: Materials in Medicine* 32, no. 9 (2021): 1-14.
12. Krishnapriya, T. K., AyswariaDeepti, P. S. Chakrapani, A. S. Asha, and M. K. Jayaraj. "Eggshell Derived Europium Doped Hydroxyapatite Nanoparticles for Cell Imaging Application." *Journal of Fluorescence* 31, no. 6 (2021): 1927-1936.
13. Park, Sung-Gwan, P. P. Rajesh, Young-UkSim, Dipak A. Jadhav, MdTabishNoori, Dong-Ho Kim, Siham Y. Al-Qaradawi, Euntae Yang, Jae-Kyung Jang, and Kyu-Jung Chae. "Addressing scale-up challenges and enhancement in performance of hydrogen-producing microbial electrolysis cell through electrode modifications." *Energy Reports* 8 (2022): 2726-2746.
14. Vismaya, K. U., T. N. Noorjasmine, S. Syam Das, Lakshmi Kesavan, P. S. Baby Chakrapani, I. M. Krishnakumar, and CV Sreeranjit Kumar. "Natural self-emulsifying reversible hybrid-hydrogel delivery (N'SERH) of tocopherol enhances bioavailability and modulates alcohol-induced reproductive toxicity in rats." *Andrologia* 54, no. 2 (2022): e14305.
15. Syam Das S., Kannan, R., Sanju George, Baby Chakrapani PS, BaluMaliakel, SibiIttiyavirah, and I.M. Krishnakumar. "Thymoquinone-rich black cumin oil

- improves sleep quality, alleviates anxiety/stress on healthy subjects with sleep disturbances—A pilot polysomnography study." *Journal of Herbal Medicine* 32 (2022): 100507.
16. Krishnapriya, Sasikumar, Parameswaran, ManiyammaAswathy, Prakash TripathiPrem, KokkuvayilVasuRadhakrishnan, and PulikkaparambilSasidharan Baby Chakrapani. "Plant derived bioactive compounds and their potential to enhance adult neurogenesis." *Phytomedicine Plus* 2, no. 1 (2022): 100191.
 17. Kunjumon, Renju, GayathriViswanathan, Devi VelayudhanJayasree, PrabathGopalakrishnanBiju, Prabha Prakash, Baby ChakrapaniPulikkaparambilSasidharan, and Sabulal Baby. "Anti-excitotoxicity and neuroprotective action of asiaticoside encapsulated polymeric nanoparticles in pilocarpine rodent seizure model." *Canadian Journal of Chemistry* 99, no. 99 (2022): 1-9.
 18. Gitty, Pooja, Kamal Planthadathil Mani, AyswariaDeepti, PulikkaparambilSasidharan Baby Chakrapani, PunathilPrabeesh, VadakkedathuParameswaran Narayanan Nampoore, and MadananKailasnath. "Structural and optical properties of dysprosium-doped hydroxyapatite nanoparticles and the use as a bioimaging probe in human cells." *Luminescence* (2022).
 19. Devendran R, Kumar M, Ghosh D, Yogindran S, Karim MJ and Chakraborty S "Capsicum-infecting begomoviruses as global pathogens: host–virus interplay, pathogenesis, and management". *Trends in Microbiology* (2021)
 20. Yogindran S, Kumar M, Sahoo L, Sanatombi K, Chakraborty S "Occurrence of Cotton leaf curl Multan virus and associated betasatellites with leaf curl disease of Bhut-Jolokiachillies (*Capsicum chinense*Jacq.) in India" *Molecular Biology Reports* (2021)
 21. Sreekanth P M, Anupama K V. Genetic diversity of mangrove tree species *Avicennia marina* in eco-geographic regions of Kerala coast, Southern India, *Ecological Genetics and Genomics* (2021)
 22. Jessy Simon, Sony Udayan, E.S. Bindiya, Sarita G. Bhat, V.P.N. Nampoore, M. Kailasnath, 2021. Optical characterization and tunable antibacterial properties of gold nanoparticles with common

- proteins, Analytical Biochemistry, Volume 612, 2021, 113975, ISSN 0003-2697, <https://doi.org/10.1016/j.ab.2020.113975>.
23. Johnson OO, Bhat SG, Ayoola GA, Madayath H, Puthusseri SP, Coker H. 2021 Isolated compounds from the roots of *Flabellariapaniculata* Cav. (Malpighiaceae) and their effects on MCF-7 Breast cancer cells. Trop J Nat Prod Res. 2020; 4(12): 1033-1038. <https://doi.org/10.26538/tjnpr/v4i12.2>
24. Rekha Mol Kollakalnaduvil Raghavan, Manzur Ali Pannippara, Sapna Kesav, Abraham Mathew, Sarita G Bhat, Mohamed Hatha AA, Elyas KK, 2021. MFAP9: Characterization of an extracellular thermostable antibacterial peptide from marine fungus with biofilm eradication potential, Journal of Pharmaceutical and Biomedical Analysis, Volume 194, 2021, 113808, ISSN 0731-7085, <https://doi.org/10.1016/j.jpba.2020.113808>.
25. Bindiya Ellathuparambil Saidumohamed, Anitharaj Pottekkat Baburaj, Tina Kollannoor Johny, Unnikrishnan Babukuttan Sheela, Maya Sreeranganathan, Sarita Ganapathy Bhat, 2021. A Magainin-2 like bacteriocin BpSI14 with anticancer action from fish gut *Bacillus safensis* SDG14, Analytical Biochemistry, Volume 627, 2021, 114261, ISSN 0003-2697, <https://doi.org/10.1016/j.ab.2021.114261>
26. Bindiya Ellathuparambil Saidumohamed, Sarita Ganapathy Bhat, 2021. Indian Oil Sardine (*Sardinella longiceps*) gut derived *Bacillus safensis* SDG14 with enhanced probiotic competence for food and feed applications, Food Research International, 2021, Vol.150, 110475, ISSN 0963-9969, <https://doi.org/10.1016/j.foodres.2021.110475>.
27. Harikrishnan M, Saipriya P. P, Prabha Prakash, C. Jayabaskaran, Sarita G. Bhat, 2021. Multi-functional bioactive secondary metabolites derived from endophytic fungi of marine algal origin, Current Research in Microbial Sciences, Volume 2, Dec 2021, 100037, ISSN 2666-5174, <https://doi.org/10.1016/j.crmicr.2021.100037>
28. Tina K.J, Rinu M. P, Sarita G Bhat (2021) A primer on metagenomics and next-generation sequencing in fish gut microbiome research. Aquaculture research. Aquaculture Research. Vol.52, issue10, p 4574-4600. <https://doi.org/10.1111/are.15373>

29. Gopinathan H, Johny TK and Bhat SG (2021) Enhanced CAUTI Risk due to Strong Biofilm Forming MDR Bacteria in Indwelling Urinary Catheters. *Austin J Microbiol.* 2021; 6(1): 1030. [ajm-v6-id1030.pdf](#)
30. RinuMadhuPuthusseri, HarisreeParamel Nair, Tina KollannoorJohny, SaritaGanapathyBhat, 2021. Insights into the response of mangrove sediment microbiomes to heavy metal pollution: Ecological risk assessment and metagenomics perspectives, *Journal of Environmental Management*, Volume 298, 2021, 113492, ISSN 0301-4797, (Aug 2021)<https://doi.org/10.1016/j.jenvman.2021.113492>.
31. Sritha, S.K., Bhat, S.G. In vitro efficiency evaluation of phage cocktail for biocontrol of *Salmonella* spp. in food products. *Arch Microbiol* (2021).<https://doi.org/10.1007/s00203-021-02522-0>
32. Johny, T.K., Puthusseri, R.M. &Bhat, S.G. Metagenomic landscape of taxonomy, metabolic potential and resistome of *Sardinellalongiceps* gut microbiome. *Arch Microbiol* 204, 87 (2022). <https://doi.org/10.1007/s00203-021-02675-y>.
33. R. Chaube, S. Sharma, B. Senthilkumaran, S.G. Bhat, K.P. Joy, 2021 Kisspeptins stimulate the hypothalamus - pituitary - ovarian axis and induce final oocyte maturation and ovulation in female stinging catfish (*Heteropneustesfossilis*): Evidence from in vivo and in vitro studies, *Aquaculture*, Volume 548, Part 2, 2022, 737734, ISSN 0044-8486, <https://doi.org/10.1016/j.aquaculture.2021.737734>

b. Book chapters

1. Saxena S, Yogindran S, Manmohan Arya, Yogita Sharma, Chandra Pal Singh “RNAi-Mediated Control of Lepidopteran Pests of Important Crop Plants” In Moths and Caterpillars (2021), IntechOpen, UK
2. Yogindran S, Chakraborty S “Natural and engineered host resistance for geminivirus management”. In book "Geminivirus: Detection, Diagnosis and Management (2021), Elsevier, USA
3. Malavika M, Yogindran S, SupriyaChakraborty “Transgenic resistance to viral diseases of vegetables” In Genetic Engineering of Vegetable crops (2021) Academic Press, Elsevier, USA
4. Dania Alphonse Jose, Prabha Prakash, P. S. Baby Chakrapani. Containers Based on Polymers in Biomedical Devices/Medical Applications. Micro- and Nano-containers for Smart Applications. 1st Edition. Pages 179-195, Springer, Jan 2022, ISBN: 978-981-16-8146-2.
5. Dania Alphonse Jose, Krishnapriya, P. S. Baby Chakrapani. Containers Based Drug Delivery for Neuroscience. Micro- and Nano-containers for Smart Applications. 1st Edition. Pages 179-195, Springer, Jan 2022, ISBN: 978-981-16-8146-2.

16. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Sl No	Name of Participant	Name of Conference/Workshop/ Symposium etc	Faculty Member/ Student? Specify	Date of event	State/ National / International Seminar? Specify	Role of the participant (Paper Presentation/ Coordinator/ Participation/ Invited Talk etc.)
1	Shruthi P K	Biotechspectrum 2022	Ph.D student	04-09 February, 2022	International	Poster Presentation

2	Adheena P B	International Conference NANOicon-2022	Ph.D Student	11-15 January, 2022	International	Poster Presentation
3	Andrea Joseph	International Conference NANOicon-2022	MSc Intern	11-15 January, 2022	International	Poster Presentation
4	Dr. Rajesh P P	Biotech spectrum 2022	Assistant Professor	04-09 February, 2022	International	Participation/ chair
5	Dr. Sayuj K P	Biotech spectrum 2022	Assistant Professor	04-09 February, 2022	International	Joint Convener/Session Chair
6	Dr. Sayuj K P	Programming for Biologists	Assistant Professor	11 June, 2021	National	Participation
7	Dr. Sayuj K P	Online Induction Program for Newly Recruited Teachers	Assistant Professor	17 March-16 Apr 2021	CUSAT	Participation
8	Dr. Bhavya Balan Chandrika	Biotech spectrum 2022	Assistant Professor	04-09 February, 2022	International	Session Chair
9	Dr. Bhavya Balan Chandrika	Online Induction Program for Newly Recruited Teachers	Assistant Professor	17 March-16 Apr 2021	CUSAT	Participation
10	Dr. Sneha Yogindran	Biotech spectrum 2022	Assistant Professor	04-09 February, 2022	International	Convener
11.	Dr. Sneha Yogindran	International Conference NANOicon-2022	Assistant Professor	11-15 January, 2022	International	Session Chair
12.	Dr. Sneha Yogindran	Hands on workshop on Bioinformatics, Genomics and	Assistant Professor	12-26 Jan 2022	International	Participation

		Ensembl Genome Browser				
13.	Dr. Sneha Yogindran	Online Induction Program for Newly Recruited Teachers	Assistant Professor	17 March-16 Apr 2021	CUSAT	Participation
14.	Dr. Sneha Yogindran	Virtual Workshop and Hands on training on Bioinformatics approaches for Data Analysis and Research	Assistant Professor	12-14 Aug 2021	National	Participation
15	Dr. Unnikrishnan Sivan	Workshop on Advanced Microscopic Techniques	Faculty	06-04-2022	National	Keynote address
16	Dr. Unnikrishnan Sivan	Emerging Trends and Frontiers in Applied Microbiology and Biotechnology	Faculty	10-03-2022	National	Invited Talk
17	Dr. Unnikrishnan Sivan	Biotech spectrum 2022	Faculty	04-09 February, 2022	Internal conference	Session Chair
18	Dr. Unnikrishnan Sivan	Biospectrum 2021	Faculty	15-19, June 2021	Internal conference	Invited Talk
19	Dr. Sreekanth PM	Biotech spectrum 2022	Assistant Professor	04-09 February 2022	International Conference	Joint Convenor/ Session Chair
20	Dr. Sreekanth P M	An insight on Ecosystem Restoration” organized by IQAC Green Initiatives Committee, St. Joseph’s College for Women, Alapuzha	Assistant Professor	05 JUNE 2021	Extension Activity	Resource Person

21	Dr. Sreekanth PM	Online training Programme on the theme Teaching effectively organized by Centre for Academic Leadership and Education Management, at the UGC HRDC, Aligarh Muslim University, Aligarh	Assistant Professor	16-22 Feb 2021	Faculty Development Program	Participation
22	Dr. Sreekanth PM	Online Faculty Development Programme (FDP) on ADVANCES IN BIOINFORMATICS' sponsored by Ministry of Electronics and Information Technology (MeitY), GoI organized by Department of Biotechnology, NITWans E & ICT Academy, NIT Warangal.	Assistant Professor	10-16 May 2021	Faculty Development Program	Participation
23	Dr. Baby Chakrapani P S	Biotech spectrum 2022		04-02-2022 to 09-02-2022	International	Participation, Technical Session Chair
24	Dr. Baby Chakrapani P S	Nanoicon 2022		11.01.2022-15.01.2022	International	Technical session Chair

25	Dr. Baby Chakrapani P S	Indian Association for Cancer Research		2.03.2022-5.03.2022	National	Invited Speaker
26	Dania Alphonse Jose	Biotechspectrum 2022		04-02-2022 to 09-02-2022	International	Oral Presentation
27	Prabha Prakash	Biotechspectrum 2022		04-02-2022 to 09-02-2022	International	Oral Presentation
28	Ayswaria Deepti	International Anatomical Science and Cell Biology Conference		February 2022	International	Oral Presentation
29	Dr. Sarita G Bhat	Biotechspectrum 2022	Assistant Professor	04-09 February, 2022	International	Coordinator
30	Blaze Babu	Skill training of rural youth (STRY) under sub-mission on agricultural extension (SMAE) of national mission on agricultural extension and technology (NMAET) of Ministry of Agricultural and Farmers welfare Government of India.	MSc. Student	18 th March 2022 to 26th March 2022	State	Deputy Director of Agriculture

18. Awards/ Honours/ Fellowships etc. received

Sl No.	Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency/ Institute
	Dr. Sarita G Bhat	UGC-BSR Mid-career award 2020	University Grants Commission, Aug 2020, sanctioned Aug 2021
2	Dr. AnushaAshokan	BIRAC-Tie Winer Women Entrepreneur Award	BIRAC and TiE- Delhi Jan 20-Dec 2021)
3	Dr. Thriпти Raghavendra	DBT-RA	DBT(Jan2020 to Dec 2021)
4	Dr. Jiya Jose	ICMR-RA	ICMR (April 2020 to March 2022)
5	Dr. Sreeja Narayanan	DBT-Wellcome Trust early career fellow	DBT-Wellcome Trust (April 20t March 2025)
6	Dr. Unnikrishnan Sivan	DHR-HRD Non Resident Indian Fellowship	Department of Health Research India (Nov. 2021)
7	Prabha Prakash	Best Paper Award, Biotechpectrum 2022	Department of Biotechnology, CUSAT

Sponsored Research Projects

Sl. No.	Title	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
1	Role of glutamate receptor and associated signaling pathways in Epstein-Barr virus mediated Oncogenesis	Ramalingam Re-entry fellowship (Ongoing)	Rs.88,00,000/-	Dr.Mohanan Valiyaveetil
2	Bioengineered calcium phosphate scaffold for T cell	DST-INSPIRE Faculty	Rs.95,00,000/-	Dr. AnushaAshokan

	mediated immunotherapy of cholangio carcinoma	scheme (Ongoing)		
3	The role of gp130 - associated cytokines in the regulation of adult Neurogenesis-	KSCSTE (Ongoing)	Rs.25,30,000/-	Dr.BabyChakrapani P S and Dr. AjithVengellur
4	Development of Antibacterial Catheters for Preventing Nosocomial Infections from Therapeutically Modulated Natural Rubber Latex Formulation	DBT- BIOCARE (Ongoing)	Rs.54,00,000/-	Dr. Sailaja G. S Dr. Sarita G Bhat Dr. AjithVengellur
6	Search for novel anticancer Secondary metabolite from endophytic fungi of selected marine algae and evaluation of action	DBT Ongoing 2017-2021	Rs.30,732,00/-	Dr. Jayabhaskaran (IISc) Dr. Sarita G. Bhat
7	Repressor element-1 silencing transcription factor (REST) in Epstein-Barr virus (EBV) biology and pathogenesis	DST-SERB Ongoing 2018-2021	Rs.47,53,200/-	Dr. Mohanan V. Veetil Dr. Sarita G. Bhat
8	Exploring the human gut microbiome and metabolome in health and Parkinson's disease -a window to the gut microbiota brain axis alterations in Parkinson's disease	ICMR ongoing	Rs.102 lakhs	Dr. Baby Chakrapani PS (PI), Dr. Sarita G Bhat, Dr. Manoj, CUSAT; Dr. Shyam K (SCTIMST)

<p>9</p>	<p>Target-specific stealth delivery of clusters of inherently immunostimulatory nanogranules incorporating an immunomodulator with chemotherapeutics for improved breast cancer therapy</p>	<p>DBT- Welcome trust ongoing</p>	<p>Rs.1.33 crores</p>	<p>Dr. Sreeja Narayanan</p>
<p>10</p>	<p>Bacterial Diversity of water and soil under the influence of Kochi refinery and its divisions: a metagenomics approach</p>	<p>DBT-RA Project ongoing</p>	<p>Rs.22,48,080/-</p>	<p>Dr. TriptiRaghavendra (PI), Dr. Sarita G. Bhat (Mentor)</p>
<p>11</p>	<p>Fabrication of electrospun collagen and bacteriophage incorporated polymer scaffolds for wound healing applications</p>	<p>ICMR-RA project ongoing</p>	<p>Rs.22,48,080/-</p>	<p>Dr. Jiya Jose Dr. Sarita G. Bhat (Mentor)</p>
<p>12</p>	<p>"Development of bioavailable formulations of phytonutrients with cognitive and memory enhancing properties for the management of neurovegetative conditions and traumatic brain injury"</p>	<p>CUSATECH Foundation (Ongoing)</p>	<p>Rs.50,0000/-</p>	<p>Dr Baby Chakrapani P.S</p>
<p>13</p>	<p>Chancellors Award grant – Title: "Biocompatible</p>	<p>Kerala State Higher</p>	<p>Rs.4 Crore</p>	<p>Dr Baby Chakrapani P.S (Co-PI)</p>

	3D Scaffolding through Femtosecond Laser Photo-polymerization for Tissue Engineering and Regenerative Medicine"	Education Council (Ongoing)		
14	Utilization of Marine Algae Chaetoceros in Microbial Fuel Cell	UGC START UP (sanctioned)	Rs.100,0000	Dr. Rajesh P P
15	Exploring the molecular regulation of antiviral silencing during CMD in Cassava	CUSAT SEED GRANT 2021	RS.2,00,000/-	Dr. SnehaYogindran
16	Whole Genome Resequencing of native true mangrove tree- <i>Avicennia marina</i> in eco-geographic regions of Kerala coast: Implication in conservation	Seed Money for New Research Initiatives, State Plan Grant, CUSAT, Kochi,	Rs.2, 50000/-	Dr. Sreekanth P M
17	Role of neurons in the formation of metastatic and primary tumor micro-niches		RS.78,24,806.00	Dr. Unnikrishnan Sivan and Dr. Baby Chakrapani P.S.
18	Industry funded Research project	AKAY Natural Ingredients Pvt. Ltd. Kerala	Rs.75,00,000.00	Dr. Baby Chakrapani P.S. and Dr. Unnikrishnan Sivan
19	Probiotic modulation of immune response, gut diversity and gut-brain axis in	UGC-FRPS Mid-career award project 2021-24	Rs.10,0000/-	Dr. Sarita G Bhat PI

	inflammatory/stress models of Daniorerio (zebrafish)			
20	Synergistic action of Fucoidan-Alkoxyglycerol complex and their implications in the management of Cognitive dysfunctions	ICMR	Rs.30,00,000.0 0	Dr. PunedathPreetham and Dr. Baby CHakrapani P S

Extension activities conducted

Sl. No.	Title of the Programme	Target Group	Duration		Coordinator
			From :	To:	
1.	UDBODH	Dementia affected	August 2019	16 th October 2022	Dr. Baby Chakrapani P S
2.	Brain Awareness Week	Students and Scientists	March 2021	March 2022	Dr. Baby Chakrapani P S
3.	An Insight on Ecosystem Restoration	Students	5 th June 2021	5 thjune 2021	Dr. Sreekanth P M
4.	Industrial Visit to Agro Inspection Quality control Laboratory (FISSAI)	Food Microbiology Elective students	19th March 2022	19th March 2022	Dr. Parvathi A and Dr. Manjusha S

Research Programmes and Activities:

S. no.	Problem / Topic	Investigator (s)
1	Microbial Genetics-Metagenomics for diversity and function, Horizontal Gene Transfer, Bacteriophage host interactions, bioactive compounds from marine organisms	Dr. Sarita. G. Bhat
2	Molecular Neurobiology (neural stem cells and Neuro degenerative diseases)	Dr. Baby Chakrapani P. S.
3	Molecular cell biology and applied biotechnology	Dr. AjithVengellur
4	Molecular cloning and characterization of Kisspeptin and gonadotropin releasing hormone genes; expressions under different physiological conditions and impacts in fish breeding	Dr. K.P. Joy
5	Virology	Dr. MohananValiyaVeetil
6	Application of nanotechnology for cancer immunotherapy	Dr. AnushaAshokan
7	Population genetics of endangered and threatened tree species, Plant Molecular Biology, Molecular ecology, Speciation genetics, Conservation biology and Barcoding	Dr. Sreekanth PM
8	Nanotechnology based bioinspired and biomimetic constructs for inflammation and cancer	Dr. Sreeja Narayanan
9	Molecular Neuroendocrinology: Molecular changes in Neuroendocrine stress axis and apoptotic signaling pathways in rats exposed to Monosodium glutamate.	Dr. Smita Mathew
10	Inflammation, inflammatory diseases, gut dysfunction and impact of food additives	DR. ChitraPushpam

11	Mangrove sediment Bacteria as a source of Pigments with antibiofilm activity on food pathogens	Dr. Bindiya E.S
12	Development of bioreactors for the treatment of oil-rich waste water from Ayurveda hospitals	Dr.Subha Pillai
13	Bacterial Diversity of water and soil under the influence of Kochi refinery and its divisions: a metagenomics approach	Dr.TriptiRaghavendra
14	Fabrication of electro spun collagen and bacteriophage incorporated polymer scaffolds for wound healing applications	Dr.Jiya Jose
15	Enhancing the Biocatalytic activity of <i>Pseudomonas aeruginosa</i> in microbial fuel cell	Dr. Rajesh P P
16	Cancer neuroscience and in vitro tumor-niche	Dr. Unnikrishnan Sivan

Others

- A. MoUs signed with the following institutions
1. With Amrita Institute of Medical Science and
 2. SreeChitraTirunal Institute for Medical Sciences and Technology (SCTIMST)
 3. TechnischeUniversitätBraunschweig, Braunschweig, Lower Saxony, Germany
- B. Project with private companies: 2
- C. Collaboration
- i. Centre for studies in Advanced Materials-CUSAT
 - ii. Inter University Centre for nanomaterials and devices-CUSAT
 - iii. Department of Polymer science and Rubber technology-CUSAT
 - iv. National Institute for research in Reproduction-Mumbai
 - v. Centre for Nanosciences and Molecular Medicine, Amrita VishwaVidyapeetham, Cochin

- vi. SreeChitraTirunal Institute for Medical Sciences and Technology (SCTIMST)-
Trivandrum
- vii. Pelican ThermogenicsPvt LTD-Cochin

**Seminar/ Conference/ Workshop/ Refresher Courses/other programs conducted by
the Department**

The department conducted an Online International Conference Biotechspectrum 2022
from February 9-14' 2022

Consultancy Work

M/S Pelican Thermogenics Pvt Ltd. Alapuzha Kerala



Department of Chemical Oceanography

ANNUAL REPORT FOR THE YEAR 2021 - 2022

Name of the Department : Department of Chemical Oceanography

Brief History of the Department

The Department of Chemical Oceanography is one of the five departments in the School of Marine Sciences of the Cochin University of Science and Technology. Though the history of the School of Marine Sciences starts in 1938 with the establishment of Oceanographic Laboratory in the erstwhile Travancore University, the Chemical Oceanographic Research was initiated only in the 1970s. The present Department of Chemical Oceanography was established in 1996 during the reorganization of the School of Marine Sciences. The first course in the field, the M.Phil.-Chemical Oceanography, was started in 1983 and later the name changed to M.Phil Marine Chemistry. The department has two postgraduate programmes, M.Sc. Hydrochemistry and M.Phil.-Marine Chemistry; and Ph.D. Programme. The M.Sc. Hydrochemistry is a judicious mixture of Pure and Marine Chemistry subjects, aiming for cutting-edge research in the field. The department offers several interdisciplinary courses like Chemical Oceanography (Theory), General Chemical Oceanography (Practical), Water Management, Atmospheric Chemistry, Instrumental Techniques, Aquatic Chemical Resources, Marine Natural Products, and Geochemistry. The syllabus of these programs is revised in 2020 as per the new outcome-based CBCS guidelines.

The Department of Chemical Oceanography has excellent facilities for training, research, and consultancy in Chemical Studies on diverse aspects of the Environment and has pioneered investigations in many areas of national/international significance. The study conducted by this department on the uptake of metals by aquatic organisms radically transformed pollution monitoring strategies and paved the way for the use of sentinel organisms in pollution monitoring studies all over India. The department also offers analytical facilities for students and researchers of the sister Departments and Universities in a courteous manner.

Programmes of Study/Research

- i. M.Sc. (Hydrochemistry)
- ii. Doctoral Philosophy and
- iii. Post-Doctoral Research

Faculty Members

<i>Sl.No.</i>	<i>Name</i>	<i>Designation</i>	<i>Qualification</i>	<i>Specialization</i>
1	Dr. Shaju S S	Assistant Professor & Head of the Department	M.Sc., Ph.D	Bio GeoChemistry, Bio- optics Ocean Colour Remote Sensing
2	Dr. Habeeb Rahman K	Assistant Professor	M.Sc., Ph.D	Chemical Oceanography Isotope Geochemistry
3	Dr. Jorphin Joseph	Assistant Professor	M.Sc., Ph.D	Membranes for water Purification, Electrochemical energy storage and conversion.
4	Dr. Sreejith S S	Assistant Professor	M.Sc., Ph.D	Coordination chemistry, CO ₂ reduction, DFT studies.
5	Dr. Asha T M	Assistant Professor	M.Sc., Ph.D	Coordination Chemistry Catalysis Biological studies

Emeritus Professor/Scientist (if any)

Sl.No.	Name	Designation	Qualification	Specialization
1	Dr. C.H. Sujatha	BSR - Faculty	M.Sc., Ph.D	Chemical Oceanography, Marine organic chemistry, Pesticides in the aquatic chemistry, Aerosol Chemistry

Visiting Faculty (If any)

Sl.No.	Name	Designation	Qualification	Specialisation
Nil				

Research/Project Staff

Sl.No.	Name	Designation	Qualification	Specialisation
1	Dr. Manju Mary Joseph	PDF	M.Sc. Ph.D	Marine Chemistry
2	Dr. Ragi A S	PDF	M.Sc. Ph.D	Marine Chemistry
3	Dr. Emilda Rosmine	PDF	M.Sc. Ph.D	Marine Chemistry
4	Dr. Martin G D	CSIR Senior Research Associate	M.Sc. Ph.D	Aquatic Pollution

Research Scholars

Sl. No.	Name	Funding Agency	Guide	Area of Work
1	Anu Susan Cheriyan	MANF	Dr. N. Chandramohanakumar	
2	Arsha Krishnan	E Grantz	Dr. C.H. Sujatha	
3	Bindu B Nayar	Part – Time	Dr. N. Chandramohanakumar	
4	Dibu Divakaran	-	Dr. C.H. Sujatha	
5	Divya K R	-	Dr. N. Chandramohanakumar	
6	Jacob Joshua	USRF	Dr. C. H. Sujatha	
7	Moushmi K S	RGNF	Dr. N. Chandramohanakumar	
8	Nisari A R	DST	Dr. C. H. Sujatha	
9	Jyoti Varier	DST Project	Dr. C H Sujatha	
10	Anjana K R	UJRF	Dr. Habeeb Rahman K	
11	Anju Suresh	E Grantz	Dr. Habeeb Rahman K	
12	Vishnuja S	UJRF	Dr. Habeeb Rahman K	
13	Megha Lovejan	E Grantz	Dr. Sujatha C H	
14	Manu Mohan	Part - Time	Dr. S Muraleedharan Nair	
15	Renjith P K	Part – Time	Dr. N. Chandramohanakumar	
16	Shameem K	Part-Time	Dr. S. Muraleedharan Nair	
17	Navya K N	- USRF upto 03-10-2021 - (Part Time onwards 04-10-21)	Dr. C H Sujatha	

Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer	1
2	Assistant Section Officer	1
4	Computer Assistant	1
5	Lab Attendant	1
6	Office Attendant	1

Technical Personnel

Sl.No.	Designation	No. of Posts
1	Technical Assistant Gr. III (<i>on contract</i>)	1

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1	M.Sc (Hydrochemistry)	4	11	15
2	Ph.D.	-	1	1

Research Facilities**e. Laboratories**

Major Scientific Equipments in the Department of Chemical Oceanography, CUSAT
Instruments
Rotary Evaporators
Atomic Absorption Spectrophotometer
GC Auto system XL
Flame Photometer
<i>Deep Freezer X 3nos</i>
HPLC
Milli-Q system
Spectrophotometer(UV-VIS)

GC
Electronic Balance
ICP OES
Ultra Pure Water System
Accelerated Solvent Extraction System Ion Chromatography

f. Library

No of books and Journals as on 31st March of the Previous Year	Additions during the current year
(Centralized library at Marine Science Campus)	

Distinguished visitors: Nil

Ph.D.s Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	“ Genesis and Validation of Aerosol Surveillance for Air Quality Assessment in the Prevailing hotspots of India ”	Jacob Joshua	Dr. C H Sujatha, BSR Faculty

Publications

a. Papers

Sl.No.	Title of Paper	Impact Factor, if any
1	Mathew, D., Gireeshkumar, T. R., Udayakrishnan, P. B., Shameem, K., Nayana, P. M., Deepulal, P. M., ... & Balachandran, K. K. (2022). Geochemical speciation of iron under nearshore hypoxia: A case study of Alappuzha mud banks, southwest coast of India. <i>Continental Shelf Research</i> , 238, 104686.	2.629

2	Moushmi, K. S., Cheriyan, A. S., Cheriyan, E., Mohan, M., & Chandramohanakumar, N. (2022). Trace metal distribution and ecological risk assessment in the core sediments of a highly urbanized tropical mangrove ecosystem, Southwest coast of India. <i>Marine pollution bulletin</i> , 175, 113163.	7.001
3	Moushmi, K. S., Cheriyan, A. S., Cheriyan, E., & Chandramohanakumar, N. (2022). Iron and phosphorus geochemistry in the core sediments of an urbanized mangrove ecosystem, Southwest coast of India. <i>Marine Pollution Bulletin</i> , 178, 113636.	7.001
4	Cheriyan, A. S., Moushmi, K. S., Cheriyan, E., Baby, L., & Chandramohanakumar, N. (2022). Sources and degradation of organic matter and its relation to trophic status in the core sediments of a tropical mangrove ecosystem along the Southwest coast of India. <i>Marine Chemistry</i> , 104137.	3.994
5	Nisari, A. R., & Sujatha, C. H. (2021). Assessment of trace metal contamination in the Kol wetland, a Ramsar site, Southwest coast of India. <i>Regional Studies in Marine Science</i> , 47, 101953.	2.166
6	Deepthi, K., Renjith, P. K., Shameem, K., Habeeb Rahman, K., & Chandramohanakumar, N. (2022). Phytochemical screening of leaves and flower extracts of <i>Sesbania grandiflora</i> (L.) Pers. and its antimicrobial activity against fish pathogens. <i>Vegetos</i> , 1-8.	
7	Sudheesh, V., Gupta, G. V. M., Reddy, Y., Bepari, K. F., Chari, N. V. H. K., Sherin, C. K., Shaju S S., ... & Vijayan, A. K. (2022). Oxygen minimum zone along the eastern Arabian Sea: Intra-annual variation and dynamics based on ship-borne studies. <i>Progress in Oceanography</i> , 201, 102742.	4.416
8	“In vitro and in silico Anticancer Activities of Sterols Isolated from Indian Green Mussel <i>Perna viridis</i> ” Divya K.R , Midhun T.R, Byju K, Divya G.,Ratheeshkumar CS and NC Kumar the Journal of Aquatic Biology & Fisheries, Volume 12 (2022).	Nil

9	Princy M John, Vishnu Murali, Kunal Chakraborty, Aneesh Lotlikar, K Shameem, Habeeb Rahman K, Anu Gopinath, 2022, Spatial and seasonal trends of trace metals in the surficial sediments from off kochi - geochemistry and environmental implications, Marine Pollution Bulletin, 182,	5.553
10	Navya, K. N., & Sujatha, C. H. (2022). Removing Deterrents Using Synthesized Hydrogel-Carboxymethyl Cellulose and Tannic Acid. <i>Chemistry Africa</i> , 1-13.	

b. Books: Nil

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
K R Divya Research Scholar	National seminar Molecular DNA identification and Phytochemical Screening Of <i>Justicia Beddomei C.B Clarke (Bennet.)</i> Nagalekshmi.R, Divya K R, R. Bino Kingsley, P. Senthil Kumar. ICAR 2020 Annual Conference	Poster Presentation
Jyoti Varier, Research Scholar	“Writing quality research articles and identifying relevant journals to read and publish in” Conducted by Elsevier on 14 th December 2021	Participant
Jyoti Varier, Research Scholar	“Effective research planning and execution using Scopus and Science Direct.” Conducted by Elsevier on 17 th December 2021	Participant
NISARI A R , Research Scholar,	Online course on nature based solutions for disaster and climate resilience-14 July 2021 UNEP	Participant
NISARI A R , Research Scholar,	“Writing quality research articles and identify relevant journal to read and publish	Participant

	in”-14 December 2021 by CUSAT & Elsevier	
NISARI A R , Research Scholar,	Effective research planning and execution using Scopus and Science direct- 17 December 2021 by CUSAT & Elsevier	Participant
NISARI A R , Research Scholar,	Spring water supply and sustainability in parts of Western Ghat Regions- 28, 29 December 2021 by National Institute of Hydrology, Roorke, Utharakhand	Participant
Dr. Shaju S S	Empowering higher education, Department of Higher Education, Government of Kerala and the Kerala State Higher education Council at IMG, Trivandrum from 28 -29 September 2021	Participant

Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Dr. Habeeb Rahman K	CUSAT	Member Board of Studies, Chemical Oceanography

Awards/ Honors/ Fellowships etc. received: Nil

Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
1	Microbial remediation of contaminated kole wetlands:Substainability for cultivation and agricultural practices	WOS-B Project DST, Govt. of India	Rs.21,47,000.00	Jyoti Varier, Research Scholar
2.	Bio-geochemical facsimile of	SMNRI, CUSAT	Rs.2,25,000.00	Dr. Habeeb Rahman K

	Shasthamkotta fresh water lake			
3.	Studies on the blue carbon and carbon fluxes of Cochin wetland ecosystem and estuary and its contribution to global carbon cycling	SMNRI, CUSAT	RS.2,25,000.00	Dr. shaju S S
4.	Design and optimization of polyimide nanofiltration membranes for desalination and water purification	SMNRI, CUSAT	Rs.3,00,000.00	Dr. Jorphin Joseph

Research Programmes and Activities:

- I. Invited talk 'EXPLORING THE EXPERIENCED: A space for listening to wonderful researchers cum academicians about their Ocean Experience' organised by M.E.S. ASMABI COLLEGE Vemballur P.O. Kodungallur, Thrissur Dist., Kerala, Pin 680671 on 14.09.2021 by Dr. Shaju S S, Assistant Professor.
- II. Invited talk 'Ocean and Global Warming' organized by St. Mary's College, Thrissur 680020 on 22.02.2022 by Dr. Shaju S S, Assistant Professor.
- III. Spatial distribution of micro plastics in the coastal marine environment, off Kochi, Kerala.
- IV. Evaluation of spacial distribution and contamination status of heavy metals in the Cochin Coastal sediment
- V. Particulate organic matter variability in the Arabian sea
- VI. Oxygen minimum zone studies along the eastern Arabian Sea
- VII. Studies on the mangrove ecosystems
- VIII. Studies on the chemical process of Cochin estuaries and pollutants.
- IX. Studies on Kol Wetland of Kerala
- X. Research on pollutant mitigation measurements

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department: Nil

Consultancy Work: Nil



Department of Computer Applications

Brief History of the Department

The Department of Computer Applications is a pioneer department of the Cochin University of Science and Technology, established in the year 1996. Currently, the department offers MCA (Master of Computer Applications), M.Sc Computer Science with Specialization in Soft Computing, M.Sc. Computer Science with Specialization in Data Science, MSc Computer Science with specialization in Artificial Intelligence and Ph.D. in Technology. The department is bestowed with an experienced team of faculty members with an excellent academic track record and proficiency in data science, machine learning, and cybersecurity. The researchers of the department have published more than a hundred research articles in reputed peer-reviewed journals and conferences. Also, the faculty has more than one crore worth of funded projects. Curriculum of the department provides a good theoretical foundation through high-quality teaching and extensive practical training. In addition to regular curriculum the department organizes workshops, technical seminars, Faculty Development Programmes (FDP), Short Term Training Programmes (STTP), and conferences to expose the students, faculty members and researchers with real world problems catering to industrial and societal needs.

Programmes of Study/Research:

- MCA
- M.Sc Computer Science with specialisation in Soft Computing
- M.Sc Computer Science with specialization in Data Science
- M Sc Computer Science with specialization in Artificial Intelligence
- Ph.D (Technology)
- Ph.D (Science)

Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr. Sabu M. K.	Professor & Head	M.C.A Ph.D.	Data Mining Rough Set Theory Artificial Intelligence

2	Dr. A. Sreekumar	Professor	MSc MTech Ph.D.	Compiler Design Number Theory Cryptography
3	Dr. Judy M. V.	Professor	M.C.A MPhil Ph.D.	Big Data Analytics Data Mining Soft Computing Computational Biology
4	Dr. Vinod P.	Professor	BTech MTech Ph.D.	Information Security, Cryptography, Deep Learning
5	Dr. Vishnukumar S.	Associate Professor	BTech MTech Ph.D.	Image Processing, Machine Learning
6	Dr. Rafidha Rehiman K. A.	Assistant Professor	MCA MTech Ph.D.	Cryptography, Network Security, Cyber Forensics
7	Dr. Deepika M. P.	Assistant Professor	B Tech M Tech Ph.D	Information Security Visual Cryptograph Software Engineering
8	Ms. S. Malathi	Assistant Professor	MCA MTech	NLP and Software Engineering
9	Ms. Sruthi S.	Assistant Professor on Contract	B.Tech M.Tech	NLP

Emeritus Professor/Scientist (if any)

Sl. No.	Name	Designation	Qualification	Specialization
1	Dr. M. Jathavedan	Emeritus Professor	MSc Ph.D	Fluid Mechanics
2	Dr. Pramod K. V.	Emeritus Professor	MSc Ph.D	Mathematical Morphology Image Processing Data Mining
3	Dr. B. Kannan	Professor	MSc MTech Ph.D.	Artificial Intelligence Graph Algorithms Language Computing Image Processing

Visiting Faculty (If any)

Sl. No.	Name	Designation	Qualification	Specialization
1	Manikandan A G	Guest Faculty	M.Tech	
2	Merin Paul	Guest Faculty	M.Tech	
3	Hasna Mol P	Guest Faculty	MCA	
4	Sivashankari	Guest Faculty	ME	
5	Archana Krishnan	Guest Faculty	M.Tech	
6	Gayathri Soman	Guest Faculty	M.Tech	
7	Keerthimon P	Guest Faculty	MCA	
8	Rahul Raj	Guest Faculty	M.Tech	
9	Asmitha K A	Guest Faculty	M.Tech	
10	Jiby T C	Guest Faculty	M.Tech	
11	Lakshmi Rajagopal	Guest Faculty	M Tech	
12	AnjalyMuralidharan	Guest Faculty	M Tech	
13	Jeshmol P J	Guest Faculty	M Tech	
14	Reshmi V	Guest Faculty		

Research/Project Staff

Sl.No.	Name	Designation	Qualification	Specialization
1.	Ms. Divyabarathi G.	Project Fellow	M.Sc	Image Processing

Research Scholars

Sl. No	Name	Funding Agency	Guide	Area of Work
1	Bindu J. S.	Nil	Dr. K.V. Pramod	Land Cover problem using Satellite Images
2	Jasir M. P.	Nil	Dr. B. Kannan	Text to Speech Synthesis in Malayalam
3	Malalathi S.	Nil	Dr. B. Kannan	Software Visualization
4	Merin Cheriyan	Nil	Dr. B. Kannan	Grammatical Error Check for Malayalam
5	Parameswaran R.	Nil	Dr. M. Jathavedan	Differential equations related to fluid Mechanics
6	Rajesh Kumar R.	Nil	Dr. K.V. Pramod	Medical Image Processing
7	Sariga Raj	Nil	Dr. Jagathy Raj VP	Enterprise service oriented architecture
8	Soumya S.	Nil	Dr. K.V. Pramod	Sentiment Analysis for Malayalam Language
9	Sreekala K. M.	Nil	Dr. Varghese Paul	Development of a Novel Encryption Technique for the security enhancement of Multimedia using Conic Curves
10	Sukrith B.	Nil	Dr. A Sreekumar	Image Registration
11	Syam Sunder Iyer	Nil	Dr. M. Jathavedan	Fluid Mechanics
12	Vijith T. K.	Nil	Dr. K.V. Pramod	Unified approach for detection of image manipulation using metadata analysis
13	Sruthi S.	UGCSRF	Dr. Binu Paul	Natural Language Processing

14	Ajilisa O. A.	Maulana Azad	Dr. Jagathy Raj V P	Entity resolution in big data Analytics – Comparison of different Algorithms
15	Selin M.	Nil	Dr. Preetha Mathew	Cyber Security
16	Soumya T. V.	UGC-SRF	Dr. Sabu M K	Handling Veracity in Big Data: Various Softcomputing Approaches
17	Haritha K.	UGC-SRF	Dr. Judy M V	Analysis of Underwater Image Processing Techniques
18	Shernas Mol A. A.	Maulana Azad	Dr. Sabu M K	Study on Quality of Life of Cancer Patients in Relation to Treatment Modality Using Fuzzy-Rough Set Theory
19	Ramesh R.	Nil	Dr. Judy M V	Big Data Analytics on Computational Epidemiology
20	K. Kumaresan	Nil	Dr. Sabu M K	Cyber Security Framework for Government Sector
21	Rekha K. S.	Nil	Dr. Sabu M K	Sequence Prediction with Deep Learning using Long Short Term Memory
22	Sruthi K. S.	UGC-SRF	Dr. B Kannan	Cyber Security
23	Sreemol R.	Nil	Dr. Santhosh Kumar Dr. Sreekumar	Biometric Data Security
24	Manoj A. M.	Nil	Dr.Santhosh Kumar	PATTERN MATCHING IN AGRICULTURE DOMAIN
25	Reshma M. R.	E grantz	Dr.B Kannan, Dr.Jagathy Raj V.P	Partial Face Recognition in Unconstrained Environment Using Generative Adversarial Networks
26	Jafseer K. T.	UJRF	Dr. Sreekumar A	Machine Learning"

27	Sabeen Govind P. V.	Nil	Dr. M. V. Judy	Study and Analysis of High capacity data hiding algorithms in Digital Images
28	Baazil P. Thampy	UGC-SRF	Dr. M. V. Judy	Big Data Analytics
29	Bindhu M. G.	Nil	Dr. Sabu M K	A Novel Approach for Dimensionality Reduction using PCA & Feature Ranking
30	Sangeetha Chandran	Nil	Dr. Santhosh Kumar M B Dr. A Sreekumar	Handwriting Analysis Using Image Processing
31	Sowmya M. R.	Nil	Dr. Santhosh Kumar M B Dr. Sooraj K Ambat	Predictive Analytics in Agriculture
32	Divyabharathi G.	Nil	Dr. M.V Judy & Dr. A Sreekumar	Enhancing Under Water Images Using Deep Learning Technics
33	Veena Jose	Nil	Dr.Jagathyraj V P Dr.Sabu M K	Detection and Prevention of Fraudulent Attacks using Deep Learning.
34	Asha J. Vithayathil	UGC-JRF	Dr.A.Sreekumar	Information Security Techniques.
35	Nisha Markose	Nil	Dr.SudheepIlayidom Dr.Sabu M K	Object Detection in Medical Images using Deep Learning Techniques
36	Meharban M. S.	Nil	Dr.Sabu M K Dr. K. Santhanakrishnan	Medical Image Synthesis Using Deep Learning
37	Anju P. Unni	UJRF	Dr.A.Sreekumar	Network Science
38	Aneurin Salim	Nil	Dr. B Kannan Dr. M K Sabu	Security Policies
39	Vivek M. V.	UJRF	Dr.Judy M V	Big Data Analytics

40	Bineetha Vijayan	UJRF	Dr.Judy M V	Big Data Analytics
41	Dhanya L K	Nil	Dr. B. Kannan	Natural Language Processing
42	Dincy R. Arikkat	Nil	Dr. Vinod P Dr. Rafidha Rehiman K A	Cyber Threat Intelligence
43	Gayathri Soman	UJRF	Dr. M V Judy	Machine Learning
44	Jishnu C. R.	NFSC	Dr. Vishnukumar S	Image Processing
45	Asmitha K. A.	UJRF	Dr. Vinod P Dr. Rafidha Rehian K A	Cyber security
46	Sameera K. M.	UJRF	Dr. Vinod P Dr. Rafidha rehiman K A	Cyber Security
47	Jeethu Joseph	Nil	Dr. Judy M V	Artificial Intelligence
48	Reena Mary George	Nil	Dr. Vishnukumar S	Under water Image Enhancement 49
49	Nisa A. K.	Nil	Dr. Vishnukumar S	Image Dehazing
50	Vinod Kumar P. P.	Nil	Dr. M K Sabu	Investigation on different approaches to assess accident probabilities in industries using AI and ML Approches.
51	Greeshma K.	Nil	Dr. Vishnukumar S	Medical Image Processing

Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer	1
2	Assistant Section Officer	1
3	Senior Grade Assistant	2
4	Office Superintendent	1
5	Computer Assistant (Selection Grade)	1
6	Junior Librarian	1
7	Office Attendant	2
8	Sweeper – cum – Cleaner	1

Technical Personnel

Sl.No.	Designation	No. of Posts
1	Programme Assistant	1
2	Technical Officer	1
3	Technician (IV)	1
4	Technical Assistant Gr. II (Electrical)	1

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1	MCA I Year 2021-23	33	30	63
2	MCA II Year 2020-2022	21	40	61
3	MCA III Year 2019-2022	35	36	71
4	M.Sc Computer Science AI I year 2021-23	19	12	31
5	M.Sc Computer Science DS I year 2021-2023	14	12	26
6	M.Sc Computer Science SC II Year 2020-2022	7	13	20
7	M.Sc Computer Science DS II Year	14	10	24

Research Facilities**a. Laboratories****Data Science Research LAB**

Sl. No.	Name of the equipment	Make	Date of Purchase	Working Condition(Y/N)	Quantity
1	Name node	Fujitsu PrimergyRX2540M4	26/12/2018	Y	1
2	Data Node	Fujitsu PrimergyRx2530	30/06/2018	Y	2
3	High Performance computing Systems	Excel	30/04/2018	Y	8
4	NVIDIA A100 GPU SERVER	Intel Xeon Gold	18/2/21	Y	2

Artificial Intelligence Research LAB

Sl. No.	Name of the equipment	Make	Date of Purchase	Working Condition(Y/N)	Quantity
1	High Performance computing Systems	Excel	30/04/2018	Y	2
2	Core i7 Desktop computer	Keltron	26/03/2014	Y	8
3	Apple imac	Apple	20/03/2013	Y	1

4	Core i7 All in one Desktop	Lenovo	06/11/2014	Y	2
5	Two A100 GPU Servers CPU - Intel Xion Gold 6226R16C GPU- 2X TESLA A100	NVIDIA		Y	1

Cyber Intelligence Research LAB

Sl. No.	Name of the equipment	Make	Date of Purchase	Working Condition(Y/N)	Quantity
1	Fred High End Forensic Workstation	Digital Intelligence	30/01/2017	Y	1
2	VPER All-in-one Field Cyber Forensic Kit	Digital Intelligence	30/01/2017	Y	1
3	Write Blockers with Forensic Duplicator	Digital Intelligence	30/01/2017	Y	1
4	Canon SLR 80D	Canon	12/01/2017	Y	1
5	Samsung 55" UA55 LED TV	Samsung	22/02/2017	Y	1
6	Mobile Phone Forensic Tool	UFED	17/03/2018	Y	1

7	FTK 6.1	Digital Intelligence	12/04/2017	Y	1
8	Amped Authenticate	Digital Intelligence	17/02/2017	Y	1
9	Encase Forensics	Digital Intelligence	16/03/2017	Y	1
10	SPB-001 Enterprise Suit	Stellar Information technology	09/05/2016	Y	1
11	SP Mac Data Recovery	Stellar Information technology	09/05/2016	Y	1

Machine Learning Research LAB

Sl. No.	Name of the equipment	Make	Date of Purchase	Working Condition(Y/N)	Quantity
1	High Performance computing Systems	Excel	30/04/2018	Y	1
2	Core i7 All in one Desktop	Lenovo	06/11/2014	Y	6

Student LAB I (MCA)

Sl. No.	Name of the equipment	Make	Date of Purchase	Working Condition (Y/N)	Quantity
1	Core i5 Desktop	Acer		Y	9
2	Core i5 Desktop	Dell optiplex 9020 MT	09/02/2016	Y	2

3	Core i3 Desktop	Dell optiplex 3020MT	24/07/2015	Y	15
4	Core i3 Desktop	HCL Infiniti LA350 PRO	25/05/2012	Y	10
5	Core i7 Desktop computer	Keltron	29/09/2012	Y	4
6	Intel core2duo	Delta Micro computer	28/03/2011	Y	6
7.	DELL 3410/17/10510U/8/1/U BU/14 Laptop	TECHNOLINE SYSTEMS & SERVICES	24/02/2021	Y	1
8	Core i5 Desktop	Hp 280 Pro G6 MT	01/03/2022	Y	20

Student LAB II (MCA)

Sl. No.	Name of the equipment	Make	Date of Purchase	Working Condition(Y/N)	Quantity
1	Core i5 Desktop	Acer Veriton	06/04/2019	Y	8
2	Core i5 Desktop	Dell optiplex 9020 MT	09/02/2016	Y	18
3	Intel pentium All in one Desktop	HP Pro one 400	26/04/2016	Y	8
4	Core i7 Desktop computer	Keltron	26/03/2014	Y	8
5	Short throw LCD Projector	Epson	15/02/2018	Y	1

Student LAB III (MSc DS)

Sl. No.	Name of the equipment	Make	Date of Purchase	Working Condition(Y/N)	Quantity
1	Intel core i7 10700 10th Gen 16 GB RAM DDR 4 512 gbssd 1 tb hdd Windows 10 pro	Lenovo	6/7/2021	Y	30

Student LAB IV (M.Sc AI)

Sl. No.	Name of the equipment	Make	Date of Purchase	Working Condition(Y/N)	Quantity
1	Core i3 Desktop	Excel	12/03/2018	Y	30
2	Intel pentium All in one Desktop	HP Pro one 400	26/04/2016	Y	1

Student LAB V (M.Sc Data Science)

Sl. No.	Name of the equipment	Make	Date of Purchase	Working Condition(Y/N)	Quantity
1	Core i7-10 700 16GB DDR4 RAM 512 SSD 1 TB HDD 19.5 inch Monitor Windows 10 Pro	Lenovo	12/03/2018	Y	30

b. **Major equipments**

c. **Library**

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
Books-6881	104
Journals-10	Nil

d. Others - NIL

Distinguished visitors

Sl.No.	Name	Affiliation	Remarks
1.	Dr. Kumar Rajamani	Senior Scientist, Philips	invited talk on ""Medical Image Segmentation using Deep Learning Approaches (Transformers in Medical Segmentation)"27-04-2022

Ph.Ds Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	Representation Learning From Time-varying Networks and its Application to Temporal Link Prediction	Anuraj Mohan	Dr. K V Pramod
2	An auto didactic algorithm for enhancing the performance of review based recommender systems	ShiniRenjith	Dr. A Sreekumar
3.	Deep neural network based approaches for detecting Tuberculosis Bacilli (TB) from conventional sputum smear microscopic images and the study of the factors influencing the adoption of computerized TB detection system	Rani OommanPanickar	Dr. Sabu M K

4.	Computer Vision based Retinal Image Processing for Glaucoma Detection.	Ajitha S	Dr. Judy M V
5.	Computational Frameworks for Identification of Spatio-Temporal Patterns in Classical Dance using Machine Learning Techniques	Shailesh S	Dr. Judy M V

Publications

a. Papers

Sl.No.	Faculty	Title of the Paper	Impact Factor, if any
1.	Dr. A Sreekumar	An empirical research and comparative analysis of clustering performance for processing categorical numerical data extracts from social medium. S Renjith, A Sreekumar, M Jathavedan	
	Dr. A Sreekumar	Sem Rec-An efficient ensemble recommender with sentiment based clustering for social media text corpus	
	Dr. A Sreekumar	Taxonomy grooming algorithm an autodidactic domain specific dimensions with reduction approach for fast clustering of social media text data.	
2	Dr. B Kannan	A Literature Review of Sentiment Evolution A Unnikrishnan, B Kannan, M Shameem C Proceedings of the International Conference on Systems, Energy & Environment. Conference	
	Dr. B Kannan	Mangalath Ravindran, Sowmya, et al. "An automated machine learning methodology for the improved prediction of reference	

		evapotranspiration using minimal input parameters." <i>Hydrologica Processes</i> 36.5 (2022): e14571	
	Dr. B Kannan	Divya, P. B., et al. "Vulnerability of link-weighted complex networks in central attacks and fallback strategy." <i>Physica A: Statistical Mechanics and its Applications</i> 590 (2022): 126667	
	Dr. B Kannan	Sruthi, S., B. Kannan, and Binu Paul. "Improved Word Sense Determination in Malayalam using Latent Dirichlet Allocation and Semantic Features." <i>ACM TRANSACTIONS ON ASIAN AND LOW-RESOURCE LANGUAGE INFORMATION PROCESSING</i> 21.2 (2022)	
	Dr. B Kannan	jebadas, D. Gnana, et al. "Histogram Distance Metric Learning to Diagnose Breast Cancer using Semantic Analysis and Natural Language Interpretation Methods." <i>Trends and Advancements of Image Processing and Its Applications</i> . Springer, Cham, 2022. 249-259	
	Dr. B Kannan	Unni, Anju P., A. Sreekumar, and Kannan Balakrishnan. "Disease Based Computational Drug Repurposing: A Review." <i>2021 5th International Conference on Information Systems and Computer Networks (ISCON)</i> . IEEE, 2021	
	Dr. B Kannan	Cherian, Merin, and Kannan Balakrishnan. "Evaluating Word Embedding Models for Malayalam." <i>REVISTA GEINTEC-GESTAO INOVACAO E TECNOLOGIAS</i> 11.4 (2021): 3769-3783	
	Dr. B Kannan	Joy, Jestin, Kannan Balakrishnan, and SreerajMadhavankutty. "A Novel Web Based Dictionary Framework for Indian Sign Language." <i>SN Computer Science</i> 2.3 (2021): 1-7	

3.	Dr. Vinod P.	<u>Evaluation of adversarial machine learning tools for securing AI systems</u> , S Asha, P Vinod Cluster Computing 25 (1), 503-522	
	Dr. Vinod P.	<u>A Deep Learning Approach for Classifying Vulnerability Descriptions Using Self Attention Based Neural Network</u> PR Vishnu, P Vinod, SY Yerima Journal of Network and Systems Management 30 (1), 1-27	
	Dr. Vinod P.	<u>Downsampling Attack on Automatic Speaker Authentication System</u> S Asha, P Vinod, VG Menon, A Zemhari 2021 2021 IEEE/ACS 18th International Conference on Computer Systems and Applications (AICCSA). <u>6 A Deep Learning-Based</u> PR Vishnu, B Agarwal, P Vinod, KA Dhanya, A Baroni Securing Social Networks in Cyberspace, 123- 138, CRC Press ISBN 9780367681739	
	Dr. Vinod P.	<u>A Deep Learning-Based Model for an Efficient Hate-Speech Detection in Twitter</u> , PR Vishnu, B Agarwal, P Vinod, KA Dhanya, A Baroni, Securing Social Networks in Cyberspace, 123-138	
	Dr. Vinod P.	<u>Secure Static Content Delivery for CDN Using Blockchain Technology</u> , M Conti, P Vinod, PP Tricomi Data Privacy Management, Cryptocurrencies and Blockchain Technology, 301-309	
	Dr. Vinod P.	<u>Automatic Classification of Vulnerabilities using Deep Learning and Machine Learning Algorithms</u>	

		V Ramesh, S Abraham, P Vinod, I Mohamed, CA Visaggio, S Laudanna 2021 International Joint Conference on Neural Networks (IJCNN), 1-8	
	Dr. Vinod P.	<u>Detection of Malicious Software by Analyzing Distinct Artifacts Using Machine Learning and Deep Learning Algorithms</u> , M Ashik, A Jyothish, S Anandaram, P Vinod, F Mercaldo, F Martinelli, ... Electronics 10 (14), 1694	
	Dr. Vinod P.	<u>Malware visualization and detection using DenseNets</u> V Anandhi, P Vinod, VG Menon Personal and Ubiquitous Computing	
4.	Dr. M V Judy	<u>A Convolution Neural Network Approach to Doppler Spectra Classification of 205 MHz Radar</u> BP Thampy, S Shailesh, MV Judy, A Kottayil Springer Nature 2021	
	Dr. M V Judy	<u>Identification of glaucoma from fundus images using deep learning techniques</u> S Ajitha, JD Akkara, MV Judy Indian Journal of Ophthalmology 69 (10), 2702	1.848
	Dr. M V Judy	Ajitha S and M.V. Judy "A Novel Hybrid Approach To Blaze Out A New Path For Sustainable Results In Glaucoma Detection Using Fundus Images" International journal of World Review of Science, Technology and Sustainable Development(2021), Scopus Q2, Impact Factor:0.78, Inderscience Publishers	
	DrM V Judy	Sabeen Govind and M V Judy, "A Secure Framework for Remote Diagnosis in Health Care: A High Capacity Reversible Data Hiding Technique for Medical Images", Computers & Electrical Engineering, An International Journal, Elsevier, SCI(2021),	3.818

	Dr. M V Judy	Sabeen Govind, M.V. Judy "A block based data hiding technique using convolution neural network " in 2nd International Conference on Innovations in Computational Intelligence and Computer Vision (ICICV-2021), Manipal University, Jaipur, Rajasthan, 05-06 , August 2021	
	Dr. M V Judy	Sabeen Govind, P.V., Varghese, B.M. & Judy, M.V., "A high imperceptible data hiding technique using quorum function",Multimedia Tools and Applications (2021),Springer,Scopus Q1, SCI	
	Dr. M V Judy	Precision-based Weighted Blending Distributed Ensemble Model for Emotion Classification,Algorithms,2022	2.27
	Dr. M V Judy	Understanding dance semantics using spatio-temporal features coupled GRU networks,Entertainment Computing,2022	2.22
5.	Dr .M K Sabu	Segmentation of thyroid nodules from ultrasound images using convolutional neural network architectures	Nil
	Dr. M K Sabu	Automatic Detection of Tuberculosis bacilli from Conventional Sputum Smear Microscopic Images Using Densely Connected Convolutional Networks	Nil
	Dr. M K Sabu	A deep learning approach for stock market predictionusing deep autoencoder and long short-term memory	Nil
6.	Dr. KV Pramod	Soumya S., & Pramod K.V (2022) . Hybrid deep Learning Approach for Sentiment Classification of Malayalam Tweets, International Journal of Advanced Computer Science and Applications (IJACSA), Vo. 13, No.4, 2022, ISSN: 2156-5570	
	Dr. K V Pramod	Paper titled "Sentiment Analysis of Malayalam Tweets- A comparative study of AutoML and Conventional ML Approaches"	

		(Accepted in ICT4SD Conference 2022, Springer- Scopus Indexed).	
	Dr. K V Pramod	Anuraj Mohan, Pramod K V. Temporal Network Embedding using graph attention network. Complex and Intelligent systems, 8, 13-27 (2022)	4.9
	Dr. K V Pramod	Anuraj Mohan, Pramod K V. , Representation Learning for Temporal Networks using Temporal Random Walk and Deep Autoencoder. Discrete Applied Mathematics, Elsevier 2022	1.1

b. Books – NIL

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
PV Sabeen Govind,	A Block-Based Data Hiding Technique Using Convolutional Neural Network, Innovations in Computational Intelligence and Computer Vision . Advances in Intelligent Systems and Computing, vol 1424. Springer, Singapore. ,2022	Present
S Shailesh,	Classification of Sequence Data Using LSTM: An Application on Chaotic Sequences, Modeling, Simulation and Optimization. Smart Innovation, Systems and Technologies, vol 206. Springer, Singapore,2021	Present
PV Sabeen Govind,	A Novel Data Hiding Technique with High Imperceptibility Using a 3-Input Majority Function and an Optimal Pixel Adjustment. Advances in Artificial Intelligence and Data Engineering. Advances in Intelligent Systems and Computing, vol 1133. Springer, Singapore.,2021	Present

Divyabarathi G	A Novel Ensemble Method for Underwater Mines Classification, 3rd International Conference on Innovative Data Communication Technologies and Application (ICIDCA 2021)	Present
Divyabarathi G	Object Classification in Underwater SONAR Images using Transfer Learning Based Ensemble Model, 10th International Conference on Advances in Computing & Communications, ICACC-2021	Present
Divyabarathi G	Three day FDP on "Satellite image analysis and applications using deep learning" organized by MACS, National Institute of Technology, Surathkal from 11 march to 13 march 2022	Participant
Divyabarathi G	Attended 5 Day Online workshop on Big Data Concepts, Tools and Techniques (Hands-on using PySpark) organized by Data Science Research Laboratory, Department of Computer Applications, Cochin university of Science and Technology, during November 29th to 3rd December 2021	Participant
Divyabarathi G	Three-day training workshop on LATEX SOFTWARE, organized by the Institute of Management & Technology, Punnapra, 2021	Participant
Haritha, K	DST Sponsored Five day Workshop on Big Data Concepts, Tools and Techniques during 29-11-2021 to 03-12-2021 conducted by Data Science Research Laboratory, Department of Computer Applications, CUSAT	Resource Person
Haritha K	Five Day Workshop on Data Science Using Python Organized by Rajiv Gandhi National Institute of Youth Development and Cochin University of Science And Technology	Resource Person
Haritha K	Two Day Workshop On Big Data: Hands on Experience at DDUKK CUSAT on 6 & 7 January 2022	Resource Person

Bineetha Vijayan	5 days of online STTP on “ Big Data & Security “, organized by the department of computer science & engineering , college of Engineering karunagappally,2021	Participant
Bineetha Vijayan	2 days of FDP on “Systemizing Research Problem-Finding to Patenting “, organized by the department of computer science & engineering, Rajagiri School of Engineering &Technology,2021	Participant
Bineetha Vijayan	one-day FDP on “ Art of Writing Research Paper & Proposal” organized by the Department of Mechanical Engineering, Christ College of Engineering, Irinjalakuda,2021	Participant
Bineetha Vijayan	Three-day training workshop on LATEX SOFTWARE, organized by the Institute of Management & Technology, Punnapra,2021	Participant
Bineetha Vijayan	One day GOLDEN JUBILEE CELEBRATORY AUTHOR WORKSHOP on “Writing Quality Research Articles & Identifying Relevant Journals to Read and Publish In” at CUSAT,2021	Participant
Bineetha Vijayan	ATAL FDP on "Signal Processing for Cognitive Neuroscience Applications" from 17/01/2022 to 21/01/2022 at National Institute of Technology Meghalaya (Online mode)	Participant
Bineetha Vijayan	Handled hands-on session on “Data Visualization using Matplotlib and Seaborn” on "FIVE DAY ONLINE WORKSHOP ON DATA SCIENCE USING PYTHON" from 07th February to 11th February 2022 organized by RGNIYD & CUSAT.	Resource Person
Bineetha Vijayan	Handled a session on Generative Models in the “One Day Workshop on Generative Models” organized by Saintgits College of Engineering (Autonomous), Kottayam, Kerala on 19/03/2022.	Resource Person
Bineetha Vijayan	AICTE sponsored STTP on "HIGH-PERFORMANCE COMPUTING AND DEEP	Participant

	LEARNING FOR IMAGE AND TEXT ANALYSIS SESSION-2" organized by the Department of Computer Science and Engineering, Mar Baselios College of Engineering and Technology scheduled from 21 March 2022 to 25 March 2022.	
Baazil P Thampy	Presented a paper in the International Symposium on Tropical Meteorology (INTROMET (21) on CHANGING CLIMATE: CONSEQUENCES & CHALLENGES (C4-'21) organized by Indian Meteorological Society, Cochin Chapter and hosted by Cochin University of Science and Technology, Kerala during the period November 23-26, 2021	Participant
Baazil P Thampy	Attended 5 Day Online workshop on Big Data Concepts, Tools and Techniques (Hands-on using PySpark) organized by Data Science Research Laboratory, Department of Computer Applications, Cochin university of Science and Technology, during November 29th to 3rd December 2021	Participant
Baazil P Thampy	Attended 5 Day ATAL Online FDP on Advanced Matlab for scientific Computing from 13/09/2021 to 17/09/2021 at university Polytechnic	Participant
Baazil P Thampy	Attended 5 Day ATAL Online FDP on Applications of Artificial Intelligence on Geospatial Data from 26/07/2021 to 30/07/2021 at Maulana Abul Kalam Azad University of Technology, West Bengal.	Participant
Baazil P Thampy	Attended 5 Day ATAL Online FDP on Medical Image Processing and 3D Applications from 05/07/2021 to 09/07/2021 at University College of Engineering.	Participant
Baazil P Thampy	Attended 5 Day ATAL Online FDP on Data Science in IoT from 21/06/2021 to 25/06/2021 at Kalinga Institute of Industrial Technology.	Participant
Baazil P Thampy	Attended the 5 day online Faculty Development Program on "Exploring Image Processing and Computer Vision using Python" from 01-03-2021 to	Participant

	05-03-2021 organized by Department of Computer Science and Engineering, College of Engineering Kidangoor and Sponsored by TEQIP II.	
Baazil P Thampy	Delivered a lecture for FP on Recent Advancements in Image Processing and Computer Vision-2021 from 17/05/2021 to 21/05/2021 organized by Department of Computer Science and Engineering LBS Institute of Technology for Women, Trivandrum	Resource Person
Vivek M.V.	Attended five days of Online STTP organized by the Department of Computer Science and Engineering, College of Engineering, Karunagappally,2021	Participant
Vivek M.V.	Attended ten days online course on “Programming with python” conducted by ICFOSS Govt. of Kerala,2021	Participant
Vivek M.V.	Ten days online course on “Machine Learning” conducted by ICFOSS Govt. of Kerala,2021	Participant
	three-day workshop on “Research-Oriented Statistical Modeling Using R,2021	
Vivek M.V.	Attended the GOLDEN JUBILEE CELEBRATORY AUTHOR WORKSHOP on “ Writing Quality Research Articles & Identifying Relevant Journals to Read and Publish,2021	Participant
Vivek M.V.	FDP on Computational Intelligence & Bio-inspired Systems” organized by Department of Computer Science & Engineering, Rajagiri School of Engineering & Technology, Kochi, from 24/01/2022 to 29/01/2022.	Participant
Vivek M.V.	AICTE sponsored STTP on "HIGH-PERFORMANCE COMPUTING AND DEEP LEARNING FOR IMAGE AND TEXT ANALYSIS SESSION-2" organized by the Department of Computer Science and Engineering, Mar Baselios	Participant

	College of Engineering and Technology scheduled from 21 March 2022 to 25 March 2022	
Vivek M.V.	Handled a session on Generative Models in the “One Day Workshop on Generative Models” organized by Saintgits College of Engineering (Autonomous), Kottayam, Kerala on 19/03/2022.	Resource Person
Vivek M V	Five Day Workshop on Data Science Using Python Organized by Rajiv Gandhi National Institute of Youth Development and Cochin University of Science And Technology	Resource Person
Vivek M.V.	Two Day Workshop On Big Data: Hands on Experience at DDUKK CUSAT on 6 & 7 January 2022	Resource Person
Jeethu Joseph	DST Sponsored Five day Workshop on Big Data Concepts, Tools and Techniques during 29-11-2021 to 03-12-2021 conducted by Data Science Research Laboratory, Department of Computer Applications, CUSAT	Resource Person
Jeethu Joseph	Five Day Workshop on Data Science Using Python Organized by Rajiv Gandhi National Institute of Youth Development and Cochin University of Science And Technology	Resource Person
Jeethu Joseph	Credit course on Deep Learning for final year CSE students CUSAT	Resource Person
Gayathri Soman	TWO WEEK INTERNATIONAL WINTER SCHOOL ON CYBER SECURITY AND THREAT INTELLIGENCE (ONLINE) as part of Golden Jubilee Celebrations of Cochin University of Science and Technology (CUSAT), organized by Cyber Intelligence Research Laboratory, Department of Computer Applications, CUSAT, from 17 / 01/ 2022 to 28 / 01/ 2022.	Participant

Gayathri Soman	DST Sponsored Five day Workshop on Big Data Concepts, Tools and Techniques during 29-11-2021 to 03-12-2021 conducted by Data Science Research Laboratory, Department of Computer Applications, CUSAT	Participant
Gayathri Soman	Five Day Workshop on Data Science Using Python Organized by Rajiv Gandhi National Institute of Youth Development and Cochin University of Science And Technology	Participant
Asha J Vithayathil	Five-Day National Workshop on “Introduction to Machine Learning Techniques” from 26-03-2021 to 30-03-21 organized by the Department of Computer Applications, CUSAT(online mode).	Participant
Asha J Vithayathil	AICTE sponsored ATAL FDP on “Cyber security oversight for information protection” from 12/07/2021 to 17/07/2021 at CUSAT(Online mode).	Participant
Anju P Unni	Five Day Workshop on Introduction to Machine Learning Techniques Organized by Department of Computer Applications, CUSAT	Participant
	Five day workshop on “Machine Learning applications in Drug Discovery: Basic to Advanced” (MLADDBA-2021) Organized by : Department of Biotechnology, VIGNAN’S Foundation for Science, Technology & Research(Deemed to be University),Vadlamudi, India	Participant
	AICTE sponsored ATAL FDP on “Cyber security oversight for information protection” from 12/07/2021 to 17/07/2021 at CUSAT(Online mode).	Participant
	The paper on “Disease based drug repurposing a review” , was presented at the International conference organized by GLA University, Mathura and IEEE.	Presenter

Dhanya L K	Third International Conference on Advances in Distributed Computing and Machine Learning (ICADCML) organized by NIT WARANGAL	Presenter
Dhanya L K	International Conference on Communication, Control and Information Sciences (ICCISc-2021) Technically co-sponsored by IEEE Kerala Section & IEEE Industry Applications Society, Sponsored under TeQIP II, Organised by Government Engineering College Idukki, Kerala	Presenter
Jafseer K T	3rd International conference on Machine Learning, Image Processing, Network security and Data Science (MIND-2021) held at National Institute of Technology Raipur, India during 11th – 12th December 2021	Presented
Sreemol R	IEEE International Conference on Advances in Computing and Communications - 2021 (ICACC-2021) organized by Rajagiri School of Engineering and Technology (Autonomous), Kochi	Presenter
Sreemol R	International Conference on Artificial Intelligence: Theory & Applications AITA-2021 organized by Dept. of ECE, NIT, Patna	Presenter
Sreemol R	IEEE CIS Summer School on “Emerging Research Trends in Artificial Intelligence and Computational Intelligence” organized by NIT Arunachal Pradesh from 15th November–19th November 2021	Participant
Manoj A.M.	Hadoop Ecosystem tools for Big Data processing. organized by Computer Society of India Cochin Chapter	Presenter
Manoj A.M.	ATAL FDP on "Cyber Security Oversight for Information Protection" organized by the Department	Participant

	of Computer Applications, Cochin University of Science and Technology, 12 – 16 July 2021.	
Manoj A.M.	Two Week International Winter School On Cyber Security And Threat Intelligence - from 17-28, January 2022. Organised by CUSAT, Department of Computer Applications.	Participant
Sowmya M R	International Conference on Artificial Intelligence: Theory & Applications AITA-2021 organized by Dept. of ECE, NIT, Patna	Presenter
Sowmya M R	Online Refresher Course in Data analytics and machine learning conducted by UGC-HRDC, University of Kerala from 23.2.2021 to 8.3.2021	Participant
Rajesh Kumar R	GOLDEN JUBILEE CELEBRATORY AUTHOR WORKSHOP on “ Writing Quality Research Articles & Identifying Relevant Journals to Read and Publish in” at Cochin University of Science And Technology, on 14 December 2021.	Participant
Rajesh Kumar R	7th International Conference on Data Science and Engineering, IIT Patna, 17-18 Dec 2021	Presenter
Ramesh R	DST Sponsored Five day Workshop on Big Data Concepts, Tools and Techniques during 29-11-2021 to 03-12-2021 conducted by Data Science Research Laboratory, Department of Computer Applications, CUSAT	Presenter
	Five Day Workshop on Data Science Using Python Organized by Rajiv Gandhi National Institute of Youth Development and Cochin University of Science And Technology	Presenter
Veena Jose	Training on Technical Writing & Document Preparation using LaTeX organized by A2Z EduLearningHub on 5th & 6th July 2021	Participant
	Webinar on Mathematical Perspective on Data Dimension Reduction & Model Fitting ,on 27th November,2021 ,organized by the Department of	Participant

	Mathematics and Centre for Topology and Applications(CETA), Rajagiri School of Engineering and Technology Applications(CETA), Rajagiri School of Engineering and Technology	
	Two-week International Winter school on Cyber Security and Threat Intelligence during 17-28 January 2022 organized by Cyber Intelligence Research Lab, Department of Computer Applications,CUSAT	Participant
	30 days International Online Workshop on Academic Writing and Communication Skills, Research Methodology, Reference Management, and Academic Publishing conducted from 23 November - 31 December 2021 by National Institute of Physical Medicine And Rehabilitation in association with Mahatma Gandhi University Library Kottayam &, Lore & ED Research Associates	Participant
	webinar on Mathematics in Data Science- Optimization ,on 11th December,2021 organized by the Department of Mathematics and Centre for Topology and Applications(CETA), Rajagiri School of Engineering and Technology	Participant
Meharban M S	FDP on Computational Intelligence & Bio-inspired Systems Conducted by RSET CSE	Participant
	ICACCS,Sreeeshwar college ,Paper presentation “Introduction to medical image synthesis using deep learning”	Presenter
	ICSCCC 2021,May 21-23 ,NIT Jalandar	Participant
Rekha K S	International Conference on Communication, Control and Information Sciences (ICCISc-2021)Technically co-sponsored by IEEE Kerala Section & IEEE Industry Applications Society, Sponsored under TeQIP II,	

	Organised by Government Engineering College Idukki, Kerala	
	AICTE Sponsored six day online STTP on Artificial Intelligence and Applications from 23rd to 28th August 2021 at Marian Engineering College, Trivandrum.	Participant
	FDP on Machine Learning from 18th to 23rd of October 2021 at Sree Buddha College of Engineering, Pattoor.	Participant
	Six day online FDP on Recent Trends in Blockchain Technology organised by Government Engineering College Idukki from 8th to 13th November 2021	Participant
Soumya S	Online FDP on Deep Learning for Natural Language Processing organized by Jaypee Institute of Information Technology, Noida from 28th June to 3rd July 2021.	Participant
Nisha Markose	Hands on workshop on Digital Image Processing and Computer vision (7 th May to 27 th May 2021)organized by ,CALCULAS , EDUPOINT	Participant
	Hand on Workshop on Machine Learning Algorithm (2 nd to 4 th September-2021) organized by,College of Engineering, Attingal	Participant
	FDP on Advanced tool in Software Engineering (18 th to 20 th January 2022),organized by M A college of Engineering , Kothamangalam	Participant
Kumaresan. K	DST Sponsored Five day Workshop on Big Data Concepts, Tools and Techniques during 29-11-2021 to 03-12-2021 conducted by Data Science Research Laboratory, Department of Computer Applications, CUSAT	Participant
	Two-week International Winter school on Cyber Security and Threat Intelligence during 17-01-2022 to 20-01-2022 organized by Cyber Intelligence	Participant

	Research Lab, Department of Computer Applications, CUSAT	
Sruthi K S	3-day Workshop on “GAN Art 2021 - Introduction to Generative Adversarial Networks” during May 20 - 22, 2021 organized by Department of Computer Science & Engineering, NIT Calicut jointly with AI Club, NIT Calicut	Participant
Jishnu C R	Five Day Workshop on Introduction to Machine Learning Techniques Organized by Department of Computer Applications, CUSAT	Participant
Jishnu C R	DST Sponsored Five day Workshop on Big Data Concepts, Tools and Techniques during 29-11-2021 to 03-12-2021 conducted by Data Science Research Laboratory, Department of Computer Applications, CUSAT	Participant

Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Dr. B. Kannan	CSI	Lifetime Member
	Indian Science Congress Association	Lifetime Member
	ACM	Member
	Computer Society of India, Cochin Chapter	Vice-Chairman
Dr. K V Pramod	Indian Science Congress	Member
Dr. Sabu M K	Rough Set Society	Member
Dr. Vinod P.	ACM	Member
Dr. Rafidha Rehiman K A	Board of Studies in DCA	Member
Dr. Judy M V	ACM	Member

Dr. Judy M V	Frontiers in Psychiatry	Co-Editor
Dr. Judy M V	Board of Studies in Engineering (PG), University of Calicut	Member
Dr. Judy M V	Sree Sankara University, Kalady	Technical Committee Member
Dr. Judy M V	Interview Board for Baharathiya Vidya Bhavan	Subject Expert
Dr. Judy M V	AICTE	Expert Visiting Committee Member
Dr. Judy M V	Applied soft computing	Reviewer
Dr. Sabu M K	Marian College, Kuttikkanam	Member, BoS
Dr. Sabu M K	Assumption College, Changanassery	Member, BoS
Dr. Sabu M K	St. Theresa's College, Ernakulam	Member, BoS
Dr. Vishnukumar S	Sreenarayanaguru Open University	Member, BoS
Dr. Vishnukumar S	Fathima Matha National College, Kollam	Member, BoS
Dr. Vishnukumar S	IEEE Computer Society Kerala Chapter	Chair
Dr. Vishnukumar S	Computer Society of India Trivandrum Chapter	Nomination Committee Member
Dr. Vishnukumar S	IEEE	Senior Member
Dr. Vishnukumar S	CSI, ISTE, IE India	Life Member

Awards/Honours/Fellowships etc. received

Name of Recipient	Name of Fellowship / Honour / Award	Awarding Agency
Dr. Vinod P	2020-OPTIMA Organization specific Threat Intelligence Mining and Sharing .Marie Curie Fellowship , Horizon Europe Frame by European Commission	European Commission
Dr. Vinod P	2021- OPTIMA Organization specific Threat Intelligence Mining and Sharing. Marie Curie Fellowship , Horizon Europe Frame by European Commission	European Commission

Sponsored Research Projects

Sl. No.	Title	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
1	Visual enhancement of underwater optical images and accuracy improvement of target detection in SONAR images using empirical mode decomposition techniques	DST	25 Lakhs	Dr. M.V Judy
2	A rough set approach to improve the performance of conventional Non Local means image denoising algorithms	State Plan Grant Govt. of Kerala	4 Lakhs	Dr. M K Sabu
3	A Deep learning-based Malware Detection Framework using Multimodal Features	State Plan Grant Govt. of Kerala	2.5 Lakhs	Dr. Vinod P.

4.	Detection and Analysis of Tuberculosis Bascilli in Sputum Smear Images using Machine Learning Techniques	State Plan GrantGovt. of Kerala	2.5 Lakhs	Dr. Vishnukumar S
5	Automated Framework for Active Ransomware Detection to Detract from Encryption	State Plan GrantGovt. of Kerala	2.5 Lakhs	Dr. Rafidha Rehiman K A
6	Social Media analysis using explainable Artificial Intelligence based techniques for less resourced languages	Govt. of Rajasthan Under taking	7,55,000	Dr. Vinod P.
7.	Cross Lingual knowledge transfer for social media analysis in less resourced language during COVID 19	DST	16,64,640	Dr. Vinod P.

Research Programmes and Activities - NIL

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl. No.	Title	Duration	Coordinator	Funding Agency
1.	AICTE ATALFDP on CyberSecurity Oversight for Information Protection	1 Week	Dr. Vinod P	AICTE
2	IOT Work shop	2 days	Dr. Rafidha Rehiman K A	CUSAT
3	Two Week International Winter School On Cyber Security And Threat Intelligence	2 Week	Dr. Vinod P	

4	FIVE DAY ONLINE WORKSHOP ON DATA SCIENCE USING PYTHON Feb 7 to 11, 2022	5 days	Dr. M.V. Judy	CUSAT
5	DST PURSE II Sponsored 5 day online workshop on Big Data Concepts Tools & Techniques from (From 29th November 2021 to 03rd December 2021)	5 days	Dr. M.V. Judy	CUSAT

Consultancy Work - NIL



Department of Computer Science

Brief History of the Department

The Department of Computer Science came into existence in 1984 with an M.Tech. Programme in Computer and Information Sciences, which was the first in the state of Kerala. In 1986, the Department was identified by the Defense Research and Development Organization for conducting a M.Sc. programme in Computer Software, as a feeder course to the DRDO Laboratories. The department served as a seeding agent for the establishment of the Computer Centre, which was inaugurated by the then Prime Minister in 1990. The department was entrusted with the responsibility of conducting the MCA programme in June 1994, which helped to streamline the course and setting it into the right track. The B.Tech. course started in 1996, was given co-ordinating support by the department in the branch of Computer Science & Engineering/Information Technology. M.Tech. programme in Software Engineering sponsored by UGC was also started in the academic year 2000-2001. M.Tech programme in Computer Science with Specialization in Embedded Systems (Part Time) was started in the year 2011 and is replaced in 2019 with M Tech programme in Computer Science & Engineering-Data Science & Artificial Intelligence(Part Time)started in 2019. Integrated Programme, M.Sc.(Five Year Integrated) in Computer Science (Artificial Intelligence & Data Science) started in 2021.Nomenclature of M Tech Computer&Information Science changed into M Tech programme in Computer Science & Engineering with specialization in Data Science & Artificial Intelligence and M.Tech. Software Engineering changed into M Tech programme in Computer Science & Engineering with specialization in Software Engineering with effect from 2021. Ph.D. programme in the areas of Artificial Intelligence, Networking, Information Systems Engineering, Software Engineering, Bioinformatics etc. are being pursued.

The department has so far received grants to the tune of Rs. 10 crore from various national agencies. The INFOCUS project with support from the Netherlands Government and collaboration of the Delft University of Technology was piloted by the department.

The campus Intranet, the CUSAT website, the campus intercom system were all initiated and commissioned by the department. The Centre for Information Resource Management was proposed and nurtured by the department.

The department provides technical expertise and support to various Government/Quasi-government bodies.

Programmes of Study/Research

1. M.Tech Computer Science and Engineering with specialization in Data Science&Artificial Intelligence (2021 onwards) - M.Tech. Computer and Information Science(Old Name)
2. M.Tech Computer Science and Engineering with specialization in Software Engineering(2021 onwards) - M.Tech. Software Engineering(Old Name)
3. M.Tech Computer Science and Engineering with specialization in Data Science&Artificial Intelligence (Part Time)
4. M.Sc. (Five Year Integrated) in Computer Science (Artificial Intelligence & Data Science)
5. Ph. D

Faculty Members

Sl. No.	Name	Designation	Qualification	Specialisation
1	Dr. Philip Samuel	Professor	MTech, Ph.D	Artificial Intelligence, Big Data Computing, Software Engineering
2	Dr. G. Santhosh Kumar	Professor	M.Tech, Ph.D	Cyber Physical Systems, Computer Vision
3	Dr. Madhu S. Nair	Professor	M.Tech, Ph.D	Image & Video Analysis
4	Mr. K. B. Muralidharan	Assistant Professor	M.Tech	Distributed & Parallel Systems
5	Dr. Jereesh A. S	Assistant Professor	M.Tech, Ph.D	Algorithms, Bio-Informatics
6	Dr Bijoy A. Jose	Associate Professor	M.Sc, Ph.D	Cyber Physical Systems, Internet of Things, AI and Computer Vision
7	Dr Jidesh P.	Associate Professor	M.Tech, Ph.D	Image Processing, Computer Vision, Machine Learning
8	Dr. Shailesh S.	Assistant Professor	M.Tech, Ph.D	Culture&Heritage Computing,AI/ML/DL/CV, Quantum Computing

Emiritus Professors/Scientist (if any): NIL

Visiting Faculty (if any): NIL

Research Staff: NIL

Research Scholars (Full Time & Part-time)

Sl. No.	Name	Guide	Area of Work
1	Manju.K	Dr. David Peter	Natural Language Processing
2	Jyothi John	Dr. David Peter	Distributed Computing
3	Jayasree.K (F.T)	Dr.Sumam Mary Idicula	Video Classification and Retrieval using Multimodal Analysis
4	Pramod Pavithran	Dr.Sheena Mathew	Network Security and Cryptography
5	Anil.C.B	Dr.Sheena Mathew	Localization, Object Tracking and Time Synchronization in Wireless Sensor Network
6	Jayaprabha.P	Dr. K. Poullose Jacob	Computer Generated Holograms and its applications
7	Brighty Jose	Dr. M.D Baby	Re Engineering Public Library System in Kerala
8	Shimmi Asokan	Dr.G Santhosh Kumar	Formal Specification and Verification of Software System
9	Sonia Abraham	Dr. Rekha K James	Investigations on Data Mining and its applications in novel platforms
10	Kochaleema K H	Dr.G Santhosh Kumar	Modeling and Verification of Embedded Systems
11	Binu.A	Dr.G Santhosh Kumar	Energy-Aware incremental compilation techniques for Mobile Processor
12	K.B Muralidharan	Dr.G Santhosh Kumar	Low-Latency Processing of Event Streams

13	Suresh Kumar.N	Dr.G Santhosh Kumar	Communication Protocol framework for cyber physical systems
14	Muhammed Anees V (P.T)	Dr.G Santhosh Kumar	Real time analysis of surveillance video and detection of abnormalities in high density crowds
15	Anu Maria Sebastian	Dr. David Peter	Intelligent Agent for Data Protection in the Cloud based on Data Classification
16	Malu S Nair	Dr.Sumam Mary idicula	Summarization of Malayalam Text to Indian Sign Language Structure.
17	Sara Renjit	Dr.Sumam Mary idicula	Application of Information Retrieval Methods and Similarity Identification Methods in Document Search
18	Sindhya K Nambiar	Dr. David Peter	Simulation Optimization
19	Sameer Mohammed Thahir	Dr Jereesh A S,Dr Santhosh Kumar G	Model Prediction Control for Evolving Cyber Physical Systems
20	Josna V R	Dr Rekha K James	Performace Optimization in Multicore Interconnection.
21	Jisha Augustine	Dr Jereesh A S	Networks Analysis in Systems Biology
22	Bijumon V G	Dr Jereesh A S	Datascience Modelling,Visualization and Analysis
23	Sreedeepta H S	Dr David Peter S,Dr Sumam Mary Idicula	Machine Translation
24	Vineetha K V	Dr Philip Samuel	Artificial Intelligence for Software Engineering
25	Sheena K S	Dr Madhu S Nair	An Investigation into Genomic Data Analysis And Compression
26	Unnikrishnan P	Dr Madhu S Nair	Design And Analysis of Multi Tempored Satellite Images Change Detection Techniques

27	Aparna R	Dr Sumam Mary Idicula	An Enhanced Spatio-Temporal Clustering method for Accurate Traffic Flow prediction
28	Emma Paul	Dr Jereesh A S, Dr Santhosh Kumar G	Analysis of Network Data in Biology and Medicine
29	Lijin P	Dr Madhu S Nair, Dr Santhosh Kumar G	Polyp Detection with Convolutional Neural Networks in Colonoscopy Images.
30	Suji Jose	Dr Philip Samuel, Dr Sumam Mary Idicula	Data Analytics for Product Enhancement.
31	Francis Antony	Dr Santhosh Kumar G	Optimizing Techniques for Routing Packets in WSN.
32	Anjali A	Dr Philip Samuel, Dr Sumam Mary Idicula	Artificial Intelligence for Testing of Software
33	Richu Norman	Dr Bijoy A Jose	Internet of Things
34	Keerthy A S Pillai	Dr Madhu S Nair	Computer Aided model for Detection & Rupture Risk Estimation of Cerebral Aneurysm Using Machine Learning Techniques.
35	Hafsath C A	Dr Jereesh A S	Modelling of Biological Systems using Data Science Techniques
36	Preena K P	Dr Madhu S Nair	Computer Aided Detection of Cerebral Aneurysm for medical images.

Administrative Personnel

Sl. No.	Designation	No. of posts
1	Section Officer	1
2	Assistant	2
3	Office Superintendent (Typist)	1
4	Office Attendant	1
5	Sweeper/Cleaner	1

Technical Personnel

Sl. No.	Designation	No. of posts
1	Tech. Officer Gr. I	1
2	Tech. Asst. Gr. III	2 (1 Vacant)
3	Junior Librarian	1

Students Enrollment

Sl. No.	Programme of Study	Men	Women	Total
1	M.Tech. Degree in Computer Science and Engineering with specialization in Data Science&Artificial Intelligence 2021-23 batch	7	9	16
2	M.Tech. Degree in Computer Science and Engineering with specialization in Software Engineering 2021-23 batch	3	13	16
3	M.Tech Computer Science and Engineering with specialization in Data Science&Artificial Intelligence (Part Time) 2021-24 batch	7	5	12
4	M.Sc. (Five Year Integrated) in Computer Science (Artificial Intelligence & Data Science) 2021-26 batch	9	11	20
5	Ph. D 2021	0	4	4

Research Facility

a. Laboratory

The research laboratories have been developed/augmented using the 2007 MHRD grant.

Cyber Physical Systems Lab/ Artificial Intelligence & Computer Vision Lab

Hardware Facilities

- Fujitsu workstations Quad Core Xeon E3-1240 Quad Core Xeon E5-1600
- Thinkstation P 900 Intel Xeon E5-2620 2.1 Ghz 4GB DDR3 Memory 1TB SATA HDD
- Thinkcentre Core i5 processor, 4 GB DDR3 RAM, 500 GB HDD, 1 TB SATA HDD

Software Facilities

- Montavista Linux
- Asterix IP PBX (to be acquired)
- NS2 Simulation Software
- Matlab R2006a
- Opensource JAVA/SIP environment
- Service Delivery Platform (to be acquired)
- SDK for Windows/Linux Smart Phones (to be acquired)
- Network Simulator software: QualNet
- Live Projects
- Mobility Modeling of Adhoc Networks
- Service Oriented Architecture for WSNs

Bioinformatics Lab/ Artificial Intelligence & Software Engineering Lab

Hardware Facilities

- PC /104 based development platform:
Popular standardized small form-factor platform for small computing applications.
- NI's PXI Controller:
Compact PCI system for modular instrumentation and data acquisition application
- PowerQuicc II Reference Design:
Compact PCI Card for evaluating and prototyping designs
- Mica Motes:
An out-of-the-box wireless sensor network module for rapid prototyping, applicati development and deployments
- IBM System x3400:
Dual-Core Dual Intel Xeon based server system
- Fujitsu workstations:
Quad Core Xeon E3-1240
Quad Core Xeon E5-1600

Software Facilities

- RTLinux : Operating System for Real-Time / Embedded applications
- VxWorks : Real-Time operating system with Tornado IDE
- LabView : A visual design tool for measurement analysis & signal processing
- TinyOS : Development platform for tiny devices

Quantum Computing Lab/ Artificial Intelligence & NLP Lab

Hardware Facilities

- IBM X Series Servers
- IBM Thinkpad Laptops with wireless connectivity
- WiFi Access Points
- GSM Modem
- GSM/GPRS & CDMA simulation infrastructure
- Programmable Mobile Phones
- Lenova Thinkstation P900 w/s

Software Facilities

- Montavista Linux
- Asterix IP PBX
- NS2 Simulation Software
- Matlab R2006a
- Opensource JAVA/SIP environment
- Service Delivery Platform
- SDK for Windows/Linux Smart Phones
- Network Simulator software : QualNet

Software Engineering Laboratory (SEL)

Hardware Facilities

Desktops on Intel Core 3 Processors

Software Facilities

- Microsoft Visual Studio .NET with MSDN

An integrated development environment (IDE) for developing web applications, web services, desktop applications, and mobile applications.

- NetBeans (freeware)

Linux based integrated tool for software development and associated documentation (UML diagrams).

- Matlab version 7.0

Library of signal and image processing routines.

- Open CV (Computer Vision)

Intel's open computer vision library for solving various computer vision problems.

Computing Lab

This well equipped general-purpose Computing lab meets the curricular requirements of the M.Tech programmes.

Hardware Facilities

- Fujitsu Celsius Workstation Intel Xeon (10 Core, 3.30GHz)

- 64GB DDR4/NVIDIA Quadro P2000 5GB/2TB SATA
- LENOVO THINK CENTRE CORE i5 4GB/500GB
- Core i7/Intel Mother Board/4GB DDR3/1TB SATA/Graphics GPU with 1GB DDR3 on board (3nos)
- Dell Workstation Precision T 1600 Xeron 3.30 GHZ/8GB DDR3/500GB SDRAM/1TB 500 SATA/1GB NividaGraphics Card (11nos)
- Intel Core i3 550/4GB DDR3/500 GB SATA
- Acer Veriton M4660G VM4660G-I3810H1

Software Facilities

- Ptolemy Modelling and simulation of cyber physical system
- Matlab

b. Library

No. of books/journals as on 31 st March of the previous year		Additions during the current Year	
Books	6604	Books	78
Journals	nil	Journals	nil

c. Others

24 hour 100Mbps internet connectivity and uninterrupted power supply for computing.

Distinguished Visitors

Sl.No.	Name	Affiliation	Remarks
1	Dr.Gopu R Potty	University of Rhode Island,USA	Inter National Expert Talk on 07/12/2021

Ph.D. Awarded

Sl. No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	Computational Drug Repurposing through the Target MicroRNAs: An Integrated Approach	Deepthi K.	Dr. Jereesh A. S.
2	An Improved Phrase-Based English-Malayalam Machine Translation System Using Refined Bilingual Alignments	Mary Priya Sebastian	Dr. G. Santhosh Kumar
3	Learning Concept Drift and Recurrence from Data Streams: A Clustering Approach	Namitha K.	Dr. G. Santhosh Kumar
4	Software Design Consistency Checking of UML Models using Artificial Intelligence Techniques	Renu George	Dr. Philip Samuel
5	Design and Development of a Framework for Visual Attention based Automatic Image Description Generation with Game-theoretic Optimization	Sreela S. R.	Dr. Sumam Mary Idicula

Publications**a) Papers**

Sl. No.	Name	Title of the Paper	Impact Factor, if any
1.	Prof. (Dr.) Madhu S. Nair	“Adaptive Importance Sampling Unscented Kalman Filter with Kernel Regression for SAR Image Super-Resolution”, IEEE Geoscience and Remote Sensing Letters, Vol.19, Article No.4004305, 2022.	3.966

2.	Prof. (Dr.) Madhu S. Nair	"An Empirical Study of the Impact of Masks on Face Recognition", Pattern Recognition, Elsevier, Vol.122, Article No.108308, February 2022.	7.740
3.	Prof. (Dr.) Madhu S. Nair	"A Computer-Aided Diagnosis System for the Classification of COVID-19 and non-COVID-19 Pneumonia on Chest X-ray Images by Integrating CNN with Sparse Autoencoder and Feed Forward Neural Network", Computers in Biology and Medicine, Elsevier, Vol.141, Article No.105134, February 2022.	4.589
4.	Prof. (Dr.) Madhu S. Nair	"Computer-Aided Detection of COVID-19 from CT Scans using an Ensemble of CNNs and KSVM Classifier", Signal, Image and Video Processing, Springer, Vol.16, No.3, pp.587–594, April 2022.	2.157
5.	Prof. (Dr.) Madhu S. Nair	"NAS-SGAN: A Semi-supervised Generative Adversarial Network Model for Atypia Scoring of Breast Cancer Histopathological Images", IEEE Journal of Biomedical and Health Informatics, Vol.26, No.5, pp.2276-2287, May 2022.	5.772
6.	Prof. (Dr.) Madhu S. Nair	"DRG-NET: A Graph Neural Network for Computer-Aided Grading of Diabetic Retinopathy", Signal, Image and Video Processing, Springer. (in press)	2.157
7.	Prof. (Dr.) Madhu S. Nair	"Multi-View Stereo using Cross-View Depth Map Completion and Row-Column Depth Refinement", Thirteenth International Conference on Digital Image Processing - ICDIP 2021 (Singapore), SPIE Proceedings, SPIE Digital Library, Vol.11878, Article No.118781N, June 2021.	
8.	Prof. (Dr.) Madhu S. Nair	"A Novel Twitter Spam Detection Technique by Integrating Inception Network with Attention based LSTM", Fifth International Conference on Trends in Electronics and Informatics - ICOEI 2021	

		(Tirunelveli, India), IEEE, pp.1009-1014, June 2021.	
9.	Prof. (Dr.) Madhu S. Nair	"On the Performance of CNN and GAN models for Melanoma Classification", Second International Conference on Artificial Intelligence and Signal Processing - AISP 2022 (India), IEEE, pp.1-6, February 2022.	
10	Dr. Jereesh A. S.	A deep learning ensemble approach to prioritize antiviral drugs against novel coronavirus SARS-CoV-2 for COVID-19 drug repurposing, Applied Soft Computing, Volume 113, Part B, 2021,107945, ISSN 1568-4946, https://doi.org/10.1016/j.asoc.2021.107945 .	6.725
11	Dr. Jereesh A. S.	"An Ensemble Approach Based on Multi-Source Information to Predict Drug-MiRNA Associations via Convolutional Neural Networks," in <i>IEEE Access</i> , vol. 9, pp. 38331-38341, 2021, doi: 10.1109/ACCESS.2021.3063885.	3.367
12	Dr. Jereesh A. S.	Blood-based gene-expression biomarkers identification for the non-invasive diagnosis of Parkinson's disease using two-layer hybrid feature selection, <i>Gene</i> , Volume 823, 2022, 146366, ISSN 0378-1119, https://doi.org/10.1016/j.gene.2022.146366 .	3.688
13	Dr. Jereesh A. S.	Blood-Based DNA Methylation Marker Identification for Parkinson's Disease Prediction. In: Khanna, A., Gupta, D., Bhattacharyya, S., Hassanien, A.E., Anand, S., Jaiswal, A. (eds) International Conference on Innovative Computing and Communications. Advances in Intelligent Systems and Computing, vol 1388. Springer, Singapore. https://doi.org/10.1007/978-981-16-2597-8_67	

14	Dr. Santhosh Kumar G	Anees, Muhammed, and Santhosh G. Kumar. "Abnormal Crowd Behaviour Detection Using Parallel Deep Neural Networks." JOURNAL OF INFORMATION SCIENCE AND ENGINEERING 37.2 (2021): 337-346.	0.64
15	Dr. Santhosh Kumar G	Kochaleema, K. H.; Kumar, G. Santhosh "Generic Methodology for Formal Verification of UML Models", Defence Science Journal . 2022, Vol. 72 Issue 1, p40-48. 9p	0.730
16	Dr. Santhosh Kumar G	Muhammed Anees, V. and Santhosh Kumar, G. 'Identification of Crowd Behaviour Patterns Using Stability Analysis'. 1 Jan. 2022 : 2829 – 2843.	1.739
17	Dr. Bijoy A Jose	E Jose, AJ Chemmanam, BA Jose, A Mooppan "Detecting Anomalies in Power Consumption of an Internet of Things Network Using Statistical Techniques, " Springe conference Artificial Intelligence Driven Circuits and Systems pp 153–164, Dec 2021	
18	Dr. Bijoy A Jose	Akhil P and B A Jose, "A Profiling Based Approach To Detect ARP Poisoning Attacks" 2021 International IEEE Conference on Green Energy, Computing and Sustainable Technology (GECOST), Curtin University Malaysia, pp 1-5, July 2021	2021
19	Dr. Jidesh P.	IP Febin, P Jidesh, Despeckling and enhancement of ultrasound images using non-local variational framework, The Visual Computer 38 (4), 1413-1426	2022, SCI
20	Dr. Jidesh P.	A Smitha, IP Febin, P Jidesh, A retinex based non-local total generalized variation framework for OCT image restoration Biomedical Signal Processing and Control 71, 103234	2022, SCI

21	Dr. Jidesh P.	A Smitha, P Jidesh, Detection of retinal disorders from OCT images using generative adversarial networks Multimedia Tools and Applications, 1-23	2022, SCI
22	Dr. Jidesh P.	C Mekoth, S George, P Jidesh, SM Erappa, Finite dimensional realization of fractional Tikhonov regularization method in Hilbert scales Partial Differential Equations in Applied Mathematics 5, 100246	
23	Dr. Jidesh P.	A Smitha, P Jidesh, A nonlocal deep image prior model to restore optical coherence tomographic images from gamma distributed speckle noise, Journal of Modern Optics 68 (18), 1002-1017	2021, SCI
24	Dr. Jidesh P.	S George, IK Argyros, P Jidesh, M Mahapatra, M Saeed, Convergence Analysis of a Fifth-Order Iterative Method Using Recurrence Relations and Conditions on the First Derivative Mediterranean Journal of Mathematics 18 (2), 1-12	2021, SCI
25	Dr. Jidesh P.	A Smitha, P Jidesh, Classification of Multiple Retinal Disorders from Enhanced Fundus Images Using Semi-supervised GAN SN Computer Science 3 (1), 1-11	2022
26	Dr. Jidesh P.	C Mekoth, S George, P Jidesh Fractional Tikhonov regularization method in Hilbert scales Applied Mathematics and Computation 392, 125701	SCI, 2022
27	Dr. Philip Samuel	Renu George, Philip Samuel, Fixing Design Inconsistencies of Polymorphic Methods Using Swarm Intelligence, e-Informatica Software Engineering Journal, Volume 15, Issue 1, Pages 7-27, Polish Academy of Sciences and Wrocław, 2021	2021

b. Books

Sl. No.	Name	Title of Book
1	Santhosh Kumar G (co-author)	Deepak, P., Chakraborty, T., Long, C., et al. (2021). Data science for fake news: Surveys and perspectives (Vol. 42). Springer Nature

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Prof. (Dr.) Madhu S. Nair	One-day Workshop on Bringing Research Focus, organized by the IEEE Kochi Subsection, during April 2022.	Invited Speaker
Prof. (Dr.) Madhu S. Nair	One-day workshop for research scholars, organized by the Department of Psychology, University of Calicut, Kozhikode, during February 2022.	Invited Speaker
Prof. (Dr.) Madhu S. Nair	Summer School in Social Science, organized by the UGC-Human Resource Development Centre, Kannur University, Kannur, Kerala, during February 2022.	Invited Speaker
Prof. (Dr.) Madhu S. Nair	Webinar, organized by the Department of Information Technology, Kannur University, Mangattuparamba Campus, Kannur, during September 2021.	Invited Speaker
Prof. (Dr.) Madhu S. Nair	Webinar Series, organized by the AKGCT Centre for Studies and Research (ACSR), Thiruvananthapuram, during September 2021.	Invited Speaker
Prof. (Dr.) Madhu S. Nair	Webinar, organized by the Research Forum, in association with the Internal Quality Assurance Cell (IQAC), Union Christian College, Aluva, Kerala, during June 2021.	Invited Speaker

Prof. (Dr.) Madhu S. Nair	Five Day Faculty Development Programme on Outcome-Based Education and Online Teaching, organized by the Faculty Development Committee, Madras School of Social Work, Chennai, Tamil Nadu, during June 2021.	Invited Speaker
Dr Jereesh A S	Faculty/PDF level online training programme on computational biology and Bioinformatics, Bioinformatics centre, NCAAH, CUSAT, Kerala, Feb 2022	Invited Speaker
Dr Jereesh A S	ARPIT Refresher course of Pedagogical Innovations And Research Methodology (Interdisciplinary) in swayam platform	Participant
Dr. G. Santhosh Kumar	One-day Workshop on Bringing Research Focus, organized by the IEEE Kochi Subsection, during April 2022.	Organizer
Dr. G. Santhosh Kumar	IEEE Mini POCO Workshop 2021, IEEE Kochi Subsection & APJ Abdul Kalam University, Sept 2-4, 2021	Organizer
Dr. G. Santhosh Kumar	2021 International Conference on Data Science & Engineering (ICDSE), IIT Patna, 17th - 18th December, 2021	General Chair
Dr. Bijoy A. Jose	One week Short Term course on Cyber Physical Systems at Kannur University, March 2-7, 2022	Resource Person
Dr. Bijoy A. Jose	Proposing and Executing Humanitarian Projects, Online session for IEEE Bangladesh Section, Nov 6, 2021	Resource person
Dr. Bijoy A. Jose	Robotics Workshop at Govt HSS Kuttamassery, 23 Oct 2021	Resource person
Dr. Bijoy A. Jose	IEEE Region 10 HTA Humanitarian Outreach Camp 1.0	Resource Person

Dr. Jereesh A. S.	Summer School, Data Learning & Knowledge Earning, 2022, NIT Pondy	Resource person
Dr. Jereesh A. S.	FDP on satellite image analysis and applications using deep learning, NITK Surathkal	Resource Person
Dr. Jereesh A. S.	Webinar Organized by Dept. of Information Technology, Kannur University	Resource Person

Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Dr. Santhosh Kumar G.	IEEE Kochi Subsection	Chair
Dr. Bijoy A. Jose	IEEE Kerala Section	Secretary
Dr. Bijoy A. Jose	Council on RFID Kerala Chapter	Chair
Dr. Jidesh P.	Guest Editor of a special issue of J. Imaging	Guest Editor

Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Prof. (Dr.) Madhu S. Nair	Best Paper Award during the Second IEEE International Conference on Artificial Intelligence and Signal Processing - AISP 2022, held at School of Electronics Engineering, VIT-AP University, Amaravati, Andhra Pradesh, February 2022.	VIT-AP University, Amaravati,
Prof. (Dr.) Madhu S. Nair	AICTE Visvesvaraya Best Teacher Award 2021 from All India Council for Technical Education (AICTE), New Delhi, in the year 2021.	AICTE

Prof. (Dr.) Madhu S. Nair	Distinguished Young Faculty Award 2020 from Cochin University of Science and Technology (CUSAT), Kochi, in the year 2021.	CUSAT
Prof. (Dr.) Madhu S. Nair	Kairali Gaveshana Puraskaram 2019-20 in the category of Physical Science from the Government of Kerala, in the year 2021.	Government of Kerala

Sponsored Research Projects

Sl.No	Title	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
1.	"Automated Validation of Aneurysm in Brain (AVAB) using Machine Learning Techniques"	Kerala State Higher Education Council (KSHEC), Government of Kerala	Rs. 24,00,000/-	Prof. (Dr.) Madhu S. Nair
2.	"International Network for Image-based Diagnosis"	The Research Council of Norway	Total Rs. 4,50,00,000/- CUSAT Share Rs 48 Lakhs	Prof. (Dr.) Santhosh Kumar G. Prof. (Dr.) Madhu S. Nair
3.	Establishment of Bioinformatics Centre (BIC) for Marine Bio-resource Conservation and Sustainable Utilization – at National Centre for Aquatic Animal Health, Cochin University of Science and Technology, Kochi	Department of Biotechnology, India	Rs. 74,99,200/-	Dr Jereesh A S

4.	DST Interdisciplinary Cyber Physical Systems: “Energy efficient cyber security implementations for Internet of Things” project	DST, Govt of India	Rs 25,00,000	Dr Bijoy A Jose
5.	Prime Ministers Doctoral Research Fellowship for proposal “Human Behaviour Analysis with Artificial Intelligence and Machine Learning”	CII, DST, Vuelogix Technologies	Rs 37,30,000	Dr Bijoy A Jose
6.	A Retinex Inspired Framework for Intensity Homogenization, Contrast Upgradation, and Restoration of Satellite and Aerial Images	DST	Rs. 2299264	Jidesh
7.	A study on non-linear ill-posed equations under weak conditions with emphasis on Parameter Identification Problem and Applications to Imaging	DST	Rs. 2100000	Jidesh
8.	Fractional regularization methods for solving inverse and Ill-posed problems and their applications	DAE	Rs. 600000	Jidesh

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Co-ordinator	Funding Agency
1	Foundation Day Programme on 11/02/2022.	1 day	Dr Philip Samuel	CUSAT
2	Orientation Programme – 2 nd , 3 rd & 4 th Dec 2021	3 days	Dr Philip Samuel	CUSAT
3	Inter National Expert Talk on 07/12/2021 by Dr Gopu R Potty	1 day	Dr Philip Samuel	CUSAT

Consultancy Work:

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1	Software Consulting, annually Rs 2,40,000	Dr Bijoy A Jose	Pumex Infotech Pvt Ltd



Department of Electronics

ANNUAL REPORT 2021-22

Name of the Department : DEPARTMENT OF ELECTRONICS

Brief History of the Department :

The Department of Electronics was established in 1975, as a post graduate Department with Master's and Ph.D programmes in the frontier field of Electronics. Post-graduate programmes include M.Sc Electronics Science and M.Tech Electronics and Communication Engineering.

The Doctoral Programmes are mainly in fields such as Underwater Acoustics, Ocean Electronics, Microwave Propagation & Antennas, Microwave Material Studies, Image Processing, Pattern Recognition, Microprocessor Applications and Signal processing National agencies like the UGC, DST, ISRO, AICTE, DoE, DRDO, DOD, CSIR, MoES, NRB, DIT etc are supporting this Department through various Research projects and Research Fellowships.

The Department of Electronics has well equipped Microwave Electronics, Ocean Electronics, Intelligent Machines & systems and Microprocessor Research Laboratories for carrying out research work at M.Tech and Ph.D levels.

The Department was chosen for special assistance by the University Grants Commission under different schemes. The UGC has sanctioned "COSIST" assistance in 1988 to the Department for the development of postgraduate education and research in the areas of Microprocessor Applications and Microwave Antennas. In 1994, the Department was selected by the UGC for DRS programme in the field of Ocean Electronics and for the special assistance programme of UGC at DSA level in the year 2000. UGC has recognized the Department as a participant in the Centre of Excellence in Laser and Optoelectronic sciences. The Department is currently undertaking research projects from various agencies and has successfully completed several major research projects. The Department has already established international collaboration with Delft University, Netherlands, and Polari zone incorporation, Malaysia, University of Paris, France and University of Kent, U.K. for different research projects. The research facilities of the department are used by different national research laboratories and research

organizations like NAL Bangalore, SAC Ahmadabad, Indian Navy and researchers from many nearby academic institutions.

The Department conducts two symposia as biennial events – the National Symposium on Antennas & Propagation (APSYM) – which commenced from 1988 and the Symposium on Ocean Electronics (SYMPOL) – from 1991 onwards. Effective from 2007, SYMPOL is organized as international conferences with the technical co-sponsorship of IEEE Oceanic Engineering Society and Acoustical Society of America. APSYM was conducted as an international event in 2020 with the technical support of IEEE Antennas and Propagation Societ

The Department has over 170 research publications and 25 students have taken Ph.D degree during the past five years. It also has very good library facilities having more than 6070 specialized books on Electronics and is also subscribing international and national journals

The technical biasing of the University, spectacular growth of Electronics industries in Kerala and the location of the University in the industrial zone of the State are all favorable aspects for substantial development of this Department.

Programmes of Study/Research: M.Sc.Electronic Science, M.Tech. Electronics and Communication Engineering, M.Tech in Defence Technology, Ph.d

Faculty Members

Sl. No.	Name	Designation	Qualification	Specialization
1	Dr.Supriya M.H.	Professor & Head	B.Tech M.Tech Ph.D, MBA	Signal Processing, Network Analysis, Digital Electronics, Microprocessors, Embedded Systems, Data Structures.
2	Arun A Balakrishnan	Assistant Professor	B.Tech M.Tech	Signal Processing
3	MithunHaridas T P	Assistant Professor	B.Tech M.Tech	Embedded Systems

4	Dr. Nalesh S	Assistant Professor	B.Tech M.Tech Ph.D	VLSI, AI on Edge, Neuromorphic Computing, Reconfigurable Computing
5	Dr. Tripti S Warriar	Assistant Professor	B.Tech M.Tech Ph.D	VLSI, Computer Architecture FPGA, VLSI Testing
6	Dr. Deepti Das Krishna	Assistant Professor	M.Sc M.Tech Ph.D	Microwave Communication Communication Systems Antennas and High frequency design
7	Kumary V Y Vidhu	Assistant Professor	B.Tech M.Tech	Microwave & Television Engineering

Research/Project Staff

Sl. No.	Name	Designation	Qualification	Specilisation
1	Rosemol Thomas	JRF	M.Tech	AI, Underwater Images
2	Lidiya Lilly Thampi	RA	PhD	Machine Learning, Image Processing
3	Linda Thomas	JRF	M.Tech	AI, Binaural Acoustics
4	Vivek R	JRF	PhD	Antennas
5	Blessy C Simon	JRF	M.Tech	AI, Binaural Acoustics
6	Nesla N A	JRF	M.Tech	AI, Underwater Images
7	AparnaRanjith	JRF	M.Tech	Machine Learning, AI, Underwater Acoustic
8	Jagadeesh P M	JRF	M.Tech	Machine Learning, AI, Underwater Acoustic
9	Edwin Jose	JRF	M.Sc	Machine Learning, AI
10	Vishnu B Raj	JRF	M.Tech	Machine Learning, AI
11	SatheeshChandran C	RA	PhD	Sonar Signal Processing, Artificial Intelligence
12	Suraj Kamal	JRF	M.Tech	AI, Sonar Signals Underwater Acoustics
13	Muhammed Raees P C	JRF	M.Tech	Signal and Image Processing, FPGA

Research Scholars

Sl. No	Name	Funding Agency	Guide	Area of Work
<i>Full – Time</i>				
1	Suraj Kamal	UJRF	Dr. Supriya M H	Acoustic Classification
2	Satheeshchandran C	-	Dr.Supriya M H	Acoustic Classification
3	Limna T J	NRB	Dr.Supriya M H	Image Processing
4	Sreekala P S	-	Dr.C.K.Aanandan	Nanomaterials
5	Abhilash A P	UGC-JRF	Dr.C.K.Aanandan	MIMO antenna
6	Sruthi Dinesh	NET-JRF	Dr.C.K.Aanandan	Microwave Electronics
7	Revathy R	-	Dr.P R S Pillai	Underwater Acoustics
8	Indu K.K	-	Dr.C.K.Aanandan	RCS Reduction
9	Vinisha C V	UGC-RGNF	Dr. P. Mohanan	Microwave Radome
10	Remsha M	DST-Purse	Dr. P. Mohanan	Material Characterisation using Microwaves
11	Manoj M	-	Dr.P.Mohanan	Compact, Planar Dipole Antenna
12	Aji George	-	Dr.James Kurian	Vibration Analysis
13	Navya Mohan	-	Dr.James Kurian	Machine Vision Systems
14	Ann Varghese	-	Dr.James Kurian	Sensor Agents
15	Midhun M S	NET JRF	Dr.James Kurian	Finger/Hand HMI Control
16	Athul Thomas	UGC-JRF	Dr.James Kurian	Robot Control

17	BinthiyaSunny Gabriel	-	Dr.Tessamma Thomas	Genomic Signal Processing
18	Deepthi	-	Dr.Tessamma Thomas	Digital Image Processing
19	Suja S	-	Dr.Tessamma Thomas	Genomic Signal Processing
20	Neeraj K Pushkaran	-	Dr.Tessamma Thomas	Conducting Polymer Antenas
21	Sangeetha R	-	Dr.Tessamma Thomas	Proteomics Signal Processing
22	Mini P P	-	Dr.Tessamma Thomas	Speech Processing
23	Vivek R	-	Dr.Vasudevan K	Microwave Electronics
24	Deepa Mathew	DST Project	Dr. Bijoy Antony Jose	Embedded Systems
25	Akhil P	E-Grantz	Dr. Bijoy Antony Jose	Cyber Security
26	Ajai John Chemanam	PM Scholarship	Dr. Bijoy Antony Jose	Computer Vision
27	Gisha C G	NET JRF	Dr. Bijoy Antony Jose	Hardware Security
28	Aswathi P	NET JRF	Dr.Deepti Das Krishna	Time modulated array
29	Neema K	UJRF	Dr.Deepti Das Krishna	Meta surface application in antenna
30	Shreya S Menon	NET JRF	Dr.Deepti Das Krishna	Microwave Electronics
31	Magnel Rose Mathew		Dr.Deepti Das Krishna	Wireless communication and microwaves
32	Rachana George	UJRF	Dr.Nalesh S	In memory computing using emerging non-volatile memory Tech

33	Rose Mary Kuruvithadam	UJRF	Dr.Nalesh S	Nueromorphic computing and Architecture
34	Motaz Al-HassinAlhassanAbdulrahman	ICCR Scholar	Dr. Nalesh S	Assistive Robotics
35	Alisha P B	E-Grantz	Dr.Tripti S Warriier	Memory Optimisation
36	Simi Sukumaran		Dr.Tripti S Warriier	Security in computer Architecture (RISCV)
Part Time				
37	Vijeesh P	-	Dr.Supriya M H	Crystalline Properties
38	Kurian Thomas	-	Dr.Supriya M H	Embedded Systems
39	Arun A Balakrishnan	-	Dr.Supriya M H	Underwater Imaging
40	MithunHaridas T P	-	Dr.Supriya M H	Machine Learning
41	A S Chandrakantha	-	Dr.Supriya M H, Co-Guide Dr. A Mujeeb	Cloud based respiratory diagnostics
42	Rashida K		Dr.Supriya M H	Array Signal Processing
43	Kumari V Y Vidhu		Dr. Supriya M H	Metamaterial Applications in RCS
44	Anil Kumar R	-	Dr.C.K.Anandan	Material Sciences
45	Anila P V	-	Dr.P.Mohanan	Microwave Antennas
46	Prasanth P P	UJRF	Dr. James Kurian	Swarm Robotics
47	Vinesh P V	-	Dr.K.Vasudevan	Multiband Folded Antennas

Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer	1
2	Assistant Section Officer	1
3	Senior Grade Assistant	1
4	Computer Assistant	2
5	Office Attendant	2
6	Sweeper-cum-cleaner	2

Technical Personnel

Sl.No.	Designation	No. of Posts
1.	Maintenance Engineer	1
2.	Tech. Asst. Grade III	1
3	Junior Tech. Asst. Grade III	4 (vacant)
4.	Technician	1 (vacant)
5.	Printer	1
6.	Asst. Librarian	1
7.	Lab. Assistant	3
8.	Storekeeper Gr. II (Electronic Science)	1

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1.	M.Tech. (Electronics & Communication Engg.)	9	13	22
2.	M.Sc. (Electronic Science)	14	11	25
3	M.Tech in Defence Technology	13	5	18
3	Ph.D.(Full-Time)	-	-	-
4	Ph.D.(Part-Time)	-	-	-

Research Facilities

(a) RESEARCH AND TRAINING LABORATORIES OF THE DEPARTMENT

With assistance from difficult funding agencies, Research and Training Laboratories have been set up in the Department in frontier areas of Electronics.

A.OCEAN ELECTRONICS LABORATORY (CUCENTOL)

A Research and Training Laboratory in Ocean Electronics (CUCENTOL) has been set up in the Department with the financial assistance from the Ministry of Human Resource Development, Govt. of India and the UGC. An amount of Rs.32 lakhs was sanctioned by the Ministry in two installments for this Centre. University Grants Commission has approved the establishment of the Centre during the VIII plan period with essential staff and infrastructure. UGC has sanctioned a sum of Rs.60.00 lakhs under the DRS programme in 1993. Developments of new Underwater Transducers and Arrays for Sonar Applications are the major activities of the center.

Studies on marine animal behavior are gaining increased attention nowadays. The marine biologists have been behavior hard to develop systems to understand the behavior and physiology of marine animals in their normal environment. The requirement of monitoring the detailed geographical position of fish in the open sea is highly complex. Migratory patterns of certain commercially important species are widely used for the purpose of stock assessments. The real time monitoring of the migratory routes is not feasible in the case of marine animals, which spent majority of the time at higher depths, as high frequency signals are heavily attenuated in underwater. Certain animals like whales, sharks, etc. spend a considerable time in the sea surface, while the species like tuna do not come to the sea surface at all. The satellite based active tracking can be resorted to only for certain species and active tracking is much expensive compared to passive tracking. Hence the migratory pattern of highly migratory species like the tuna in the open sea, can only be performed by attaching archival tags to the species under study. These tags can be used to measure the oceanographic parameters, such as pressure, temperature, light level data, etc.

A prototype archival electronic tag for monitoring the ocean parameters like temperature, pressure and light intensity has been developed. A digital temperature sensor is used to sample the temperature from the tag's surroundings, while a micro machined peso resistive silicon digital pressure sensor, which is capable of measuring absolute pressure levels up to 14 bars, provides the depth information. The depth measurements can be made more accurate, if the resolution of the pressure sensor is significantly high. An absolute pressure measurement with a resolution of 1.2 mbar (behavior. 1.2 cm in depth measurements) has

been achieved with this tag. One of the important parameters to be measured is the geolocation of the species, which is computed from the ambient light intensities recorded by the digital light sensor in the tag. These parameters can be sampled and recorded in the memory at preset time intervals, as set at the time of deployment of the tag. This miniaturized tag provides the temperature data with 13 bit resolution, while the pressure and light intensity values have 15 bit resolutions. When used in fisheries studies, the size of the device has to be miniaturized, so that by way of attaching such devices, the normal behavior of the species remain unaffected.

Simulation of Rotating Hydrophone arrays and Localization of the Underwater Targets Using Buoy Systems and Estimation of DOA Using the Buoy System are also undertaken in this laboratory. Works in the area of Underwater Target Classifier Capable of Reducing Self-Convolution Distortion, Towards Improving the Space Reconstruction of Underwater Signals, Collection and Analysis of Ocean Noise Data Using NI cDAQ 9215 and NI Lab VIEW as well as OROS OR-36 Based Platform for Recording and Analyzing the Ocean Noise Data is also undertaken in the lab.

B. MICROWAVE ELECTRONICS AND ANTENNA LABORATORY

A well established research and training Laboratory in Microwave Electronics and Antennas has been set up in this Department with financial assistance from MHRD, UGC, DST (Govt. of India) and DoE (Govt. of India). The Laboratory is equipped with most modern and sophisticated equipment like HP 8510 B Network Analyzer, Agilent Network Analyzer 67 GHz, Cascade Probe Station, Microwave Power Meter and different antenna and RCS standards. The laboratory is having a Microwave Anechoic Chamber for simulating free space environment for antenna and RCS measurements. The Chamber has instrumentation set-up attached to it with provision for fully automatic measurement based on HP 8510 B Network Analyzer and Scientific Atlanta Positioner. The Department has developed an indigenous software which is used for quick and precise antenna measurements and analysis. An EMI EMC pre-compliance set up up till 18GHz is procured recently. The major areas of research now being pursued are microstrip antennas and transmission lines, integrated circuits and antennas, reduction of radar cross section, microwave non-destructive testing, leaky wave antennas, microwave horn antenna, material studies in microwave region etc. These facilities are being used/operated by many establishments like SAMEER (Bombay & Madras), SAC Ahmadabad, NPOL, Cochin, Delhi University, CSIR Regional Research Laboratory (Trivandrum), Jadavpur University, Gulbarga University and others.

Major works undertaken are:

- Electrically Small Antennas
- Substrate Integrated Waveguide
- Miniature Antenna for Medical Applications:
- RFID Tags
- Ultra Wide Band Antennas
- Low Radiation Hazard Antennas for Mobile Applications
- MIMO Antennas
- Microwave properties of nano composite
- Radar Cross section studies

C. EMBEDDED SYSTEM LABORATORY (ESL)

The Department has set up an Embedded Systems Laboratory, comprising of Martin Auto vision Expert 9.5 SMD Re-workstation, Tektronix 34 Channel Logic Analyzer, Tektronix Digital Storage Oscilloscope, etc.. The nature of activities currently being pursued in the Department making use of these facilities include the design and development of Embedded Systems for the realization of steering/control system for hydrophone arrays, embedded signal processor modules, embedded CDMA transceiver modules, miniaturized archival tags for tagging tuna, development of miniaturized embedded global positioning devices, etc..

Training and Research facilities in VLSI Design

In view of the importance and significance in promoting Training and Research activities in VLSI Design, the Department is planning to establish a VLSI Laboratory for exposing the PG students and Research Scholars to this most emerging area of Electronics, and cater the requirements of National Laboratories and industries.

AUDIO AND IMAGE RESEARCH LAB (AIRL)

In this laboratory major works are done in the following areas:

Biomedical Image Processing

- Analysis and Content Based Image Retrieval of Scoliosis images
- Mammogram analysis using fractals for the detection of breast cancer
- Genomic Signal Processing
- DNA Image processing
- Microarray Image Processing
- Finger Print Recognition and Identification

E. ADVANCED SIGNAL PROCESSING & INSTRUMENTATION RESEARCH LAB (ASPIRE)

In this laboratory major works are done in the following areas:

- Implementation of an underwater target classifier with improved success rates using HMM concepts.
- Kinematic Predictive Tracking of Underwater Targets using Extended Kalman Filter
- Selective Listening of Underwater Acoustic Targets using MVDR Beam forming
- Acoustic Classification of Marine Species using Self-Organizing Maps
- Design of SVM Based Underwater Target Classifier
- Asymmetric cryptography based GSM audio authentication system
- General Processing using Graphical Processing Unit for Hidden Markov Models
- PDA Filters for multiple target tracking
- Acoustic Synthesis of Underwater targets
- VLSI systems for computer vision

INTELLIGENT MACHINES AND SYSTEMS LABORATORY (IMSL)

Intelligent Machines and Systems Laboratory aims to work on the futuristic tools, techniques and systems for the control of mobile and industrial robots. The areas of research span Reconfigurable Systems, Underwater Navigation and Guidance systems, Machine Vision, Training and Rehabilitation Aids, Vibration Analysis, Human-Machine Interface and Distributed Robotic Systems. The research activities of IMSL focus on the development of algorithms for the control and coordination of Multi-robot systems through connectivity control as well as task allocation for distributed robotic systems. The laboratory is equipped with state-of-the-art hardware/software platforms and subsystems for a broad spectrum of robotic applications.

CENTRE FOR RESEARCH IN ELECTRO MAGNETICS & ANTENNAS (CREMA)

- Material Characterisation using Microwaves
- Compact, Planar Dipole Antenna
- Microwave Radome

- MIMO Antennas
- Electrically Small Antennas
- Meta Material Inspired Antennas

MICROWAVE MATERIAL RESEARCH LAB (MMRL)

1. Conducting Polymer Antennas.
2. Microwave imaging for biomedical applications using millimeter waves.
3. Waveguide Transitions
4. Radar cross section
5. 5G
6. Pattern Reconfigurable Antennas for higher frequency applications.
7. Compact multiband antennas for wireless applications.

CYBER PHYSICAL SYSTEMS LAB (CPS)

In this lab major works are done in the following areas:

- Cyber Security in Embedded Systems
- Virtualization Environments for Mobile Computing System.
- IoT based application
- Video Analytics.

NANOSCALE INTEGRATED CIRCUITS AND SYSTEMS LAB (NICS)

In this lab major works are done in the following areas:

- Beyond CMOS devices like Memristors, Resistive RAMs, 2DFETs, SpinFETs, Quantum devices
- Hardware accelerators for DSP and Machine Learning applications.
- Embedded Systems for Monocular Vision

List of Major Equipments available in the Department (cost exceeding more than 5 lakh)

Sl. No.	Equipment	Cost in Lakhs
1	HP 8510 C-Network Analyzer	20.00
2	HP 8514 B S Parameter Test set	20.50
3	HP 8341 B Broad band Microwave sweep oscillator	7.00
4	HP 83651B Dedicated source 45 MHz - 50 GHz	18.5
6	HP Spectrum Analyzer	7.98
16	S- Band Radar (Donated by LRDE, Bangalore)	100.00
17	Robot Arm & Vision System	7.00
19	UPS 5 KVA(6 Nos)	9.00
21	HP Microwave Sweep Oscillator	6.5
22	Short Range Sonar	5.07
23	Fully Instrumented Underwater Transducer Evaluation Facility	20.00
24	Fully Instrumented Far Field Antenna Test Facility	20.00
25	Standard Transducer	2.92
26	Echo Sounder ES60	17.29
28	Underwater Video Camera & Accessories	5.03
32	Portable Network Analyzer	5.00
33	Microwave Vector Network Analyzer	38.07
34	Dual Frequency Sonar	6.62
35	SMD Rework Station	13.25
38	Computer with Xeon Processor 3.73 GHz x 2 (16 Nos.)	42.83
42	UPS IGA Sattern 5 KVA (8 Nos.)	12.24
45	Agilent PNA	45.00
46	Simulation Software for Microwave Circuits/Antennas	13.00
48	Workstation/Computers etc.	12.00
49	Generator / UPS etc.	8.00
50	R & S PNA – Network Analyzer	37.00
52	SMD Re-work station Martin DBL-05 + Air Compressor	17.00
53	Plasma Display	4.95
54	Coventor MEMS Software	9.93

56	Anritsu Make Spectrum Analyzer MS 2724 B	12.44
58	PCB Prototype Machine	7.86
59	External Power Sensor	1.98
60	OR 36-8 Channel FFT Analyser	14.39
61	Workstation 10 Nos.	15.61
62	Probe Station	20.94
65	Agilent Network Analyser 67 GHz	45
66.	Cascade Probe Station	2.7

Other Facilities:

Library

No of books and Journals as on 31 st March of the Previous Year (2021-22)	Additions during the current year
Books - 6575 (As on March 2021) Journals - 3	Books - 10 Journals - 3

Distinguished visitors

Sl. No.	Name	Affiliation	Remarks
1	Prof. Dr. Gopu R. Potty	Professor, University of Rhode Island	Invited Speaker, SYMPOL 2021
2	Rear Admiral Antony George	Chief of Staff, Southern Naval Command, Kochi	Inauguration, SYMPOL 2021
3	Shri. S. Vijayan Pillai	Director, NPOL, Cochin	Inauguration, SYMPOL 2021
4	Smt. Usha P Verma	Technical Director (SSE) & Scientist 'G' Advanced Systems Laboratory Dr. APJ Abdul Kalam Missile Complex, Hyderabad	Technical Talk, IEEE APS & MTT-S, Kerala Chapter

Ph.Ds Awarded

Sl. No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	Investigations on the Radiation Characteristics of Coplanar Waveguide Fed Compact Antennas with shorted Signal Strip and Ground Plane	Vivek R	Dr. K. Vasudevan
2	Design and Development of Compact Capacitive coupled Multiband Planar Inverted F Antennas	Vinesh P V	Dr. K Vasudevan
3	Design, Development and Analysis of Harmonic Suppressed Stepped Impedance Dipole Antennas	Manoj M	Dr. P. Mohanan
4	Synthesis and Characterization of Novel Doped Conducting Polymer Composites for Microwave Applications	Sreekala P S	Dr. C K Aanandan
5	Performance Analysis and Optimizations for Virtualized Mobile Computing	Deepa Mathew	Dr. Bijoy Antony Jose
6	Passive Acoustic Classification of Underwater Targets using Unsupervised Representation Learning Scheme	Satheesh Chandran C	Dr. Supriya M H

Publications

Papers

Sl.No.	Title of Paper	Impact Factor, if any
1	Sleebe Divakaran, Deepthi Das Krishna , Nasimuddin, and Jobin K. Antony, "Dual-Band Multi-Port Rectenna for RF Energy Harvesting," Progress In Electromagnetics	1.01

	Research C , Vol. 107, 17-31, 2021.doi: 10.2528/PIERC20100802	
2	Palson, C.L., Krishna, D.D., Jose, B.R. (2022). A Varactor-Based Impedance Tuner Circuit Operating at ISM Frequency Band Centered at 2.45 GHz. In: Mishra, B., Mathew, J., Patra, P. (eds) Artificial Intelligence Driven Circuits and Systems. Lecture Notes in Electrical Engineering, vol 811. Springer, Singapore. https://doi.org/10.1007/978-981-16-6940-8_7	
3	Jaisy M A, Aswathi P and Deepti Das Krishna , “Experimental Verification of Harmonic Characteristic Analysis of Direction-finding System using Multi-element Time-modulated Arrays”, 2021 IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting at Marina Bay Sands in Singapore, on 4-10 Dec 2021	
4	Shreya Menon, Deepti Das Krishna , C. K. Aanandan, Surya Pathak, “Guided and Leaky Mode Radiation Characteristics of Solid Dielectric Pyramidal Horn Antenna”, 2021 IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting at Marina Bay Sands in Singapore, on 4-10 Dec 2021	
5	Thampi L, Thomas R, Kamal S, Balakrishnan AA, Haridas TM, Supriya MH. Analysis of U-Net Based Image Segmentation Model on Underwater Images of Different Species of Fishes. In 2021 International Symposium on Ocean Technology (SYMPOL) 2021 Dec 9 (pp. 1-5). IEEE.	
6	Thomas R, Thampi L, Kamal S, Balakrishnan AA, Haridas TM, Supriya MH. Dehazing Underwater Images Using Encoder Decoder Based Generic Model-Agnostic Convolutional Neural Network. In 2021 International Symposium on Ocean Technology (SYMPOL) 2021 Dec 9 (pp. 1-4). IEEE.	

7	Balakrishnan AA, Bijoy MS, Supriya MH, Classification of Low Quality Underwater Objects Using Convolutional Neural Networks and Transfer Learning. In OCEANS 2022-Chennai 2022 Feb 21 (pp. 1-4). IEEE.	
8	AK Krishnan, MH Supriya, S Nalesh, A Hardware-Software Co-design based Approach for Development of a Distributed DAQ System using FPGA, 25th International Symposium on VLSI Design and Test (VDAT), 2021	
9	M Mahesh, S Nalesh, S Kala, Bandwidth-Efficient Sparse Matrix Multiplier Architecture for Deep Neural Networks on FPGA, 2021 IEEE 34th International System-on-Chip Conference (SOCC), 7-12	
10	M Mahesh, S Nalesh, S Kala, Hardware Acceleration of SpMV Multiplier for Deep Learning, 2021 25th International Symposium on VLSI Design and Test (VDAT), 1-6	
11	S Sreeparvathy, R George, RM Kuruvithadam, S Nalesh, Fast Booth Multipliers Using Approximate 4: 2 Compressors.2021 IEEE International Symposium on Smart Electronic Systems (iSES)(Formerly iNiS)	
12	LidiyaThampi, Rosemol Thomas, Suraj Kamal, Arun A. Balakrishnan, MithunHaridas T.P. and Supriya M. H., "Analysis of U-Net Based Image Segmentation Model on Underwater Images of Different Species of Fishes", 2021 International Symposium on Ocean Technology, SYMPOL 2021, Kochi, December 9-11, 2021. (Published in IEEE Xplore)	
13	Rosemol Thomas, LidiyaThampi, Suraj Kamal, Arun A. Balakrishnan, MithunHaridas T.P. and Supriya M. H., "Dehazing Underwater Images Using Encoder Decoder Based Generic Model-Agnostic Convolutional Neural Network", 2021 International Symposium on Ocean Technology, SYMPOL 2021, Kochi, December 9-11, 2021. (Published in IEEE Xplore)	

14	Blessy C. Simon, Supriya M. H. and Jayanthi V. S., “Deep Neural Based Beamforming Techniques for Direction of Arrival (DOA) Estimation”, 2021 International Symposium on Ocean Technology, SYMPOL 2021, Kochi, December 9-11, 2021. (Published in IEEE Xplore)	
15	Linda Thomas, Blessy C. Simon, SatheeshChandran C., Suraj Kamal and Supriya M. H., “Binaural Listening based DOA Estimation of Underwater Targets using Unsupervised GMM”, 2021 International Symposium on Ocean Technology, SYMPOL 2021, Kochi, December 9-11, 2021. (Published in IEEE Xplore)	
16	Arun A. Balakrishnan, Bijoy M. S., Supriya M. H. “Classification of Low Quality Underwater Objects Using Convolutional Neural Networks and Transfer Learning,” OCEANS 2022, Feb. 2022, pp. 1 – 4.	
17	Suraj Kamal, SatheeshChandran C. and Supriya M.H., Efficiency of Various Time-Frequency Representations in Deep Neural Network based Passive Sonar Target Classifiers, International Journal of Innovative Technology and Exploring Engineering (IJITEE), Volume 9, Issue 4, PP 1908-1918, February 2020.	
18	Remya A. R., Arun A. Balakrishnan, Suraj Kamal, SatheeshChandran C. and Supriya M. H., Modular Microservice based GPU Utilization Manager with Unicorn, Journal of Science and Technology, Volume 5, Issue 4 (July-August 2020)	
19	Kurian Thomas, Pranav E., Supriya M.H. A Generalized Deep Learning Model for Denoising Image Datasets, International Journal of Engineering and Advanced Technology (IJEAT) ISSN: 2249-8958, Volume-10 Issue-1, pp 9 – 14, October 2020	
20	Suraj Kamal, SatheeshChandran C. and Supriya M.H., Passive Shallow Water Automated Target Recognition using Deep Convolutional Bidirectional Long Short Term	

	Memory, Defence Science Journal, Vol. 71, No. 1, pp. 117-123, January 2021.	
21	Suraj Kamal, SatheeshChandran C. and Supriya M.H., Passive sonar automated target classifier for shallow waters using end-to-end learnable deep convolutional LSTMs, Engineering Science and Technology, an International Journal, https://doi.org/10.1016/j.jestch.2021.01.014 .	
22	ShamsudheenMarakkar, MithunHaridas T.P. and Supriya M.H., “Performance Comparison of Convolutional Neural Network-based model using Gradient Descent Optimization algorithms for the Classification of Low Quality Underwater Images”, Journal of Science and Technology, Vol. 05, Issue 05, Sep-October 2020, pp227-236. doi:10.46243/jst.2020.v5.i5.pp227-236	
23	SatheeshChandran C., Suraj Kamal, A. Mujeeb and Supriya M.H. Passive Sonar Target Classification using Deep Generative β -VAE , IEEE Signal Processing Letters, pp 808-812, Vol 28, 2021.	

Books

Sl.No.	Title of Book
1	Proceedings of 2021 International Symposium on Ocean Technology (SYMPOL)

Book Chapter

Sl.No.	Title of Book
1	S Kala, S Nalesh, Security and challenges in IoT-enabled systems, System Assurances, 437-445

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Aswathi P, Shreya Menon	2021 IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting at Marina Bay Sands in Singapore, on 4-10 Dec 2021.	Participant
Dr. Deepti Das Krishna	IEEE APS Kerala Chapter sponsored five day FDP (6-10 Dec 2021) on Microwave antennas and applications at the Dept of Electronics, MES College, Marampally, Kerala 7th dec 2021	Invited speaker
Arun A. Balakrishnan, Supriya M H	OCEANS 2022-Chennai	Session Chair
S Sreeparvathy. Rachana George, Rose Mary Kuruvithadam, Dr. Nalesh S	2021 IEEE International Symposium on Smart Electronic Systems (iSES)(Formerly iNiS) attended online	Participant
Abi K Krishnan	2021 25th International Symposium on VLSI Design and Test (VDAT) attended online	Participant
Dr. Nalesh S	171st UGC sponsored Induction Programme conducted by UGC-HRDC Kerala University from 06.09.2021 to 05.10.2021	Participant

Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Dr. Deepti Das Krishna	IEEE Kerala Section	Chair, IEEE APS Kerala Chapter Branch COunselor, IEEE CUSAT SB IEEE Kochi Subsection Executive Committee Member
Dr. Tripti S Warriar	IEEE Kerala Section	IEEE Kochi Subsection Treasurer

Dr. Nalesh S	IEEE Kerala Section	Chair, IEEE CRFID Kerala Chapter
Dr. Nalesh S	Kerala Technical University	Member, Board of Studies, Applied Electronics and Instrumentation

Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
1	Machine learning Models for underwater Image Enhancement and Content Analysis	Naval Research Board, New Delhi	48,04,560	Dr. Supriya M. H., Arun A. Balakrishnan, Mithun Haridas T. P.
2	Portable Device for the Preliminary Diagnosis of Preeclampsia	DST	24,44,083	Dr. Tripti S. Warriar, Dr. Nalesh S, Dr. Usha K, Dr. Leena R, Dr. Kala R and Dr. Girish Kumar

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl. No.	Title	Duration	Coordinator	Funding Agency
1	Training Program on “Hello EMI & EMC – Learn to detect and decode”	Two Week (26 July – 06 Aug 2021)	Dr. Deepti Das Krishna	IEEE APS Kerala Chapter
2	International Symposium on Ocean Technology, 2021	09 – 11 DECEMBER 2021	Dr. Supriya M. H. and Arun A. Balakrishnan	DRDO, CSIR, DST

	(SYMBOL 2021)			
3	Tech Summit on Smart Sensing & Edge Computing	11 December 2021	Nalesh S./Arun A. Balakrishnan/MithunHaridas T. P.	Sony Semiconductors

Consultancy Work

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1	Development of Biomimetic Approaches for SONAR Systems(19.99 lakhs)	Dr. Supriya M. H., Arun A. Balakrishnan, Mithun Haridas T. P.	NPOL, Cochin
2	In Situ Intelligent Passive Acoustic Sensor Network For Monitoring Marine Habitats(17.1 lakhs)	Dr. Supriya M. H., Arun A. Balakrishnan, Dr. Nalesh S.	Sony Semiconductors



Department of English and Foreign Languages

Name of the Department : Department of English and Foreign Languages

Brief History of the Department:

The Establishment and Evolution of the Department

The Department of Foreign languages was established in 1976 in order to cater the needs of students, research scholars, teachers public who are interested in learning foreign languages. In order to include broader spectra into the academics the department was renamed as Department of Culture and Heritage in 2003. With the emergence of English as a global lingua franca, the teaching of English language has been given added importance and the department was renamed as Department of English and Foreign Languages in 2012.

Pioneers of the Department

Dr. Jose T Thomas, Dr. Annie Kurian and Dr. Murugesan Reddiar were the pioneering teachers of the Department and were experts in French, German and Russian respectively. The first head of the department was Dr. Jose T Thomas followed by Dr. Annie Kurian (1979-1997), Dr. Murugesan rediar (1997-2001), Dr. Mariamma Vincent Panikulangara (2001 to 2008) and Mr..A Achyutha Menon (2008-2011). Dr.Brinda Bala Sreenivasan, Asst. Professor in English is the head of the department from 2011 onwards.

Chronology of Academics

In 1977 department was offering part time evening programmes in German, French and Russian and later Japanese language programme was also introduced. P G Diploma in Communicative English programme commenced in 2003. Programmes in Italian language in collaboration with Italian embassy commenced in the year 2006. The first Ph.D (in English Language) of the department was awarded in the year 2010. Currently four students are doing Ph.D research in English Language in the department. Memorandum of Understanding was signed with Shimane University, Japan for Collaborative venture for Japanese teaching in the year 2018. An agreement with St.Pauls College, Kalamassery has been approved for collaborative research in the year 2020. The department is also offering a P G Elective course in Communicative English,

German Language courses for Integrated Programme in Science conducted by Centre for Integrated Studies, CUSAT. The Department regularly conducts National Seminars, Workshops and Webinars on the realms of Language, literature, film and Culture.

Industry Collaboration

Besides the regular programmes, the department conducted several short-term intensive courses for scientists and engineers of RRII, Kottayam; HMT, Kalamassery; Southern Naval Command, Cochin; Crompton Greaves, GEC, Wiltech softwares etc. Besides teaching foreign languages, the department offers translation and interpretation services in foreign languages to industrial and commercial establishments.

Social Outreach Programmes

As part of dissemination of the academic knowledge, the Department is conducting short – term Courses in English and foreign languages for institutions and for the public on demand. Short- term Courses and vacation programmes for school students in English, Foreign Languages and Personality Development are conducted regularly.

Programmes of Study/Research

- A. P G Diploma in Communicative English (1 year Part Time Evening Programme)
- B. Integrated Diploma in Japanese (1 year Part Time Evening Programme)
- C. Certificate in German (1 year Part Time Evening Programme)
- D. Certificate in French (1 year Part Time Evening Programme)
- E. Ph.D in English (Full time & Part Time)

Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Dr.Brinda Bala Sreenivasan	Assistant Professor	1. BSc.Zoology 2. MA 3. UGC lectureship accredited 4. Ph.D	Zoology, Botany, Chemistry (English) (English) (English)

Research Scholars

Sl. No.	Name	Funding Agency	Guide	Area of Work
1.	Aneeta Joseph	UGC JRF	Dr.Brinda Bala Sreenivasan	Digital Cultural Studies
2.	Neethu Varghese	UGC JRF	Dr.Brinda Bala Sreenivasan	Post Colonialism and Indian Fiction
3.	Deepthy Krishna D	Uni. JRF	Dr.Brinda Bala Sreenivasan	Subaltern Studies
4.	Gulabi	UGC JRF	Dr.Brinda Bala Sreenivasan	

Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Assistant Section Officer	1
2.	Computer Assistant (Sr.Gr.)	1
3.	Library Assistant	1
4.	Office Attendant	1

Technical Personnel: NIL**Student Enrollment: 2021**

Sl.No.	Programme of Study	Men	Women	Total
1	P G Diploma in Communicative English	6	7	13
2	Integrated Diploma in Japanese	8	11	19
3	Certificate in German	16	9	25
	Certificate in French	4	15	19
4	Ph.D	0	3	3

Research Facilities

- a. Laboratories: Multimedia Language Lab with 25 computers
- b. Major equipments: NIL
- c. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
7614	49

d. Others

Publications:

Papers

Sl. No.	Title of the Paper	Author(s)	Impact Factor, if any
1	The Cynosure of All Eyes (poem published in the book Glorious India, Inkdew Publication)	Dr.Brinda Bala Sreenivasan (Asst. Prof & HOD)	ISBN: 978-81-947877-9-2
2	Winged Memories (Poem published in the book Dream Poetry, Authors Press,2022)	Dr.Brinda Bala Sreenivasan (Asst. Prof & HOD)	ISBN: 978-93-5529-210-0
3	The Patriarchal Key and the Ornate Lock: The Faminine Psyche in <i>Manichitrathazhu</i> (Article published in the book <i>Journey Across Cultures: Literary Reflections, ESN publications 2021.</i>	Dr.Brinda Bala Sreenivasan (Asst. Prof & HOD)	ISBN: 978-81-950305-6-9
4	An Overview of Changing Paradigms of Caste, Politics and Gender Marginalities in Tamil Films from 2000 to 2021 (Paper published in the peer reviewed journal "All About Ambedkar – A Journal of Theory and Praxis"	Deepthy Krishna D (Research Scholar)	ISSN 2582-9785

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Dr.Brinda Bala Sreenivasan (Asst. Prof. & HOD)	National Webinar-The Phonetic Aspects of India English Communication	Director
Dr.Brinda Bala Sreenivasan (Asst. Prof. & HOD)	National Webinar-Personal Mastery	Director
Dr.Brinda Bala Sreenivasan(Asst. Prof. & HOD)	Pandemic, the Human and the Posthuman	Participant
Dr.Brinda Bala Sreenivasan(Asst. Prof. & HOD)	Gendered Leadership Across the Spectrum	Chaired an academic Session
Aneeta Joseph (Research Scholar)	National Webinar-Personal Mastery	Participant
Deepti Krishna D (Research Scholar)	National Webinar-Personal Mastery	Participant
Neethu Varghese (Research Scholar)	National Webinar-Personal Mastery	Participant
Dr.Brinda Baka Sreenivasan (Asst. Prof. & HOD)	A Talk on Women and Creativity During the Pandemic	Organizer
Aneeta Joseph (Research Scholar)	A Talk on Women and Creativity During the Pandemic	Participant
Neethu Varghese (Research Scholar)	A Talk on Women and Creativity During the Pandemic	Participant
Deepthy Krishna D (Research Scholar)	A Talk on Women and Creativity During the Pandemic	Participant
Dr.Brinda Bala Sreenivasan (Asst. Prof. & HOD)	Online Research Strategies in Humanities and Publishing Articles in Authentic Journals	Director
Aneeta Joseph (Research Scholar)	Online Research Strategies in Humanities and Publishing Articles in Authentic Journals	Participant

Neethu Varghese (Research Scholar)	Online Research Strategies in Humanities and Publishing Articles in Authentic Journals	Participant
Deepthy Krishna D (Research Scholar)	Online Research Strategies in Humanities and Publishing Articles in Authentic Journals	Participant
Dr.Brinda Bala Sreenivasan (Asst. Prof. & HOD)	National Seminar-Visual Semiotics of the Web Spectacle	Director
Aneeta Joseph (Research Scholar)	National Seminar-Visual Semiotics of the Web Spectacle	Participant
Neethu Varghese (Research Scholar)	National Seminar-Visual Semiotics of the Web Spectacle	Participant
Deepthy Krishna D (Research Scholar)	National Seminar-Visual Semiotics of the Web Spectacle	Participant

Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Dr. Brinda Bala Sreenivasan	Certificate of Appreciation for participating in the Yercaud Poetry Festival - V	Rotary Club of Salem Galaxy, Soul Scribers Society Salem and ANS Dhivyam
Dr. Brinda Bala Sreenivasan	Certificate of Appreciation for outstanding service during the NAAC Accreditation Process	CUSAT
Dr.Brinda Bala Sreenivasan	Certificate of Contribution for Maximum Contribution for a Book	ESN Publications
Dr.Brinda Bala Sreenivasan	Certificate of Appreciation for contributions from Nov 2020 to March 2021.	Kaumudi International Multilingual Poets Group in association with Telengana Sahitya Academy

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Coordinator	Funding Agency
1.	National Webinar-The Phonetic Aspects of India English Communication	1 day	Dr.Brinda Bala Sreenivasan	CUSAT
2.	National Webinar-Personal Mastery	1 day	Dr.Brinda Bala Sreenivasan	CUSAT
3.	A Talk on Women and Creativity During the Pandemic	1 day	Dr.Brinda Bala Sreenivasan	CUSAT
4.	Online Research Strategies in Humanities and Publishing Articles in Authentic Journals	1 day	Dr.Brinda Bala Sreenivasan	CUSAT
5.	National Seminar-Visual Semiotics of the Web Spectacle	3 days	Dr.Brinda Bala Sreenivasan	CUSAT



Department of Hindi

Format for submission of the Annual Report for the year 2021- 2022

Name of the Department : **Hindi**

Brief History of the Department

The Department of Hindi, established in 1963, is one of the oldest departments of the University. It was a part of the Kerala University and joined the folds of University of Cochin when it was established in the year 1971. From the period of inception, it has blossomed into one of the prestigious institutions among Indian University Departments engaged in teaching and research of Hindi Language and Literature.

This Department is a UGC assisted SAP Department & DSA Phase-1 is completed. It is actively engaged in research in different areas like Ancient and Modern Poetry, Fiction, Drama and Theatre studies, Criticism, Grammar, Linguistics, Comparative Studies of Languages and Literature, Folk Literature, Translation, Feminist Literature, Dalit Literature, Adivasi Literature, Ecological Discourse, Transgender Studies etc.

The Department is one of the leading centres of research in Hindi and the faculties have guided about 300 Ph.Ds. The creative capabilities of the teaching faculty received recognitions through the award of Fellowships/Prizes, etc. About One Hundred and Fifty research papers, twenty Six books and learned articles have been published by the faculty and research Scholars during the last five years.

The Department Library has about 46416 books and is currently subscribing 47 journals. The PG students and Research Scholars from various parts of Kerala use the Library as a reference centre. It has been assessed as one of the best libraries in the country. The Department has a well-equipped computer lab and conducts short term Computer Courses. The Department has a Centre named 'Centre for Green Literature Studies' also the Department organizes national seminars every year and also conducts UGC sponsored programmes. Since 1975 the department publish a research journal named 'Anuseelan'.

Programmes of Study/Research

1. M.A. Hindi Language and Literature
2. Ph. D
3. P.G. Diploma in Translation, Journalism and Hindi Language Computing
4. Certificate Course in Computer Aided Language Training in Hindi

Faculty Members

Sl. No.	Name	Designation	Qualification	Specialization
1	Dr. K Ajitha	Senior Professor & Head	M.A, M.Phil, Ph.D, PG certificate in Russian language	Contemporary and Modern Hindi Literature, Drama and Theatre, Subaltern Studies
2	Dr. Prabhakaran Hebbar Illath	Associate Professor	M.A, Ph.D	Poetry, Literary Criticism
3	Dr.Praneetha P	Associate Professor	M.A, M.Phil, Ph.D	Ancient & Modern Hindi Literature, Drama and Theatre, Comparative Literature
4	Dr. Aneesh. K. N	Asst. Professor	M.A, M.Phil, Ph.D	Modern Hindi Literature, Drama and Theatre, Comparative Literature
5	Dr. Girish Kumar. K.K	Asst. Professor	M.A, M.Phil, Ph.D	Modern and Contemporary Hindi Literature, Comparative Literature, Contemporary Hindi Poetry
6	Kum.Sreelekha K.N	Asst.Professor	M.A, M.Phil, NET, P.G.Diploma in Translation	Hindi Short Story, Linguistics, Tribal Discourse, Translation
7	Dr.Sheena M.A	Assistant Professor	M.A, M.Phil, Ph.D	Contemporary Tribal Literature, Hindi Short Story, Journalism & Linguistics

***Relieved from duty on 21/03/2022 A.N vide U.O No.CUSAT/AD (D).SO/1363/2022 Dtd.21/03/2022**

Emeritus Professor/Scientist (if any)

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr.R.Sasidharan	Emeritus Professor	M.A,Mphil,Ph.D and Diploma in Translation	Ancient and Modern Hindi Literature, Drama & Theatre, Comparative Literature, Translation Studies,Dalit Literature

Visiting Faculty (If any)

Sl.No.	Name	Designation	Qualification	Specilisation
1	Aparna Mohan	Guest Faculty Malayalam	M.A	Chalachithra Patanam
2	Ajna M.A	Guest Faculty Malayalam	M.A, NET & B.Ed	Malayalam Literature
3	Viji V	Contract Faculty	M.A, M.Phil. Ph.D, UGC-NET, PGDT & short term computer course based in Hindi	Modern and Contemporary Hindi Literature, Contemporary Hindi Novel, Western Literary Thoughts

Research/Project Staff

Sl.No.	Name	Designation	Qualification	Specilisation
1	Prathyusha S.Nair	Post Doctoral Fellow	M.A & Ph.D	Autobiography
2	Dr.Sandya.S	Post Doctoral Fellow	M.A,PGDT & Ph.D	Fiction
3	Dr.Reshmi Raveendran	Post Doctoral Fellow	M.A, M.Phil & Ph.D	Drama

Research Scholars

Sl. No	Name	Funding Agency	Guide	Area of Work
1	SMT. KANAKALATHA O	Part Time	Dr. R. Sasidharan	“Swayam Prakash Ka Kahani Sahitya: Ek.Adhyayan”
2	SHYJU K	CUSAT - USRF	Dr. N. Mohanan	Nav Vampanthi Kaviyon Ki Kavitaon Mein Pratirodh Ki Sanskriti
3	ANUMOL KRISHNAN	E-Grantz - SC Dept.	Dr. K. Ajitha	Samakaleen Hindi Kahaniyon Mein Bal Vimarsh
4	ARYA P MANI	E-Grantz - SC Dept.	Dr. K. Vanaja	STRI VIMARSH KE PARIPREKSHY MEIN ANAMIKA KI RACHANAYEN
5	GREESHMA ELEZEBATH K A	USRF	Dr. R. Sasidharan	Adhunik Hindi Katha Sahitya Mein Transgender Ka Jeevan Yatharth
6	SARANYA SASI	E-Grantz – SC Dept.	Dr. R. Sasidharan	Samakaleen Hindi Dalit Natakomein Mein Yatharth Ke Vividh Ayam
7	AKHIL SIVANANDAN	USRF	Dr. Aneesh K.N	Hindi Yatra Sahitya Mein Himalaya
8	PRASAD M	UJRF	Dr. K. Vanaja	Chhayavadi Kavya – Ek Punarpaath
9	FATHIMA BEEVI R	MANF - UGC	Dr. K. Ajitha	Hindi Ki Samakaleen Dalit Alochana: Ek Adhyayan
10	ABHIRAMY M S	UJRF	Dr. K. Vanaja	Samakaleen Gram Kendrit Kahaniyom Mein Stree Jeevan Ki Sthitiyan
11	RESHMA M L	UGC - JRF	Dr. K. Ajitha	Ikkeesween Sadi Ki Hindi Kavitha Mein Vyangya- Ek Adhyayan

12	KAVYA NAIR B	UJRF	Dr. K. Vanaja	Queer Siddhant Ke Pariprekshya Mein Ikkisvin Shatabdi Ka Hindi Sahitya
13	ATHIRA KRISHNAN	UJRF	Dr. Girish Kumar K.K	Geethajali Sree Ka Kathasahitya Ek Anusheelan
14	SHINTU ELEZEBATH SHAJI	UJRF - CUSAT	Dr. K. Ajitha	Kabeer Sambandhi Hindi Kavitaon Ka Vishleshanatmak Adhyayan
15	AKHILA R	E-Grantz - SC/ST Dept	Dr. Girish Kumar. K.K	SATHOTTAR HINDI KAVITA KE VIKAS MEIN TEESARA SAPTAK KE KAVIYON KA YOGDAN
16	FATHIMATH RAMSEENA	Nil	Dr. Aneesh K.N	ASSIYOTAR HINDI VYANGYA NATAKON MEIN SATTA AUR RAJNITI
17	JISHNA RAGHAV	E-Grantz - ST Dept	Dr. Praneetha P	SAMAKALEEN HINDI – MALAYALAM ADIVASI UPANYASON KA TULNATMAK ADHYAYAN
18	NEETHU U V	UJRF	Dr.Praneetha P	SAMAKALEEN HINDI AUR MALAYALAM CINEMA MEIN CHITRIT QUEER SAMAJ KA VISHLESHNATMAK ADHYAYAN
19	SREENA S	UJRF	Dr.Praneetha.P	Samakaleen Pravasi Hindi Kahaniyon Ka Vishleshnatnak Adhyayan

20	APARNA A	UJRF	Dr. Prabhakaran Hebbar Illath	NAVATYUTTAR HINDI KAVITA MEIN PARYAVARAN DARSHAN
21	VISHNU V PRABHU	UJRF	Dr. Prabhakaran Hebbar Illath	SAMAKALEEN HINDI KAHANI MEIN FASCIVAD KA PRATHIRODH (2000- 2020 TAK KI HINDI KAHANI KE VISHESH SANDARBH MEIN)
22	REMYA KRISHNAN	UJRF	Dr.K.Ajitha	VISTHAPAN AUR SAMAKALEEN HINDI KAVITA : VIKAS KE VISHESH SANDARBH MEIN
23	CHIPPY M R	UJRF	Dr. K. Ajitha	BHIKHARI THAKUR : PATH AUR PUNARPATH
24	MEENU SIVAN	UJRF	Dr. K. Ajitha	SAMAKALEEN HINDI UPANYAS MEIN STREE AUR DHARM
25	MINNU JOSEPH	UJRF	Dr. Aneesh K.N	PREMCHAND KE HINDI SAMEEKSHAK : EK ADHYAYAN
26	VISHNUJA MOHAN	UGC	Dr. Girish Kumar .K.K	T.D Ramakrishnan Aur Alka Saraogi Ka Katha Sahitya : Ek Tulna
27	ANJALI B KUMAR	UJRF- CUSAT	Dr. Girish Kumar .K.K	Samakaleen Hindi Katha Sahitya Mein JaduyiYatharth
28	SONITHA S SARAF	PT	Dr. K. Vanaja	Benyamin Ke Upanyas 'Adujeevitham Ka Hindi Anuvad Evam Uski Samasyayen

29	ARYA VISWANATH	PT	Dr. R. Sasidharan	Samakaleen Hindi - Malayalam Mahila Kahanikaron Ki Kahaniyon Ka Tulanatmak Adhyayan : Chitra Mudgal Aur Chandramai Ki Kahaniyon Ke Vishesh Sandarbh Mein
30	SREELEKHA K N	PT	Dr. R. Sasidharan	IKKEESWEEN SADI KI HINDI KAHANIYON MEIN ADIVASI JEEVAN(2001-2020)
31	ANJUSREE PK	USRF - CUSAT	Dr. Aneesh K.N	Samakaleen Hindi Katha Sahitya Mein Kashmir
32	N.R. SETHULAKSHMI	USRF - CUSAT	Dr. K. Ajitha	Bharatiya Upanyason Mein Dharm Nirapekshata (Chune Huye Upanyason Ke Vishesh Sandarbh Mein)
33	REVATHY S	USRF - CUSAT	Dr. K. Vanaja	Samakaleen Hindi Kavita Ki Bhasha: Ek Adhyayan
34	ANISHA P.U	USRF - CUSAT	Dr. Girish Kumar K.K	Naksalvad Ke Pariprekshya Mein Sattothari Hindi Kavitha: Ek Adhyayan
35	MYMOONA.P	MANF - UGC	Dr. R. Sasidharan	Samakaleen Hindi Kahani Mein Ghar: Ek Vishleshnatmak Adhyayan
36	NEETHU. P.J	USRF - USRF	Dr. K. Ajitha	Samakaleen Hindi Kahani Mein Upbhoktavad
37	RINU ELIZEBATH PHILIP	USRF - CUSAT	Dr. Aneesh K.N	Samakaleen Hindi Kahaniyon Mein Gaav

38	BINDU R	Part Time	Dr.R.Sasidharan	Rajni Tilak Ke Sahitya Ka Vishleshnatmak adhyayan
39	SARIGA I V	E-Grantz - SC Dept.	Dr. N. Mohanan	"Premchand Ke Kathasahitya Ka Sampathishastriya Vivechan
40	SHYJA.K	UJRF	Dr. R. Sasidharan	Ikkisveem Sadi Ke Pratham Dashak Ke Hindi Katha Sahitya Mein Sampradayikata Ka Virodh
41	MARY GEENA.KG	USRF - CUSAT	Dr. N. Mohanan	Hindi Aur Malayalam Navajagarankaleen Upanyasom Ka Tulanatmak Adhyayan
42	SANGEETHA SADANANDAN	UJRF	Dr. K. Ajitha	Prasadyugeen Hindi Natakon Mein Rashtriya Chetna
43	SUGATHA A.R	UJRF	Dr. R. Sasidharan	Alka Saraogi Ka Katha Sahitya: Ek Vishleshnatmak Adhyayan
44	ANJU K R	USRF - CUSAT	Dr.K.Ajitha	Swatantryottar Hindi Upanyasom mein Veshya jeevan
45	VINEEJA VIJAYAN	UGC	Dr.K.Ajitha	Samakaleen Mahila Upanyasom Mein Stree Mukti Ke Aayam
46	AMRUTHA C S		Dr.Prabhakaran Hebbar Illath	Samakaleen Hindi Kahani Mein 'Pruthakkaran' Ka Swaroop (Navathyuthan Kahani Ke Vishesh Sandarbh Mein)
47	PREETHIKA N		Dr. Aneesh K.N	Samakaleen Hindi Upanyasom Mein Vruddh Jeevan Ki Samasyayem : Ek Adhyayan

48	TINU ALEX		Dr.Praneetha.P	Swatantrrottar Hindi Upanyason Mein Divyang Jeevan(Manavadhikar
49	CHRIS P GEORGE		Dr.K.Ajitha	Samakaleen Hindi Kahani Mein Aadhunik Sabhyata Vimarsh
50	IRIN ANN ABRAHAM		Dr.Girishkumar K.K	Khel Kendrit Hindi Filmon ka Vishleshanatmak Adhyayan
51	RAHUL K S		Dr. Aneesh K.N	HINDI UPANYAS AUR SAAJHI SANSKRITI(NABBE KE BAAD KE VISHESH SANDARBH MEIN

Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer	1
2	Assistant Librarian	1
3	Assistant	2
4	Prof. Assistant	1 Contract
5	Computer Assistant	1 (P) 1- D. Wages
7	Lab/Library Assistant	1
8	Office Attendant	1
9	Sweeper-cum-Cleaner	Full time – 1, Part time – 1(Daily Wage)

Student Enrollment

Sl. No.	Programme of Study	Men	Women	Total
1	M.A	2	29	31
2	Ph. D	2	5	7
3	PG Diploma in Translation, Journalism and Hindi Language Computing	1	18	19
5	Computer Aided Language Training in Hindi (8 weeks)	During the Pandemic Period the course was not conducted		
6	Post Doctoral Fellowship	0	3	3

Research Facilities

- g. Laboratories : Computer Lab
h. Major equipments : Nil
i. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
Books: 47029 Journals: 31	614

Online webinars conducted.

Sl.No.	Name	Affiliation	Remarks
1	Dr. Ashish Tripathi	Professor, Dept. Hindi, BHU, Varanasi	Webinar – Hindi Drama and Theatre on 29/04/2021
2	Dr. Ram Prakash	Professor, Dept. Hindi, S.V University, Thirupathi, A.P	Webinar – Hindi Drama and Theatre on 29/04/2021
3	Dr.R Jayachandran	Professor & Head, Dept. of Hindi, University of Kerala	Open Defence & Viva Mary Geena K.G – Online 8/06/2021

4	Dr.Bharati Gore	Professor, Dept.of Hindi, Dr.B.A.M.U, Aurangabad-04, Maharashtra	Open Defence & Viva Anju K R – Online 24/06/2021
5	Dr.B.Kamakoti	Associate Professor & Head, Dept. of Hindi, Annamali University	Open Defence & Viva Anjusree P K – Online 09/07/2021
6	Dr.Ramaprakash	Chairman, Board of Studies, Dept.of Hindi, S.V.University, Tirupati- A.P	Open Defence & Viva Anisha P U – Online 29/07/2021
7	Dr. Bir Pal Sing Yadav	Professor, Dept. of Hindi, Mahatma Gandhi International Hindi University, Maharashtra	Premchand Jayanthi Samaroh on 31/7/2021 – Webinar
8	Dr.A. Aravindakshan	Professor(Rtd),Sandram, Puthussery Post, Palakkad	Golden Jubilee Lecture on 05/08/2021
9	Dr.Ganesh B Pawar	Professor, Department of Hindi, School of Humanities and Languages & Director, IQAC Central University of Karnataka, Kalaburagi	Open Defence & Viva N R Sethulakshmi – Online 13/08/2021
10	Dr. Mohan	Pofessor Department of Hindi, Delhi University	Open Defence & Viva Sariga I V – Online 24/08/2021
11	Dr. Ram Prakash	Chairman, Board of Studies, Dept.of Hindi, S.V.University, Tirupati- A.P	Open Defence & Viva Rinu Elizabeth – Online 25/08/2021
12	Dr. Chitra. P	Professor, Department of Hindi, S.S.U.S Kalady	Two Day National Webinar on HINDI SAHITYA AUR VIVIDH VIMARSH, CUSAT was held on 10 th & 11 September, 2021
13	Dr. Rashmi Rawat	Critic	Two Day National Webinar on HINDI SAHITYA AUR VIVIDH VIMARSH, CUSAT was held on 10 th & 11 September, 2021

14	Dr. Achutanand Mishra	Poet & Critic	Two Day National Webinar on HINDI SAHITYA AUR VIVIDH VIMARSH, CUSAT was held on 10 th & 11 September, 2021
15	Dr. Ranendra Kumar	Famous Hindi Writer	Two Day National Webinar on HINDI SAHITYA AUR VIVIDH VIMARSH, CUSAT was held on 10 th & 11 September, 2021
16	Dr. Ashok B	Assistant Professor, University College, Thiruvananthapuram	Two Day National Webinar on HINDI SAHITYA AUR VIVIDH VIMARSH, CUSAT was held on 10 th & 11 September, 2021
17	Dr. Vishnu Thankappan	Assistant Professor, Department of Hindi, Payyannur College	Two Day National Webinar on HINDI SAHITYA AUR VIVIDH VIMARSH, CUSAT was held on 10 th & 11 September, 2021
18	Dr. Deepakumari	Assistant Professor, D.B.College, Thalayolaparambu, Kottayam	Two Day National Webinar on HINDI SAHITYA AUR VIVIDH VIMARSH, CUSAT was held on 10 th & 11 Sep.'21
19	Dr. Bindu M.G	Dept.of Hindi, Maharaja's College, Ernakulam	Two Day National Webinar on HINDI SAHITYA AUR VIVIDH VIMARSH, CUSAT was held on 10 th & 11 Sep'21

20	Dr. Chithra P	Professor, Department of Hindi, S.S.U.S, Kalady	Two Day National Webinar on HINDI SAHITYA AUR VIVIDH VIMARSH, CUSAT was held on 10 th & 11 Sep'21
21	Dr. Sindhu S.L	Associate Professor, K.K.T.M. College, Pullut, Kodungallur	Two Day National Webinar on HINDI SAHITYA AUR VIVIDH VIMARSH, CUSAT was held on 10 th & 11 September, 2021
22	Dr.Gopalji Pradhan,	Professor School of Letters, Dr. B. R. Ambedkar University, Delhi	Suneetha Bai Endowment Lecture Series on 23/09/2021
23	Dr. Puneet Kumar Rai,	Associate Professor Chattisgarh.	Suneetha Bai Endowment Lecture Series on 24/09/2021
24	Dr.Ram Prakash	Chairman, Board of Studies, Dept.of Hindi, S.V.University, Tirupati- A.P	Open Defence & Viva Shyja K – Online 30/09/2021
25	Dr.PRABHAKAR SINGH	Professor, Banaras Hindu University, Varanasi	Golden Jubilee Lecture Series on 09/10/2021
26	Dr.AVINASH KUMAR SINGH	Professor & Head, Jamshedpur Women's University, Jharkhand	Golden Jubilee Lecture Series on 13/10/2021
27	Dr.GARIMA SREEVASTHAV	Professor, BHARATHIY BHASHA KENDRU, JNU, DELHI	Suneetha Bai Endowment Lecture Series on 21/10/2021
28	Dr.Mukthesar Nath Thivari	Professor, Santhi Nikethan, West Bengal	Suneetha Bai Endowment Lecture Series on 22/10/2021
29	Sri.VYOMESHSH UKLA	Director Roovani theatres, Banaras	Suneetha Bai Endowment Lecture Series on 23/10/2021
30	Shri.E.P Rajagopal	Malayalam Critics & Dramatist	Kerala Piravi Celebration 01/11/2021

31	Dr.KRISHNA KUMAR SINGH	MGAHV, WARDHA, MAHARASHTRA	Golden Jubilee Lecture on 04/12/2021
32	Dr.SADANAND SAHI	Professor, Department of Hindi, Ajagara, Varanasi, Uttar Pradesh	Golden Jubilee Lecture on 12/11/2021
33	Dr.R Jayachandran	Professor & Head, Dept. of Hindi, University of Kerala	M.A Ist Year Induction Programme on 11/11/2021
34	Dr.Ganesh B Pawar	Professor, Department of Hindi, School of Humanities and Languages & Director, IQAC Central University of Karnataka, Kalaburagi	Open Defence & Viva Sangeetha Sadhanandan – Online 15/11/2021
35	Dr.Ravi Ranjan	Professor, Dept.of Hindi, School of Humanities at the University of Hyderabad	Open Defence & Viva Revathy S – Online 19/11/2021
36	Dr.Rakesh Kumar Singh	Lecturer (Hindi), Sriram Model Inter College, Thora(Jewar), Gautham Budh Nagar(District),Uttar Pradesh - 203155	Golden Jubilee Lecture on 20/11/2021
37	Dr.Rekha Rani	Dr. Rekha Rani Professor & Head Dept. of Hindi EFL University, Hyderabad	Open Defence & Viva Arya Viswanath – Online 09/12/2021
38	Dr.PREM SHANKAR PANDEY	Delhi University, Delhi	Golden Jubilee Lecture on 29/12/2021
39	Dr.Abhishek Pratap Singh	Critic, Kothpet, Telangana	Golden Jubilee Lecture on 29/12/2021
40	Dr.Promila	Assistant Professor of Hindi, English & Foreign Languages University,Hydrabad	Golden Jubilee Lecture on 31/12/2021
41	Dr.Shanti Nair	Professor, SSVS, Kalady	Golden Jubilee Lecture on 31/12/2021
42	Sri. N. M Pearson	Famous Orator and Writer	‘Safdar Hashmi Day Celebration’ on 03/01/2022
43	Sri. Rakesh Shankar Bharti	Ukraine	‘World Hindi Day’ on 10/01/2022

44	Dr.Ram Prakash	Chairman, Board of Studies, Dept.of Hindi, S.V.University, Tirupati- A.P	Open Defence & Viva Mymoona P – Online 14/02/2022
45	Pro.Ashutosh Mohan	Professor, Delhi University	Special Talk on Hindi Fiction 22/02/2022
46	Dr.K. V. Sasi	Assistant Professor, Thunjathezhuthachan Malayalam University, Tirur	World Mathru Bhasha Day on 21/02/2022
48	Dr.Shabeela	FJLT Hindi, Govt. U.P School Kongad, Palakkad	‘GANDHI CHINTAN AUR HINDI SAHITYA’ on 03/03/2022
49	Dr.Sindhu	Assistant Professor, Dept. of Hindi, Payyanur College, Kannur	‘GANDHI CHINTAN AUR HINDI SAHITYA’ on 03/03/2022
50	Dr.Manju Ramachandran	Associate Professor, University College, Thiruvananthapuram	‘GANDHI CHINTAN AUR HINDI SAHITYA’ on 03/03/2022
51	Dr.Suma	Associate Professor, Govt. Arts & Science College, Calicut	GANDHI CHINTAN AUR HINDI SAHITYA’ on 03/03/2022
52	Dr.Anand	Associate Professor, Govt. Arts & Science College, Calicut	GANDHI CHINTAN AUR HINDI SAHITYA’ on 03/03/2022
53	Dr.Shylaja	Associate Professor, Govt. College, Tirur	GANDHI CHINTAN AUR HINDI SAHITYA’ on 03/03/2022
54	Dr.P.J Herman	Associate Professor, SSUS, Kalady	GANDHI CHINTAN AUR HINDI SAHITYA’ on 03/03/2022
55	Dr.Sujata Chaudhari	Well Known Writer and Social Worker, Bihar	GANDHI CHINTAN AUR HINDI SAHITYA’ on 03/03/2022
56	Dr.Rajiv Ranjan Giri	Professor, J.N.U, New Delhi	International Webinar on ‘GANDHI CHINTAN AUR HINDI SAHITYA’ on 03/03/2022

57	Dr.Mohankant Gautam	Well known Writer, Netherlands	International Webinar on 'GANDHI CHINTAN AUR HINDI SAHITYA' on 03/03/2022
58	Prof.(Dr.)Purusho ttam Agrawal	Renowned Hindi Writer and Critic, JNU, New Delhi	International Webinar on 'GANDHI CHINTAN AUR HINDI SAHITYA' on 03/03/2022
60	Dr.Pramod Kovaprath	Professor, Calicut University	International Webinar on 'GANDHI CHINTAN AUR HINDI SAHITYA' on 04/03/2022
61	Dr.Pushpita Avasti	Renowed Orator & Writer, Netherlands	International Webinar on 'GANDHI CHINTAN AUR HINDI SAHITYA' on 04/03/2022
62	Dr.Vinod Kumar Shahi	Professor (Rtd), Punjab	International Webinar on 'GANDHI CHINTAN AUR HINDI SAHITYA' on 04/03/2022
63	Dr.Rajaram Bhadu	SAMANTAR SANSTHAN, 71/17, Shyampur Road, Pratap Nagar, Jaipur	International Webinar on 'GANDHI CHINTAN AUR HINDI SAHITYA' on 04/03/2022
64	Dr.Asghar Wajahat	Renowed Writer, New Delhi	International Webinar on 'GANDHI CHINTAN AUR HINDI SAHITYA' on 05/03/2022
65	Dr.Aji.C.Panikar	Associate Professor, M.A College, Kothamangalam	International Women's Day on 11/03/ 2022.
66	Dr.Taru S Pawar	Associate Professor, Central University of Kerala	Open Defence & Viva Neethu P J – Online 11/03/2022

Ph.Ds Awarded

Sl. No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	HINDI AUR MALAYALAM NAVAJAGARANKALEEN UPANYASOM KA TULANATMAK ADHYAYAN	Mary Geena	Dr.N.Mohanan
2	SWATANTRYOTAR HINDI UPANYASON MEIN VESHYA JEEVAN	Anju K R	Dr. K. Ajitha
3	SAMAKALEEN HINDI KATHA SAHITYA MEIN KASHMIR	Anjusree P K	Dr.Aneesh K N
4	Naksalvad Ke Pariprekshya Mein Sattothari Hindi Kavita : Ek Adhyayan”	Anisha P U	Dr.Girishkumar K K
5	BHARATIYA UPANYASON MEIN DHARMNIRAPEKSHATA(Chune Huye Upanyason ke Vishesh Sandarbh Mein)	N R Sethulakshmi	Dr. K. Ajitha
6	“Premchand Ke Kathasahitya Ka Sampathishastriya Vivechan”	Sariga I V	Dr.N.Mohanan
7	SAMAKALEEN HINDI KAHANIYOM MEIN GAAV	RINU ELIZABETH PHILIP	Dr.Aneesh K N
8	IKKISVEEM SADI KE PRATHAM DASHAK KE HINDI KATHASAHITYA MEIN SAMPRADAYIKATA KA VIRODH	Shyja K	Dr.R.Sasidharan
9	PRASADYUGREEN HINDI NATAKON MEIN RASHTRIYA CHETNA	SANGEETHA SADANANDHAN	Dr. K. Ajitha
10	SAMAKALEEN HINDI KAVITA KI BHASHA: EK ADHYAYAN	REVATHY S	Dr.K.Vanaja
11	SAMAKALEEN HINDI – MALAYALAM MAHILA KAHANIKARON KI KAHANIYON KA TULANATMAK ADHYAYAN : CHITRA MUDGAL AUR CHANDRAMATI KI KAHANIYON KE VISHESH SANDARBH MEIN”	ARYA VISWANATH	Dr.R.Sasidharan

12	SAMAKALEEN HINDI KAHANI MEIN GHAR : EK VISHLESHNATMAK ADHYAYAN	MYMOONA P	Dr.R.Sasidharan
13	SAMAKALEEN HINDI KAHANI MEIN UPBHOKTAVAD	NEETHU P J	Dr.K.Ajitha

Publications

a. Papers

Sl.No.	Title of Paper	Impact Factor, if any
Dr. K. Ajitha		
1	Malayalam Natakomein mein Gandhi – Anuseelan – January 2022(Accepted)	
2	Adhe Adhoore Aur Hayvodana: Ek Tulna – Anuseelan – July 2021(Accepted)	
Dr. Prabhakaran Hebbar Illath		
1	<i>Anuvad: KuchVichar</i>	Nil
2	<i>Krishna aur Geetha ki Bahuroopadarshitha</i>	Nil
3	<i>Admiyath ko Bachane ka Iklautha Sangharsh</i>	Nil
4	<i>Swathanthratha ki Gulal (Chayavadi Kavita par Ek Nazar)</i>	Nil
5	<i>Devayani ko Patthehuye</i>	Nil
6	<i>Roshnayi Bharti Kavitha</i>	Nil
7	<i>NatyaNabh ka UjwalThara</i>	Nil
8	<i>Sangharsh Evam SundarathakeSahachar Kavi Veeren</i>	Nil
9	<i>Berozgar ki Kasak</i>	Nil
10	<i>Anye ke Srijan ka Prathirodh Karthi Asgar ki kahaniyam (Co-author)</i>	Nil
11	<i>Kavitha, Vikas aur Manavadhikar</i>	Nil
Dr.Praneetha P		
	<u>Article.</u>	
1	Vinod Kumar Shukla Ke Upanyason mein Chitrit Madhyavarageya Jeevan – Bhoal Sodh Manjusha. Vol-14, issue-4. October – 2021	3.811
2	Samanate ki Chah aur Samakaleen Stri Kavita – Bohal Sodh Manjusha. Vol-15. Issue-1, March 2022	3.811

3	Paaristhitiki ke sandarbh mein Hindi aur Malayalam kahani - Anuseelan – July 2021	
4	Gandhi Chintan ki prasangikata – Anuseelan – January 2022	
Dr.Girish Kumar K K		
1	Samakaleen Malayalam Kavita mein Paristhitik Sajagata	Nil
2	<i>Samakaleen Hindi kavita mein vishthapiton ka jeevan-yatharth</i> , Anuseelan	Nil
3	<i>Sachchi aur naisargik svachhandata ke pravartak kavi</i> , Jankriti	Nil
Dr. Aneesh K. N		
1	Hindi ke Nukkad Natakomein Prathirodhi Swar – Janakriti – March - 2022	
2	Dharmavir Bharathi ke Yathra Sahitya – Sahitya Yatra – February - 2022	
3	Aadivasi sanskriti – Anuseelan – July - 2022	
4	Nepali Kranti Katha mein Renu ki Rajanitik Drishti – Anuseelan – July 2021	
Ms.Sreelekha K.N		
1	Apurnata mein Purnata ki Talash: Purush Tan mein Phansa mera Nari Man, Universe of Knowledge :Research Analysis, July 2021,ISSN-2454-7689	1.0934 (GIF)
2	Mitti, Jadon se judi huyi kavita,Drishtikon, March-April 2021,ISSN - 0975-119x UGC Care group I listed	5.051
3	Aadivasi jeevan sanskriti se sakshatkar(jangali phool aur kolukkan ke vishesh sandarbh mein) – Anuseelan July 2021	
Dr. Sheena M. A		
1.	‘Baapu kaid hai’ natak mein Gandhi ki prasangikata - Accepted	
2	Sarvam Saha naari: Neelu Neelima Neelofar aur Aus ki Boondh ke vishesh sandarbh mein.	
Dr.Viji.V		
1	NavjagaranKeAgradooth : Sree Narayana Guru –Jankriti Issue 72-73 (Multidisciplinary International Magazine) (Peer - Reviewed) ISSN : 2454-2725, April – May 2021	Nil

b. Books

Sl.No.	Title of Book
Dr. Viji V	
1	Samkalin Sahitya – Vimarsh Ke Aayam – Anuugya Books, Delhi- 110032, ISBN: 978-93-91034-13-9, May 2021

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Sl.No	Name of Participant	Name of Seminar / Conference/ Workshop	Role
1	Dr. K. Ajitha	Bhishma sahni Aur Unka Natak – Hanush/The Zamorin’s Guruvayoorappan College, Calicut	Resource Person
		Hindi Natak Aur Rangamunch – University of Calicut	Resource Person
		Swatanrata Sangram Aur Dakshin Bharath – University of Madras	Resource Person
1	Dr. Aneesh K N	GANDHI CHINTAN AUR HINDI SAHITYA	Participant
2	Dr. Girish Kumar K K	GANDHI CHINTAN AUR HINDI SAHITYA	Organizing Secretary
		Hindi Sahitya: Vivid Vimarsh	Participant
		Prof. Suneeta Bai Endowment Lecture Series	Participant
3	Dr. Praneetha P	National Workshop conducted by SSUS Kalady (RC-Koyilandi)	Resource Person
4	Dr. Viji .V	AICTE Training And Learning (ATAL) Academy Online Elementary FDP on ‘Green Literature Hindi and Malayalam’ from 22/11/2021 to 26/11/2021 at CUSAT	Participant
5	Dr. Prabhakaran Hebbar Illath	<i>Vistapan aur Samakaleen Hindi Sahitya</i>	Paper Presentation
6	Dr. Prabhakaran Hebbar Illath	<i>Samakaleen Hindi Kavitha ka Mukti Rag</i>	Paper Presentation
7	Ms. Sreelekha K.N	National Webinar on ‘Hindi ka Gadhya Sahitya’ conducted by Department of Hindi, Adruka College of Commerce and Arts, Hyderabad	Participation
		Lecture Series -34 on ‘Adivasi Lekhan’ conducted by the Department of Hindi, Government College for Women, Thiruvananthapuram	Participation
		Lecture Series-35 on ‘Samakalin Hindi Natak-Stri Mukti ka Prashna’ conducted	Participation

		by the Department of Hindi, Government College for Women, Thiruvananthapuram held on 20 June-2021.	
		International Webinar on ' <i>Ikkesween Sadi ki Kavitaon mein Hasya aur Vyanga</i> ' conducted by the Department of Hindi, Nehru Arts Science and Commerce College, Karnataka held on 20 June-2021.	Participation
		One Day International Webinar on <i>Hindi Bhasha aur Bal Sahitya</i> conducted by MVNSPMANDALS PARTH Arts and Science College, Maharashtra held on 21 June 2021.	Participation
		Two Day International Webinar on ' <i>Pravasi Hindi Sahitya : Vividh Ayam</i> ' conducted by Mangaluru Vishvidhyalay, Mangalgotri held on 29-30 June-2021.	Participation
		One Day International Webinar on <i>Hindi Cinema and Third Gender Discourse</i> conducted by Communication Today in collaboration with Credent T.V held on 18 July 2021.	Participation
		One Day National Webinar on <i>Phanishwarnath Renu: Srijan ke Vividh Ayam</i> conducted by Mankar College, West Bengal held on 18 July 2021.	Participation
		Lecture Series-37 on ' <i>Adivasi Darshan, Itihas aur Sanskriti</i> ' conducted by the Department of Hindi, Government College for Women, Thiruvananthapuram held on 18 July-2021.	Participation
		Two Day National Webinar on <i>Samakalin Sandarbh mein Premchand</i> conducted by Bharat Mata College, Thrikkakara held on 31 July- 01 August 2021.	Participation
		National Webinar on <i>Hindi mein Computer ki Bhoomika</i> conducted by Sanatan Dharm College, Haryana held on 30 May 2021.	Participation
		National Webinar on <i>Global Context of Hindi Translation</i> conducted by JNU, Delhi held on 30 Sept 2021.	Participation
		Lecture Series-40 on ' <i>Vaishvikaran aur Hindi Sahitya</i> ' conducted by the Department of Hindi, Government	Participation

		College for Women,Thiruvanathapuram held on 12 Sept-2021.	
		One Day National Webinar on <i>Samakalin Hindi ke Vividh Ayam</i> conducted by M.S Irani College,Kalburgi held on 22 Oct 2021.	Participation
		One Day International Webinar on <i>Paryavaran aur Samakalin Hindi Sahitya</i> conducted by Vishv Hindi Sangathan,Delhi in association with Devam Sansthaan Balgaariya,Europe held on 07 January 2022.	Participation
		One Day International Webinar on <i>Hinditar Prant mein Hindi Bhasha aur Sahitya:Vaishvik Paripreshya mein</i> conducted by St.Aloysius College,Karnataka held on 08 January 2022.	Participation
		One Day International E-Conference on <i>Hindi ka Vaishwik Swaroop-Chin ke Vishesh Sandarbh mein</i> conducted by Chevalier T.Thomas Elizabeth College for Women,Chennai held on 09 January 2022.	Participation
		Lecture Series-46 on ' <i>Vaishvik Pariprekshya mein Bharatiyata</i> conducted by the Department of Hindi,Government College for Women,Thiruvanathapuram held on 10 January-2022.	Participation
		National Webinar on ' <i>Adivasi Samaj aur Vikas ki Rajniti</i> ' conducted by the IQAC & Department of Social Work,AISECT University,Hazaribagh held on 04 March -2022.	Participation
		One day Professional Development E-Workshop on <i>Plagiarism and Citation Techniques :Some Useful Tips for Researchers</i> conducted by S.P.D.M Arts , S.B.B & S.H.D Commerce & S.M.A Science College,Dhule on 25 May 2021.	Participation

		Presented a paper on <i>Adivasi Chintan : Vishwasi Ekka ki Kavitaon ke Sandarbh mein</i> in the One Day International webinar organized by Hindi Cultural Center Tokyo,Japan on 27 June 2021.	Paper Presentation
		Presented a paper on <i>Adivasi Chintan mein Stri Swar</i> in the One Day National Seminar conducted by Jharkhandi Bhasha Sahitya Sankriti Akhra in association with Dr.Ram Dayal Munda Tribal Welfare Research Institute and Dept. of Welfare,Govt of Jharkhand on 22 November 2021.	Paper Presentation
		One Week FDP organized by the Teaching Learning Centre, Ramanujan College University of Delhi on <i>Online Tools For Research & Analysis</i> from 8 June to 14 June 2021.	Participation
		Five Days Online FDP organized by the Institute of Advanced Studies in Education (IASE),Agarthala,Tripura on <i>Web Apps & E-Content Development for Digital Learning</i> from 25-29 May 2021.	Participation
		Three Day FDP organized by the Department of Data Sciences, Siva Sivani Institute of Management,Telugana on <i>Citation Styles and Reference Lists</i> from 21st - 23rd June, 2021.	Participation
		One Week FDP organized by the Faculty Development Centre,Kerala State Higher Education Council, Thiruvananthapuram on <i>Edu.Tech Hands-on Online Workshop</i> through online mode from 23rd to 28th June 2021.	Participation
		Two Week FDP organized by the Teaching Learning Centre, Ramanujan College University of Delhi on <i>Managing Online Classes & Co- Creating MOOCS (Level 2)</i> from 02 June to 16 July 2021.	Participation
		Two Days Workshop organized by the St.Francis De Sales College,Bengaluru on <i>Teaching and Learning using ICT</i> held from 03 to 04 February 2022.	Participation

Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
K.Ajitha	Dept of Hindi CUSAT	Head
	Women's Studies Centre, CUSAT	Hon'ble Director
	Centre for Green Literature	Co- Ordinator
	Anuseelan Patrika	Chief Editor
	Aakhar Patrika	Reviewer
	Dakshina Path	Editorial Board Member
Dr. Prabhakaran Hebbar Illath	Janakamsha	Editorial Board Member

Awards/ Honours/ Fellowships etc. received

Sl.No	Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
1	Dr. Viji. V	Kamal Sadhika Samman	Brijloksahitya kala sanskriti academy, Agra- 283111(Uttar Pradesh) year 2022
2	Mis.Sreelekha K.N	Proud Indian Innovative Teacher Award 2022	IMRF,Vijayawada.
		Dr.Vishwakirti Naari Gourav Samman-2022	Gina Devi Shodh Sansthaan,Haryana

Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)	Remarks
1	SEED money	CUSAT	100000	Dr. Prabhakaran Hebbar Illath	Completed the Project
2	SEED money	CUSAT	100000	Dr. Praneetha. P	

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Coordinator	Funding Agency
1	HINDI SAHITYA AUR VIVIDH VIMARSH(National Webinar)	10/10/2021 & 11/10/2021	Dr. P Praneetha	CUSAT
2	International Women Day (Seminar)	01-03-2022	Dr.Aneesh K N	CUSAT
3	Premchand Jayanthi Samaroh	31-07-2021	Dr.K.Ajitha	CUSAT
4	Hindi Day Celebration	14-09-2021	Dr.K.Ajitha	CUSAT
5	Kerala Piravi	01-11-2021 -	Dr.K.Ajitha	CUSAT
6	Suneetha Bai Endowment Lecture Series on 24/09/2021	24-09-2021	Dr.K.Ajitha	CUSAT
7	‘Safdar Hashmi Day Celebration’	03-01-2022	Dr.K.Ajitha	CUSAT
8	‘World Hindi Day	10-01-2022	Dr.K.Ajitha	CUSAT
9	GANDHI CHINTAN AUR HINDI SAHITYA’ on 03/03/2022(National Webinar)	03-03-2022	Dr. Girish Kumar K K	CUSAT
10	Special Talk on Hindi Fiction	22-02-2022		CUSAT
11	World Mathru Bhasha Day	21-02-2022	Dr.K.Ajitha	CUSAT
12	ATAL – FDP Programme on Green Literature : Hindi & Malayalam	22-11-2021 to 26-11-2021	Dr.Prabhakaran Hebbar Illath	CUSAT
13	Orientation Programme on Library Resources, Services and Notnul Data base	30-11-2021	Sri. Joe Joseph	CUSAT
14	Suneetha Bai Smrithi Puraskar Ceremony	30-03-2022	Dr.K.Ajitha	CUSAT
15	Golden Jubilee Lecture Series – Kavita se Batkali	10 Lectures August 2021 to December 2022	Dr.Prabhakaran Hebbar Illath	CUSAT

Department Instrumentation

Brief History of the Department

The Department of Instrumentation at the Cochin University of Science and Technology was established in the year 1995. Though it is a relatively young teaching and research department, it has a long history of evolution as it was derived from the University Science Instrumentation Centre (USIC). The department of Instrumentation offers a vibrant environment for education and research in Instrumentation Technology. The vision of the department is to provide the leadership and guidance to enable India's excellence in the field of Instrumentation. The department is committed to expansion of the frontiers of knowledge in Instrumentation and to provide the students with an inspiring and a rewarding learning experience.

Milestones: -

- 1978- USIC started as a service department with UGC support
- 1990- Elevated to a Level III USIC by UGC and became a full-fledged academic department.
- 1994- Started PG diploma in Instrumentation.
- 1995- University reorganized USIC into a full-fledged teaching department.
- 1996- Started Six Semester Post- BSc B. Tech, in Instrumentation.
- 1999- Post- BSc B. Tech, in Instrumentation is converted to 8 semester B. Tech in Instrumentation.
- 2011- Started Four Semester M. Sc. Course in Instrumentation.
- 2012- B. Tech, Syllabus revised and course is renamed as B. Tech, in Instrumentation Technology.
- 2016- Sanction is given by University to start a new M. Tech, course in Instrumentation Technology.
- 2017- Started Four Semester M. Tech, course in Instrumentation Technology.

Programmes of Study/Research:

- a. B.Tech. Instrumentation Technology
- b. M. Sc. Instrumentation
- c. M. Tech. Instrumentation Technology
- d. Ph.D.
- e. PDF

Faculty Members

Sl. No.	Name	Designation	Qualification	Specialisation
1.	Dr. Johney Isaac	Associate Professor & Head	Ph.D	Applied Physics and Instrumentation
2.	Dr. Reju V. G.	Associate Professor	Ph.D.	Electronics
3.	Dr. Pankaj Sagar	Assistant Professor	Ph.D	Cryogenic Instrumentation
4.	Mr. Ratheesh P. M.	Assistant Professor	M.Tech.	Microprocessor based Instrumentation
5.	Dr. Nimmy John T.	Assistant Professor (on Contract)	Ph.D	Signal Processing
6.	Ms. Soni P.	Assistant Professor (on Contract)	M. Tech	Embedded system Design
7.	Ms. Anju V. Sathyan	Assistant Professor (on Contract)	M.Tech	Signal Processing
8.	Mr.Sanoj K. P.	Assistant Professor (on Contract)	M.Tech.	Process Control
9.	Ms. Namitha Venugopal	Assistant Professor (on Contract)	M.Tech.	Signal Processing
10.	Mr. Sam Varghese	Assistant Professor (on Contract)	M.Tech.	Image & Signal Processing
11.	Dr. Anju Sunny	Assistant Professor (on Contract)	Ph.D	Process Control
12.	Dr. Minu A. Pillai	Assistant Professor (on Contract)	Ph.D	Signal Processing & Instrumentation
13.	Mr. Kiran Babu	Assistant Professor (on Contract)	M.Tech	Signal Processing

14.	Ms. Darasana V	Assistant Professor on Contract	M.Tech.	Embedded systems
15.	Ms. Veena K. V.	Guest Faculty	M.Tech.	Signal processing
16.	Ms. Teena Chacko	Guest Faculty	M. Sc.	Mathematics
17.	Ms. Smitha N. M.	Guest Faculty	M. Tech.	Embedded System Design
18.	Mr. Jacob James	Guest Faculty	B.Tech	Tool Engineering
19.	Dr. Shalini Menon	Guest Faculty	Ph.D	Analytical Chemistry
20.	Dr. Thomas Joseph	Guest Faculty	Ph.D	Mathematics
21.	Dr. Stephen Rodrigues	Guest Faculty	Ph.D	Microwave Electronics
22.	Ms. Akhila P	Guest Faculty	M.Tech	Transducers & Industrial Instrumentation

Emeritus Professor/Scientist (if any)

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr.K Rajeev Kumar	Professor (retd)	Ph.D	Semiconductor Thin Films

Research/Project Staff

Sl.No.	Name	Designation	Qualification	Specialization
1	Dr.Aju John K	Post Doctoral fellow	Ph.D	Electro Magnetic Shielding

Research Scholars

Sl. No.	Name	Funding Agency	Guide	Area of Work
1.	Soumya H.	PT	Dr. Jacob Philip	Physical properties of low dimensional solids
2.	Anil Johny	PT	Dr. K .N. Madhusoodanan	Image processing in Biomedical applications

3.	Sundar Rajan	PT	Dr. K .N. Madhusoodanan	Linearization of sensors and its applications
4.	Ratheesh P. M.	PT	Dr. K .N. Madhusoodanan	Multi Sensor Data Fusion
5.	Vishnukumar V.	DST	Dr. K .N. Madhusoodanan	Sensors and Signal Processing
6.	Siril V. S.	CUSAT	Dr. K .N. Madhusoodanan	Semiconductor Metal Oxide Gas Sensors
7.	Melbin Baby	PT	Dr. K. Rajeev Kumar	Material Science
8.	Abhayjith	DST	Dr. K. Rajeev Kumar	Solar Holography
9.	Lidiya T. V.	PT	Dr. K. Rajeev Kumar	Material Science
10.	Thomas Antony	PT	Dr. K. Rajeev Kumar	Fiber Optic Sensors
11.	Manoj B.	PT	Dr. Stephen Rodrigues	Wireless Communication
12.	Peter Cyriac	PT	Dr. Stephen Rodrigues	Microwave Antenna
13.	Sanish V. S.	PT	Dr. Stephen Rodrigues	Microwave Engineering- (Micro strip Antenna Design)
14.	Hrudhya B. Kurup	CSIR	Dr. Stephen Rodrigues	Microwaves and Antennas
15.	Divya Antony	PT	Dr. Stephen Rodrigues	Microstrip Antenna Bandwidth Enhancement
16.	Vishnupriya T. R.	CUSAT	Dr. Stephen Rodrigues	Microwave Engineering (Design Development and performance analysis of UWB MIMO antennas)
17.	Sheeja P. George	PT	Dr. Johney Isaac	Simulation and modelling of e-field distribution and associated parameters in inter-digital capacitive transducers and surface acoustic wave devices

18.	Sitha Radhakrishnan	PT	Dr. Johney Isaac	Adaptive fuzzy neural modelling and control scheme for Blood Oxygen level
19.	Priya Venugopal	PT	Dr. Johney Isaac	Power grid optimization
20.	Sree Sanker S. S.	CUSAT	Dr. K.N Madhusoodanan	Sensor Technology using periodic structures and Microsystems
21.	Amily B.	CUSAT	Dr. K.N Madhusoodanan	Sensor Materials and Devices
22.	Anisia A.	CUSAT	Dr. Reju V. G.	Image Processing Techniques for Sub-pixel Level Precision Motion Detection
23.	Divya N. S.	PT	Dr. Reju V. G.	Polyphonic sound event detection using recurrent neural network
24.	Subhija E. N.	PT	Dr. Reju V. G.	Biomedical image processing
25.	Suniya V. S.	CUSAT	Dr. Reju V. G.	Signal enhancement techniques for audio processing
26.	Susmitha Rajan	CUSAT	Dr. Reju V. G.	Selective Blind Source Separation
27.	Abdul Nazer K. H.	CUSAT	Dr. Pankaj Sagar	Development of High Performance Cryoadsorption Pump with field assisted accelerated gas flow
28.	NamithaVenugopal	CUSAT	Dr. Pankaj Sagar	Non Contact RRR Estimation Techniques for Thin Film Superconducting RF Cavities

Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Section Officer	1
2.	Assistant Section Officer	1
3.	Assistant	1
4.	Computer Assistant	2
5.	Office Attendant	1
6.	Library Assistant	1
7.	Professional Assistant(contract)	1
8.	Sweeper-cum-cleaner	2

Technical Personnel

Sl.No.	Designation	No. of Posts
1	Technical Assistant Gr.III	1
2	Technical Assistant Gr.II	1
3	Technical Assistant Gr.I	2

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1.	B.Tech	21	10	31
2.	M. Tech	3	4	7
3.	Ph.D.	1	1	2
4.	PDF	Nil	-	Nil

Research Facilities

a. Laboratories

1. Atomic Layer Deposition Lab
2. CVD Lab
3. Photo acoustic Lab
4. Process Control Lab
5. IoT Lab
6. Intelligent Instrumentation Lab

b. Major equipment

1. ALD and CVD systems
2. I-V Measurement setup
3. C-V Measurement setup
4. PPE set up
5. IPPE set up
6. PA set up
7. Dielectric constant and pyroelectric co-efficient setup
8. TWRC set up
9. Travelling photo thermal wave set up
10. Distributed Control System (DCS)
11. LibelliumWSN and IoT Development Platform
12. FBG Interrogators
13. Electrometer
14. RF Magnetron Sputtering System.
15. Optical Spectrum Analyzer
16. Centrifuge

c. Library

No of books and Journals as on 31st March of the Previous Year	Additions during the current year
3544	51

Distinguished visitors

Sl. No.	Name	Affiliation	Remarks
1.	Prof.P. R. Madhava Paniker	Rtd.Scientist, VSSC Rtd,Professor, RSET	Student Induction Programme 2021
2.	Mr. Sumit Kumar	Senior Product Design Engineer, Scandisk India, Bengaluru	Student Induction Programme 2021
3.	Mr. Rameez Rehman	Environmentalist	Student Induction Programme 2021
4.	Mr. Babu A. P.	Principal, Govt.HSS, Avala Calicut	Student Induction Programme 2021
5.	Ms. Nithya Sathyan	Instrument Engineer, Almeer Technical Services Co.W L L, Al Ahmadi, Kuwait	Student Induction Programme 2021
6.	Ms. Maria Rose Paul	Senior Manager Instrumentation, Reliance Industries Lrd	Student Induction Programme 2021
7.	Mr. Anugraph Cherian	Executive Engineer, Yokogawa India Ltd, Bengaluru	Student Induction Programme 2021
8.	Ms. Jasna V.	Yoga Therapy Trainer	Student Induction Programme 2021

Ph.Ds Awarded

Sl. No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Evaluation of Inter-Digital Capacitive Structures for sensing Proximity, Relative humidity and Gas species concentration	Jiss Paul	Dr. Jacob Philip
2.	Investigations on fluorescence quenching in selected anoparticle Doped organic dyes	Mathew Mecheril	Dr. Jacob Philip

3.	Structural, Dielectric and piezoelectric properties of selected Lead- free Ceramic Nanocomposites exhibiting Morphotropic Phase Boundary	Nissamudin Kunnath	Dr. Jacob Philip
4.	Magneto-Electric and associated properties of selected Lead-free Multiferroic Perovskite-Ferrite Nanocomposites	Rakhikrishna R	Dr. Johney Isaac

Publications

a. Papers

Sl. No.	Title of the Paper	Impact Factor, if any
1.	Feasibility study of a novel capacitance based quench detection sensor for HTS power transmission cables, Cryogenic Engineering Conference 2021 / 23rd Cryogenic Engineering Conference and International Cryogenic Materials Conference , 2022 –PankajSagar	
2.	SreeSanker S S, Subin Thomas and K N Madhusoodanan, "Synthesis and Characterization of Monodispersed Polystyrene Spheres and Hydrophilic Sulfonated Polystyrene spheres", 65th DAE Solid State Physics Symposium, BARC, Mumbai, Dec-15-19, 2021	
3.	SreeSanker S S, Subin Thomas, Dhanya P Jacob, K N Madhusoodanan, "Fabrication and characterization of 3D Photonic crystals of different polymer spheres: A comparative study" NANOicon2022, CUSAT, Jan 11-15, 2022	
4.	SafnaSaif, SreeSanker SS, Karthika Sankar, K.N.Madhusoodanan, Priya Rose.T, " Synthesis and Optical Characterization of 3D Self Assembled Free Standing Photonic Crystal" NANOicon2022, CUSAT, Jan 11-15, 2022	
5.	Performance of alkali metal (Li/Na) doped Zno thin film for NO ₂ gas sensing, AIP conference proceedings(I.F 0.5) (accepted on Feb 2022) Jasmi K. K, Antojohny, Siril VS, K. N Madhusoodanan	
6.	sol gel synthesis and investigation of dielectric behavoiur in Barium Stannate " Siril V S, Ihsan Ali P. V., K. N. Madhusoodan	

7.	Multilayer perceptron neural network model development for mechanical ventilator parameters prediction by real time system learning. Sita Radhakrishnan , Suresh G. Nair and Johney Isaac Biomedical Signal Processing and Control 71 (2022) 103170	3.88
8.	Shyammohan S, Rajeev Ashokan, Ratheesh P. M., Suresh G., “ <i>An Investigation on Underwater Acoustic Phase Measurement in Simulated Environment</i> ”, IEEE Oceans 2022 ChennaiInternationalConference, February 2022	
9.	Optimization of MicroStrip Patch Antenna Dimensions for Enhanced Bandwidth, Operating Frequency, Return Loss and Feed Width using Genetic Algorithm –IEEE 7th International Conference on Advanced Computing and Communication Systems(ICACCS 2021) , Chennai,	
10.	Genetic Algorithm Optimization of MicroStrip Patch Antenna Dimensions for Enhanced Bandwidth, Accurate Operating Frequency and Return Loss - IEEE International Conference on Wireless Communications Signal Processing and Networking (WiSPNET), Chennai,	

b. Books: Nil**Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.**

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Mr. Ratheesh P. M. Asst. Professor	One week Faculty Development Programme on “Learning Management System (Moodle) and Course Design conducted by the Faculty Development Centre of the Kerala State Higher Education Council (KSHEC), Thiruvananthapuram from 01-06 September 2021 through online mode for the faculty members of the state Universities and affiliated colleges.	Participation
Dr. Pankaj Sagar Asst. Professor	NANOicon 2022	Chair
Amily B Research Scholar	Workshop on Rendering your scientific output Golden Jubilee celebratory author workshop on Writing quality research articles, journals to read and publish in Golden jubilee international conference NANOicon 22	Participation

Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Dr. Johney Isaac	Board of studies , Instrumentation, CUSAT	Chairman
	Board of Studies, Physics & Electronics, St.Thomas College(Autonomous), Thrissur	Member
	Governing Council, STIC, CUSAT	Member
	Faculty of Technology, CUSAT	Member
	Academic Council, CUSAT	Member
Dr. Reju V. G.	Board of studies, Instrumentation, CUSAT	Member
	Faculty of Technology, CUSAT	Member
	CUSAT-TBI hub under CUSATECH foundation	Member
	Selection Committee, FACT	Member
	Project Design Review Committee, NPOI	Member
Mr. Ratheesh P. M.	Indian Society of Technical Education	Life Member
	Board of studies, Instrumentation, CUSAT	Member
Dr. Pankaj Sagar	Board of studies, Instrumentation, CUSAT	Member
	Board of Studies Department of Applied Electronics and Instrumentation, Rajagiri School of Engineering and Technology (Autonomous), Kakkand,	
	Board of Examination Saintgits College of Engineering (Autonomous) Kottukulam Hills, Pathamuttom P. O., Kottayam, Kerala	
	CAMSE 2021, Advances in Mechanical and Systems Engineering at Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, Punjab	Paper Reviewer

Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Lidiya T V	USRF	CUSAT
Siril V S	UJRF	CUSAT
Divya Antony	UJRF	CUSAT
Vishnukumar V	DST PURSE	DST
Hrudya B Kurup	SRF	CSIR
Abhayjith	INSPIRE	DST
Sree Sankar S S	UJRF	CUSAT
Anisia A	UJRF	CUSAT
Suniya V S	UJRF	CUSAT
Amily B	UJRF	CUSAT
Susnitha Rajan	UJRF	CUSAT
Abdul Nazer K H	UJRF	CUSAT
Namitha Venugopal	UJRF	CUSAT

Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
1.	Design and Development of a Planar Multi-Layer Inductor based RRR measurement for thin film coated Niobium SRF Cavities	DST/SERB	26,73,000	Dr.PankajSagar(PI) Dr.UpendraBehera, IISC Bangalore (Co-PI)

Research Programmes and Activities

Sl. No.	Problem / Topic	Investigator (s)
1.	Development of Polymer ceramic composites for transducer actuator applications	Dr. Jacob Philip
2.	Nanomaterials	
3.	Optimization and Implementation of Inter-Digital Capacitive sensor design	
4.	Physical properties of low dimensional solids	
5.	Image processing in Biomedical applications	Dr. K. N. Madhusoodanan
6.	Linearization of sensors and its applications	
7.	Fiber Optic Sensors	
8.	Microwave Photonics	
9.	Multi Sensor Data Fusion	
10.	Sensors and Signal Processing	
11.	Semiconductor Metal Oxide Gas Sensors	
12.	Sensor Technology using periodic structures and Microsystems	Dr. Johney Isaac
13.	Simulation and modelling of-field distribution and associated parameters in inter-digital capacitive transducers and surface acoustic wave devices	
14.	Adaptive fuzzy neural modelling and control scheme for Blood Oxygen level	
15.	Power grid optimization	
16.	Investigations on Multiferroic/ Magnetoelectric composites	Dr. Reju V. G.
17.	Image Processing Techniques for Sub-pixel Level Precision Motion Detection	
18.	Polyphonic sound event detection using recurrent neural network	
19.	Biomedical image processing	
20.	Signal enhancement techniques for audio processing	

21.	Selective Blind Source Separation	
22.	Sensor Materials and Devices	Dr. K. N. Madhusoodanan
23.	Development of High Performance Cryoadsorption Pump with field assisted accelerated gas flow	Dr. Pankaj Sagar
24.	Non Contact RRR Estimation Techniques for Thin Film Superconducting RF Cavities	

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department: Nil

Consultancy Work

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1.	DDCCS	Dr. Pankaj Sagar	Accubits Technologies.
2.	DDCCS	Dr. Pankaj Sagar	IISC, Bangalore



Department of Marine Biology, Micro Biology & Biochemistry

ANNUAL REPORT FOR THE YEAR 2021 - 2022

Name of the Department : Department of Marine Biology, Microbiology and Biochemistry

Brief History of the Department :

The Department of Marine Biology Microbiology & Biochemistry is the academic continuation of the original Department of Marine Biology and Fisheries established in 1938 under the University of Travancore. The M.Sc course in Marine Biology was started in 1958. Currently, the annual intake of students is 22. So far about 725 students have completed the course. The department has well-equipped laboratories with sophisticated instruments. At present 58 Research Scholars are working in these labs and 174 Ph.D.s have been already awarded. Major thrust areas of research include Marine Biodiversity, Microbiology, Biochemistry, Fishery Biology, Aquaculture, Fish Pathology, Marine Pollution monitoring, Marine benthos, and Marine Pharmacology. Further, the department has an M.Phil Degree course in Life Sciences with an intake of 6 students.

Programmes of Study/Research :

1. M.Sc. Marine Biology
2. M.Phil. Life Sciences
3. Ph.D. in different disciplines specified above

Faculty Members

Sl. No.	Name	Designation	Qualification	Specialisation
1	Dr. K. B. Padmakumar	Assistant Professor	M.Sc, Ph.D	Marine Biology- Algology
2	Dr. Lathika Cicily Thomas	Assistant Professor	M.Sc, Ph.D	Marine Microbiology (Joined on 20.02.2021)
3	Dr. Swapna P. Antony	Assistant Professor	Ph.D	Aquaculture

4.	Dr. A.A. Mohamed Hatha	Professor & Head	Ph.D	Microbiology
5.	Priyaja P.	Assistant Professor	Ph.D	Marine Biology
6	Dr. S. BijoyNandan	Professor	M.Sc., Ph.D	Marine Biology, Marine Ecology, Marine Benthic Ecology, Marine Ecotoxicology
7.	Dr. Punnadath Preetham E.	Associate Professor	Ph.D	Biochemistry, Neurobiology and Biochemistry
8.	Dr. Chaithanya E.	Assistant Professor	Ph.D	Microbiology

Research/Project Staff

Sl. No.	Name	Designation	Qualification	Specialisation
Dr. A. A. Mohamed Hatha				
1	Preetha Shenoy	RUSA - PDF	PhD	Marine Algae
2	Preetha G. Nair	KSCSTE Women Scientist	PhD	Marine Biology
3	Sooria P.M.	CSIR, RA	PhD	Marine Biology
4	Jasna Vijayan	UGC Kothari PDF	PhD	Microbiology
5	Bijin Mohammed	JRF Project staff NCPOR Project	M.Sc	Marine Biology
6	Ramshad Ali	JRF Project Staff ISRO Project	M.Sc	Marine Biology
Dr. S Bijoy Nandan				
1	Vishnudattan. N. K.	JRF (MoES-NCESS)	M.Sc	Marine Biology
2	Neethu K.V.	SRF (MoES- NCCR)	M.Sc	Marine Biology
3	Hari Praved. P	SRF (UGC SAP - phase II)	M.Sc	Marine Biology
4	Sruthy Sebastian	Project fellow (KSPCB)	M.Sc	Environmental technology

5	Dr. Radhika R.	Post Doc (Water metro- TEBMA)	Ph.D	Zoology
6	Aravind E. Haridas	Field assistant (MoES- NCESS)	M.Sc	Applied fisheries and Aquaculture

Research Scholars

Sl. No.	Name	Funding Agency	Guide	Area of Work
Dr. K B Padmakumar				
1	Twinkle Sathish	U-SRF	Dr. K. B. Padmakumar	Phytoplankton ecology and Harmful Algal Blooms
2	Niya Benny	U-SRF	Dr. K. B. Padmakumar	Microphytobenthos
3	Aishwarya	CSIR-SRF	Dr. K. B. Padmakumar	Epizoism in Marine organisms
4	Renju Mohan	U-JRF	Dr. K. B. Padmakumar	Cyanobacterial Blooms
Dr. Swapna P Antony				
1.	Dhanya Lenin K.L.	U-JRF	Dr. Swapna P. Antony	Bioprospecting of antimicrobial peptides for potential application in aquaculture
2.	Sheethu Annie Vincent	UGC-JRF	Dr. Swapna P. Antony	Antimicrobial Peptides for use in shrimps culture systems
3.	Athira Menon T	U-JRF	Dr. Swapna P. Antony	Aquatic Viruses Associated with Aquaculture Systems
4.	Anne Maria Thomas	U-JRF	Dr. Swapna P. Antony	Exploring the Marine Realm for Bioactive Peptides: Discovery & Applications

Dr. A A Mohamed Hatha				
1.	Soumya Krishnankutty		Mohamed Hatha	Bioactive compounds from echinoderms
2.	Bini Francis		Mohamed Hatha	Seafood Microbiology
3.	Nashad M.		Mohamed Hatha	Fish pathology
4.	Sumayya (co-guide)	UJRF	Mohamed Hatha	Algae-microbe interaction
5	Thasneem T.R.		Mohamed Hatha	Marine Microbiology
6	Soumya K.	E-grantz	Mohamed Hatha	Marine litter – bacteria interaction
7	Athira Venu (joint guide)	CSIR	Mohamed Hatha	Microbial biosurfactants from psychrotrophs
8	Hafsa Kattatheyl	CSIR	Mohamed Hatha	Microbial enzymes from psychrotrophs
9	Vishnupriya		Mohamed Hatha	Marine Microbiology
Dr. Priyaja P				
1.	Aneena Yesudas	UGC	Dr.Priyaja P	Marine Pollution
2.	Vidyalakshmi V.B.	UGC	Dr.Priyaja P	Marine Pollution
3.	Gopika Sivan	UJRF	Dr.Priyaja P	Marine Sponges
4.	Muhammed Musthafa S.	UJRF	Dr.Priyaja P	Anti-Microbial Peptides
Dr. S Bijoy Nandan				
1	Neelima Vasu	U-SRF	Dr. S. Bijoy Nandan	Taxonomy and systematics of the harpacticoid copepods
2	Jima M.	U-SRF	Dr. S. Bijoy Nandan	Meiofauna of high-latitude glacial fjords of Arctic
3	Krishnapriya P. P.	U-SRF	Dr. S. Bijoy Nandan	Biocenosis of meiofauna, morpho-taxonomy and

				functional attributes of nematodes from the glacial Arctic fjord
4	Neethu K. V.	U-SRF	Dr. S. Bijoy Nandan	Toxicity studies of selected metals on marine organisms
5	Hari Praved P.	UGC-SAP	Dr. S. Bijoy Nandan	Ecology and distribution of jelly fishes along the east and west coast of India
6	Suhaana M. Nazar.	CSIR-SRF	Dr. S. Bijoy Nandan	Studies on thaliaceans from Indian Ocean
7	Vishnudattan N. K.	MoES-NCESS	Dr. S. Bijoy Nandan	Submarine groundwater discharge and its influence on coastal biota
8	Shamily Catherine P. C.	U-JRF	Dr. S. Bijoy Nandan	Bionomics, morpho taxonomy and molecular studies on the native bivalve clam resources of the south west coast of India
9	Aishath Farhath Ali	ICCR Scheme, Govt. of India	Dr. S. Bijoy Nandan (Supernumerary)	Study on the Diversity of Mangroves northern islands in Maldives
Dr. Aneykutty Joseph (Rtd.)				
1	Rajani S. Ganga		Dr. Aneykutty Joseph	Microbial changes in raw cow milk under low temperature condition.
2	Ardra M. Appukkuttan	E- grantz	Dr. Aneykutty Joseph	Mangrove crabs of vembanadu eco- system
3	Sandhya E. S.	E- grantz	Dr. Aneykutty Joseph	Mangrove crabs of vembanadu eco- system with special reference to family Ocypodidae

4	Aneesa K. A.	UJRF	Dr. Aneykutty Joseph	Portunid crabs of vembanad eco- system
5	Libeesh P. K.		Dr. Aneykutty Joseph (Co- Guide)	Optimization of process parameters for developing high end value added products from genetically improved farmed Tilapia (Gift)
6	Sruthy C. Sunil	CSIR	Dr. Aneykutty Joseph	Captive broodstock of development and Larvy culture of commercially important Portunid crabs.
7	Aswathy Krishnan	USRF	Dr. Aneykutty Joseph	Development and standardization of the diatom, Nitzschiapalea (Kutzing)
Dr. K J Joseph (Prof. Rtd._)				
1	Akhil Prakash E.	E-grantz	Dr. K. J. Joseph	Prevalance of Pathogenic bacteria in Migrated birds
2	Aswathy N. K.	E-grantz	Dr. K. J. Joseph	Functional and structural aspects of Macrobenthic communities in the Arctic Fjords.
Dr. Rosamma Philip				
1	Neelima	CSIR- SRF	Dr. Rosamma Philip	Anti microbial peptides and therapeutic potential

2	Anjali S. Mohan	UJRF	Dr. Rosamma Philip	Marine viruses Diversity and Characterization
3	Athira P. P.	CSIR- SRF	Dr. Rosamma Philip	Anti microbial peptides from marine organisms
4	Dhanya Kesevan	E- grantz	Dr. Rosamma Philip	Endophytic microbes associated with sea grasses
5	Revathy M. R.	UGC- SRF	Dr. Rosamma Philip	Bio active compounds from mangrove associated entophytic fungus
6	Anooja V. V.	CSIR- SRF	Dr. Rosamma Philip	Anti microbial peptides from marine invertebrates

Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Section Officer (HG)	1
2.	Computer Assistant	1
3.	Assistant Section Officer	1
4.	Senior. Gr.Assistant	1
5.	Office Attendant	1

Technical Personnel

Sl.No.	Designation	No. of Posts
1.	Technical Asst. Grade III	1
2.	Lab Assistant	2
3.	Lab Attendant	1
4.	Specimen Collector	1
5.	Aquarium Assistant	1

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1	M.Sc. Marine Biology	9	35	44
2	M.Phil Life Sciences	1	4	5
3	Ph.D.	6	41	47

Research Facilities

a. Laboratories

1. Marine Biology Wet Lab
2. Microbiology Lab
3. Biochemistry Lab
4. Instrumentation lab
5. Computer Lab
6. Electron Microscope Lab
7. Algology Lab (Marine Botany)
8. Aquaculture lab
9. Ecology lab
10. Fish Pathology Lab
11. Marine Ecotoxicology Lab

b. Major equipments

1. Fluorescence Microscope LEICA, Germany
2. Biologic Duo Flow Chromatographic system, BioRad, USA
3. Electrofocussing Unit
4. Lyophiliser
5. Ultramicrotome
6. Refrigerated centrifuges
7. HPLC
8. Fermenter
9. Vacuum Concentrators
10. PAGE apparatus
11. Spectrophotometers
12. PCR Machines
13. Deep Freezers
14. Microscopes (Bright Field/ Phase Contrast/ Fluorescence)
15. Anaerobic Chamber
16. Atomic Absorption Spectrophotometer
17. Incubator Shaker (Jeio Tech, Korea)
18. Cold storage chamber (Sanyo, Japan)
19. Liquid Nitrogen cylinder (Thermo Scientific, USA)

20. UV-VIS Spectrophotometer,
21. Real Time PCR (ABI, USA)
22. Gas Chromatograph
23. Microbial ID System
24. Phase Contrast Microscope
25. Blood Analyser (Biochemical Analyser)
26. Microbial identification system
27. Gel Documentation system
28. Water Quality Analyser
29. Epifluorescence Microscope
30. Electrophoresis with Gel documentation system
31. Gradient PCR
32. Kjehl Plus-Digestion and Distillation Unit
33. TOC Analyser
34. Binocular Microscope
35. Rotary Vacuum Flash Evaporator
36. Dual Vertical Gel Electrophoresis Unit
37. Stereo Microscope
38. Microplate Reader

Ph.D.s Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
Dr. S Bijoy Nandan			
1	Ecotoxicity of selected heavy metals, their responses and trophic transfer in marine organisms from Cochin coastal system (Date of award: 26-04-2021)	Mr. Don Xavier N. D.	Dr. S. Bijoy Nandan
2	Toxicity effects of trace metals and their trophic transfer in selected species of microalgae and mussel, <i>Perna viridis</i> (Date of award: 16-11-2021)	Mrs. Anu P. R.	Dr. S. Bijoy Nandan

Publications

a. Papers

Sl. No.	Title of Paper	Impact Factor, if any
1.	In Journals	
Dr. K.B.Padmakumar		
1	Twinkle Sathish, Nazrin A. K, Lathika Cicily Thomas and K. B Padmakumar (2022) . Seasonal dynamics of dinoflagellates with special emphasis on potentially harmful species in a tropical estuarine system along the southwest coast of India. Journal of Oceanography (Accepted).	1.840
2	Lathika Cicily Thomas, S. BijoyNandan and K.B. Padmakumar (2022) . First Report on the Bloom of Diatom HasleaGretharumSimonsen, 1974 from the Arabian Sea. Thalassas: An International Journal of Marine Sciences, 38, 527-534. https://doi.org/10.1007/s41208-021-00369-2	0.620
3	Smitha B.R, V.N. Sanjeevan, K.B. Padmakumar , S.H. Midhun, T.C. Salini, and J.K. Lix (2022) Role of mesoscale eddies in the sustenance of high biological productivity in North Eastern Arabian Sea during the winter-spring transition period. Science of the total Environment. https://doi.org/10.1016/j.scitotenv.2021.151173 .	7.963
4	Twinkle Sathish, Maneesh Lakshmi V.M, Lathika Cicily Thomas, Jayanarayanan Kuttippurath and K. B Padmakumar (2022) . Spatial variability in the community structure of microphytoplankton along the southeastern Arabian sea during an unusually warm winter monsoon season. Regional Studies in Marine Science Vol.49, https://doi.org/10.1016/j.rsma.2021.102078	1.624
5	Niya Benny, Lathika Cicily Thomas and K. B. Padmakumar (2021) . Environmental influences on the cyanobacterial mat formation in the mangrove ecosystems	1.693

	along the southwest coast of India. Marine Ecology. https://doi.org/10.1111/maec.12685 .	
6	Aishwarya Purushothaman, Lathika Cicily Thomas, S. Bijoy Nandan and K. B. Padmakumar (2021) . Influence of upwelling on the chaetognath community along the Southeastern Arabian Sea. Wetland Ecology and Management, 29: 731-743. https://doi.org/10.1007/s11273-020-09773-6	1.379
7	Sandra M.P, Aishwarya Purushothaman and K. B. Padmakumar (2021) . Prevalence of epibiosis in plankton community of the Indian waters: a review. Symbiosis, 85, 259-271. https://doi.org/10.1007/s13199-021-00816-x	2.268
8	Twinkle Sathish, Lathika Cicily Thomas and K.B. Padmakumar (2021) . Variabilities in the community structure of phytoplankton in the upwelled and non-upwelled waters of southeastern Arabian Sea during the early summer monsoon. Indian Journal of Geo-Marine Sciences 50(07): 542-549.	0.496
9	Aishwarya Purushothaman, Tizian Romagnoli, Sanu V Francis, Lathika Cicily Thomas and K. B. Padmakumar (2021) . First report of marine epizoic diatom, <i>Protoraphis atlantica</i> (Protoraphidaceae) on calanoid copepods along the southeastern Arabian Sea. Symbiosis 84: 131-140. https://doi.org/10.1007/s13199-021-00772-6 .	2.268
10	Niya Benny, Lathika Cicily Thomas and K.B. Padmakumar (2021) . Community structure of Microphytobenthos associated with mangrove ecosystems along the southwest coast of India. Estuaries and Coasts, 44: 1380-1391. https://doi.org/10.1007/s12237-020-00888-w .	2.976
11	Asha Devi, C.R, K.G. Vimalkumar, K.B. Padmakumar , C.T. Lathika, T.P. Maneesh and Sudhakar (2021). Understanding the microzooplankton mediated food web of the winter-spring Noctiluca bloom in the Northeastern Arabian Sea Ecosystem. Regional Studies in Marine Sciences, Vol.42, https://doi.org/10.1016/j.rsma.2021.101623 .	1.624

12	Jeslin I.J, Niya Benny, Lathika Cicily Thomas and K. B. Padmakumar (2021) . Short term spatio-temporal variabilities of microphytobenthic assemblages in the mangrove ecosystems along the southwest coast of India. <i>Wetland Ecology and Management</i> 29: 689-702. https://doi.org/10.1007/s11273-021-09787-8	1.379
13	Lathika Cicily Thomas, S. Bijoy Nandan and K.B. Padmakumar (2021) . First report on an unusual bloom of the potentially toxic epibenthic dinoflagellate <i>Prorocentrum rathymum</i> from Bangaram Lagoon of the Lakshadweep archipelago: Arabian Sea. <i>Regional Studies in Marine Sciences</i> , 41, 101549. https://doi.org/10.1016/j.rsma.2020.101549	1.624
Proceedings/ Abstracts		
1	Aishwarya, Jerry Amal John and KB Padmakumar (2022). Seaweed associated epiphytes with special reference to diatoms along the intertidal ecosystem of South West Coast of India. In: Vincent SGT, DB Arya, SS Panchami and PS Arunkumar (Eds.) <i>Proceedings of the International Online Conference on Environmental Status of Estuarine and Coastal Ecosystems in India</i> . 26-28 th January 2022, Thiruvananthapuram. pp 20-22. ISBN No. 978-93-5607-582-5.	
2	Renju Mohan, Lathika Cicily Thomas and KB Padmakumar (2022). Potentially toxic cyanobacterial species of freshwater ecosystems of South-West coast of India. In: Vincent SGT, DB Arya, SS Panchami and PS Arunkumar (Eds.) <i>Proceedings of the International Online Conference on Environmental Status of Estuarine and Coastal Ecosystems in India</i> . 26-28 th January 2022, Thiruvananthapuram. pp 33-34. ISBN No. 978-93-5607-582-5.	
3	Amal K. S, Niya Benny and K. B. Padmakumar (2022) "Microphytobenthic community of cochin backwaters-a tropical estuarine complex along the southwest coast of India: an ephemeral analysis" In: Vincent SGT, DB Arya, SS Panchami and PS Arunkumar (Eds.) <i>Proceedings of the International Online Conference on Environmental Status of Estuarine and Coastal Ecosystems in India</i> . 26-28 th January 2022, Thiruvananthapuram pp. 22-24, ISBN No. 978-93-5607-582-5	
4	Aishwarya, Lathika Cicily Thomas, Sanu V Francis, K. B. Padmakumar (2021) . Occurrences of Epibiotic and Endobiotic Associations in Marine	

	Plankton along the West Coast of India. In Book of Abstracts (Eds.) K M Abraham, Annual National Conference on Sustainable Ecosystems, Aquaculture, Fisheries and Fisherfolk (ANCOSEAFF 2021), 4 – 5 March 2021, Thiruvananthapuram, pp: 60.	
5	Twinkle Sathish, Aishwarya Purushothaman, Lathika Cicily Thomas, Jayanarayanan Kuttippurath and K.B. Padmakumar (2021).Is rising Trichodesmium blooms an indication of the warming of Arabian Sea?In Abstracts Volume (Eds.)International Symposium on Tropical Meteorology (INTROMET-2021) on climate change: Consequences and Challenges (C4-21), 23-26 November 2021, Kochi, pp: 523.	
SL. NO	Title of Paper	Impact Factor, if any
2.	In Journals	
Dr. Lathika Cicily Thomas		
1	Twinkle Sathish, Nazrin A. K, Lathika Cicily Thomas and K. B Padmakumar (2022). Seasonal dynamics of dinoflagellates with special emphasis on potentially harmful species in a tropical estuarine system along the southwest coast of India. Journal of Oceanography (Accepted).	1.840
2	Lathika Cicily Thomas , S. BijoyNandan and K.B. Padmakumar (2022). First Report on the Bloom of Diatom HasleaGretharumSimonsen, 1974 from the Arabian Sea. Thalassas: An International Journal of Marine Sciences, 38, 527-534. https://doi.org/10.1007/s41208-021-00369-2	0.620
3	Twinkle Sathish, Maneesh Lakshmi V.M, Lathika Cicily Thomas , Jayanarayanan Kuttippurath and K. B Padmakumar (2022). Spatial variability in the community structure of microphytoplankton along the southeastern Arabian sea during an unusually warm winter monsoon season. Regional Studies in Marine Science Vol.49, https://doi.org/10.1016/j.rsma.2021.102078	1.624
4	Niya Benny, Lathika Cicily Thomas and K. B. Padmakumar (2021). Environmental influences on the cyanobacterial mat formation in the mangrove ecosystems along the southwest	1.693

	coast of India. Marine Ecology. https://doi.org/10.1111/maec.12685 .	
5	Aishwarya Purushothaman, Lathika Cicily Thomas , S. Bijoy Nandan and K. B. Padmakumar (2021). Influence of upwelling on the chaetognath community along the Southeastern Arabian Sea. Wetland Ecology and Management, 29: 731-743. https://doi.org/10.1007/s11273-020-09773-6	1.379
6	Twinkle Sathish, Lathika Cicily Thomas and K.B. Padmakumar (2021). Variabilities in the community structure of phytoplankton in the upwelled and non-upwelled waters of southeastern Arabian Sea during the early summer monsoon. Indian Journal of Geo-Marine Sciences 50(07): 542-549.	0.496
7	Aishwarya Purushothaman, Tizian Romagnoli, Sanu V Francis, Lathika Cicily Thomas and K. B. Padmakumar (2021). First report of marine epizoic diatom, <i>Protoraphis atlantica</i> (Protoraphidaceae) on calanoid copepods along the southeastern Arabian Sea. Symbiosis 84: 131-140. https://doi.org/10.1007/s13199-021-00772-6 .	2.268
8	Niya Benny, Lathika Cicily Thomas and K.B. Padmakumar (2021). Community structure of Microphytobenthos associated with mangrove ecosystems along the southwest coast of India. Estuaries and Coasts, 44: 1380-1391. https://doi.org/10.1007/s12237-020-00888-w .	2.976
9	Asha Devi, C.R, K.G. Vimalkumar, K.B. Padmakumar, C.T. Lathika , T.P. Maneesh and Sudhakar (2021). Understanding the microzooplankton mediated food web of the winter-spring Noctiluca bloom in the Northeastern Arabian Sea Ecosystem. Regional Studies in Marine Sciences, Vol.42, https://doi.org/10.1016/j.rsma.2021.101623 .	1.624
10	Jeslin I.J, Niya Benny, Lathika Cicily Thomas and K. B. Padmakumar (2021). Short term spatio-temporal variabilities of microphytobenthic assemblages in the mangrove ecosystems along the southwest coast of India. Wetland	1.379

	Ecology and Management 29: 689-702. https://doi.org/10.1007/s11273-021-09787-8	
11	Lathika Cicily Thomas , S. Bijoy Nandan and K.B. Padmakumar (2021). First report on an unusual bloom of the potentially toxic epibenthic dinoflagellate <i>Prorocentrum rathymum</i> from Bangaram Lagoon of the Lakshadweep archipelago: Arabian Sea. <i>Regional Studies in Marine Sciences</i> , 41, 101549. https://doi.org/10.1016/j.rsma.2020.101549	1.624
	Proceedings/ Abstracts	
1	Renju Mohan, Lathika Cicily Thomas and KB Padmakumar (2022). Potentially toxic cyanobacterial species of freshwater ecosystems of South-West coast of India. In: Vincent SGT, DB Arya, SS Panchami and PS Arunkumar (Eds.) <i>Proceedings of the International Online Conference on Environmental Status of Estuarine and Coastal Ecosystems in India. 26-28th January 2022, Thiruvananthapuram. pp 33-34. ISBN No. 978-93-5607-582-5.</i>	
2	Aishwarya, Lathika Cicily Thomas , Sanu V Francis, K. B. Padmakumar (2021). Occurrences of Epibiotic and Endobiotic Associations in Marine Plankton along the West Coast of India. In <i>Book of Abstracts (Eds.) K M Abraham, Annual National Conference on Sustainable Ecosystems, Aquaculture, Fisheries and Fisherfolk (ANCOSEAFF 2021), 4 – 5 March 2021, Thiruvananthapuram, pp: 60.</i>	
3	Twinkle Sathish, Aishwarya Purushothaman, Lathika Cicily Thomas , Jayanarayanan Kuttippurath and K.B. Padmakumar (2021). Is rising <i>Trichodesmium</i> blooms an indication of the warming of Arabian Sea? In <i>Abstracts Volume (Eds.) International Symposium on Tropical Meteorology (INTROMET-2021) on climate change: Consequences and Challenges (C4-21), 23-26 November 2021, Kochi, pp: 523.</i>	

Sl. No	Title of Paper	Impact Factor, if any
Dr. Swapna P. Antony		
1	Athira, P.P., Anooja, V.V., Anju, M.V., S. Neelima, K. Archana, S. Muhammed Musthafa, Swapna P. Antony, I. S. Bright Singh, Rosamma Philip. 2022. A hepatic antimicrobial peptide, hepcidin from Indian major carp, <i>Catla catla</i> : molecular identification and functional characterization. <i>J Genet Eng Biotechnol</i> 20, 49. https://doi.org/10.1186/s43141-022-00330-7	-
2	Athira Raveendran, Dhanya Lenin K. L., Anju M.V., Neelima S., Anooja V.V., Athira P. P., Archana K., Rosamma Philip, Swapna P. Antony. 2021. β -defensin from the Asian sea bass, <i>Lates calcarifer</i> : Molecular prediction and phylogenetic analysis. <i>Probiotics and Antimicrobial Proteins</i> . 3(6):1798-1807. doi: 10.1007/s12602-021-09804-5.	4.609
3	Dhanya Lenin K. L., Rajeswari Vasu Iyer, Athira Raveendran, Anju M.V., Rosamma Philip, Swapna P. Antony. 2021. β -defensin from common goby (<i>Pomatoschistus microps</i>) and silver trevally (<i>Pseudocaranx georgianus</i>): Molecular characterization and phylogenetic analysis. <i>Molecular Biology Reports</i> . 48(5):4943-4951. doi: 10.1007/s11033-021-06435-5.	2.316
4	Aishwarya P.V., Anjali S. Mohan, Rosamma Philip, Swapna P. Antony. 2021. Metagenomic phage biodiversity: New insight into the tropical estuarine ecosystem process and microbial risk assessment, <i>Regional Studies in Marine Science</i> , 46, 101894 https://doi.org/10.1016/j.rsma.2021.101894 .	1.624
5	M.S. Chithira, P.V. Aishwarya, Anjali S Mohan, Swapna P. Antony. 2021. Profiling Bacteriome Associated with the Sediments of Mangrove Ecosystem in Kerala. <i>Ecological Genetics and Genomics</i> . 21, 100103. https://doi.org/10.1016/j.egg.2021.100103 .	-

6	M.S. Chithira, P.V. Aishwarya, Anjali S Mohan, Swapna P. Antony. 2021. Metagenomic Analysis of Microbial Communities in the Sediments of a Semi Intensive Penaeid Shrimp Culture System. Journal of Genetic Engineering and Biotechnology. 19:136. https://doi.org/10.1186/s43141-021-00237-9	-
7	Rajeswary Vasu Iyer, Dhanya Lenin K.L., and Swapna P. Antony. 2021. Tissue expression profiling, molecular and functional characterization of the antimicrobial peptide β defensin, Mc- BD, from Grey Mullet, Mugil cephalus. Book of Abstracts - International Webinar on Sustainable Marine Fisheries And Aquaculture: Policies, Packages and Perspectives in Blue Economy Paradigm (SMART P3BLUEECO-2021), organized by the Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram, Kerala, India. 24 pp. 12-13 March 2021.	-
8	Evelyn Thankachan, C.K., Sonima K. Surendran, Sheethu Annie Vincent and Swapna P. Antony. 2021. Molecular identification and characterization of type I crustin isoforms from the hemocytes of penaeid shrimps, Penaeus monodon and Fenneropenaeus indicus. Book of Abstracts - International Webinar on Sustainable Marine Fisheries And Aquaculture: Policies, Packages and Perspectives in Blue Economy Paradigm (SMART P3BLUEECO-2021), organized by the Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram, Kerala, India. 68 pp. 12-13 March 2021.	-
Sl. No	Title of Paper	Impact Factor, if any
Dr. A. A. Mohamed Hatha		
1	Shahana Kabeer, Jeslin, I.J., Joseph, K.J., Krishnan, K.P and A.A. Mohamed Hatha (2022) Screening of actinomycetes from Arctic sediment for L-asparaginase activity and optimization by response surface methodology. Journal of	2.28

	Basic Microbiology. Doi: https://doi.org/10.1002/jobm.202200116 .	
2	Dhanraj, N.D., Mohamed Hatha, A.A. and Jisha M.S. (2022) Biodegradation of petroleum based and bio-based plastics: Approaches to increase the rate of biodegradation. Archives of Microbiology. , 204 (5). Doi: https://doi.org/10.1007/s00203-022-02883-0 .	2.05
3	Femi Anna Thomas, Rupesh Kumar Sinha, Mohamed Hatha, A.A. and K.P. Krishnan (2022) <i>Phenylobacterium glaciei</i> sp. Nov. isolated from Vestrebroggerbreen, a valley glacier in Svalbard, Arctic. International Journal of Systematic and Evolutionary Microbiology. Doi: https://doi.org/10.1099/ijsem.0.005375	2.74
4	Jemi Job, N., Mohamed Hatha, A.A. and C.K. Radhakrishnan (2022) Seasonal variation of <i>Cligus rotundigenitalis</i> infestation on the host fish <i>Etroplus suratensis</i> from the Cochin backwaters, south west coast of India. <i>Acta Oceanologica Sinica.</i> , 41: 1-5. Doi: https://doi.org/10.1007/s13131-021-1904-1 .	1.43
5	Preetha G Nair, Shoji Jospeh, Narayana Pillai and A.A. Mohamed Hatha (2022) Seasonality in recurrent of potential fishing zones along India's south west coast and its relationship to the prevailing hydrographic conditions. Regional Studies in Marine Sciences. , 51: 102191 https://doi.org/10.1016/j.rsma.2022.102191	1.62
6	Aneesh, P.T., Nashad, M., Bijukumar, A., Bineesh, K and A.A. Mohamed Hatha (2022) Review of global distribution and host of the fish parasitic isopod genus <i>Reconcila</i> Meirs (Crustacea: Cymothoidae) with description of a new species from Andaman waters, India. Journal of Natural History. DOI: https://doi.org/10.1080/00222933.2021.2019341	1.1
7	Akhil Prakash, E., Tereza Hromadkova, Jabir Thajudheen, Vipindas, P.V., Krishnan, K.P., Mohamed Hatha, A.A and Martins Briedis (2021) Dissemination of multidrug resistant bacteria into the polar environment: Role of longest migratory	7.96

	bird Arctic tern (<i>Sterna paradisaea</i>). Science of the Total Environment , 815(4): 152727 . DOI: https://doi.org/10.1016/j.scitotenv.2021.152727 .	
8	Vipindas, P.V., Jabir, T., Sudheesh, V., Mujeebrahiman, K.M and A.A. Mohamed Hatha (2021) Impact of anthropogenic organic matter on bacterial community distribution in the continental shelf sediments of southeastern Arabian Sea. Marine Pollution Bulletin , 174 (113227) 1-11 . DOI: https://doi.org/j.marpolbul.2021.113227	5.55
9	Silvester, R., Saji, A., Divakaran, A.R., Dilshana, P.M., Nair, R., Mohamed Hatha, A.A and Harikrishnan, M. (2021) Increased incidence and antimicrobial resistance among <i>Vibrio parahaemolyticus</i> in shellfishes from major fish markets in Cochin, South India: Seafood risk assessment. Annals of Animal Science . Doi: https://doi.org/10.2478/aoas-2021-0077 .	2.09
10	Bini Francis and A.A. Mohamed Hatha (2021) Prevalence of biofilm associated pathogenic <i>Escherichia coli</i> seafood pre-processing factories – A potential threat to seafood safety. Fishery Technology , 58: 1-10	5.25 (NAAS)
11	Preetha G Nair, Shoji Joseph, Narayana Pillai, V. Kripa and A.A. Mohamed Hatha (2021) Trophic significance of microzooplankton to commercially important small pelagic fishes along the southwest coast of India. Environmental Science and Pollution Research . https://doi.org/10.1007/s11356-021-15452-7	4.22
12	Ashneel Ajay Singh, Ravinesh Ram, Sheemal Vandhana Kumar, Sheemal Ashna, Shipaldika Verma, Zafiar Thasneem Naaz and A.A. Mohamed Hatha (2021) Depuration of fresh water clam (<i>Batissa violacea</i>) from Rewa river in Fiji using biofilter set up in closed and open water circulation system. Nova Biotechnologica et Chimica . https://doi.org/10.36547/nbc.824	
13	Reshma Silvester, Ajin, M., Ajilesh, P.P., Adarsh, B.M., Harikrishnan, M and A.A. Mohamed Hatha . (2021) Global	7.96

	surveillance of antimicrobial resistance and hyper virulence in <i>Klebsiella pneumoniae</i> from LMIC's – an in silico approach. Science of the Total Environment . https://doi.org/10.1016/j.scitotenv.2021.149859	
14	Indu M Nair and A.A. Mohamed Hatha (2021) Identification of antibacterial compound in the exocarp of <i>Garcinia gummi-gutta</i> (L.) Robs. Using high performance TLC and biological detection system. The Journal of Oriental Research Madras., XCII., 2: 8-13	
15	Mohamed Hatha, A.A., Jabir, T., Akhil Prakash, E and K.P. Krishnan (2021) Microcosm studies on the survival of <i>Escherichia coli</i> in the Kongsfjorden an Arctic fjord. Polar Science . https://doi.org/10.1016/j.polar.2021.100722	1.92
16	Vishnupriya, S., Jabir, T., Krishnan, K.P and A.A. Mohamed Hatha (2021) Bacterial Community structure and functional profiling of high Arctic fjord sediments. <i>World Journal of Microbiology and Biotechnology</i> , 37: 133. https://doi.org/10.1007/s11274-021-03098-z	2.51
17	Ally C Antony, Reshma Silvester, Divya, P.S., Aneesa, P.A., Bini Francis, Ajit Joseph, Midhunsha Hussain, Umesh, B.T., Joy George and A.A.Mohamed Hatha (2021) Faecal contamination and prevalence of pathogenic <i>E. coli</i> in shellfish growing areas along south-west coast of India. Regional Studies in Marine Sciences . https://doi.org/10.1016/j.rsma.2021.101774	1.68
18	Divya, P.S and A.A. Mohamed Hatha (2021) Molecular epidemiology of multidrug resistant <i>Escherichiacoli</i> from human urinary tract infections. Journal of Microbiology and Infectious Diseases , 11(2): 66-73. https://doi.org/10.5799/jmid.951495	2.05
19	Ally C Antony, Reshma Silvester, P.A. Aneesa., Bini Francis and A.A. Mohamed Hatha (2021) Efficacy of closed water deputation system with charcoal filter on the bacteriological quality of <i>Villorita cyprinoides</i> var <i>cochinensis</i> (Hanley, 1866). Fishery Technology , 58., 160-165	5.25 (NAAS)

20	Jabir, T., Vipindas, P.V., Jesmi, Y., Divya, P.S., Adarsh, B.M., Nafeesathul Miziriya.H.S, and A.A. Mohamed Hatha* (2021) Influence of environmental factors on benthic nitrogen fixation and role of sulfur reducing diazotrophs in a eutrophic tropical estuary. Marine Pollution Bulletin . https://doi.org/10.1016/j.marpolbul.2021.112126	5.55
21	Jabir, T., Vipindas, P.V., Krishnan K. P., and A.A. Mohamed Hatha (2021). Abundance and diversity of diazotrophs in the surface sediments of Kongsfjorden, an Arctic fjord. World Journal of Microbiology and Biotechnology . https://doi.org/10.1007/s11274-020-02993-1	3.3
22	Reshma Silvester, Ally C Antony, Jesmi Yousuf, Ajin Madhavan, Soorya, P.M., Aswin Kokkat, Harikrishnan, M and A.A. Mohamed Hatha (2021) Survival kinetics of Vibrio species in a tropical estuary along the south west coast of India – as a function of selected environmental parameters. Fishery Technology , 58 : 40-47	5.25 (NAAS)
23	Rekhamol, K.R., Manzur Ali, P., Sapna Kesav, Abraham Mathew, Sarita G Bhat, Mohamed Hatha, A.A and Elyas K. K (2021) MFAP9: Characterisation of an extracellular thermostable antibacterial peptide from marine fungus with biofilm eradication potential. Journal of Pharmaceutical and Biomedical Analysis . https://doi.org/10.1016/j.jpba.2020.113808	3.93
Dr. P. Priyaja		
1.	Aneena Yesudas, Vidyalakshmi D, Gopika Sivan and Priyaja P (2021). Assessment of Trace metal concentrations in regular sea urchin <i>Stomopneustes variolaris</i> from Vizhinjam harbour, south west coast of India during premonsoon and post monsoon seasons. Conference -YOUMARES 12 "Heading to a Sustainable and Clean Ocean", 8-10-2021, Hamburg University, Germany.	

2.	Vidyalakshmi D, Aneena Yesudas, and Priyaja P (2021). Assessment of heavy metal pollution using bivalve mollusc, <i>Perna perna</i> from Vizhinjam harbour, South west coast of India during pre-monsoon and post monsoon seasons. Conference - YOUMARES 12 "Heading to a Sustainable and Clean Ocean", 8-10-2021, Hamburg University, Germany.	
3.	Gopika Sivan, Aneena Yesudas, Vidyalakshmi, D. and Priyaja, P. Report on endolithic bioeroding sponge infesting <i>Tibia curta</i> Sowerby ii, 1842 from Kollam, south west coast of India. International webinar on Conservation of Life Below Water, March 18-21, 2021, University of Kerala, Kerala.	
4.	Aneena Yesudas, Vidyalakshmi D, Gopika Sivan, Priyaja P (2021). Inter-annual variations in the trace metal accumulation at Muzhappilangadu beach Kerala, with special reference to regular echinoid <i>Salmacis bicolour</i> . International webinar on Environmental Conservation: Necessity and Challenges, Alphonsa College, Pala, 5-6 November 2021.	
5.	Vidyalakshmi D, Aneena Yesudas, Gopika Sivan, Priyaja P (2021). Annual variation of heavy metal pollution in a Drive-in beach of North Kerala with special reference to bivalve <i>Perna viridis</i> . International webinar on Environmental Conservation: Necessity and Challenges, Alphonsa College, Pala, 5-6 November 2021.	
INTERNATIONAL PUBLICATIONS		
Dr. S. Bijoy Nandan		
1	Tiago Passos, Dan Penny, Roberto Barcellos, S. Bijoy Nandan, D.S. Suresh Babu, Isaac R. Santos, Christian J. Sanders, 2022. Increasing carbon, nutrient and trace metal accumulation driven by development in a mangrove estuary in south Asia. <i>Science of the Total Environment</i> , Vol. 832, p. 154900, DOI: http://dx.doi.org/10.1016/j.scitotenv.2022.154900 , ISSN: 0048-9697, Publisher: Elsevier .	10.75

2	<p>Neelima Vasu K., S. Bijoy Nandan, Radhika R., Sanu V.F., 2022. Taxonomic Revision of Epiphytic Copepod <i>Metis jousseaumei</i> Richard, 1892 (Copepoda, Harpacticoida, Metidae) from Kavaratti Island Southeastern Arabian Sea. <i>Thalassas: An International Journal of Marine Sciences</i>, DOI: https://doi.org/10.1007/s41208-022-00417-5, ISSN: 2366-1674, Publisher: Springer.</p>	0.951
3	<p>S. Sreelekshmi, M. Harikrishnan, S. Bijoy Nandan, V. SreejithKaimal, N. Regina Hershey, 2022. Ecosystem Carbon Stock and Stable Isotopic Signatures of Soil Organic Carbon Sources Across the Mangrove Ecosystems of Kerala, Southern India. <i>Wetlands</i>, Vol. 42(29), pp.1-12, DOI:https://doi.org/10.1007/s13157-022-01540-y, ISSN: 0277-5212 (print), ISSN: 1943-6246 (online), Publisher: Springer.</p>	2.204
4	<p>Ganga Vijayaraghavan, K. V. Neethu, B. P. Aneesh, Aparna Suresh, K. S. Saranya, S. Bijoy Nandan, K. V. Sharma, 2022. Evaluation of toxicological impacts of Polyvinyl Chloride (PVC) microplastics on fish, <i>Etroplus suratensis</i> (Bloch, 1790), Cochin estuary, India. <i>Toxicology and Environmental Health Sciences</i>, pp. 1-10, DOI:https://doi.org/10.1007/s13530-021-00120-7, ISSN: 2005-9752, Publisher: Springer.</p>	-
5	<p>P. R. Jayachandran, R. Radhika, B. P. Aneesh, K. S. Santu, M. Jima, S. Bijoy Nandan, 2021. Biological Invasion of Medically Important Bladder Snail <i>Physella acuta</i> Draparnaud, 1805 (Gastropoda, Physidae), in the Freshwater Habitat of Kerala, India. <i>Proceedings of the Zoological Society</i>, Vol. 75, pp. 200-207, DOI: 10.1007/s12595-021-00419-w, ISSN: 0972-6683, Publisher: Springer.</p>	0.71
6	<p>M. Jima, P. R. Jayachandran, S. Bijoy Nandan, 2021. Modern Benthic Foraminiferal Diversity Along the Fjords of Svalbard Archipelago: Diversity Evaluation. <i>Thalassas: An International Journal of Marine Sciences</i>, Vol. 38(1), pp. 647-664, DOI:https://doi.org/10.1007/s41208-021-00356-7, ISSN: 2366-1674, Publisher: Springer.</p>	0.951

7	1. N. D. Don Xavier, S. Bijoy Nandan, P. R. Jayachandran, K. V. Neethu, D. Mohan and S. R. Marigoudar, 2021. Eliciting heavy metal contamination on selected native organisms from Cochin estuary using contemporary biomarker approach. Journal of Earth System Science, Vol. 130:174, pp.1-13, DOI: https://doi.org/10.1007/s12040-021-01676-1 , ISSN: 0253-4126, Publisher: Springer.	1.912
8	S. Vineetha and S. Bijoy Nandan, 2021. Biological Traits and Trait Combinations of Benthic Macroinvertebrates in a Wetland Under Hydrological Disturbance. Proceedings of the Zoological Society, Vol. 74(3), pp. 339-356, DOI: https://doi.org/10.1007/s12595-021-00379-1 , ISSN: 0373-5893, Publisher: Springer.	-
9	N. K. Vishnudattan, S. Bijoy Nandan, J. G. Hansen, P. R. Jayachandran, 2021. A new Tardigrade species, <i>Stygarctus keralensis</i> sp. nov. (Arthrotardigrada: Stygarctidae) from the intertidal zone of Southwest coast of India. Zootaxa, Vol. 4985 (3), pp. 381-391, DOI: 10.11646/zootaxa.4985.3.5 , ISSN: 1175-5326 (print), ISSN: 1175-5334 (online), Publisher: Magnolia, New Zealand.	1.091
10	P. Hari Praved, André C. Morandini, Maximiliano M. Maronna, M. Nazar Suhaana, M. Jima, B. P Aneesh, S. Bijoy Nandan, P. R. Jayachandran, 2021. Report of Mauve Stinger <i>Pelagia cf. noctiluca</i> (Cnidaria: Scyphozoa) Bloom from Northeastern Arabian Sea (NEAS). Thalassas: An International Journal of Marine Sciences, Vol. 37(2), pp. 569-576, DOI: https://doi.org/10.1007/s41208-021-00304-5 , ISSN: 2366-1674, Publisher: Springer.	0.951
11	P. P. Krishnapriya, N. K. Aswathy, M. M. Dhanya, M. Jima, P. R. Jayachandran, S. Bijoy Nandan, M. Harikrishnan and K. P. Krishnan, 2021. Protective role of carbon sequestration by free living nematodes in Arctic Kongsfjord (intermediate zone), Svalbard in the emerging climate change scenario. Journal of Earth System Science, Vol. 130(3), pp. 1-15, DOI: https://doi.org/10.1007/s12040-021-01639-6 , ISSN: 0253-4126, Publisher: Springer.	1.912

12	K. V. Neethu, K. S. Saranya, N. G. Athul Krishna, P. Hari Praved, B. P. Aneesh, S. Bijoy Nandan, S. R. Marigoudar, 2021. Toxicity of copper on marine diatoms, Chaetoceros calcitrans and Nitzschia closterium from Cochin estuary, India. <i>Ecotoxicology</i> , Vol. 30(5), pp. 783-793, DOI: https://doi.org/10.1007/s10646-021-02410-9 , ISSN: 0963-9292, Publisher: Springer.	2.935
13	M. Jima, P. R. Jayachandran, S. Bijoy Nandan, P. P. Krishnapriya, N. K. Aswathy, K. P. Krishnan, M. Harikrishnan & C. K. Radhakrishnan, 2021. Stable isotopic signatures of sediment carbon and nitrogen sources and its relation to benthic meiofaunal distribution in the Arctic Kongsfjord. <i>Marine Ecology</i> , Vol. 42(3), e12648, DOI: 10.1111/maec.12648 , ISSN: 0173-9565 (print), ISSN: 1439-0485 (online), Publisher: Wiley publishers.	1.733
14	N. Regina Hershey, S. Bijoy Nandan, K. Neelima Vasu & Douglas R. Tait, 2021. Anthropogenic nutrient loads and season variability drive high atmospheric N ₂ O fluxes in a fragmented mangrove system. <i>Scientific reports</i> , Vol. 11(1): 6930, pp.1-11, DOI: https://doi.org/10.1038/s41598-021-85847-6 , ISSN: 2045-2322, Publisher: Nature Portfolio .	.998.
15	Philomina Joseph, S. Bijoy Nandan, S. Sreelekshmi, P. R. Jayachandran, Rani Varghese, C. M. Preethy, C. V. Asha, K. J. Adarsh, 2021. Benthic Biocoenosis: influence of edaphic factors in the tropical mangroves of Cochin, Southern India. <i>Tropical Ecology</i> , Vol. 62(3), pp. 463-478, DOI: https://doi.org/10.1007/s42965-021-00162-5 , ISSN: 0564-3295, Publisher: Springer.	1.57
16	Aishwarya Purushothaman, Lathika Cicily Thomas, S. Bijoy Nandan, K. B. Padmakumar, 2021. Influence of upwelling on the chaetognath community along the Southeastern Arabian Sea. <i>Wetlands Ecology and Management</i> , Vol. 29(5), pp. 731-743, DOI: https://doi.org/10.1007/s11273-020-09773-6 , ISSN: 0923-4861, Publisher: Springer.	2.30

17	S. Sreelekshmi, Bijeesh K.V., S. Bijoy Nandan, M. Harikrishnan, 2021. Mangrove forests along the coastline of Kerala, southern India: Current status and future prospects, <i>Regional Studies in Marine Science</i> , Vol. 41, p. 101573, DOI: https://doi.org/10.1016/j.rsma.2020.101573 , ISSN: 2352-4855, Publisher: Elsevier.	2.166
NATIONAL PUBLICATIONS		
1	S. Bijoy Nandan, S. Sreelekshmi and M. Harikrishnan, 2021. Fishery Production Potential of the Mangroves in India - A Review. <i>Journal of the Indian Society of Coastal Agricultural Research</i> . Vol. 39(2), pp. 151-160, DOI: 10.54894/JISCAR.39.2.2021.110914 , ISSN: 0972-1584, Publisher: Indian Society of Coastal Agricultural Research.	-
2	Sanu V. Francis, Jasmine Purushothaman, Alfisa Siddique, Aishee Bhowal, S. Bijoy Nandan, 2021. Redescription of poorly known neustonic calanoid copepod <i>Pontella andersoni</i> Sewell, 1912 (Family: Pontellidae) from the Bay of Bengal, Indian Ocean. <i>Indian Journal of Geo Marine Sciences</i> . Vol. 50(08), pp. 635-640, http://nopr.niscair.res.in/handle/123456789/58550 , ISSN: 2582-6727 (Online); 2582-6506 (Print), Publisher: National Institute of Science Communication and Information Resources. CSIR, India.	0.496
3	Rajasree K. R, Aneesh B, and S. Bijoy Nandan, 2021. World of Microplastics and environmental issues (microplasticukalude lokavum parsthithiprashnangalum <u>article in Malayalam</u>), <i>Vijayanakairali</i> , (53), pp. 14-20. Publisher: Kerala Bhasha Institute, Govt. of Kerala.	-
4	P. R. Jayachandran, B. P. Aneesh, Anders Hallan, N. K. Vishnudattan, M. Jima, R. Radhika, S. Bijoy Nandan, 2021. Notes on the genus <i>Amerianna</i> Strand, 1928 (Gsatropda, Planorbidae) in India. <i>Records of the Zoological Survey of India</i> , Vol. 121(4), pp. 487-492, DOI: 10.26515/rzsi/v121/i4/2021/159888 , ISSN (Online): 2581-	-

	8686 ISSN (Print): 0375-1511, Publisher: Zoological Survey of India, Calcutta.	
	CONFERENCE PROCEEDINGS	
	BOOK CHAPTERS	
<p>P.R. Jayachandran, S. Bijoy Nandan, M. Jima, J. Philomina, N.K. Vishnudattan 2022, Benthic organisms as an ecological tool for monitoring coastal and marine ecosystem health, Editor(s): Prince S. Godson, Salom Gnana Thanga Vincent, S. Krishnakumar, Ecology and Biodiversity of Benthos, Elsevier, pp. 337-362, ISBN: 978-0-12-821161-8, DOI: https://doi.org/10.1016/B978-0-12-821161-8.00004-0. (https://www.sciencedirect.com/science/article/pii/B9780128211618000040).</p>		

b. Books

Sl.No.	Title of Book
Dr. P Priyaja	
1.	BijoyNandan S, Priyaja P , Jayachandran P.R (2020). Frontiers in Benthic Science. Directorate of Public Relations and Publications, CUSAT, Kochi, India. ISBN 978-81-936217-7-6.
Dr. S Bijoy Nandan	
2	Ecology and Biodiversity of Benthos

20. Participation in Seminar/Conference/Training/Refresher Courses, etc. by Faculty/Students.

Name of Participant	Name of Seminar/ Conference/ Training/Workshop	Role
Dr. K. B. Padmakumar		
Dr. K.B.Padmakumar	Refresher course in “Life Science” organized by Ramanujan College, University of Delhi, 01 to 15 September 2021.	Participant
Renju Mohan, Research Scholar	“Online Workshop on PRIMER v7 and PERMANOVA” organized by the Department of Marine Biology, Microbiology and Biochemistry, School of Marine	Participant

	Sciences, CUSAT, from 14-25 June 2021.	
Renju Mohan, Research Scholar	“YOUMARES 12- International conference on “Heading to a Sustainable and Clean Ocean”” organized by German Society for Marine Research (DGM), from 5-7 October 2021.	Participation and oral presentation
Renju Mohan, Research Scholar	“Conference workshop on “Women in Science: History, Challenges and Opportunities”” conducted by YOUMARES-12 organized by German Society for Marine Research (DGM) on 8 th October 2021.	Participation
Renju Mohan, Research Scholar	“Conference workshop on “Plastics and the Environment”” conducted by YOUMARES-12 organized by German Society for Marine Research (DGM) on 8 th October 2021.	Participation
Renju Mohan, Research Scholar	“Conference workshop on “Understanding and Practicing Blue Mind for Life”” conducted by YOUMARES-12 organized by German Society for Marine Research (DGM) on 8 th October 2021.	Participation
Renju Mohan, Research Scholar	“Virtual International workshop on “Computational Modelling in Chemistry, Biology and Materials”” organized by Department of Applied Chemistry, CUSAT from 22-28 November 2021.	Participation

Renju Mohan, Research Scholar	“National Seminar on “Emerging Trends in Fisheries and Aquaculture (ETFA-2021)”” organized by Department of Aquaculture, SH College from 1-2 December 2021.	Participation
Aishwarya, Research Scholar	“Annual National Conference on Sustainable Ecosystems, Aquaculture, Fisheries and Fisherfolk (ANCOSEAFF 2021)” organized by the Department of Aquatic Biology and Fisheries, University of Kerala held from 4 th -5 th March 2021.	Participation and oral presentation
Aishwarya, Research Scholar	“Webinar on Molecular Taxonomy: Tools and Techniques” organized by Association of Fisheries Graduates on 18 th April 2021	Participation
Aishwarya, Research Scholar	“Panel discussion on Coastline Management in Kerala: Socio-economic and environmental Paradigms” organized by Association of Fisheries Graduates on 12 th June 2021.	Participation
Aishwarya, Research Scholar	“Online Workshop on PRIMER v7 and PERMANOVA” organized by the Department of Marine Biology, Microbiology and Biochemistry, School of Marine Sciences, CUSAT, from 14-25 June 2021.	Participation
Aishwarya, Research Scholar	“YOUMARES 12- International conference on “Heading to a Sustainable and Clean Ocean”” organized by German Society for	Participation and oral presentation

	Marine Research (DGM), from 5-7 October 2021	
Aishwarya, Research Scholar	“Conference workshop on “Women in Science: History, Challenges and Opportunities”” conducted by YOUMARES-12 organized by German Society for Marine Research (DGM) on 8 th October 2021	Participation
Aishwarya, Research Scholar	“Conference workshop on “Plastics and the Environment”” conducted by YOUMARES-12” organized by German Society for Marine Research (DGM) on 8 th October 2021	Participation
Aishwarya, Research Scholar	“Conference workshop on “Understanding and Practicing Blue Mind for Life”” conducted by YOUMARES-12” organized by German Society for Marine Research (DGM) on 8 th October 2021	Participation
Aishwarya, Research Scholar	“Webinar on J-GATE @ E-Shodhsindhu: one platform to discover all Scholarly E-Journal Literature” organized by Cochin University of Science and Technology and Informatics Publishing Limited, Bangalore on 21 st October, 2021	Participation
Aishwarya, Research Scholar	“Invited talk by Prof. Steven J. Cooke on The state and future of inland fisheries and freshwater biodiversity in connection with the AFG Fisheries Week Celebration 2021” organized by the	Participation

	Association of Fisheries Graduates on 20 th November 2021.	
Aishwarya, Research Scholar	“Panel Discussion on “Potential, Weakness, Opportunities and Challenges for the Sustainable development of Fisheries Sector in Kerala” in connection with World Fisheries Day 2021” organized by the Association of Fisheries Graduates on 21 st November 2021.	Participation
Aishwarya, Research Scholar	“Virtual International workshop on “Computational Modelling in Chemistry, Biology and Materials”” organized by Department of Applied Chemistry, CUSAT from 22-28 November 2021.	Participation
Aishwarya, Research Scholar	“National Seminar on “Emerging Trends in Fisheries and Aquaculture (ETFA-2021)” organized by Department of Aquaculture, SH College from 1-2 December 2021.	Participation
Twinkle Sathish, Research Scholar	“Online Workshop on PRIMER v7 and PERMANOVA” organized by the Department of Marine Biology, Microbiology and Biochemistry, School of Marine Sciences, CUSAT, from 14-25 June 2021	Participation
Twinkle Sathish, Research Scholar	“YOUARES 12- International conference on “Heading to a Sustainable and Clean Ocean”” organized by German Society for	Participation and oral presentation

	Marine Research (DGM), from 5-7 October 2021	
Twinkle Sathish, Research Scholar	“Conference workshop on “Plastics and the Environment” facilitated by Rethink Plastic, Inc. during the YOUMARES 12 "Heading to a Sustainable and Clean Ocean" conducted by YOUMARES-12” organized by German Society for Marine Research (DGM) on 8 th October 2021	Participation
Twinkle Sathish, Research Scholar	“Conference workshop on “Creating Meaningful Schematics using Biorender” conducted by YOUMARES-12” organized by German Society for Marine Research (DGM) on 8th October 2021	Participation
Twinkle Sathish, Research Scholar	“Webinar on J-GATE @ E-Shodhsindhu: one platform to discover all Scholarly E-Journal Literature” organized by Cochin University of Science and Technology and Informatics Publishing Limited, Bangalore on 21 st October, 2021	Participation
Twinkle Sathish, Research Scholar	“International Symposium on Tropical Meterology (INTROMET-2021) on climate change: Consequences and Challenges (C4-21)” organized by Indian Meteorological Society - Cochin Chapter & Cochin University of Science and Technology (CUSAT), Cochin,	Participation and Poster presentation

	Kerala State, India from 23-26 November, 2021.	
Niya Benny, Research Scholar	International Webinar on Conservation of Life Below Water Perspectives on Systematics, Sustainable Livelihoods and Citizen Science (COLIBA-2021).	Participant and oral presentation
Niya Benny, Research Scholar	“National Conference on Mariculture in India – Recent Advancement through online mode on 16-06-2021” Organized by Department of Marine Biotechnology AMET, Chennai, in association with Indian Association of Aquatic Biologist	Participant
Niya Benny, Research Scholar	“Panel Discussion organized by the Association of Fisheries Graduates on the topic Potential, Weakness, Opportunities and Challenges for the Sustainable development of Fisheries Sector in Kerala in association with World Fisheries Day 2021 “organized by the Association of Fisheries Graduates on 21 st November 2021.	Participated
Niya Benny, Research Scholar	“Invited Talk by Prof. Steven J. Cooke organized by the Association of Fisheries Graduates on the topic The state and future of inland fisheries and freshwater biodiversity in connection with AFG Fisheries Week Celebration 2021” organized by the	Participated

	Association of Fisheries Graduates on 20 th November 2021.	
Niya Benny, Research Scholar	“Online workshop entitled “Creating Meaningful Schematics using Biorender” facilitated by Dr. Jana Hinners during the YOUMARES 12 “Heading to a Sustainable and Clean Ocean” Conference Workshop on 08 October 2021” organized by German Society for Marine Research (DGM), from 5-7 October 2021.	Participated
Niya Benny, Research Scholar	“Online workshop entitled “Plastics and the Environment” facilitated by Rethink Plastic, Inc. during the YOUMARES 12 “Heading to a Sustainable and Clean Ocean” Conference Workshop on 08 October 2021.” organized by German Society for Marine Research (DGM), from 5-7 October 2021.	Participated
Niya Benny, Research Scholar	“PRIMER v7 & PERMANOVA WORKSHOP” organized by Department of Marine Biology, Microbiology and Biochemistry, School of Marine Sciences, Cochin University of Science and Technology (CUSAT) from 14th to 25th June, 2021	Participated
Niya Benny, Research Scholar	“Panel Discussion organized by the Association of Fisheries Graduates on the theme Coastline Management in Kerala: Socio-economic and Environmental	Participated

	paradigms in connection with World Oceans Day 2021.” organized by the Association of Fisheries Graduates.	
Niya Benny, Research Scholar	“For active participation in the online World Environment Day Quiz, 2021” conducted by CPCB, Regional Directorate, Bengaluru; during 5-6th June, 2021.	Participated
Dr. Lathika Cicily Thomas		
Dr. Lathika Cicily Thomas	Workshop on “Advanced Microscopic Techniques” organized by the Department of Marine Biology, Microbiology and Biochemistry in association with the American society of Microbiology and Inbiotek Microsystems, Kochi on 6 th April 2022	Participant
Dr. Lathika Cicily Thomas	Orientation programme organized by Teaching Learning Centre, Ramanujan College, University of Delhi, under aegis of Ministry of Education, Pandit Madan Mohan Malavya National Mission on Teachers and Teaching, 15 th March to 14 th April 2021.	Participant
Dr. Lathika Cicily Thomas	Deeksharambh 2021- Student orientation program- Research Department of Fisheries and Aquaculture, St. Alberts College, Ernakulam, 22 nd September 2021	Invited Talk on Biodiversity of Marine Ecosystems- Current Scenario, Threats and Conservation

Dr. Swapna P Antony		
Dhanya Lenin K. L	International Webinar on Sustainable Marine Fisheries And Aquaculture: Policies, Packages and Perspectives in Blue Economy Paradigm (SMART P3BLUEECO-2021), organized by the Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram, Kerala, India. 24 pp. 12-13 March 2021.	Paper presentation and Participation
Sheethu Annie Vincent	International Webinar on Sustainable Marine Fisheries And Aquaculture: Policies, Packages and Perspectives in Blue Economy Paradigm (SMART P3BLUEECO-2021), organized by the Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram, Kerala, India. 24 pp. 12-13 March 2021.	Paper presentation and Participation
Dhanya Lenin K.L.	DATA ANALYSIS USING SPSS by DDU Kaushal Kendra, CUSAT, 15 – 17th APRIL 2021	Participation
Sheethu Annie Vincent	DATA ANALYSIS USING SPSS by DDU Kaushal Kendra, CUSAT, 15 – 17th APRIL 2021	Participation
Anne Maria Thomas	Golden Jubilee Celebratory Author Workshop on "Writing quality Research Articles & Identifying Relevant Journals to Read & Publish In"	Participation

Athira Menon T.	Golden Jubilee Celebratory Author Workshop on "Writing quality Research Articles & Identifying Relevant Journals to Read & Publish In"	Participation
Dhanya Lenin K.L.	Golden Jubilee Celebratory Author Workshop on "Writing quality Research Articles & Identifying Relevant Journals to Read & Publish In"	Participation
Dr. Chaithanya E R		
Dr. Chaithanya E. R.	ICAR sponsored winter school on Recent Developments in Taxonomic Techniques of Marine Fishes for Conservation and Sustainable Fisheries Management organized by ICAR - Central Marine Fisheries Research Institute, Kochi from 03-23 January 2022.	Participation
Dr. Chaithanya E. R.	Albertian Knowledge Summit-International Conference on Multidisciplinary Research Organized by St. Alberts College (Autonomous) Ernakulam on 4th March 2022	Invited Speaker
Dr. A A Mohamed Hatha		
Hafsa Kattathayil	Hafsa Kattathayil, Vishnupriya. S, A. A. Mohamed Hatha (2022) Screening and isolation of cold-active lipase producing strain for biodegradation of lipid-rich wastes.	Oral presentation in 34 th Kerala Science Congress held at Thiruvananthapuram during 10-12 February 2022
Vishnupriya S.	Vishnupriya, S., Amrutha, M., K.P. Krishnanand A.A. Mohamed Hatha(2021)Hydrolyticenzyme potential of psychrotrophic	Oral presentation inthe International webinar on "Environmental Conservation: Necessity and Challenges"

	bacteria from sediments of Kongsfjorden, Arctic.	Organized by PG Department of Zoology & Birds Club International, Alphonsa college Pala in association with School of Environmental Sciences, M.G. University Kottayam on 5th and 6th November, 2021.
Vishnupriya S.	Vishnupriya, S., K.P. Krishnanand A.A. Mohamed Hatha (2022) Diversity of complex polysaccharide degrading heterotrophic bacterial isolates from sediments of Kongsfjorden and Krossfjorden, Arctic.	Oral presentation in the Albertian Knowledge Summit 2022- An International conference on Multidisciplinary Research Organized by the office of the Dean, Research, in association with the Department of Zoology and Research Centre, St. Albert's college on 8th & 9th March 2022.
Akhil Prakash E.	Akhil Prakash E, Midhun Shah Hussan, Krishnan, K.P., Mohamed Hatha A. A., Quantification of ancient microbes from permafrost and their potential risk: A simulation study;	Poster presented at; ASSW 2021; 19-26 March 2021; Online, Portugal.
Bini Francis	Bini Francis & A. A Mohamed Hatha, presented a paper on the topic 'Biological Synthesis of Silver Nanoparticles using	. Oral Presentation in the International Conference on 'Nanomedicine and Nanomaterials'

	Pomegranate Peel Extract and its Characterization'	organized by School of Biosciences, Mar Athanasios College for Advanced Studies, Tiruvalla (MACFAST) in association with International and Inter-University Centre for Nanoscience and Nanotechnology (IIUCNN), Mahatma Gandhi University on 3 rd , 4 th , and 5 th September 2021
Midhun Shah Hussain	Midhun Shah Hussain, Smitha B. R., Mohamed Hatha, A.A. (2021) Warming driven early-blooming scenarios in North Eastern Arabian Sea.	Oral presentation in OSICON 21, in the theme Coastal and Open Ocean process at the online virtual platform, during August 12-14, 2021.
	Soumya, K., Lakshmi, E., Bini Francis and A.A. Mohamed Hatha (2021). Risk assessment of biofilm-forming bacteria on plastic debris from popular beaches around Cochin – Kerala.	Oral presentation in National conference, RICERCA 2021, at Alappuzha, Kerala from 5 to 21 October 2021
	Soumya, K., and A.A. Mohamed Hatha (2021). An investigation into plastic pollution along selected beaches around Cochin, Kerala.	Oral presentation in from International conference, YOUMARES 12- "Heading to a Sustainable and Clean Ocean" organized by German Society for Marine Research (DGM) 2021 at Germany from 5-7 October 2021

	Soumya, K (2021). Workshop participation in Conference workshop on “Plastics and the Environment” conducted by YOUMARES-12 Organized by German Society for Marine Research (DGM) 2021 at Germany - 8 th October 2021	Online presentation
	Soumya, K (2021). - Workshop participation in Conference workshop on ‘Women in science’: ‘History, challenges and Opportunities’ – YOUMARES-12, 2021 at Germany - 8 th October 2021	
	Soumya, K., and A.A. Mohamed Hatha (2022) Prevalence of Micro, Meso and Macro Plastics in Popular Beaches Around Cochin –Kerala, India-	Oral presentation in International Online Conference, Environmental status of Estuarine and Coastal Ecosystem in India, ECEI CONFERENCE, 2022 at University of Kerala, Thiruvananthapuram, Kerala from 26 to 28 January 2022
Dr. P. Priyaja		
Dr.Priyaja P.	Faculty Development Programme (FDP) on Learning Management System (Moodle) and Course Design, Kerala State Higher Education Council, 26-7-2021 to 30-7-2021	Participation

Dr.Priyaja P.	Marine Biodiversity and Ecosystem, St.Stephens College, Uzhavur, Kerala	Invited Talk
Vidyalakshmi D.	YOUMARES 12 hybrid conference, 05 – 07 October 2021, Hamburg, Germany.	Paper Presentation
AneenaYesudas	YOUMARES 12 hybrid conference (05 – 07 October 2021, Hamburg, Germany).	Paper Presentation
Gopika Sivan	International Webinar on Conservation of Life Below Water, March 18-20, 2021, University of Kerala	Paper Presentation
Dr. S. Bijoy Nandan		
Dr. S. Bijoy Nandan	Guided Hands-on Training on Instrumental Chemical Analysis, held on 23-27 May 2022 in Dept. of Chemical Oceanography, CUSAT, organised by Dept. of Chemical Oceanography & Inter University Centre for Development of Marine Biotechnology (IUCDMB), School of Marine Sciences, CUSAT.	Organizing Committee Member, Felicitation of the programme
Dr. S. Bijoy Nandan	International dialogue on ‘Australia-India Indo-Pacific Oceans Initiative (IPOI): Strengthening International Cooperation’ held on 21-22 April 2022 in Kochi, organised by Centre for Public Policy Research (CPPR) in collaboration with Monash University, Australia and the Department of Foreign Affairs and Trade (DFAT), Australia.	Chairman, session on Marine Litter and Debris in the Bay of Bengal.

Dr. S. Bijoy Nandan	Five Days Workshop on 'Entrepreneurship Development, held on 04-08 April 2022 in School of Marine Sciences Auditorium, CUSAT, organised by School of Industrial Fisheries, CUSAT.	Dean, Faculty of Marine Sciences, Inauguration of the programme.
Dr. S. Bijoy Nandan	Webinar on Wetlands: Their Importance & Measures to Conserve, in connection with World Wetland Day Observance on 02-02-2022, organized by Govt. Higher Secondary School, Elankunnapuzha, funded by Kerala Forest Department Social Forestry Division, Ernakulam.	Invited talk
Dr. S. Bijoy Nandan	Indian Ocean Regional Committee and to contribute to the Challenger 150 programme, coordinated by Alex Rogers, Science Director, REV Ocean and the meeting held in connection with World Ocean Day on 11 June 2021.	Member
Dr. S. Bijoy Nandan	National Conference on Deep Sea Bioresources in Indian Ocean from 25-26 February 2021 (virtual mode) organised by Zoological Survey of India.	Invited special lecture
Dr. S. Bijoy Nandan	Capacity Building Workshop on the 1982 UNCLOS organised by Indian Council of World Affairs, Ministry of External Affairs, Govt. of India, held on 29 January 2021, (Venue: Virtual Workshop).	Chairman, session on Protection of the Marine Environment and issues of Marine Scientific Research attended by over 20 nations at IORA (Indian Ocean Rim Association)

Hari Praved P.	Is climate change attributed to enigmatic gelatinous zooplankton blooms in the Arabian Sea, International Indian Ocean Science Conference, 14-18 March 2022 (Online).	Paper presentation
Hari Praved P.	Distribution and abundance of gelatinous zooplankton in South Eastern Arabian Sea (SEAS), International Indian Ocean Science Conference, 14-18 March 2022 (Online).	Paper presentation
Neethu K. V.	Toxicity effects of cadmium (Cd) on the fish <i>Etroplus suratensis</i> (Bloch, 1790), Cochin Estuarine System, Southwest Coast, India, International Indian Ocean Science Conference, 14-18 March 2022 (Online).	Poster presentation
Vishnudattan N. K.	Influence of submarine groundwater discharge (SGD) on intertidal in-faunal communities along southwest coast of India, The Second International Conference on Biodiversity, Ecology, and Conservation of Marine Ecosystems (BECOME-2022), from 03-07 January 2022, City University of Hong Kong (Online).	Paper presentation
Hari Praved P.	Swarming, Seasonal Patterns and Diet of the Ctenophore <i>Pleurobrachia pileus</i> in a Tropical Monsoonal Estuary, The Second International Conference on Biodiversity, Ecology, and	Paper presentation

	Conservation of Marine Ecosystems, (BECOME-2022), from 03-07 January 2022, City University of Hong Kong (Online).	
Neethu K. V.	Laboratory simulated food chain transfer of cadmium from microalgae <i>Chaetoceros calcitrans</i> and <i>Thalassiosira weissflogii</i> to black clam <i>Villorita cyprinoides</i> and toxicity responses, The Second International Conference on Biodiversity, Ecology, and Conservation of Marine Ecosystems, (BECOME-2022), from 03-07 January 2022, City University of Hong Kong (Online).	Paper presentation
Krishnapriya P. P	“International conference on Modern Zoology: Known and unknown” organized by the PG & Research Department of Zoology, C. Abdul Hakeem College (Autonomous), Melvisharam 28 th & 29 th October 2021.	Oral presentation
Aswathy N. K.	“International conference on Modern Zoology: Known and unknown” organized by the PG & Research Department of Zoology, C. Abdul Hakeem College (Autonomous), Melvisharam 28 th & 29 th October 2021.	Oral presentation
Jima M.	ForBio and MEDUSA symposium: Evolution and Diversity of Meiobenthos,	Oral presentation

	September 13-16, 2021 of University Museum of Bergen.	
Dr. Jayachandran P. R	International Training Workshop - 2 Primer v7 & Permanova (online) (Plymouth multivariate software) was held in the Dept.of Marine Biology, CUSAT, organised under the UGC- SAP – phase-2 programme.	Participation
Vishnudattan N. K.	International Training Workshop - 2 Primer v7 & Permanova (online)(Plymouth multivariate software) was held in the Dept. of Marine Biology, CUSAT, organised under the UGC- SAP – phase-2 programme.	Participation
Neelima Vasu K.	Workshop on PRIMER v7-Permanova (Plymouth multivariate software) (online) was held in the Dept. of Marine Biology, CUSAT, organised under the UGC-SAP –phase-2 programme.	Participation
Hari Praved P.	Workshop on PRIMER v7-Permanova (Plymouth multivariate software) (online) was held in the Dept. of Marine Biology, CUSAT, organised under the UGC-SAP – phase-2 programme.	Participation
Jima M.	Workshop on PRIMER v7-Permanova (Plymouth multivariate software) (online) was held in the Dept. of Marine Biology, CUSAT, organised under	Participation

	the UGC-SAP – phase-2 programme.	
Aswathy N. K.	Workshop on PRIMER v7-Permanova (Plymouth multivariate software) (online) was held in the Dept. of Marine Biology, CUSAT, organised under the UGC-SAP – phase-2 programme.	Participation
Krishnapriya P. P	Workshop on PRIMER v7-Permanova (Plymouth multivariate software) (online) was held in the Dept. of Marine Biology, CUSAT, organised under the UGC-SAP – phase-2 programme.	Participation

Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Dr. K B Padmakumar		
Dr. K. B. Padmakumar	Scientific Committee on Oceanic Research (SCOR)	SCOR Working Group 165- Member (India)- Mixotrophy in the Oceans – Novel Experimental designs and Tools for a new trophic paradigm (MixONET)
Dr. K. B. Padmakumar	URoL:EN Green Noctiluca blooms, Salps and Jellyfish - Rules of Emergence and Societal Impact reduction via Science and Technology (RESIST)- NSF	Research collaboration

Dr. K. B. Padmakumar	Department of Life and Environmental Science, Università Politecnica delle Marche, Italy.	Research collaboration (Diatom taxonomy)
Dr. K. B. Padmakumar	A.O. Kovalevsky Institute of Biology of the Southern Seas, Sevastopol, Russia	Research collaboration (Epizoism in Marine organisms)
Dr. K. B. Padmakumar	Harmful Algae News: IOC-UNESCO Newsletter on Toxic algae and Algal Blooms.	Regional Editor (India)
Dr. K. B. Padmakumar	NIO-RC-Mumbai	Subject expert for the selection of TA I and JRF positions
Dr. K. B. Padmakumar	Department of Zoology, University of Kerala,	Subject/ External expert- Ph.D Pre-submission Seminar
Dr. K. B. Padmakumar	Department of Marine Biology, Cochin University of science and Technology	Board of Studies- Marine Biology- Member
Dr. K. B. Padmakumar	Fatima Mata National College, University of Kerala, Kollam	Board of Studies- Zoology - Member
Dr. K. B. Padmakumar	University of Calicut, M.Sc. Aquaculture and Fishery Microbiology (CUCSS),	Board of Examiners
Dr. K. B. Padmakumar	National Centre for Aquatic Animal Health, Cochin University of Science and Technology	Collaborating Faculty Member for M.Tech Marine Biotechnology programme
Dr. K. B. Padmakumar	School of Industrial Fisheries, CUSAT	Expert Member - Passing board
Dr. K. B. Padmakumar	School of Naval Oceanology and Meteorology (SNOM), Naval base, Kochi	Instructor- Biological Oceanography for Oceanography course (International)

Dr. K. B. Padmakumar	Kerala University of Fisheries and Ocean Studies (KUFOS), Kochi	External expert for setting question paper for M.Sc. Marine Biology
Dr. K. B. Padmakumar	Kerala University of Fisheries and Ocean Studies (KUFOS), Kochi	External examiner for the Evaluation of MFSc. Thesis
Dr. K. B. Padmakumar	HAEDAT (Harmful Algae Event Database), UNESCO-IOC-ICES-PICES from October 2017	National contact for India
Dr. K. B. Padmakumar	Indian Journal of Marine Sciences-NISCAIR (National journal)	Reviewer
Dr. K. B. Padmakumar	Regional Studies in Marine Sciences, Oceanologia, Marine and Fresh Water Research- CSIRO Publishing; Phytotaxa- Magnolia press; Acta Oceanologica Sinica, Cahiers de Biologie Marine (International journals)	Reviewer
Dr. K. B. Padmakumar	University of Calicut	Member-Board of Examiners- M.Sc. Aquaculture and Fishery Microbiology (CUCSS)
Dr. K. B. Padmakumar	Kerala University of Fisheries and Ocean studies (KUFOS), Kochi	External Examiner for MSc. Marine Biology- Subject-MB2106- Coral reef and Mangrove ecology and management
Dr. K. B. Padmakumar	University of Calicut	Question paper setter for Ph.D Entrance examination in

		Aquaculture and Fishery Microbiology
Dr. K. B. Padmakumar	Scientific Committee on Oceanic Research (SCOR)	SCOR Working Group 165- Member (India)- Mixotrophy in the Oceans – Novel Experimental designs and Tools for a new trophic paradigm (MixONET)
Dr. K. B. Padmakumar	URoL:EN Green Noctiluca blooms, Salps and Jellyfish - Rules of Emergence and Societal Impact reduction via Science and Technology (RESIST)- NSF	Research collaboration
Dr. Lathika Cicily Thomas		
Dr. Lathika Cicily Thomas	St.Alberts College, Ernakulam	Board of Studies- Aquaculture - Member
Dr. Lathika Cicily Thomas	St.Alberts College, Ernakulam	External examiner for Fishery Management and Fishery Economics (M.Sc. Aquaculture)
Dr. Lathika Cicily Thomas	Regional Studies in Marine Sciences, Oceanologia, Phytotaxa, Environmental Monitoring Assessment, Egyptian journal of Remote sensing and Space Sciences (International journals)	Reviewer
Dr. Swapna P Antony		
Dr. Swapna P. Antony	St. Teresa's College, Ernakulam	Member, Board of Studies
Dr. Swapna P. Antony	KUFOS	Member, Passing board

Dr. Swapna P. Antony	KUFOS	External examiner
Dr. Swapna P. Antony	CUSAT	Member, Board of Studies
Dr. Swapna P. Antony	CUSAT (Industrial Fisheries)	External examiner
Dr. Swapna P. Antony	KVM (Biotechnology), CUSAT	External examiner
Dr. Swapna P. Antony	Kerala University	External examiner
Dr. Swapna P. Antony	Calicut University	External examiner
Dr. A A Mohamed Hatha		
Dr. A.A. Mohamed Hatha	Central institute of Fishery Technology, society of fisheries Technologists of India (SOFTI)	Sub-Editor, Fishery Technology
Dr. A.A. Mohamed Hatha	CMFRI	Executive Committee Member (JMBAI)

Dr. A.A. Mohamed Hatha	39 th Indian Scientific Expedition to Antarctica – January, 2020	Member
Dr. A.A. Mohamed Hatha	DST young scientist award – 2002	
Dr. A.A. Mohamed Hatha	Field Participant – Indian Arctic Expedition 2011, 2016	
Dr. A.A. Mohamed Hatha	– Indian Arctic Expedition 2009	Team Leader
Dr. A.A. Mohamed Hatha	Earth Science and Technology Cell (ESTC), instituted by Govt. of India at Cochin University of Science and Technology	Research Co-ordinator
Dr. A.A. Mohamed Hatha	Fulbright Visiting Lecturer Scholarship 2012-13 of US Government	
Dr. A.A. Mohamed Hatha	Best Faculty Award - 2013	

Dr. A.A. Mohamed Hatha	Co-ordinator, Virtual Centre for Advanced Marine Science Research – 2018-19	
Dr. A.A. Mohamed Hatha	IQAC Core committee member, 2016-19	
Dr. A.A. Mohamed Hatha	Co-ordinator, Centre of Excellence in Marine Biology, Microbiology and Biochemistry – 2016-19	
Dr. A.A. Mohamed Hatha	Director, CUSAT-NCPOR Centre for Polar Sciences	
Dr. A.A. Mohamed Hatha	Consultant – King Fahd University of Petroleum and Minerals– 2008	
Dr. A.A. Mohamed Hatha	Consultant – Devi Sea Foods (leading seafood processor in India), Since 2006	
Dr. A.A. Mohamed Hatha	Consultant – L&T, Jacob’s CES	
Dr. A.A. Mohamed Hatha	President, Society of Marine Biologists of India – Since 2010	
Dr. A.A. Mohamed Hatha	Secretary, Marine Biology Alumni Association – Since 2017	
Dr. A.A. Mohamed Hatha	President, Biological Society of South Pacific, Fiji – 2005-06	
Dr. A.A. Mohamed Hatha	Chief Scientist, Cruise No. 255 of Sagar Sampada	
Dr. A.A. Mohamed Hatha	Member, Senate, Cochin University of Science and Technology	
Dr. A.A. Mohamed Hatha	Member, Academic Council, Cochin University of Science and Technology	

Dr. A.A. Mohamed Hatha	Chairman, Board of Studies in Marine Biology, Cochin University of Science and Technology	
Dr. A.A. Mohamed Hatha	Member, Board of Studies in Microbiology, Calicut University	
Dr. A.A. Mohamed Hatha	Member, Board of Studies in Aquaculture, Calicut University	
Dr. A.A. Mohamed Hatha	Member, Board of Studies in Marine Sciences,	
Dr. A.A. Mohamed Hatha	Bharathidasan University Member, Board of Studies in Microbial Biotechnology, Bharathiar University	
Dr. A.A. Mohamed Hatha	Member, Board of Studies in Environmental Sciences, Mahatma Gandhi University Member, Board of Studies in Zoology, Kannur University	
Dr. A.A. Mohamed Hatha	Member, Board of Studies in Fisheries Sciences, Kerala University of Fisheries and Ocean Sciences (KUFOS)	
Dr. A.A. Mohamed Hatha	Member, Board of Studies in Zoology, Mar Evanio College, Trivandrum	
Dr. A.A. Mohamed Hatha	Member, Board of Studies in Zoology, St. Joseph's College, Irijalakkuda	
Dr. A.A. Mohamed Hatha	Member, Board of Studies in Microbiology, St. Bergmans College, Changanassery	
Dr. A.A. Mohamed Hatha	Member, Board of Studies in Botany, St. Teresas College, Ernakulam	

Dr. A.A. Mohamed Hatha	Reviewer to several International and National Journals	
Dr. A.A. Mohamed Hatha	Member, Editorial Board, Asian Journal of Microbiology, Biotechnology and Environmental Sciences	
Dr. A.A. Mohamed Hatha	Sub-Editor, Fishery Technology (ICAR-CIFT)	
Dr. A.A. Mohamed Hatha	Member, American Society of Microbiology	
Dr. A.A. Mohamed Hatha	Member, American Chemical Society	
Dr. A.A. Mohamed Hatha	Life Member, Society of Fishery Technologist of India	
Dr. A.A. Mohamed Hatha	Life Member, Association of Microbiologists of India Life Member, Association of Biotechnologists of India	

Dr. Priyaja P.		
Dr.Priyaja P	Central Marine Fisheries Research Institute	External Examiner
Dr.Priyaja P	Kerala University of Fisheries and Ocean Studies	External Examiner
Dr.Priyaja P	University of Calicut	External Examiner
Dr.Priyaja P	Kerala University	External Examiner
Dr.Priyaja P	Coast Guard Training Centre, Kochi	External faculty for taking classes
Dr. S. Bijoy Nandan		
Dr. S. Bijoy Nandan	International Association for Ecology	Life Member
Dr. S. Bijoy Nandan	International Association for Open Knowledge on Invasive Alien Species	Life Member

Dr. S. Bijoy Nandan	International Association of Meiobenthologists (IAM)	Life Member
Dr. S. Bijoy Nandan	Limnological Association of Kerala (National)	Life Member
Dr. S. Bijoy Nandan	Marine Biological Association of India (National)	Life Member
Dr. S. Bijoy Nandan	National Institute of Ecology (National)	Life Member
Dr. S. Bijoy Nandan	National Environmental Science Academy (National)	Life Member
Dr. S. Bijoy Nandan	Society of Marine Biologists (National)	Life Member
Dr. S. Bijoy Nandan	Society of Fishery Technologists (National)	Life Member
Dr. S. Bijoy Nandan	Marine Biology Alumni Association (National)	Life Member
Dr. S. Bijoy Nandan	Mangrove Society of India (National)	Life Member
Dr. S. Bijoy Nandan	Ocean Society of India (National)	Life Member
Dr. S. Bijoy Nandan	UGC-SAP programme	Coordinator
Dr. S. Bijoy Nandan	Board of Studies in Marine Biology, CUSAT	Chairman
Dr. Chaithanya E R		
Dr. Chaithanya E R	St. Alberts College (Autonomous) Ernakulam	External examiner

Awards/ Honours/ Fellowships, etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Dr. A. A. Mohamed Hatha		
Dr. A.A. Mohamed Hatha	Country Ambassador	American Society of Microbiology, USA
Dr. A.A. Mohamed Hatha	Research Advisory Committee Member	National Centre for Polar and Ocean Research
Dr. A.A. Mohamed Hatha	Kerala State Planning Board Member, Working Group on science and Technology	Govt. of Kerala
Dr. S. Bijoy Nandan		
Dr. S. Bijoy Nandan	MID CAREER AWARD 2021-22 on the research topic Taxonomy, community assemblage and genetic characterization of Gelatinous zooplankton from the Marine habitats of the South West Coast of India	UGC-BSR
Jima M	ForBio prize for second-best talk at ForBio and MEDUSA symposium: Evolution and Diversity of Meiobenthos, September 13-16, 2021	University Museum of Bergen.
Jima M.	Distinguished Researcher Award 2021	Cochin University of Science and Technology.
Krishnapriya P. P.	Best Oral Presentation in the "International	PG & Research Department of Zoology,

	conference on Modern Zoology: Known and unknown”, 28 th - 29 th October 2021.	C Abdul Hakeem College (Autonomous), Melvisharam
Dr.Priyaja P.		
Dr.Priyaja P.	Letter of Appreciation for designing and developing MOOC course	Cochin University of Science and Technology

Sponsored Research Projects

Sl. No.	Title	Sponsoring Agency	INR of Rs.in Lakhs (Rs.)	Investigator(s)
Dr. Swapna P. Antony				
1	Metagenomic characterization of marine viruses: Functional and Phylogenetic Perspectives	DST (INSPIRE Faculty)	35 lakhs	Swapna P. Antony
2	Immune Gene Discovery in Important Aquaculture Species and its Applications	Govt. of Kerala (State Plan Grant)	2.5 lakhs	Swapna P. Antony
3	Exploring the microbial diversity of aquaculture systems: A metagenomic approach	UGC (Start Up Grant)	10 lakhs	Swapna P. Antony
Dr. A A Mohamed Hatha				
1	Microbiome of glaciomarine environment in the Arctic – diversity, its variability and bioprospecting. PACER – POP Project	funded by National Centre for Polar and Ocean Research, Govt. of India	(INR 40.84 Lakhs) – 2019-2022.	A.A. Mohamed Hatha, T.P. Sajeevan and K.P. Krishnan

2	Vulnerability of Kerala coast to natural hazards – An integrated approach to map the hazards and evaluate the risk associated	DST-NRDMS, Govt. of India –	(INR 33.47 Lakhs) 2019-2022	A.A. Mohamed Hatha and P.S. Sunil
3	Modeling chlorophyll-a (Chl-a) dynamics of the eastern Arabian sea: biophysical coupling in the context of change in climate	ISRO-SAC Respond	(INR 29.11 Lakhs) – 2020-2023	A.A. Mohamed Hatha and P. Priyaja
Dr. S Bijoy Nandan				
1	Impact of Climate variability on the India Ocean: Role of gelatinous zooplankton structuring food web structure and community assemblages.	Ministry of Earth Sciences (MoES), Indian National Centre for Ocean Information Services (INCOIS) , Ministry of Earth Science	Logistical support	Dr. S. Bijoy Nandan
2	Functional importance and responses of meiofauna to environmental gradients in the Arctic fjord.	Ministry of Earth Science	Logistical support only	Dr. S. Bijoy Nandan
3	Unravelling Submarine Groundwater Discharge (SGD) zones along the Indian Subcontinent and its Islands (Mission-SGD) – PILOT STUDY), University Order No: CUSAT/PL(B).A2/70/2019 dtd. 24-04-2019.	National Centre for Earth Science Studies (NCESS), Ministry of Earth Science	Rs.27,80,000 lakhs	Dr. S. Bijoy Nandan
4	Biomimetic approaches to decipher the decadal changes in meiobenthic	National Centre for Polar and Ocean Research	Logistical support only	Dr. S. Bijoy Nandan

	community structure of the Arctic Kongsfjorden.	(NCPOR), Ministry of Earth Science		
5	Preparation of checklist of Meiofauna, University Order No: CUSAT/PL(B).A2/341/2019 dtd. 17-09-2019.	Ministry of Environment Forests and Climate change, Govt. of India	Rs.7,00000 lakhs	Dr. S. Bijoy Nandan
6	Sea water quality criteria and Ecological risk Assessment (coastal research programme), University order No. CUSAT/FIN.A3/1544/2020 dtd. 14-07-2020.	National Centre for Coastal Research (NCCR), Ministry of Earth Sciences, Govt. of India,	Rs 34,20,000 lakhs.	Dr. S. Bijoy Nandan
Dr. Lathika Cicily Thomas				
1	Ecophysiology and bloom dynamics of potentially toxic cyanobacteria of the genus Microcystis from the aquatic ecosystems of Kerala	SMNRI- State Plan Grant CUSAT 2021-22	3.5 lakhs	Dr. Lathika Cicily Thomas
Dr. Chaithanya E. R.				
1	Microbiome in Cochin Estuary and its Functional Attributes to pollutants with special reference to antibiotics	Govt. of Kerala (State Plan Grant)	2.25 lakhs	Dr. Chaithanya E R

Research Programmes and Activities:

Sl.No.	Problem / Topic	Investigator (s)
Dr.K.B.Padmakumar		
1.	Benthic Harmful Algal Blooms (BHABs)	Dr.K.B.Padmakumar
2.	Algal Bloom Dynamics	Dr.K.B.Padmakumar

3.	Harmful Algal Blooms (HABs)	Dr.K.B.Padmakumar
4.	Freshwater cyanobacterial blooms	Dr.K.B.Padmakumar
5.	Epizoism in Marine organisms	Dr.K.B.Padmakumar
Dr. A. A. Mohamed Hatha		
1	Cold Active enzymes and biosurfactants	Mohamed Hatha
2	Bioactive compounds from Echinoderms	Mohamed Hatha
3	Plastisphere bacteria	Mohamed Hatha
4	Phage Therapy	Mohamed Hatha
5	Microalgae and neutraceuticals	Mohamed Hatha
6	Fish pathology	Mohamed Hatha
7	Antimicrobial resistance	Mohamed Hatha
8	Seafood quality control	Mohamed Hatha
Dr. S. Bijoy Nandan		
1.	Macro and meiobenthic community structure from Arctic fjords	Dr. S. Bijoy Nandan
2.	Sea water quality criteria and Ecological risk Assessment	Dr. S. Bijoy Nandan
3.	Impact of submarine ground water discharge on biogeochemical processes and benthic ecology along the southwest coast of India	Dr. S. Bijoy Nandan
4.	Ecology and distribution of jelly fishes along the east and west coast of India	Dr. S. Bijoy Nandan
5.	Morpho taxonomy of clams from the estuaries of Kerala	Dr. S. Bijoy Nandan
Dr.Priyaja P.		
1.	Studies on Echinoderms from Coastal and Oceanic Waters of India with respect to Pollution	Dr.Priyaja P/Ms.Aneena Yesudas
2.	Studies on Mollusc from Coastal and Oceanic Waters of India with respect to Pollution	Dr.Priyaja P/Ms.Vidyalakshmi D
3.	Studies on Sponges from East and West coast of India	Dr.Priyaja P/Ms.Gopika Sivan

Dr. Swapna P. Antony		
Sl.No.	Problem / Topic	Investigator (s)
1	Antimicrobial peptides for potential applications in aquaculture	Dr. Swapna P. Antony
2	Exploring the Marine Realm for Bioactive Peptides: Discovery & Applications	Dr. Swapna P. Antony
3	Aquatic Viruses Associated with Aquaculture Systems	Dr. Swapna P. Antony

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl. No.	Title	Duration	Coordinator	Funding Agency
Dr. S. BijoyNandan				
1	International Training Workshop - 2 Primer v7 & Permanova (online) (Plymouth multivariate software)	02 to 13 August 2021	Dr. S. Bijoy Nandan	UGC- SAP – phase - 2 programme
2	Workshop on PRIMERV7- Permanova (Plymouth multivariate software) (online)	14 to 25 June 2021	Dr. S. Bijoy Nandan	UGC- SAP – phase - 2 programme
3	International Webinar 9: Marine Biology lecture series, Assessing the marine environmental status under an ecosystem-based approach: the Nested Environmental Status Assessment Tool (NEAT)	31 March 2021	Dr. S. Bijoy Nandan	UGC- SAP programme

4	Webinar 8: Marine Biology lecture series, Plankton Change Climate change	29 March 2021	Dr. S. Bijoy Nandan	UGC- SAP programme
5	Webinar 7: Marine Biology lecture series, Microbial pollution in coastal waters and Human health	24 March 2021	Dr. S. Bijoy Nandan	UGC- SAP programme
6	Webinar 6: Marine Biology lecture series, (Prof. N.R. Menon Memorial lecture) Monitoring of Marine Environment	19 March 2021	Dr. S. Bijoy Nandan	UGC- SAP programme
7	Webinar 5: Marine Biology lecture series, Mariculture in India: Status, Scope and Way	17 March 2021	Dr. S. Bijoy Nandan	UGC- SAP programme
8	International Webinar 4: Marine Biology lecture series, Science Diplomacy and Future Sustainability of the Deep Ocean	10 March 2021	Dr. S. Bijoy Nandan	UGC- SAP programme
9	Webinar 3: Marine Biology lecture series, Live Feeds in Mariculture	06 March 2021	Dr. S. Bijoy Nandan	UGC- SAP programme
10	Webinar 2: Marine Biology lecture series, Marine Biodiversity of India and its Conservation	26 February 2021	Dr. S. Bijoy Nandan	UGC- SAP programme

11	Webinar 1: Marine Biology lecture series, Biophysical Processes influencing the fishery of South Eastern Arabian Sea	19 February 2021	Dr. S. Bijoy Nandan	UGC- SAP programme
Dr.Priyaja P				
1.	Workshop on Advanced microscopic Techniques	6-04-2022	Dr.A.A.Mohamed Hatha/ Dr.Priyaja P	American Society for Microbiologists, InBiotek Microsystems

Consultancy Work

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
Dr. K. B. Padmakumar			
1	World Wide Fund- India (WWF-India)- HAB Expert (Species identification) for Western Ghats	Dr.K.B.Padmakumar	WWF- India (without remuneration)
2	World Wide Fund- India (WWF-India)- HAB Expert (Species identification) for Western Ghats	Dr.K.B.Padmakumar	WWF- India (without remuneration)
Dr. A. A. Mohamed Hatha			
1	Baseline Marine Environmental Survey for Azheeka Port, Kannur (2020) Consultancy offered by	A.A. Mohamed Hatha	KITCO, Cochin
2	Baseline Marine Environmental Survey for Cochin Port (2019) Consultancy offered by	A.A. Mohamed Hatha	L & T IEL, Hyderabad

Dr. S. BijoyNandan		
Estimate Value of Environmental Degradation and Cost Restoration of Lakshadweep islands, DST File No: LD-0300211/2017-LPCC-UT-LKS (2) dtd. 06-11-2019.	Dr. S. Bijoy Nandan	Department of Science & Technology, Lakshadweep (Rs. 16.8 lakhs)
Water Metro Dredging - Environmental Quality Monitoring	Dr. S. Bijoy Nandan	Tebma Marine Pvt. LTD (Rs. 16,00500 + GST)
Mass die-off of the largest mangrove forest in Maldives" International project.	Dr. S. Bijoy Nandan	Ministry of Environment, Govt. of Maldives (5.18 lakhs INR)



Department of Marine Geology and Geophysics

DEPARTMENT OF MARINE GEOLOGY & GEOPHYSICS

ANNUAL REPORT 01.04.2021 – 31.03.2022

Brief History

Earth Science education is enhancing its relevance and scope globally owing to recent advances in geo-exploration and its role in resolving environmental and development issues. CUSAT is one of the premier Universities in the country to begin a full-fledged post-graduate programme in Marine Geology in the year 1976 taking into account the global advancement in general and national needs in particular in the field of Marine Sciences. A 3-year M.Sc (Tech.) programme in Marine Geophysics was introduced in 1992 which has now been restructured into a 2-year M.Sc. programme. Both the programmes had been designed to aim at the development of manpower in the fields of Marine Geology and Geophysics with a special emphasis on offshore areas with a view to cater the needs of various research institutions and survey organizations as well as multinational companies engaged in mineral exploration, sea bed surveys, remote sensing and oil and ground water prospecting. The students of this Department are absorbed in various Universities, Central, State, Public sector organizations like ONGC, GSI, NIO, NGRI, CGWB, NCESS, NCAOR, IIG, WIHG and MNCs like Reliance, Shell, Cairn Energy, Total, Schlumberger, CGG etc. Several major research projects funded by external agencies have been undertaken and are in operation in the Department.

Programmes of Study/Research:

1. M.Sc. Marine Geology
2. M.Sc. Marine Geophysics
3. Ph.D.

3. Faculty Members:

Sl.No.	Name	Designation	Qualification	Specialization
1.	Dr. Sunil P. S.	Associate Professor	Ph.D	Tectonic Geodesy, Earthquake Seismology, Ionosphere Seismology, and Glacier Dynamics, Terrestrial and Marine Geophysics
2	Dr. Joji V. S.	Associate Professor	Ph.D	Ground Water Resource Management, Water Chemistry, Aquifer Contamination, Environmental issues
3.	Dr. N. R. Nisha	Assistant Professor	Ph. D	Marine Micropaleontology, Paleoclimatology/ Marine Geology
4.	Dr. Ajayakumar P.	Assistant Professor	Ph. D	Marine Geophysics
5.	Dr. Ratheeshkumar R. T.	Assistant Professor	PhD	Geology & Geophysics; Tectonics, Geodynamics
6.	Dr. Amaldev T.	Assistant Professor	PhD	Environmental Geology, Metamorphic Petrology, Tectonics
7	Dr. Honey H. das	Assistant Professor	PhD	Metamorphic Petrology, Structural Geology and Plate Tectonics
8	Mr. Naveen P. U.	Assistant Professor	M. Sc.	Geodynamics, Gravity and Magnetic Method

Emeritus Professor/Scientist : Nil

Visiting Faculty : Nil

Adjunct Faculty : Nil

Guest Lecturers:

Sl.No.	Name	Designation	Qualification	Specialization
1	Mrs. Veena K V	Guest Lecturer	M. Tech	Signal processing

Contract Lecturers: Nil**Research/Project Staff:**

Sl. No.	Name	Funding Agency	Guide	Area of work
1	Sooraj A.	SERB	Dr. Sunil PS	Monitoring the crustal and dam deformations induced by the seasonal loading and unloading of Idukky reservoir in Kerala, south India using ground and space geodetic techniques.
2	Ashvin K. A.	SAC	Dr. Sunil PS	Estimation of the contemporary kinetics and interseismic strain rates along eastern Himalayan region using space geodetic techniques

Research Scholars

Sl. No.	Name	Funding Agency	Guide	Area of work
1	Anu R.	UJRF	Dr. K. Sajan	Post-seismic deformation studies along major subduction zones in the Indian Ocean
2	Anu-sha A. P.	KSCSTE	Dr. K. R. Baiju	Petrology, Geochemistry and Geochronological studies of charnockites and associated rocks of western Madurai block, Southern India

3	Likhil A. C.	UJRF	Dr. K. Sajan	Minerology, Sedimentology & Geochemical studies of Ponnani estuary
4	Abhirami R.	UJRF	Dr. P. Ajayakumar	Detailed Geophysical & Geological studies on the evolution & development of late Mesozoic Distentional Features along western Coastal tract of Central Kerala
5	ZebaNezrin F. K.	UJRF	Dr. P. Ajayakumar	Gravity and Magnetic studies
6	KavyaAravind	KSCSTE	Dr. N. R. Nisha	Late quaternary climatic and oceanographic changes of the Bay of Bengal : A multiproxy approach
7	Puja Vijay	UGC	Dr. N. R. Nisha	Multiproxy approach to understand paleoceanographic and paleoclimatic changes during last glacial period on Southern Arabian sea
8	VeenaGViswam	UGC-SRF	Dr. N. R. Nisha	Physical and biogeochemical processes of the Bay of Bengal and its effect on the monsoonal system_ A sedimentological, geochemical and faunal approach
9	AnupamaM	UJRF	Dr. Sunil P. S.	Subduction Zone Earthquakes and Stress patterns
10	Amal George K	MANF	Dr. Sunil PS	Analysis of causes and impacts of natural hazards in Kerala: a geological and geospatial approach.
11	Rose Mary Shaju	UJRF	Dr. Sunil P. S.	Study of the lithospheric deformation and

				tropospheric zenith delay of the Indian sub-continent using global navigation satellite system (GNSS) data.
12	AnjanaGireesh S	UJRF	Dr. Ajayakumar P.	Millennial scale variability of sea surface temperature and productivity in the northern Indian ocean during late Pleistocene
13	RakhilDev	DST INSPIRE	Dr. N. R. Nisha	Sedimentological geochemical and faunal records in the late quaternary sequence off the rameswaram groupm pf island and their oceanographic and climatic significance.
14	Reshma Susan Jacob	INSPIRE	Dr. Joji V. S.	Assesment of role of coastal tourism in changing the aquifer characteristics and hydrogeochemistry in the multi layered coastal aquifer sequence of Puduchery region of union territory of Pondichery, Southeast India.
15	Divya AS	KSCSTE	Dr. Joji V. S.	Hydrogeochemical studies with special reference to foluride contamination in the ground waters of Phreatic and deeper aquifers in Pullamapatti watershed of Dharmapuri distric, northern Tamilnadu, South India.

16	Ashvin K. A.		Dr. Sunil P. S.	Study of the contemporary kinematics and interseismic strain rates along the Himalaya using space geodetic techniques
17	Sooraj A.	Project Fellow	Dr. Sunil P. S.	Monitoring the tectonic and nontectonic crustal deformations in Indian reservoir provinces using space geodetic techniques
18	Arun S. K.		Dr. Ajayakumar P.	Structural control in the geomorphic evolution of the west coast of india and formation of beach placers along the west coast : A geophysical approach

Administrative Personnel

Sl. No.	Designation	No. of posts
1.	Section Officer	1
2.	Assistant Section Officer	2
3.	Computer Assistant Grade I	1
4.	Office Attendant	1

Technical Personnel

Sl.No.	Designation	No. of posts
1	Technical Assistant	1 (on contract)
2	Laboratory Assistant	1

Student Enrollment

Sl. No.	Programme of study	Men	Women	Total
1	I Year Marine Geology	5	7	12
2	II Year Marine Geology	6	5	11
3.	I Year Marine Geophysics	8	4	12
4	II Year Marine Geophysics	3	8	11

Research Facilities

a) Laboratories

1. Mineralogy & Petrology Lab
2. Geochemistry Lab
3. Geochemistry Instrumentation Lab
4. Sedimentology Lab
5. Rock Cutting & Polishing Lab
6. Micropaleontology Lab
7. Computer & Geoinformatics Lab
8. Geological Museum
9. Geological Instrumentation lab I
10. Geological Instrumentation lab II
11. Geophysical Instrumentation lab

b) Major Equipments

1. Petrological Microscopes
2. Ore Microscope with CCT camera (Leica make)
3. Rock core driller
4. Rock cutting, Polishing & Lapping machine
5. Flame Photometer
6. Spectrophotometer
7. Binocular Stereoszoom Microscopes with CCT camera (Leica make)
8. Gravimeter
9. Proton Precession Magnetometer
10. Resistivity meter
11. 24 Channel Engineering seismograph
12. Water Quality Analaser Probe
13. Isodynamic separator

Publications:**a) Papers**

Sl. No.	<i>Name of the paper</i>	<i>Impact factor</i>
1	Timing of UHT metamorphism and cooling in south Indian granulites: New P-T-t results from a sapphirine granulite	4.261
2	Paleo-Mesoarchean crustal evolution in the Coorg Block, southern India: Insights from magmatic and metamorphic records in mafic granulites.	4.261
3	Hydrogeochemistry of the Indian thermal springs: Current status	12.038
4	Revealing the Contemporary Kinematics of Antarctic Plate Using GPS and GRACE Data	
5	Chemical and Isotopic Characterization of Lakes in the Larsemann Hills, East Antarctica	
6	Harvesting of water by tunneling: A case study from lateritic terrains of Western Ghats, India.	1.912
7	Assessment of water quality in a tropical Ramsar wetland of southern India in the wake of COVID-19	
8	Site classification and correlation study of HVSR curve with seismic and aquifer parameters of strong-motion sites in Uttarakhand, India	1.827
9	Tsunami detection by GPS-derived ionospheric total electron content	4.996
10	Mantle deformation beneath the Western Ghats, India: Insights from core-refracted shear wave splitting analysis	3.449
11	Crustal Density and Susceptibility Structure beneath Achankovil Shear Zone, India	3.069
12	Status of GIS-enabled morphometric analysis of river basins of Kerala, Southern India: A review and assessment	1.624
13	Combined U-Pb/Hf isotopic studies and phase equilibrium modelling of HT-UHT metapelites from Kambam ultrahigh-temperature belt, south India: Constraints on tectonothermal history of the terrane.	4.02

Awards /Honors/Fellowships etc. received:

Sl. No.	Name of Recipient	Name of Fellowship/ Honor /Award	Awarding Agency
1.	Veena G Viswam	Inter University Acceleratorcentre Thesis Proposal BTR2 for AMS dating	IUAC New Delhi
2.	KavyaAravind	Inter University Acceleratorcentre Thesis Proposal BTR2 for AMS dating	IUAC New Delhi
3.	Dr. N R Nisha	Inter University Acceleratorcentre Thesis Proposal BTR3 for AMS dating	IUAC New Delhi

Sponsored Research Projects:

Sl.No.	Title	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
1	Growth, structure and evolution of Coorg-Nilgiri blocks and associated suture zones, southern India; an integrated approach using geological and geophysical data	SMNRI Project	1.75	Dr. Amaldev T
2	Pseudotachylites in the Satyamangalam Group, Southern Granulite Terrain (SGT).	SMNRI Project	1	Dr. Honey H Das
3	Tectonics and crustal structure of Southern Granulite Terrain (SGT), South India using potential field methods	SMNRI Project	1	Mr. Naveen P. U.

Seminar/Conference/Workshop/Refresher Courses conducted by the Dept. :

Sl.No.	Title	Duration	Coordinator	Funding Agency
1	Online training course on “ Geospatial technology for hydrological modelling ” conducted by Indian Institute of Remote Sensing, Space Application Centre, Govt of India.	July 19, 2021 to July 30, 2021.	Dr. Ajayakumar P.	ISRO (Online)
2	Online training course on “ SAR Application for flood hazard mapping and monitoring ” conducted by Indian Institute of Remote Sensing, Space Application Centre, Govt of India.	July 16, 2021 to July 16, 2021.	Dr. Ajayakumar P.	ISRO (Online)
3	Tier II programe on Ground water resource management	28-30th July 2021	Dr. V. S. Joji	
4	GeoTalks	December 7, 2021 to December 8, 2021	Dr. Amaldev T. Dr. Honey H. Das Mr. Naveen P.U.	DST PURSE



Department of Mathematics

ANNUAL REPORT – 2021 - 2022

Name of the Department : DEPARTMENT OF MATHEMATICS

Brief history of the Department :

The combined Department of Mathematics and Statistics came in to existence in November 1976, with the major objective of developing it to a Centre of Excellence in this region in mathematical sciences and applications and to provide facilities for training, study and research in these areas. This Department was bifurcated to form an independent Department of Mathematics on 1st January, 1996. The Department conducts a Master's Degree programme, M.Phil. Programme in Mathematics and Ph.D. programmes. The students of M.Sc. (Mathematics) generally take up teaching positions or opt for research. Apart from giving instruction in post graduate courses, the Department has from the very beginning taken the leadership in promoting research in mathematics and its applications, especially in this part of the country. This was realized in a two-fold way one, by guiding young researchers to do their doctoral work and two, by conducting extension programmes which will improve the instruction at the P.G. level in colleges and encourage youngsters to take up research. Thrust areas of research are Algebra, Semigroups Theory, Universal Algebras and Category Theory, Algebraic Geometry, Stochastic Control theory, Retrial Queues, Graph Theory, Fuzzy Mathematics, Wavelet Analysis, Operator Theory, Topology and Fluid Mechanics. The department has been receiving a library grant from NBHM since 1991. The department library has about 7500 books and subscribes 12 Indian and 3 foreign journals, and Mathscinet. Also, the department has been co-ordinating the Mathematical Olympiads and related training programmes for school children with the assistance of NBHM since 1990. In association with Azim Premji Foundation and Ramanujan Mathematical Society, the department has organized many training programmes for school teachers.

Programmes of Study/Research

- (1) M.Sc. Mathematics
- (2) M.Phil Mathematics
- (3) Ph.D.

Faculty Members

Sl.No.	Name	Designation	Qualification	Specialisation
1.	Dr. Sasi Gopalan	Professor & Head	M.Sc., M.Phil, Ph.D	Approximation Theory, Optimization Techniques, Fuzzy Mathematics
2.	Dr. P.G. Romeo	Senior Professor	M.Sc., Ph.D.	Algebra
3.	Dr. Shery Fernandez	Associate Professor	M.Sc, M.Phil, NET, PGDCA, Ph.D.	Fuzzy Mathematics, Operator Theory & Geometry
4.	Dr. Kiran Kumar V.B.	Assistant Professor	M.Sc., M.Phil, Ph.D.	Functional Analysis and Operator Theory.
5.	Dr. Ambily A.A.	Assistant Professor	M.Sc., M.Phil, Ph.D.	Commutative Algebra, Algebraic K-theory
6	Dr. Noufal. A.	Assistant Professor	M.Sc., M.Phil, Ph.D.	Functional Analysis, Approximation Theory, Integral Transforms, Signal Processing.
7.	Dr. Aparna Lakshmanan S	Assistant Professor	M.Sc., Ph.D.	Graph Theory, Algebra
8.	Dr. Tathagata Banerjee	Assistant Professor	M.Sc., Ph.D.	Operator Algebras , Operator Theory and Coarse Geometry
9.	Dr. Tanushree Pandit	Assistant Professor	M.Sc., Ph.D.	Convex Optimization, Variational Inequalities, Equilibrium Problems
10.	Dr. Shankar P	Assistant Professor	M.Sc., Ph.D.	Functional Analysis , Operator Algebras and Operator Theory

Emeritus Professor / Adjunct Faculty (If any)

Sl. No.	Name	Designation	Qualification	Specialisation
1.	Dr. M.N. Narayanan Namboodiri	KSCSTE Emeritus Scientist	M.Sc. Ph.D.	Functional Analysis, Operator Theory
2.	Dr. A. Vijayakumar	Emeritus Professor	M.Sc., Ph.D.	Graph Theory, Discrete Mathematics

Research/Project Staff

Sl.No.	Name	Designation	Qualification	Specilisation
1	Rahul Rajan	Project Fellow	M.Sc. Mathematics	

Research Scholars

Sl. No.	Name	Funding Agency	Guide	Area of Work
Part-time				
1)	Abdul Rof. V.	-	Dr. A. Krishnamoorthy	Stochastic Models
2)	Anju S. Mattam	-	Dr. Sasi Gopalan	Study of Properties of Fuzzy Soft Sets in Algebraic Structures
3)	Yogesh Prasad. N.	-	Dr. T.P. Johnson	Some Problems in Lattice Theory, Topology and Related Topics
4)	Sindhurani P.J.		Dr. T.P. Johnson	Indian Contributions to Studies on Algebra with Special Reference to Interminate Equations.
5)	Nisha A.B	-	Dr. Sasi Gopalan	Mathematical Morphology and Function Approximation

6)	Prince Joseph		Dr. A. Krishnamoorthy	Stochastic Modelling Analysis
7)	Jaison Jacob		Dr. B. Lakshmy	Stochastic Modelling their Analysis and Applications
8)	Ajan K.A.	-	Dr. T.P. Johnson	General Topology
9)	Smisha M.A.	-	Dr. P.G. Romeo	A Study on Semigroup Amalgams
10)	Sindhu. S.		Dr. A. Krishnamoorthy	Stochastic Modelling
11)	Anu Nuthan Joshua	-	Dr. A. Krishnamoorthy	Stochastic Modelling
12)	Shajeeb P.U.	-	Dr. A. Krishnamoorthy	Stochastic Modelling Analysis and Applications
13)	Lexy Alexander		Dr. A Noufal	Operator theory, Asymptotic linear algebra
14)	Linnet Roslin Antony	-	Dr. T.P. Johnson	Some Problems in Topology and Related Topics
15)	Riya Jose	-	Dr. P .G Romeo	Category theory, Semigroups
16)	Mathew Thomas	-	Dr. V. B Kiran Kumar	Linear Relation
17)	Sathi P H	-	Dr. P .G Romeo	Study of Structure of linear algebraic monoids
18)	Niza N		Dr. Ambily A A	Unimodular rows in K-Theory
Full-time				
19)	Savitha K.N.	-	Dr. Sasi Gopalan	Optimization of Wavelet Functions & its Application in Image Processing
20)	Pinky	UGC JRF	Dr. T.P. Johnson	Some Problems in Topology Lattice Theory and Related Topics
21)	Linu Pinto	UJRF	Dr. Sasi Gopalan	Mathematical Database and Functional Analysis

				in Data Mining using Intelligent Systems
22)	Femy N.S.	UJRF	Dr. Sasi Gopalan	Advances in Applied Mathematics to Pattern Recognition
23)	Anupriya C.S.	UGC JRF	Dr. Sasi Gopalan	Application of Fuzzy Algebra to Automato Theory
25)	Rasila V.A.	KSCSTE JRF	Dr. A. Vijayakumar	Some Aspects of Cayley Graphs
26)	Siji Michael	UGC CSIR	Dr. P.G. Romeo	Semigroups
27)	Aparna Pradeep V.K.	SERB, DST	Dr. Ambily A A	Clifford Algebras
28)	Divya P.B.	-	Dr. T.P. Johnson	Some Applications of Graph Theory in Social Network Analysis
29)	Athira Babu	UGC	Dr. A. Noufal	Multi wavelet frames and its properties in a Hilbert space
30)	Navin Tomy	UGC	Dr. T .P. Johnson	Some problems in topology, analysis and related topics
31)	Alanka Thomas	CSIR	Dr. P. G Romeo	Algebra
32)	Sneha K K	CSIR	Dr. P. G Romeo	Category Theory and semigroups
33)	Anju A	CSIR	Dr. P. G Romeo	Algebra
34)	Sarath Kumar N S	CSIR	Dr. V. B Kiran Kumar	Numerical linear algebra, Functional analysis
35)	Simi Thomas	UGC	Dr. Shery Fernandez	Spectral theory of operators
36)	Anmary Tonny	INSPIRE	Dr. V B Kiran Kumar	Symplectic Spectral Theory
37)	Arjun S N	INSPIRE	Dr. P. G. Romeo	A Study of the structure of some

				class of Lie groups and Lie algebras
38)	Sruthi Raghothaman	CSIR	Dr. A. Noufal	A Study of Gabor Frames and its Applications
39)	Anusree Sreedharan	UJRF	Dr. A. Noufal	Subdivision schemes and their Applications
40)	Manju Varghese	UJRF	Dr. Shery Fernandez	Fuzzy Algebra
41)	Sambhu Raj P R	UGC	Dr. Sasi Gopalan	Fractional Calculus
42)	Vinaya P C	UGC	Dr. V.B. Kiran Kumar	Modulus of smoothness and its applications.
43)	Anupama K	CSIR	Dr. Sasi Gopalan	Fractal theory and Soft computing techniques
44)	Midhuna V Ajith	UJRF	Dr. Aparna Lakshmanan S.	Study of graphs defined on algebraic structures.
45)	Maneesha KK	e-grantz	Dr. T.P. Johnson	Topological Data Analysis
46)	Gayathry Pradeep	CSIR	Dr. Ambily A A	K-Theory of quadratic forms
47)	Albin James	CSIR	Dr. T.P. Johnson	Some problems in topology and related topics
48)	Athul Augustine	CSIR	Dr. Shankar P	Boundary representation and Hyperrigidity in Hilbert C*- Modules
49)	Rinusha T R	UJRF	Dr. Shery Fernandez	Generalizations of pivot theorems
50)	Minnumol P K	-	Dr. P G Romeo	Structure of algebras : A semigroup theoretical and categorical approach

Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Section Officer	1
2.	Asst. Section Officer	1
3.	Computer Asst. Senior Grade	1
4.	Junior Librarian	1
5.	Office Attendant	1
6.	Sweeper-cum-Cleaner	1

Student Enrollment

Sl. No.	Programme of Study	Men	Women	Total
1.	M.Sc Mathematics	5	19	24
2.	M.Phil (Maths)	1	12	13
3.	Ph.D.	2	8	10

Research Facilities**a. Laboratories (List out Major equipments available)****Computer Lab**

More than 20 Computers connected through Local Area Network and all with hi-speed Internet Connectivity. Printers are also made available. Each of the faculty members, office and department library are also provided with computers with hi-speed Internet connectivity.

b. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
Books as on 31.03.2021 : 10176	As on 31.03.2022 : 10189
Total Number of Indian Journals : 6	: 6

c. Others

Ph.Ds Awarded

Sl. No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	A Study on some lattice problems in L-Topology and related topics	Pinky	Dr. P G Romeo
2	An analytical approach on the approximations of deep neural network for classifications functions in fuzzy domain	Linu Pinto	Dr. Sasi Gopalan
3	A critical analysis of sulbasutras in the perspective of geometry and algebra	Sindhurani P J	Dr. T.P Johnson
4	Studies on some steiner distance notions in graphs	Rasila V A	Dr. A Vijayakumar

Publications of Faculty Members

d. Papers

Author(s)	Title of Paper	Impact Factor, if any
Jismy Varghese, Anu V., Aparna Lakshmanan S.	Italian Domination and Perfect Italian Domination on Sierpinski Graphs, Journal of Discrete Mathematical Sciences & Cryptography, 24(7) (2021), 1885 – 1894. (Taylor and Francis)	0.77
Seena Varghese, Aparna Lakshmanan S., S. Arumugam	Leech Index of a Tree, Journal of Discrete Mathematical Sciences & Cryptography (online ready). (Taylor and Francis)	0.77
Anu V., Aparna Lakshmanan S.	Impact of Some Graph Operators on Double Roman Domination Number, International Journal of Combinatorial Graph Theory and Applications, 6(1) (2021), 97 – 105. (Ashwin Anokha)	1.7

V. G. Deepa, Aparna Lakshmanan S., V. N. Sreeja	A Comparative Study on Various Sharing Among Undergraduates in PreCovid-19 and Covid-19 Period Using Network Parameters, Lecture Notes in Networks and Systems (book series Intelligent Sustainable Systems), 334 (2021), 525 - 536. (Springer)	0.57
Jismy Varghese, Aparna Lakshmanan S.	Impact of Vertex Addition on Italian Domination Number, Indian Journal of Discrete Mathematics, 8(1) (2022), 11 – 20. (Academy of Discrete Mathematics and Applications)	0.75
A.A. Ambily and V.K. Aparna Pradeep	Visualization for Petrov’s odd unitary group Journal: Linear and Multilinear Algebra, March 2022	1.736
Shery Fernandez, Deepthi Mary Tresa S	Interval valued Fuzzy graph and Complement Number, International Digital Conference on Computational sciences (CSMCS - 2020), Computations in Computer and Information Science, CCIS, Springer 192-202, 2021.	
Shery Fernandez, Divya Mary Daise S	Intuitionistic level subgroups in cyclic groups of order p^n , South East Asian Journal of Mathematics and Mathematical Sciences, 17(1), 125-138, 2021.	
Shery Fernandez, Divya Mary Daise S, Deepthi Mary Tresa S	Intuitionistic Level Subgroups in the Klein-4 Group. Creative Mathematics and Informatics, 30(2), 164-173, 2021.	
Shery Fernandez, Divya Mary Daise S	On Isomorphisms of Intuitionistic Fuzzy Sets. Journal of Advanced Mathematical Studies, 15(2), 176-186, 2022.	

21. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Aparna Lakshmanan S.	Refresher Course in Mathematics and Computational Sciences organized by Department of Mathematics and UGC-Human Resource Development Centre, Savitribai Phule Pune University, Pune on 16-17, October 2021.	Resource person
	International Conference on Recent Trends in Mathematics and its Applications, GITAM School of Science, Bangalore on 02/12/2021.	Resource person
	Recent Trends in Domination and Graph Labelling (RTDGL 2021) organized by Department of Mathematics, Ramanujan College, University of Delhi in collaboration with Academy of Discrete Mathematics and Applications (ADMA) from 27-31, May 2021	Participant
	Short Term Training Programe on Graph Theory and Discrete structures organized by LBS institute of Technology for Women, Thiruvananthapuram on 24-25, November, 2021.	Resource person
	National Conference on Recent Research Advances in Graph Theory organized by St. Stephan's College, Uzhavoor on 21/03/2022.	Resource person
A.A. Ambily	International Conference on Algebra and Discrete Mathematics, at Fathima Mata National College, Kollam on 14 March 2022	Invited Speaker
	Ganitha Garima- A workshop for M.Sc and B.Sc. students at the Kerala University, 29 November - 3 December, 2021.	
	Refresher Course in Mathematics at Calicut University, 1 November, 2021	
	Refresher Course in Mathematics at Calicut University, 22 October, 2021	

	Summer Training Program in Mathematics STPM-2021, at S.B.College Changanassery, April 5-17, 2021.	Resource Person
Vinaya P C	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Participant
Manju Varghese	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Participant
Simi Thomas	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Presented a paper
Arjun S N	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Presented a paper
Athul Augustine	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Presented a paper
Anmary Tonny	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Presented a paper
Anusree Sreedharan	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Participant
Sruthi Raghothaman	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Participant
Aparna Pradeep V K	65th Annual Conference of the Australian Mathematical Society, 7-10 December 2021	Presented a paper
	CIMPA School on the topic Khansar School on Graph Algebras, Current Trends and Perspectives, July 3-14, 2021.	Attended
	NCM Workshop on Finite Groups of Lie Type, 31st July to 3rd October, 2021.	Attended

	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022	Presented a paper
Midhuna V Ajith	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Participant
Maneesha K K	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Participant
Anupama K	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Participant
Minnumol P K	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Participant
Anupriya C S	International Lecture Series on Wavelet Transforms and Image Processing, August 2021, Al-Ameen College, Edathala	Presented a paper
Rinusha T R	International Lecture Series on Wavelet Transforms and Image Processing, August 2021, Al-Ameen College, Edathala	Presented a paper
	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Participant
	Abdi Memorial Lecture, 2021.	Participant
Sambhu Raj P R	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Participant
	International conference on mathematical modeling, applied analysis and computational intelligence.	Presented a paper
Navin Tomy	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Participant
	”Some generalizations of L-closed set.” - International Conference on Recent Trends in Modern	Participant, Presenter

	Mathematics, St. John's College, Palayamkottai.	
	"Some separation of in L-topological." - International Conference on Recent Developments in Mathematics and Mathematical Sciences (ICRDMMS 2021) organized by Calcutta Mathematical Society	
Sarathkumar N S	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Presented a paper
Alanka Thomas	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Presented a paper
	Presented the paper "Graph inverse semigroups" IWEAMMA-2020 conducted by Calcutta mathematical society in december 2020	Presented a paper
	Presented the paper "Graph inverse semigroup of directed trees" on MSAST-2020 Conducted by IMBIC Calcutta in December 2020.	
	Presented the paper "Graph Semigroups and their biordered set" in the 33rd Kerala science congress in January 2021.	
	Presented the paper "Group lattices over division rings" in ICADM-22 Conducted by Fatima Mata national college Kollam in march 2022	
Sneha KK	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Presented a paper
Anju A	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Presented a paper
	ICADM-22 Conducted by Fatima Mata national college Kollam in march 2022	
	ICRSMS 2022	

Riya Jose	International Conference on Semigroups, Algebra and Operator theory, March 28-31, 2022.	Presented a paper
	65TH ANNUAL CONFERENCE OF THE SOCIETY AUSTRALIAN MATHEMATICAL	
Shery Fernandez	An International Level Lecture series on Wavelet Transforms and Image Processing, Al Ameen College, Edathala, August 2021	Chaired the whole Sessions
Shery Fernandez	International Conference on semigroups, Algebras and Operator Theory (ICSAOT 2022), Department of Mathematics, CUSAT, March 2022	Chaired a Session

Role of Faculty in International/National Organizations/Institutions/Editorial Boards :

Name of faculty	Name of Organizations	Role
Shery Fernandez	Academic Committee for P.G Mathematics Sreenarayanaguru Open University Kollam	Member
Aparna Lakshmanan S	Indian Mathematical Society	Life Member
	Ramanujan Mathematical Society	
	Academy of Discrete Mathematics and Applications	

Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Athira Babu	KCSTE best paper award	KCSTE
Akhila N S Alida Mariya Kurian Megha Kundathil	Chief Ministers Student Excellence Award 2021	Kerala State

Vishnu K S Reshma G Krishna Anusree J S Sana K	Got admission to higher studies in foreign universities	
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Sponsored Research Projects

Title of the Project	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
Algorithms for Bilevel Optimization problem and related issues	CUSAT	1,25,000/-	Dr. Tanushree Pandit
Peaking matrix states for operator systems	CUSAT	1,25,000/-	Shankar P
Non commutative coarse geometry for symmetric domains in C^n	CUSAT, SEED money for new research initiatives	1,25,000/-	Tathagata Banerjee
Leech labeling and its generalization	CUSAT	1,25,000/-	Aparna Lakshmanan S
Korokvin Type Approximation and Application to Spectral Analysis	KSCSTE Young Scientist Award Project	14,25,000/-	Dr. V B Kiran Kumar

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl. No.	Title	Duration	Coordinator	Funding Agency
1	A Window to the scale and structure of 1-dimensional maps - Prof. T. Thrivikraman Endowment Lecture	1 day	Aparna Lakshmanan S	Prof. T Thrivikraman endowment fund

2	International Webinar in honour of Prof. Laszlo Lovasz	1 day		-
3	PG enrichment program	3 days		Seminar fund and registration fees
4	An Introduction to Species of Structures	1 day		Alumni sponsored
5	International Conference on Semigroups, Algebras and Operator Theory	1 day	A.A. Ambily and V.B. Kiran Kumar	Cochin University of Science and Technology



Department of Physics

Format for submission of the Annual Report 2021-22

Name of the Department : Department of Physics

Brief History of the Department:

The Department of Physics was established in 1963 as the Ernakulam center of Kerala University. It became part of the University of Cochin in the year 1971, which was later reorganized into the full fledged Cochin University of Science and Technology. Prof. K. Venkateswarlu was the founder Head of the Department of Physics.

The Department, right from its inception, was committed to excel in its post graduate teaching and impart state of the art research training to students who opt for advanced studies in Physics. The Department offers the postgraduate courses of M.Sc. and M.Phil. and the research course leading to the Ph.D. degree. Till now, the Department has continuously maintained a creditable record of excellence in postgraduate teaching and research in Physics. Over the years, the eminent faculty members of the Department have put in relentless efforts to maintain the high standards of teaching and nurture a unique research culture, compatible with international standards. The unique style of teaching and the rich research culture developed have made the Department the dream destination of the young generation of Kerala to pursue higher studies in Physics. The Department has produced about 225 Ph.D s and close to 1100 research publications in leading international/national journals. The research areas of the Department encompass both experimental and theoretical fields and can be broadly classified as Materials Science, Spectroscopy, Nanoscience and Nanotechnology, Gravitation and Cosmology and Particle Physics.

Programmes of Study/Research: M.Sc., M.Phil. & Ph.D**Faculty Members**

Sl. No.	Name	Designation	Qualification	Specialization
1.				
2.	Dr. M. Junaid Bushiri	Professor	Ph.D.	Nanomaterials Thin films Spectroscopy Electronics
3.	Dr. M.K. Jayaraj	Professor	Ph.D.	Optoelectronic Materials and Devices
4.	Dr. Titus K Mathew	Professor and Head	Ph.D.	Gravitation and Cosmology
5.	Dr. Senoy Thomas	Assistant professor	Ph.D.	Material Science
6.	Dr. Sabeena. M	Assistant professor	Ph.D.	Material Science
7.	Dr. Anoop. K. K	Assistant Professor	Ph.D.	Intense Light Matter Interactions, Atomic Spectroscopy
8.	Dr. Sasidevan. V	Assistant professor	Ph.D.	Statistical Physics
9.	Dr. Rhine Kumar. A. K	Assistant professor	Ph.D.	Nuclear Physics (Theoretical)
10.	Dr. Asha. A. S	Assistant professor	Ph.D.	Material Science
11.	Dr. Charles Jose	Assistant professor	Ph.D.	Cosmology and Astrophysics
12.	Dr. Ronald Benjamin	Assistant Professor – UGC FRP	Ph.D.	Equilibrium and Non-Equilibrium Statistical Mechanics of Soft matter systems
13.	Dr. Prasad V V	Assistant Professor	Ph.D.	Soft-Matter and Statistical Physics
14.	Dr. Vineeth Mohanan P	Assistant Professor	Ph.D.	Magnetic materials Spintronics
15.	Dr. Aldrin Antony	Associate Professor	Ph.D.	Optoelectronic Materials and Devices

16.	Dr. Riju C. Issac	Associate Professor	Ph.D.	Ultra fast lasers, Optics
17.	Dr. Pradeep A. V.	Assistant Professor	Ph.D.	Spintronics, Magnetism, Instrumentation

Emeritus Professor/Scientist (if any)

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr. S. Jayalekshmi	KSCSTE, Emeritus Scientist	Ph.D.	Energy storage
2.	Prof. Ramesh Babu T	Adjunct Faculty	Ph.D.	Particle Physics and Quantum Mechanics
3	Dr. N Shaji	Adjunct Faculty	Ph.D	Quantum Computation

Visiting Faculty (If any): Nil**Research/Project Staff**

Sl.No.	Name	Designation	Qualification	Specialization
1	Dani Rose	Project Assistant	MSc Physics	Nuclear Physics
2	Nabeel Salim	Project Assistant	MSc Physics	Nuclear Physics

Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
1.	Hassab Basari	University	Prof. Titus K Mathew	Theoretical Physics
2	Manosh T M	CSIR	Prof. Titus K Mathew	Theoretical Physics
3	Dheepika M	CSIR	Prof. Titus K Mathew	Theoretical Physics
4	Nandhida Krishna	Govt. of Kerala	Prof. Titus K Mathew	Theoretical Physics

5	Vishnu Pai	University	Prof. Titus K Mathew	Theoretical Physics
6	Vshnu Namboothiri	NIL	Prof. Titus K Mathew	Theoretical Physics
7	Navya Sara Kuriyan	DST Inspire	Dr. Sabeena M	Luminescent materials
8	parvathy M	University	Dr. Sabeena M	Luminescent materials
9	Hemanth B	NIL	Dr. Sabeena M	upconversion Phosphors
10	Lekha Mary John	UGC	Dr. Anoop K K	Laser Induced Breakdown Spectroscopy
11	Rajeev Rajendran	UGC	Dr. Anoop K. K.	Laser Surface Texturing
12	Haseena Koyakutty	University	Prof. M. Junaid Bushiri	Nano Functional Materials
13	Niranjana J S	CSIR	Prof. M. Junaid Bushiri	Nano Functional Materials
14	Annet Anna Thomas	University	Prof. M. Junaid Bushiri	Nano Functional Materials
15	Anupama A	University	Prof. M. Junaid Bushiri	Nano Functional Materials
16	Angelin Abraham	University	Prof. M. Junaid Bushiri	Nano Functional Materials
17	Hari Narayanan V	University	Prof. M. Junaid Bushiri	Nano Functional Materials
18	Muhammed Anees P	UGC	Prof. M. Junaid Bushiri	Nano Functional Materials

19	Jasna CK	UGC	Dr. Sasidevan V	Statistical Physics
20	Akhil Thomas Panicker	University	Dr. Sasidevan V	Complex networks
21	Ann Mary Mathew	Part time Scholar	Dr. Sasidevan V	Complex Systems
22	Sreeja EM	University	Dr. Sasidevan V	Li ion cells
23	Neethu Simon	University	Dr. Vineeth Mohanan P	Li-ion cells
24.	Emy Mons	University	Dr. Charles Jose	Cosmology
25	Suryan Sivadas	CSIR JRF	Dr. Charles Jose	Cosmology
26	Benny Joseph	Part Time	Dr. Charles Jose	Cosmology
27	Navya Joseph	KSCSTE	Dr. Senoy Thomas	Magnetism
28	Anija Mary	CSIR	Dr. Senoy Thomas	Magnetism
29	Shan Abraham Sam	University SRF	Dr. Senoy Thomas	Magnetism
30	Prathyusha S Nair	University	Dr. Ronald Benjamin	Stochastic Processes
31	Arjun S R	University	Dr Ronald Benjamin	Active Matter

Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Head of the Department	1
2	Section Officer	1
3	Assistant Section Officer	2
4	Assistant	1
5	Computer Assistant (Sr.Gr) Office Superintendent	1 1
6	Assistant Librarian	1
7	Library Assistant	1
8	Lab Assistant	3
9	Technical Assistant	1
10	Store Keeper	1

Technical Personnel

Sl.No.	Designation	No. of Posts
1.	Technical AssisTechnical Assistant Grade III	1
2.	Technical AssisTechnical Assistant Grade I	3

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1.	M.Sc.	12	19	31
2.	I.M.Sc.	4	13	17
3.	Ph.D.	3	1	4

Research Facilities**a. Laboratories**

- Cosmology - Structure Formation
- Nanophotonic & Optoelectronic Devices Laboratory
- Magnetics Laboratory
- Nanomaterials for Emerging Solid-state Technology (NEST)
- Applied Optics Division
- Division for Research in Advanced materials
- Nano Functional Materials
- Intense Laser Interactions (ILAI) Group
- Materials and Metallurgical Lab
- SpinMag Lab
- Gravity and Cosmology
- Theoretical Nuclear Physics
- Complex System Group
- Quantum Computation and Information
- Non-equilibrium Physics Lab
- Statistical Mechanics of Soft Condensed Matter
- High Energy Physics
- Large Scale Structures
- Thin film photovoltaics and Solar Cells
- Nuclear Physics lab
- Electronics laboratory/M.Sc Physics laboratory I
- Optics Lab

Major equipments

- Field Emission Scanning Electron Microscope with EDX Facility
- Electrochemical workstation and Glove box
- X-ray Diffraction System
- DC Magnetron Sputtering System
- Photoluminescent setup with lifetime measurement facility
- Femtosecond laser
- DC and RF Magnetron Sputtering Unit
- Nd:YAG Laser
- Nd:YAG Laser with accessories
- HR XRD ; Powder XRD
- Atomic Force Microscope
- Micro Raman Spectrometer
- Stylus Profilometer
- Ellipsometer
- UV Visible NIR Spectrophotometer
- Rigaku X-Ray diffraction system
- Fourier Transform Infrared Spectrophotometer
- Sputtering unit for fabrication of thin film devices
- XPS X-Ray Photoelectron Spectrometer
- Closed cycle cryostat
- Nikon Trinocular Microscope

Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
Books -15283 Journals/Magazines	100 Renewed subscription for 6 journals/magazines

b. Others

Distinguished visitors

Sl.No.	Name	Affiliation	Remarks
1	Prof. Manfred Albrecht	University of Augsburg, Germany	Under joint DST-DAAD Project

Ph.Ds Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Tailoring Magnetic nanofluids for Microwave, magneto-optical and Sustainable Energy Applications	Dr. Archana V.N	Prof.M.R Anantharaman
2.	Fabrication of Thermoelectric Devices Based on Tellurides and Manganites - A material to Device Approach	Dr.Sreeram P.R	Prof.M.R Anantharaman
3.	Zn ²⁺ ion assisted growth of α -Fe ₂ O ₃ and electrochemical sensing of α -Fe ₂ O ₃ and ZnFe ₂ O ₄ / α -Fe ₂ O ₃ -graphene hybrid nanomaterial	Dr.Divya N.G	Prof. M Junaid Bushiri
4.	Development of carrier selective contacts and upconversion phosphors for silicon solar cells	Dr.Kurias k Mathew	Prof.M.K Jayaraj & Dr. Aldrin Antony
5.	Photoluminescence studies of Europium doped ZnS microspheres and Zn ₂ SnO ₄ nanostructures for bioimaging application	Dr.Krishna Sagar C.K	Prof. M Junaid Bushiri
6.	Studies on holographic running vacuum model of the late accelerating Universe	Dr.Paxy George	Prof.Titus K Mathew
7	Full causal and truncated viscous models for the recent acceleration of the universe	Dr. Jerin Mohan N D	Prof. Titus K Mathew
8	Emergence of cosmic space and expansion of the universe	Dr. Krishna P B	Prof. Titus K Mathew

Publications Papers

Sl. No.	Title of the Paper	Author(s)	Impact Factor, if any
1	Emergence of cosmic and its connection with thermodynamics principles	Krishna P B, Hassan Basari V T and Titus K Mathew	General Relativity and Gravitation, 54 (2022) 58, IF:2.84
2	Tsallis holographic dark energy reconsidered	Dheepika M and Titus K Mathew	EPJC, 82 (2022) 399, IF:4.991
3	Constraining the bulk viscous models with standard LambdaCDM using bayesian analysis	V. Mohammed Shereef, Jerin Mohan and Titus K Mathew	Astrophysics and Space Science, 367(2022) 46, IF:1.83
4	Running vacuum model versus LambdaCDM model - a bayesian analysis	Sarath N and Titus K Mathew	Month Notices of the Royal Society, 510(2022) 5553, IF: 5.235
5	Luminescence studies of Eu ³⁺ doped calcium magnesium silicate phosphor prepared at different annealing temperatures for fine color tunability	Navya Sara Kuriyan, M. Sabeena Journal of Luminescence 249 (2022) 119038	Journal of Luminescence 249 (2022) 119038 IF: 3.59
6	Superhydrophilic TEOS/PF-127 based antireflection coating for solar and optical applications	R Swathi, J Shanthi, K. K. Anoop	Optical Materials, Volume 118, 111246 (2021). Impact Factor: 3.754
7	Influence of deproteinization and demineralization process sequences on the physicochemical and structural characteristics of chitin isolated from Deep-sea mud shrimp (Solenocera hextii)	MK Rasweefali, S Sabu, KS Muhammed Azad, MK Raseel Rahman, KV Sunooj, A Sasidharan, K. K. Anoop	Advances in Biomarker Sciences and Technology Volume 4, 2022, Pages 12-27
8	Radio frequency plasma assisted surface modification of Fe ₃ O ₄	Beena Mol, Ansar E B, Prasad S J,	Journal of Materials Science: Materials in Medicine, 32 (2021) 9-14.

	nanoparticles using polyaniline/polypyrrole for bioimaging and magnetic hyperthermia applications	Prabha Prakash, R S Jayasree, Senoy Thomas, Baby Chakrapani, MR Anantharaman, M Junaid Bushiri	IF- 3.9
9	Growth of interconnected ZnO nano structures- its photo catalytic and electrochemical properties	Bini B Nair, K. Ihsan Ahmed, M. Junaid Bushiri	ECS Journal of Solid State Science and Technology 11 (2022) 013008 IF-2.07
10	Solution Combustion Synthesis of Pencil-Shaped ZnO Nanostructures and the Analysis of Their Photocatalytic Properties	Bini B Nair, K and M. Junaid Bushiri	<i>ECS Journal of Solid State Science and Technology</i> 11 (2022) 053014 IF- 2.07
11	Highly sensitive and reusable SERS substrate based on Ag/SnO ₂ nanocone arrayed thin film	Abdul Rasheed Paloly, Anju K S. Junaid Bushiri	Plasmonics https://doi.org/10.1007/s11468-022-01703-x (2022). IF-2.4

Books: Nil

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.



Name of Participant	Name of Seminar / Conference/ Workshop	Role
Sabeena M	Faculty Development programme	attended
Parvathy M	DAE Solid State Physics Symposium (DAE-SSPS)December 2021(Dec 15-19)BARC, Mumbai, India	Poster Presentation
Parvathy M	Golden Jubilee International Conference NANOicon 2022 (Jan 11-15),Cochin University of Science and Technology, Cochin, Kerala, India	Poster Presentation
Navya Sara Kuriyan	Golden Jubilee International Conference NANOicon 2022 (Jan 11-15),Cochin University of Science and Technology, Cochin, Kerala, India	Oral Presentation
Sreelekha C.A.,	International Conference on RECENT TRENDS IN PHOTONICS 2022. National Photonics Symposium, NPS-2022	Poster Presentation
Sreelekha C.A.,	INTERNATIONAL CONFERENCE ON MATERIALS SCIENCE- A KALEIDOSCOPIIC JOURNEY: ic-MKJ 2022	Oral Presentation
Dr. Anoop K K	TWO - WEEK INTERDISCIPLINARY REFRESHER COURSE in “ADVANCED RESEARCH METHODOLOGY” Teaching Learning Centre, Ramanujan College University of Delhi in collaboration with NEWMAN COLLEGE, Thodupuzha, Kerala (June 2022)	Participation
Dr. Anoop K K	Refresher Course in Material Science: Recombinant Memetics conducted by the HRDC, University of Calicut (December 2021)	Invited Talk/Resource Person
Dr. Anoop K K	National level online FDP on Applied Optics and Photonics (August 2021)	Resource Person

Dr. Anoop K K	International Conference on Physics of Materials and Nanotechnology 2021. 28th - 30th October 2021, at Mangalore University	Oral Presentation
Akhil Thomas Panicker	10th International Conference on Complex Networks & Their Applications, Madrid, Spain November 30 - December 02, 2021	Oral Presentation
Dr. Sasidevan V	Workshop on Teacher training program on “Mathematical modeling using technology-enabled and student-centered learning” Dept. of Physics Kannur University 30-31 May 2022	Resource Person
Dr. Sasidevan V	Webinars on Nobel prizes 2021 organized by KSCSTE November 1 2021	Resource Person
Dani Rose and Rhine Kumar A. K.	DAE Symp. On Nucl. Phys., BARC, Mumbai, India, 65, 196 (2021).	Oral Presentation
Rhine Kumar A. K.	DAE Symp. On Nucl. Phys., BARC, Mumbai, India, 65, 120 (2021).	Poster Presentation
Anjana Guptha and Rhine Kumar A. K.	DAE Symp. On Nucl. Phys., BARC, Mumbai, India, 65, 196 (2021).	Poster Presentation
Dr. Charles Jose	Workshop on Teacher training program on “Mathematical modeling using technology-enabled and student-centered learning” Venue: Dept. of Physics	Resource Person
Dr. Charles Jose	Workshop on Teacher training program on “Mathematical modeling using technology-enabled and student-centered learning” Venue: Dept. of Physics	Resource Person

Dr. Charles Jose	Workshop on Teacher training program on “Mathematical modeling using technology-enabled and student-centered learning” Venue: WMO Arts and Science College Muttil Wayand	Resource Person
Dr. Charles Jose	Workshop on Teacher training program on “Mathematical modeling using technology-enabled and student-centered learning” Venue: Bishop Moore College, Mavelikkara.	Resource Person
Dr. Senoy Thomas	ICMPMA 2022	Invited speaker

Role of Faculty in International/National organizations/Institutions/ Editorial Boards: Nil

Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Dr. Senoy Thomas	DAAD-Research stay for University Academics and Scientists	DAAD, Germany

Sponsored Research Projects

Sl. No.	Title	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
1	Fermi-Indian Institutions collaboration on the studies on Neutrino	DST, Govt. of India	114 lakhs	Prof. Titus K Mathew and Prof. Ramesh Babu T
2	Study of giant dipole resonance in hot and rotating nuclei	DST-INSPIRE	35 lakhs	Dr. Rhine Kumar A. K.
3	Magnetic spin vortices on curved geometries	DST-DAAD	5.15 Lakhs	Dr. Senoy Thomas

Research Programmes and Activities: Nil**Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department**

Sl. No.	Title	Duration	Coordinator	Funding Agency
1	Thursday Colloquium	one hour on every thursday	Dr. Senoy Thomas	Department of Physics, CUSAT
2.	Workshop on Teacher training program on “Mathematical modeling using technology-enabled and student-centered learning” Venue: Dept. of Physics	23/09/2021 to 24/09/2021 (2 days)	Dr. Sasidevan V	KSCSTE
3.	Workshop on Teacher training program on “Mathematical modeling using technology-enabled and student-centered learning” Venue: Dept. of Physics	21/10/2021 to 22/10/2021 (2days)	Dr. Sasidevan V	KSCSTE
4.	Workshop on Teacher training program on “Mathematical modeling using technology-enabled and student-centered learning” Venue: WMO Arts and Science College Muttill Wayand	18/11/2021 to 19/11/2021 (2 days)	Dr. Sasidevan V	KSCSTE
5	CUSAT-Augsburg joint seminar on magnetic materials	26.08.2022	Dr. Senoy Thomas	

6	Workshop on Teacher training program on “Mathematical modeling using technology-enabled and student-centered learning” Venue: Bishop Moore College, Mavelikkara.	22/11/2021 to 23/11/2021 (2 days)	Dr. Sasidevan V	KSCSTE
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Consultancy Work: Nil

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency



Department of Physical Oceanography

ANNUAL REPORT FOR THE YEAR 2021 - 2022

Brief History of the Department

The Department of Physical Oceanography serves as a center of excellence in producing high-quality oceanographers and ocean technologists contributing effectively to enhance our understanding of the physics of the ocean and its allied topics. The department was established in 1996 under the Cochin University of Science and Technology. The department facilitates the establishment of high-quality infrastructure and environment for teaching, learning, and research leading to innovations in ocean sciences and technology. The major programs offered in this department include M.Sc. Oceanography, M. Tech Ocean Technology along with ongoing doctoral and postdoctoral programs. The department has been a forerunner in producing skilled oceanographers for this country for over four decades. We are proud of many distinguished scientists currently serving in various institutes in India and abroad who are alumni of this department.

Placements are at CSIR-National Institute of Oceanography, ESSO-National Centre for Earth System Science, DRDO-Naval Physical and Oceanographic Laboratory, ESSO-National Institute of Ocean Technology, Indian Institute of Science, Indian Institute of Technology, ISRO-Space Application Centre, ISRO-National Remote Sensing Centre and so on, while some find positions abroad and private.

This department has a dedicated lifeline of highly qualified decorated scientists and researchers serving the nation in varied capacities. Also, time in and out, valued projects from EU, MoES, SAC, DST, MHRD, AICTE and UGC have been executed by the faculty attached to this department. Members have often associated themselves with international bodies/ scientists & teachers from foreign countries in their pursuit for academic excellence. A number of students have qualified the NET – CSIR – UGC test to secure positions in national laboratories/institutions. The department houses sophisticated instruments like ocean current meters, automatic sedimentation analyzer, bathythermograph, echo sounder, tide and wave gauges, ship borne data acquisition systems, ADCP, CTD, ocean data buoy system etc.

Programmes of Study/Research

- a. **M.Sc. Oceanography**
- b. **M.Tech. Ocean Technology**
- c. **Ph.D Programme in Oceanography**

Faculty Members

Sl.No.	Name	Designation	Qualification	Specialization
1.	Dr. R. Sajeev	Associate Professor & Head of the department	M.Sc (CUSAT) Ph.D (CUSAT)	Coastal Oceanography
2.	Dr. P. K. Saji	Assistant Professor	M.Sc (CUSAT) Ph.D (CUSAT)	Environmental Oceanography
3.	Dr. V. Vijith	Assistant Professor	M.Sc (CUSAT) Ph.D (Goa University)	Physics of the coastal seas and estuaries
4.	Dr. K. M. Santhosh	Assistant Professor (on contract)	M.Sc (CUSAT) Ph.D (Mangalore University)	Satellite Oceanography
5.	Mr. Lix K. John	Assistant Professor (on contract)	M.Sc. (CUSAT)	Air sea interaction
6.	Mrs. Thanvi Fathima Rahman	Assistant Professor (on contract)	M.Tech. (CUSAT)	Ocean Technology

Emeritus Professor/Scientist (if any) – Nil**Visiting Faculty (If any) – Nil**

Sl. No.	Name	Designation	Qualification	Specialization
1.	Dr. T. K. Sivadas (Retd. Scientist CIFT)	Guest faculty	M.Sc, Ph.D	Ocean instrumentation

Research/Project Staff

Sl. No.	Name	Designation	Specialisation
	Dr. Abdulla C. P.	UGC-Dr.D.S.Kothari Post Doctoral Fellow	Meso-Scale Edeies

Research Scholars

Sl. No.	Name	Funding Agency	Guide	Area of Work
1.	Vimalkumar K.G		Dr. R Sajeev	Oceanic Mesoscale features in the Bay of Bengal
2.	E.K.Simon		Dr. R Sajeev	Air Sea Interaction in the Tropical Indian Ocean and its influence on Monsoon over Southern Peninsular India
3.	Nisa Anil	CUSAT	Dr. R Sajeev	Air-Sea Interaction Processes over the Indo-Pacific Region
4.	Lix K John		Dr. R Sajeev	An Investigation on the Air Sea interaction process over the Eastern Arabian sea
5.	Vasudevan S	CUSAT	Dr. R Sajeev	Shoreline dynamics of Kerala Coast
6.	Elizabeth Shani N.X	DRDO	Dr. R Sajeev	Modeling of Underwater ambient noise and light field
7.	Anup N	DST-PURSE	Dr. V Vijith	Ecosystem dynamics of the North Indian ocean
8.	Prasanth R	MOES	Dr. V Vijith	Bio-Physical processes of the North Indian ocean
9.	Safin I.P.	Maulana Azad National Fellowship	Dr. V Vijith	Dynamics of the Cochin estuary Kerala
10.	Anoop K.A.	E-Grants	Dr. P.K. Saji	Ocean Mesoscale dynamics
11.	Abhishek V. A	CUSAT	Dr. V Vijith	Assessment of north Indian Ocean circulation using satellite altimetry and model simulation.

12	Urmila P.	MHRD-DRDO CUSAT	Dr. R. Sajeev	Modelling and Simulation of UnderWater Acoustic Environment
13	Rajive Krishnan R	MHRD-DRDO CUSAT	Dr. P.K. Saji	Coastal currents, Tides and Eddies.
14	Anisha L.G.	CUSAT	Dr. P.K. Saji	Intraseasonal Air sea Interaction
15	JimnaJanardhanan	MHRD-DRDO CUSAT	Dr. R. Sajeev	Dynamical Studies on Coastal features and its influence on Acoustic Propagation
16	Swathy.A.R	E grants	Dr. P K .Saji	Climate change and Global Warming in the ocean
17	Thanvi Fathima Rahman	-	Dr. R. Sajeev	Impact of climate change on wave power variations along the India Ocean.

Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Section officer	1
2.	Assistant section officer	1
3.	Office Superintendent	1
4.	Office attendant	1

Technical Personnel

Sl.No.	Designation	No. of Posts
1.	Lab technician	1 (vacant) –reported Daily wage

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1.	M.Sc Oceanography	8	5	13
2.	M.Tech Ocean Technology	1	1	2

Research Facilities

- a. Laboratories:** Ocean Instrumentation Lab
Ocean Buoy System
Computer Lab

b. Major equipments

Ocean current meter
Salinometer and bathy thermograph
Digital water analyzer
Lux meter
Current meter
3 D ACM Current Meter
Van Dorn water samplers
Portable echo sounder
Wave cum tide gauge
GPS
Mapping device
Aneroid barometer
Horizontal water sampler
Shallow water ADCP
Portable mini CTD
Shallow water ADCP
Ocean Data Buoy
Dual-frequency Echosounder

c. Library: Please see details available under School of Marine Science Library

d. Others: Computer Laboratory Equipped for Ocean Modelling and Remote sensing applications

Distinguished visitors

Sl. No.	Name	Affiliation	Remarks
1	Prof. Vinu Valsala	Indian Institute of Tropical Meteorology, Pune	Luminary Lecture series on Fundamental of inverse modelling and its application on observational network design, 23 February 2022.

Ph.Ds Awarded

Sl. No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Response of surface chlorophyll to oceanic mesoscale processes and marine aerosols in the south eastern Arabian Sea	Mohammed Shafeeq	Prof. A.N. Balchand

Publications

a. Papers

Sl. No.	Title of Paper	Impact Factor, if any
1.	N. Anup, V. Vijith, A.K Jithin, B. Rohit, P. Amol, P.A Francis. Quasi-Biweekly oscillation in sea level along the western Bay of Bengal. Continental Shelf Research, 231, 104594	2.391
2.	JayanarayananKuttippurath, Wuhu Feng, Rolf Müller, Pankaj Kumar, Sarath Raj, Gopalakrishna Pillai Gopikrishnan, Raina Roy. Exceptional loss in ozone in the Arctic winter/spring of 2019/2020. Atmospheric Chemistry and Physics , 21, 14019–14037, 2021	6.546
3.	Nisa Anil, M. R. Ramesh Kumar, R. Sajeev, P. K. Saji. Evolution mechanism of contrasting phases of consecutive IOD events. Indian Journal of Geo Marine Sciences, Vol. 50 (07), July 2021	0.496
4.	Muhammad Shafeeque, Grinson George, S.Akash, B.R.Smitha, PhirosShaha, A. N. Balchand. Interannual variability of chlorophyll-a and impact of extreme climatic events in the South Eastern Arabian Sea. Regional Studies in Marine Science, 48,101986, 2021.	1.624
5.	Divya David T, Subeesh M.P, Anju V., Anilkumar N. Variability in the hydrography of two proximate Arctic fjords during 2013–18. Polar Science, 30,100735, 2021.	1.927
6.	M. Afroosa, B. Rohith, Arya Paul, Fabien Durand, RomainBourdallé-Badie, P. V. Sreedevi, Olivier de Viron, ValérieBallu, S. S. C. Sheno. Madden-Julian oscillation winds excite an intraseasonal see-saw of ocean mass that affects Earth’s polar motion. Nature Communications, Earth and Environment, 2:139, 2021.	-
7.	Meenakshi Chatterjee, D Shankar, V. Vijith, G. K. Sen, D. Sundar, G. S. Michael, P. Amol, Abhisek Chatterjee, P. Sanyal, Siddhartha Chatterjee, Anwesa Basu, SaranyaChakraborti, SurjaKantaMisra, K. Suprit, Debabrata Mukherjee, A. Mukherjee, SoumyaMukhopadhyay, Gopal Mandal, AravindKalla, Madhumita Das. Variation of surface salinity in the Sundarbans Estuarine System during the Equinoctial Spring tidal phase of March 2011. Journal of Earth System Science, 130,2021	1.371
8.	R. Prasanth, V. Vijith, V. Thushara, Jenson V. George, P. N. Vinayachandran. Processes governing the seasonality of vertical chlorophyll-a distribution in the central Arabian Sea: Bio-Argo observations and ecosystem model simulation. Deep Sea Research Part II, 183, 104926, 2021.	2.732

9.	E. K. Simon, R. Sajeew and Basil mathew. Spatial variability of north east monsoon rainfall over Peninsular India during strong, weak and normal NEMR years. Indian Journal of Geo Marine Sciences, 2020, Vol. 49 (05), May 2020.	0.496
10.	C. Jayaprakash , R. Sajeew. Rare earth elements in the inner shelf sediments off Kerala Coast, India. SGAT Bulletin. Vol 21, 1, pp 6019.	-
11.	Sumangala Dhanya, Rajarethinam Mohan, KuppusamyMullaiVendhan, MallavarapuVenkataRamana Murthy, Raveendran Sajeew. Assessment of Performance of a Groin Constructed on Puducherry Coast - A Case Study. Journal of Coastal Reserach, 89(sp1):84-91, 2020	0.854
12.	V. Sanil Kumar, Aswathy B. Ashok, Jesbin George, M. M. Amrutha. Regional studies of changes in wind power in the Indian Shelf seas over the last 40 year. Energies, 13 (9), 2295, 2020.	3.00
13.	P. Amol, P. N. Vinayachandran, D. Shankar , V. Thushara, V. Vijith, A. Chatterjee, and A. Kankonkar. Effect of freshwater advection and winds on the vertical structure of chlorophyll in the northern Bay of Bengal. Deep-Sea Research Part II, 104622, 2020	2.697
14.	P. Amol, S. Bemal, D. Shankar, V. Jain, V. Thushara, V. Vijith, P. N. Vinayachandran. Modulation of chlorophyll concentration by downwelling Rossby waves during the winter monsoon in the southeastern Arabian Sea. Progress in Oceanography, 20,10365, 2020	3.25
15.	V. Vijith, P. N. Vinayachandran, Benjamin G. M. Webber, Adrian J. Matthews, Jenson V. George, K. Vijay Kumar, Aneesh A. Lotliker, and P. Amol. Closing the sea surface mixed layer temperature budget from in-situ observations alone: Operation Advection during BoBBLE. Scientific Reports, 10, 7062, 2020	3.9
16.	P. Sabu, Stephy Ann Libera, Racheal Chacko, N. Anilkumar, M. P. Subeesh& Antony P.Thomas. Winter water variability in the Indian Ocean sector of Southern Ocean during austral summer. Deep Sea Research Part II, Topical Studies in Oceanography, 10852, 2020.	2.697
17	E.K.Simon, R.Sajeew & Basil mathew. Temporal behavior of north east monsoon rainfall during extreme NEMR years over Peninsular India. Indian Journal of Geo Marine Science, 2020.	0.496
18	Malavika, A. R., Pai, M. L., & Saji, P. K. (2020, June). Analytical evidence for deep ocean warming trend in tropical Indian Ocean. In <i>IOP Conference Series: Earth and Environmental Science</i> (Vol. 491, No. 1, p. 012014). IOP Publishing.	

b. Books: Nil**Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.**

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Anisha L. G.	Modelling for ocean forecasting and process studies, 6-10 December 2021, INCOIS, Hyderabad	Participant
Anisha L. G.	In-house training on Python Computer Programming	Participant
Anisha L. G.	30 hour value added training course Skill Development in Oceanography organised by Department of Physical Oceanography, Cochin University of Science and Technology, Cochin, India from December 2021- January 2022	Participant
Swathy A. R.	Research Methodology on Science conducted by IRTC from 28/10/2020 to 2/01/2021	Participant
Swathy A. R.	Research Methodology in Science	Participant
Swathy A. R.	One month internship in Research Training from 5.7.2021 to 5.8.2021	Participant
Swathy A. R.	Modelling for ocean forecasting and process studies, 6-10 December 2021, INCOIS, Hyderabad	Participant
Swathy A. R.	30 hour value added training course on Skill Development in Oceanography organised by Department of Physical Oceanography, Cochin University of Science and Technology, Cochin, India from December 2021 – January 2022.	Participant
R. Prasanth, V. Vijith	R. Prasanth, V. Vijith , P. N. Vinayachandran. Dynamics of Diurnal Variability of Chlorophyll in the Southern Bay of Bengal, AGU fall meeting 13 - 17 December 2021, New Orleans, LA, USA (Online)	Presented
R. Prasanth, V. Vijith	R. Prasanth, V. Vijith , P. N. Vinayachandran. Characteristics of vertical distribution of chlorophyll in the Southern Bay of Bengal during the BoBBLE field program. International Indian Ocean Science Conference (IIOSC-2022), 14 - 18 March 2022, Goa	Presented

Anup N.	Online Training Course on Fundamentals of Ocean Modelling organised by International Training Centre for Operational Oceanography (ITCOcean), ESSO-INCOIS, Hyderabad, India from 27 September – 01 October 2021.	Participant
Anup N.	30 hour value added training course on Skill Development in Oceanography organised by Department of Physical Oceanography, Cochin University of Science and Technology, Cochin, India from December 2021 – January 2022.	Participant
N. Anup, V.Vijith	N. Anup, V.Vijith, C. Abhishek. The annual cycle and effects of the northern Bay of Bengal dome. Early Career Researcher’s Symposium-2021 organised by ESSO-INCOIS, Hyderabad, 02 February 2021.	Presented
N. Anup, V.Vijith	N. Anup, V.Vijith, C. Abhishek. On the Evolution of Northern Bay of Bengal Dome. EGU General Assembly 2021, 19 – 30 April 2021, Vienna, Austria.	Presented
N. Anup, V.Vijith	N. Anup, V.Vijith, C. Abhishek. Two distinct thermocline domes in the Bay of Bengal. International Indian Ocean Science Conference (IIOSC) 2022, 14 – 18 March, 2022.	Poster Presentation
Safin I.P.	Modelling for Ocean Forecasting and Process Studies, International Training Centre for Operational Oceanography (ITCOcean), INCOIS during December 6-10, 2021, Hyderabad, India.	Participant
Safin I.P.	Golden Jubilee Celebratory Author Workshop on “Writing Quality Research Articles & Identifying Relevant Journals to Read and Publish In” at Cochin University of Science and Technology in association with Elsevier, on Tuesday 14 December, 2021.	Participant
Safin I.P.	Skill Development Workshop in Oceanography, Department of Physical Oceanography, Cochin University of Science and Technology during November 2021 – January 2022.	Participant
Vasudevan Shankar	Skill Development Workshop in Oceanography, Department of Physical Oceanography, Cochin University of Science and Technology during November 2021 – January 2022.	Participant

Anoop K.A.	Skill Development Workshop in Oceanography, Department of Physical Oceanography, Cochin University of Science and Technology during November 2021 – January 2022.	Participant
Urmila P.	Skill Development Workshop in Oceanography, Department of Physical Oceanography, Cochin University of Science and Technology during November 2021 – January 2022.	Participant
Rajive Krishnan	Skill Development Workshop in Oceanography, Department of Physical Oceanography, Cochin University of Science and Technology during November 2021 – January 2022.	Participant
Jimna J	Skill Development Workshop in Oceanography, Department of Physical Oceanography, Cochin University of Science and Technology during November 2021 – January 2022.	Participant

Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Dr. V. Vijith	Vaishwik Bharatiya Vaigyanik Summit	Panellist
Dr. V. Vijith	Passing Board of Kerala Fisheries University	External Member
Dr. V. Vijith	Board of Studies in Physical Oceanography, Cochin University of Science and Technology	Member
Dr. V. Vijith	Selection Committee, PA Recruitment, CSIR-National Institute of Oceanography	Member
Dr. P.K. Saji	Board of Studies in Physical Oceanography, Cochin University of Science and Technology	Member
Dr. R. Sajeev	Board of Studies in Physical Oceanography, Cochin University of Science and Technology	Chairman
Dr. R.Sajeev	Academic Council, Cochin University of Science and Technology	Member
Dr. R. Sajeev	Faculty of Marine Science, Cochin University of Science and Technology	Member

Dr. R. Sajeev	Interview Board, Project Scientist B Recruitment, NCESS	Member
Dr. R. Sajeev	RC Meeting of CMLRE, Cochin	Chairman
Dr. R. Sajeev	RC meeting of NCESS, CMLRE & NIO Regional Centre	Member

Awards/ Honours/ Fellowships etc. received: Nil

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Theertha P.	P.G. Girl student Fellowship	Muthoot M. George Foundation
Ajay B.	U.G.C JRF (NET)	U.G.C.
Vasil C.	RUSA-CUSATTECH Scholarship 2021	RUSA

Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
1.	A coupled physical-ecosystem model based on MOM5-COBALT for the Indian Ocean	ESSO-Indian National Center for Ocean Information Services	22.5 Lakhs	Dr. V Vijith
2.	Impact of physical processes on the fisheries of the north Indian Ocean	DST-SERB TARE	18 Lakhs	Dr. V Vijith
3.	Modelling coastal oceanographic features in the South Eastern Arabian Sea	DST-SERB TARE	18 Lakhs	Dr. P. K. Saji

Research Programmes and Activities:

Sl.No.	Problem / Topic	Investigator(s)
1	BoBBLE (Bay of Bengal Boundary Layer Experiment)- Collaboration with Indian Institute of Science and University of East Anglia.	Dr. V. Vijith
2	Hydrography of the Andaman Sea - Collaboration with Centre for Marine Living Resources and Ecology (CMLRE), Ministry of Earth Sciences	Dr. R. Sajeev
3	Sundarban Estuarine Program - Collaboration with Jadavpur University, Kolkata	Dr. V. Vijith
4	Modelling coastal sediment transport- Project Collaboration with ISRO-Space Application Centre	Dr. R. Sajeev
5	Modelling coastal Oceanography- Project Collaboration with CSIR-National Institute of Oceanography	Dr. P. K. Saji
6	Surface and internal waves, currents, tides, small-scale eddies and turbulence - Project Collaboration with DRDO-Naval Physical and Oceanographic Lab	Dr. P. K. Saji
7	Dynamical studies of coastal features and its influence on acoustic propagation- Project Collaboration with DRDO-Naval Physical and Oceanographic Lab	Dr. R. Sajeev
8	Coupled OGCM-biogeochemical modelling of the north Indian Ocean-Project collaboration with ESSO-Indian National Centre for Ocean Information Services	Dr. V. Vijith
9	Impact of Physical processes on the fisheries of the east coast of India - Project collaboration with CSIR-National Institute of Oceanography, Goa	Dr. V. Vijith

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl.No	Title	Duration	Coordinator	Funding Agency
1.	Skill Development Workshop in Oceanography (December 2021 - January 2022)	30 Hours	Dr. V. Vijith	Alumni DPO, CUSAT

Consultancy Work: Nil



Department of Polymer Science and Rubber Technology



DEPARTMENT OF POLYMER SCIENCE AND RUBBER TECHNOLOGY COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

Annual Report for the year 2021-2022

Name of the Department: Department of Polymer Science and Rubber
Technology

Brief History of the Department

The Department of Polymer Science and Rubber Technology (P.S. & R.T.) established in 1971 is one of the pioneers in the area of education and research in Polymer Science and Engineering. In collaboration with the Rubber Research Institute of India the B.Tech. Programme was started in the year 1972. The starting of the M.Tech. Programme in the year 1985 was a major milestone in the growth of the Department.

The highly motivated faculty members with experience in Universities outside India have to their credit about 850 research publications in internationally reputed journals. More than 100 students have already taken their Ph.D. Degrees from the Department. The Department organises International Symposia on Advances in Polymer Technology (APT) once in two years to bring the polymer scientists, technologists, and engineers working in academic institutions, industry and research organizations to a common platform. Almost 100% placement of the B.Tech. and M.Tech. students, mainly through campus selection, in major tyre companies, polymer manufacturing/processing industries, and research institutions have been the tradition of the Department. Alumni of the Department are in senior positions in major polymer based industries in India, and in multinational corporations.

The B. Tech programme in Polymer Science and Rubber Technology was restructured to an eight-semester post +2 pattern in 2002 in collaboration with the Eindhoven University of Technology, The Netherlands under the MHO programme. It was then thoroughly revamped in 2009 and designated as B. Tech in Polymer Science and Engineering. The revised curriculum has been designed to equip students in basic science and engineering skills, and to provide them up-to-date knowledge, and skills in the production, characterization, processing, and testing of polymers and polymer products. Practical training sessions at the Rubber Research Institute of India, Kottayam, Central Institute of Plastic Engineering and Technology, Chennai and other research institutions, and in-plant training in Tyre/Polymer Industries are the highlights of this course.

Teaching and research are intertwined in the four semester M.Tech. Programme in Polymer Technology. The first two semesters of the programme comprises of lectures, laboratory work, and seminars. The students spend the third and fourth semesters in a research project either in a research institution/industry R & D division or in the University.

The Department has a very active research community. The Department successfully completed international collaborations which include the sandwich Ph.D. programmes with the Eindhoven University of Technology (TUE), and the Twente University of the Netherlands. Modification of rubber products using electron beam (BARC), Conducting polymers for developing pressure sensors (ISRO), Use of carbon nano-tubes for improved mechanical and electrical properties (DST), Modification of natural rubber (AICTE), Specialty composites (UGC- SAP), and Bio-degradable polymers are some of the completed projects. UGC has sanctioned Rs. 1.24 crores through SAP DRS II to the Department for the project proposal entitled 'Development of non-carcinogenic binary accelerator based vulcanization system for natural rubber'.

Major facilities in the Department include basic rubber/plastic processing equipments, Windsor Injection Moulding Machine, Shimadzu Autograph Universal Testing Machines (50 kN and 10kN), Alpha Technologies RPA2000 Rubber Process Analyser, TA Dynamic Mechanical Analyser Q800, TA DSC Q100, TA TGA Q50, Hitachi U-V Visible NIR Spectrophotometer, Bruker Tensor 27 FTIR, Zwick Impact Tester, Atago Abbe Refractometer, Keithley2182 Nano Voltmeter, Waters515 HPLC, Brookfield Viscometer, Carl Zeiss Stereo Microscope, Thermo Hake (Rheomix) Poly Lab System, Buchi Parallel evaporator, Buchi Rotavapor, Ektron Mooney Viscometer, Ektron Flexometer, Particle Size Analyzer and Impedance Analyzer.

Programmes of Study/Research :

- a) B.Tech Course in Polymer science & Engineering
- b) M.Tech Course in Polymer Technology
- c) Ph.D. Programme in Polymer Technology

22. Faculty Members

Sl. No.	Name	Designation	Qualification	Specialization
1	Dr. Sunil K. Narayanakutty	Professor & Head	M.Tech., Ph.D	Polymer Science/Technology
2	Dr. Honey John	Professor	M.Sc., M.Tech., Ph.D.	Polymer Science / Polymer Technology
3	Dr. Sailaja G.S.	Professor	Ph.D.	Biomaterials Nanotechnology Cancer Therapy Membranes for Fuel Cells
4	Dr. Prasanth R	Professor	Ph.D	Energy Storage
5	Dr. Jayalatha Gopalakrishnan G.	Associate Professor	B.Tech., M.Tech., Ph.D.	Polymer Science /Polymer Technology
6	Dr. Abhitha K.	Assistant Professor	M.Tech.,Ph.D	Polymer Technology
7	Dr. Jinu Jacob George	Asst. Professor	B.Tech., M.Tech., Ph.D	Polymer Technology

Emeritus Professor/Scientist (if any)

Sl. No.	Name	Designation	Qualification	Specilisation
1	Dr. C.P Raghunadhan Nair	Retired Scientist /Engineer-H		

Visiting Faculty (If any): Nil**Research/Project Staff: Nil****Research Scholars**

Sl.NO	Name	Funding Agency	Guide	Area of Work
1	Alvina Augusthy	UJRF	Dr.Jayalatha Gopalakrishnan	Supercapacitors
2	Jishana Basheer	UJRF	Dr. Jinu Jacob George	Nanocellulose based polymer composites
3	Sithara Radhakrishnan	DRDO	Dr. Honey John, Dr. T Santhanakrishnan	Triboelectric Nanogenerators
4	Christy Ann Biji		Dr. Honey John	Supercapacitor
5	Aparna Jayan	DRDO	DrAbhitha K	Underwater Encapsulation
6	Ajith Mathew	UJRF	Dr.Jinu Jacob George	Nanocellulose derived bionanocomposites
7	Reshma Varghese	UJRF	Dr.Jayalatha Gopalakrishnan	EMI Shielding

Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer	1
2	Sr.Grade Assistant	2
3	Office Superintendent	1
4	Office Attendant	1
5	Sweeper(D/W)	1

Technical Personnel

Sl.No.	Designation	No. of Posts
1	Store Keeper	1
2	Technician Gr.II(D/W)	1
3	Workshop Attender(D/W)	1
4	Assistant Librarian	1

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1	B.Tech.	6	16	22
2	M.Tech.	4	5	9
3	Ph.D	1	6	7

Research Facilities**a. Laboratories**

Sophisticated Testing Lab (5 Nos)

Research Chemical Lab (2 Nos.)

b. Major equipments

c. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
Books - 4181	20
Journals – 3	

d. Others**Distinguished visitors: Nil****Ph.Ds Awarded**

Sl. No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	EPOXY / POLYANILINE / REDUCED GRAPHENE OXIDE NANOCOMPOSITES FOR ELECTROMAGNETIC INTERFERENCE (EMI) SHIELDING	Rahnamol A.M.	Dr.Jayalatha Gopalakrishnan G
2	STUDIES ON THE MECHANICAL, ELECTRICAL AND THERMAL PROPERTIES OF POLYTHIOPHENE COATED BANANA FIBER COMPOSITES BASED ON PU, PE AND PP	Jabin T	Dr.Sunil K.Narayanankutty
3	STUDIES ON POLYVINYL ALCOHOL NANOCOMPOSITE FILMS AND AEROGELS WITH MODIFIED CLAY AND ITS REDUCED GRAPHENE OXIDE HYBRIDS FOR CARBON DIOXIDE ADSORPTION AND ORGANIC DYE REMOVAL	Sona Stanly	Dr.Honey John

Publications

Sl. No.	Title of the Paper	Author(s)	Impact Factor, if any
1	Reduced graphene oxide/epoxy nanocomposites with enhanced dielectric, mechanical, thermomechanical and thermal properties”, Journal of Elastomers and Plastics, <u>54(3)</u> , 2022; 407-428	Rahnamol A. M., Jayalatha Gopalakrishnan	2.21
2.	Polyaniline nanorod adsorbed on reduced graphene oxide nanosheet for enhanced dielectric, viscoelastic and thermal properties of epoxy nanocomposites”, Polymer Engineering and Science, Wiley, 2021; 61:1755–1772.	Rahnamol A. M., Jayalatha Gopalakrishnan	2.57
3	Enhanced performance of cellulose nanofibre reinforced styrene butadiene rubber nanocomposites modified with epoxidised natural rubber”, Industrial Crops and Products, 183, 114935	Venugopal Balachandrakurup, Jayalatha Gopalakrishnan	6.44
4	Effect of compatibiliser on the mechanical, rheological and thermal properties of natural rubber/Cellulose nanofibre composites”, Materials Today: Proceedings, Elsevier, 47(15), 2021; 47: 5345-5350	Venugopal B., Neena George, Jayalatha Gopalakrishnan	

17-23	<ol style="list-style-type: none"> 1. K Sunitha, CP Reghunadhan Nair, Handbook of Thermoset Plastics, 931-952 (2022) 2. M Sathesh Chandran, Niranjana Sreelal, CP Reghunadhan Nair, Maleimide based Alder-ene thermosets: recent advances Handbook of Thermoset Plastics, 619- 3. Bibin John, CP Reghunadhan Nair, Thermosetting polymer-based syntactic foams: an overview, Handbook of Thermoset Plastics, 801-832 (2022) 4. Savitha Nair, Tony Francis, CP Reghunadhan Nair, Suresh Mathew Copper Oxide/HKUST-1 Composite Catalyst as Thermal Decomposition Modifier on Ammonium Perchlorate, Propellants, Explosives, Pyrotechnics, 47, 2021-208 (2022) 5. K Sunitha, Sankarapillai Mahesh, C Suchithra, G Unnikrishnan, CP Reghunadhan Nair, Comb like amphiphilic graft copolymers bearing PDMS and PEO side chains: synthesis and solvent-assisted self-assembly behaviour, Journal of Polymer Research, 29,1-12 (2022) 6. A. Jeemol, Suresh Mathew, C.P. Reghunadhan Nair, “Toughening of Unsaturated Polyester Resin by Blending with Polyether Telechelics. Dependency of Toughening Efficacy on End Groups, J Polymrtic Mater (in press) 7. S. Reshmi, C.P. Reghunadhan Nair_Ammonium perchlorate-mediated, long-term chemoxidation of copper chromite burn rate moderator; insight into storage-related diminution in burn rate of composite solid propellants, Propellants and Explosives (2022,under review) 		
	<p>“Uncarbonized crosslinked PVA-modified MMT/reduced graphene hybrid aerogel for efficient carbon dioxide adsorption at low pressure”, <i>Journal of Polymer Research</i>, 28, 2021</p>	<p>Sona Stanly, Honey John</p>	<p>3.061</p>
6	<p>“Triboelectric nanogenerators for marine energy harvesting and sensing applications” <i>Results in Engineering</i>, 2022</p>	<p>Sithara Radhakrishnan, Sherin Joseph, E J Jelmy, K J Saji, T Santhanakrishnan, Honey John</p>	

7	“Triboelectric nanogenerator based on polyaniline nanorods incorporated PDMS composites through a facile synthetic route” <i>Journal of Materials Science: Materials in Electronics</i> , 33, 2022, 15408- 15421	Divya Jose, Jelmy E J, P.S. Subin, Rani Joseph, Honey John	2.779
8	“Self-powered ultra-sensitive millijoule impact sensor using room temperature cured PDMS based triboelectric nanogenerator”, <i>Microelectronic Engineering</i> , 251, 2022,111664	K.V. Vijoy, Honey John, K.J. Saji	2.662
9	“Isolation of high crystalline nanocellulose from Mimosa pudica plant fibres with potential in packaging applications”, <i>Packaging Technology and Science</i> , 35, 2022	Tresa Sunitha George, Sainul Abidh Muhammadaly, Bipinbal Parambath Kanoth, Texin Joseph, Midhun Dominic Chemmarickal Dominic, Neena George, Venugopal Balachandrakurupp, Honey John	2.545
10	“Impact of structure, doping and defect-engineering in 2D materials on CO2 capture and conversion”, <i>Reaction Chemistry & Engineering</i> , 6, 2021, 1701-1738	E. J. Jelmy, Nishanth Thomas, Dhanu Treasa Mathew, Jesna Louis, Nisha T. Padmanabhan, Vignesh Kumaravel, Honey John, and Suresh C. Pillai	5.2
11	“Enhanced triboelectric performance of graphene oxide-conducting polymer hybrid modified polydimethylsiloxane composites”, <i>RSC Materials Advances</i> , 3, 2022,6897-6907	E J Jelmy, Divya Jose, K V Vijoy, K J Saji and Honey John	

12	“Electrode materials for stretchable triboelectric nanogenerator in wearable electronics”, <i>RSC Advances</i> , 12, 2022, 10545-10572	Irthasa Aazem, Dhanu Treasa Mathew, Sithara Radhakrishnan, KV Vijoy, Honey John, Daniel M Mulvihill and Suresh C Pillai	4.036
13	“Electrode material for high performance symmetric supercapacitors based on superparamagnetic Fe ₃ O ₄ nanoparticles modified with cetyltrimethylammonium bromide”, <i>Synthetic Metals</i> , 287, 2022, 117080	Meera Sathyan, P.J. Jandas, M. Venkatesan, Suresh C. Pillai and Honey John	4
14	“Effect of reaction variables on facet-controlled synthesis of anatase TiO ₂ photocatalysts”, <i>Bulletin of Materials Science</i> , 45, 2022	Nisha T Padmanabhan, Jayalatha Gopalakrishnan, Honey John	1.878
15	“Crystal lattice engineering in a screw-dislocated ZnO nanocone photocatalyst by carbon doping”, <i>RSC Material Advances</i> , 2022	Jesna Louis, Nisha T Padmanabhan, Madambi K Jayaraj and Honey John	
16	“Antibacterial self-cleaning binary and ternary hybrid photocatalysts of titanium dioxide with silver and graphene”, <i>Journal of Environmental Chemical Engineering</i> , 10, 2022, 107275	Nisha T Padmanabhan, Rinku M. Thomas, Honey John	7.968
17	“Lawsonite Derived Zn (II) and Fe (III) Metal-Organic Frameworks with pH-Dependent Emission for Controlled Drug Delivery”, <i>New Journal of Chemistry</i> , 2021, 45(32), 14589-14597.	P. Sirajunnisa, Liz Hannah George, N. Manoj, S. Prathapan and G. S. Sailaja	3.591
18	“Active Bayerite Underpinned Ag ₂ O/Ag: An Efficient Antibacterial	Irthasa Aazem, Prasanth Rathinam, Saju Pillai,	3.796

	Nanohybrid Combating Microbial Contamination”, <i>Metallomics</i> , 2021, 13(8), mfab049	Gopinathan Honey, Ajith Vengellur, Sarita G. Bhat, G. S. Sailaja	
19	“Degradation-Dependent Controlled Delivery of Doxorubicin by Glyoxal Cross-Linked Magnetic and Porous Chitosan Microspheres”, <i>ACS omega</i> , 2021, 6(33), 21472-21484.	N. S. Sumitha, Prabha Prakash, Balagopal N. Nair	4.132
20	“In vitro Biomineralization and Osteogenesis of <i>Cissus quadrangularis</i> Stem Extracts: An Osteogenic Regulator for Bone Tissue engineering”, <i>Journal of Biosciences</i> , 2021, 46(4), 1-14.	Praseetha R.Nair, S.Sreeja, and G.S.Sailaja	1.65
21	“Intrinsically radiopaque biomaterial assortments: A short review on the physical principles, X-ray imageability and state-of-the-art developments”. <i>Journal of Materials Chemistry B</i> , 2021	Sneha, K. R., & Sailaja, G. S	6.331
22	“Early biomineralizing chitosan–collagen hybrid scaffold with <i>Cissus quadrangularis</i> extract for regenerative bone tissue engineering”. <i>New Journal of Chemistry</i> , 2021, 45(42), 19733-19745.	Nair, P. R., Sreeja, S., & Sailaja, G. S	3.591
23	“Intrinsically radiopaque and antimicrobial cellulose based surgical sutures from mechanically powerful <i>Agave sisalana</i> plant leaf fibers”. <i>Biomaterials Science</i> , 9(23), 7944-7961.	Sneha, K. R., Steny, P. S., & Sailaja, G. S	7.59
24	“Early biomineralizing chitosan–collagen hybrid scaffold with <i>Cissus quadrangularis</i> extract for	Praseetha R.Nair, S.Sreeja, and G.S.Sailaja	3.591

	regenerative bone tissue engineering”. <i>New Journal of Chemistry</i> , 2021, 45(42), 19733-19745		
25	A dual functional superparamagnetic system with pH-dependent drug release and hyperthermia potential for chemotherapeutic applications. <i>Materials Chemistry and Physics</i> , 2021, 273, 125108.	Sumitha, N. S., Sreeja, S., Varghese, P. G., & Sailaja, G. S.	4.094
26	<i>Cissus quadrangularis</i> stem derived fiber: a natural osteoinductive substrate for regenerative bone tissue engineering. <i>Cellulose</i> , 2021, 29(1), 413-426	Praseetha R.Nair, S.Sreeja, and G.S.Sailaja	5.93
27	Injectable polyelectrolyte complex-nascent HAP biodegradable antibiotic delivery system for the treatment of osteomyelitis. <i>Biomedical Materials</i> , 2021, 17(1), 015011.	Liz Hannah George, Aswin Arakkal, Prathapan Sreedharan and G. S. Sailaja	4.103
28	Antibacterial natural rubber latex films with surface-anchored quaternary poly (4-vinylpyridine) polyelectrolyte. <i>Reactive and Functional Polymers</i> , 2022, 172, 105190.	Aswin Arackal, Prasanth Rathinam, P. Sirajunnisa, Honey Gopinathan, Ajith Vengellur, Sarita G Bhat, G. S. Sailaja	3.975
29	Lawsone-bentonite hybrid systems for pH-dependent sustained release of ciprofloxacin. <i>New Journal of Chemistry</i> , 2022, 46(20), 9560-9571.	Sirajunnisa, P., Sabna, C., Aswin, A., Prathapan, S., & Sailaja, G. S.	3.591
30	High dielectric constant, flexible and easy-processable calcium copper titanate/thermoplastic polyurethane (CCTO/TPU) composites through simple casting method, <i>Journal of Materials Science: Materials in</i>	Lakshmi Variar, M. N. Muralidharan, Sunil K. Narayanankutty, Seema Ansari,	2.478

	Electronics volume 32, 5908–5919(2021), https://doi.org/10.1007/s10854-021-05311-z		
31	Preparation of chemically functionalized and self compatibilized short coir fiber- High density polyethylene composites, J. Appl. Polym. Sci., 138 (36), 2021, September 20, p 1097-4628	S ArchanaBabuand Sunil K Narayanan Kutty	3.125
32	Electrochemical Studies On Corrosion Resistance Of Coatings Based On Polyaniline And Silica Gel,, Advanced Materials Research, Approved: 2021-04-20 publisher https://www.scientific.net	Soumya C.C.1,2, Sunil K. Narayanankutty, K.E. George	
33	Titanium Dioxide Nano – ceramic Filler in Solid Polymer Electrolytes: Strategy Towards Suppressed Dendrite Formation and Enhanced Electrochemical Performance for Safe Lithium Ion Batteries Journal of Alloys and Compounds, 882, 160709, 2021	Sasikumar M., R. Hari Krishna, M. Raja, Helen A. Therese, Neethu T. M. Balakrishnan, Prasanth Raghavan and P. Sivakumar	6.31
34	Experimental Stimulation Studies on Non- Woven Polypropylene- Nitrile Rubber Blend: Recycling of Medical Face Mask to an Engineering Product. ACS Omega,7, 4791–4803, 2022	George Varghese P.J., Deepthi Anna David, Anas Karuth, Jabeen Fatima M.J., P. M. Sabura Beegum, Jinu Jacob George, Bakhthiyor Rasulev, Prasanth Raghavan	4.52
35	Approach Towards the Functionalization of ISAF Carbon Black for Reinforcing Acrylonitrile	Asha Paul, Deepti Anna David, Neethu T.M. Balakrishnan, Akhila	

	Butadiene Rubber, Materials Today Proceedings,51,2608-2613,2022	Das, Sameeha A. P., Jabeen Fatima M J, Prasanth Raghavan*	1.46
36	Graphene: Chemistry and Applications for Lithium – Ion Batteries Electrochem; 3; 143-183, 2022	Roshny Joy, Neethu T.M. Balakrishnan, Akhila Das, Shimna Shafeek, Vijay Kumar Thakur, Karim Zaghbi, Jabeen Fatima Manamkeri. Jaffarali, Mogalahalli Venkatesh Venkatashamy Reddy, Prasanth Raghavan	2.398
37	Tannin as Renewable Raw Material for Adhesive Applications: A Review RSC Materials Advances ;3, 3365-3388, 2022	Pritam V. Dhawale, S. K. Vineeth, Ravindra V. Gadhawe, Jabeen Fatima M. J, Mrudul Vijay Supekar, Vijay Kumar Thakur, Prasanth Raghavan	4.03
38	Menstrual Cup: A replacement to sanitary pads for a plastic free periods,Materials Today: Proceedings, 2021	Anmiya Peter, Abhitha K	1.46
39	Synthesis of CuO nanomaterials with controllable morphologies by changing the pH, SSRN,The International Conference on Emerging Trends in Engineering (Conference Proceedings) Yukthi-21, Govt. Engineering College Kozhikode, 2021	Anmiya Peter, Abhitha K	1.1

40	A review on polymer based adsorbents for CO ₂ capture, IOP Conf. Series: Materials Science and Engineering, 2021	V. Indira, K. Abhitha	
41	A review on recent developments in Zeolite A synthesis for improved carbon dioxide capture: Implications for the water-energy nexus, Energy Nexus 7 (2022) 100095.	V. Indira, K. Abhitha	

a. Papers

Sl. No.	Title of the Paper	Author(s)	Impact Factor, if any
1	Reduced graphene oxide/epoxy nanocomposites with enhanced dielectric, mechanical, thermomechanical and thermal properties”, Journal of Elastomers and Plastics, <u>54(3)</u> , 2022; 407-428	Rahnamol A. M., Jayalatha Gopalakrishnan	2.21
2	Polyaniline nanorod adsorbed on reduced graphene oxide nanosheet for enhanced dielectric, viscoelastic and thermal properties of epoxy nanocomposites”, Polymer Engineering and Science, Wiley, 2021; 61:1755–1772.	Rahnamol A. M., Jayalatha Gopalakrishnan	2.57
3	Enhanced performance of cellulose nanofibre reinforced styrene butadiene rubber nanocomposites modified with epoxidised natural rubber”, Industrial Crops and Products, 183, 114935	Venugopal Balachandrakurup, Jayalatha Gopalakrishnan	6.44

4	Effect of compatibiliser on the mechanical, rheological and thermal properties of natural rubber/Cellulose nanofibre composites”, <i>Materials Today: Proceedings</i> , Elsevier, 47(15), 2021; 47: 5345-5350	Venugopal B., Neena George, Jayalatha Gopalakrishnan	
5	Copper Oxide/HKUST-1 Composite Catalyst as Thermal Decomposition Modifier on Ammonium Perchlorate. Propellants, Explosives, Pyrotechnics, 47(3), p.e202100208. 2022	Nair, S., Francis, T., Nair, C.R. and Mathew, S.,	2.134
6	2022. Comb like amphiphilic graft copolymers bearing PDMS and PEO side chains: synthesis and solvent assisted self-assembly behavior. <i>Journal of Polymer Research</i> , 29(7), pp.1-12. 2022	Sunitha, K., Mahesh, S., Suchithra, C., Unnikrishnan, G. and Reghunadhan Nair, C.P.,	3.061
7	“Uncarbonized crosslinked PVA-modified MMT/reduced graphene hybrid aerogel for efficient carbon dioxide adsorption at low pressure”, <i>Journal of Polymer Research</i> , 28, 2021	Sona Stanly, Honey John	3.061
9	“Triboelectric nanogenerators for marine energy harvesting and sensing applications” <i>Results in Engineering</i> , 2022	Sithara Radhakrishnan, Sherin Joseph, E J Jelmy, K J Saji, T Santhanakrishnan, Honey John	
8	“Triboelectric nanogenerator based on polyaniline nanorods incorporated PDMS composites through a facile synthetic route” <i>Journal of Materials Science: Materials in Electronics</i> , 33, 2022, 15408- 15421	Divya Jose, Jelmy E J, P.S. Subin, Rani Joseph, Honey John	2.779

10	“Self-powered ultra-sensitive millijoule impact sensor using room temperature cured PDMS based triboelectric nanogenerator”, <i>Microelectronic Engineering</i> , 251, 2022,111664	K.V. Vijoy, Honey John, K.J. Saji	2.662
11	“Isolation of high crystalline nanocellulose from Mimosa pudica plant fibres with potential in packaging applications”, <i>Packaging Technology and Science</i> , 35, 2022	Tresa Sunitha George, Sainul Abidh Muhammadaly, Bipinbal Parambath Kanoth, Texin Joseph, Midhun Dominic Chemmarickal Dominic, Neena George, Venugopal Balachandrakurupp, Honey John	2.545
12	“Impact of structure, doping and defect-engineering in 2D materials on CO ₂ capture and conversion”, <i>Reaction Chemistry & Engineering</i> , 6, 2021, 1701-1738	E. J. Jelmy, Nishanth Thomas, Dhanu Treasa Mathew, Jesna Louis, Nisha T. Padmanabhan, Vignesh Kumaravel, Honey John, and Suresh C. Pillai	5.2
13	“Enhanced triboelectric performance of graphene oxide-conducting polymer hybrid modified polydimethylsiloxane composites”, <i>RSC Materials Advances</i> , 3, 2022,6897-6907	E J Jelmy, Divya Jose, K V Vijoy, K J Saji and Honey John	
14	“Electrode materials for stretchable triboelectric nanogenerator in wearable electronics”, <i>RSC Advances</i> , 12, 2022, 10545-10572	Irthasa Aazem, Dhanu Treasa Mathew, Sithara Radhakrishnan, KV Vijoy, Honey John, Daniel M Mulvihill and Suresh C Pillai	4.036
15	“Electrode material for high performance symmetric supercapacitors based on superparamagnetic Fe ₃ O ₄ nanoparticles modified with	Meera Sathyan, P.J. Jandas, M. Venkatesan, Suresh C. Pillai and Honey John	4

	cetyltrimethylammonium bromide”, <i>Synthetic Metals</i> , 287, 2022, 117080		
16	“Effect of reaction variables on facet-controlled synthesis of anatase TiO ₂ photocatalysts”, <i>Bulletin of Materials Science</i> , 45, 2022	Nisha T Padmanabhan, Jayalatha Gopalakrishnan, Honey John	1.878
17	“Crystal lattice engineering in a screw-dislocated ZnO nanocone photocatalyst by carbon doping”, <i>RSC Material Advances</i> , 2022	Jesna Louis, Nisha T Padmanabhan, Madambi K Jayaraj and Honey John	
18	“Antibacterial self-cleaning binary and ternary hybrid photocatalysts of titanium dioxide with silver and graphene”, <i>Journal of Environmental Chemical Engineering</i> , 10, 2022, 107275	Nisha T Padmanabhan, Rinku M. Thomas, Honey John	7.968
19	“Lawsonite Derived Zn (II) and Fe (III) Metal-Organic Frameworks with pH-Dependent Emission for Controlled Drug Delivery”, <i>New Journal of Chemistry</i> , 2021, 45(32), 14589-14597.	P. Sirajunnisa, Liz Hannah George, N. Manoj, S. Prathapan and G. S. Sailaja	3.591
20	“Active Bayerite Underpinned Ag ₂ O/Ag: An Efficient Antibacterial Nanohybrid Combating Microbial Contamination”, <i>Metallomics</i> , 2021, 13(8), mfab049	Irthasa Aazem, Prasanth Rathinam, Saju Pillai, Gopinathan Honey, Ajith Vengellur, Sarita G. Bhat, G. S. Sailaja	3.796
21	“Degradation-Dependent Controlled Delivery of Doxorubicin by Glyoxal Cross-Linked Magnetic and Porous Chitosan Microspheres”, <i>ACS omega</i> , 2021, 6(33), 21472-21484.	N. S. Sumitha, Prabha Prakash, Balagopal N. Nair	4.132
22	“In vitro Biomineralization and Osteogenesis of <i>Cissus quadrangularis</i> Stem Extracts: An	Praseetha R.Nair, S.Sreeja, and G.S.Sailaja	1.65

	Osteogenic Regulator for Bone Tissue engineering”, <i>Journal of Biosciences</i> , 2021, 46(4), 1-14.		
23	“Intrinsically radiopaque biomaterial assortments: A short review on the physical principles, X-ray imageability and state-of-the-art developments”. <i>Journal of Materials Chemistry B</i> , 2021	Sneha, K. R., & Sailaja, G. S	6.331
24	“Early biomineralizing chitosan–collagen hybrid scaffold with <i>Cissus quadrangularis</i> extract for regenerative bone tissue engineering”. <i>New Journal of Chemistry</i> , 2021, 45(42), 19733-19745.	Nair, P. R., Sreeja, S., & Sailaja, G. S	3.591
25	“Intrinsically radiopaque and antimicrobial cellulose based surgical sutures from mechanically powerful <i>Agave sisalana</i> plant leaf fibers”. <i>Biomaterials Science</i> , 9(23), 7944-7961.	Sneha, K. R., Steny, P. S., & Sailaja, G. S	7.59
26	“Early biomineralizing chitosan–collagen hybrid scaffold with <i>Cissus quadrangularis</i> extract for regenerative bone tissue engineering”. <i>New Journal of Chemistry</i> , 2021, 45(42), 19733-19745	Praseetha R.Nair, S.Sreeja, and G.S.Sailaja	3.591
27	A dual functional superparamagnetic system with pH-dependent drug release and hyperthermia potential for chemotherapeutic applications. <i>Materials Chemistry and Physics</i> , 2021, 273, 125108.	Sumitha, N. S., Sreeja, S., Varghese, P. G., & Sailaja, G. S.	4.094

28	Cissus quadrangularis stem derived fiber: a natural osteoinductive substrate for regenerative bone tissue engineering. <i>Cellulose</i> , 2021, 29(1), 413-426	Praseetha R.Nair, S.Sreeja, and G.S.Sailaja	5.93
29	Injectable polyelectrolyte complex-nascent HAP biodegradable antibiotic delivery system for the treatment of osteomyelitis. <i>Biomedical Materials</i> , 2021, 17(1), 015011.	Liz Hannah George, Aswin Arakkal, Prathapan Sreedharan and G. S. Sailaja	4.103
30	Antibacterial natural rubber latex films with surface-anchored quaternary poly (4-vinylpyridine) polyelectrolyte. <i>Reactive and Functional Polymers</i> , 2022, 172, 105190.	Aswin Arackal, Prasanth Rathinam, P. Sirajunnisa, Honey Gopinathan, Ajith Vengellur, Sarita G Bhat, G. S. Sailaja	3.975
31	Lawsone-bentonite hybrid systems for pH-dependent sustained release of ciprofloxacin. <i>New Journal of Chemistry</i> , 2022, 46(20), 9560-9571.	Sirajunnisa, P., Sabna, C., Aswin, A., Prathapan, S., & Sailaja, G. S.	3.591
32	High dielectric constant, flexible and easy-processable calcium copper titanate/thermoplastic polyurethane (CCTO/TPU) composites through simple casting method, <i>Journal of Materials Science: Materials in Electronics</i> volume 32, 5908–5919(2021), https://doi.org/10.1007/s10854-021-05311-z	Lakshmi Variar, M. N. Muralidharan, Sunil K. Narayanankutty, Seema Ansari,	2.478
33	Preparation of chemically functionalized and self compatibilized short coir fiber- High density polyethylene composites, <i>J. Appl.</i>	S ArchanaBabuand Sunil K Narayanan Kutty	3.125

	Polym. Sci., 138 (36), 2021, September 20, p 1097-4628		
34	Electrochemical Studies On Corrosion Resistance Of Coatings Based On Polyaniline And Silica Gel., Advanced Materials Research, Approved: 2021-04-20 publisher https://www.scientific.net	Soumya C.C.1,2, Sunil K. Narayanankutty, K.E. George	
35	Titanium Dioxide Nano – ceramic Filler in Solid Polymer Electrolytes: Strategy Towards Suppressed Dendrite Formation and Enhanced Electrochemical Performance for Safe Lithium Ion Batteries Journal of Alloys and Compounds, 882, 160709, 2021	Sasikumar M., R. Hari Krishna, M. Raja, Helen A. Therese, Neethu T. M. Balakrishnan, Prasanth Raghavan and P. Sivakumar	6.31
36	Experimental Stimulation Studies on Non- Woven Polypropylene- Nitrile Rubber Blend: Recycling of Medical Face Mask to an Engineering Product. ACS Omega,7, 4791–4803, 2022	George Varghese P.J., Deepthi Anna David, Anas Karuth, Jabeen Fatima M.J., P. M. Sabura Beegum, Jinu Jacob George, Bakhthiyor Rasulev, Prasanth Raghavan	4.52
37	Approach Towards the Functionalization of ISAF Carbon Black for Reinforcing Acrylonitrile Butadiene Rubber, Materials Today Proceedings,51,2608-2613,2022	Asha Paul, Deepti Anna David, Neethu T.M. Balakrishnan, Akhila Das, Sameeha A. P., Jabeen Fatima M J, Prasanth Raghavan *	1.46
38	Graphene: Chemistry and Applications for Lithium – Ion Batteries Electrochem; 3; 143-183, 2022	Roshny Joy, Neethu T.M. Balakrishnan, Akhila Das, Shimna Shafeek, Vijay Kumar Thakur, Karim Zaghib, Jabeen Fatima Manamkeri. Jaffarali, Mogalahalli Venkatesh Venkatashamy Reddy, Prasanth Raghavan	2.398

39	Tannin as Renewable Raw Material for Adhesive Applications: A Review RSC Materials Advances ;3, 3365-3388, 2022	Pritam V. Dhawale, S. K. Vineeth, Ravindra V. Gadhve, Jabeen Fatima M. J, Mrudul Vijay Supekar, Vijay Kumar Thakur, Prasanth Raghavan	4.03
40	Menstrual Cup: A replacement to sanitary pads for a plastic free periods, Materials Today: Proceedings, 2021	Anmiya Peter, Abhitha K	1.46
41	Synthesis of CuO nanomaterials with controllable morphologies by changing the pH, SSRN, The International Conference on Emerging Trends in Engineering (Conference Proceedings) Yukthi-21, Govt. Engineering College Kozhikode, 2021	Anmiya Peter, Abhitha K	1.1
42	A review on polymer based adsorbents for CO2 capture, IOP Conf. Series: Materials Science and Engineering, 2021	V. Indira, K. Abhitha	
43	A review on recent developments in Zeolite A synthesis for improved carbon dioxide capture: Implications for the water-energy nexus, Energy Nexus 7 (2022) 100095.	V. Indira, K. Abhitha	
44	Nanocellulose: A fundamental Material Science and Technology Applications	Aiswarya Poulose, Jyothishkumar Parameshwaranpillai, Jinu Jacob George, Jineesh Ayippadath Gopi, Senthilkumar rishnasamy, Midhun Dominic C. D., Nishar Hameed, Nisa V. Salim,	4.927

		Sabarish Radpoor and Natalia Sienkiewicz	
45	A study on the influence of reduced grapheme oxide on the mechanical dynamic mechanical and tribological properties of silicone rubber nanocomposites.	P S Sarath, Grace Moni, Jinu Jacob George, Jozef T Haponiuk, Sabu Thomas and Soney C George.	2.591

b. Books

Sl.No	.	Title of Book
1	CPR Nair	Carbonaceous adsorbents for the removal of water pollutants, Nova Science Publishers, USA 2022 (Book Chapter)
2	CPR Nair	Title, A Compendium on Interview Questions in Chemical Sciences , by V. Unnikrishnan & CPR Nair , Publisher: Sahity Charitable Trust, Trivandrum, 2022, Pages: 280, ISBN: 978-93-92053-02-3
3	CPR Nair	Materials for energy efficient systems and environmental remediation, Elsevier Publishers, Netherlands, Accepted, 2022 (Book Chapter)
4	CPR Nair	.K Sunitha, CP Reghunadhan Nair, Handbook of Thermoset Plastics, 931-952 (2022)
5	CPR Nair	M Satheesh Chandran, Niranjana Sreelal, CP Reghunadhan Nair, Maleimide based Alder-ene thermosets: recent advances Handbook of Thermoset Plastics, 619-
6		Bibin John, CP Reghunadhan Nair, Thermosetting polymer-based syntactic foams: an overview, Handbook of Thermoset Plastics, 801-832 (2022)
7	Dr. Jinu Jacob George	Chapter Title "Thermally Conducting Graphene Elastomer Nanocomposites: Preparation, Properties and Applications" in the Book entitled "Graphene-Rubber Nanocomposites Fundamentals to Applications" Publisher: CRC Press, USA

8	Dr. Sari P. S.	Plasma modification of Polyolefin- Synthesis, Characterization and Applications, Springer International Publishing
9	Dr. Sari P. S.	(Book chapter) Recycling of Polyurethanes." In Polyurethane Chemistry: Renewable Polyols and Isocyanates, pp. 413-427. American Chemical Society, 2021.
10	Dr. Sari P. S.	(Book chapter) Micro-and Nanofibers-Based Flexible Energy Devices, In Smart and Flexible Energy Devices (pp. 81-98). CRC Press.2022
11	Dr. Prasanth Raghavan	(book) Electrospinning for advanced energy storage application,ISBN:9789811588433 Springer Nature International
12	Dr. Prasanth Raghavan	(book) Ceramic and Specialty Electrolytes for Energy Storage Devices, Publisher: CRC Press, USA ISBN:978-0367701444
13	V.Indira, Peter Anmiya, K.R.Resmi, K.	(Book chapter) Biodegradable polymer membranes for water purification, in the book entitled "Water Purification Processes, Applications and Health Effects", Nova Science Publishers, New York, 2022 ISBN: 978-1-68507- 633-7(eBook).

2. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Jayalatha Gopalakrishnan	International Online Conference on Advanced Nano Materials (ICAN 2021), organized by Amal Jyothi College of Engineering, Kanjirappally, Kottayam, Dec 14-16, 2021	Invited Speaker & Chaired a session
Jayalatha Gopalakrishnan	NANOicon 2022, Jan 11-15, IUCND, CUSAT	Chaired a session

Jayalatha Gopalakrishnan	International Conference on Sustainable Technology and Innovation for Industry 4.0, Virtual Centre for Advanced Research in Engineering Science and Technology, CUSAT, April 21& 22, 2022	Co-chaired a session & Organising Committee Member
Honey John	<i>NANOicon 2022, Jan 11-15, IUCND, CUSAT</i>	Conference chair and coordinator
Honey John	<i>Current Trends in Polymer Science-CTPS 2022, 6 - 7 May 2022, Department of Polymer Science and Rubber Technology, CUSAT</i>	Conference Chair and organizing committee member
Honey John	<i>SIET Kerala - Tech Talent 2022, 10 - 12 March 2022, Inter University Centre for Nanomaterials and Devices, CUSAT</i>	Organizing committee member
Jinu Jacob george	<i>NANOicon 2022, Jan 11-15, IUCND, CUSAT</i>	Session Chair
Jinu Jacob george	<i>Current Trends in Polymer Science-CTPS 2022, 6 - 7 May 2022, Department of Polymer Science and Rubber Technology, CUSAT</i>	Coordinator
Sailaja G S	<i>NANOicon 2022, Jan 11-15, IUCND, CUSAT</i>	Conference Chair and organizing committee member
Sailaja G S	<i>Current Trends in Polymer Science-CTPS 2022, 6 - 7 May 2022, Department of Polymer Science and Rubber Technology, CUSAT</i>	Organizing committee member
Christy Ann Biji	RYSO 2021, Nanoicon 2022, CTPS 2022	

Sithara Radhakrishnan	RYSO 2021, Nanoicon 2022, CTPS 2022	
Mathew Sunil	ICPN-2021, NANOicon2022,, RYSO 2021, CTPS 2022	
Alvina Augusthy	RYSO 2021, Nanoicon 2022	
Neethu T. M. Balakrishnan	International Online Conference on Nano Materials (ICN 2022), ,	Mahatma Gandhi University (MG university)
Neethu T. M. Balakrishnan	International Conference on Functional Materials and Nanotechnology (ICFMN-2K22),	Department of Physics, Nehru Institute of Technology, Coimbatore in collaboration with Indian Association for Crystal Growth
Aparna Jayan	Nanoicon 2022, Elsevier Webinar 2021	
Bijina V	RYSO 2021, Nanoicon 2022, CTPS 2022	
Liz Hannah George	Nanoicon 2022, Elsevier Webinar 2021	

Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Honey John	Results in Engineering, Elsevier Publishers	Editor
Sailaja G. S.	Society of Biomaterials and Artificial Organs, India	Honorary Associate member

Prasanth Raghavan	Journal of Materials Research (JMR)	Editor
Prof. Thomas Kurian	Fatima Matha National College, Kollam	Member - Board of Studies in Polymer Chemistry

Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Best Mentor Award	Dr. S. Radhakrishnan Bharat Shiksha Award 2021	Ministry of Education

Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
1	Advanced Research in Tactical Oceanography, Modern Sensors, Signal Processing and Telemetry	DRDO	Rs. 1,83,95,308	Honey John
2	Modified phenolic resins	KSBC	Rs. 7,52,640	Honey John
3	Adhesive development (Rubber to metal bonding applications)	KSCSTE-THEJO Engineering-CUSAT PAIR Programme	2 years Rs. 5,00,000 + Salary for the PDF	Honey John
4	Development of Visible light responsive Micro reactor systems for water purification	DST-SERB, Govt. of India	Rs. 34,06,040	Honey John

Research Programmes and Activities: Nil**Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department**

Sl. No.	Title	Duration	Coordinator	Funding Agency
1	Current Trends in Polymer Science (CTPS '22) National Conference (May 6-7)	3 days	Dr. Jinu Jacob George	

Consultancy Work

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1	M/s Mane Kancor Ingredients Private Limited	Honey John	
2	Western Malabar Plywood Manufacturer Cluster Services, Pvt. Ltd. Idukki, Ernakulam	Honey John	
3	Carborundum Universal, Kakkanad, Cochin	Sunil K. Narayanankutty	



Department of Ship Technology

BRIEF HISTORY OF THE DEPARTMENT:

The Department of Ship Technology is one of the pioneers in the field of Naval Architecture education in this country. The Department was established with an aim to create a new and dynamic generation of Naval Architects to meet the requirements of Indian Shipbuilding Industry, Ship Classification Societies, R&D Organisations, Indian Navy, and related institutions. With this in view, a B.Tech course in Naval Architecture and Shipbuilding was started in 1975. This department maintains active collaboration and interaction with Indian Institutes of Technology (IITs), foreign universities, shipyards and other industries and research centres like IIT Madras, IIT Kharagpur, Saint Petersburg Marine Technical University, Russia, Memorial University of Newfoundland, Cochin Shipyard Limited, Garden Reach Shipbuilders & Engineers (GRSE) Limited, ClassNK, National Physical and Oceanographic Laboratory (NPOL) etc. These institutions have been generous in extending their facilities and expertise to impart training to our students. The fruitful collaboration of this department with Rostock University, Germany dates back to 1978 and remains an important milestone in the growth of this department. The B. Tech. course was accredited by the Royal Institution of Naval Architects, London, for five years from 1994. The Ministry of Surface Transport, Govt. of India approved this course for the M.O.T. Certificate Examination, thus enabling our graduates to venture into the field of Marine Engineering also. The Indian Navy has recognized this department as a centre for the higher education of their officers. The curriculum was drawn up and updated in consultation with experts from various walks of the field. This has brought the course curriculum in conformity with international standards. The department has a highly qualified and dedicated faculty, an excellent library, computer centre, laboratories and workshops. The quality of education imparted and the resulting professional competence of the graduates enabled the department to achieve a unique record of 100% placement of its graduates in India and abroad.

The intake of students to the B.Tech Naval Architecture and Ship Building programme is based on the Common Admission Test (CAT), is limited to 43 (of which 15 seats are reserved for cadets from the Indian Navy). An M. Tech. degree programme in Computer Aided Structural Analysis and Design (CASAD), having a very promising employment potential, was started in 1995 with an intake of 10 students (present intake - 18 students). This department also offers Ph.D. programmes in Naval Architecture, Ocean Engineering, and other related fields.

Programmes of Study/Research

- | | |
|---------------------------|---|
| 1. Bachelor of Technology | Naval Architecture and Ship Building |
| 2. Master of Technology | Computer Aided Structural Analysis and Design |
| 3. Doctor of Philosophy | Hydrodynamics, Structural Analysis, Strength of |

Materials, Ship design, Offshore Structures, Ship Motions, Ship and Submarine Controllability, Resistance and Propulsion, Stability, Ship Production, CAD/ CAM, Ship Recycling, Robust motor control, Power quality in ship electrical system, Computational Fluid Dynamics

Faculty Members

Sl. No	Name	Designation	Qualification	Specialisation
1	Dr. Satheesh Babu. P. K	Head of the Department (since 17-01-2022), Associate Professor	B. Tech. Naval Architecture and Ship Building (CUSAT), Post Graduate Diploma (IIT Delhi), Post Graduate Diploma in Management (IGNOU), M. Tech. Corrosion Science and Engineering (IIT Bombay), Ph. D Ship Technology (CUSAT)	Structural Engineering, Ocean Engineering. Naval Architecture, Material Science
2	Dr. Mathiazhagan A.	Head of the Department (till 16-01-2022), Professor	M.Sc. Applied Science (Anna University, Chennai), M.E. Metallurgy, (REC, Trichy), Ph.D (CUSAT)	Material Science and Corrosion Engineering
3	Dr. Mariamma Chacko	Professor (superannuated on 30-04-2022)	B. Tech. (Elect. Engg.) M. Tech. (Electronics) Ph.D (CUSAT)	Digital Electronics Embedded System software Validation and Optimization
4	Dr. Sivaprasad K.	Professor	B. Tech. Naval Architecture (CUSAT) M.Sc. Ship Production Technology (Strathclyde University, Glasgow), Ph.D. (CUSAT)	Ship Building Technology

5	Dr. Sudheer C.B.	Adjunct Faculty	B. Tech. Naval Architecture (CUSAT), Dr. Ing. (Rostock University, Germany)	Production Engg., Ship Production, CAD/CAM
6	Dr. D. D. Ebenezer	Adjunct Faculty	B. Tech. Naval Architecture (IIT Madras), M.S. Ocean Engineering and Ph.D. Ocean Engineering (University of Rhode Island)	Vibration, Hydrodynamics, Acoustics
7	Dr. Rajesh P Nair	Assistant Professor	B. Tech. Mechanical Engineering (Kannur University), M. Tech CASAD (CUSAT), Ph. D Applied Mechanics (IIT Madras)	Applied Mechanics
8	Dr. Manoj T Issac	Assistant Professor	B. Tech. Civil Engineering (University of Kerala), M. Tech Ocean Engineering (IIT Madras), Ph.D. Ocean and Naval Architecture Engineering (Memorial University of Newfoundland, Canada)	Hydrodynamics of unmanned underwater vehicles
9	Dr. Favas T. K.	Assistant Professor	B. Tech. Mechanical Engineering (University of Calicut), M. Tech. Mechanical Engineering Industrial Refrigeration and Cryogenic Engineering (University of Kerala), Ph. D. Mechanical Engineering (NIT Calicut)	Computational Fluid Dynamics, Numerical Heat Transfer

10	Dr. Beena Mary John	Assistant Professor (Contract)	B. Tech. Civil Engineering (CUSAT), M. Tech. Computer Aided Structural Analysis and Design (CUSAT), Ph. D. Applied Mechanics and Hydraulics (NITK Surathkal)	Structural Engineering, Coastal Engineering
11	Mr. Aravind K. R.	Assistant Professor	B. Tech. Naval Architecture and Offshore Engineering (AMET, Chennai), M. Tech Marine Engineering (CUSAT)	Inland Water Transport, Ship Design, Marine Engineering
12	Mr. Anoop Chitrasenan	Assistant Professor	B. Tech. Naval Architecture and Ship Building (CUSAT), MS Naval Architecture and Marine Engineering (University of New Orleans, USA)	Marine Hydrodynamics, Controllability of Ships
13	Mr. Akram P. A.	Assistant Professor	B. Tech. Civil Engineering (CUSAT), M. Tech Civil Engineering -Offshore Structures (NIT Calicut)	Hydrodynamics, Finite Element Analysis
14	Mr. Mohammed Ashiqu	Assistant Professor	B. Tech. Ocean Engineering and M. Tech. Ocean Engineering (IIT Kharagpur)	Hydrodynamics, Ship Design

Research Scholars

Sl. No:	Name	Funding agency	Guide	Area of Work
1	GireeshMukundan		Dr. K. Sivaprasad	Development of an index for a practically viable Green ship design
2	Prasanth K.		Dr. K. Sivaprasad	Analysis for Fluid Structure Interaction Effects on Ship Hull

3	Elias George K.		Dr. A. Mathiazhagan	Marine Corrosion Protection using Nano Materials
4	Lekshmi Babu		Dr. Mariamma Chacko	Improved converter for renewable energy system
5	ShereenaGaffoor		Dr. Mariamma Chacko	Hybrid Optimization Technique for Electrical Power Transmission Systems
6	Krishna Prasad S.		Dr. A. Mathiazhagan	Study on welding of duplex stainless steel for LNG carrier application
7	Hareesh Y.S.		Dr. Senthil Prakash M. N.	Development of a Marine Propeller by using Computational Fluid Dynamics Analysis
8	Kannan P. K.		Dr. Rajesh P Nair	Structural and hydrodynamic performance analysis of biometric underwater vehicle
9	Robin Syriac		Dr. Senthil Prakash M. N.	Reuse of Decommissioned offshore fixed platform for marine renewable energy
10	Radhakrishnan P. V.	University JRF	Dr. Senthil Prakash M. N.	Numerical and Experimental investigation on the mechanics of cardiovascular tissue-device interface
11	Renjith R.		Dr. Rajesh P Nair	Analysis of Mechanical and Thermal Characteristics of Bio-composite as a Substitute for Traditional Shipbuilding Materials
12	Midhu Paulson	University JRF	Dr. Mariamma Chacko	Enhancement of Power Harvesting from Renewable Energy Sources
13	Remna Radhakrishnan	University JRF	Dr. Mariamma Chacko	Power quality in ships electrical systems

14	Priya Rani Jose	University JRF	Dr. Mariamma Chacko	Controller for electric motors
15	Geethu R Babu		Dr. Rajesh P Nair	Numerical Analysis of offshore Blast Wall subjected to explosion
16	Nimmy Thomas	University JRF	Dr. Senthil Prakash M. N.	Design of wave energy converter
17	Meera G.	University JRF	Dr. Senthil Prakash M. N.	Design of hybrid electric ship propulsion by renewable energies available at sea
18	Mahesh C.		Dr. Rajesh P Nair	Ballistic impact on ship hull structures made of sandwich compositior
19	Mohanan P. R.		Dr. Mariamma Chacko	Power Aware Computing
20	Venugopal R.		Dr. C. B. Sudheer	Deflection Analysis of a cargo ship and its effects on various operational factors
21	Goutham K. V.		Dr. C. B. Sudheer	Investigation on the capability of inland waterways in the context of cargo transport and cruise tourism in inland waterways stretching across the west coast of Kerala
22	Aravind K. R.		Dr. C. B. Sudheer	Technical feasibility and socio economic factors for cargo transport in the inland waterways of Kerala
23	Anishkumar M. N.		Dr. K. Sivaprasad	Resistance study and optimization of catamaran hulls for inland water navigation solutions considering shallow water and wash effects

24	Tony K. P.		Dr. Manoj T Issac	Manoeuvring and control dynamics of biomimetic autonomous underwater vehicles
25	Deepak Sebastian		Dr. K. Sivaprasad	Development of strategies for life cycle control of marine vessels and structures
26	Bijoydas U. R.		Dr. C. B. Sudheer	Investigation and Development of Hybrid Genetic Algorithm for multi objective optimization of assembly scheduling in ship building industry
27	Sreerag V.		Dr. Manoj T Issac	Dynamic performance of unmanned marine vehicle
28	Rahul Krishna H.	University JRF	Dr. Manoj T Issac	Numerical investigation on hydrodynamic performance of streamlined autonomous underwater vehicle
29	Akram P. A.		Dr. A. Mathiazhagan	CFD Based Surrogate Model Development for the Analysis of Underwater Radiated Noise due to Shipboard Machineries
30	Vysakh K. B.	University JRF	Dr. A. Mathiazhagan	Investigations on Fracture Behaviour in Welded Marine Graded Steel
31	James K. J.		Dr. K. Sivaprasad	Development of River Information System for Inland Water Transport
32	NajdanWaris C. P.		Dr. K. Sivaprasad	Development of Digital Technology for Ship Life Cycle

33	Bini Rani Jose		Dr. Mariamma Chacko	A study on Implementation of Advanced Power Electronic Switches to Hybrid Electrical Power System Onboard Ships
34	Shinoy K. S.		Dr. Mariamma Chacko	Design, Analysis and Control of Multi Phase Electrical Machines
35	Shefeena C. A.	University JRF	Dr. C. B. Sudheer	Investigation on Economical and Technical Aspects of Subsea Pipeline System to Effective and Efficient Utilisation
36	Teena Sarah John	University JRF	Dr. C. B. Sudheer	Development of Inland Waterway Network System for Intermodal Transportation Catering to the Hinterlands of Kerala
37	Angela Susan Tonio	University JRF	Dr Manoj T Issac	Development of Dynamic Simulation Model of an AUV Using Identification Techniques
38	Renju Raj		Dr. Favas T K	Numerical Study of Heat and Fluid Flow for Fire Safety Applications
39	Mohammed Faizal H		Dr. Favas T K	Numerical Investigation of Thermal Performance Characteristics of Conjugate Heat Transfer Applications
40	Chitra N		Dr. A. Mathiazhagan	Investigations on Mechanical Behaviour of Nano-phased Sandwich Laminate
41	Murali Mohan		Dr. K. Sivaprasad	Effective and Improved Requirement Engineering

Administrative Personnel

Sl. No.	Designation	No. of posts
1	Section Officer	1
2	Assistants	3
3	Typists	1
4	Peon	1
5	Asst. Librarian	1
6	Store officer	1
7	Sweeper	1

Technical Personnel

Sl. No.	Designation	No. of posts
1	Technical Officer Gr. I	1
2	Technical Assistant Gr. III	1
3	Technician Gr. II	5
4	Lab. Assistant	1

Student Enrollment

Sl. No.	Programme of Study	Men	Women	Total
1	B. Tech (Naval Architecture and Ship Building) including Naval cadets	29	4	33
2	M. Tech (Computer Aided Structural Analysis and Design)	3	13	16
3	PhD	1	1	2

Research Facilities

a. Laboratories and b. Major Equipments

Notch Apparatus, Pipe Friction Apparatus, Reynolds Apparatus, Orifice Apparatus, Venturi Meter and Orifice Meter, Centrifugal Pump Test Rig, Extensometer, Rebound Hardness Testing Apparatus, Impact Testing Machine, Universal Testing Machine, Rockwell Hardness Tester, Brinell Hardness Testing Machine, Electrochemical Workstation, Spring Testing machine, Micro lab Box, ARC, GAS, TIG, MIG and Submerged arc welding machines, Lathe, Shaping and Milling machine and all major workshop equipments, Computer Lab with work stations and ship design softwares, Ship Model making facility.

c. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
Books: 10194 Journals: 3	Books – 63 Journals – 0

Distinguished visitors:

Sl. No.	Name	Affiliation	Topic
1	Shri. Madhu S. Nair	Chairman and Managing Director, Cochin Shipyard Limited	Chief Guest - Inaugural Session of International Conference on Advances in Naval and Ocean Engineering (iCANOE'21)
2	Dr. M. Abdul Raheem	Corporate Officer and Regional Manager, Middle East and South Asia, ClassNK.	Distribution of ClassNK Awards for the Best Project
3	Mr. Sumathran Sampath	General Manager, ClassNK, Mumbai	Felicitations - Inaugural Session of International Conference on Advances in Naval and Ocean Engineering (iCANOE'21)

4	Mr. Roni Franics	Scientist -F, Division Head (OE), Naval Physical and Oceanographic Laboratory (NPOL), Defence Research and Development Organisation (DRDO), Kochi	Chair - Technical Session on Computational Fluid Dynamics in International Conference on Advances in Naval and Ocean Engineering (iCANOE'21)
5	Mr. Jathesh Chandra	AGM (Design), Cochin Shipyard Limited	Keynote Address on Emerging Trends Ship Design and Production in International Conference on Advances in Naval and Ocean Engineering (iCANOE'21)
6	Dr. Reji John	Scientist -G, Associate Director (Materials), NPOL, DRDO, Kochi`	Chair - Technical Session on Materials and Manufacturing Process in International Conference on Advances in Naval and Ocean Engineering (iCANOE'21
7	Dr. Gopu R Potty	University of Rhode Island	Erudite Lecture on Research Opportunities in Naval and Ocean Engineering
8	Cmdr P R Hari	Indian Navy (Retd), Director Personnel, Garden Reach Shipbuilders and Engineers (GRSE) Limited.	Campus Recruitment
9	Mr. Renganathan. S.	DH (PAC), Indian Register of Shipping	Campus Recruitment
10`	Mr. Sudheesh Ramadaran	Director, Naval Architecture and Marine Technology, Cybermarine Knowledge Systems Pvt. Ltd.	Campus Recruitment

11	Mr. Akhil Augustine	Assistant Manager - Business Development, Capital Ship Solutions, Cochin	Campus Recruitment
12	Mr. Abin Purushothaman	Engineering Manager, Capital Ship Solutions, Cochin	Campus Recruitment
13	Mr. Shihabudeen K M	Commercial Director, Albwardy Daman, UAE	Campus Recruitment
14	Mr. Arun Sankar	Deputy Director Technical, Global Maritime Consultants Group (GMCG), Kochi	Campus Recruitment
15	Mr. Anup Radhakrishnan	Naval Architect, GMC, Kochi	Campus Recruitment
16	Mr. RakulRemanan	Engineering Director, Offshore Construction Specialists, Singapore	Campus Recruitment
17	Mr. Sohan Roy	Aries Marine	Orientation for first year B.Tech students

Ph.Ds Awarded

Sl. No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	Studies on Epoxy Nanocomposite Coatings for Corrosion Protection	Elias George	Dr. A. Mathiazhagan

Publications Papers

SI No	Title of Paper	Impact Factor, if any
1	Krishna Prasad, S. Mathiazhagan, A. , Krishnadas, P. S. (2021). Effect of Manual Flux Bounded TIG Welding on Austenitic stainless steel AISI 304 and its comparison with Automated Flux Bounded TIG Welding. <i>Indian Welding Journal</i> , 54 (3), 59-77.	

2	Renju, R. and Favas, T. K. (2021). A Review of the Computational Fluid Dynamics Investigations on Fire Safety in Ships, In: B. M. John, T. K. Favas and P. K. Satheesh Babu (Eds.), <i>Proceedings of the International Conference on Advances in Naval and Ocean Engineering</i> (pp. 43-46). Chess Educational Publishers.	
3	Faizal, H. M, and Favas, T. K. (2021). Computational Heat Transfer in Marine Applications - A Review, In: B. M. John, T. K. Favas and P. K. Satheesh Babu (Eds.), <i>Proceedings of the International Conference on Advances in Naval and Ocean Engineering</i> (pp. 47-50). Chess Educational Publishers.	
4	Favas, T. K., and Faizal, H. M. (2021).The Effect of Coolant Prandtl Number on Hotspots in Plate Type Fuel Element of a Nuclear Research Reactor, <i>International Conference on Aerospace and Mechanical Engineering (ICAME '21)</i>	
5	Anant Ajithkumar and Satheesh Babu, P. K. (2022). A review on applicability of hydrogen fuel cells in shipping for a sustainable future, <i>Sustainability, Agri, Food and Environmental Research</i> , (ISSN: 0719-3726), 10(X), 2022: http://dx.doi.org/10.7770/safer-V10N1-art2835 .	
6	Arya, V. P., Akshara Priya Vinod and Satheesh Babu, P. K. (2022). Carbon footprint levels and recommendations for sustainable shipping industry, <i>Sustainability, Agri, Food and Environmental Research</i> , (ISSN: 0719-3726), 11(X).	
7	Arunprasath, Satheesh Babu, P. K., Sunil Kumar and Mangesh (2021). Methodologies to be followed to minimize the loss of containers at sea, In <i>Proceedings of the Third International Conference on Shipbuilding and Offshore Engineering (ICSOE2021)</i> , ISBN: 978-93-85434-91-4, pp 81-90.	
8	Savin Viswanathan, Satheesh Babu, P. K., Christian Holden and Olav Egeland, A. (2021). Co-simulation methodology for offshore load handling, In: B. M. John, T. K. Favas and P. K. Satheesh Babu (Eds.), <i>Proceedings of the International Conference on Advances in Naval and Ocean Engineering</i> (pp. 8-14). Chess Educational Publishers.	

9	Binoy Sebastian, Beena Mary John, and Manoj T Issac , (2021). Numerical Study on the Effect of Embedment Length of Monopiles Supporting Offshore Wind Turbines in Indian Marine Soil, In: B. M. John, T. K. Favas and P. K. Satheesh Babu (Eds.), <i>Proceedings of the International Conference on Advances in Naval and Ocean Engineering</i> (pp. 155-160). Chess Educational Publishers.	
10	Gaurav Tehlan, and Satheesh Babu P. K , (2022). The concept design of hybrid wind-solar ferry for inland waters of Kerala, <i>International Conference on Sustainable Technology and Innovation for Industry 4.0 (icstii 2022)</i> , April 21-22, 2022, CUSAT, Kochi, Kerala, India.	
11	Geethu R Babu, and Rajesh P Nair (2022). Numerical analysis on offshore blast walls subjected to explosion. <i>GIS Science Journal</i> , 9(1). ISSN No: 1869-9391.	
12	Mahesh C, and Rajesh P Nair (2022). Impact Analysis of Sandwich Composite Plates made of Honeycomb and Foam cores. Special issue on Recent Research on Management, <i>Applied Sciences and Technology</i> , 26 (3).	
13	ChhunBanann, Rajesh P. Nair , and D. D. Ebenezer , (2022). Numerical Simulation of Strain Rate Effect of Al Circular Tube Under Dynamic Loading Conditions, <i>Recent Advances in Applied Mechanics</i> , Lecture Notes in Mechanical Engineering.	
14	Ameena Nazeer, Rajesh P. Nair , and D. D. Ebenezer , (2022). Numerical Analysis of a Vibration Isolator Under Shock Load in <i>Recent Advances in Applied Mechanics</i> , Lecture Notes in Mechanical Engineering, pp 597-612.	
15	V. J. Farhana, Beena Mary John , and Rajesh P Nair , (2022). Finite Element Analysis of OGrid Lateral Bracing System. <i>Recent Advances in Applied Mechanics</i> , Lecture Notes in Mechanical Engineering, p.613-623.	
16	Shefeena C. A., Manoj T. Issac , Shakkir, T, and Abhishek Kumar, (2021). Hydrodynamic study of the influence of bulbous bow shape for a displacement hull using CFD, In: B. M. John, T. K. Favas & P. K. Satheesh Babu (Eds.), <i>Proceedings of the International Conference on Advances in Naval and Ocean Engineering</i> (pp. 15-20). Chess Educational Publishers.	

17	Sruthy Raj, S, Rahul Krishna H, Manoj T. Issac , and D. D. Ebenezer ,(2021).Numerical Analysis of wall shear stress, pressure, drag and lift of the NACA 0020 airfoil used in DARPA SUBOFF, In: B. M. John, T. K. Favas & P. K. Sathesh Babu (Eds.), <i>Proceedings of the International Conference on Advances in Naval and Ocean Engineering</i> (pp. 31-37). Chess Educational Publishers.	
18	Krishna Prasad. S, Mathiazhagan, A , Nikhil S Nair, (2021). Effect of manual flux bounded and activated tungsten inert gas welding using single component fluxes on marine grade stainless steel, In: B. M. John, T. K. Favas & P. K. Sathesh Babu (Eds.), <i>Proceedings of the International Conference on Advances in Naval and Ocean Engineering</i> (pp. 117-124). Chess Educational Publishers.	
19	Jishnu Menon, Ramesh Kumar, A. V., Mathiazhagan, A. , &Reji John, (2021). Galvanic corrosion of Marine alloys with CFRP composites,In: B. M. John, T. K. Favas & P. K. Sathesh Babu (Eds.), <i>Proceedings of the International Conference on Advances in Naval and Ocean Engineering</i> (pp. 125-127). Chess Educational Publishers.	
20	Angela susanTonioRahul Krishna HManoj T Issac, (2022).Estimation of Force and Moment Coefficients for DARPA SUBOFF using USAF DATCOM Method, <i>OCEANS '22</i> , Chennai, Organized by IIT, Madras & NIOT Chennai, Feb 21-24.	
21	Neena, G., Amrutha, S. R., Rani, J., Jose, P. M., and Mathiazhagan, A. (2021). Nano-silica as reinforcing filler in NR latex: Role of processing method on filler morphology inside the rubber and properties of the nanocomposite, <i>eXPRESS Polymer Letters</i> , 15(11), 1101–1112,(2021)	
22	Vysakh, K. B., Mathiazhagan, A. , and Krishnaprasad P. S. (2021). A Review on Activated Tungsten Inert Gas Welding Technique, In <i>National Seminar on Welding Science and Technology -NSWEST-2021</i> , Organized by IIM, Chennai Chapter, 23-24 July.	

23	Krishnaprasad. S, Mathiazhagan. A , & HariKrishnan. R. (2021). Experimental validation and comparative study of activated tungsten inert gas welding on Marine grade aluminium alloy, In: B. M. John, T. K. Favas & P. K. Satheesh Babu (Eds.), <i>Proceedings of the International Conference on Advances in Naval and Ocean Engineering</i> (pp. 106-110). Chess Educational Publishers.	
24	Akram, P. A., Beena Mary John , Teresa Siby Madathil, Shija, C., Prakasan, A., Mathiazhagan, A. , Tide, P. S., and D. D. Ebenezer (2022). Numerical Model of a Multi Layer Shock and Vibration Isolator, <i>Oceans '22</i> , Research Park Organized by IIT, Madras & NIOT Chennai, Feb 21-24.	
25	NisanthSanthakumar Pai, Yashwanth R Kammath and K. Sivaprasad , (2021). Concept Design of Quarantine Hospital Ship, <i>International Conference on Smart & Green Technology for Shipping and Maritime Industries (Including Ballast Water Management) – SMATECH 2021</i> , October 21-22.	
26	Rajesh P Nair , (2022). Impact Analysis of Sandwich Composite Plates made off Honeycomb and Foam Cores, <i>2nd International Conference on Science, Technology and Innovation</i> , Organized by Indian Academicians and Researchers Association, February 06.	
27	Shefeena, C. A., and Sudheer, C. B. (2021) A Review on Microbially Induced Corrosion in Subsea Pipelines, <i>NIGIS CORCON 2021</i> , November 18-20.	
28	ShereenaGaffoor, and Mariamamma Chacko , (2022). A Multi-objective Hybrid Optimization for renewable energy integrated Electrical Power Transmission Expansion Planning, <i>International Journal of Electrical and Computer Engineering Systems</i> , 13 (2), pp. 87-98, ISSN: 1847-6996, DOI://doi.org/10.32985/ijeces.13.2	0.68
29	Baiju, M. V., Vipinkumar, V., Dhijudas, P. H., Sivaprasad, K. , and Leela Edwin. (2022). A study on the Influence of Bulbous Bow on the Resistance of Fishing Vessel Hull form Using CFD Analysis, <i>Fishery Technology</i> 59, pp. 132-139.	
30	Gaurav Tehlan. (2022). Recent Trends and Technologies in Corrosion Management of Ships, <i>SHIPSTECHNIC</i>	

31	Ebenezer, D. D. (2021). Analytical Models of Piezoelectric Components and Transducers. 2nd Symposium on Advances in Ferro and Piezoelectrics, SAFE'21. Organized by RIC-DRDO and IITM, Chennai. 17-18 Sep. 2021.	
32	Ebenezer, D. D. (2022). Review of recent research on underwater acoustic radiating transducers and arrays. Acoustical Society of India. Online Conference. 04 March 2022.	
33	Vinida, K., and Mariamma Chacko (2021). Implementation of speed control of sensorless brushless DC motor drive using H-infinity controller with optimized weight filters, <i>International Journal of Power Electronics and Drive System</i> , 12(3), 1379-1389. ISSN: 2088-8694, DOI: 10.11591/ijped.v12.i3	0.53

Books

Sl. No	Title of Book
1	Proceedings of the International Conference on Advances in Naval and Ocean Engineering (2021), Editors : Dr. Beena Mary John, Dr. Favas T. K, Dr. Sathesh Babu P. K , ISBN: 978-81-952577-5-1, Chess Educational Publishers, Chennai, India.
2	SHISPSTECHNIC 2022 - Editor : SridevJayan, Society of Naval Architecture Students (SNAS)

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar/ Conference/ Workshop	Role
Dr. K. Sivaprasad	12 days Leadership Management Training Programme conducted by AICTE, Dudley College, UK and British Council during 23-26 Nov 2021 at Rajagiri College of Social Sciences, Kochi, Kerala, 18-21 Jan 2022 (online) and 21-23 Mar 22 (online)	Participant

Dr. A. Mathiazhagan	Golden Jubilee International Conference on Sustainable Technology and Innovation for Industry 4.0 -2022 (ICSTII 2022) organized by Virtual Centre for Advanced Research in Engineering Science and Technology, CUSAT, April 2022	Chair & Reviewer
Dr. A. Mathiazhagan	Third International Conference on Shipbuilding and Offshore Engineering (ICSOE2021), Amet University, June 2021	Chair & Reviewer
Mr. Akram P. A.	OCEANS 2022 Chennai - Conference, February 21-24, 2022	Paper Author
Mr. Akram P. A.	International Conference on Sustainable Technology and Innovation for Industry 4.0 - ICSTII 2022 - CUSAT, April 21,-22, 2022	Session Co-chair
Mr. Akram. P. A.	International Conference on Advances in Naval and Ocean Engineering (iCANOE'21) organized by Department of Ship technology, CUSAT, November 19-20, 2021.	Co-chair
Dr. Favas T. K.	7 day National Level Faculty Development Program - "Prudent Teaching Dynamics" organized by IQAC, SAFI Institute of Advanced Study, Kerala, June 2021	Participant
Dr. Favas T. K.	MARIZINE'21 - A DIGITAL PASSAGE - progressive tools for Maritime Research and Development organized by KunjaliMarakkar School of Marine Engineering, CUSAT, July 2021	Participant
Dr. Favas T. K.	3-Day Faculty Development Programme on Technological Advancements in NAVAL, DEFENSE and SPACE Applications: An integrated Industry 5.0 Approach organized by N S Raju Institute of technology, Visakhapatnam, July 2021	Participant

Dr. Favas T. K.	ATAL Academy Online Elementary FDP on Computational Fluid Dynamics - A Potential Engineering Design Tool organized by Centurion University of Technology and Management, July 2021	Participant
Dr. Favas T. K.	National Webinar on National Education Policy 2020: Way Ahead organized by Rajkiya Engineering College, Mainpuri, U.P. , August 2021.	Participant
Dr. Favas T. K.	IEEE Mini Poco Workshop 2021 organized by IEEE Kochi Subsection and APJ Abdul Kalam technological University, Kerala, September 2021.	Participant
Dr. Favas T. K.	Student Induction Program, October-November 2021, CUSAT	Resource Person for Lecture on 'Flourish in the Campus'-
Dr. Favas T. K.	Science for Humanity International Webinar on Landslides in Kerala: Driving Factors and Mitigation Measures, November 2021	Convenor
Dr. Favas T. K.	IEEE Webinar on Inspiring Innovation at CUSAT with IEEE Research, October 2021	Participant
Dr. Favas T. K.	International Conference on Advances in Naval and Ocean Engineering (iCANOE'21) organized by Department of Ship technology, CUSAT, November 19-20, 2021	Joint Convenor, Reviewer, Co-chair
Dr. Favas T. K.	Golden Jubilee Celebratory Author Workshop on "Writing Quality Research Articles & Identifying relevant Journals to Read and Publish In' organized by Elsevier Researcher Academy on Campus, December 2021	Participant

Dr. Favas T. K.	Online Short term Course on Advanced Modeling and Innovations in Water Resources Engineering and Management (AMI:WREM 2022) organized by NIT Hamirpur, February-March 2022.	Participant
Dr. Favas T. K.	One-day Workshop on Bringing Research Focus organized by IEEE Kerala Section, April 2022	Participant
Dr. Favas T. K.	Golden Jubilee International Conference on Sustainable Technology and Innovation for Industry 4.0 -2022 (ICSTII 2022) organized by Virtual Centre for Advanced Research in Engineering Science and Technology, CUSAT, April 21-22, 2022	Co-chair, Editor- Book of Abstracts
Dr Satheesh Babu P K	FDP on “Applied Engineering in Environmental Protection: Relevance of Green Technology” on the topic “Protection of Marine Environment” organized by SNGCE during - 28-30 June 2021.	Invited Lecture
Dr Satheesh Babu P K	Symposium on “INDUSTRIAL HERITAGE AND SHIPBUILDING” organized by Ministry of Culture, Govt of India, 30 Sep 21	Expert Panel Member and delivered a talk on “Rich Ship building Heritage of India with special reference to Kerala
Dr Satheesh Babu P K	Technical Training for Supervisors of PS-I grade of Cochin Shipyard Ltd conducted at CSL on 17-18 Dec 21.	Coordinator and Resource person
Dr Satheesh Babu P K	DIMS Lite technical sessions organized as part of India Boat and Marine Show (IBMS) 2022 held on 26 Mar 2022.	Paper presenter

Dr Satheesh Babu P K	International Conference on Machine Intelligence in Research and Development (ICMIRD'22), 18-20 Apr 22.	Keynote Address
Dr Satheesh Babu P K	International Conference on Advances in Naval and Ocean Engineering (iCANOE'21), organized by Dept of ship Technology, November 19-20, 2021.	Convener and Editor of conference proceedings
Dr Satheesh Babu PK	12 days Leadership Management Training Programme conducted by AICTE, Dudley College, UK and British Council during 23-26 Nov 2021 at Rajagiri College of Social Sciences, Kochi, Kerala, 18-21 Jan 2022 (online) and 21-23 Mar 22 (online)	Participant
Dr Satheesh Babu PK	Induction programme for newly recruited teachers, organized by CUSAT during 09-15 Mar 22.	Participant
Dr Satheesh Babu PK	Golden Jubilee International Conference on Sustainable Technology and Innovation for Industry 4.0 -2022 (ICSTII 2022) organized by Virtual Centre for Advanced Research in Engineering Science and Technology, CUSAT, April 21-22, 2022	Reviewer
Dr. D. D. Ebenezer	International Webinar. Government Arts and Science College, Balussery, Kozhikode, Kerala. 17 July 2021.	Invited Talk.on 'Mathematics: We need you more than even'
Dr. D. D. Ebenezer	Acoustical Society of India. Online Conference. 21-23 March 2021.	Invited Talk on 'Shock and vibration isolation for shipboard systems'

Dr. Beena Mary John	Second International Conference on Structural Engineering and Construction Management (SECON'21), 12-15 May 2021 organized by Department of Civil Engineering, Federal Institute of Science And Technology (FISAT), Kerala, India	Participant
Dr. Beena Mary John	5 Day Online Short-Term Training Programme (STTP) on "Recent Advances in Marine Vehicles and Structures (RAMVS)", 4-8 October 2021, Department of Civil Engineering, National Institute of Technology Calicut.	Participant
Dr. Beena Mary John	International Conference on Advances in Naval and Ocean Engineering (iCANOE'21) organized by Department of Ship technology, CUSAT, November 19-20, 2021	Joint Convenor, Reviewer, Co-chair, Editor of conference proceedings
Dr. Beena Mary John	Recent Advances in Modelling of Inelastic Response and Integrity Assessment of Metals, 10 January to 13 January 2022 & 17 January to 20 January 2022, organized by the Indian Society of Applied Mechanics (ISAM) and Department of Applied Mechanics, IIT Madras.	Participant
Dr. Beena Mary John	International webinar on "Empowerment of Research Culture for Female Teachers" organized by Women Empowerment Cell (WEC) of Mahendra College of Engineering, 22 January 2022.	Participant
Dr. Beena Mary John	Second International Conference on Materials, Mechanics & Structures (ICMMS 2022) organized by Department of Civil Engineering, National Institute of Technology Calicut in online mode during March 10th – 12th, 2022.	Participant

Mr. Mohammed Ashiqu	5 Day Online Short-Term Training Programme (STTP) on “Recent Advances in Marine Vehicles and Structures (RAMVS)”, 4-8 October 2021, Department of Civil Engineering, National Institute of Technology Calicut.	Participant
Mr. Mohammed Ashiqu	Student Induction Program, October-November 2021, CUSAT	Resource Person
Mr. Mohammed Ashiqu	Golden Jubilee International Conference on Sustainable Technology and Innovation for Industry 4.0 -2022 (ICSTII 2022) organized by Virtual Centre for Advanced Research in Engineering Science and Technology, CUSAT, April 21-22, 2022	Reviewer
Mr. Mohammed Ashiqu	International Conference on Advances in Naval and Ocean Engineering (iCANOE’21) organized by Department of Ship technology, CUSAT, November 19-20, 2021.	Co-chair
Dr. Rajesh P Nair	Value Education - Government Polytechnic College, Purappuzha	Invited Talk
Dr. Rajesh P Nair	Student Induction Program, October-November 2021, CUSAT	Coordinator
Dr. Rajesh P Nair	International Conference on Advances in Naval and Ocean Engineering (iCANOE’21) organized by Department of Ship technology, CUSAT	Co-chair
Dr. Rajesh P Nair	Online Programme on Research training organized by MSME - Technology Development Centre (PPDC), August 16-27, 2021	Participant
Dr. Rajesh P Nair	Faculty Development Programme on Learning Management System (Moodle) and Course Design organized by Kerala State Higher Education Council, August 09-13, 2021	Participant

Dr. Rajesh P Nair	Workshop on Recent Advances in Modeling of Inelastic Response and Integrity Assessment of Metals organized by Indian Society for Applied Mechanics (ISAM), January 13-17, 2022	Participant
Dr. Rajesh P Nair	Workshop on Constructive Mentoring Methodology organized by Mentoring Cell in association with IQAC, St. Teresa's College, Ernakulam, October 12-13, 2021	Participant
Dr. Rajesh P Nair	Prof. N R Madhava Menon Interdisciplinary Centre for Research Ethics and Protocols, August 2021	Invited Lecture
Dr Rajesh P Nair	AICTE sponsored Third International Conference on Computing in Mechanical Engineering, September 22-24, 2021, CUSAT	Member of Panel Discussion on 'Numerical Techniques verses Experiments in Fluid Flow and Heat Transfer'.
Dr. Manoj T Issac	Golden Jubilee International Conference on Sustainable Technology and Innovation for Industry 4.0 -2022 (ICSTII 2022) organized by Virtual Centre for Advanced Research in Engineering Science and Technology, CUSAT, April 2022	Reviewer
Dr. Manoj T Issac	5 Day Online Short-Term Training Programme (STTP) on "Recent Advances in Marine Vehicles and Structures (RAMVS)", 4-8 October 2021, Department of Civil Engineering, National Institute of Technology Calicut.	Participant
Dr. Manoj T Issac	International Conference on Advances in Naval and Ocean Engineering (iCANOE'21) organized by Department of Ship technology, CUSAT, November 19-20, 2021.	Co-chair

Mr. Anoop Chithrasenan	International Conference on Advances in Naval and Ocean Engineering (iCANOE'21) organized by Department of Ship technology, CUSAT, November 19-20, 2021.	Co-chair
Mr. Aravind K. R	International Conference on Advances in Naval and Ocean Engineering (iCANOE'21) organized by Department of Ship technology, CUSAT, November 19-20, 2021.	Treasurer
Atharva Puranik and Alen Saji	ISCOE' 2021, AMET Chennai	Paper Presentation on 'Smart Ships and its Impact on Ecosystem'
Shashank	ISCOE' 2021, AMET Chennai	Paper Presentation on 'Scrubber Technology - Time to rethink its use'
K. S. Sridaar	2nd Virtual International tribology Research Symposium (ITRS'21) , December 2021, SRM Chennai	Paper Presentation on Major Environmental Factors and Models in Marine Corrosion
NisanthSanthakumar Pai, Yashwanth R Kammath and Dr. K. Sivaprasad	International Conference on Smart & Green Technology for Shipping and Maritime Industries (Including Ballast Water Management) – SMATECH 2021 - 21-22 October 2021, Online	Paper Presentation on Concept Design of Quarantine Hospital Ship

Role of Faculty in International/National organizations/Institutions/Editorial Boards

Name of Faculty	Name of Organization	Role
Dr. Satheesh Babu P K	NPOL (DRDO), Detailed Design Review Committee, Engineering Systems	Chairman of Committee
Dr. Satheesh Babu P K	Kochi Water Metro Limited (KMRL)	Expert, Inspection and Review of Technical Specification of Boats
Dr. A. Mathiazhagan	Bureau of Indian Standards	Member - Ship Structural Committee
Dr. A. Mathiazhagan	Board of Studies, B.Tech NASB, CUSAT	Chairman
Dr. A. Mathiazhagan	Board of Studies, Defense Technology	Member
Dr. A. Mathiazhagan	Academic Council, CUSAT	Member
Dr. K. Sivaprasad	Bureau of Indian Standards	Member - Transport Committee
Dr. K. Sivaprasad	DRDO Expert Committee, Ministry of Defence	External Expert
Dr. K. Sivaprasad	APJ Abdul Kalam Kerala Technological University	Member of Board of Studies, Marine Engineering
Dr. K. Sivaprasad	Rebuild Kerala Technical Committee	Technical Expert
Dr. K. Sivaprasad	School of Industrial Fisheries, CUSAT.	Board of Studies Member
Dr. K. Sivaprasad	Board of Studies and Faculty of Defence Science & Technologies, CUSAT	Member
Dr. K. Sivaprasad	Indian Maritime University	Board of Research Studies Member
Dr. K. Sivaprasad	Bharat Heavy Electricals Limited	Independent Director, Board of Directors
Dr. K. Sivaprasad	ClassNK, Japanese Ship Classification Society, Tokyo	Member of India technical Committee

Dr. K. Sivaprasad	National Monitoring Committee for Minority Education, Ministry of Education, Government of India	Member
Dr. K. Sivaprasad	ClassNK Japan	Technical committee member Indian sub continent
Dr. Rajesh P Nair	Department of Ship Technology, CUSAT.	PG Academic Committee Member
Dr. Rajesh P Nair	CUSAT	Senate Member
Dr. C. B. Sudheer	Kerala State Water Transport Department	Technical Committee Member for Construction of 120 PAX Passenger cum Tourist Boat, 30 PAX Solar Boat, 75 PAX Solar Boat, Mini Dredging Unit, 100 PAX Catamaran Boat, Solar-Electric Ro-Ro Vessel, Dinghy Boats
Dr. C. B. Sudheer	Kerala Forest and Wildlife Department	Technical Committee Member - Launching of Solar Powered Boat
Dr. D. D. Ebenezer	The Journal of the Acoustical Society of America	Associate Editor
Dr. D. D. Ebenezer	Hydro- Vibro- Acoustic Panel of the Naval Research Board of DRDO	Chairman
Dr. D. D. Ebenezer	Project Monitoring and Review Committee that oversees the Project SMTECH, DYSL-SM, DRDO, India.	Member
Dr. D. D. Ebenezer	Apex committee, ICS, DRDO	Member
Dr. D. D. Ebenezer	Board of Studies, KUFOS, Kerala	Member
Dr. D. D. Ebenezer	Recruitment Screening Committee, DRDO	Member

Dr. Manoj T Issac	NPOL (DRDO), Preliminary Design Review Committee (Academic Expert)	Member
Dr. Manoj T Issac	DRDO Lab Level Award Committee	Member
Dr. Manoj T Issac	APJAKTU	Scrutiny Board Member
Dr. Manoj T Issac	Kerala University of Fisheries and Ocean Studies	Member – Board of Studies for School of Ocean Engineering and Underwater Technology
Dr. Manoj T Issac	NPOL, Kochi.	Scrutinizing Committee Member
Dr. Favas. T. K.	APJ Abdul Kalam Kerala Technological University	Coordinator, Question Paper Setting
Dr. Favas. T. K.	Kerala University of Fisheries and Ocean Studies (KUFOS)	Question Paper Setter
Dr. Favas. T. K.	Western Ghats Institutions for Social Excellence	Academic Council Member
Mr. Aravind K. R.	Kerala State Water Transport Department	Technical Committee Member for Construction of 120 PAX Passenger cum Tourist Boat, 30 PAX Solar Boat, 75 PAX Solar Boat, Mini Dredging Unit, 100 PAX Catamaran Boat, Solar- Electric Ro-Ro Vessel, Dinghy Boats
Mr. Aravind K. R.	Kochi Water Metro Limited	Expert, Inspection and Review of Technical Specification of Boats

Awards/ Honours/ Fellowships etc. received:

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Rahul Krishna H.	University Junior Research Fellowship	CUSAT
Radhakrishnan P. V.	University Junior Research Fellowship	CUSAT
Vysakh K. B.	University Junior Research Fellowship	CUSAT
Shefeena C. A.	University Junior Research Fellowship	CUSAT
Teena Sarah John	University Junior Research Fellowship	CUSAT
Angela Susan Tonio	University Junior Research Fellowship	CUSAT
Dr. Rajesh P Nair	Work Contract - FEM Analysis of Underwater Structures	Naval Physical & Oceanographic Laboratory
Dr. Favas T. K.	Beloved Alumnus for Excellent Achievement	Vidya College of Excellence

Sponsored Research Projects:

Sl No	Title	Sponsoring Agency	INR of Rs.in Lakhs	Status of the Project	Investigator (s)
1	Developing the methodologies and identifying the design constraints for eco friendly inland water ship design for National Waterway 3	Seed Money for New Research Initiative (SMNRI) – CUSAT, State Plan Grant.	1.5	Ongoing	Mr.Aravind K. R.

2	Calculating Motion Characteristics of wind turbine floater for deep sea operation	SMNRI – CUSAT, State Plan Grant.	0.25	Ongoing	Mr. Anoop Chithrasenan
3	Numerical Prediction of Hotspots and Entropy Generation in Energy Generating Components Cooled by Nanofluids/ Liquid Metals by considering Temperature Dependency of Thermo-physical Properties	SMNRI – CUSAT, State Plan Grant.	1.00	Ongoing	Dr. Favas T. K.
4	Study of Underwater Acoustics due to Structure borne Noise of the shipboard Machineries	SMNRI – CUSAT, State Plan Grant.	1.10	Ongoing	Akram P. A.
5	Exploration of renewable energy from ocean	SMNRI – CUSAT, State Plan Grant.	2.50	Ongoing	Mr. Mohammed Ashiqu
6	FEM Analysis of Underwater Structures	Naval Physical and Oceanographic Laboratory (NPOL)	7.14	Ongoing	Dr. Rajesh P Nair

7	Hydrodynamic Analysis of a Submarine Launched Towed Body with Fins	Kerala State Council for Science Technology and Environment (KSCSTE) Student Project	0.10	Ongoing	Dr. Manoj T. Issac, Dr. D. D. Ebenezer
8	Risk and Reliability Assessment for Offshore Deployed Oceanographic Buoy	NPOL	9.93	Ongoing	Dr. K. Sivaprasad
9	Design, Analysis and 3D Modeling of Full Scale Prototype Submarine Structure Integrated with Combat Suite	NPOL	53.23	Ongoing	Dr. K. Sivaprasad, Dr. Satheesh Babu PK

Research Programmes and Activities:

Sl. No:	Topic	Investigator(s)
1	Development of an Index for a Practically Viable Green Ship Design	Dr. A. Mathiazhagan
2	Design of Ship and Offshore Structures	Dr. K. Sivaprasad
3	Corrosion Assessment for Marine Structures	Dr. A. Mathiazhagan
4	Analysis for Fluid Structure Interaction Effects on Ship Hull Enrichment of Product Models of Ships from a Recycling Perspective	Dr. K. Sivaprasad
5	Optimization of Hull of a Fuel Efficient Deep Sea Multipurpose Fishing Vessels using Computational Fluid Dynamics	Dr. K. Sivaprasad
6	Forensic Investigation on Damages in Ship Structures	Dr. K. Sivaprasad
7	Marine Corrosion Protection using Nano Materials	Dr. A. Mathiazhagan

8	Robust control of sensor less BrushLess Direct Current motors	Dr. Mariamma Chacko
9	Improved Converter for Renewable Energy System	Dr. Mariamma Chacko
10	Hybrid Optimization Technique for Electrical Power Transmission Systems	Dr. Mariamma Chacko
11	Study on Welding of Duplex Stainless steel for Liquefied Natural Gas Carrier Application	Dr. A. Mathiazhagan
12	Development of a Marine Propeller by using Computational Fluid Dynamics Analysis	Dr. Senthil Prakash M. N.
13	Structural and Hydrodynamic Performance Analysis of Biometric Underwater Vehicle	Dr. Rajesh P Nair
14	Reuse of Decommissioned Offshore Fixed Platform for Marine Renewable Energy	Dr. Senthil Prakash M. N.
15	Numerical and Experimental Investigation on the Mechanics of Cardiovascular Tissue-device Interface	Dr. Senthil Prakash M. N.
16	Enhancement of Power Harvesting from Renewable Energy Sources	Dr. Mariamma Chacko
17	Power Quality in Ships Electrical Systems	Dr. Mariamma Chacko
18	Energy Consumption for Ship Recycling	Dr. K. Sivaprasad
19	Controller for Electric Motors	Dr. Mariamma Chacko
20	Numerical Analysis of offshore Blast Wall subjected to explosion	Dr. Rajesh P Nair
21	Design of Wave Energy Converter	Dr. Senthil Prakash M. N.
22	Design of Hybrid Electric Ship Propulsion by Renewable Energies Available at Sea	Dr. Senthil Prakash M. N.
23	Ballistic Impact on Ship Hull Structures made of Sandwich Compositor	Dr. Rajesh P Nair
24	Power Aware Computing	Dr. Mariamma Chacko
25	Deflection Analysis of a Cargo Ship and its Effects on Various Operational Factors	Dr. C. B. Sudheer
26	Novel Concrete Materials using Nano Materials	Dr. A. Mathiazhagan
27	Investigation on the Capability of Inland Waterways in the Context of Cargo Transport and Cruise Tourism in Inland Waterways Stretching across the West Coast of Kerala	Dr. C. B. Sudheer

28	Technical Feasibility and Socio-economic Factors for Cargo Transport in the Inland Waterways of Kerala	Dr. C. B. Sudheer
29	Resistance Study and Optimization of Catamaran Hulls for Inland Water Navigation Solutions considering Shallow Water and Wash Effects	Dr. K. Sivaprasad
30	Manoeuvring and Control Dynamics of Biomimetic Autonomous Underwater Vehicles	Dr. Manoj T Issac
31	An Innovative Interactive Tool for Assessment and Simulation of Safe Return to Fort srtp for Passenger Ships	Dr. K. Sivaprasad
32	Development of Strategies for Life Cycle Control of Marine Vessels and Structures	Dr. K. Sivaprasad
33	Investigation and Development of Hybrid Genetic Algorithm for Multi Objective Optimization of Assembly Scheduling in Ship Building Industry	Dr. C. B. Sudheer
34	Dynamic Performance of Unmanned Marine Vehicle	Dr. Manoj T Issac
35	Numerical Investigation on Hydrodynamic Performance of Streamlined Autonomous Underwater Vehicle	Dr. Manoj T Issac
36	Computational Fluid Dynamics Based Surrogate Model Development for the Analysis of Underwater Radiated Noise due to Shipboard Machineries	Dr. A. Mathiazhagan
37	Investigations on Fracture Behaviour in Welded Marine Graded Steel	Dr. A. Mathiazhagan
38	Development of River Information System for Inland Water Transport	Dr. K. Sivaprasad
39	Development of Digital Technology for Ship Life Cycle	Dr. K. Sivaprasad
40	A Study on Implementation of Advanced Power Electronic Switches to Hybrid Electrical Power System Onboard Ships	Dr. Mariamma Chacko
41	Design, Analysis and Control of Multi Phase Electrical Machines	Dr. Mariamma Chacko

42	Investigation on Economical and Technical Aspects of Subsea Pipeline System to Effective and Efficient Utilization	Dr. C. B. Sudheer
43	Development of Inland Waterway Network System for Intermodal Transportation Catering to the Hinterlands of Kerala	Dr. C. B. Sudheer
44	Development of Dynamics Simulation Model of an Autonomous Underwater Vehicle using Identification Techniques	Dr. Manoj T Issac
45	Numerical Study of Heat and Fluid Flow for Fire Safety Applications	Dr. Favas T. K.
46	Transient Analysis of Multilayer Shock Isolator	Dr. D. D. Ebenezer
47	Finite Element Analysis of Crash Tube Subjected to Impact Loading	Mr. Akram P. A.
48	Computational Fluid Dynamics Analysis of Free Surface Flows	Dr. D. D. Ebenezer
49	Numerical Investigation of Oscillating Water Column Wave Energy Converter	Dr. Beena Mary John
50	Acoustic Interaction of Underwater Transducers	Dr. D. D. Ebenezer
51	Buckling Enhancement of Metallic Cylindrical Pressure Vessel using Composite Stiffener	Dr. Rajesh P. Nair
52	Finite Element Analysis of Fiber-Reinforced Plastic Boat under Slamming Load	Dr. Rajesh P. Nair
53	Computational Fluid Dynamics Analysis of Flow over a Deeply Submerged Rudder	Dr. D. D. Ebenezer
54	Soil Structure Interaction of Laterally Loaded Piles	Dr. Beena Mary John
55	Modeling of Fluid Loaded Fiber-Reinforced Plastic Plate	Dr. D. D. Ebenezer
56	Finite Element Analysis and Design Verification of Test Rig Structure for the Integrated Structural Qualification of Crew Module Fairing Assembly of a Manned Mission Launch	Dr. Rajesh P. Nair
57	Design and Analysis of Broadband Ring Underwater Transducer	Dr. D. D. Ebenezer

58	Computational Fluid Dynamics Analysis of Flow around a Ship Hull to Estimate Viscous Resistance	Dr. D. D. Ebenezer
59	Numerical Investigation of Wave Structure Interaction around Coastal Structures	Dr. Beena Mary John
60	Effect of the Nose on the Hydrodynamic Characteristics of a Towed Body	Dr. Manoj T. Issac
61	Effect of the Stabilizers on the Hydrodynamic Characteristics of a Towed Body	Dr. Manoj T. Issac
62	Hydrodynamic analysis of Autonomous Underwater Vehicle Propeller	Dr. D. D. Ebenezer
63	Finite Element Analysis of Lateral Load Resisting Structural Systems	Dr. Beena Mary John
64	Harmonic Analysis of Multi-layer Vibration Isolators	Dr. D. D. Ebenezer

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department:

Sl. No.	Topic	Month & Year	Presented by
1	SNAS Webinar 5.0 'Oil & Gas Upstream Process and where Naval Architects can fit in'	June 2021	SNAS (Society of Naval Architecture Students)
2	SNAS Webinar 6.0 'Innovating for Marine Sector'	August 2021	SNAS (Society of Naval Architecture Students)
3	SNAS Webinar 7.0 'Classification Societies - An Insider View'	September 2021	SNAS (Society of Naval Architecture Students)
4	SNAS Webinar 8.0 'IMO Conventions and their Significance in Ship Design'	September 2021	SNAS (Society of Naval Architecture Students)
5	SNAS Webinar 9.0 'Design of Underwater Vehicles'	October 2021	SNAS (Society of Naval Architecture Students)
6	B. Tech Student Induction Programme	October - November 2021	Department of Ship Technology
7	SNAS Webinar 10.0 'Defence Seaworthiness management System'	November 2021	SNAS (Society of Naval Architecture Students)

8	International Conference on Advances in Naval and Ocean Engineering (iCANOE '21)	November 2021	Department of Ship Technology, CUSAT.
9	ERUDITE lecture on Research Opportunities in Naval and Ocean Engineering, Dr. Gopu R Potty, University of Rhode Island	December 2021	Department of Ship Technology, CUSAT
10	DIMS Lite (DOSATS International Maritime Seminar) in association with IBMS (India Boat & Marine Show), Kochi 2022	February 2022	DOSTAS (Department of Ship Technology Alumni Society)
11	Golden Jubilee International Conference on Sustainable Technology and innovation for Industry 4.0 (icstii 2022)	April 2022	Virtual Centre for Advanced Research in Engineering Science and Technology
12	SNAS Webinar 11.0 'Corrosion Prevention in Subsea Oil and Gas Pipelines'	April 2022	SNAS (Society of Naval Architecture Students)

Consultancy Work

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1	IVDIP	Dr. K. Sivaprasad	FACT
2	Consultancy Service for Detailed Project Report involving Boat Service in Tirur-Ponnani River	Dr. C. B. Sudheer	District Panchayath, Malappuram
3	Inclining Experiment, Trim and Stability Booklet Preparation for Floating Cottages	Dr. C. B. Sudheer, Mr. Aravind K. R and Mr. Muhammed Ashiqu	Club Mahindra Holidays, Ashtamudi, Kerala
4	Inclining Experiment, Trim and Stability Booklet Preparation for House Boats	Dr. C. B. Sudheer, Mr. Aravind K. R	Mr. Jolly James, Alappuzha



Department of Statistics

Brief History of the Department:

The Department of Statistics was established in 1996 by the bifurcation of the School of Mathematical Sciences. The Department offers a four semester M.Sc. Programme in Statistics and an M. Tech Programme in Engineering Statistics besides research programmes leading to Ph. D degree. The thrust areas of research in the department include Distribution Theory, Reliability Modeling, Statistical Inference, Time Series Analysis, Survival Analysis, Inference on Stochastic Processes, and Information Theory.

The M.Sc. course is intended to provide a platform for talented students to undergo higher studies in the subject as well as to train them to suit for the needs of society.

The M. Tech course is intended to provide a vehicle for interaction between the modern approaches to quality and reliability engineering, statistical methodology and industrial engineering aspects, thereby facilitating integration of appropriate techniques.

The Department has been identified as a Centre for organizing refresher courses for College/University teachers since 1993. The departmental library has more than 3000 books and is presently subscribing to 14 journals. The Department has two well-equipped computer labs with internet facility. The department has acquired the latest computer software such as SPSS, MATLAB, MATHEMATICA, SYSTAT, and SAS so as to meet the needs of the students. In addition, a well-equipped engineering laboratory with metrological instruments is set up for the use of the M. Tech students.

To enhance academic pursuits in socially relevant and scientifically interesting fields a Centre for Population Studies has been established in the Department.

The UGC has recognized the Department under the Special Assistance Programme at DRS level. An amount of Rs.32.00 lakhs was sanctioned at the first phase to develop research facilities. In the second phase of the SAP-UGC-DRS II programme has granted financial support of Rs 44 lakhs for the period 2010-2015. The Department has been identified by the DST for the FIST programme. Under this programme DST has sanctioned an amount of Rs.19.5 lakhs for infrastructural development at the first phase. In the second phase, DST had given an amount of Rs. 30 lakhs. Presently, the third phase of the SAP-UGC-DRS III has started with a financial

support of Rs 37 lakhs for the next five years. Recently, DST has sanctioned Rs 52.5 lakhs under the FIST programme.

Four UGC sponsored minor research projects have already been completed and four major research projects sponsored by DST are completed and another one is ongoing. The department has conducted many national and international conferences/seminars/workshops on emerging areas of Statistics.

Programmes of Study/Research:

1. M.Sc Statistics
2. M.Tech Engineering Statistics
3. M.Tech Data Science and Analytics
- 3 Ph.D Programme

Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr. N.Balakrishna	Senior Professor	M.Sc., M.Phil, Ph.D.	Stochastic Processes & Inference, Time Series Models, Chaos & Nonlinear Time Series
2	Dr. K.C.James	Professor	M.Tech, Ph.D	Industrial Engineering, TQM, Reliability Simulation Modelling.
3	Dr. Asha Gopalakrishnan	Senior Professor	M.Sc, M.Phil Ph.D.	Distribution theory, Discrete Reliability theory
4	Dr. P.G.Sankaran	Senior Professor	M.Sc, Ph.D	Distribution Theory, Reliability Theory, Data Analysis

5	Dr. S.M.Sunoj	Professor	M.Sc, Ph.D.	Distribution Theory, Reliability Theory, Data Analysis
6	Dr. Rajesh. G	Professor & Head	M.Sc, M.Phil Ph.D.	Information measures
7	Dr.Irshad M.R.	Assistant Professor	M.Sc., M.Phil, Ph.D	Distribution Theory
8	Dr. Princy T	Assistant Professor	M.Sc, Ph.D	Distribution Theory, Survival Analysis
9	Ms.Hashmy Hassan	Assistant Professor (On Contract)	M.Tech PGDDS	Information Retrieval, Knowledge Representation, Data Science
10	Dr.Ambily Jose	Assistant Professor (On Contract)	M.Sc., M.Phil Ph.D	Hidden Markov Models
11	Anila P.	Guest Faculty	M.Sc	

Research Scholars

Sl. No.	Name	FT/PT	Funding Agency	Guide	Area of Work
1	Rejani P.P.	PT		Dr.P.G.Sankaran	Survival Analysis
2	Rasin R.S.	PT		Dr.S.M.Sunoj	Weighted Distributions
3	Baby A. K.	PT		Dr.G.Rajesh	Distribution Theory
4	Soorya C.S.		USRF	Dr.Asha	Reliability

		FT		Gopalakrishnan	Analysis
5	Sisuma M.S.	FT	DST-INSPIRE	Dr.P.G.Sankaran	Survival Analysis
6	Himanshu Pokhriyal	PT		Dr.N.Balakrishna	Time Series Analysis
7	Durga Vasudevan	FT	CSIR	Dr.Asha Gopalakrishnan	Reliability Theory
8	Ashlin Mathew P.M.	PT		Dr.P.G.Sankaran	Survival Analysis
9	Linto Joseph	PT		Dr.Rajesh G	Distribution Theory
10	Jayalekshmi S.	FT	KSCSTE	Dr.Rajesh G	Distribution Theory
11	Aswin I.C.	FT	KSCSTE	Dr.P.G.Sankaran	Reliability Theory
12	David Chris Raju	FT	USRF	Dr.S.M.Sunoj	Entropy
13	Richu Rajesh	FT	USRF	Dr.Rajesh G.	Entropy
14	Silpa Subhash	FT	USRF	Dr.S.M.Sunoj	Entropy
15	Veena Dacruz	FT	USRF	Dr.Irshad M.R.	Distribution Theory
16	Anu Susan George	FT	UJRF	Dr.Asha Gopalakrishnan	Reliability Theory
17	Anuresha Krishna	FT	UJRF	Dr.Irshad M.R.	Distribution Theory
18	Nibha P Raj	FT	UGC-JRF	Dr.N.Balakrishna	Time Series Analysis
19	Hari S	FT	CSIR -JRF	Dr.P.G.Sankaran	Survival Analysis
20	Anoop T Babu	FT	E-grants	Dr.Asha Gopalakrishnan	Survival Analysis
21	Divya Kuttenthalil Andrews	FT	UJRF	Dr.N.Balakrishna	Time Series Analysis

22	Namitha Suresh	FT	UJRF	Dr.S.M.Sunoj	Reliability Theory
23	Hari Prasad E	FT	UGC -JRF	Dr.N.Balakrishna	Time Series Analysis
24	Archana K	FT	UJRF	Dr.Irshad M R	Entropy
25	Sandra R	FT	UJRF	Dr.N.Balakrishna	Time Series Analysis
26	Muhammed Ahammed E S	FT	UJRF	Dr.Irshad M R	Distribution Theory
27	Saranya P	FT	DST - PURSE	Dr.S.M.Sunoj	Reliability and Information Theory
28	Sajily V S	FT	UJRF	Dr.Rajesh G	Distribution and Information Theory
29	Philip T	FT	DST- PURSE	Dr.Rajesh G	Distribution Theory
30	Pavithra Hariharan	FT	CSIR- JRF	Dr.P.G.Sankaran	Survival Analysis
31	Rhea Davis	FT	UJRF	Dr.N.Balakrishna	Time Series Analysis
32	Sneha Babu	FT	UJRF	Dr.Princy T.	

Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Section Officer	1
2.	Junior Librarian	1
3.	Office Superintendent	1
4.	Senior Grade Assistant	2
5.	Office Attendant	1
6.	Sweeper cum Cleaner	1

Student Enrollment (2021 Admission)

Sl.No.	Programme of Study	Men	Women	Total
1	M.Sc Statistics	3	18	21
2	M.Tech Data Science and Analytics	6	5	11
3	Ph.D	Nil	3	3

Research Facilities**a. Laboratories:**

- i. Computer Lab (New) with 34 Computers
- ii. Computer Lab (Old) with 23 Computers
- iii. Internet facility
- iv. Metrology Laboratory

b. Major equipment: Nil**c. Library:**

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
Books: 4160	Books:237
<u>Journals:</u> Indian: 7 Foreign:5 Govt. Pub: 0	<u>Journals:</u> Indian: 3 Foreign: 5 Govt. Pub: 0

Publications**a. Papers**

Sl No.	Title of Paper	Impact Factor (if any)
1	Pokhriyal, H. and N.Balakrishna (2021). Testing for measurement error in regression with autoregressive innovations. Accepted in Communications in Statistics – Simulation	1.118

	and Computation. https://doi.org/10.1080/03610918.2021.1891430	
2	Sujith, P. and Balakrishna, N. (2021). Autoregressive inverse Gaussian process and the stochastic volatility modeling. Accepted in Communications in Statistics - Theory and Methods. https://doi.org/10.1080/03610926.2021.1977324	0.893
3	Nimitha John and Balakrishna, N. (2022). Modelling of Cointegration with Student's t-errors. Journal of Mathematics and Statistics, 10(1): 233-245.	
4	Koul, H. L., Perera, I. and Balakrishna, N. (2021). A class of Minimum Distance Estimators in Markovian Multiplicative Error Models. Sankhya, Series B, pages 1-29. https://doi.org/10.1007/s13571-021-00274-x	
5	Joshy, C.G., N Balakrishna (2021). Orthogonally blocked second order response surface designs under auto-correlated errors. Journal of Indian Society for Agricultural Statistics. 75(2), 169–174.	UGC CARE
6	G Asha and Soorya C.S, On a Class of Transmuted Distributions to Model Survival Data with a Cure Fraction, Calcutta Statistical Association Bulletin, Volume: 73 issue: 2, page(s): 106-126 Article first published online: December 5, 2021	
7	Richu Rajesh, Rajesh G., S.M. Sunoj (2022) Kernel estimation of extropy function under length-biased sampling, Statistics and Probability Letters 181 (2022) 109290	UGC CARE
8	G. Rajesh, N. Unnikrishnan Nair, S. Jayalekshmi (2022) Some Aging Notions Based on the Laplace Transform of Bivariate Residual Life, Journal of the Indian Society for Probability and 9Statistics, https://doi.org/10.1007/s41096-021-00113-2 .	

9	Nair, N. U., Sunoj, S. M. and Rajesh, G. (2021). Cumulative residual entropy of equilibrium distribution of order n. Communications in Statistics- Theory and Methods, DOI: 10.1080/03610926.2021.1931332.	
10	Nair, N. U., Sunoj, S. M. and Rajesh, G. (2021). Relation between relative hazard rate residual divergence with some applications to reliability analysis. Sankhya A (to appear).	
11	Rajesh G, Richu Rajesh and Sunoj S M (2021) Kernel Estimation of Entropy Function for Length-Biased Censored Data, Journal of the Indian Society for Probability and Statistics, https://doi.org/10.1007/s41096-021-00103-4	
12	Richu Rajesh, Rajesh G. & S. M Sunoj (2021) Estimation of Shannon Entropy in the Presence of Length-Bias and Type I Censoring, American Journal of Mathematical and Management Sciences, DOI:10.1080/01966324.2021.1941452.	
13	G. Rajesh, Linto Joseph & T. M. Jacob (2021) Smoothed kernel estimation of bivariate residual entropy function, Communications in Statistics - Simulation and Computation, DOI: 10.1080/03610918.2021.1951764.	
14	Rajesh G, Sunoj S M and Richu Rajesh (2021) Kernel estimation of entropy function under length-biased sampling, Communications in Statistics Theory and Methods, https://doi.org/10.1080/03610926.2021.1904987	
15	Silpa Subhash, S. M. Sunoj, P. G. Sankaran, and G. Rajesh (2021) Nonparametric estimation of quantile-based entropy function, Communications in Statistics - Simulation and Computation, https://doi.org/10.1080/03610918.2021.1890773	
16	Irshad, M R, Veena D'cruz and Maya, R. (2021). The exponentiated unit Lindley	

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17	Maya, R and Irshad, M R. (2021). Kernel estimation of Mathai-Haubold entropy and residual Mathai-Haubold entropy functions under α -mixing dependence condition. <i>American Journal of Mathematical and Management Sciences</i> , 1-12.	
18	Maya, R, Irshad, M R and Arun, S P. (2021). Application of U–statistics in Estimation of Scale Parameter of Bilal Distribution. <i>The Philippine Statistician</i> 1970(1), 67-82.	
19	Irshad, M R, Chesneau, C, D’cruz, V and Maya, R. (2021). Discrete Pseudo Lindley Distribution: Properties, Estimation and Application on INAR (1) Process. <i>Mathematical and Computational Applications</i> 26(4), 76.	
20	Irshad, M R, Maya, R, Al-Omari, A I, Arun, S P and Alomani, G. (2021). The extended Farlie-Gumbel-Morgenstern bivariate Lindley distribution: Concomitants of order statistics and estimation. <i>Electronic Journal of Applied Statistical Analysis</i> 14(2), 373-388.	
21	Irshad, M R, Chesneau, C, Nitin, S L, Shibu, D S and Maya, R. (2021). The Generalized DUS Transformed Log-Normal Distribution and Its Applications to Cancer and Heart Transplant Datasets. <i>Mathematics</i> 9(23), 3113.	
22	Irshad, M R, Maya, R and Krishna, A. (2021). Exponentiated Power Muth Distribution and Associated Inference. <i>Journal of the Indian Society for Probability and Statistics</i> 22(2).	

23	Maya, R, Irshad, M R and Arun, S P. (2021). Muth Distribution and Estimation of a Parameter Using Order Statistics. <i>Statistica</i> 81(1), 93-119.	
24	Irshad, M R, D' cruz, V and Maya, R. (2021). The Zografos-Balakrishnan Lindley distribution: properties and applications. <i>Statistica</i> 81(1), 45-64.	
25	Irshad, M R, Maya, R and Arun, S P. (2021). Concomitants of Order Statistics Arising from the Morgenstern Type Bivariate Lindley Distribution. <i>Theory and Practice of Mathematics and Computer Science</i> 11, 39-47.	
26	Irshad, M R and Maya, R. (2021). Nonparametric estimation of past extropy under α α -mixing dependence condition. <i>Ricerche di Matematica</i> , 1-12.	
27	Maya, R, Irshad, M R and Archana, K. (2021). Recursive and non-recursive kernel estimation of negative cumulative residual extropy under α -mixing dependence condition. <i>Ricerche di Matematica</i> , 1-21.	
28	Krishna, A, Maya, R, Chesneau, C. and Irshad, M R. (2022). The Unit Teissier Distribution and Its Applications. <i>Mathematical and Computational Applications</i> 27(1), 12.	
29	Irshad, M R, Maya, R, Buono, F and Longobardi, M. (2021). Kernel Estimation of Cumulative Residual Tsallis Entropy and Its Dynamic Version under ρ -Mixing Dependent Data. <i>Entropy</i> 24(1), 9.	
30	Silpa Subhash, Sunoj, S.M., Sankaran, P.G. and Rajesh.G. (2021): Nonparametric estimation of quantile-based entropy function, <i>Communications in Statistics-</i>	0.651

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31	Rajesh, G., Sunoj, S.M. and Richu Rajesh (2021): Kernel estimation of entropy function under length-biased sampling, Communications in Statistics – Theory and Methods, USA, DOI: 10.1080/03610926.2021.1904987, ISSN 0361-0926.	0.470
32	Nair, N.U., Sunoj, S.M. and Rajesh.G. (2021): Cumulative residual entropy of equilibrium distribution of order n, Communications in Statistics – Theory and Methods, USA, ISSN 0361-0926, DOI: 10.1080/03610926.2021.1931332.	0.470
33	Rajesh, G., Richu Rajesh and Sunoj, S.M. (2021): Estimation of Shannon entropy in presence of length-bias and type I censoring, American Journal of Mathematical and Management Sciences, USA, ISSN 0196-6324, DOI: 10.1080/01966324.2021.1941452.	
34	Rajesh, G., Richu Rajesh and Sunoj, S.M. (2021): Kernel estimation of entropy function for length-biased censored data, Journal of the Indian Society for Probability and Statistics, India, ISSN 2364-9569, DOI: 10.1007/s41096-021-00103-4.	
35	Nair, N.U., Sunoj, S.M. and Rajesh, G. (2022): Relation between Relative Hazard Rates and Residual Divergence with Some Applications to Reliability Analysis, Sankhya A, India, ISSN 0976-836X, DOI: 10.1007/s13171-021-00277-w.	
36	Richu Rajesh, Rajesh, G. and Sunoj, S.M.:	0.87

	Kernel estimation of extropy function under length-biased sampling, Statistics and Probability Letters, USA, ISSN 0167-7152, 181, 109290, DOI: 10.1016/j.spl.2021.109290.	
37	Aswin, I.C., Sankaran, P.G. and Sunoj, S.M.: The bilinear mean residual quantile function, Communications in Statistics – Theory and Methods, USA, ISSN 0361-0926, DOI: 0.1080/03610926.2022.2042022.	0.470
38	Sankaran P G and Rejani P P : Modeling and Analysis of Competing Risks Cure Rate Regression Model with Weibull Distribution, Statistics and Applications, 2021 (to appear)	
39	Sisuma S and Sankaran P G : Non-parametric Test of Recurrent Cumulative Incidence Functions for Competing Risks Models, Metron, 2022 (to appear)	
40	Dileep Kumar M and Sankaran P G : Some Results of Auto-Relevation Transform in Reliability Analysis, Statistics and Applications, 2021 (to appear)	
41	Rejani P P and P.G.Sankaran : Regression analysis of cure model with generalized Weibull distribution, Statistica, LXXXI,3, 2021, 267-278	
42	Silpa S; Sunoj S.M; and Sankaran P G : Nonparametric estimation of quantile based entropy function, Communications in Statistics- Simulation and Computation, 2021 DOI: 10.1080/03610918.2021.1890773	
43	Gleeja V L and Sankaran P G : Cause Specific Shared Frailty Proportional Reversed Hazards Models, Statistics and Applications, 12 (2), 2021,1-18.	
44	Vipin N, Rahul T and P.G.Sankaran: The delayed effect of temperature on the risk of hospitalization due to COVID-19: Evidence from Mumbai, India,	

	Epidemiologic Methods,9, 2021, https://doi.org/10.1515/em-2020-0039 , 1-11.	
45	Sreedevi E P and P.G.Sankaran : Statistical Methods foe estimating cure fraction of Covid-19 patients in India, MASA, 16, 59-64, 2021.	
46	Sreedevi E P and Sankaran P G: Nonparametric inference for panel count data with competing risks, Journal of Applied Statistics, 48 (16), 3102-3115, 2021.	
47	Dileep Kumar M and P.G.Sankaran: A new family of quantile functions and its applications, Communications in Statistics- Theory and Methods,50(18), 4216-4235, 2021.	

b. Books:

Sl. No.	Name of the Authors	Title of the book/chapters published
	N. Balakrishna	NON-GAUSSIAN AUTOREGRESSIVE-TYPE TIME SERIES. Springer Nature, Singapore. eBook: ISBN 978-981- 16-8162-2. Hardcover: ISBN 978-981-16-8161-5.

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar/Conference/Workshop	Role
Dr. N Balakrishna	International Virtual Conference On STATISTICS AND DATA SCIENCE: THEORY AND PRACTICE FOR PROGRESS AND PROSPERITY, Osmania University, Hyderabad. March 11-13, 2022	Invited speaker

	Fifth International Webinar on Recent Trends in Statistical Theory and Applications-2021 University of Kerala, June 29 – July 2, 2021.	Participant
	Statistical Methods in Finance, 2021 at CMI and ISI Chennai, June 27 – July 1, 2021.	Participant
Dr.K.C.James	“Learn from Industry-Workshop on Data Science Tools and Applications, 17/12/2021, Department of Statistics, CUSAT	Organized the workshop
	Served as committee member, reviewed research papers and chaired a session in “2021 International Conference on Electric Vehicle and Vehicle Engineering”, Frankfurt Germany, Sept 17 9,2021(online)	Committee Member and chaired a session
	Delivered an invited talk on “Computer Simulation: Some views on Model Development, Experimentation and Robust Design” during 24th Annual Conference of SSCA (online) on “Recent Advances in Statistical Theory and Applications (RASTA-2022)” 23 –27 February, 2022 at ICAR - National Academy of Agricultural Research Management (ICAR -NAARM), Hyderabad. Further chaired a session in RASTA-2022, 23 –	Invited Talk, Chaired a session

	27 February, 2022	
Asha Gopalakrishnan	Panelist on “Teaching statistics online during the pandemic – sharing experiences from multiple continents” organised by section “Teaching Statistics in Health Sciences (TSHS)” American Statistical Association.	Panelist
	Organized the invited session “IPS: Modern Statistical Techniques for Reliability Analysis” and presented a talk titled “Dynamic Models for Left Censored Data” the Virtual ISI World Statistics Congress 2021 held on 11-16 July 2021.	Organizer, Invited Speaker
	International Conference (VIRTUAL MODE) On Emerging Trends In Statistics And Data Science In Conjunction with the 40’th Annual Convention Of Indian Society of Probability & Statistics (ISPS) 7-10 September, 2021.	Invited Speaker
Dr.P.G.Sankaran	Delivered a talk on Modeling and analysis of panel count data in the Colloquium at Indian Statistical Institute, 30 November, 2021	Invited Talk

	Delivered a talk on Proportional mean model for panel count data with competing risks in the conference STATISTICS 2021 CANADA, July15-18, 2021.	
	Delivered a talk on Quantile modelling at National Webinar on Advances in Statistics at Department of Statistics, University of Calicut, June 29, 2021.	
	Delivered a talk on Quantile Modeling in the National Webinar on The Recent Developments in Statistics and Probability, February 18-19, 2021.	
	Delivered a talk on Modeling and analysis of panel count competing risks data in the Web Conference on Visionary Innovations in Statistical Theory and Applications during February 24-28, 2021	
	Delivered a talk on Bayesian inference in quantile functions in the International Virtual Conference: Statistics in The Era of Pandemic of Kerala Statistical Association, March 4-6, 2021.	
Dr.S.M.Sunoj	International Conference (Virutal Mode) on Emerging Trends in Statistics and Data Science in conjunction with 40th Annual Convention of Indian Society for Probability and Statistics (ISPS) jointly organized by Departments of Statistics of Cochin University of Science and Technology, Cochin, M.D.University, Rohtak, University of Kerala, Trivandrum,Bharathiar	Invited Speaker

	University,Coimbatore, The Madura College (Autonomous), Madurai during 7-10 September, 2021.	
	National Science Day celebration at Sree Neelakanta Government Sanskrit College, Pattambi, Kerala, India on 28 February, 2022.	Keynote Speaker
Dr.Rajesh G	Attended and presented a paper on non-parametric estimation of copula entropy under length biased sampling in the international conference (Virtual Mode) on emerging trends in statistics and Data Science in conjunction with 40 th annual convention of ISPS, 7-10 September 2021.	Invited Talk
	Delivered a Talk on Way to make career in Statistics organized by St. Joseph College Irinjalikuda on 27 th January 2022	Invited talk

Role of Faculty in International/National organizations/Institutions/Editorial Boards

Name of Faculty	Name of Organization	Role
	International Statistical Institute, The Netherlands	Elected Member
	American Mathematical Society, U.S.A	Member
	Institute of Mathematical Statistics, U.S.A	Member
	International Indian Statistical Association, U.S.A	Life Member

Dr.P.G.Sankaran	International Society for Business and Industrial Statistics, U.S.A	Life Member
	Indian Society for Probability and Statistics, India	Life Member
	Kerala Statistical Association	Life Member
	American Mathematical Review, U.S.A	Reviewer
	International Statistics journals such as Multivariate Analysis, Computational Statistics and Data Analysis, Statistics and Probability Letters, Statistics, Communications in Statistics – Theory and Methods, Statistical Papers, Journal of Japan Statistical Association, Journal of Applied Statistics, Journal of Indian Statistical Association, Bulletin of Calcutta Statistical Association	Reviewer
	Board of Studies, CUSAT	Member
	Governing Council, RUSA	Member
	Senate, CUSAT	Member
	Indian Society for Probability and Statistics	President
	International Statistical Institute	Elected Member
	Research Council, Kerala	Member

Dr.N.Balakrishna	School of Mathematics	
	BoS in Statistics, CUSAT	Chairman (Till 17. 11. 2021)
	BoS in Calicut University	Member
	Advisory Committee of the SAPDRS in Statistics, Osmania University, Hyderabad	UGC Nominee
	Advisory Committee of the SAPDRS in Statistics, Bharathiar University, Coimbatore	UGC Nominee
	International Relations, CUSAT	Director
	CAT Monitoring Committee, CUSAT	Member
	Journal of Indian Statistical Association	Editor
	Journal of Indian Society for Probability and Statistics	Associate Editor
	Communications in Statistics–Theory and Methods	Associate Editor
	Communications in Statistics –Simulation & Computations	Associate Editor
	Dr.K.C.James	ISTE
Society of Operations Management		Life Member
International Association of Engineers (IAENG)		Member
Dr.Asha Gopalakrishnan	International Statistical Institute, Netherlands	Elected Member
	American Mathematical Society	Life Member
	International Indian Statistical Association	Life Member
	Indian Society for	Life Member

	Probability and Statistics	
	Indian Statistical Association	Life Member
	Kerala Statistical Association	Life Member
	Board of Studies, S H College, Thevara	Member
	Board of Studies, M S University, Baroda	Member
	Faculty Recruitment Committee, IISEAR, TVM	External Expert
	Faculty Recruitment Committee, Mar Ivanios College, TVM	External Expert
	Board of Studies, CUSAT	Member
Asha Gopalakrishnan	1. Journal of Indian Statistical Association	Associate Editor
	Far East Journal of Mathematical Statistics.	Associate Editor
Dr.S.M.Sunoj	International Indian Statistical Association	Life Member
	Indian Society of Probability and Statistics (ISPS)	Life Member
	Indian Society for Probability and Statistics	Associate Editor
	Kerala Statistical Association (KSA)	Life Member
	Board of Studies, CUSAT	Member
	American Journal of Mathematical and Management Sciences	Reviewer
	Journal of Probability in the Informational and Engineering Statistics	Reviewer
	Journal of Quality and Reliability Engineering	Reviewer

	International	
	American Mathematical Society	Reviewer
	Revista Colombiana Estadística	Reviewer
	Stochastics and Quality Control	Reviewer
	Board of Studies, Christ College (Autonomous), Irinjalakuda	Member
	Board of Studies, St. Thomas College(Autonomous), Thrissur	Member
	Board of Studies, Vimala College (Autonomous), Thrissur	Member
Dr.Rajesh G.	Kerala Statistical Association	Life Member
	Indian Society of Probability and Statistics	Life Member

Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/Honour/Award	Awarding Agency
Dr.N.Balakrishna	International Advisory Board Member	Kuwait Journal of Science published by Kuwait University 2020-2021
	Public outreach program	University of Calicut 2020-2021
Dr.Asha Gopalakrishnan	Member, Board of Examiners, Ph.D.	University of Perdinia, Sri Lanka 2020-2021

	Examiner	UPSC, India 2020-2021
	Associate Editor	Advanced Statistical Techniques in Business and Industry 2020-2021
Dr.Asha Gopalakrishnan	Reviewer	Computational statistics and Data Analysis 2020-2021
	Reviewer	Communication in Statistics Theory and Methods 2020-2021
Dr.S.M.Sunoj	MATRICS fellowship from SERB, India	SERB, India

Sponsored Research Projects

Sl.No.	Title of the Project	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
1		DST - FIST	Rs. 53 lakhs	Head of the Department
2	Quantile modeling of statistical data	SERB, Government of India (MATRICS)	6,60,000	Dr. P G. Sankaran
3	Modelling and analysis of lifetime data using quantile function	KSCSTE	Rs. 11.32 lakhs	Dr. P G. Sankaran
4	Stochastic modelling of non-negative time series	SERB, Government of India (MATRICS)	6,60,000	N. Balakrishna

5	Stochastic modelling and analysis for life time and time series data	SAP	Rs. 37 lakhs	Dr.N.Balakrishna
6	Statistical Inference Procedures for Bivariate Copula Entropy	SERB, Government of India (MATRICS)	6,60,000	Dr.Rajesh G
7	Modelling and analysis of life time data using quantile based measures.	SERB, Government of India (MATRICS)	6,60,000	Dr.S M Sunoj
8	A study on Lindley family of distribution.	SMNRI Project	1,00,000	Dr.Irshad M.R.

Research Programmes and Activities:

Sl.No.	Problem / Topic	Investigator (s)
1.	Stochastic Modeling of Time Series – with a focus on non-linear models	Dr.N. Balakrishna
2.	Study of stochastic elements in logistics and supply chain	Dr.K.C.James
3.	Stochastic models for the analysis of survival data	Dr.P.G. Sankaran
4.	Accelerated lifetime models	Dr. Asha Gopalakrishnan
5.	Stochastic modeling using different reliability measures	Dr. S.M. Sunoj
6.	Information inequality in bivariate set up	Dr. Rajesh.G

Seminars/ Conferences/ Workshops/ Refresher Courses conducted by the Department

Sl. No.	Title	Duration		Coordinator	Funding Agency
		From:	To:		
1	Workshop on Advanced Distribution Theory	09.12.2021	10.12.2021	Dr.Princy T.	CUSAT
2	Workshop on Data Science tools and applications	17.12.2021		Dr.Irshad M.R.	CUSAT



School of Engineering

ANNUAL REPORT 2021-22

Name of the Department: SCHOOL OF ENGINEERING

Brief History of the Department

School of Engineering (SoE) was established in 1979 as School of Technology for offering Part-time M.Tech. in Civil, Mechanical, Electrical and Chemical Engineering. Research activities were started from 1981 with Ph.D. Programme in Civil Engineering.

This School introduced B.Tech Programme in the 5 major disciplines viz Civil, Mechanical, Electronics, Computer Science and Information Technology in 1995 which played a significant role in the development of the School. Considering the increased demand of student community, the School introduced B.Tech in Safety & Fire Engineering in 1996, Marine Engineering in 2001 and Electrical & Electronics Engineering in 2003.

The Division of Marine Engineering became an independent Department in June 2007. M.Tech (Full-time) Programmes were started in Civil Engineering and Mechanical Engineering branches in 2012; Electronics & Communication Engineering and Information Technology in 2013; Safety & Fire Engineering and Computer Science & Engineering in 2014. B.Tech (Part-time) degree programmes in Mechanical Engineering, Civil Engineering and Chemical Engineering commenced in the year 2017.

The School has executed projects worth More than ₹ 250 Lakhs through its research and consultancy activities. We Received ₹ 17 Crores under TEQIP schemes in 2 consecutive phases, using which we modernized our research and other infrastructural facilities.

School of Engineering (SoE) functions through its Civil, Mechanical, Electrical, Electronics, Computer Science, Safety & Fire, Information Technology, Chemical Engineering and Applied Sciences and Humanities divisions.

All seven B.Tech programmes of School of Engineering were accredited by National Board of Accreditation (NBA) under Tier I category, and four programmes have been re-accredited till 2021- 22. The University is accredited with **A+ grade by NAAC**.

School of Engineering has been well accepted as a research center and a major consultancy center. A number of research projects have been sanctioned to the School by agencies like DST, ISRO, AICTE, UGC, Coir Board etc. Having more than 3000 students, School of Engineering is the largest academic constituent of the University.

The School offers part-time B.Tech and M.Tech degree courses in various disciplines in Engineering. Doctoral Programme is offered under all divisions.

Programmes of Study/Research: B.Tech and M.Tech Programs
B.Tech, M.Tech (Part Time), Ph.D

Faculty Members

Civil Engineering

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr.Job Thomas	Head & Professor	Ph.D	Structural Engineering
2	Dr. Sobha Cyrus	Professor	Ph.D	Geotechnical Engineering
3	Dr.K.S Beena	Professor	Ph.D	Geotechnical Engineering
4	Sri. Arun Kumar T	Associate Professor	ME	Environmental Engineering
5	Dr.Renu Pawels	Professor	Ph.D	Environmental Engineering
6	Sri.S. Ramadass	Associate Professor	ME	Structural Engineering
7	Dr.Glory Joseph	Professor	Ph.D	Offshore

				Structures
8	Dr.Abdu Rahiman K.U	Professor	Ph.D	Hydraulics Engineering
9	Dr. Bindu C.S	Professor	Ph.D	Transportation Engineering
10	Dr.Subha V.	Professor	Ph.D	Master of Housing
11	Dr.Deepa Balakrishnan S.	Professor	Ph.D	Structural Engineering & Construction Management
12	Dr.D.S Narasimha	Associate Professor	Ph.D	Structural Engineering
13	Dr.Deepa G. Nair	Professor	Ph.D	Habitat Technology
14	Dr.Roy M. Thomas	Professor	Ph.D	Environmental Engineering
15	Vishnu Sasidharan,	Assistant Professor	M.Tech	Geotechnical Engineering
16	Metilda Paulose N	Assistant Professor	M.E	Integrated Water Resources Management
17	Viji A J	Assistant Professor	M.Tech	Construction Engineering and Management
18	Dr.Anila Cyril	Assistant Professor	Ph.D	Transportation Engineering
19	Dr. Malavika Varma	Assistant Professor	Ph.D	Geotechnical Engineering

20	Dr.Anu Mary Ealias	Assistant Professor	Ph.D	Environmental Engineering
21	Swathy Pushpan	Assistant Professor	M.Tech	Geotechnical Engineering
22	Dr Rameesha T V	Assistant Professor	Ph.D	Offshore Structures
23	Anjana M V	Assistant Professor		Structural Engineering
24	Parvathy A Nair	Assistant Professor	M.Tech	Structural Engineering & Construction Management
25	Renuka V B	Assistant Professor	M.Tech	Environmental Engineering
26	Neenu Maria Jose	Assistant Professor	M.Tech	Structural Engineering & Construction Management
27	Junaijath K A	Assistant Professor	M.Tech	Structural Engineering



Mechanical Engineering

Sl.No.	Name	Designation	Qualification	Specialization
1	Dr.Ajithkumar G	Professor	Ph.D	Industrial Engineering
2	Dr.Bhasi A B	Professor	Ph.D	Industrial Engineering
3	Dr.Biju N	Professor	Ph.D	Production Engineering
4	Dr.Franklin Robert John	Professor	Ph.D	Industrial Engineering
5	Dr.Gireeshkumaran Thampi B S	Professor	Ph.D	Thermal Engineering
6	Dr.Jacob Elias	Professor	Ph.D	Thermal Engineering
7	Dr.James Varghese	Professor	Ph.D	Thermal Engineering
8	Dr.Jayadas N H	Professor	Ph.D	Production Engineering
9	Mr.Joshy P J	Associate Professor	M.Tech	Thermal Engineering
10	Dr.Narayanan Namboothiri V N	Professor	Ph.D	Production Engineering
11	Dr.Radhakrishna Panicker M R	Professor	Ph.D	Materials Engineering
12	Dr.Saju K K	Professor	Ph.D	Materials Engineering
13	Dr.Tide P S	Professor	Ph.D	Thermal Engineering
14	Dr.Roy V Paul	Associate Professor	Ph.D	Thermal Sciences
15.	Dr. Harikrishnan S	Assistant professor	Ph.D	Thermal power for Engineering

Electrical and Electronics Engineering

Permanent Faculty Members :				
Sl. No.	Name	Qualification	Designation	Specialization
1	Dr. Asha Elizebeth Daniel	Professor	B.Tech, M.Tech, Ph.D	Communication Engineering
2	Dr. P.G. Latha	Associate Professor	B.Tech, M.Tech	Power & Energy Systems
3	Sheena K.M.	Associate Professor	B.Tech, M.Tech	Electrical Machines
Contract Faculty				
4	Dr. Haseena H	Assistant Professor (Contract)	B Tech M Tech Ph.D	Instrumentation and Control
5	Anju G Pillai	Assistant Professor (Contract)	B.Tech, M.Tech	Power Electronics & Power Systems
6	Ankitha M R	Assistant Professor (Contract)	B.Tech, M.Tech	Power systems
7	Rosamma Thomas	Assistant Professor (Contract)	B.Tech, M.Tech	Power Electronics & Power Systems
8	Misha K M	Assistant Professor (Contract)	B.Tech, M.Tech	Power systems and Control
9	Mithra P S	Assistant Professor (Contract)	B.Tech, M.Tech	Power Systems

10	Dr.K Vinida	Assistant Professor (Contract)	B Tech M Tech Ph.D	Industrial Drives and Control
11	Sanjna Salim	Assistant Professor (Contract)	B Tech M Tech	Power Electronics
12	Reshma K Jayan	Assistant Professor (Contract)	B Tech M Tech	Power Electronics & Drives
13	Ragi R Menon	Assistant Professor (Contract)	B Tech M Tech	Power Electronics & Drives
14	Jithin Jose	Assistant Professor (Contract)	B Tech M Tech	Power Electronics & Power Systems
15	Suprina S	Assistant Professor (Contract)	B Tech M Tech	Power Electronics & Drives
16	Neethu N M	Assistant Professor (Contract)	B Tech M Tech	VLSI & Embedded Systems

Permanent Faculty Members : Division of Applied Sciences and Humanities

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr Dhannia T	Associate Professor	Ph.D, B.Ed	Material science
2	Dr. T P Johnson	Professor	Ph.D	

Computer Science & Engineering

Permanent Faculty Members :				
SL.No.	Name	Qualification	Designation	Specialization
1	Dr. David Peter S	Ph.D	Professor	Software Engineering
2	Dr. Sheena Mathew	Ph.D	Professor	Network Security
3	Dr. Sudheep Elayidom	Ph.D	Professor	Data Science
4	Dr. Latha R Nair	Ph.D	Professor	Artificial Intelligence and Machine learning
5	Mr. Vinodkumar P P	M Tech	Associate Professor	Computer & Information Science
6	Mr. Pramod Pavithran	M Tech	Associate Professor	Network Security
7	Mr. V Damodaran	M Tech	Associate Professor	Computer Science
8	Ms. Ancy Zachariah	M Tech	Associate Professor	Machine learning
9	Ms. Sheena S	M Tech	Assistant Professor	Image Processing
10	Ms. Preetha S	M Tech	Assistant Professor	Data science

Contract Faculty Members				
11.	Ms.Jithi P V	M.Tech	Assistant Professor	Information System
12.	Ms.Minu Poulose	M.Tech	Assistant Professor	Deep Learning
13.	Ms.Fameela K A	M.Tech	Assistant Professor	Image Processing
14.	Ms.Renjusha Aravind	M.Tech	Assistant Professor	Image Processing
15.	Ms.Neethu George	M.Tech	Assistant Professor	Network Security
16.	Ms.Remyamol K M	M.Tech	Assistant Professor	Big Data
17.	Mr.Rajkumar K	M.Tech	Assistant Professor	Mobile Communication
18.	Dr.Hima Suresh	M.Tech	Assistant Professor	Machine Learning
19.	Ms.Chaithanya C	M.Tech	Assistant Professor	Deep Learning
20.	Ms.Aiswarya Sudhakar	M.Tech	Assistant Professor	Network Security

Permanent Faculty Members : Division of Electronics and Communication Engineering

SI No	Name	Designation	Qualification	Specialisation
1	Dr. Anju Pradeep	Professor & Head	Ph.D	Microwave Metamaterials
2	Dr. Rekha K. James	Professor	Ph.D	Micro Electronics
3	DR, Mridula S.	Professor	Ph.D	RF and Microwaves
4	Dr. Binu Paul	Associate Professor	Ph.D	Microwave ,CEM
5	Mr. Unni AM	Associate Professor	M.Tech	Electronics Design
6	Dr. Mythili	Associate Professor	Ph.D	Microwaves & signal Processing
7	Dr. Jibukumar M.G.	Associate Professor	Ph.D	Opto Electronics Wireless Communication
8	DR. Abdulla P.	Professor	Ph.D	RF and Microwaves
9	Dr. Shahana T.K.	Associate Professor	Ph.D	Micro Electronics
10	Dr. Deepa Sankar	Associate Professor	Ph.D	Image Processing
11	Mr. Premkumar C.V.	Assistant Professor	M.Tech,	Electronics and Communication
12	Dr. Babita Roslind Jose	Professor	Ph.D	Micro Electronics
13	Ashwin Bhasi	Assistant Professor	M TECH	Wireless Technology
14	Gayathri R	Assistant Professor	M TECH	Signal Processing

15	Vani Devi P	Assistant Professor	M TECH	Applied Electronics
16	Renju R	Assistant Professor	M TECH	VLSI and Embedded Systems
17	Deepa R	Assistant Professor	M.TECH	Applied Electronics
18				VLSI & Embedded system
19	Ami Iqubal	Assistant Professor	M TECH	Applied Electronics
20	Lesni P S	Assistant Professor	M TECH	VLSI and Embedded
21	Indu I	Assistant Professor	Ph.D	Wireless Technology
22	Reen Paul	Assistant Professor	M.Tech	VLSI & Embedded system
23	Deepthy J	Assistant Professor	M.Tech	Wireless Technology
24	Anjali Vasudev	Assistant Professor	M.Tech	Communication Engg& Signal processing
25	Anu A R	Assistant Professor	Ph.D	Microwave



Information Technology

Sl. No.	Name	Designation	Qualification	Specilisation
1	Dr Renumol V G	Professor	M Tech, Ph.D	Software Engineering
2	Dr Binsu C Kovoov	Professor	M Tech , Ph.D	Computer and information science
3	Dr Santosh Kumar	Associate Professor	M.Tech,Ph.D	Software engineering
4	Dr Shelbi Joseph	Associate Professor	MTech, Ph.D	Computer science
5	Dr Daleesha M Viswanathan	Associate Professor	MTech, Ph.D	Computer and information science
6	Mrs. Sariga Raj	Associate Professor	MTech	Software engineering
7	Dr Sunitha E V	Assistant Professor(contract)	Ph.D	Computer Science
8	Akhil P V	Assistant Professor(contract)	M Tech	Computer Scienceand Information Systems
9	Mrs. Smitha S	Assistant Professor(contract)	M Tech	Computer & Information Technology
10	Shilpa Elsa Abraham	Assistant Professor(contract)	M Tech	Computer Science Engineering

11	Riyas N.K	Assistant Professor(contract)	M Tech	Information Security
12	Deepa Paul E.P	Assistant Professor(contract)	M Tech	Computer Scienceand Engineering
13	Sahiya A.A	Assistant Professor(contract)	M Tech	Information Security
14	Sreejadevi P	Assistant Professor(contract)	M Tech	Information Technology
15	Anjali S	Assistant Professor(contract)	M Tech	Computer Science Engineering
16	Nafsiya C A	Assistant Professor(contract)	M Tech	Computer Scienceand Engineering
17	Smitha John	Assistant Professor(contract)	M Tech	Computer Scienceand Engineering
18	Lima Johnson K	Assistant Professor(contract)	M Tech	Computer Scienceand Engineering
19	Sara Renjith	Assistant Professor(contract)	M Tech	Computer Scienceand Engineering
20	Sunu Fathima T H	Assistant Professor(contract)	M Tech	Computer Scienceand Engineering
21	Jiby T C	Assistant Professor(contract)	M Tech	Computer Scienceand Information Systems

Permanent Faculty Members: Safety and fire Engineering

Sl. No.	Name	Qualification	Designation	Specialization
1.	Dr. G. Madhu	Professor	Ph.D	Environmental Engineering, Process Safety
2.	Dr. D.K Sahoo	Professor	Ph.D., LL.B.	Structural Engineering
3.	Dr. George Mathew	Professor	PhD	Structural Engineering
4.	A Nirmal Job	Associate professor	M.Tech	Production Mgt., safety
5.	Dr. V.R. Renjith	Associate professor	PhD	Industrial Safety
6.	Mr. Anish Job Kurian	Asst. Professor (Contract)	M Tech	Solid Mechanics, Fire Dynamics
7.	Mrs. Nithya Gopinath	Asst. Professor (Contract)	M.Tech	Green Technology, Chemical Engineering
8.	Ms. Jiji Varghese	Asst. Professor (Contract)	M.Tech	Industrial Safety, Process Safety, QRA
9.	Mrs. Anju Roy	Asst. Professor (Contract)	M.Tech	Industrial Drives and Control
10.	Dr. Ahammed	Asst. Professor	Ph.D	Applied and Computational

	Sherief K Y	(Contract)		Mathematics
11.	Mr. Shyam P N	Asst. Professor (Contract)	M.Tech	Manufacturing Engineering
12.	Dr. Lila Bhai T S	Asst. Professor (Contract)	Ph.D	Chemical Engineering
13.	Mr. Praveen Vijayan	Asst. Professor (Contract)	M.Tech	Thermal Engineering
14.	Dr. Ahammed Sherief K Y	Asst. Professor (Contract)	Ph.D	Applied and Computational Mathematics
15.	Mr. Shyam P N	Asst. Professor (Contract)	M.Tech	Manufacturing Engineering
16.	Mrs. Beena P Nambiar	Asst. Professor (Contract)	M.Tech	Environmental Engineering

Visiting Faculty (If any)**Information Technology**

Sl.No.	Name	Designation	Qualification	Specilisation
1	Mrs.Maya Menon	Guest Faculty	B.Tech	Networking

Research Scholars :**Civil Engineering**

Sl.No	Name	Funding Agency	Guide	Area of Work
1	Lekshmi M S		Dr.Subha V, Dr.Deepa G Nair	Building Technology
2	Saranya Ullas	University JRF	Dr.Bindu C S	Transportation Engineering
3	Meera Jacob	University JRF	Dr.Deepa Balakrishnan S	Geotechnical Engineering
4	Asika Johney	University JRF	Dr.Benny Mathews Abraham, Dr.Deepak Kumar Sahoo	Geotechnical Engineering
5	Rija Johny	University JRF	Dr.Benny Mathews Abraham	Geotechnical Engineering
6	Sujatha A	E-Grantz	Dr.Deepa Balakrishnan S	Structural Engineering
7	Jinsha T V	University JRF	Dr.Beena K S	Geotechnical Engineering
8	Vinu Vijayan	University JRF	Dr.Deepa G Nair	Building Technology

9	Ajai Joy Nariyelil	University JRF	Dr.Sobha Cyrus, Dr.Deepa Balakrishnan S	Geotechnical Engineering
10	Vivek K Sidhan	University JRF	Dr.Roy M Thomas, Dr.Sobha Cyrus,	Geotechnical Engineering
11	Ifrath K Maitheen	University JRF	Dr.Beena K S, Dr.Bindu C S	Geotechnical Engineering
12	Vivek V S	University JRF	Dr.Beena K S	Geotechnical Engineering

Mechanical Engineering

Sl. No.	Name	Funding Agency	Guide	Area of Work
Full – Time				
1	Erfan S	Yes	Dr. Franklin Robert John	
2	Syam Joy	Yes	Dr. Franklin Robert John	
3	Nivin Vincent	Yes	Dr. Franklin Robert John	
Part – Time				
Sl. No.	Name	Institute	Guide	
1	Manoj Kumar V.K.	Jyothi Engineering Shornur.	Dr.Franklin Robert John	
2	Rashid Kareem	SOE, CUSAT	Dr.M.R.R. Panicker	
3	Unnikrishnan M.M.	SOE, CUSAT	Dr.Biju N	

4	Divya S	ToCH	Dr.Ajith Kumar G.	
5	Hareesh B	Carmel Polytechnic	Dr.Jacob Elias	
6	Harkrishnan R	College of Engineering and MnagementP unnapra	Dr.K.C.James	
7	Kriparaj.K.G	KMSME	Dr.Tide P S	
8	M.Harikrishnan	SOE, CUSAT	Dr.Tide P S	
9	Niju Mohammed K	CET, Trivandrum	Dr.Tide P S	
10	Shamnad M	College of Engineering, Perimon	Dr.Franklin Robert John	
11	Shijith K	College of Engineering Vadakara.	Dr.Franklin Robert John	
12	Shine George	Govt Polytechnic College, Kalamassery.	Dr.Narayanan Namboothiri V N	
13	Binu Thomas	AmalJyothi, Kanjirapally	Dr.P S Sreejith	
14	Praveen A	CET Trivandrum	Dr Gireesh Kumaran Thampi	
16	Rama Chandra RaoAdduru	ISRO Aluva	Dr TIDE P S	
17	Shafeek M	CET Trivandrum	Dr Narayanan Namboothiri V N	

18	Vipin Vijayan	MuthootInstt. of Tech.	Dr.Sreejith P S	
19	Tom Zacharia		Dr.Jayadas N.H.	
20	V.Vijayachandran Nair		Dr.V.N.Narayanan Namboothiri	
21	James K.J.		Dr.M.Bhasi (SMS)	
22	Jayadeep Kumar J.		Dr.James Varghese	
23	Santhosh Kumar S.		Dr.James Varghese	
24	Arun C.		Dr.Biju N.	
25	Jibi Job		Dr.Biju N.	
26	GopalakrishnaP illaiM.		Dr.P.S.Sreejith	
27	Thilakan T.B.		Dr.P.S.Sreejith	
28	Jayasree K.S.		Dr.K.C.James	
29	Sanchu S.		Dr.Biju N.	
30	SushilCherian		Dr.James Varghese	
31	Eldho Jacob Joy		Dr.Biju N.	
32	Srijith Rajeev		Dr.Biju N.	
33	Raghu R.		Dr.P.S.Sreejith	
34	Askkar Ali P.		Dr.Ajithkumar G.	
35	Harish T.V.		Dr.Ajithkumar G.	
36	S. Krishnanunni		Dr.Ajithkumar G.	

37	SanjuJ.Thomas		Dr.Ajithkumar G.	
38	Rajeev V.S.		Dr.James Varghese	
39	Biju Prasad B.		Dr.Biju N	
40	Dileep G.		Dr.Biju N.	
41	Nikhil Asok N.		Dr.Biju N.	
42	Joshy Joseph		Dr.Ajith Kumar G.	
43	Surya Natarajan		Dr.Ajithkumar G.	
44	Bony John		Dr.James Varghese	
45	Devi Parvathy S.		Dr.James Varghese	
46	LintoP.Anto		Dr.James Varghese	
47	Rajeev V.S.		Dr.James Varghese	
48	Swaraj Kumar B		Dr.James Varghese	
49	PramodRamakrishnan		Dr.M.R.Radhakrishna Panicker	
50	Antonio Joseph V.K.		Dr.Jayadas N.H.	
51	Nimmu Mary Ivan		Dr.Jayadas N H	
52	Revikumarthampi V.R		Dr.P.S.Sreejith	
53	Chinmaya Krishnan G.		Dr.V.N.Narayanan Namboothiri	
54	Jinu Mathew		Dr.Jacob Elias	

55	Sanjeevy .C		Dr.Jacob Elias	
56	Mathew PrinsKorah Philip		Dr.M.R.Radhakrishna Panicker	
57	AnuN.Vincent		Dr.Gireesh Kumaran Thampi	
58	Eldho Varghese		Dr.Gireesh Kumaran Thampi	
59	NithinM.Joy		Dr.Gireesh Kumaran Thampi	
60	Praveen Vijayan		Dr.Gireesh Kumaran Thampi	
61	Vishnu Sankar		Dr.Gireesh Kumaran Thampi	
62	Syamlal T.		Dr.Jayadas N.H.	
63	Toms Philip		Dr.Jayadas N.H.	
64	Aby S.		Dr.Jacob Elias	
65	GovindS.Menon		Dr.Jacob Elias	
66	Jimmy John		Dr.Jacob Elias	
67	Roshith K.		Dr.James Varghese	
68	SaiGovind V.S.		Dr.M.R.Radhakrishna Panicker	
69	Arun Chand		Dr. A B Bhasi	
70	Jayamohan K G		Dr. A B.Bhasi	
71	Ruby Maria Syriac		Dr. A B Bhasi	

72	Shajan K Thomas		Dr.Gireesh Kumaran Thampi	
73	Prakash M Kallanickal		Dr.Gireesh Kumaran Thampi	
74	Shajan K Thomas		Dr.Gireesh Kumaran Thampi	
75	SreeneshValiyandi		Dr.Gireesh Kumaran Thampi	
76	Ramesh Krishnan S		Dr.V.N.Narayanan Namboothiri	
77	Asif. S		Dr.Jacob Elias	
78	Anilett Benny		Dr. Franklin Robert John	

Electrical and Electronics Engineering

Sl.No.	Name	Funding Agency	Guide	Area of Work
Full – Time				
1	Reenu Bose	JRF	Dr P G Latha	Electric Vehicles
Part – Time				
Sl. No.	Name	Institute	Guide	Area of Work
1	Deepa Sankar	ASIET	Dr.C.A.Babu	Power System
2	Shaija P.J.	MEC	Dr. Asha Elizebeth Daniel	Control Systems
3	Athira M.	ASIET	Dr. Asha Elizebeth Daniel	Power Electronics

4	Prameela B.	GEC,trissur	Dr. Asha Elizebeth Daniel	Low Noise Amplifier Design
5	Preethi Sebastian	Mangalam College	Dr. Usha Nair	Renewable Energy
6	Sindhura Rose Thomas	MITS	Dr. Usha Nair	Non Linear Dynamical Analysis of Coupled Oscillators for Electrical Network and Biological Systems
7	Saritha K. S.	SNGCE	Dr. Usha Nair	Optimum Energy Management of Integrated Microgrid System with Storage.
8	Vinod V. Nair	DDUK, CUSAT	Dr. Usha Nair	Integrating Solar Photovoltaic Generation in Distribution Grids: Models, Strategies and Solutions for Network Integration with reference to Kerala
15	Swathi M.	Bishop Jerome	Dr.C.A.Babu	Optimal Power
16	Beena Puthilath	SCMS	Dr.C.A.Babu	Electrical Safety

17	Vipin A.M	SOE,CUSAT	Dr. Usha Nair &Dr. Asha Elizebeth Daniel	Wireless Power Transfer
18	Sanjna Salim	SOE	Dr.C.A.Babu	Renewable Energy
19	Nisha Rani G.S	KMSME,CU SAT	Dr.C.A.Babu	Industrial Drives
20	Gireesh Kumar A.	CAE, Perumon	Dr.C.A.Babu	Hybrid Renewable Energy Systems
21	Ashna Joseph	MACE	Dr.PG Latha	Power Electronic Converter
22	Rakhee R	FISAT	Dr.PG Latha,	Renewable energy
23	Veena Wilson	FISAT	Dr.PG Latha,	Electric Vehicle
24	Sreeja E A	FISAT	Dr.PG Latha,	Renewable energy
25	Rosamma Thomas	SOE,CUSAT	Dr.Asha Elizabeth Daniel,	Data analytics in distribution systems
26	Surumi Hassainar	FISAT	Dr.Asha Elizabeth Daniel,	Communication
27	Baby Sebastian	ISRO	Dr.Asha Elizabeth Daniel,	Communication

28	Jyothi GK	FISAT	Dr.Asha Elizabeth Daniel	Improved arc welding supply
29	Divya S	ToCH	Dr.PG Latha,	Developing technologies in EV

Division of Applied Sciences and Humanities

Sl.No.	Name	Funding Agency	Guide	Area of Work
1	Ms Anu Tharu P			Material science
2	Ms Resmi V R			Material science

Division of Computer Science and Engineering

Sl.No.	Name	Funding Agency	Guide	Area of Work
Full – Time				
1	Athiramol		Dr. Sudheep Elayidom	Deep Learning
2	Midhun P Mathew		Dr. Sudheep Elayidom	Deep Learning
Part – Time				
Sl.No.	Name	Institute	Guide	Area of Work
1.	Asha M. J		Dr. Sudheep Elayidom	Deep Learning
2.	Hashmy Hassan		Dr. Sudheep Elayidom	Data science
3.	Asha Raj		Dr. Sudheep Elayidom	Deep Learning

4	Mohammed Illias		Dr. Sudheep Elayidom	Agricultural Data Mining
5	Nisha Markose		Dr. Sudheep Elayidom	Image Processing
6.	Arun M. O		Dr. Sudheep Elayidom	Data science
7.	Rakhee M		Dr. Sudheep Elayidom	Block Chaining
8.	Anil C B		Dr. Sheena Mathew	Wireless Sensor Networks
9.	Siyamol Chirakkarottu		Dr. Sheena Mathew	Bioinformatics in Cryptography
10.	Pamod Pavithran		Dr. Sheena Mathew	Network Security
11.	Tomsy Paul		Dr. Sheena Mathew	Parallel processing
12.	Sheena S		Dr. Sheena Mathew	Image processing
13.	Sheena Kurian		Dr. Sheena Mathew	Image processing
14.	Fasila K A		Dr. Sheena Mathew	Image processing
15.	Divya Mohan		Dr. Latha R Nair	Deep learning
16.	Abdul Nazar A A		Dr. Latha R Nair	Ensemble classification
17.	Dhanya K Sudhish		Dr. Latha R Nair	Content Based Retrieval
18.	Rahoof P. P		Dr. Latha R Nair	Network Security

19.	Ancy Sherin Jose		Dr. Latha R Nair	Software Defined Networking
20.	Prabha Elizabeth Varghes		Dr. Latha R Nair	Cryptography
21.	Preeetha S		Dr. Latha R Nair	Big Data
22.	Ancy Zachariah		Dr. Latha R Nair	Machine Learning
23.	Remesh K.M		Dr. Latha R Nair	Rough set algorithms
24.	Bincy Wilson		Dr. David Peter S	
25.	Mathews Abraham		Dr. David Peter S	
26.	Lima Johnson K		Dr. David Peter S	Human Action Recognition
27.	Sneha S		Dr. David Peter S	Natural Language Processing

Division of Electronics and Communication Engineering

SI No	Name	Funding Agency	Guide	Area of Work
1	Nisamol TA		Dr . Abdulla P. Professor	Micro strip LPF for RF Microwave Communication
2	Sheeba Varghese		Dr . Abdulla P. Professor	Waveguide-fed
3	Ansha K.K		Dr . Abdulla P. Professor	EMI/EMC
4	Anju Iqbal		Dr . Abdulla P. Professor	Design and Development of Microwave
5	Lakshmi S Panicker		Dr. R. Gopikakumari Professor	Transform for multi modal Signal

6	Rahul C		Dr. R. Gopikakumari Professor	
7	FebinaIkbal		Dr. R. Gopikakumari Professor	Image processing for Secure communication
8	Arun C		Dr. R. Gopikakumari Professor	Medical Image Processing
9	ReshmaLakshmanan		Dr. S. Mridula Professor	Flexible Substrates
10	Tushara AH		Dr. S. Mridula Professor	Microwave Material characterization
11	Mr. Basil J Paul		Dr. S. Mridula Professor	Metamaterials in Microwave
12	Mrs. Sheeja Vincent		Dr. S. Mridula Professor	RF Sensors
13	Anjali S V		Dr Binu Paul. Professor	
14	Binesh. K.		Dr Binu Paul. Professor	Design of UWB MIMO Antenna Array
15	Mary Catherine V.G.		Dr Binu Paul. Professor	Design and development of Aibased sensors
16	Neethu Mohan M	JRF	Dr Binu Paul. Professor Microwaves	Microwaves
17	Shiney Thankachan		Dr. Binu Paul Professor	Performance enhancement and numerical analysis of metamaterials structures
18	Sheeba P S		Dr. P.Mythili,	
19	Anjit TA		Dr. P.Mythili,	Microwave Imaging
20	Sushanth Puthiyottil		Dr. P.Mythili,	
21	Rema N R		Dr. P.Mythili,	Transformation techniques for Image Processing

22	Anju Maria		Dr. P.Mythili,	
23	Ramitha Radhakrishnan		Dr. P.Mythili,	Signal Processing
24	Riya Benny		Dr. P.Mythili,	Image processing
25	Soumya N		Dr. P.Mythili,	
26	Gopi C		Dr. Jibukumar M.G	Fiber optic sensors
27	Archana Ajith		Dr. Jibukumar M.G	Artificial intelligence
28	Sani John		Dr. Jibukumar M.G	AI in medical imaging for Anomaly Detection and disease identification
29	Nivea Kesav		Dr. Jibukumar M.G	Machine Learning
30	Shamla B		Dr. Jibukumar M.G	Cooperative Communication
31	Tripti C		Dr. Jibukumar M.G	Vehicular Networking
32	Sethulekshmi P		Dr. Jibukumar M.G	Communications
33	Premkumar		Dr. Jibukumar M.G	Cooperative Communication
34	Rose George		Dr. Rekha James	Reconfigurable Intrusion Detection System
35	Shika U S		Dr. Rekha James	Performance and Improvement for TFET
36	Josna Philomina		Dr. Rekha James	Secure communication in NOC
37	Neethu. K.		Dr. Rekha James	Design of Reliable and secure on chip communication

38	Jithendra K.B.		Dr. Shahana T.K	Hardware Efficient Secure Embedded Communication Systems
39	Mahesh V.V.		Dr. Shahana T.K	VLSI Signal Processing Systems
40	Roshna B Raj		Dr. Shahana T.K	Thin film transistors
41	Pramod P		Dr. Shahana T.K	VLSI Signal Processing Architectures
42	Basil K Jeemon		Dr. Shahana T.K	Wireless Communication
43	Anu Assis		Dr. Shahana T.K	Development of Cryogenic sensors
44	Preenu Paul		Dr. Babita R Jose and Dr. Shahana T.K	DC-DC Converters
45	<u>Devika A K</u>		Dr. Babita R Jose	Transfer Learning
46	Lekshmi. R.		Dr. Babita R Jose	Transfer Learning
47	Mehbooba P. Shareef		Dr. Babita R Jose	Recommendation System
48	Rony Antony. P.		Dr. Babita R Jose	SecurityPrimitives in emerging Technologies
49	Chitra Liz Palson		Dr. Babita R Jose	Reconfigurable RF circuits
50	Seema Safar		Dr. Babita R Jose	Efficient Algorithms
51	Agnel John K.J.		Dr. DeepaSankar	

52	Shehin A.U.		Dr. DeepaSankar	Design of Reliable and secure on chip communication
53	Pearsly P V		Dr. Deepa Sankar	Compressive Sensing
54	Reshma B		Dr. Deepa Sankar	Coral Reef Identification
55	Dhanya Sudarshan		Dr. Deepa Sankar	Document Digitization and analysis
56	Aiswariya Raj		Dr. Deepa Sankar	Digital image processing
57	Jeslyn Shah		Dr. Deepa Sankar	Image Processing
58	Arun Shaji		Dr. Anju Pradeep	Gain enhancement superstrate
59	Dhanya R		Dr. Anju Pradeep	Phased array
60	Rahul Manohar		Dr. Anju Pradeep	Metamaterial Absorber
61	Jisha M V		Dr. Anju Pradeep	Radar Cross section
62	Sreerag M		Dr. Anju Pradeep	Isolation Enhancement for multi Antenna
63	Sumi Baby		Dr. Anju Pradeep	Modeling and Stimulization of Drain current



Information Technology

Sl. No.	Name	Funding Agency	Guide	Area of Work
1	Uma Narayanan	CUSAT	Dr.Shelbi Joseph	Big data security
2	Nisha S Raj	CUSAT	Dr.Renumol V G	Education Technology
3	Jeevamol Joy	CUSAT	Dr.Renumol V G	Education Technology
4	Savitha K K	KERALA GOVT	Dr.Renumol V G	Education Technology
5	Smitha John	CUSAT	Dr.Renumol V G	Education Technology
6	Sreeja M. U	CUSAT	Dr.Binsu C Koor	Computer vision, video analytics
7	Sreelakshmy I J	KERALA GOVT	Dr.Binsu C Koor	Computer vision
8	Nismimol E.A	UGC	Dr.Santoshkumar M B	Knowledge base in agriculture domain
9	Jaseena K.U	UGC	Dr.Binsu C Koor	Big Data analytics
10	Alfin Abraham	CUSAT	Dr.Santoshkumar M B	Block chain in agriculture
11	Vishnuprabha V.	KERALA GOVT	Dr.Daleesha M Viswanathan	Natural Language Processing
12	Sandhya N.	CUSAT	Dr.Philip Samuel	Big Data
13	Deepu Job	CUSAT	Dr.Shelbi Joseph	Cryptography and networking
14	Lidiya Thambi	TEQUIP	Dr. Varghese Paul	Digital image processing

Safety and Fire Engineering

Sl.No.	Name	Funding Agency	Guide	Area of Work
Full – Time				
1	Priscilla Grace George	USRF	Dr. V R Renjith	Risk Assessment

2	Deepa R.	QIP	Dr. G Madhu	Water Treatment
3	Anagha Raveendran	USRF	Dr. V R Renjith	Risk Assessment
4	Mrs. Anillett Benny	DST-PURSE (Aug- Dec 2021) &UJRF(Since Mar-2022)	Dr. V R Renjith	Safety Management

Part – Time

Sl.No.	Name	Institute	Guide	Area of Work
1	Manoj Jose Kalathil		Dr. V R Renjith	
2	Sivi Varghese		Dr. V R Renjith	
3	Stephy James		Dr. V R Renjith	
4	Ayyappadas K.		Dr. V R Renjith	
5	Baiju Karun		Dr. V R Renjith	
6	Raufeek M.H.		Dr. V R Renjith	
7	Suresh G.		Dr. V R Renjith	
8	Sini Joy P.J.		Dr. V R Renjith	
9	Amal S.George		Dr. V R Renjith	
10	Praveen Mathew	KSCSTE	Dr. Dipak Kumar Sahoo	
11	Biju P.Varghese	KSCSTE	Dr. Dipak Kumar Sahoo	
12	James C.J.		Dr. Dipak Kumar Sahoo	
13	Athira M.		Dr. Dipak Kumar Sahoo	

14	Ranjini Menon		Dr. Dipak Kumar Sahoo	
15	Neeraj U.K.		Dr. Dipak Kumar Sahoo	
16	Rakesh A.		Dr. Dipak Kumar Sahoo	
17	Binu M Issac		Dr. George Mathew	
18	Suresh Babu N		Dr. George Mathew	
19	Biju C.V		Dr. George Mathew	
20	Anish Job Kurian		Dr. George Mathew	
21	Nirmal Job A		Dr. G Madhu	
22	Lila Bhai T.S.		Dr. G Madhu	
23	Mohammed Irshad E		Dr. G Madhu	
24	Krishnalal G.		Dr. G Madhu	
25	K. Uday Sankar		Dr. G Madhu	
26	Tiju Baby		Dr. G Madhu	
27	Kishore Ravindran		Dr. G Madhu	
28	Sruthi Vijayakumar		Dr. G Madhu	
29	Nivya Mary Abraham		Dr. G Madhu	
30	Saurabh Sahadev		Dr. G Madhu	
31	Salini P.J.		Dr. G Madhu	
32	Nithya Gopinath		Dr.G.Madhu	
33	Sheela K.K		Dr.G.Madhu	
34	Thomas T		Dr.M.N.Vinod Kumar	
35	Babu P. Kuriakose		Dr.M.N.Vinod kumar	

36	Rajesh Kumar R.		Dr.M.N.Vinodkumar	
37	Manoj P.K.		Dr.M.N.Vinodkumar	
38	Jayakumar V.		Dr.M.N.Vinodkumar	
39	Saritha K.S		Dr.M.N.Vinodkumar	
40	Josna Philomina		Dr.M.N.Vinodkumar	
41	Shijarath		Dr. G Madhu	

Administrative Personnel :

Electrical and Electronics Engineering

Sl. No.	Designation	No. of posts
1	Head of the Division	1

Computer Science and Engineering

Sl. No.	Designation	No. of posts
1	Head of the Division	1

Electronics and Communication Engineering

Sl.No.	Designation	No. of Posts
1	Head of the Division	1
2	Office attendant	1

Safety and Fire Engineering

Sl. No.	Designation	No. of posts
1	Head of the Division	1

1. Technical Personnel :**Civil Engineering**

Sl.No.		Designation	No. of Posts
1	Permanent	Technical Officer Grade I	2
2		Technical Asst.Gr.III	1
3		Lab Attendant	1
4	Contract	Technical Assistant Grade I	3
5		Technician Grade I	2

Mechanical Engineering

Sl.No.	Designation	No. of Posts
1	Tech. Asst. Grade III	1
2	Tech. Asst. Grade II	7
3	Tech. Asst. Grade I	3
4	Lab Assistant	1
5	Technician Grade I	5

Electrical and Electronics Engineering

Sl.No.	Designation	No. of posts
1	Tech. Asst. Grade II	2
2	Tech. Asst. Grade I	1
3	Lab Assistant	1

Computer Science and Engineering

Sl.No.	Designation	No. of posts
1	Tech. Asst. Grade II	2
2	Tech. Asst. Grade I	3
3	Lab Assistant	0

Electronics and Communication Engineering

Sl. No.	Designation	No. of Posts
1	Technical Officer Gr.I (Senior scale)	1 permanent
2.	Technical Officer Gr.I	1 permanent
3	Technical Asst.Gr III	1(permanent)
4	Technician Asst Grd I	1(contract)
5	Technician Gr I	4(2 contract, 1 daily wage)
6	Lab Attendant	1(permanent)

Information Technology

Sl.No.	Designation	No. of Posts
1	Technical assistant(grade 3)	3
2	Lab attendent	1

Safety and Fire Engineering

Sl.No.	Designation	No. of posts
1	Tech. Asst. Grade I	2(Contract)
2	Tech. Asst. Grade I	2(Contract)
3	Lab Assistant	1(Permanent)

Student Enrollment :**Civil Engineering**

Sl.No.	Programme of Study	Men	Women	Total
1	B.TECH (FULL TIME)	204	207	411
2	M.TECH (FULL TIME)	10	41	51
3	B.TECH (PART TIME)	18	21	39
4	M.TECH (PART TIME)	16	8	24

Mechanical Engineering

Sl.No.	Programme of Study	Men	Women	Total
1.	B.Tech	63	10	73
2.	M.Tech	9	2	11
3.	B.Tech (PT)	40	-	43

Electrical and Electronics Engineering

Sl. No.	Programme of Study	Men	Women	Total
1	B. Tech	43	25	68
2	M. Tech			

Computer Science and Engineering

Sl. No.	Programme of Study	Men	Women	Total
1	B. Tech	67	26	93
2	M. Tech	1	7	8

Electronics and Communication Engineering

Sl.No.	Programme of Study	Men	Women	Total
1	B. Tech	56	41	97
2	M. Tech	-	2	2

Information Technology

Sl.No.	Programme of Study	Men	Women	Total
1	B.Tech in IT	290	96	386
2	M .Tech in software systems	2	2	4

Safety and Fire Engineering

S I. No.	Programme of Study	Men	Women	Total
1	B. Tech(2018Ad)	62	3	65
2	M. Tech(2020 Ad)	11	6	17

Research Facilities :**Civil Engineering**

- a. Laboratories :- 08**
- b. Major equipments - 03**
- c. Library**

Division of Applied Sciences and Humanities

- d. Laboratories**
 - 1. Weighing balance**
 - 2. Distillation unit**
 - 3. Microwave oven**
 - 4. Hot air Oven**
 - 5. Sonicator**
 - 6. Centrifuge**

Computer Science and Engineering

Sl. No.	Name	Major Equipments
1	Network and Operating System Lab	Fujitsu Server -1 HCL Server - 1 Dell Server-1 I5 Dell Systems -30
2.	Data Structure Lab	Fujitsu Server -1 I3 Systems – 45
3.	Computational Lab	I3 System -30
4.	M.Tech Lab	I3 System – 20
5.	Project Lab	I3 System -25 Arm Kit -3 Microcontroller Kit - 3 8085 kit - 10 8086 Kit – 3

Electronics and Communication Engineering

DIVISION OF ELECTRONICS		
	Name of Laboratory	Major equipments
1	COMMUNICATION LAB	1. Antenna 3D Positioner 2. Ridged Horn Antenna 3. Analog & Digital Storage Oscilloscope 4. Microwave Bench 5. Computers
2	WIRELESS TECHNOLOGY LAB	1. Computer 2. Digital CRO 3. Sprctrum Analyzer 4. RF Signal Generator 5.Universal Programmer,

3	DIGITAL /MUP LAB	<ol style="list-style-type: none"> 1. 8051 Microcontroller kit (7 nos) 2. 8086 Microcontroller kt(5 nos) 3. Interface card for 86 kit (20 nos) 4. Digital IC Trainer kit (20 nos) 5. Dual channel CRO (4 nos) 6. Digital IC Tester (1 no) 7. i5 Desktop
4	SIGNAL PROCESSING LAB	<ol style="list-style-type: none"> 1. HP Desktop 2. DSP Starter Kit 3 DSP Evaluation Board 4. i7 Desktop Computers 5. Wireless Access Point 6. DSP Kit 7. i5 Desktop Computer
6	COMPUTATIONAL LAB	<ol style="list-style-type: none"> 1. i5 computers (15 nos)
6	VLSI Lab	<ol style="list-style-type: none"> 1. Server 2. Cadence Virtuoso
7	Fiber Lab	<ol style="list-style-type: none"> 1.AC Power Meter Connectrisation kit, 2.Computers

Information Technology

Advanced Project Lab

Safety and Fire Engineering

Sl. No.	Programme of Study	Men	Women	Total
1	B. Tech(2018Ad)	62	3	65
2	M. Tech(2020 Ad)	11	6	17

a. Major equipments : i7 PCs

b. Library

School of Engineering

No of books and Journals as of 31 st March of the Previous Year	Additions during the current year
38239	432

d) Distinguished visitors

Civil Engineering

Sl.No.	Name	Affiliation	Remarks
1	Dr.Benny Raphel	Technical Talk	‘Construction Automation’

Ph.Ds Awarded :

Civil Engineering

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	“A Study on the Effect of Organic Matter on the Engineering Behaviour of Lime Stabilized Clays”	Ms.Annie Joy	Dr.Benny Mathews Abraham
2	"Bio-Fuel Cells: Sustainable Technology for the Treatment of Coconut Industry Wastewater" by Ms.Sanju Sreedharan- Evaluation Report -reg.	Ms.Sanju Sreedharan	Dr.Renu Pawels
3	“A Study On Utilization Of Jarofix In Construction Application”	Mr.Santhosh G	Dr.K S Beena

Mechanical Engineering

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	Experimental and Numerical Investigations on Friction Stir Welding of AA7068-T6 Aluminium Alloy	Bindu M D	Dr. Tide P S
2	Analysis, Modification and Evaluation of Chaulmoogra Oil (Hydnocarpus Wightianus) as a Base Oil for Industrial Lubricants	Salaji S	Dr. Jayadas N H

Electrical and Electronics Engineering

Sl.No	Title of Thesis	Name of Research Scholar	Supervising Guide
1	"Stability Analysis Of Nonlinear Smib Power System Based On Slow Flow Equations And Tuning Of PIDPs Employing Tidal Force Firefly Algorithm"	Suresh Kumar MG	Dr CA Babu

Electronics and Communication Engineering

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	Design and Development of Central Resonator Based Ground Plane Aperture Wide Band Bandpass Filters	Ami Iqbal	Dr. Abdulla
2	Efficient Approaches for Image/ Video Analysis in Surveillance	Michael George	Dr. Babita R Jose

3	Design and Development of Microstrip-Fed Compact Planar antennas for Ultra wide band applications	Sam Kollannore U	Dr.Abdulla
4	Design and development of Dielectric Resonator Antenna using Planar Slots	Anu A R	Dr.Abdulla
5	Development of Ultra wideband antennas for dielectric profile imaging for Breast Tumour detection	Philip Cherian	Dr.Mythili
6	Enhancement of Network Lifetime in Wireless Sensor Networks using Energy Harvesting Protocols	Sethu Lakshmi P	Dr.Jibu Kumar

Information Technology

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	Reinforcement learning with resilient distribution for big data processing	Sandhya N	Dr.Philip Samuel
2	Ontology based techniques to solve cold start problem in E-learning recommender systems	Jeevamol Joy	Dr.Renumol V G
3	Intelligent framework for weather forecasting using deep learning techniques	Jaseena	Dr. Binsu C Koor

4	An efficient security architecture for secure authentication and data sharing in cloud enabled big data environment	Uma Narayanan	Dr. Shelbi Joseph
5	Enhanced AI models for generic and genre-specific video summarization	Sreeja M U	Dr.Binsu C Koor

Safety and Fire Engineering

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	An Investigation on alternative methods in failure mode effect and criticality analysis.	Mr. Manoj Jose Kalathil	Dr. V R Renjith
2	Analysis of personal factors influencing electrical occupational accidents	Mr. Tiju Baby	Dr. G Madhu

Publications

e. Papers:

Civil Engineering

Sl.No.	Title of the Paper	Author(s)	Impact Factor, if any
1	Lignocellulosic materials as reinforcement and replacement for binders in masonry mortar; Construction and Building Materials: 282 (3), ID: 122607	Lekshmi M. S, Vishnudas S., and Anil K. R	7.693
2	Improved empirical model for the strut efficiency factor and the stiffness degradation coefficient for the strength and the deflection	Thomas, J., and Ramadass, S.,	5.006

	prediction of FRP RC deep beams, Structures, 29, pp:2044- 2066		
3	Effect of partial replacement of bentonite with biochar in liner soils, Biomass Conversion and Biorefiner, DOI: 10.1007/s13399-021-01319-x	Veena.V, Dr.Sobha Cyrus, S., and Abraham, B.M., Jose, B.T.,	4.050
4	Prediction of the load and deflection response of concrete deep beams reinforced with FRP bars, Mechanics of Advanced Materials and Structures, 28(1), pp: 43-66.	Thomas, J., and Ramadass, S	4.03
5	Transport Geotechnical properties of lateritic soil stabilized with Jarofix and lime, Environment, Development and Sustainability, 23, pp: 1601-1622.	Beena, K.S., and Santhosh, G.	4.8
6	Feasibility study on treatment of coconut industry wastewater and bioenergy production using microbial fuel cell(MFC)' International Journal of Environmental Science and Technology, 19 (3), pp:5333–5342	Sanju Sreedharan., and Renu Pawels,	2.86
7	Introducing strut efficiency factor in the softened strut and tie model for the ultimate shear strength prediction of steel RC deep beams based on experimental study, European Journal of Environmental and Civil Engineering, March, pp:5129-5166	Thomas, J., and Ramadass, S	2.516
8	Modeling of packed bed column studies for the removal of Cu(II) using polypyrrole alumina iron oxid nanocomposite; Desalination and Water Treatment, 227, pp: 278–288.	Lissy, P.N.M., Madhu, G., and Roy M Thomas	1.254
9	Sustainable Treatment of Waste Coconut Water from Copra	Sanju Sreedharan,P, and	0.516

	Industry using Microbial Desalination Cell (MDC), Pollution Research, 40 (3), pp:733-741.	and Renu Pawels	
10	Soil Water Characteristic Curves of Compacted Marine Clay, Journal of Solid Waste Technology & Management, 47(4), pp: 717-725.	Veena.V, Dr.Sobha Cyrus, S., and Benny Mathews Abraham, Banu Jose T	0.438
11	Mechanical Performance of Natural Rubber Latex Modified Mortars (2021), Lecture Notes in Civil Engineering, Vol.124, Springer, 765-774	Liji Anna Mathew, Jisha Jose and Glory Joseph	
12	Influence of Reservoir Level on the Dynamic Behavior of Gravity Dam (2021), Lecture Notes in Civil Engineering, Recent Advances in Earthquake Engineering, Springer, Vol 175, , 281-290	Biju P.N and Glory Joseph	
13	Predicting the mechanical properties of fibrous concrete by ANN' International Journal of Engineering Research and Applications ISSN: 2248-9622, Vol. 11, Issue 4, (Series-II) April 2021	Athira M, Deepa Balakrishnan, Dipak Kumar Sahoo	
14	'Modal analysis of an RCC long span arch bridge using midas Civil - A validation' Materialstoday Proceedings, Vol 57, pg 460-463, April 2022	Meera Jacob, Deepa Balakrishnan	
15	Optimizing the Mixture Proportion and Prediction of Compressive Strength of Polymer Modified Recycled Coarse Aggregate Concrete: A Review'	Savithri S Nair, Deepa Balakrishnan	
16	Investigations on the Pozzolanic Properties of Residual Rice Husk Ash. In Advances in Sustainable	Koya, M. N. K., & Nair, D. G.	

	Construction Materials, 2021, pp. 421-431, Springer, Singapore.		
17	Feasibility of Waste Materials In High Strength Geopolymer Building Blocks, In: Sandip A. Kale editor, Efficient Engineering Systems: Volume 1, Pune: Grinrey Publications, 2021, pp. 53-62	Shamon K K., Nair, D.G.,	
18	Feasibility of Plastic Waste as Reinforcement in the Mechanical Properties of Stabilized Lateritic Soil Blocks proceedings of 36th National Convention of Civil Engineers & National Conference on 'Innovation, Mechanization and Modern Techniques in Civil Engineering' organized by The Institution of Engineers (India) Jharkhand State Centre Under the aegis of Civil Engineering Division, IEI in association with Birla Institute of Technology, Mesra, Ranchi, 23-24 October, 2021, pp48-54,.	Sreekumar, M.G., Nair, D.G.,	

Mechanical Engineering

Sl. No.	Title of the Paper	Author(s)	Impact Factor, if any
1	Numerical Analysis of Pool Boiling of Nano Fluids for High Heat Dissipation Applications.	Dr. Tide P S	11.979
2	Numerical Analysis on Air Core Vortex Formation in Inclined Cylindrical Tanks	Dr. Tide P S	
3	Schlieren imaging investigation on azimuthally varying shock net from four-lobed corrugated nozzle	Dr. Tide P S	0.975

4	An experimental study on shock cell structures of underexpanded jets from corrugated lobed nozzles using schlieren imaging technique,	Dr. Tide P S	0.643
5	Numerical Investigation on flow across strut based flame holder with converging grooves	Dr. Tide P S	0.643
6	Artificial Neural Network- Genetic Algorithm Based Optimization of Baffle Assisted Jet Array Impingement Cooling with CrossFlow.	Dr. Tide P S	1.405
7	Passive Downward Heat Transfer in Reverse Thermosyphon Enabled Bubble Pump with Two Working Media for U-Tube Solar Thermal Collector	Dr. Tide P S	0.436
8	Numerical and Experimental Studies on Friction Stir Welding of AA 7068-T6 for different welding speeds	Dr. Tide P S	0.98
9	Numerical optimization of pulse frequency and heat transfer for a subsonic impinging jet array	Dr. Tide P S	1.46
10	Experimental and Numerical Investigations on Baffle Assisted Jet Array Impingement Cooling with Cross-flow	Dr. Tide P S	1.22
11	Workspace analysis of an under constrained cable-driven parallel robot with four cables.	Dr.Biju N.	7.7
12	Schlieren Imaging Investigation on Azimuthally varying shock net from four lobed corrugated nozzle	Dr.Biju N.	0.975
13	An Experimental Study on Shock Cell Structures of Under-expanded Jets from Corrugated Lobed nozzles using Schlieren Imaging Technique	Dr.Biju N.	0.643
14	Effect of baffle configuration on heat transfer and pressure drop characteristics of jet impingement system with cross-flow	Dr.Biju N.	1.388
15	Experimental and numerical investigations on baffle assisted jet array impingement cooling with cross flow.	Dr.Biju N.	1.22

16	Numerical optimization of pulse frequency and heat transfer for a subsonic impinging jet array	Dr.Biju N.	1.46
17	Flow transition in periodically fully developed wavy channels	Dr.S Harikrishnan	4.98
18	Effect of top wall configuration on unsteady flow and heat transfer characteristics of sinusoidal wavy channels	Dr.S Harikrishnan	2.172
19	Effect of liquid-air interface on particle cloud dynamics in viscous liquids	Dr.S Harikrishnan	4.98
20	An Effective Visco supplementation Strategy for Treating Knee Joint: Preliminary Outcome from the In Vitro Study	Dr.K.K. Saju	3.115
21	Development of calcium fluoride thin film on Ti-6Al-4V material by a dip coating process with an intermediate shellac for biocompatible orthopedic applications	Dr.K.K. Saju	3.0
22	Taguchi method and box - Behnken design approach for process parameter optimization of magnetite coating	Dr.K.K. Saju	1.606
23	Characterisation and in vitro studies of low reflective Magnetite (Fe ₃ O ₄) Thin film on stainless steel 420 A Developed by chemical method	Dr.K.K. Saju	3.312
24	Development of biocompatible coating on Ti6Al4V implant materials using chitosan extracted from shellfish waste	Dr.K.K. Saju	1.46
25	Development of thin-film hydroxyapatite coatings with an intermediate shellac layer produced by dip - coating process on Ti6Al4V implant material	Dr.K.K. Saju	2.382
26	Sustainability analysis on rural livelihood systems with interventions in energy water food nexus	Dr.Ajithkumar G.	1.683
27	Multi-fuel performance and emission characteristics of an optimized thermal barrier coated diesel engine	Dr.M.R.R. Panicker	1,596

28	Effect of material characteristics on thermal, tribological and mechanical properties of high temperature cast iron coatings	Dr.M.R.R. Panicker	1.46
29	Numerical Investigation On Flow Across Strut-Based Flame Holder With Converging Grooves	Dr.A.B. Bhasi	0.643
30	Parametric responses of carbon-epoxy composite with delamination using cohesive gap element	Dr.A.B. Bhasi	1.46
31	Domestic Retail Sales Forecasting of Passenger Vehicles in India using Time Delay Neural Network: An In-COVID scenario	Dr.A.B. Bhasi	
32	Open Innovation and IP Management in Medical Devices: A Review on Scope, Drivers and Barriers,	Dr.A.B. Bhasi	0.154
33	Numerical Studies on Temperature and Material Flow During Friction Stir Welding using Different Tool Pin Profiles	Dr.A.B. Bhasi	1.388
34	Modeling and parametric optimization of friction stir welding of aluminium alloy AA7068-T6 using response surface methodology and desirability function analysis	Dr.A.B. Bhasi	1.515
35	Experimental investigations on unglazed photovoltaic-thermal (PVT) system using water and nanofluid cooling medium	Dr.Jacob Elias	8.634
36	Investigations on the Corrosion Properties of Sn-0.5Cu-Bi-xAg Lead Free Solder Alloys in 3.5% NaCl Solution	Dr.Jacob Elias	0.201
37	Multi-fuel performance and emission characteristics of an optimized thermal barrier coated diesel engine	Dr.Gireesh Kumaran Thampi	1.596
38	Impact of volume fraction and fluid layer thickness on heat transfer effectiveness of water-based nanofluids	Dr.Gireesh Kumaran Thampi	3.75

39	A Numerical Investigation Into the Flow Development and Heat Transfer Characteristics for Different Tube Geometry Configurations in a Water in Glass Evacuated Tube Solar Water Heater	Dr.JAMES VARGHESE	2.384
40	Three-dimensional steady state numerical analysis of inclined two phase closed thermosyphon for solar applications	Dr.JAMES VARGHESE	6.51
41	Parametric Analysis and Optimisation of Efficiency of a Kalina Cycle with Turbine Staging	Dr.JAMES VARGHESE	0.961
42	Numerical analysis of a hybrid thermal energy storage system using thermochemical and phase change material for constant, low temperature applications	Dr.JAMES VARGHESE	1.383
43	Impact of volume fraction and fluid layer thickness on heat transfer effectiveness of water-based nanofluids	Dr.Narayanan Namboothiri V N	3.75
44	Schlieren imaging investigation on azimuthally varying shock net from four-lobed corrugated nozzle	Dr Roy V Paul	0.975
45	An experimental study on shock cell structures of under expanded jets from corrugated lobed nozzles using the schlieren imaging technique	Dr Roy V Paul	0.643

Electrical and Electronics Engineering

Sl. No	Title	Conference/ Journal	Authors	Indexing
1	Performance Analysis of Induction Motor Drive with Hysteresis and PI Current Controllers	2nd International Conference on Power Electronics & IoT Applications in Renewable Energy and its Control (PARC), 2022, pp. 1-7	P. J. Shaija and A. E. Daniel	

2	“Parameter Tuning of Sliding Mode Speed Controller of Induction Motor Drive Using Teaching-Learning Based Optimization Algorithm	International Review of Automatic Control (IREACO), Vol 15, No 1 (2022)	P. J. Shaija, Asha Elizabeth Daniel	scopus
3	Droop Control-Based Grid Forming Inverters with an Auxiliary Grid Support Control for Frequency Regulation in a Low Voltage Microgrid	Recent Advances in Electrical & Electronic Engineering 2022	M. Athira, Daniel Elizabeth Asha	
4	Rural area electrification with Variable Speed Diesel Generator and Lithium-ion battery hybrid system	Int. J. of Renewable Energy Technology (<i>Inderscience</i>) Inderscience) Vol.13, No.1, January 2022, pp 48-65.	Gireesh Kumar A, C A Babu	
5	Opposition based Constriction Factor Particle Swarm Optimization for Economic Load Dispatch	Second International Conference on Advances in Electrical, Computing, Communication and Sustainable Technologies (ICAECT), 21-22 April 2022 SCOPUS INDEXED	Swathy M, C. A. Babu, Ajith Kumar S	scopus
6	Implementation of Speed Control of Sensorless Brushless DC Motor Drive using H-Infinity Controller with Optimized Weight Filters	International Journal of Power Electronics and Drive System (IJPEDS), Vol. 12, No. 3, September 2021, pp. 1379~1389, ISSN: 2088-8694 SCOPUS INDEXED	K. Vinida and Mariamma Chacko	scopus

7	Design and analysis of novel Quasi Z Source based Asymmetric Multilevel Inverter for PV applications	International Journal of Power Electronics and Drive system, ISSN:2088-8694, Vol.11, No.3, September 2020 Scopus indexed	Deepa Sankar, C A Babu	scopus
8	“Fingerprint Scanner Sanitising Module for Kerala Ration Shops”	IEEE International Conference on Innovative Trends in Information Technology (ICITIIT), February 2022	Uday Sankar; Anseel Ameerudheen; Treesa Rose K Sani; Alister Augustine D’Cruz; Sanjna Salim; K. Vinida,	
9	A Modified Sepic-Based High Step-Up DC-DC Converter with Coupled Three Winding Inductor for Renewable Energy Applications	Proceedings of the International conference on Sustainable technology and Innovation for Industry 4.0 (icstii 2022)	Saju S B, K. Vinida	
10	A DC-DC Boost Converter with A Wide Input Range and High Voltage Gain With low Input Current Stress for Fuel Cell Vehicles	Proceedings of the International conference on Sustainable technology and Innovation for Industry 4.0 (icstii 2022)	Romy George, K. Vinida	
11	An Efficient Synchronous Buck Converter Control For Ev Battery Charging From Solar Pv Array	Proceedings of the International conference on Sustainable technology and Innovation for Industry 4.0 (icstii 2022)	Afia Karim, P.G Latha, Reenu Bose	

12	A Tuning Guide For Resonant Controller For A Grtid Connected Inverter	Proceedings of the International conference on Sustainable technology and Innovation for Industry 4.0 (icstii 2022)	Sanjna Salim, C A Babu	
13	High-Efficiency Hybrid High Step-Up DC-DC Converter for Distributed PV Generation Systems	Proceedings of the International conference on Sustainable technology and Innovation for Industry 4.0 (icstii 2022)	Arun M S, Anju G Pillai	
14	Modified Interleaved CUK converter with improved voltage gain and reduced THD	Arabian Journal for Science and Engineering	K D Joseph, Asha Elizabeth Daniel, A Unnikrishnan	SCOPUS, SCIE
15	Disturbance Rejection Analysis of a Robust Vector Controlled Induction Motor Drive with an Adaptive Quasi-Sliding Mode Controller	International Journal on Electrical Engineering and Informatics	P.J. Shaija, Asha Elizabeth Daniel	SCOPUS

Applied Science and Humanities

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Design and implementation of efficient data mining models using CDR data for density analysis and prediction	Suja C Nair	Dr.Sudheep Elayidom

2.	Novel datamining strategy for the trend analysis in the equity domain	Cerene Mariam Abraham	Dr.Sudheep Elayidom
3.	Design and Optimization of efficient classification model for sentiment analysis of product reviews	Hema Krishnan	Dr.Sudheep Elayidom
4.	Design and implementation of a multimodal learning to rank model for ranking web pages	Nikhila T Bhuvan	Dr.Sudheep Elayidom

Computer Science and Engineering

Sl. No.	Title of Paper	Impact Factor, if any
1	Pramod Pavithran, Sheena Mathew, Suyel Namasudra, Pascal Lorenz, A novel cryptosystem based on DNA cryptography and randomly generated Mealy machine”, <i>Computers & Security</i> , Elsevier, vol. 104, 2021.	4.438
2	Pramod Pavithran, Sheena Mathew, Suyel Namasudra, Gautham Srivasthava, A novel cryptosystem based on DNA cryptography, hyperchaotic systems and a randomly generated Moore machine for cyber physical systems”, <i>Computer Communications</i> , Elsevier, 2022.	3.167
3	Pramod Pavithran, Sheena Mathew, Suyel Namasudra, Ashish Singh, Enhancing randomness of the ciphertext generated by DNA-based cryptosystem and finite state machine, <i>Cluster Computing</i> , Elsevier, 2022. https://doi.org/10.1007/s10586-022-03653-9	2.342
4	K.A Fasila, Sheena Mathew (2022), ‘An Efficient Lightweight Key Exchange Algorithm for IOT Applications’, <i>International Journal of Electrical and Computer Engineering</i> , ISSN:2088-8708, Vol.99, pp. 1-1x, Scopus indexed Q2 Journal.	
5	Fasila K.A., Sheena Mathew (2022), An efficient multilevel security architecture for blockchain-based IoT networks using principles of cellular automata, <i>International (SCIE)</i> , h-index 28, https://doi.org/10.7717/peerj-cs.989	2.41

6	K A Fasila, Sheena Mathew (2022), 'Fast and Efficient Security Scheme for Blockchain- Based IOT Networks', Computers, Materials and Continua, Tech Science Press, ISSN:1546-2218, SCIE indexed.	3.86
7	Sheena S, Sheena Mathew, Bindu M Krishna, 'Performance Evaluation of new feature based on Ordinal Pattern analysis for Iris Biometric Recognition', International Journal of Advanced Computer Science and Application, Oct.2022, ESCI indexed.	1.092
8	Girija O K and Sudheep Elayidom M, (2022), 'Mammogram pectoral muscle removal and classification using histo-sigmoid based ROI clustering and SDNN', Multimedia Tools and Applications, 2022, SCIE, Scopus indexed.	2.57
9	Suja Chandra Sekharan Nair, Sudheep Elayidom, Sasi Gopalan, (2022),'Mining frequent patterns with generalized linear model for traffic density analysis, Multimedia Tools and Applications, Springer, ISSN:1546-2218, SCIE indexed.	2.57
10	Girija O.K, Sudheep Elayidom M (2021), 'An Effective Mammogram Classification Using Hot Based Tree and Hot Based Cnn', Turkish Journal of Computer and Mathematics Education, Vol.12, pp.4202-4216, 2021.	
11	Krishnan, H., Elayidom,M.S and Santhanakrishnan, T.(2022), 'Sentiment analysis of product reviews using weighted distance-based whale optimization assisted deep belief network', Int.J. Business Information Systems, ISSN: 1746-0980, Vol 39, No 2, pp: 241-277, Scopus indexed.	
12	Sarith D.M, Sudheep Elayidom M, Rajesh R, (2022), 'Design and implementation of an efficient and cost effective deep feature learning model for rice yield mapping', Int. J. Computational Science and Engineering, Inderscience Publications, ISSN: 1742-7185, Vol 25, pp: 128-139, 2022, ESCI, Scopus indexed	
13	Rhoof P P, Latha R Nair, Thafasal Ijyas V P, 'A secure Two-Tier Domain Verification and Certificate Validation Integrating Intermediate Certificate Authorities and Secure Certificate Box, Journal of Circuits, Systems and Computers, 2022, SCIE indexed.	
14	Divya Mohan, Latha R Nair, (2022), 'Sammon Quadratic Recurrent Multilayer Classifier for legal document	3.86

	analysis’, Computers, Materials and Continua, Tech Science Press, ISSN: 1546-2218, Vol 72, 2022, E indexed.	
15	Dhanya K, Sudhish, Latha R Nair, (2021), ‘3D Content-Based Retrieval for Ti Weighted Contrast Enhanced Magnetic Resonance Brain Data Based using Multiple Features’, Grenze, International Journal of Engineering and Technology, 2021.	
16	A.A Abdalnassar, Latha R Nair, (2021), ‘A comprehensive study on the importance of the Elbow and the Silhouette Metrix in Cluster Count Prediction for Partition Cluster Models’, Geintec, ISSN:2237-0722.	
17	A.A Abdalnassar, Latha R Nair, (2021), ‘A Comprehensive Study to Analyze the Performance of Clustering Models’, International Journal of Research and Analytical Reviews, 2021.	
18	Divya Mohan, Latha R Nair, (2021), ‘Probit Regressive Tversky Indexed Rocchio Convolutive Deep Neural Learning for Legal Document Data Analytics’, International Journal of Intelligent systems and Applications in Engineering, ISSN: 2147-6799, 2021.	
19	Latha R Nair, (2021), ‘A comprehensive study to analyse the methods to predict cluster count values and its importance in partition cluster models’, Advances in security and computing, 2021.	
20	Ancy Sherin Jose, Latha R Nair, Varghese Paul, (2021), ‘Towards detecting flooding DDOS attacks over software defined networks using machine learning techniques, Advances in security and computing, 1(4): pp.3837-3865, 2021.	
21	Sindhya K Nambiar, David Peter S, Sumam Mary Idicula (2022), ‘Abstractive Summarization of Text Document in Malayalam Language: Enhancing Attention Model using POS Tagging Feature’, ACM Transactions on Asian Law Resource Language Information and Processing, ACM, ISSN: 2375-4699, SCIE, Scopus indexed.	1.471
22	Manju Kondath, David Peter, Suseelan, Sumam Mary Idicula, (2022), ‘Extractive Summarization of Malayalam Documents using Latent Dirichlet allocation: An experience’, Journal of Intelligent systems, ISSN:2191-026x, Vol.31, pp.393-406, ESCI, Scopus indexed.	

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Sl. No.	Title of the Paper	Author(s)	Impact Factor, if any
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2	"High Gain Isolated Quasi Switched Boost Converter Embedded with Switched Capacitor Cell" Electric Power Components and Systems, Taylor and Francis, SCIE Journal, 49:4-5,333-344,16 October 2021(published online), https://doi.org/10.1080/15325008.2021.1971334	Preenu Paul, Babita R. Jose, T. K. Shahana, Chikku Abraham, and Jimson Mathew.	1.424
3	"Effect of active layer thickness variation on scaling response in a-IGZO thin film transistors under Schottky limited operation." Semiconductor Science and Technology (2021). IOP Publishing, August 2021. https://doi.org/10.1088/1361-6641/ac1d62 .	Roshna, B. Raj, Ashutosh Kumar Tripathi, Pradeep Kumar Mahato, Shiny Nair, T. K. Shahana, and T. Mukundan	2.361 (SCIE).
4	"Effect of Active Layer Thickness Variation on Overlap Length Scaling in a-IGZO Thin Film Transistors," 2021 8th International Conference on Smart Computing and Communications (ICSCC), 2021, pp. 319-322, doi: 10.1109/ICSCC51209.2021.9528296.	Roshna B. Raj, A. Tripathi, S. Nair, D. Gupta, T. K. Shahana and T. Mukundan,	

5	"Space Time Block Coded Vector OFDM with ML Detection," 2021 8th International Conference on Smart Computing and Communications (ICSCC), 1-3 July 2021, pp. 145-148, doi: 10.1109/ICSCC51209.2021.9528236.	B. K. Jeemon and Shahana T.K	
6	"Frequency Switchable and Tunable Negative Group Delay Circuits Based on Defected Microstrip Structures," Progress In Electromagnetics Research M, 2022	Chithra Liz Palson, Rema Kunhikrishnan Sreelal, Deepti Das Krishna, and Babita Roslind Jose	1.02
7	Seema Safar, Babita R J, Jimson Mathew, T. Santhanakrishnan, "Light-weight Recommendation System using Graph Neural Networks" INDICON 2022 ,IEEE 19th India Council International Conference (accepted)	Seema Safar, Babita R J, Jimson Mathew, T. Santhana krishnan,	
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9	"Ablation Studies on Unsupervised Domain Adaptation algorithm for Object Recognition" INDICON 2022, IEEE 19th India Council International Conference (accepted)	Devika A K, Phalguni Mishra, Babita R J	

10	“A Varactor Based Impedance Tuner Circuit Operating at ISM Frequency Band Centered at 2.45 GHz”, 10th International Symposium on Embedded Computing and System Design (ISED), DIAT, Gandhi Nagar, Gujrat, 16 – 18 July 2021.	Chithra Liz Palson, Deepti Das Krishna, and Babita Roslind Jose,	
11	“Memristor based Tunable Negative Group Delay Circuit”, International Conference on Advances in Computing and Communications 2021 (ICACC-2021) on October 21-23, 2021 at Cochin	Chithra Liz Palson, Sreelal K Deepti Das Krishna, and Babita Roslind Jose,	
12	"Kernelized transfer feature learning on manifolds", accepted for 28th International Conference on Neural Information Processing (ICONIP 2021), Dec 8-12, 2021, Bali, Indonesia.	Lekshmi R, Rakesh Kumar Sanodiya, Babita R Jose, J. Mathew	
13	"Recommendation Systems : A comparative analysis of Deep learning and classical approaches" 8th International Conference on Smart computing and Communications, organised by MITS, DOI:10.1109/ICS CC51209.2021.9528193	Mehbooba P Shareef, Babita R Jose	
14	"Kernelized Transfer Joint Matching for Unsupervised Domain Adaptation" accepted for publication in 2021 International Conference on Data Science and Engineering (ICDSE 2021)	Devika Asha Kadavath, Dr.Rakesh Kumar Sanodiya and Dr.Babita Roslind Jose	
15	"An Improved Recommendation System with Aspect-Based Sentiment Analysis" accepted for publication in 2021 International Conference on Data Science and Engineering (ICDSE 2021)	Seema Safar, Babita Jose and Santhanakrishna n T	

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44	Dhanya Sudarsan, Deepa Sankar “A novel complete denoising solution for old Malayalam palm leaf manuscripts”, Pattern Recognition and Image Analysis, Springer, Vol.32, pp.187-204, March 2022	Dr.Deepa sankar	

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57	Sonia Abraham and Rekha K James, “Smartphone based Human Activity Recognition using RNN variants” INDICON 2022 – Accepted	Dr.Rekha K James	
58	Neethu K, Enrico Russo, Rose George Kunthara, Rekha K James and John Jose, “Impact Analysis of Communication Overhead in NoC Based DNN Accelerators”, INDICON 2022 – Accepted	Dr.Rekha K James	
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65	Shiney Thankachan, Anju pradeep, Binu paul “ Design & Analysis of metamaterial Inspired Electrically Small Circularly Polarised Rectangular patch Antenna	Dr.Anju Pradeep	

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Safety and Fire Engineering

Sl. No.	Title of Paper	Impact Factor,if any
1	Influence of different alumina phases on the catalytic properties of palladium-alumina catalysts for selective hydrogenation of acetylene to ethylene Ravindran, K., Madhu, G., Renjith, V.R., Rugmini, S.Reaction Kinetics, Mechanisms and Catalysis, 2021, 134(2), pp. 867–882	
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7	A path model approach to safety compliance and personal factors among electrical workers in India Baby, T., Madhu, G., Renjith, V.R.International Journal of Occupational Safety and Ergonomics, 2021	
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13	Bond Slip Behavior of Geopolymer Concrete after Exposure to Elevated Temperatures George Mathew, N Sureshbabu Jordan Journal of Civil Engineering	
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22	Strength enhancement in deep beams with engineered web openings via diagonal struts Biju P Varghese, Dipak Kumar Sahoo Asian Journal of Civil Engineering	
23	Design of safety zone and optimal risk identification of undesired events during loading and unloading of LNG terminal using TSA-GEO: A hybrid strategy Stephy James, V R Renjith Process Integration and Optimization for Sustainability	
25	Covariate model-based fault tree analysis for risk assessment in chemical process industries: A case study of a chlorine manufacturing facility E Ahammed, AR Soman, B Gopakumar, VR Pramod, G Madhu Journal of the Indian Chemical Society 99 (6), 100463	
26	Treatment of vehicle wash wastewater by Fenton process and its recycling PJ Salini, G Madhu, R Pawels Materials Today: Proceedings 57, 2444-2451	
27	A comparative study on the removal of an emerging contaminant Mefenamic acid from aqueous media by various advanced oxidation methods R Deepa, G Madhu, RM Thomas Materials Today: Proceedings 47, 1416-1422	

f. Books

Information Technology

Sl.No.	Title of Book
1	Optimal Image Feature Ranking and Fusion for Visual Question Answering", Evolution in Computational Intelligence in the book series Advances in intelligent Systems and Computing , AISC vol 1176, pp103-113, Sruthy Manmadhan and Dr.Binsu C. Koor
2	"Keyword Template based Semi- Supervised Topic Modelling in Tweets," in International Conference on Innovative Computing and Communications. in the book Advances in Intelligent Systems and Computing, vol 1166, pp 659-666, Greeshma N. Gopal, Dr.Binsu C. Koor and U. Mini

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Civil Engineering

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Glory Joseph	National Conference on Structural Engineering and Construction Management SECON'22, Kerala, June 1-3	Reviewer and session chair

Mechanical Engineering

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Dr. Tide P S	International Conference on Sustainable Technology and Innovation for Industry , ICSTII 2022, CUSAT	Participant
Dr. Tide P S	OCEANS 2022 , Chennai	Participant
Dr. Tide P S	International Conference on Aerospace and Mechanical Engineering, ICAME'21, TKMCE Kollam	Participant
Dr. Tide P S	IOP Conf. Series: Materials Science and Engineering, Vol. 1132, 2, 2021	Participant
Dr.Biju N.	IOP Conference Series: Materials Science and Engineering Vol. 1132, 2, 2021	Participant
Dr.S Harikrishnan	1st International Conference on Advances in Mechanical Engineering and Material Science (ICAMEMS-22),VIT AP,Andhra Pradesh, 22-24 January 2022	Participant
Dr.S Harikrishnan	International Conference on Energy Conversion and Thermo-fluid Systems (i-CONNECTS 2021), MNIT Jaipur, 19-20 November 2021	Participant
Dr.K.K. Saju	International Conference on Sustainable materials, Manufacturing and Renewable Technologies 2021, 2021	Participant
Dr.Narayanan Namboothiri V N	Material science & Manufacturing Technology 2022 ,Coimbatore	Participant
Dr.Narayanan Namboothiri V N	Material science & Sustainable Manufacturing Technology 2022 ,Coimbatore	Participant
Dr.Narayanan Namboothiri V N	Materials Today : Proceedings	Participant

Division of Applied Sciences and Humanities

Name of Participant	Name of Seminar / Conference/ Workshop
Ms Anu Tharu P	Sustainable Technology for Industry 4.0(icstii2022)
Ms Resmi V R	Sustainable Technology for Industry 4.0(icstii2022)

Computer Science and Engineering

Name of Participant	Name of Seminar / Conference/ Workshop
V.Damodaran	Work shop on Advances in Bigdata Research
	FDP on Nature Inspired Computing
Dr. Sudheep Elayidom	M.Sarith Divakar, M.Sudheep Elayidom, R.Rajesh, (2022), 'Forecasting crop yield with deep learning based ensemble model', Materials Today:Proceedings, Elsevier, Vol.58, pp.256-259, Scopus Indexed
	Divakar, M.S., Elayidom, M.S., Rajesh, R, (2022), 'Sequence Models for Crop Yield Prediction Using Satellite Imagery. In :Smys, s.,Tavares, J.M.R.S., Balas, V.E. (eds), Computational Vision and Bio-Inspired Computing, Advances in Intelligent Systems and Computing, Scopus indexed, Vol 1420, pp: 687-700, Springer, Singapore,
	Sarith Divakar, M., Sudheep Elayidom, M., Rajesh, R, (2022), 'Feature Engineering of Remote Sensing Satellite Imagery Using Principal Component Analysis for Efficient Crop Yield Prediction. In: suma, V.,

	<p>Fernando, X., Du, KL., Wang, H. (eds) Evolutionary Computing and Mobile Sustainable Networks. Lecture Notes on Data Engineering and Communications Technology, Scopus indexed, Vol 116, Springer, Singapore,2022</p>
	<p>Divakar, M.S., Elayidom, M.S., Rajesh, R. (2022). Analysis of Remote Sensing Satellite Imagery for Crop Yield Mapping Using Machine Learning Techniques. In: Saraswat, M., Sharma, H., Balachandran, K., Kim, J.H., Bansal, J.C. (eds) Congress on Intelligent Systems. Lecture Notes on Data Engineering and Communications Technologies, vol 114. Springer, Singapore.</p>
	<p>Work shop on Advances in Bigdata Research</p>
<p>Dr.David Peter S</p>	<p>Work shop on Advances in Bigdata Research</p>
<p>Dr. Sheena Mathew</p>	<p>FDP on Nature Inspired Computing</p>
<p>Dr. Sheena Mathew</p>	<p>Siyamol Chirakkarottu, Sheena Mathew, (2021), ‘A Novel Digital Image Encryption Scheme using nonlinear mathematical model’, International Conference on Communication, Control and Information Sciences (ICCISC), 2021, Vol 1, pp.485-490.</p>
<p>Mr. Pramod Pavithran</p>	<p>Work shop on Advances in Bigdata Research</p>
<p>Mr. Pramod Pavithran</p>	<p>National Level Workshop on NIRF INDIA rankings 2022 for higher educational institutions (online)</p>
<p>Mr. Pramod Pavithran</p>	<p>Work shop on Advances in Bigdata Research</p>
<p>Mr. Pramod Pavithran</p>	<p>FDP on Nature Inspired Computing</p>

Ms. Ancy Zachariah	FDP on Bigdata
	FDP on Nature Inspired Computing
Ms. Sheena S	FDP on Bigdata
	FDP on Nature Inspired Computing
Ms. Preeha S	FDP on Bigdata
	FDP on Nature Inspired Computing
Ms.Remyamol K M	FDP on Nature Inspired Computing
	Work shop on Advances in Bigdata Research
Ms.Minu Poulouse	FDP on Nature Inspired Computing
	Work shop on Advances in Bigdata Research
Mr.Rajkumar K	Work shop on Advances in Bigdata Research
Ms.Fameela K A	FDP on Nature Inspired Computing
	5-day online FDP on 'Inculcating UHV in Technical Education' organized by AICTE
	Work shop on Advances in Bigdata Research
Ms.Jithi P V	FDP on Nature Inspired Computing
	5-day online FDP on 'Inculcating UHV in Technical Education' organized by AICTE
	Work shop on Advances in Bigdata Research
Ms.Renjusha Aravind	FDP on Nature Inspired Computing
	5-day online FDP on 'Inculcating UHV in Technical Education' organized by AICTE
	Work shop on Advances in Bigdata Research

Ms. Neethu George	FDP on Nature Inspired Computing
	Work shop on Advances in Bigdata Research
Dr. Hima Suresh	Work shop on Advances in Bigdata Research
	FDP on Amazon Web Services
	FDP on Nature Inspired Computing
	Artificial Intelligence and Data Science
	FDP on Advanced Research Methodology Tools & Techniques organized by Bon Secours College for Women
	FDP on “Effective Teaching Strategies in Higher Education” organized by St. Mary’s College, Pthanangadi.
	FDP on “Online Courses for Educators” organized by Erode Arts & Science College
	Online ShortTerm Training Program on “Algorithms for Competitive Exams”, conducted by NIT, Warangal
	Short term training program on Cyber Data Analytics organized by VET Institute of Arts & Science, Erode
	National level workshop on NIRF India Rankings 2022 organized by Institute for Academic Excellence

Information Technology

Dr.Renumol V G	NEP 2020 - Implementation and Implications in HEI	Participant
Dr. Daleesha M Viswanathan	NEP 2020 - Implementation and Implications in HEI	Participant
Dr. Daleesha M Viswanathan	Domain Specific Accelerators, IIT Guwahati	Participant
Dr. Binsu C. Kovoov	11th International Conference on Computer Communication and Information	Participant
Dr.Santhosh Kumar M B	Introduction to Machine Learning Techniques	Participant
Dr.Sunitha E V	NEP 2020 - Implementation and Implications in HEI	Participant
	“Cyber Security and Blockchain Technology	
Sahiya A A	Smart Cities	Participant
	Management 4.0	
	Blended Learning and Flipped Classroom	
	NEP 2020 - Implementation and Implications in HEI	
	“Entrepreneurship Development”	
Smitha S	Internet of Things (IoT)	Participant
	Quantum Computing	
	“Cyber Security and Blockchain Technology	
	New Examination Reforms (AICTE)	
Shilpa Elsa Abraham	Python for Data Science	Participant
Nafsiya C A	Mathematics for machine learning	Participant
	The ART of IC Design using EDA	

Safety and Fire Engineering

Name of Participant	Name of Seminar / Conference/ Workshop
Karun, B., Renjith, V.R., Elayidom, S.	<p>Conference Paper</p> <p>Inherently Safer Design Approaches and Improvement Strategies in Process Industries</p> <p>2021 8th International Conference on Smart Computing and Communications: Artificial Intelligence, AI Driven Applications for a Smart World, ICSCC 2021, 2021, pp. 94–99</p>
Baby, T., Madhu, G., Renjith, V.R.	<p>Conference Paper</p> <p>Adaptive Neuro Fuzzy-Based Prediction of Safety Participation from the Personal Factors of the Workers 2021 International Conference on Maintenance and Intelligent Asset Management, ICMIAM 2021, 2021</p>
George, P.G., Renjith, V.R.	<p>Conference Paper</p> <p>Safety and Security of Process Plants: A Fuzzy-Based Bayesian Network Approach</p> <p>Lecture Notes in Mechanical Engineering, 2020, pp. 639–648</p>
Arjun P Kumar, Dr V R Renjith	<p>Risk Assessment of NHT Heat Exchanger using bow tie analysis: An intuitionistic fuzzy approach Advances in Behaviour Based Safety, Springer Nature Singapore 2022</p>
Amal S George, Dr V R	<p>A Study on the influence of human factors in safety performance Advances in Behaviour</p>

Renjith	Based Safety, Springer Nature Singapore 2022
Arya Dinesh, Dr V R Renjith	Intuitionistic Fuzzy Based ETA for Risk assessment of DHDS Unit Advances in Behaviour Based Safety, Springer Nature Singapore 2022
Anilett Benny, Dr V R Renjith	Developing Bow Tie model for blowout scenario in oil well operational process Proceedings of the International conference on sustainable technology and Innovation for industry, April 22 CUSAT
Rakesh Kumar, Dr Bikram Singh, Dr V R Renjith	Application of fuzzy logic based risk assessment model to compute risk reduction factor of safety instrumented functions in a nuclear reactor Proceedings of the International conference on sustainable technology and Innovation for industry, April 22 CUSAT
Shafzana PS, Dr Dipak Kumar Sahoo	Safety Management System in Modular Integrated Construction Projects Proceedings of the International conference on sustainable technology and Innovation for industry, April 22 CUSAT
Suresh G, Dr V R Renjith, AB Bhasi	Prioritisation of factors influencing workers risk tolerances in process industries by interval valued intuitionistic fuzzy analytic hierarchy process Proceedings of the International conference on sustainable technology and Innovation for industry, April 22 CUSAT
Raufeek M,	Comparative risk evaluation of RLNG cross

GreeshmaBenoiet, Dr V R Renjith	country pipeline network using fuzzy copras and copras MCDM approach
Sivi Varghese, Dr V R Renjith	Prediction of thermal hazards and estimation of fire safety distance of process industry pool fires . Proceedings of the International conference on sustainable technology and Innovation for industry, April 22 CUSAT
Stephy James, Dr V R Renjith	An investigation on the usefulness of soft computing techniques in risk analysis Proceedings of the International conference on sustainable technology and Innovation for industry, April 22 CUSAT
Anagha Raveendran, Dr V R Renjith, Dr G Madhu	Dynamic Analysis of domino effect frequencies through dynamic Bayesian network- a case study Proceedings of the International conference on sustainable technology and Innovation for industry, April 22 CUSAT
GreeshmaBenoiet, Anilett Benny, Dr V R Renjith	Analysis & Simulation of jet fire consequence during surface transport of liquified petroleum gas (LPG): A Case study 24th Annual Process Safety International Symposium, Oct 19-21,21 Mary Kay O'Connor Process Safety Center, Texas A&M
Baiju Karun, Dr V R Renjith, Dr SudheepElayidom	Inherently safer design approaches & improvement strategies in process industries 8th International Conference on Smart Computing & Communications
Shafzana PS, Dr Dipak Kumar Sahoo	Safety Management System in Modular Integrated Constrution Projects Proceedings of the International conference on sustainable technology and Innovation for industry, April 22 CUSAT

Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Civil Engineering

Name of Faculty	Name of Organization	Role
Dr.Glory Joseph	APJ Abdul Kalam Technological university	Examiner for Ph.D Comprehensive Examination and DC member, Examiner for M.Tech Thesis
Dr.Deepa G. Nair	APJ Abdul Kalam Technological university	Board of studies Member for Architecture
Dr.Deepa G. Nair	Housing Department, Government of Kerala	Member of the Subcommittee of Housing Policy
Dr.Deepa G Nair	APJ Abdul Kalam Technological university	DC member, Ph.D Course work viva
Dr.Deepa Balakrishnan S	APJ Abdul Kalam Technological university	Examiner for Ph.D Pre submission Evaluation , Examiner for M.Tech Thesis

Mechanical Engineering

Name of Faculty	Name of Organization	Role
Dr. MRR Panicker	Faculty of Engineering, CUSAT	Member
	Board of Studies, CUSAT	Member
	Academic Council, CUSAT	Member
	KUFOS, Board of studies	Member
Dr. Girish Kumaran Thampi. B S	DRDO	Member
	Board of Studies, CUSAT	Member
	Faculty of Engineering, CUSAT	Member
	THDC Dehradun	Selection Board Member
Dr. Biju N.	Board of Studies, CUSAT	Member
Dr. James Varghese	Board of Studies, CUSAT	Member
	Research Committee Member VSSC	Member
	IRAA	Director
Dr. K.K. Saju	AICTE	Expert Member
	UGC	Nominee
Dr. Jacob Elias	ISRAE	Member
	CUSAT	Placement Officer
Dr. Bhasi	Board of Studies, CUSAT	Member
	Kerala University	Ph.D Viva Voce
	Academic Council, CUSAT	Member
Dr. Tide P.S.	Board of Studies Defence Science and Technology	Member
	Board of Studies (Autonomous), TKM College of Kollam	Member
Dr. Franklin Robert John	Institution of Engineers	Member

Computer Science and Engineering

Name of Faculty	Name of Organization	Role
Dr. Sheena Mathew	CUSAT	Member of Board of Studies
Dr.Latha R Nair	NCCIP-UHV	Volunteer for NCCIP-UHV
Dr.Sheena Mathew	SOE	NIRF Coordinator
Dr. M. Sudheep Elayidom,	International Journal of image and graphics	Reviewer

Information Technology

Name of Faculty	Name of Organization	Role
Dr. Renumol V.G	Board of Studies,School of Engineering	Member
Dr.Santhosh Kumar M.B	FISAT	Member
Dr.Santhosh Kumar M B	Department of Computer Science, Saintgits College of Engineering	Member
Dr.Binsu C. Kovoov	Department advisory Committee of Information Technology, Rajagiri School of Engineering & Technology	External member from academia
Dr. Daleesha M Viswanathan	Department advisory Committee of Information Technology, Rajagiri School of Engineering & Technology	External member from academia
Dr. Daleesha M Viswanathan	Department advisory Committee of Information Technology, VIT,Vellor	External member from academia

Awards/ Honours/ Fellowships etc. received :**Computer Science and Engineering**

Name of Recipient	Name of Fellowship/Honour/Award	Awarding Agency
Dr.Latha R Nair	Guinness world Record	Guinness

Sponsored Research Projects**Electronics and Communication Engineering**

Sl.No.	Title	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
1	Modernization of Computational Lab	AICTE-MODRO BS	Rs.6,49,019	Dr. Babita R Jose

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department**Civil Engineering**

Sl.No.	Title	Duration	Coordinator	Funding Agency
1	Practical aspects of ground improvement Techniques	09/10/2021	Dr.Job Thomas	NIL
2	From Building Dreams To Protecting Dreams	04/02/2022	Dr.Job Thomas	NIL
3	Oriente –Civil Engineering Orientation Programme	05/09/2021	Dr.Job Thomas	NIL

4	Structural Engineering Theory & Practice for Civil Engineers	25/09/2021	Dr.Job Thomas	NIL
5	SKETCHUP	31/10/202, 06/11/2021, 07/11/2021	Dr.Job Thomas	NIL
6	Future Construction Management: Integrated Open BIM Management With BEXEL Manager	11/02/2022	Dr.Job Thomas	NIL
7	Investigation and Design Aspect of Hydraulic Structures	19/02/2022	Dr.Job Thomas	NIL
8	Obstruction Control Around an Airport	09/04/2022	Dr.Job Thomas	NIL
9	Awards 2022 Installation Ceremony	25/04/2022	Dr.Job Thomas	NIL

Computer Science and Engineering

Sl. No.	Title	Duration	Coordinator	Funding Agency
1.	Nature Inspired Computing	7 Days	Dr.Latha R Nair &Ms.Preetha S	TEQIP PhaseII
2.	FDP on Blockchain and Internet of Things	4 Days	Dr. M. Sudheep Elayidom, Mahima Mary Mathews	TEQIP PhaseIII
3.	Workshop on Advances in Big data Research	3 Days	Dr. M. Sudheep Elayidom, Ms. Fameela K.A	TEQIP PhaseIII
4.	Workshop on Recent Trends and Applications in Deep Learning		Dr. Latha R Nair, Ms. Lino Murali	TEQIP PhaseII

Information Technology

Sl. No.	Title	Duration	Coordinator	Funding Agency
1	DevOps Workshop	22 Feb 2022	Ms. Maya Menon	CUSAT CLUBS
2	Self Defense Workshop(Girls Only)	23 April 2022	Ms. Maya Menon	CUSAT CLUBS
3	Extension programs	From March 1, 2021 to November 30, 2021	Ms. Maya Menon	CUSAT CLUBS

Safety and Fire Engineering

Sl.No.	Title	Duration	Coordinator	Funding Agency
1	Training for Addl. Inspectors of Factories and Boilers	10 days	Dr. V R Renjith	Director, Dept. of Factories and Boilers, Suraksha Bhavan, Kumarapuram, TVM

Consultancy Work**Civil Engineering**

Sl. No.	Title	Period	Consultant	Funding Agency
1	Testing of Concrete Cubes,Paving tiles,Steel,Bricks, and Cement	April 2021 to March 2022	Dr.Deepa Balakrishnan S	Govt,Quasi-govt,Pvt agencies
2	Design of Concrete Mixes	April 2021 to March 2022	Dr.Deepa Balakrishnan S	
3	Tests on Bitumen	April 2021 to March 2022	Dr.Bindu C S	
4	Tests on Soil	April 2021 to	Dr.Beena K S	

	Samples	March 2022		
5	Tests on Water Samples	April 2021 to March 2022	Dr.Renu Pawels	
6	Design Check of Swimming Pool	April 2021 to March 2022	Dr.Job Thomas	
7	NDT and Core Test	April 2021 to March 2022	Dr.Job Thomas	Govt,pvt agencies
8	Expert Visit and Report	April 2021 to March 2022	Dr.Job Thomas & Dr.Glory Joseph	ASAP
9	Testing of Building Materials	April 2021 to March 2022	Dr.Job Thomas	Greenlab
10	Soil Stability Analysis for Anganwadi Building	January 2022	Dr.Beena K S	Thrikkakkara Municipality
11	Scrutiny of Structural Design	April 2021 to March 2022	Dr.Deepa Balakrishnan S	Cochin Municipal Corporation
12	Scrutiny of Stability Report	April 2021 to March 2022	Dr.Deepa Balakrishnan S & Dr.Glory Joseph	Saraswathy Vidyanikethan Public School

Information Technology

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1	Future farms , Maker Village	Dr.Santosh Kumar M B	
2	KITCO-WBTIDCL	Dr.Santosh Kumar M B	

Safety and Fire Engineering

Sl. No	Name of Consultancy	Name of Consultant	Sponsoring Agency
1	Conduct of skill test for recruitment to the post of Safety and Firemen	Dr. V R Renjith	The Centre for Management Development ,Thycad, TVM
2	Re-design of the state of administrative office building central warehouse, Kinfra park, Thalassery	Dr. George Mathew	The Regional Manager,Central warehousing complex,Kadavanthra
3	Temporary strengthening of 6.0m culrster SH1 at Pakalmattam , Kuruvilamgadu	Dr. George Mathew	M/S. G & S Constructing Company India PVT Ltd ,Near Hanuman temple ,Mandaer p o , Kannur
4	Design of Foundation of 60mt ptless weigh bridge at central warehouse ,Kinfra Park ,Thalassery	Dr. George Mathew	Executive Engineer, Central warehousing corporation Regional office , Kadavathara,EKM
5	Training for Addl. Inspectors of Factories and Boilers(10days)	Dr. V R Renjith	Director, Dept. of Factories and Boilers, SurakshaBhavan, Kumarapuram, TVM
6	Inspection of Building Owned by Maradu Service Coporative bank	Dr. George Mathew	The Secretary Maradu Service Coporative Bank
7	Design of OH& UG fire water tank of Central warehouse TVM	Dr. George Mathew	Executive Engineer, Central warehousing corporation Regional office , Kadavathara,EKM

School of Environmental Studies

ANNUAL REPORT 2021-22

Name of the Department: School of Environmental Studies

Brief History of the School

The School of Environmental Studies(SES), Cochin University of Science and Technology(CUSAT) was established in the year 1980 with an objective to serve as a center imparting high quality environmental education in the country. Currently School is offering M. Sc. &Ph D Programs in Environmental Science and Technology.School has a vision “ to ensure the well- being of citizens by providing trained human resources through the development of appropriate technology and emanating knowedge for sustainable development.”School isalsofunctioning with the major objective of providing environmental knowledge and awarness among the public on the need of environmental protection and environmental management for asustainableliving and economic development.

School is having well established laboratories and state of art facilities for teaching and research in the primeareas of Environmental Studies--Environmental Science, Environmental Chemistry, Environmental Engineering, Environmental Physics, Environmental Biology, Environmental Biotechnology, Environmental Law, Environmental Management, Environmental Technology, and Environmental Economics and on the other related areas. To achieve these objectives, the School has been undertaking research and extension programs in different disciplines along with the consultancy services, for private, public and judiciary.

Post Graduate Program M.Sc. Degree inEnvironmental Studies was started in 1986with intake of 12 students (Physical /Chemical Sciences - 06 & Biological/ Life Sciences - 06). This course was discontinued in 1999, for starting M.Sc. Degree in Environmental Technology [E T] with two distinct streams: Stream 1: Environmental Engineering &Stream 2: Environmental Biotechnology. The School offers Ph D programin core areas of Environmental Studies through its well established research laboratories and as well as enrolled scholars by approved centres across the state recognised under the Faculty of Environmental Studies.

The School enjoyed academic collaboration with the Technical University of Delft, The Netherlands for five years from 1999 to 2004. Dr. I.S. Bright Singh, Reader, School of Environmental Studies (SES/CFDDM) 99-2000/537 dated 1-12-1999) with the mandate to

work towards protection of aquatic animal health and their environment. Later based on the proposal submitted by Dr. I.S. Bright Singh, CFDDM was re-designated as NCAAH on 2005 January developed as a constituent organization of the School in 1999. This Centre is involved in active research and extension activities under the Faculty of Environmental Studies. It has been sanctioned with an M.Tech. Programme in Marine Biotechnology by Department of Biotechnology, Government of India.

There are 45 research scholars and 3 Post Doctoral students are actively involved in research in the various laboratories of the School of Environmental Studies. The School has also achieved grant of Rs. 75 lakhs under FIST Programme (Coordinator Prof. I. S. Bright Singh). The School also is assisted under the UGC SAP- DRS Programme for 59.0 Lakh/- Phase I (2009-2014/ Coordinator Prof. I. S. Bright Singh & Deputy Coordinator Dr. V. Sivanandan Achari) for Rs.135 Lakhs for Phase II (2015-2020/ Coordinator Prof. Dr. V. Sivanandan Achari & Deputy Coordinator Dr. M. Anand). Major infrastructure development happened during this period for the promotion of teaching, research, consultancy and extension equipped with laboratory and analytical instrumentation facilities. High value equipment facilities (1) BET – Surface Area Analyser (Model: Micromeritics -3Flex, USA/ Cost **Rs. 43,79,613/**) for Environmental Analysis and study of chemistry and physics of materials, (2) Atomic AAS- Atomic Absorption Spectrometry (Perkin – Elmer 900 H) for **Rs. 33,24,732**, (3) HPLC System (Schimadzu-Prominence L P 2023 Plus) for **Rs. 25,40, 826/** procured , installed and functioning well , utilizing for the teaching, research and consultancy works for the industries and public regularly. The induction of the above facilities and financial support is reflected in the quality of the research articles, outcome of the curriculum, positions of alumnus and quality of the consultancy supports provided and the number of further research projects sanctioned by various agencies.

Currently a major curriculum restructure and revision successfully completed in the month of July 2020 and masters program renamed as **M. Sc. Environmental Science and Technology (M Sc. E S&T)** by, merging the ongoing stream I and II as a single program incorporating many new courses and enhances the intake to 24 seats from existing 12 seats with effect from 2021 Admission, due to huge demand and growing relevance of the subject specialized area.

Vision of the School of Environmental Studies is “To Ensure The Well Being of The Citizens by Providing Trained Human Resources Through the Development of The Appropriate Technology and by Emanating Knowledge for Sustainable Development”



Programmes of Study/Research

1. M.Sc. Environmental Science & Technology:
2. Ph. D. Programme

Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr. V. Sivanandan Achari	Professor	M.Sc, M.Phil, Ph.D	Environmental Chemistry/ Physical Chemistry/ Analytical Chemistry
2	Dr. Rajathy Sivalingam	Professor	M.Sc., M Phil, Ph.D.	Environmental Toxicology
3	Dr. K Usha K Aravind	Professor & Director	M.Sc, Ph.D	Environmental Chemistry
4	Dr. Suja P Devipriya	Associate Professor	M.Sc., Ph.D.	Ecology & Environmental Technology
5	Dr. M. Anand	Assistant Professor	M.Sc., M.Phil, Ph.D	Environmental Biotechnology
6	Dr. Ratheesh Kumar C S	Assistant Professor	M.Sc., Ph.D.	Environmental Chemistry
7	Dr. Preethy Chandran	Assistant Professor	M.Sc., Ph.D.	Environmental Microbiology
8	Dr. Krishna Mohar K S	Assistant Professor	M.Sc., Ph.D.	Environmental Physics
9	Dr.Vrinda. S	Assistant Professor	M.Sc., Ph.D.	Environmental Ecotoxicology

1. Emeritus Professor/Scientist (if any) (Adjunct Professor)

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr. V Sekkar	Emeritus Professor	M.Sc., M.Tech., Ph.D.	Chemistry and Material Science

2. Research/Project Staff

Sl.No.	Name	Designation	Qualification	Specilisation
	Vishnu Narayanan	Project fellow (DST-BDTD project)	MSc	Environmental Science

3. Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
1	Raichel Mary Lopez	UGC-NET JRF	Prof.Dr. V. Sivanandan Achari	Adsorption Engineering & Carbon Chemistry
2	Balamuralikrishna	E-grantz	Prof. Dr. V. Sivanandan Achari	Environmental Analytical Chemistry
3	Monisha Mohanadas	E-grantz	Prof.Dr. V. Sivanandan Achari	Environmental Engineering
4	Manju T	UJRF	Prof.Dr. V. Sivanandan Achari	Adsorption Engineering & Carbon Chemistry
5	Renjini N nair	UJRF	Prof.Dr. V. Sivanandan Achari	Adsorption Engineering & Carbon Chemistry
6.	Jyothilekshmy S A	UJRF	Prof.Dr. V. Sivanandan Achari	Environmental & Hydro Analytical Chemistry
7.	Nisthula D S	UJRF	Prof.Dr. V. Sivanandan Achari	Environmental &Hydro Analytical Chemistry
8	Sruthy P Mohan	UJRF	Prof.Dr. V. Sivanandan Achari	Adsorption Engineering & Carbon Chemistry
9	Aishwarya S	UJRF	Prof.Dr. V. Sivanandan Achari	Adsorption Engineering & Carbon Chemistry
10	Yadhukrishnan Namboothiri	UJRF	Prof.Dr. V. Sivanandan Achari	Adsorption Engineering & Carbon Chemistry

11	Chandini P K	E-grantz	Prof. Dr. Rajathy Sivalingam	Environmental Toxicology
12	Samitha K A	UJRF	Prof. Dr. Rajathy Sivalingam	Environmental Toxicology
13	Maneesh Kumar S K	E-grantz	Prof. Dr. Rajathy Sivalingam	Environmental Toxicology
14	Vidya P V	UJRF	Prof. Dr. Rajathy Sivalingam	Environmental Toxicology
15	Athulya P	E-grantz	Prof. Dr. Rajathy Sivalingam	Environmental Toxicology
16	Ambili C B		Prof. Dr. Rajathy Sivalingam+ Dr. Mohandas	Zoology
17	Asha S Raj	E-grantz	Prof. Dr. Rajathy Sivalingam+ Dr. Preethy Chandran	Environmental Microbiology
18	Joshy Mathew	P.T	Prof. Dr. Rajathy Sivalingam	Environmental Toxicology
19	Renjusha Nair	P.T	Prof.Dr. Rajathy Sivalingam	Environmental Toxicology
20	Arun A U	P.T	Prof. Dr. Usha K Aravind	Environmental Science
21	Amitha Unnikrishnan	UJRF	Prof. Dr. Usha K Aravind	Environmental Science
22	Aradhana K S	UJRF	Prof. Dr. Usha K Aravind	Environmental Science
23	Greeshma Thankachan	INSPIRE	Prof. Dr. Usha K Aravind	Environmental Science
24	Sasina sai O K	KCSTE	Prof. Dr. Usha K Aravind	Environmental Science
25	Arundhathy J	UJRF	Prof. Dr. Usha K Aravind	Environmental Chemistry
26	Aparna S	UJRF	Prof. Dr. Usha K Aravind	Environmental Chemistry

27	Naveen S Lal	UGC -JRF	Prof. Dr. Usha K Aravind	Environmental Science
28	Madhuraj P K	UGC- JRF	Dr. Suja P Devipriya	Environmental Science
29	Amal R	UJRF	Dr. Suja P Devipriya	Environmental Science
30	Riya K Alex	UJRF	Dr. Suja P Devipriya	Environmental Science
31	Abhinab Borah	UJRF	Dr. Suja P Devipriya	Environmental Science
32	Umalashmi K S	E-grantz	Dr. Suja P Devipriya	Environmental Science
33	Akhilesh K B	E-grantz	Dr. M Anand	Environmental Biotechnology
34	Anjali T B	RGNF	Dr. M Anand	Environmental Biotechnology
35	Satheesh John	P.T	Dr. M Anand	Water Resource Management
36	Asha Elizabeth V S	P.T	Dr. M Anand	Waste Water Treatment
37	Roshni Mohan	UJRF	Dr. Ratheesh Kumar C S	Environmental Science
38	Sudha A	UJRF	Dr. Ratheesh Kumar C S	Environmental Chemistry
39	Gayathri O S	E-grantz	Dr. Ratheesh Kumar C S	Environmental Science
40	Archana Waran	UJRF	Dr. Preethy Chandran	Environmental Biology
41	Sneha suresh	UJRF	Dr. Preethy Chandran	Environmental Microbiology
42	Arathy U L	UJRF	Dr. Preethy Chandran	Environmental Microbiology
43	Anoop B S	UGC-BSR	Dr. Bright Singh	Biotechnology

44	Linu Balan		Dr. Bright Singh	Marine Microbiology
45	Merlin T S	UGC-BSR	Dr. Sajeevan	Marine Biotechnology
46	Deepa G	UGC-BSR	Dr. Sajeevan	Marine Biotechnology
47	Krishnapriya R S	KSCSTE	Dr. Sajeevan	Fish Immunology
48	Sivakumar K C	P.T	Dr. Sajeevan T P	Marine Biotechnology
49	Lakshmi N	Project-DBT	Dr. Sajeevan	Marine Biotechnology
50	Sajith K S	P.T	Dr. M. V. Harindranathan Nair	Environmental Management
51	Hariprasad N	UGC-BSR	Dr. M. V. Harindranathan Nair	Environmental Biology
52	Amarnadh		Dr. M. V. Harindranathan Nair	GIS
53	Devassy Christo		Dr. Valsamma Joseph	Marine Biotechnology
54	Indira K	UGT-SRF	Dr. Valsamma Joseph	Algal Biofuel
55	Jisha Kumaran	UGC-BSR	Dr. Valsamma Joseph	Marine Biotechnology
56	Lekshmi G	UGC-JRF	Prof. Dr. Ammini Joseph	Environmental Biology
57	Sooraj N P	P.T	Prof. Dr. Ammini Joseph	Environmental Biology
58	Ajitha V	UGC-BSR	Dr. Mohandas	Environmental Toxicology
59	Sharon Mathew	KSCSTE	Dr. Kripa	Environmental Science

Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer	1
2	Office Superintendent	1
3	Assistants	2
4	Office Attendant	1
5	Sweeper-cum-Cleaner	1

Technical Personnel

Sl.No.	Designation	No. of Posts
1	Laboratory Assistant	1
2	Technical Assistant	2

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1	M.Sc.	2	43	45
2	Ph.D.	18	41	59

Research Facilities**a. Laboratories**

- 1) Environmental Chemistry Research Laboratory – 1
- 2) Environmental Chemistry Research Laboratory – 2
- 3) Environmental Chemistry Laboratory
- 4) Environmental Engineering Laboratory-1
- 5) Environmental Management(GIS) Laboratory -1
- 6) Environmental Microbiology P G Laboratory
- 7) Algal Biotechnology Laboratory-1
- 8) Environmental Toxicology Laboratory-1
- 9) Environmental Toxicology P G Laboratory
- 10) Environmental Virology Laboratory-1
- 11) Environmental Biotechnology Laboratory-1
- 12) Environmental Biotechnology P G Laboratory

- 13) Molecular Biology Laboratory-1
- 14) Instrumentation Room-1
- 15) M.Sc. Environmental Technology Laboratory-1
- 16) Environmental Biology & Environmental Technology Laboratory-1
- 17) Adsorption Research Laboratory (BET Analyser/HPLC)
- 18) Trace Metal Analysis Laboratory (AAS Analyser Lab)

b. Major Equipments

- 1. Cooling Centrifuge
- 2. UV-Visible Spectrophotometer
- 3. Tissue Homogenizer
- 4. Research Microscope
- 5. Laminar Airflow
- 6. High volume Air Sampler
- 7. TOC Analyzer
- 8. Rotary Vacuum Evaporator
- 9. Spectrofluorometer
- 10. Ultrasonic Cell Disruptor
- 11. KF Titrator
- 12. Electronic Balances/Digital Weighing Balance
- 13. Ozone Generator
- 14. Ultra Pure Water Purification System
- 15. Deep Freezer
- 16. Hot Air Oven
- 17. Distillation Unit
- 18. Muffle Furnace
- 19. AAS-Atomic Absorption Spectrophotometer (under UGC-SAP-DRS-II Program/ 2015-2020)

20. High Performance Liquid Chromatography under (UGC-SAP-DRS-II Program 2015-2020/)
21. BET Analyser (under UGC-SAP-DRS-II Program/2015-2020/)
22. Water Purification System (Deioniser and Distillation)
23. Master cycler nexus gradient PCR
24. Binocular Digital Microscope
25. Passive Atmospheric Microplastic Sampler
26. Glass filtration Assembly
27. 1KVA Online UPS
28. Magnetic Stirrer with Hot Plate
29. Binocular Brightfield Microscope
30. Water Bath
31. Solid Phase Extraction Vacuum Manifold and Vacuum Extractor
32. Biological Safety Cabinet Class II type A2
33. ME Analytical Balance
34. Line Interactive UPS BIZ 600 1 12V
35. Biomedical Freezer
36. Workstation computer and accessories
37. Zebronics 15.4 monitor
38. LG Monitor 18.5
39. Freeze dryer
40. Flame Photometer
41. Water Analyzer (pH/EC/TDS/Salinity Meter (PETS))

c. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
1. Books - 2811	41 Numbers
2. Journals - 5	40 Numbers

Ph.Ds Awarded (2021-22)

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Ph D Synopsis (Environmental Analytical Chemistry). <i>Title:</i> Synthesis, Characterisation and Testing of TiO ₂ – Reduced Graphene Oxide Nano Composite for the Photocatalytic Removal of Pollutants in Water. Since 14-08-2012. Presynopsis Presented on 28/10/2020. Thesis Submitted on 08/02/2021. Ph D AWARDED on 2nd August, 2021.	Deepthi John [4411]	Prof. Dr. V. Sivanandan Achari
2.	Foraging ecology of selected birds in Kole wetlands of Thrissur, Kerala, India”.	Ms. Greeshma P	Dr. E. A. Jayson
3.	Chemistry of Mangrove Soils in Kerala.	Ms. Renuka R.	Dr. S Sandeep
4.	Assessment of litter with special reference to plastics and its impact on the biota of vembanad wetland ecosystem, kerala, india.	Ms. Shylaja G	Dr. V Kripa
5.	Structure based in silico screening for antiviral lead compounds from marine sources against White Spot Syndrome Virus: A multi-target drug discovery approach	Mr. Sivakumar K.C (Reg.No 4847)	Dr. T.P. Sajevean

6.	Studies on Ecophysical Perspectives of Terrestrial Plant Invasion	Mr.Sooraj N. P (Reg.No 4407)	Dr Ammini Joseph
7.	Cellulolytic potential assessment of the Silent Valley National Park top soil through metagenomic approaches	Devassy christo (Reg :4122)	Dr. Valsamma Joseph

Publications

a. Papers

Sl.No.	Title of Paper	Impact Factor, if any
1.	Chandini P K., Jayasooryan K K, Gayathri O S, Sharon Mathew, RajathySivalingam, "An Assessment of Earthworm Population Density of different Habitat Types in a Mango Cultivation Region of Palakkad District, Western Ghats", International Journal for Research in Applied Science & Engineering Technology (IJRASET), ISSN: 2321-9653; vol 9, issue IV Apr 2021	
2.	Ambily C B, Mohandas A, Rajathy S and Sugathan R, "Hydrology of Thattekkad Bird Sanctuary, Kerala" Biological Forum – An International Journal 13(1): 299-306(2021)	
3.	Samitha k., RajathySivalingam , "Monitoring Heavy Metal Contamination in the Pineapple (Ananascomosus) Cultivated tracts of Kerala, India" International Journal of Current Science Research and Review, vol 4, issue 05 May 2021.	
4.	Patchaiyappan, Arunkumar, Syed ZakiAhmed, KaushikDowarah, SwapnaSarikaKhadanga, Tejaswini Singh, ShanmuganathanJayakumar, ChinnasamyThirunavukkarasu, and Suja P. Devipriya . "Prevalence of microplastics in the sediments of Odisha beaches, southeastern coast of India." Marine Pollution Bulletin 167 (2021): 112265.	5.55

5.	Kundungal, Harsha, KlewosSynshiang, and Suja Purushothaman Devipriya . "Biodegradation of polystyrene wastes by a newly reported honey bee pest <i>Uloma</i> sp. larvae: An insight to the ability of polystyrene-fed larvae to complete its life cycle." <i>Environmental Challenges</i> 4 (2021): 100083.	
6.	Patchaiyappan, Arunkumar, KaushikDowarah, Syed Zaki Ahmed, ManivannanPrabakaran, ShanmuganathanJayakumar, ChinnasamyThirunavukkarasu, and Suja P. Devipriya . "Prevalence and characteristics of microplastics present in the street dust collected from Chennai metropolitan city, India." <i>Chemosphere</i> 269 (2021): 128757.	7.086
7.	Sasi, S., Rayaroth, M. P., Aravindakumar, C. T., & Aravind, U. K , Alcohol ethoxysulfates (AES) in environmental matrices, <i>Environmental Science and Pollution Research</i> , vol 28, issue 27 pp. 34167–34186,10 May 2021	4.2
8.	Shalumon, C. S., Sanu, K. S., Thomas, J. R., Aravind, U. K. , Radhakrishnan, S., Sahoo, S. K., ... &Aravindakumar, C. T, Analysis of uranium and other water quality parameters in drinking water sources of 5 districts of Kerala in southern India and potability estimation using water quality indexing method, <i>hydroresearch</i> ,Vol 4, 2021, Issue-in progress, Pp. 38-46, 08 June 2021	
10.	Sreejith, M. V., Aradhana, K. S., Varsha, M., Cyrus, M. K., Aravindakumar, C. T., & Aravind, U. K. (2021). ATR-FTIR and LC-Q-ToF-MS analysis of indoor dust from different micro-environments located in a tropical metropolitan area. <i>Science of The Total Environment</i> , 783, 147066.	7.963
11	John Richard Thomas, M. Vishnu Sreejith, Usha K. Aravind , S. K Sahu , P. G. Shetty , M.Swarnakar , R. A. Takale, GauriPandit, C. T. Aravindakumar(2021).Outdoor and Indoor natural	

	background gamma radiation across Kerala, India. RSC Environmental Science: Atmospheres	
12.	K.K Nejumal, M. Vishnu Sreejith, D. Dineep , Usha K. Aravind and C.T. Aravindakumar (2021) Identification and ecological hazard analysis of contaminants of emerging concern (CECs) in water bodies located in a coastal metropolitan environment. Air, water and Soil pollution (Springer)	2.52
13.	Manappillil K. Athullya, Devadasan Dineep, Mary L. Mathew, Charuvila T. Aravindakumar and Usha K. Aravind . Identification of micropollutants from graywater of different complexity and remediation using multilayered membranes(ESPR)	4.2
14.	Krishnamohan KS , Modak A, Bala G (2021) Effects of local and remote black carbon aerosols on summer monsoon precipitation over India. Environmental Research Communications. https://doi.org/10.1088/2515-7620/ac18d1	2.104
15.	Resmi P., Gireeshkumar T. R. ; Ratheesh Kumar C. S. , Udayakrishnan P.B , N. 2021. Distribution and sources of fatty acids in surface sediments of mangrove ecosystems in the northern Kerala coast, India. Chandramohanakumar, Environmental Forensics (Accepted for publication)	Web of science: 0.726, Scopus:1.351
16.	ANJALI, T.B.1*, ASWIN K. VIJAY2 , AKHILESH, K.B.1 AND ANAND M A Study on Biochar Preparation and Characterization of Broiler's Poultry Litter	
17.	Nejumal, K. K., Sreejith, M. V., Dineep, D., Aravind, U. K. , & Aravindakumar, C. T. (2021). Identification and Ecological Hazard Analysis of Contaminants of Emerging Concerns (CECs) in Water Bodies Located in a Coastal Metropolitan Environment. Water, Air, & Soil Pollution, 232(10), 1-14.	2.574
18.	John, Reshmi, Jissy Mathew, Anu Mathew, Charuvila T. Aravindakumar, and Usha K. Aravind . "Probing the Role of Cu (II) Ions on Protein Aggregation Using Two Model Proteins." ACS Omega (2021).	3.512

19	Nair, Sreekanth R., Sunil Paul M. Menacherry, S. Renjith, T. K. Manojkumar, Usha K. Aravind , and Charuvila T. Aravindakumar. "Oxidation reactions of carbaryl in aqueous solutions." <i>Chemical Physics</i> (2021): 111427.	2.348
20.	Thomas, John Richard, M. Vishnu Sreejith, Usha K. Aravind , S. K. Sahu, P. G. Shetty, M. Swarnakar, R. A. Takale, GauriPandit, and C. T. Aravindakumar. "Outdoor and indoor natural background gamma radiation across Kerala, India." <i>Environmental Science: Atmospheres</i> (2022).	
21.	Krishnamohan, KS , Bala, G "Sensitivity of Tropical Monsoon Precipitation to the Latitude of Stratospheric Aerosol Injections" (accepted for publication)	4.375
22	ArchanaWaranand PreethyChandran "Cradle to Grave,;multifacetedsoapnut an update on applications of Sapindusspp, Sustainable chemistry and Pharmacy, 24:100557.	4.5
23.	Sreejith, Vishnu M., John Richard Thomas, Nejumal K. Khalid, Abin Varghese, Usha K. Aravind , and Charuvila T. Aravindakumar. "Implosion–demolitions: impact on the local environment in a tropical humid Ramsar site located in southwestern India." <i>Air Quality, Atmosphere & Health</i> (2022): 1-19.	3.763
24.	Khalid, Nejumal K., Manoj P. Reyaroth, DineepDevadasan, Usha K. Aravind , and Charuvila T. Aravindakumar. "Sonochemical Degradation Studies of Isoniazid in Aqueous Medium." <i>Water, Air, & Soil Pollution</i> 233, no. 3 (2022): 1-13.	2.52
25.	Philip, Jeeva M., Cyrus M. Koshy, Usha K. Aravind , and Charuvila T. Aravindakumar. "Sonochemical degradation of DEET in aqueous medium: Complex by-products from synergistic effect of sono-Fenton–New insights from a HRMS study." <i>Journal of Environmental Chemical Engineering</i> (2022): 107509.	5.909
26.	SreedharanNair, Sreedhanya,	4.384

	KrishnarajKooramattomUnni, SwaroopSasidharanpillai, Satheesh Kumar, Charuvila T. Aravindakumar, and Usha K. Aravind . "Bio- physical and computational studies on serum albumin/target protein binding of a potential anti- cancer agent." <i>European Journal of Pharmaceutical Sciences</i> 172 (2022): 106141.	
27.	V. Sivanandan Achari , Raichel Mary Lopez, S. Rajalakshmi, O. Jayasree, O. M. Shibin, Deepthi John and V. Sekkar, Microporous carbon with highly dispersed nano- lanthanum oxide (La ₂ O ₃) for enhanced adsorption of methylene blue, <i>Separation and Purification Technology</i> , 279,119626, 2021, Elseviers (15 December, 2021) https://doi.org/10.1016/j.seppur.2021.119626 . IMPACT FACTOR: 7. 3/ PEER REVIEWED.	7.3
28	Deepthi John, Jiya Jose, Saritha G Bhat & V. Sivanandan Achari , Integration of heterogeneous photocatalysis and persulfate based oxidation using TiO ₂ – reduced graphene oxide for water decontamination and disinfection, <i>Heliyon</i> , 7(2021)e07451, Elseviers, Received after revision 15, March 2021 ,Accepted on 28 June 2021, http://doi.org/10.1016/j.heliyon.2021.e07451 . Impact Factor: 2.85 (2021). IMPACT FACTOR: 2. 85/ PEER REVIEWED.	2.85
29	R. Deepa, G. Madhu, Roy M Thomas & V. Sivanandan Achari Removal of Mefenamic Acid from Aqueous Solution by Fenton Process: Optimization Using Response Surface Methodology with Central Composite Design" <i>Nature Environment and Pollution Technology</i> , 20(5) pp 2061-2067, 2021 doi.org/10.46488/NEPT.2021. V20I05.023, Received on 07/05/2021, 2021 Reviewed 25/06/ 2021, Accepted 01/07/2021 Published September 21, 202. IMPACT FACTOR: 0. 45/ PEER REVIEWED	0.45

b. Books :

Sl. No.	Title of Book
1.	Cost Effective Technologies for Solid Waste and Wastewater Treatment (Advances in pollution research series) –Edited
2.	<p>Eleyadath Lakshmi, Machinchery Priya & Velayudhan Sivanandan Achari, BOOK CHAPTER / INTECH OPEN UK/IN IN THE BOOK “Modern Ship Engineering, Design and Operations, ”, 978-1-83969-473-V/ Title: Systems and Operation of Ballast Water in Ships with the the Changing Ballast Water Management Policy. BOOK CHAPTER INTEC OPEN, UK, FINAL BOOK TITLE & ISBN: "Modern Ship Engineering, Design and Operations," 978-1-83969-473-8, visit the book page for details here: http://www.intechopen.com/books/modern-ship-engineering-design-and-operations,The permanent web address of your chapter “Systems and Operation of Ballast Water in Ships with the Changing Ballast Water Management Policy” is: http://mts.intechopen.com/articles/show/title/systems-and-operation-of-ballast-water-in-ships-with-the-changing-ballast-water-management-policy, Submitted on February, 26th, 2021 Reviewed July 19th, 2021 Published September 21, 2021, [Open Access Peer Reviewed Chapter – ONELINE FIRST DOI: 10.5772/INECHOPEN. 99552] Published Print on 22/12/2021/ PEER REVIEWED</p>
	INDUSTRIAL STUDY REPORTS
	APM Muhammed Hanish, Shiva Nagendra, R. Venugopal, T. Mukundan, V. Sivanandan Achari , S. Suhas, Santhosh KoshyThomas, Scientific Study Related to Health & Safety of Residents Near BPCL- KOCHI REFINERY, Kerala, India, Study Report Submitted by Expert Committee, Government of Kerala, 15 th February, 2021 [as per the GO (ORD) No. 669/ 2020/ Industries, Thiruvananthapuram, Dated 20/08/2020]

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Dr.Usha K Aravind	Applied Engineering in Environmental protection: Relevance of Green Technology	Invited Talk
AmithaUnnikrishnan	Three days National workshop on Research methodology and Data Processing in Excel organised by Integrated Institute for Advanced Research and Information(IIARI)	Participation
Arundhathy J	Three days National workshop on Research methodology and Data Processing in Excel organised by Integrated Institute for Advanced Research and Information(IIARI)	Participation
GreeshmaThankachan	Online training programme on "Indoor Air Pollution and its effect on Women and Children Health in India" organized by National Institute of Disaster Management, Ministry of Home Affairs, Govt. of India in collaboration with WRI India	Participation
GreeshmaThankachan	Online training programme on "Climate Change and Disaster Management Related Challenges in Polar Regions" organized by National Institute of Disaster Management, Ministry of Home Affairs, Govt. of India in collaboration with National Centre for Polar and Ocean Research Goa and INSAScientific Committee on Antarctic Research (SCAR National Committee)	Participation

GreeshmaThankachan	Online course on Nature-based Solutions for Disaster and Climate Resilience ,developed by United Nations Environment Programme (UNEP)	Participation
SasinaSai OK	Online course on Nature-based Solutions for Disaster and Climate Resilience ,developed by United Nations Environment Programme (UNEP)	Participation
Aparna s	Online workshop on Goodness of roses:Healthy flavonoids	Participation
Aradhana KS	Online training programme on "Indoor Air Pollution and its effect on Women and Children Health in India" organized by National Institute of Disaster Management, Ministry of Home Affairs, Govt. of India in collaboration with WRI India	Participation
Dr.Ratheesh Kumar C S	World Ozone Day Celebration 2021	Participation
Dr. Anand M	A Study on Biochar Preparation and Characterization of Broiler's Poultry Litter ANJALI, T.B.1*, ASWIN K. VIJAY2 , AKHILESH, K.B.1 AND ANAND M	Participation
Dr. C S Ratheesh Kumar	World Environment day celebration	organising committee/ participation
Usha K Aravind	14th National Symposium on Radiation and Photochemistry(NSRP-2021)	Paper presentation(Tittle: Protien based flurescent probe for heavy metal sensing)

Usha K Aravind	World Environment day celebration	organiser
Usha K Aravind	International Conference on Advanced Polymer Technology	session chair
Dr. M. Anand	World Environment Day celebrations	Invited talk
Dr.Usha K Aravind	DST-PURSE sponsored Workshop on Membrane Separation Process	Coordinator
A U Arun	ISPEC International Congress On Environment, Disaster and Forest Adana, Turkey	Participation
Naveen S Lal	DST-PURSE sponsored Workshop on Membrane Separation Process	Participation
Aparna S	DST-PURSE sponsored Workshop on Membrane Separation Process	Participation
Aparna S	GOLDEN JUBILEE CELEBRATORY AUTHOR WORKSHOP on “Writing Quality Research Articles & Identifying Relevant Journals to Read and Publish In	Participation
GreeshmaThankachan	GOLDEN JUBILEE CELEBRATORY AUTHOR WORKSHOP on “Writing Quality Research Articles & Identifying Relevant Journals to Read and Publish In	Participation
GreeshmaThankachan	DST-PURSE sponsored Workshop on Membrane Separation Process	Participation
SasinaSai OK	DST-PURSE sponsored Workshop on Membrane Separation Process	Participation

Arundhathy J	Workshop on "Research Methodology and Data Analysis using Excel" organized by Integrated Institute for Advanced Research and Information	Paper presentation
GreeshmaThankachan	International Online Conference on Materials Science and Technology (ICMT 2021)	Participation
Aradhana KS	DST-PURSE sponsored Workshop on Membrane Separation Process	Participation
AmithaUnnikrishnan	DST-PURSE sponsored Workshop on Membrane Separation Process	Participation
GreeshmaThankachan	Webinar on Basics of Disaster Management	Participation
GreeshmaThankachan	Seminar on Climate Change and Disasters - Vulnerability and Mitigation Strategies	Participation
GreeshmaThankachan	Online Training on Disaster resilience and Coping Capabilities of Cities amidst COVID 19 Pandemic	Participation
SasinaSai OK	Webinar on Waste Management in Pandemics Impact on Marine Environment and Ecology	Participation
SasinaSai OK	Webinar on Disaster Resilient Airport Infrastructure	Invited talk
Dr. PreethyChandran	International webinar series conducted by department of Microbiology, Kalady	Invited talk

Dr.Ratheesh Kumar C S	Faculty Induction Program	Paper presentation
Dr.Usha K Aravind	Lecture Series on capital ,consumption and nature	Invited Talk
Dr.Usha K Aravind	Golden Jubilee International Conference NANOicon 2022 (Online)	Coordinator
NAVEEN S LAL	INTERNATIONAL CONFERENCE ON CURRENT TRENDS IN CHEMISTRY	Participation
GreeshmaThankachan	Golden Jubilee International Conference NANOicon 2022 (Online)	Poster presentation
NAVEEN S LAL	7-DAY NATIONAL ONLINE WORKSHOP ON R PROGRAMMING FOR STATISTICAL DATA ANALYSIS	Participation
GreeshmaThankachan	Three-day international conference on “Nano Biopolymeric systems” Sponsored by Shastri Indo-Canadian Institute and hosted by the Mahatma Gandhi University	Participation
GreeshmaThankachan	7-day National Online Workshop on R Programming for Statistical Data Analysis	Participation
Vishnu Narayan MN	Golden Jubilee International Conference NANOicon 2022 (Online)	Poster presentation
SasinaSai OK	Golden Jubilee International Conference NANOicon 2022 (Online)	Poster presentation

SasinaSai OK	7-DAY NATIONAL ONLINE WORKSHOP ON R PROGRAMMING FOR STATISTICAL DATA ANALYSIS	Participation
Aradhana K S	7-DAY NATIONAL ONLINE WORKSHOP ON R PROGRAMMING FOR STATISTICAL DATA ANALYSIS	Participation
Aradhana K S	34 Kerala Science Congress	Participation
Aparna S	Golden Jubilee International Conference NANOicon 2022 (Online)	Participation
Aparna S	International Conference on Current Trends in Chemistry, CTriC 2022	Oral Presentation
Arundhathy J	Golden Jubilee International Conference NANOicon 2022 (Online)	Oral Presentation
Arundhathy J	International Conference on Current Trends in Chemistry, CTriC 2022	Poster presentation
AmithaUnnikrishnan	34 Kerala Science Congress	Oral Presentation
AmithaUnnikrishnan	Lake Envirthon Conclave 2022	Oral Presentation
AmithaUnnikrishnan	Indian Analytical Science Congress, 2022	Poster presentation
SasinaSai OK	Webinar on Raman Spectroscopy in Material Science and Biology” by Prof. ChandrabhasNarayana, Director, Rajiv Gandhi Centre for Biotechnology	Participation
SasinaSai OK	Massive harmful algal blooms in Rio de Janeiro (Brazil) during Summer 2021/2022	Participation

Dr. Preethy Chandran	International conference NANOicon 22	chair a session
Dr. Ratheesh Kumar C S	Vidya p v, rajathy s, ratheesh kumar c s. Spatial and seasonal variation in water quality parameters of a kole wetland system, southwest coast of india	chair a session
Dr. Ratheesh Kumar C S	Simimol A. S., Ajith S., Ratheesh Kumar and Anita Das Ravindranath Development of Thermally Stable Coir Fibre Using Eco-Friendly Bio Extracts of Spinaciaoleracea	chair a session
Dr. Ratheesh Kumar C S	Roshni Mohan., Sudha, A., Vidya, P.V., Gayathri, O.S. and Ratheesh Kumar, C.S. 2022. Seasonal Variations in Physico-chemical Parameters and Nutrient Dynamics in Ashtamudi Estuary, A Ramsar Site, South West Coast, India.	chair a session
Dr. Ratheesh Kumar C S	Vidya P V, Rajathy S, Ratheesh Kumar C S, Maneesh Kumar S K, Roshni Mohan, Sudha A. Spatial and seasonal variability in fundamental geochemical characteristics of a kole wetland	chair a session
Prof. Dr. V. Sivanandan Achari	CUSAT Golden Jubilee International Conference on NANOicon 2022, organized by Interuniversity Centre For Nanomaterials and Devices [IUCND], Cochin University of Science and Technology on January 11-15, 2022.	Chaired a session

Prof. Dr. V. Sivanandan Achari	Given an INVITED TALK on John isotherm methods for the Characterization of Porous Materials –An Indian Contribution in Analytical Science, organized by Indian Society of Analytical Scientists [Kerala Chapter], at Munnar on March 10-12, 2022.	Invited talk
Prof. Dr. V. Sivanandan Achari	Engaged a Session in BET – SURFACE AREA ANALYSER giving an INVITED TALK on Physisorption of Gases, Surface Area and Porosity Determinations: BET Analysis conducted by Central Laboratory For Instrumentation and Facilitation, University of Kerala as a part of 5-Day Hybrid National Workshop on NMR Spectroscopy, BET Surface Area Analyser, X-Ray Photoelectron spectroscopy andCHNS/O Analyser during 15-19 th March, 2022 at CLIF, Kariavattom, Trivandrum.	Invited talk
Prof. Dr. V. Sivanandan Achari	Resource Person for a Five Day Online Faculty Development Program on Advanced Soil Reclamation Techniques Organised by Department of Civil Engineering, Muthoot Institute of Technology and Science, Varikkoli, Kochi, Kerala, from 4-8 April, 2022. Title of the Talk, “ Surface Area and Porosity Determination of Porous Materials for Industrial Applications”	Resource person

Prof. Dr. V. Sivanandan Achari	Delivered a special address on the theme “Transformation of Food Systems for Human and Planetary Health in the Webinar organized by the Department of Hotel Management & Catering Science of G.T.N Arts College, POLLACHI, Tamilnadu, on 31 st August 2021.	Special Address
Prof. Dr. V. Sivanandan Achari	Given Felicitation speech in Dr. L. Suneetha Bai Smriti Puraskar Presentation Ceremony organized by Department of Hindi, CUSAT on 30 th March, 2022	Felicitation Speech
Prof. Dr. V. Sivanandan Achari	DST Purse II Sponsored Workshop on Membrane Separation Process Organised by School of Environmental Studies, CUSAT on December 8-9, 2021	Member, Organising Committee Felicitation Address
Prof. Dr. V. Sivanandan Achari	Delivered a Speech during the inauguration of NATURE CLUB-PRAKRITHI, at SNM Institute of Managemnt and Technology, Maliankara, Ernakulam on 4 th March, 2022	Inaugural speech
Prof. Dr. V. Sivanandan Achari	Delivered an online Lectures on the Focal Theme of Capital Consumption and Nature organized by the Centre For Green Literature Studies, Department of Hindi, CUSAT, on March 6, 2022. Topic of the Talk “Bharathappuzha River- A Scientific Studies”	Invited talk
Prof. Dr. V. Sivanandan Achari	Resource person to deliver a Keynote Lecture in observance of World Ozone Day, organized by Department of Botany and Biotechnology, NEWMAN	Keynote

	COLLEGE, THODUPUZHA, in association with St. Therasus College, Ernakulam, on September 16, 2021.	Lecture
Prof. Dr. V. Sivanandan Achari	Delivered a Talk on SCIENCE AS A PASSION AND PROFESSION, in the orientation program for B Sc. Science Students organized by the CATHOLIC COLLEGE, Pathanamthitta, Kerala, INDIA.	Delivered a Talk
Prof. Dr. V. Sivanandan Achari	Given Felicitation speech in Dr.L.Suneetha Bai Smriti Puraskar Presentation Ceremony organized by Department of Hindi, CUSAT on 30 th March,2022.	Felicitation speech
Balamuralikrishna	Indian Analytical Science Congress 20 Analytical Science for Aatmanirbhar Bharat through Technological Excellence, Presented a paper on “Hydro analytical Determinations of Groundwater for Selected Coastal Aquifers of Beach Mineral Sand Deposited Sites of Kerala, India “ on March 10-12, 2022, Hotel Tea County, Munnar	Presented a Paper
Manju T	Indian Analytical Science Congress 20 Analytical Science for Aatmanirbhar Bharat through Technological Excellence, Presented a paper on “Carbon Aerogel derived from Triethyl amine catalyzed and atmospheric pressure dried resorcinol-formaldehyde aerogel-A cost effective removal of methylene blue from industrial effluent using carbon aerogel. “ on March 10-12, 2022, Hotel Tea County, Munnar	Presented a Paper

Renjini N Nair	Indian Analytical Science Congress 20 Analytical Science for Aatmanirbhar Bharat through Technological Excellence, Presented a paper on “Comparative Study of Adsorption Evaluation of Organophosphorous Pesticide Chlorpyrifos on to Different Adsorbents, Kinetic Study and Its Quantitative Determination By HPLC Method.” on March 10-12, 2022, Hotel Tea County, Munnar	Presented a Paper
Monisha Mohanadas	Lakeview Envirothon Conclave LAEC-2022, Sacred Heart College (Autonomous), Kochi, Kerala. International Seminar on Wetlands and Mangroves: Deliberations on Sustainability and Conservation. Presented a paper on “The Effect of Seafood Industrial Effluent on The Water Quality of Vembanad Wetland” on March 24-26, 2022	Presented a Paper
Jyothi Lekshmy S A	Lakeview Envirothon Conclave LAEC-2022, Sacred Heart College (Autonomous), Kochi, Kerala. International Seminar on Wetlands and Mangroves: Deliberations on Sustainability and Conservation. Presented a paper on “Assessing Soil Quality of Kole Wetlands, Thrissur with Special Reference to Phosphate Fractionation and Heavy Metal Concentration” on March 24-26, 2022	Presented a Paper
Jyothi Lekshmy S A	Lakeview Envirothon Conclave LAEC-2022, Sacred Heart College (Autonomous), Kochi, Kerala. International Seminar on Wetlands and Mangroves: Deliberations on	Participated

	Sustainability and Conservation	
Aiswarya S.	Lakeview Envirothon Conclave LAEC-2022, Sacred Heart College (Autonomous), Kochi, Kerala. International Seminar on Wetlands and Mangroves: Deliberations on Sustainability and Conservation.	Participated
Renjini N Nair	Lakeview Envirothon Conclave LAEC-2022, Sacred Heart College (Autonomous), Kochi, Kerala. International Seminar on Wetlands and Mangroves: Deliberations on Sustainability and Conservation.	Participated

17. Role of Faculty in International/National Organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Dr.Usha K Aravind	CUSAT - Board of studies	Member
Dr.Usha K Aravind	MG University - ACESSD-Inter university center	Adjunct Faculty
Dr.Usha K Aravind	CUSAT - Virtual Centre for Advanced Research in Basic Science.	Coordinator
Dr. M. ANAND	Kerala University - Passing board M.Phil	External expert/chairperson
Dr.Usha K Aravind	Centre for Environment Education and Technology (CEET), Kottayam	Life Member
Dr.Usha K Aravind	Advanced centre of Environmental Studies and Sustainable Development (ACESSD)- Inter University center-MG University	Adjunct Faculty

Dr.Usha K Aravind	Society of Environmental Chemistry and Allied Sciences (SECAS), Kottayam	Life member and Treasurer
Dr. Ratheesh Kumar C S	State Referral Institute, Kerala Water Authority- Technical Specification Evaluation Committee	Technical Expert for Technical Specification Evaluation of Quotations/ Tenders for purchase of Analytical instruments
SujaP.Devipriya	NCCR, Ministry of Earth Sciences - 'Marine Litter policy development	Subject expert
Dr. Usha K Aravind	CUSAT- Cusat Alumni Association	Executive member
Dr. Usha K Aravind	DST-Facility Management committee-SAIF -MGU	Member
Dr. Ratheesh Kumar C S	Kerala University of Fisheries and Ocean Studies-Question Paper Setting	External Expert for setting the question paper
Dr.SujaP.Devipriya	National Center for coastal research ,Ministry of Earth Sciences -	Subject expert
Dr. Usha K Aravind	CUSAT - Zero waste campus initiative	coordinator
Prof. Dr. V. Sivanandan Achari	State Institute of Encyclopaedic Publications Governments of Kerala, Thiruvananthapuram, Kerala , India as per the order: Order No. 621/ E4/2021/ S I E P Date 19/ 07/ 2021 The State Institute of Encyclopaedic	Member, Editorial Board

	Publications, Department of Cultural Affairs, Government of Kerala, Thiruvananthapuram- 695 0 14, INDIA.	
Prof. Dr. V. Sivanandan Achari	Nominated as Dean, Faculty of Environmental Studies, Cochin University of Science & Technology, as per the order of the Vice- Chancellor with effect from February, 2021. No. Conf.II/ Deans/ 2019 Deans 01/02/ 2021. Conducted the combined meeting of the Board of Studies in Environmental Studies and Faculty of Environmental Studies held on 25/01/2022 [TUESDAY]at 10.30 am	ACT AS DEAN OF THE FACULTY
Prof. Dr. V. Sivanandan Achari	Nominated as Member of Syndicate, Faculty of Environmental Studies, Cochin University of Science & Technology, as per the order of the Vice-Chancellor with effect from March, 2021. As per the order No. GA & EL. 1/ 17 (1)/ 2019- Vol (a) Date 20-01- 2021 as per the Notification No. G A & EL. 1/ 17 (1)/ 2019- Vol (a) Date 20-01- 2021(a).	ACT as Member of Syndicate
Prof. Dr. V. Sivanandan Achari	Appointed as CHAIRMAN, Board of Environmental Studies of Cochin University of Science and Technology, as per the ORDER OF	ACT as Chairman, Board of Studies.

	VICE- CHANCELLOR for the period 2020- 2024. Conducted the combined meeting of the Board of Studies in Environmental Studies and Faculty of Environmental Studies held on 25/01/2022 [TUESDAY]at 10.30 am.	
Prof. Dr. V. Sivanandan Achari	Member, Academic Council, Cochin University of Science and Technology, w.e. f 01/07/2018.	Member
Prof. Dr. V. Sivanandan Achari	Member, Academic Committee, Cochin University of Science and Technology,.	Member
Prof. Dr. V. Sivanandan Achari	Member Research Committee, National Centre for Earth Sciences [NCESS], Akkulam, Thiruvananthapuram.	Member
Prof. Dr. V. Sivanandan Achari	Member Research Committee, Centre for Water Resources Development and Management, Kunnamangalam, Kozhikode. Research Committee met on 17/12/2020.	Member
Prof. Dr. V. Sivanandan Achari	Member, Doctoral Committee, of Ms. Saranya M S, under Dr. Ninishv V. Nair, Professor, Department of Civil Engg , RIT Government Engineering College, Kottayam, Kerala.	Member
Prof. Dr. V. Sivanandan Achari	Nominated to the Governing Council of STIC for a period of 3	MEMBER

	years with effect from 04-11-2020 and in turn will be a member of the Executive Committee of STIC by the virtue of this nomination to the Governing Council. Attended the 74 th meeting of the Executive Committee of STIC on 10.03.2022 as per the order Ref.No. STIC/4/2021-22/1563. Attended the 52 nd meeting of the Governing Council of STIC on 17.01.2022 as per the order Ref.No.STIC/3/2021-22/1127.	
Prof. Dr. V. Sivanandan Achari	Member of Board of Studies in Chemistry, Fathima Matha National College, Kollam.	MEMBER
Prof. Dr. V. Sivanandan Achari	Member of Board of Forensic Science, Cochin University of Science and Technology, Kochi- 682 022, INDIA.	MEMBER
Prof. Dr. V. Sivanandan Achari	Expert Committee Member “Scientific Study Related to Health and Safety of Residents Near BPCL Kochi Refinery”. Government Order No. 669/2020 , Industry Department; Dated 20/08/2020.Expert Committee Member, recommended by Managing Director, Industries Development Corporation constituted by Secretary, Industries Department, Government of Kerala as proposed by	Expert Committee Member

	<p>Petition Committee of Kerala Legislative Assembly to study the Health & Safety Problems faced by people living in and around of BPCL, Kochi. First Meeting Attended on 06/11/2020, 04/11/2021, 22/01/2021. Final Report Submitted to Government of Kerala as per the GO (ORD) No. 669/ 2020/ Industries, Thiruvananthapuram, Dated 20/08/2020</p>	
<p>Prof. Dr. V. Sivanandan Achari</p>	<p>Recognized Institutions – Extension of Provisional Recognition for the Academic Years 2020-21 & 2021-22- Inspection Committee Constituted. Order No. CUSAT/ AC ©. C3/2373/2021 Dated 15/07/2021. Visited For Inspection Nizar Rahim and Mark School of Architecture, Oyur, Kollam & Central Institute of Fisheries, Nautical & Engineering Training, Kochi- 68 2 016</p>	<p>Member of the Inspection Committee</p>
<p>Prof. Dr. V. Sivanandan Achari</p>	<p>Acted as the Judge for the Evaluation of Manorama Nallapadam Award 2021-22, for the Schools of Ernakulam Disstric, by Malayalala Manoram, News Paper Daily on March 22, 2022.</p>	<p>Acted as the Judge</p>

Prof. Dr. V. Sivanandan Achari	Nominated as the Member in the Selection Committee for assessing the eligibility of Dr. Sajeewan T.P, Assistant Professor(Stage 3),NCAAH for promotion as Associate Professor(Stage 4) under Career Advancement Scheme of UGC Regulations 2021 as per the Order No.VC/PS/CAS/NCAAH/2020.	Member of Selection Committee
Prof. Dr. V. Sivanandan Achari	Conducted the Open Defence and Viva-Voce of SHYLAJA G the PhD thesis entitled “Assessment of Litter with Special Reference to Plastic and its impact on the biota of Vembanad Wetland Ecosystem, Kerala, India in the Seminar Hall, School of Environmental Studies, CUSAT as per the order No.CUSAT/EXAM(T).A3/30435/2020 on 6 th October,2021.	Chairman Of Ph D Viva Board
Prof. Dr. V. Sivanandan Achari	Conducted the Open Defence and Viva-Voce of the PhD thesis entitled “Chemistry of mangrove soils in Kerala” in respect of the candidate Renuka R in the Seminar Hall, School of Environmental Studies, CUSAT on 7 th September 2021 as per the order No.CUSAT/EXAM(T).A3/27223/2020.	Chairman Of Ph D Viva Board

Prof. Dr. V. Sivanandan Achari	Conducted the Pre Submission Seminar of Ms. Remya R , Research Scholar on the topic "Groundwater-Seawater interactions along the coastal stretch of Thiruvananthapuram District, Kerala" at Department of Geology, University of Kerala on 27 th October 2021.	Chairman Of Ph D Viva Board
Prof. Dr. V. Sivanandan Achari	Viva Voce And Open Defence Of Ms. P. Greeshma [Register No. 4692], Research Scholar Of The Kscste – Kerala Forest Research Institute, Peechi-680 653, Thrissur, Under The Faculty Of Environmental Studies, Cochin University Of Science And Technology (Cusat), Held At School Of Environmental Studies, Cusat, Kochi 682 022, At 2.00 Pm, On 12 Th July, 2021.	Chairman Of Ph D Viva Board
Prof. Dr. V. Sivanandan Achari	Ph D Viva Voce And Open Defence Of Ms. Deepthi John [Register No. 4411], Research Scholar Of The School Of Environmental Studies Under The Faculty Of Environmental Studies, Cochin University Of Science And Technology (Cusat), Held At School Of Environmental Studies, Cusat, Kochi 682 022, At 11.00 Am, On 02 Th	Chairman Of Ph D Viva Board

	August, 2021.	
Prof. Dr. V. Sivanandan Achari	Ph D Viva Voce And Open Defence Of Mr. Sivakumar K C , [Register No. 4847], Research Scholar Of The School Of Environmental Studies, Cochin University Of Science And Technology , Kochi -22, Under The Faculty Of Environmental Studies, Cochin University Of Science And Technology (Cusat), Held At School Of Environmental Studies, Cusat, Kochi- 682 022, At 11.00a M, On 21 St January, 2022.	Chairman Of Ph D Viva Board
Prof. Dr. V. Sivanandan Achari	Ph D Viva Voce And Open Defence Of Mr. Devassy Christo , [Register No. 4122], Research Scholar Of The School Of Environmental Studies, Cochin University Of Science And Technology, Kochi -682 022, Under The Faculty Of Environmental Studies, Cochin University Of Science And Technology (Cusat), Held At School Of Environmental Studies, Cusat, Kochi- 682 022, At 10.30am, On 22 Nd February, 2022 [Tuesday]	Chairman Of Ph D Viva Board

Awards/ Honours/ Fellowships etc. received : Nil

Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
1	Bioremediation of pesticides from effluents using an integrated photo catalytic bioreactor using immobilized bacteria.	CUSAT	200000	Dr Preethy Chandran
2	Identification of bioindicator organism for microplastic pollutant, assessment of the impact of microplastic ingestion and possible tropic transfer in bioindicators.	Seed money (SMNRI)	2 lakhs	Dr.Suja P.Devipriya
3	Portable Device for the preliminary analysis of preeclampsia	DST Delhi	2444083/-	Dr.Usha K Aravind (Co.PI)
4	Layer by Layer (LbL)assisted antimicrobial membranes for water purification	SPARC	4449175/-	Dr. Usha K Aravind(PI)
5	Towards sustainable surface water ecosystems in India: Predicting the fate ,transport and effects of urban waste water pollutants in rivers	SPARC	4849175/-	Dr.Usha K Aravind (Co.PI)

6	<p>Healthiness Study of Secured Land Fill (SLF) of The Travancore Cochin Chemicals Ltd., P B No. 4, Udyogamandal. P.O, Inspection and Lab Scale Analysis of the samples collected from the industrial premises- the FOUR TEST WELLS around the capped pit of Mercury Storage for a period of six months as per the direction of Kerala State Pollution Control Board. Award of the work order: Ref (1) TCC/ AGMPJ / SLF/ 8/ 20 DATED 28th August, 2020. Final Report Submitted on 29th, JUNE, 2021 [Outcome of Study Sanction Order: TCC/ AGMP/SLF/8/20 Dated 28th August, 2020]</p>	<p>The Travancore Cochin Chemicals Ltd., P B No. 4, Udyogamandal. P.O</p>	<p>Rs. 1,29,000/</p>	<p>Prof. Dr. V. Sivanandan Achari [Principal Investigator & Consultant]</p>
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Research Programmes and Activities:

Sl.No.	Problem / Topic	Investigator (s)
1	Granular Carbons Activated with La 3+ ions and Nano La ₂ O ₃ ; Preparation, Characterisation, Adsorption Isotherms and Kinetic Studies Determination of Surface Area of Porous Materials Using Adsorption Method from Liquid Phase	Raichel Mary Lopez [Register No. 4665]
2	Groundwater Quality of Alappad Coast of Kerala: A Critical Evaluation of groundwater Chemistry	Mr. Balamuralikrishna [5292]
3	Advanced Treatment of Drinking water/waste water using Biological Activated Carbon Filters after Ozonation.	Mrs. Monisha Mohanadas [5438]
4	Preparation, characterisation and adsorption isotherm studies of biologically activated carbon filters (FACF) for the treatment of contaminated water	Renjini N Nair [5965]
5	Granular activated carbon incorporated with carbon aerogel: Study of adsorption isotherms, porosity, kinetics and thermodynamics.	Manju, T [5964]
6	Groundwater Chemistry and Environmental Quality Assessment of highly vulnerable ecologically sensitive Alappad coastal region of Kollam, Kerala	Jyothi Lekshmy S A [6480]
7	Ground water Chemistry And Soil Chemistry Of Ecologically Sensitive Arattupuzha Coastal Region, Alappuzha, Kerala, India	Nisthula D S [6481]

8	“Synthesis and Characterization of Graphene Oxide/ Zinc Oxide (nanorod) composite for the effective removal of heavy metals- lead, mercury and cadmium: Adsorption and Kinetic Studies”	Sruthi P Mohanan [6516]
9	Activated Carbon Chemistry, Adsorption Studies and Physical Chemistry, Title/ Granular Carbon –nanomaterial composite for the effective adsorption removal of toxic heavy metals: Use of Ce ³⁺ and Nano Ce ₂ O ₃	Ms. S. Aiswarya [6007]
10	Activated Carbon Chemistry, Adsorption Studies and Physical Chemistry, Title/ Granular Activated Carbons Doped With Nano Zinc Oxide for the Removal of Selected Toxic Heavy Metal Ions,	Mr. Yadu Krishnan Namboothiri [6608]

POST DOCTORAL FELLOWS GUIDING / MENTORING AT PRESENT

Sl.No.	Name	Problem / Topic	Investigator (s)
1.	Dr. A. S. Rajalekshmi (No.Ac.B3/PDF/2019-20) DOJ 09.10.2019	CUSAT PDF	Prof. Dr. V. Sivanandan Achari

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl. No.	Title	Duration	Coordinator	Funding Agency
1	World Environment Day	6/5/2021	Dr Preethy Chandran	Dept
2	World Environmental Day		Dr Preethy Chandran	Dept
3	world Environment day Celebrations	6/5/2021	Dr Preethy Chandran	Dept
4	Training on Information and communication Technology (ICT)	29/6/2021-2/7/2021	ERASMUS,MARE&URGENT	
5	International Mangrove Day	26th July, 2021		
6	Workshop on Membrane Separation Process	8/12/2021-9/12/2021	Dr.Usha K Aravind	DST PURSE
7	Field visit to Vemband Estuary	12/21/2021	Dr Ratheesh Kumar C S	
8	Mambrane Separation Process	12/8/2021-12/09/2021	Dr Ratheesh Kumar C S (Organizing Committee Member)	
9	Golden Jubilee International Conference NANOicon 2022 (Online)	11/1/2022-15/01/2022		

Consultancy Work

01	Drinking water & Wastewater Analysis Done For Public and Industries. Revenue Generated Rs. 16,800/ [Jan-March, 2022] Revenue Generated Rs. 2600/ [April-June, 2021] Revenue Generated Rs. 6600/ [July-Sept, 2021] Revenue Generated Rs. 7700/ [Octo-Dec, 2021] TOTAL AMOUNT Rs. 33, 700/	Director	Public& Industry
02	<u>Revenue Generated Through Analytical Services:</u> High Value Equipments Installed UGC- SAP – Program/ 1. Brunauer- Emmett- Teller [BET]Analyser Revenue Generated Rs. 9, 298/ [Sept 2021] Revenue Generated Rs. 13000/ [March, 2022] TOTAL AMOUNT Rs. 22, 298/	Director	
	CONSULTANCY TOTAL AMOUNT	Rs. 55, 998/	



School of Industrial Fisheries

ANNUAL REPORT FOR THE YEAR 2021 – 2022

Name of the Department: SCHOOL OF INDUSTRIAL FISHERIES

Brief History of the Department:

The School of Industrial Fisheries was established in 1976 as the Department of Industrial Fisheries under the erstwhile University of Cochin for post-graduate teaching and research on all aspects of fishery science and technology. The Department started offering the M.Sc. course in Industrial Fisheries in 1976 and Ph. D programme in 1979. The Department was elevated to the status of the School since 1995 by recognizing the progress and achievements in teaching, research and outreach activities in various fields of Fisheries. The various activities of the School are now carried out under five well defined division of (1) Aquaculture and Capture Fisheries (2) Fishing Craft and Gear Technology (3) Fish Processing Technology (4) Fisheries Economics and (5) Fisheries Management.

The M.Sc. course in Industrial Fisheries is a multi-disciplinary programme spread over four semesters designed to offer the students the needed scientific, technical and managerial skills to take up responsible positions in industry, administration and management in the fisheries sector of the country and abroad. The School is offering an Innovative PG programme of UGC viz., Master of Fisheries Science (MFSc) in Seafood Safety and Trade. The four semester course with an intake of 20 has been framed so as to provide manpower specialized in managerial skills and technical expertise in the field of seafood safety demanded by the trade and seafood safety standards, to provide training in areas related to seafood business at par with world class institutions. The course also aims at extending state of the art research opportunities in emerging vistas related to post harvest technology of fish, seafood trade, seafood quality assurance and international trade. In addition to School of Industrial Fisheries, National Institute for Fisheries Post Harvest Technology and Training (NIFPHATT) and Seafood Exporters Association of India are collaborating in the conduct of the programme.

In addition to the two PG programmes, the School is offering a M.Phil Programme in Fisheries Science. The syllabus of both PG programmes were

revised as per the Outcome Based Education system implemented by the Cochin University of Science and Technology. The Ph.D. programmes of the School extends to frontier areas of fisheries science and technology, including aquaculture, capture fisheries, Fish Biochemistry, Post harvest technology of fish, Seafood quality assurance, Fisheries Economics, Fisheries Management and International Marketing. The faculty of the School serves as experts/consultants in many national /international fisheries bodies and has organized/participated in many national/international symposia/workshops.

Programmes of Study/Research

1. M.Sc. Industrial Fisheries
2. M.F.Sc Seafood Safety & Trade
3. M.Phil Fishery Science
4. Ph.D. programmes
 - (a) Fishery Biology and Aquaculture
 - (b) Fishing Craft and Gear Technology
 - (c) Fish Processing Technology
 - (d) Fisheries Economics
 - (e) Fisheries Management

Faculty Members

Sl.No	Name	Designation	Qualification	Specialization
1	Dr. S. Sabu	Associate Professor & Director	MSc, PhD, NET	Fish Post Harvest Technology
2	Dr. M Harikrishnan,	Professor	MSc, PhD, NET	Industrial Fisheries
3	Dr. Mini Sekharan	Associate Professor	MSc, PhD, NET	Fisheries Management
4	Dr. Santhosh Kumar P. K	Associate Professor	MA, PhD, NET	Fisheries Economics
5	Dr. Mujeeb Rahiman	Associate Professor	MSc, PhD, NET	Fisheries

6	Dr. Hareesh N Ramanathan	Associate Professor	MBA, PhD, NET	Fish Business Management
7	Dr. Shibu A V	Assistant Professor	MSc, PhD, NET	International Marketing and Trade
8	Dr. Ancy V P	Assistant Professor	MA, MPhil., PhD, NET	Fisheries Economics

Emeritus Professor/Scientist (if any)

Sl.No.	Name	Designation	Qualification	Specialisation
1	Dr. K. T. Thomson	Adjunct Professor	M.A, Ph.D.	Fisheries Economics

Visiting Faculty (If any): Nil**Research/Project Staff**

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr. Sreelakshmi S	Post Doctoral Fellow	MSc PhD	Marine Biology
2	Dr. Sreedevi O	Post Doctoral Fellow	MSc PhD	Marine Biology
3	Dr. Reshma Silvester	Post Doctoral Fellow	MSc PhD	Marine Microbiology

Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
1	Radhika K.	ICSSR	Prof. K. T. Thomson	Fisheries Economics
2	Saranya A Sankar	E-Grants	Dr. Mini Sekharan N	Fisheries Management

3	Demaris Benny Daniel	KSCSTE	Prof. K. T. Thomson	Fisheries Management
4	Revathy K Nair	CUSAT	Dr. Shibu A V	Fisheries Management
5	Patralika Mukopadhyay	CUSAT	Dr. Shibu A V	Microplastics
6	Sruthi K	CUSAT	Prof. M. Harikrishnan	Fisheries Biology
7	Ancy Ashraf	CUSAT	Dr. S. Sabu	Shrimp feed supplements
8	Chinnu S Raj	-	Dr. S. Sabu	Fish Processing Technology
9	Rasweef Ali MK	CUSAT	Dr. S. Sabu	Seafood shell waste utilization
10	Arundhathy	CUSAT	Dr. Mini Sekharan N	Fisheries Management
11	Nayana Asok	CUSAT	Dr. S. Sabu	Organic farming of vegetable crops
12	Mary Sania Stephen	CUSAT	Dr. Shibu A V	Water and Energy utilisation in seafood industry
13	Amritha R Krishnan	-	Dr. Shibu A V	
14	Angel Maria Selessy	CUSAT	Dr. S. Sabu	Organic farming of vegetable crops
15	Rithin Raj	CUSAT	Prof. M. Harikrishnan	Capture fisheries
16	Nikhila Khanna A R	CUSAT	Prof. M. Harikrishnan	Aquaculture
17	Anilkumar	-	Prof. M. Harikrishnan	Fishery Biology
18	Saswata Maitra	-	Prof. M. Harikrishnan	Fishery Biology

19	Jenson Victor Rozario	-	Prof. M. Harikrishnan	Fishery Biology
20	Sameera Shamsudheen	-	Prof. M. Harikrishnan	Molecular Taxonomy
21	Anju Alex	-	Dr. Ancy V. P	Fisheries Extension
22	Praveen P	-	Dr. Shibu A V	Fisheries Extension
23	Judine John Chacko	-	Dr. Mini Sekharan	Ornamental Fisheries
24	Megha Lovejan	-	Dr. Mujeeb Rahiman	Aquaculture
25	Haritha Haridas	-	Dr. Ginson Joseph	Fish Processing
26	Freeda Rebecca Bastian	-	Dr. Ginson Joseph	Fish Processing
27	Manjunath C Manoharana	-	Dr. Ginson Joseph	Fish Processing
28	Merin Thomas	-	Dr. Ginson Joseph	Fish Processing
29	Saddam Hussein	ICSSR	Prof. M. Harikrishnan	Aquaculture

Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer	1
2	Assistant	3
3	Computer Assistant	2
4	Office attendant	1

Technical Personnel

Sl.No.	Designation	No. of Posts
1	Technical Assistant	1
2	Hatchery Assistant	1

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1	Master of Science in Industrial Fisheries	2	25	27
2	Master of Fisheries Science in Seafood Safety & Trade	0	19	19
3	Doctor of Philosophy		1	1

Research Facilities**a. Laboratories :**

- i. Fish Processing laboratory
- ii. Food safety laboratory
- iii. Fish Biochemistry & Quality Assurance laboratory
- iv. Aquaculture laboratory
- v. Fishery Biology laboratory
- vi. Fish Hatchery Complex
- vii. Fish grow out ponds
- viii. Fishing Craft & Gear laboratory
- ix. Research boat

b. Major equipments: AAS, HPLC, CHN analyzer, Texture analyzer, GC, Spectrophotometer, PCR etc.

c. Library

No of books and Journals as on 31st March of the Previous Year	Additions during the current year
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d. Others**Distinguished visitors**

Sl. No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	“Calcium betonite clay mineral as dietary supplement in reducing aflatoxin B1 toxicity and its effect on growth, biochemical and histopathological changes in Nile Tilapia, <i>Oreochromis niloticus</i> (Linnaeus 1758)”.	Remisha O	Dr. Saleena Mathew
2	“ Taxonomy of Elasmobranchs and life history traits of Bigeye thresher shark <i>Alopias Superciliosus</i> along the Southwest coast of India”.	Diana Benjamin	Dr. B. Madhusoodana Kurup
3	“Studies on the life history traits of Malabar puffer fish, <i>Carinotetraodon travancoricus</i> (Hora and Nair, 1941) inhabiting Pampa and Chalakkudy rivers, South India.	Anupama K. M	Dr. M. Harikrishnan
	“Food Safety Management systems in international Seafood Trade with Special Reference to Kerala”.	Asha Raymond	Dr. Shibu A V
4	"Assessment of plastic debris in coastal and marine environments of Kerala with special emphasis on microplastics and fishing related plastics".	Damaris Benny Daniel	Dr. Saly N Thomas & Dr. K. T. Thomson
5	Studies on the history traits of <i>Daukinsia chalakkudiensis</i> (Menon, Rema devi & Thobia, 1999), An endemic indigenous ornamental fish inhabiting rivers of western ghats, South India for developing management strategies towards sustainability	Anju P.	Dr. Mini Sekharan N
6	Consumer preference towards seafood in selected European countries for enhancing seafood export from India.	Nashila Rahmaniya	Dr. Mini Sekharan N

Publications

e. Papers

Sl. No.	Title of Paper	Impact Factor, if any
	S. Sabu.(2021) Effect of Different Hydrothermal Treatments on Pasting, Textural and Rheological Properties of Single and Dual Modified <i>Corypha Umbraculifera</i> L. Starch, Starch ? Stärke, Wiley 2021	2.35
	M. K. Rasweefali, S. Sabu. (2021) Influence of deproteinization and demineralization process sequences on the physicochemical and structural characteristics of chitin isolated from Deep-sea mud shrimp (<i>Solenocera hextii</i>), Advances in Biomarker Sciences and Technology, KeAi, Elsevier Vol. 4, 2022	0.5
	S. Sabu, 2021. Impact of microwave irradiation on chemically modified talipot starches: A characterization study on heterogeneous dual modifications, International Journal of Biological Macromolecules, Elsevier 2022	7.05
	S. Sabu, 2022. Influence of plasma-activated water on the morphological, functional, and digestibility characteristics of hydrothermally modified non-conventional talipot starch, Food Hydrocolloids, Elsevier 2022	7.95
	S. Sabu, 2022. Effects of supplementation of shrimp head meal, chitin, chitosan and chitosan oligosaccharide in feed on the growth performance and survival in early post larval stages of <i>Penaeus monodon</i> (Fabricius 1798), Fishery Technology, Indian Council for Agricultural Research Vol. 59, 2022	0.5
	S. Sabu, 2022. Application of innovative packaging technologies to manage fungi and mycotoxin contamination in agricultural products: Current status, challenges, and perspectives, Toxicon, Elsevier 2022	3.70
	S. Sreelekshmi, Bijeesh Kozhikkodan Veetil, S. Bijoy Nandan, M. Harikrishnan , Mangrove forests along the coastline of Kerala, southern India: Current status and future prospects,	2.166

	Regional Studies in Marine Science,Volume 41,2021,101573, ISSN 2352-4855, https://doi.org/10.1016/j.rsma.2020.101573 .	
	M.K. Rasweefali, S. Sabu , K.V. Sunooj, A. Sasidharan, K.A. Martin Xavier, Consequences of chemical deacetylation on physicochemical, structural and functional characteristics of chitosan extracted from deep-sea mud shrimp, Carbohydrate Polymer Technologies and Applications,Volume 2, 2021, 100032, ISSN 2666-8939, https://doi.org/10.1016/j.carpta.2020.100032 .	0.0
	S. Anjana, S. Abhilash, B. Varghese, S. Sabu , K.V. Sunooj, K.A. Martin Xavier, Performance evaluation of ultra violet assisted vertical re-circulating deputation system on microbial, heavy metal reduction and composition of black clam (<i>Villorita cyprinoides</i>), LWT, Volume 138, 2021, 110628, ISSN 0023-6438, https://doi.org/10.1016/j.lwt.2020.110628 .	6.056
	Silvester, R., Madhavan, A., Kokkat, A., Parolla, A., Adarsh,B.M., Harikrishnan, M. and M.H.Abdulla (2022) Global surveillance of antimicrobial resistance and hypervirulence in <i>Klebsiellapneumoniae</i> from LMICs: An in-silico approach. <i>Science of the Total Environment</i> 802(2022)	7.963
	Sreelekshmi, S., Harikrishnan,M., BijoyNandan,S., Kaimal, S.V. and N.R. Hershey (2022) Ecosystem Carbon Stock and Stable Isotopic Signatures of Soil Organic Carbon Sources Across the Mangrove Ecosystems of Kerala, Southern India <i>Wetlands</i> 42 (4): 1-12	2.653
	Sameera, S., Jose, D., Harikrishnan, M. and A.Ramachandran (2021) Species substitution revealed through genotyping . Implications of traceability limitations and unregulated fishing Food Control https://doi.org/10.1016/j.foodcont.2020.107779 .	4.258
	Harikrishnan, M., Jose,D., Nidhin, B.andK.P.Anilkumar (2021) Real Time PCR detection of <i>Macrobrachiumrosenbergii</i> (de Man, 1879) larvae with emphasis to their ecology, <i>Aquatic Living Resources</i> , EDP Sciences 2021 Vol. 34, 2021 https://doi.org/10.1051/alr/2021012	1.026
	Jima,m., Jayachandran,P.R., BijoyNandan,S., Krishnapriya, P.P., Aswathy, N.K., Krishnan, K.P., Harikrishnan, M. and C.K. Radhakrishnan (2021) Stable isotopic signatures of	1.359

	sediment carbon and nitrogen sources and its relation to benthic meiofaunal distribution in the Arctic Kongsfjord, Marine Ecology, Wiley 2021 https://doi.org/10.1111/maec.12648	
	Sreelekshmi, S., Bijeesh, K.V., BijoyNandan, S. and M.Harikrishnan (2021) Mangrove forests along the coast line of Kerala, southern India: current status and future prospects. Regional Studies in Marine Science: 41 (2021) 101573	1.183
	ReshmaSilvester*, AmalaSaji, Anagha Rani Divakaran, Dilshana PM, Radha Nair, Mohamed Hatha, Harikrishnan M (2021) Increased incidence and antimicrobial resistance among <i>Vibrio parahaemolyticus</i> in shellfishes from major fish markets in Cochin, South India: Seafood risk assessment. Annals of Animal Science, doi: 10.2478/aoas-2021-0077	2.09
	Silvester, R., Antony, C.A.,Yousuf, J., Madhavan, A., Sooria, P.M. Kokkat, A., Harikrishnan,M. and M. Hatha (2021) Survival Kinetics of <i>Vibrio</i> Species in a Tropical Estuary along the Southwest coast of India - as a function of selected Environmental Factors, Fishery Technology, Society of Fisheries Technologists India Vol. 58, 2021	0.0
	Muhsin, A.I., Hameed, P.V.P.S., Pookoya, P., Harikrishnan, M. and K.Ranjeet (2021) Fish stock demographics of skipjack tuna (<i>Katsuwonuspelamis</i>) from Kavaratti in Lakshadweep, Southern Arabian Sea Journal of Fisheries https://journal.bdfish.org/index.php/article/view/JFish20273	0.0
	Roshni,K., Renjithkumar,C.R.,Sreekanth, G.B., Raghavan,R., Ranjeet,K., Harikrishnan,M., B.M. Kurup (2021) Trophic interactions between native and exotic cichlids in a shallow tropical estuary (Lake Vembanad, India) Marine and Freshwater Research 73(3) 411-416 https://doi.org/10.1071/MF21044	
	Sylvester,R., Alexander, D., Sudha, S., Harikrishnan, M. and M.Hatha (2021) Virulence features of <i>Vibrio parahaemolyticus</i> - A review. In. Kurup, B.M., Boopendranath, M.R., Harikrishnan, M. and A.V.Shibu (eds.) "Impact of Climate Change on Hydrological Cycle, Ecosystem, Fisheries and Food security" Narendra Publishing House, New Delhi ISBN: 9789390309115	

	<p>Kurup, B.M., Harikrishnan, M., Shibu, A.V. and M.Sileesh (2021) Impac of climate change on ecology and fisheries of tropical estuaries with reference to Vembanad estuary (India): past trends and potential projections In. Kurup, B.M., Boopendranath, M.R., Harikrishnan, M. and A.V.Shibu (eds.) “Impact of Climate Change on Hydrological Cycle, Ecosystem, Fisheries and Food security” Narendra Publishing House, New Delhi ISBN: 9789390309115</p>	
	<p>Mohan, R., Harikrishnan, M. and E.S.Williams (2021) Fishery of gobiid fish <i>Oxyurichthystentacularis</i>(Valenciennes, 1837) inhabiting Ashtamudi Lake, Kerala In. Kurup, B.M., Boopendranath, M.R., Harikrishnan, M. and A.V.Shibu (eds.) “Impact of Climate Change on Hydrological Cycle, Ecosystem, Fisheries and Food security” Narendra Publishing House, New Delhi ISBN: 9789390309115</p>	
	<p>Mohan, R., Harikrishnan, M. and E.S.Williams (2021) Length – Weight Relationship of <i>Oxyurichthystentacularis</i>, (Valenciennes, 1837) inhabiting Ashtamudi Lake, KeralaIn. Kurup, B.M., Boopendranath, M.R., Harikrishnan, M. and A.V.Shibu (eds.) “Impact of Climate Change on Hydrological Cycle, Ecosystem, Fisheries and Food security” Narendra Publishing House, New Delhi ISBN: 9789390309115</p>	
	<p>Sreelakshmi, S.,BijoyNandan, S. and M.Harikrishnan (2021) Structural analysis of major mangrove forests of India. In. Kurup, B.M., Boopendranath, M.R., Harikrishnan, M. and A.V.Shibu (eds.) “Impact of Climate Change on Hydrological Cycle, Ecosystem, Fisheries and Food security” Narendra Publishing House, New Delhi ISBN: 9789390309115</p>	
	<p>Harisankar, H.S., Philip, B.andM.Harikrishnan (2021). Biochemical characteristics of pepsins from two cichlids <i>Etroplussuratensis</i> and <i>Oreochromismossambicus</i>. In. Kurup, B.M., Boopendranath, M.R., Harikrishnan, M. and A.V.Shibu (eds.) “Impact of Climate Change on Hydrological Cycle, Ecosystem, Fisheries and Food security” Narendra Publishing House, New Delhi ISBN: 9789390309115</p>	
	<p>Mukhopadhyay, P., Pankaj, K., Shruthy, R., Shibu, A.v. and M.Harikrishnan (2021) Implications and ramifications of extreme weather on the livelihood and economy of aquafarmers</p>	

	in central Kerala. In. Kurup, B.M., Boopendranath, M.R., Harikrishnan, M. and A.V. Shibu (eds.) "Impact of Climate Change on Hydrological Cycle, Ecosystem, Fisheries and Food security" Narendra Publishing House, New Delhi ISBN: 9789390309115	
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Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Dr. Sreedevi O.K.	<ol style="list-style-type: none"> 1. PRIMER v7 & PERMANOVA International Online Workshop organized by Department of Marine Biology, Microbiology & Biochemistry, Cochin University of Science and Technology, CUSAT, Cochin-16 (August 2nd to 13th 2021) 2. Training programme on Computational Biology and Bioinformatics organized by the DBT-Bioinformatics Centre at National Centre for Aquatic Animal Health Aquatic Animal Health, CUSAT, Cochin-16 (21st February to March 14th 2022) 3. Parasites and diseases of fishery Organized by Association of Fisheries Graduates (AFG) 23rd October 2021. 4. Biodiversity of Coral Reefs of Lakshadweep Organized by Association of Fisheries Graduates (AFG) 30th January 2022. 	<p>Participation</p> <p>Participation</p> <p>Participation</p> <p>Participation</p>
Dr. Reshma Silvester	<ol style="list-style-type: none"> 1. Reshma Silvester, Aswin Kokkat, Harikrishnan M and Mohamed Hatha (2022). Genomic insight into multi-drug resistant hypervirulent <i>Klebsiella pneumoniae</i> from seafood in South India. Microbiology Society annual conference 2022, Belfast UK, 	<p>Paper presentation</p>

	<p>4-7TH April, 2022 (oral).</p> <ol style="list-style-type: none"> 2. Delivered an invited lecture on ‘Anti-Microbial Resistance (AMR)- Fighting the issue and alternative solutions’ at Geotalks– DST PURSE Sponsored CUSAT’s GoldenJubilee Memorial Invited Talks conducted on 07 th and 8 th December 2021 at School of Marine Sciences Auditorium. 3. 21 days Faculty/PDF level training programme on Computational Biology and Bioinformatics organized by the DBT-BIC, NCAAH, CUSAT (Feb-March, 2022) 4. International training course on ‘Monitoring microbial quality of water’ conducted by ONWARDOpen Network for Water-Related Diseases (Feb 11-28, 2022). 5. Three weeks certificate training course on Metagenomics Applied to Surveillance of Pathogens and Antimicrobial Resistance conducted by Technical University of Denmark (DTU) (26/06/2021-17/07/2021) 	Invited talk
Dr. Sreelakshmi S.	<ol style="list-style-type: none"> 1. “ Mangrove ecosystems of Kerala: Current status and future prospects” in a webinar organised by Dept of Zoology, St Xaviers College, Aluva in connection with the International mangrove conservation day on 26th July 2021 2. “Variations in mangrove structure and carbon stocks among major mangrove habitats of India” in a workshop on Scoping study to develop people-inclusive livelihood-based governance strategy for the long-term conservation of mangrove forests of Kerala conducted by Kerala Forest 	Invited talk

	Research Institute, Peechi and Forest Dept, Gov of Kerala on 25 February 2021.	
Jenson Victor Rozario	1. Training programme on Computational Biology and Bioinformatics organized by the DBT-Bioinformatics Centre at National Centre for Aquatic Animal Health Aquatic Animal Health, CUSAT, Cochin-16 (21 st February to March 14 th 2022)	Participation
Rithin Raj M.	<p>1. Online training Programme on “Gender Dimensions for Knowledge Integration and Sustainable Food Systems through IFS” organized by the National Institute of Agricultural Extension Management (MANAGE), Hyderabad, and ICAR-Central Plantation Crops Research Institute, Regional Station, Kayamkulam, Kerala,during January 04-06, 2022</p> <p>2. Training programme on “Computational Biology and Bioinformatics” organized by the Bioinformatics Centre at National Centre for Aquatic Animal Health, CUSAT, Kerala, sponsored by the Department of Biotechnology, Government of India in January 2022.</p> <p>3. 15 days International Online Workshop on “Open-Source Computing, Multimedia and Open Access Publishing Tools” conducted by Archbishop Kavukattu Central Library in association with Lore & Ed Research Associates from 06 September - 23 September 2021.</p> <p>4. Golden Jubilee Celebratory Author Workshop on “Writing Quality Research Articles & Identifying Relevant Journals to Read and Publish</p>	Participation

	<p>In” at CUSAT on 14 December 2021. Presented by Vishal Gupta Sr. Customer Consultant-Elsevier.</p> <p>5. Effective research planning and execution using Scopus and ScienceDirect at the University of Jammu on 17 December 2021, Presented by Vishal Gupta, Sr. Customer Consultant-Elsevier.</p>	Participation
K. Sruthi	<p>1. PRIMER v7 & PERMANOVA WORKSHOP organized by Department of Marine Biology, Microbiology and Biochemistry, School of Marine Sciences, CUSAT from 2nd to 13th August 2021.</p> <p>2. Online training program on “Fresh Water Aquaculture” organised by ICAR- Krishi Vigyan Kendra on 16 June 2021</p> <p>3. webinar - “J- Gate @ E-Shodhsindhu – One Platform to discover all Scholarly E-Journal Literature” on 21st October, 2021.</p> <p>4. webinar on Biodiversity of coral reefs of Lakshadweep organized by Association of Fisheries Graduates on 30th January 2022.</p>	Participation
Nikhila Khanna A.R.	<p>1. International training workshop 2 on primer 7 and permanova” conducted by Department of Marine biology, Microbiology and Biochemistry CUSAT from 2nd to 13th of August 2021</p> <p>2. Training programme on “Computational Biology and Bioinformatics organized by the DBT-BC, NCAAH, CUSAT from 16th to 29th of January 2022</p> <p>3. Two weeks international workshops on</p>	Participation

	<p>“Research methodology, Academic writing and publishing (IWRAP-22)” organised by Research forum in association with IQAC from 15th to 26th February 2022</p> <p>4. 7-day National Online Workshop on Collecting literature, manuscript preparation and publishing organised by the Department of Environment science, and Research committee, SIES (Nerul) college of arts science and commerce, Nerul; Navi Mumbai in Association with Lore and EDI Research Associate, Kottayam from 21 – 28th March 2022</p>	Participation
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2. Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Dr. Mini Sekharan	Ornamental Fisheries International	Editorial Board Member
Prof. M. Harikrishnan	KITCO Ltd	Consultant
Dr. Mini Sekharan	Tamil Nadu Dr. Jayalalitha Fisheries University	Visiting Professor

Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Rasweef Ali M K	Swachhatha Saarthi Award 2020	Advisor office, PMO, Govt of India.
Dr.S.Sreelakshmi	Gaveshaka Puraskaram in Biological Science under the Kairali Research Awards instituted by the Kerala state government	Govt. of Kerala

Dr.Reshma Sylvester	NavaKerala Post Doctoral Fellowship	Govt. of Kerala
Saranya	Marine Stewardship Council, UK award for sustainable fisheries initiatives in India	MSC, UK (International award)

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department:

Sl.No.	Title	Duration	Coordinator	Funding Agency
1	Seafood Safety Webinar	2 days	Dr. Mini Sekharan	CUSAT

Consultancy Work:

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1	Ornamental Fisheries	Dr. Mini Sekharan	KAVIL, Govt of Kerala



School of Legal Studies

ANNUAL REPORT -2021 -2022

Name of the Department: SCHOOL OF LEGAL STUDIES,CUSAT,

Brief History of the Department

The School of Legal Studies was initially established as a P.G. Department of Law of the Kerala University in 1962 under the leadership of the late Prof.(Dr.) A.T. Markose, an Internationally reputed Jurist who was the founder Director of the Indian Law Institute, New Delhi and the Deputy Judge of International Administrative Tribunal. The Department of Law got delinked from Kerala University and was made a part of the Cochin University in the year 1971 and later renamed as Cochin University of Science and Technology in 1986. Subsequently Department of Law was renamed as School of Legal Studies with vision to expand it into different Centers of Excellence. The School of Legal Studies continues to remain as a prestigious institution in imparting Legal Education and Research. It's pioneering efforts in encouraging P.G. studies and research in the vital fields of law has earned it name and fame both nationally and internationally.

Its commitment to social development has made it to develop teaching and research in socially relevant and nationally important emerging areas of law such as Constitutional Law, Criminal Law, Consumer Protection Law, Environmental Law, Human Rights, Commercial Law, Labour Law, Maritime Law, Intellectual Property Law and Corporate Law. Its consistent dedication to social change has attracted the attention of the UGC and Govt of India. Its programmes in Human Rights, Intellectual Property Rights Law and Corporate Law are now substantially supported by these agencies. The Library of the School has rich collections of study materials and books. This priced holding and exceptional services have helped it gain global recognition as a Nodal Centre for IPR studies. Its faculty is being consulted by various agencies including the Govt. of India for law reforms. The institution takes pride in having its alumni at different levels such as High Court Judges, District Judges, Senior Professors of leading Law Schools, Law Officers in various financial institutions and leading members of the Bar in almost all parts of India. The School has been regularly organizing Seminars, Symposia both at national and local levels and Refresher programmes for law teachers to help the participants to update their knowledge in emerging areas of law The Public Law Lecture series established by the School has already Produced commendable works in law. The LL.B programme which was initially started as an evening course in the year 1994 was converted into a full time regular course due to change in the policy adopted by Bar Council of India in Legal Education. Later the School switched over to five year

Integrated programme with limited number of seats for rigorous training for Under Graduate. This course was later restructured as double degree Integrated Hons. programme in Law vis-a-vis BBA LL.B (Hons.) and B.Com LL.B. (Hons.). The School also introduced 3 year LL.B (Evening) course with a view to train administrators and Law Enforcement Officers who need specialized training in Law. The School has been fortunate to attract scholars having experience and education at different parts of the world to be in its vibrant teaching faculty.

Thrust Areas of Research:

- | | | |
|--------------------------------|-------------------------|--------------------|
| ❖ Criminal Law | Jurisprudence | Constitutional Law |
| ❖ Environmental Law | Consumer Protection Law | Human Rights Law |
| ❖ Intellectual Property Rights | Corporate Governance | Maritime Law |
| ❖ Commercial Law | Administrative Law | Labour Laws |
| ❖ International Criminal Law | International Trade Law | |
| ❖ Women Related Laws | Child Related Laws | |

Programmes of Study/Research:

BBA LL.B (Hons.), B.Com LL.B (Hons.),
3 year LL.B (Evening), One Year LL.M. and Ph.D

Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Dr. Harigovind P.C.	Assistant Professor & Director	LL.M, NET,Ph.D	Human Rights and Duties Education and Criminal Law.
2.	Dr. P.S. Seema	Associate Professor	BA (Economics) LL.M.,NET, Ph.D	Human Rights Law, Constitutional Law, Jurisprudence and Criminal Law.
3.	Dr.Vani Kesari. A	Associate Professor	LL.M., Ph.D	Constitutional Law, Administrative Law and Human Rights Law.

4.	Smt. Jean Vinitha Peter	Assistant Professor	BA LL.B, LL.M., NET	Criminal Law and Constitutional Law.
5.	Dr. Naveen S.	Assistant Professor	LL.M. NET, Ph.D	Constitutional Law, IPR, International Organization and Human Rights, Law of the Sea, Environmental Law, Law and Society.
6.	Dr. Preetha S.	Assistant Professor	LL.M., NET, Ph.D	Criminal Law, Commercial Law.
7.	Dr. Sreejith S.	Assistant Professor	Ph.D, MBA	Management
8.	Dr.Nemat Sheereen S	Assistant Professor	M.Com, M.Phil, NET, Ph.D	Financial Management
9.	Smt.Arathi Ashok	Assistant Professor	LL.M, NET	Intellectual Property Rights, Labour Laws and Jurisprudence
10.	Dr.Aneesh V. Pillai	Assistant Professor	LL.M., Ph.D, SET, PDF	Consumer Law and Human Rights
11.	Sri. Induraj V.R.	Assistant Professor	LL.M. NET	Commercial Law and Consumer Law
12.	Dr. Binu Mole K.	Assistant Professor	LL.M, NET, Ph.D	Maritime Law and Labour Laws
13.	Dr. Harisankar K.S.	Assistant Professor	LL.M, NET, Ph.D	International Trade Law

Visiting Faculty (If any)

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Dr. Mathew Jacob	Guest Faculty	M.Com, M.Phil, Ph.D	Management
2.	Adv. Russel S.	”	LLM	IPR and Human Rights
3.	Gregory John	”	M.Com, MBA (Finance), B.Ed, PDCFA, NET (Commerce), SET(Commerce)	Commerce Subjects
4.	Adv. Fathima Roobi P.B.	”	PG Diploma in Journalism and Mass Communication, LL.B, MA, LL.M	Administrative Law
5.	Sri. Rijo Gratus	”	MBA	Management
6.	Adv. Mohanraj T.P.	„	LL.M, DCL	Constitutional Law, Maritime Law
7.	Smt. Chithra P.K.	„	M.Com (Finance), B.Ed. M.Phil, NET	Finance
8.	Nimmy K Abraham	„	M.Com (Finance), NET, MBA (Finance)	Finance
9.	Sabira K.I.	”	MA, M.Phil, Ph.D, NET	English
10.	Adv. Gireesh P.S.	„	LL.M, NET	Criminal Law and Security Law

11.	Adv. Anjali Rajendran	„	LL.M	Administrative Law & Constitutional Law
12.	Kirti Rashmi	„	LL.M	Company Law & Administrative Law
13.	Hanoon Fathima J	„	MBA, NET	Finance Marketing
14.	Vijayamohanana.C	„	B.Sc LL.M, CAIIB, NET	Commercial Law & Constitutional Law
15.	Aswathy M N	„	LL.M	Constitutional Law & Environmental Law
16.	Linta Ann John	„	BBA LL.B, LL.M(IPR)	IPR
17.	Sruthi Manohar	„	LL.M, MBL, NET	Corporate Governance & Securities Law

Research Scholars

Sl. No.	Name	Funding Agency	Guide	Area of Work
1	Induraj V R	NIL	Prof. (Dr.) N.S. Soman	Legal Pluralism in India: A study with special reference to tribal laws and customs
2.	Smt. Ann Loretta Correya	University-SRF	Dr Vani Kesari A	Maritime Law
3.	Smt. Najla Pazhayakath	UGC-MANF-JRF	Dr Vani Kesari A	Family Law II (Law relating to inheritance)

4	Smt. Sreeparvathy G	University SRF	Dr Vani Kesari A	Labour Law
5	Shri. Nandu Sam Jose	UGC- SRF	Dr Vani Kesari A	Health Care Law
6	Adv. Syam Kumar V.M	NIL	Dr Binu Mole K	Determination of Applicable law in Contracts for carriage of Goods by Sea.
7	Ehsan Jahanian	NIL	Dr Binu Mole K	Regulatory Framework Governing Maritime Search and Rescue Operations
8	Aneesh R	University JRF	Dr Binu Mole K	Women's Rights under New Labour Codes -An Appraisal
9	Glory Tharakan	University JRF	Dr Binu Mole k	Role of Corporate Governance in Merger & Acquisitions
10	Georgekutty Mathew	NIL	Dr Aneesh V Pillai	Nature and Scope of Right against enforced disappearance: International and National Perspectives
11	Rajitha E.	UGC-SRF	Dr Aneesh V Pillai	“Anticompetitive Practices by Trade and Professional Associations with Special Reference to Healthcare Sector in India”
12	Sarath Mohan	University JRF	Dr. Harigovind P C	Indian Law on the Conduct of Free and Fair Elections: A Critical study

13	Renuka V.	UGC-NET JRF	Dr P S Seema	“The Fairness of Laws that Tax Digital Economy in the Backdrop of Concepts and Theories of Taxation”
14	Nandita Narayan	GATE- UJRF	Dr P S Seema	The Restrictions on the Fundamental Right to Artistic Freedom under the Right to Freedom of Speech and Expression in India and their Reasonableness
15	Keerthy V.S	UGC-SRF	Dr P S Seema	“The Concept of Negligence under the Indian Penal Code: A Critical Evaluation of the Judicial Approach”
16	Jean Vinitha Peter	NIL	Dr P S Seema	Protection of Rights of Victims of Sexual offences in the Indian Criminal Justice System: Problems and Perspectives
17	Ashamol V.	NIL	Dr. Preetha S.	Legal Protection of Child in conflict with Law
18	Shruthi Manohar	NIL	Dr. Preetha S.	Legal Framework on Corporate Insolvency Resolution in India
19	Kamalakshy Kylasanath	NIL	Dr. Preetha S.	Fairness in Public Contract
20	Manjula R S	NIL	Dr. Preetha S.	Securities Fraud: Regulatory Fraud

Administrative Personnel

Sl.No.	Designation	No. of Posts
OFFICE		
1	Section Officer	1
2	Senior Grade Assistant	2
3	Assistant	3
4	Computer Assistant	2
5	Office Attendant	3
6	Sweeper Cum Cleaner	3
LIBRARY		
1	Assistant Librarian (Sr. Grade)	1
2	Junior Librarian	1
3	Professional Asst. Gr. I	2
4	Library Assistants Gr. II	2

Technical Personnel**NIL****Student Enrollment**

Sl.No.	Programme of Study	Men	Women	Total
1.	LL.M.	10	23	33
2.	BBA.LL.B (Hons.)	13	23	36
3.	B.Com LL.B (Hons.)	15	23	38
4.	3 Year LLB (Regular- Evening)	41	6	47
5.	Ph.D.	1	0	1

Research Facilities**Library**

No of books and Journals as on 31st March of the Previous Year	Additions during the current year
Books – 33,407	628
Journals - 50	50

Distinguished visitors

Sl.No.	Name	Affiliation	Remarks
1.	Dr. Sandeep S	Assistant Professor, IIM, Raipur	Three Day Workshop on Questionnaire Development.
2.	Kouchouseph Chittilapilly	Founder & CEO, V-Guard Industries	One Day webinar on Entrepreneurship Development programme - “Meet the Entrepreneur” on 25 th January 2022.
3.	Adv. Ferha Azeez	Fellow member of World Mediation Organisation	World Mediation Organisation Programme on 4 th June 2021.
4.	Rahul Verma	Master Mariner, Maritime Lawyer & Founder, Ally Maritime and Legal Service	Talk on Career in Maritime Law on 11 th March 2022.

Ph.Ds Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Legal Regime on Climate Change in India	Dr. Naveen S.	Dr.D.Rajeev

Publications**a. Papers**

Sl.No.	Title of the Paper	Author(s)	Impact Factor, if any
1.	Nanotechnology Research: Challenges to Law, Environment and Health , RMNLU, Vol.14 (2022), ISSN: 0975-9549.	Dr.Vani Kesari A	-
2.	<i>Dark Webs and drug trafficking : The Unregulated Legal terrains</i> , Journal of Indian Legal Thought, ISSN-2249-9989 Vol 15 pp 43-57	Dr.Vani Kesari A	-
3.	Dr.Preetha.S, “Emerging Prospects of Shareholder Activism in India”, Indian Journal of Corporate Governance,14(2),226-241,2021, https://doi.org/10.1177%2F09746862211045760 .	Dr. Preetha S	-
4.	P Published Chapter in Book Dr.Preetha S, “Diversification of Corporate Boards in India: An Overview” in <i>Corporate Governance: Emerging Dimensions</i> , Dr Ashish Kumar Srivastava & Dr Vikesh Ram Tripathi (Ed), Thomson Reuters, June, 2021, pp-135-152 (ISBN: 978-93-90529-93-3).	Dr. Preetha S	-
5.	Testing the role of gold in crisis: A Global Perspective.	Sreejith S, Sruthy Madhavan	ABDC – C
6.	Report on Socio-Economic Impact of COVID 19 on Migrant Workers with Reference to Kerala State.	Sreejith S, Sreejith P.M	WHO COVID-19 Research Database
7.	The Devas Saga: Another Twist and the Ghost of a Past BIT Case - 8 February 2022, Bloomberg Quint.	Dr Harisankar K S	-
8.	“Need to revisit right to health” in <i>Shaded Justice and Rights People</i> . <i>Power and Pandamic 2021</i> .	Dr. Seema P.S.	-

9.	Women’s reproductive rights and their scope under international legal frameworks. 2021, Entrepreneurship, Economy and Law, 8, 18–28. ISSN: 2663-5313 (print), 2663-5321	Aneesh V Pillai, Kostruba, Anatoliy	-
10.	Dimensions of Sustainable Development in India – An Enviro-Legal Perspective, Fundamentaum Petendi Law Journal , (Christian University of Indonesia), 2022, Vol. 1(1), 61-75	Dr. Aneesh V. Pillai	
11.	“Delimitation of Jurisdiction of Commercial, Civil and Administrative Courts: IT Challenges”, IJCSNS International Journal of Computer Science and Network Security, Vol.22 No.7, July 2022, 85.	Dmytro Baranenk, Tetiana Stepanova, Aneesh V. Pillai, Anatolii Kostruba, and Yuliia Akimenk.	
12.	Making India a Hub for Institutional Arbitration: Indian Scenario and Recent Developments, BSLOS Voice, July 2022, Vol.1 (1), p.9 (ISBN: 978-81-952655-2-7).	Dr. Aneesh V. Pillai	
13.	From Negotiation to Adjudication: The Emerging Climate Litigation.	Dr.Naveen S.	NA
14.	Climate Change and International Law: A Contemporary Analysis.	Dr.Naveen S.	NA
15.	Impact of Climate Change: Why Health Matters	Dr.Naveen S.	NA
16.	Creator – Entrepreneur Relationship in the Post <i>COVID World</i> , Journal of Indian Legal Thought 2021.	Arathi Ashok	
17.	Understanding (Romantic) Authorship in the Context of Artificial Intelligence, TNDALU Intellectual Property Law Review, 2022.	Arathi Ashok	
18.	<i>A Re- View of Copyright Ownership</i> , Bangalore University Law Journal, 2022.	Arathi Ashok	

b. Books

Sl.No.	Title of Book
1.	Water Quality in Agriculture: The Need for a Revisit of Land Use Patterns and Policies”, in MK Ramesh & Sairam Bhat, Agricultural Water Governance : Sustainable Practices & Strategies published by CEERA, NLSIU, ISBN 978- 93-91111-06-9 pp119-129 – Dr.Vani Kesari A
2.	Envisioning Business for a Better Tomorrow innovate, integrate , impact ISBN 978-93-54351-17-4Book Chapter –Development of Marine economy and the growth of shipping industry during the outbreak of COVID-19(pp.70-77) Bloomsbury publishing India pvt ltd, New Delhi, 2021 – Dr. Nemat Sheereen S.
3.	Critical Essays on Corporate laws in India (Editor) ISBN Number: 978-81-941516-8-5, published in 2021 – Dr. Seema P. S.
4.	Dr. Aneesh V. Pillai & Dr. Pardeep Singh (eds.), <i>Shaded Justice and Rights</i> , Satyam Law International, New Delhi (2021) (ISBN 9789391345204).
5.	Dr. Aneesh V. Pillai, The Narcotic Drugs and Psychotropic Substances Act, 1985 and Rules (Central a & Kerala) with Allied Laws (Malayalam Translation), Swamy Law House, Kerala, 2021 (ISBN 978-93-83845-27-9).

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Dr. Preetha S.	PPresented Paper titled “Emerging Jurisprudence on the Role of Committee of Creditors under the Insolvency and Bankruptcy Code” for the Two-Day Virtual Conference on Changing Paradigm of Corporate and Commercial Laws organized by Jagran Lakecity University, Bhopal, 19-20, June 2021.	Paper Presenter
Dr. Preetha S.	Webinar on “Laws for Protection and Safety of Women”, Kesari Memorial Library, Thrikkakara, 31/7/2021.	Resource Person

Dr. Preetha S.	Faculty Development Programme (Virtual) on “Contemporary Developments in Corporate Laws” jointly organised by SLS & ICSI, Kochi Chapter as part of UGC SAP programme, Dec-6-10, 2021	Resource Person
Dr. Preetha S.	National Legal Conclave, “Rethinking Victim Rights”, School of Legal Studies, CUSAT, 24-25 February, 2022.	Resource Person
Dr. Preetha S.	Participated in National Workshop on Contemporary Challenges in Family Law, School of Law (VITSOL), Vellore Institute of Technology, 20 th March, 2022.	Participant
Dr. Preetha S.	Online Refresher Course in Law, Annual Refresher Programme in Teaching, MHRD, (1 st Dec 2020-March 2021; Exam -21 st August 2021)	Participant
Dr. Sreejith S.	Online Two-Week Refresher Course in “Commerce and Management”.	Participant
Dr. Sreejith S.	International Virtual Conference on Behavioural Finance: Insights for Researchers and Entrepreneurial Innovations.	Paper Presenter and Participant
Dr. Sreejith S.	International Conference on Managing and Reinventing Organisations in the Age of Disruptions.	Paper Presenter and Participant
Dr. Sreejith S.	B-LIV 2022- International Management Conference.	Paper Presenter and Participant
Dr. Sreejith S.	Virtual webinar program on ‘Sales Force Management, University of Kelaniya.	Resource Person
Dr Harisankar K.S.	Five-Day Workshop on Research and Publication Ethics funded by UGC- Stride Project, Sree Shankaracharya University of Sanskrit, Kalady, June 22, 2022.	Resource Person
Dr Harisankar K.S.	Mumbai University-UGC HRDC Refresher Course in Social Sciences (Interdisciplinary), March 04-17, 2022.	Participant

Dr Harisankar K.S.	Australia-India Indo-Pacific Oceans Initiative (IPOI): Strengthening International Cooperation organized by Centre for Public Policy Research in association with Monash University, Australia and the Department of Foreign Affairs and Trade (DFAT), Australia, April 21, 2022.	Speaker (IPOI Scholars Round table Discussion)
Dr. Nemat Sheereen S.	Participated and Presented a paper entitled “Impact of Greenwash on Consumers Green Purchase Behaviour in the AICTE sponsored International Conference on Managing and Re-inventing Organisations in the Age of Disruptions organised by SCMS Cochin School of Business, Kochi held during 22 nd October - 23 rd October 2021.	Paper Presenter
Induraj V. R.	Access to justice Disabled women victims	Chairman
Induraj V. R.	Role of the forensic science in legal investigation	Participant
Dr. Seema P.S.	Talkathon Lecture Series Human Rights National Perspective Conducted by the PG and Research Department of Commerce, Cochin College on 10-09-2021.	Resource Person
Dr. Seema P.S.	Expert Lecture on Contemporary Legal Issues on the Topic <i>Dobbs v Jackson</i> and its expected implications on the abortion laws in India (08-07-2022).	Resource Person
Dr. Seema P.S.	“Gender Justice” Albertian Institute of Science and Technology, conducted on 25-11-22021.	Resource Person
Dr. Seema P.S.	Short term course on Human Rights and RTI conducted by the UGC- HRDC Kannur University from 17-03-2022 to 19-03-2022.	Resource Person
Dr. Seema P.S.	DialecticA Discourse on Humanitarian Law, held online on 5 th March 2022, at the auspicious of the Christ Academy Institute of Law.	Resource Person

Dr. Aneesh V Pillai	Advanced Research Methodology Lecture Series on Legal Research organised by Symbiosis Law School, Hyderabad on 30 th April 2022.	Resource Person
Dr. Aneesh V Pillai	National Legal Colloquium on Marital Rape: Issues and Challenges organised by Quantum School of Law, Quantum University, Roorkee from May 02-07, 2022. (HC)	Resource Person
Dr. Aneesh V Pillai	Faculty Development Programme in Contemporary Changes in Law, organised by Al-Azhar Law College, Thodupuzha, Kerala from 23.05.2022 – 29.05.2022.	Resource Person
Dr. Aneesh V Pillai	One Day National Workshop on Building an Enduring India for 21st Century in a Multi-Dimensional Legal Perspective organised by Chennai Dr. Ambedkar Government Law College, Pattaraiperumpadur on 20 th May 2022.	Resource Person
Dr. Aneesh V Pillai	Certificate Course on IPR and Innovation: A Vision for Exploration and Incipient Technologies organised by Amity Academic Staff College & Amity Law School, Noida from 16 th June to 25 th June 2022.	Resource Person
Dr. Aneesh V Pillai	Student Exchange Programme on International Law in the Indian Framework organised by Law Faculty, Binh Doung University, Vietnam on September, 12 th , 2022	Resource Person
Dr. Aneesh V Pillai	Webinar organised by Tamil Nadu National Law University, Tamil Nadu on 12.08.2022. (Hardcopy)	Resource Person
Dr. Aneesh V Pillai	Resource Person, Webinar organised by Vikash Law School, Odisha on the occasion of “World Day for International Justice” on 17 th July 2022.	Resource Person
Dr. Aneesh V Pillai	International Seminar on Changing Dimensions of Media Law, organised by Kerala Law Academy Law College on 25 th June 2022.	Resource Person

Dr. Aneesh V Pillai	International Conference on Kaleidoscopic vision of Competition Law: The Way Forward, jointly organised by Shankarrao Chavan Law College, India & Department of Legal and Social Studies, University of Chieti-Pescara, Italy on 24 th & 25 th January 2022.	Chair
Dr. Aneesh V Pillai	7 th Annual ACS Constitutional Law Scholars Forum (virtual conference) held on February 25, 2022 organised by the Barry Law School ACS chapter and Law Review and Texas A&M University, School of Law, USA.	Paper Presenter
Dr. Aneesh V Pillai	International Seminar on International Commercial Arbitration held at Government Law College, Kozhikode on March 15 th & 16 th , 2022.	Paper Presenter
Dr. Aneesh V Pillai	International Scientific Conference on Ensuring the Rights of Persons with Disabilities in the Sustainable Development of Vietnam and Other Countries of the World, held at Binh Doung University, Vietnam on September 10 th , 2022	Paper Presenter
Dr. Aneesh V Pillai	International Consumer Protection Law Conference and Interactive Workshop held at Consumer Protection Law Cluster, Department Mercantile Law, University of Pretoria, South Africa from 15 th -17 th September, 2022.	Resource Person
Dr. Naveen S.	Rise of Environmental Crimes and the Victim's Paradigm.	Resource Person
Dr. Naveen S.	Traditional Wisdom and Indigenous Communities: A Research Study of Traditional Knowledge of Tribal Groups: A Special Focus on Aspirational Districts of Meghalaya, Kerala, Maharashtra.	Resource Person
Dr. Naveen S.	A Survey on the Study on Mode of Examination and Assessment in Higher Education and its Impact on Stakeholders - With Special Reference to Legal Education in the context of Covid 19.	Member

Dr Binu Mole K	Fifteen Days FDP on ICT Enabled Online Teaching Methods (September 9 to 23, 2021) organised by Kerala State Higher Education Council In association with GLC, Ernakulam.	Participant
Dr Binu Mole K	Participated in 7 days FDP on “Gender Sensitisation and Gender Equality” organized by Women Studies Centre, CUSAT, 7-13 September, 2021.	Participant
Dr Binu Mole K	Resource Person, Faculty Development Programme (Virtual) on “Contemporary Developments in Corporate Laws” jointly organised by SLS & ICSI, Kochi Chapter as part of UGC SAP programme, Dec-6-10, 2021.	Resource Person
Dr Binu Mole K	Five days Workshop on "Research Methodology forDissertation" on February 28, 2022 -Topic: "Report Writing Major Findings, Conclusion, Suggestions & Bibliography", organised by Dr Ambedkar Law College, Department of Law, from 24-28 February 2022, Deekshaboomhi, Nagpur.	Resource Person
Dr Binu Mole K	Short term Course in Human Rights & RTI Act organised by School of Legal Studies, Kannur University from 14/3/22 to 19/3/22 -Topic- “Human rights of Seafarers”.	Resource person
Dr Binu Mole K	Short Term Course on Human Rights & RTI conducted by HRDC, Kannur University from 28/10/2022 to 3/11/2022- Topic Human rights & Seafarers.	Resource Person
Jean Vinitha Peter	First International Victimology Colloquium on Victim Empowerment Through Legal and Social initiatives.	Participation
Arathi Ashok	Know Your IP Weekly Series of Online Lectures, organized by the DPIIT-IPR Chair, Osmania University on 19-03-2022.	Invited Talk as Resource Person
Arathi Ashok	Certificate course on Protection of Geographical Indications organised by DPIIT-IPR Chair and CIPR at Maharashtra National Law University, Nagpur on 12-03-2022.	Invited Talk as Resource Person

Arathi Ashok	The Indian Society of International Law on 15-02-2022.	Invited Talk as Resource Person
Arathi Ashok	Mar Gregorios College of Law (Centre for IPR) on 03-02-2022.	Invited Talk as Resource Person
Arathi Ashok	Mercy College, Palakkad on 29-01-2022.	Invited Talk as Resource Person
Arathi Ashok	Bharata Mata School of Legal Studies, Aluva on 17-12-2021.	Invited Talk as Resource Person
Arathi Ashok	Online Faculty Development Programme on Research Methodology organized by Sreekrishnapuram V T Bhattathiripad College, Palakkad on 29-10-2021.	Invited Talk as Resource Person
Arathi Ashok	Don Bosco Arts and Science College, Chennai on 23-09-2021.	Invited Talk as Resource Person
Arathi Ashok	Raising Awareness in Intellectual Property Rights at Deeksharambh 2021: Student Induction Programme at Sree Sankara Vidhyapeetom College, Perumbavoor on 11-09-2021.	Invited Talk as Resource Person
Arathi Ashok	Symbiosis Law School, Nagpur on 13-08-2021.	Invited Talk as Resource Person
Arathi Ashok	Two Day National Seminar on Intellectual Property Rights for Business organized by Department of Commerce and Management Studies, Amal College of Advanced Studies on 26-05-21.	Invited Talk as Resource Person
Arathi Ashok	School of Excellence in Law, The Tamil Nadu Dr. Ambedkar Law University on 24-04-21.	Invited Talk as Resource Person

3. Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Dr. Vani Kesari A	CHLP, NUALS	Was a reviewer in the panel of reviewers for the book titled, Digital Healthcare and the Law, published by CHLP, NUALS (2022)
Dr. Vani Kesari A	SLS, CUSAT	Chief Editor, CULR
Dr. Vani Kesari A	GLS Law College	General Editor, Editorial Team , GLS Law Journal, Ahmedabad, Gujarat
Dr. Sreejith S	CUSAT	Member, Board of Studies, Law (UG)
Dr. Sreejith S	St. Albert's College, Kochi	Member, Board of Studies, Management Studies
Dr. Sreejith S	Marian College, Kuttikkanam	Member, Board of Studies, Commerce (UG)
Dr. Sreejith S	CUSAT	Member, Green Campus Initiatives
Dr Harisankar K.S.	Journal of International Law and Comity (JILC) published by the Weeramantry Centre for Peace, Justice and International Law	Editorial Board Member
Dr. Seema P.S.	Cochin University Law Review	Associate Editor
Dr. Aneesh V Pillai	African Journal of Reproductive Health (AJRH),	External Reviewer

Dr. Aneesh V Pillai	National Journal of Cyber Security Law	External Reviewer
Dr. Naveen S	CUSAT - Cochin University Law Review	Associate Editor
Arathi Ashok	International Journal of Law and Social Science	Member, Peer Review Board
Arathi Ashok	Indian Journal of International Law	Member, Peer Review Board

Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Dr. Harisankar K S	Honorary Research Fellow	Centre for Public Policy Research (CPPR)

Sponsored Research Project

Sl.No.	Title	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
1.	Coordinator,Southern Regional Partner based on an MOU between School of Legal Studies, CUSAT-CEERA, NLSIU on Project titled, “ <i>Collaborative Engagement For Research, Training and Development in the Handling of Chemical and Hazardous Waste</i> ” Granted by MOEF& CC – Dr. Vani Kesari A	CEERA NLSIU	3 lakhs	

2.	Coordinator, for the Empirical Field study conducted by SLS, in Ernakulam & Thrissur Districts of Kerala for the NLU- NCW project titled “An Empirical scrutiny of discrimination on remuneration paid to women workers in the construction industry in Organized and Unorganized sectors in India – Dr.Vani Kesari A.	NLU	Payment based on the work entrusted	
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Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Coordinator	Funding Agency
1.	Organised a series of lectures under the Chancellors Chair Professor program by inviting Dr David Hunter, Senior Lecturer, University of Adelaide, Australia March 25, 2021 to September 30, 2021.	March 25 th , 2021 to September 30 th ,2021.	Dr Vani Kesari A	Chancellors Chair Fund
2.	Organised a series of lectures/webinars under the Erudite in Residence program,KSHEC, of Prof (DR) Reider K Lie , Head of the Department , University of Bergen,Norway from September 15,2021 to October 25,2021.	15 th September 2021 to 25 th October 2021	Dr Vani Kesari A	KSHEC
3.	Organised an online lecture on “ Relevance of Bioethics as a Field of Knowledge” by Dr. Vina Vaswani, Director, Centre For Ethics& Professor,	22.08.22 at ICREP	Dr Vani Kesari A	ICREP

	Department of Forensic Medicine & Toxicology, Yenepoya University on 22.8.22 at ICREP.			
4.	Organised an online lecture on “Bioethics and Scientific Research : A Road map For Good science” by Dr David B Resnik, American Bioethicist, NIH &NIEH on 26.08.22.	26.08.22	Dr Vani Kesari A	ICREP
5.	Organised a lecture (offline) on Ethical AI : Towards a Responsible Technological Application by DR M.V.Rajesh, Associate Professor, Department of Electronics Engineering, College of Engineering, Chengannur, on 29.08.22. Organised a lecture (offline) on Ethical AI : Towards a Responsible Technological Application by DR M.V. Rajesh, Associate Professor, Department of Electronics Engineering, College of Engineering, Chengannur, on 29.08.22.	29.08.22	Dr Vani Kesari A	ICREP
6.	Organised a live interaction with Mr. Sam Santhosh, the CEO & Founder Sci Genome with students of Masters in Bioethics on 26.09.2022 on the theme “Challenges in Bioethics” at ICREP.	26.09.22	Dr Vani Kesari A	ICREP
7.	Webinar on “Gender Justice Contemporary Challenges and Legal Remedies”, organized by Gender Justice Forum, SLS, CUSAT, 20 th January, 2022.	One day	Dr. Preetha S.	

8.	National Webinar on “Securities Market Regulations: Emerging Trends and Regulatory Responses.	17-02-2022	Dr. Preetha S	UGC
9.	Three Day Online Workshop on “Questionnaire Development for Social Science Research”	13-11-2021 to 15-11-2021	Dr. Sreejith S. Dr. Harigovind P.C.	NA
10.	One day webinar on Entrepreneurship Development “Meet the Entrepreneur” Resource Person - Kouchouseph Chittilappilly, Founder &CEO V-Guard Industries, Jan.25,2022.	1 day	Dr.Nemat Sheereen S.	
11.	Webinar Internship Tutelage, Resource Person Adv Ferha Azeez, Fellow member of World Mediation Organisation, June 4, 2021.	1 day	Dr.Nemat Sheereen S.	
12.	Talk on Career in Maritime Law Resource person - Rahul Verma, Master Mariner, Maritime Lawyer and Founder, Ally Maritime and Legal Service, March 11 th , 2022.	1 day	Dr.Nemat Sheereen S.	
13.	Industrial Visit - KAMCO (Kerala Agro Machinery Corporation Ltd) Athani, EKM District, March.16 th , 2022.	1 day	Dr.Nemat Sheereen S.	
14.	Five -Day Faculty Development Programme on “Contemporary Developments in Corporate Laws”.	6 th to 10 th December 2021	Dr. Seema P.S, Dr. Binumole K, and Dr. Preetha S.	ICSI
15.	National Webinar on Rights of Consumers: Issues and Perspectives, 15th March 2021.	3 hours	Dr Aneesh V Pillai & Arathi P.S	

16.	International Webinar on Womens Rights and Perspectives, 8th March 2021.	3 hours	Dr Aneesh V Pillai & Arathi P.S	
17.	Fourth One Week Annual Summer School On Competition And Consumer Law June 28 th – July 2 nd , 2022.	One Week	Dr Aneesh V Pillai & Arathi P.S	
18.	One Day Round Table Conference Revisiting Roe v. Wade (1973) in the context of Dobbs v. Jackson Women’s Health Organization (2022) on 23.07.2022.	One Day	Dr Aneesh V Pillai & Dr. P.S. Seema	
19.	Prof V. S. Mallar Memorial Legal Aid Competition June-October 2022 SLS-CULAC organised Speed Mentoring in 5 Schools in July 26 th , 27 th , 29 th 2022. 2 Street Plays 16 th & 22 th September 2022. 1 Village Halt in Airapuram, Valayanchirangara, kalady 28 th & 29 th August, 2022. 1 Public Hearing 29 th August 2022 & Village Adalat at SLS in association with District Legal Service Authority, Ernakulam on 30 th Sept 2022.		Jointly co-ordinated by Dr Vani Kesari A, Mrs Jean Vinitha Peter & Dr Binu Mole K	CUSAT - SLS Alumni
20.	Public Law Lectures	13-14 January 2022	Dr. Jean Vinitha Peter	

21.	CULAC Legal Awareness Programme.	10.03.2022	Dr.Jean Vinitha Peter	
22.	Two Day Virtual National Legal Conclave on Rethinking Victim Rights.	24-25 February 2022	Dr.Jean Vinitha Peter	
23.	Webinar on Gender Justice: Contemporary Challenges & Legal Remedies.	20 th January 2022	Dr.Jean Vinitha Peter	
24.	National Webinar on Intellectual Property for the Protection of SMEs.	1 Day	Arathi Ashok & Dr. Aneesh V. Pillai	CUSAT
25.	Third Annual International Virtual Summer School on “Understanding Competition Law: Perspectives from Asian Countries”.	7 days	Arathi Ashok & Dr. Aneesh V. Pillai	CUSAT
26.	International Webinar on Right to Equality as a Human Right.	1 Day	Arathi Ashok & Dr. Aneesh V. Pillai	CUSAT

Consultancy Work

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1.	<u>Member Institutional Stem Cell Committee, Albot Technologies, Bionest, KINFRA.</u>	Dr. Vani Kesari A.	Bionest, KINFRA
2.	LLegal Consultancy For M/s Exalt SSustainable Energy & Automation SServices Pvt. Ltd, 2021-2022.	Dr. Preetha S.	



School of Management Studies

FORMAT FOR SUBMISSION OF THE ANNUAL REPORT FOR THE YEAR 2021-22

Name of the Department – SCHOOL OF MANAGEMENT STUDIES

Brief History of the Department :

The School of Management Studies was established in 1964 as part of an all India scheme of promoting management studies throughout the country. It is the major institution of its kind in Kerala offering post-graduate studies and research programmes in Business Administration, Commerce and related areas.

The School is located twelve kilometers north east of the city of Kochi. It is in the main campus of the University at Thrikkakkara, right in the heart of the industrial belt of the State. The campus is about two kilometers east of South Kalamassery on NH 47 between Ernakulam and Alwaye. The School started functioning in October 1964 as part of the University of Kerala. With the formation of the University of Cochin in July, 1971 the School became a Department of the University. Changes in the field of management education have always prompted School of Management Studies (SMS) of Cochin University of Science and Technology (CUSAT) to strive to affect and shape the field since 1964, in this part of the country. Over the past five decades, SMS has prepared students to live up to and make meaningful contributions through positions of importance in the business world.

Programmes of Study/Research :

At present the School offers Master of Business Administration (MBA - Full-Time), Master of Business Administration (MBA - Part-Time), Master of Business Administration (International Business), Master of Business Administration (Travel & Tourism), M.Phil (Commerce) and Ph.D. programme.

- 1) MBA (FT) 2 years : Four semesters
- 2) MBA (PT) 3 years : Six semesters
- 3) Ph.D.

Master of Business Administration (Full Time – 2 Years – Four semesters) with three batches 40 students each

This is a two-year full time post-graduate programme leading to the Degree of Master of Business Administration. Its aim is to provide the young aspirants with the opportunity

to pursue a career in business, to acquire adequate knowledge, skills and attitudes which would constitute a foundation for their growth into competent and responsible business executives. The course has been so designed, as to enable the students to develop a thorough grasp of the basic concepts and techniques of management as well as the ability to practice them under Indian conditions. Further, it aims at developing their analytical decision making and communication skills.

Master of Business Administration (Part Time – 3 Years – Six semesters)

The part-time programme leading to the degree of Master of Business Administration is a three-year evening programme. Its objective is to give an opportunity to executives working in Government and business organizations to improve their managerial ability and performance.

Ph.D.

Research students can pursue Ph.D. through Full Time or Part Time Programmes.

Methods of instruction

The School employs different methods of instruction viz, lectures, case studies, seminars, role-plays, syndicates, field work etc. At the end of the third semester the students (F.T) are required to attach themselves to an organization for a period of eight weeks and prepare a project report on a problem related to the working of the organisation.

The unique programmes offered by the School aim at developing the personality of students and sharpening their oral and written communication skills.

Management Development programmes

Besides academic programmes, the School conducts Management Development Programmes and undertakes Management Consultancy. The management development programmes in general are aimed at inducting personnel into more recent developments in their own specialized or allied areas, so that they would be able to develop a wider perspective.

Consultancy programmes

The School undertakes consultancy assignments to provide managerial and technical – services to various organizations. The School has been recognised by the Government of Kerala as an authorised centre to provide consultancy services to small scale industries in the State.

Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr.Jagathy Raj V. P	Professor & Director	M.Tech., M.B.A.,DSADP, Ph.D.	Systems and Operations Management - Logistics, Supply Chain Management, IT Applications in Business and Management, ERP,MIS, Engineering and Technology Management.
2	Dr. M. Bhasi	Professor	M.Tech., Ph.D.	Logistics, Quality, Safety & Crisis Management
3	Dr.Zakkariya K. A	Professor	M.A., M.B.A., P.G.D.I.B., Ph.D.	Organisational Behaviour, Marketing, & Sales Management, Managerial Skills Development
4	Dr.Santhosh Kumar S	Professor	M.Com., M.B.A, M.Phil., Ph.D.	Finance
5	Dr. Sam Thomas	Professor	B.Tech., M.B.A., Ph.D.	Systems and Finance
6	Dr.Saji T G	Associate Professor	M Com, MBA Finance, MBA Investment Management, MPhil, Ph.D, ACCA (FR), CFA(IF)	Finance
7	Dr.Rajitha Kumar S.	Professor	M. Com., M. Phil., Ph. D.	General Management, Financial Management,

8	Dr. D. Mavoothu	Professor	M.B.A., D.L.L.. Ph.D.	HRM ,Industrial Relations and Business Ethics
9	Dr. Manoj Edward	Professor	B.Tech, M.B.A., Ph.D.	Operations and Service Management
10	Dr. Smarty P Mukundan	Associate Professor	MBA, MHRM, Ph.D	Human Resource Management
11	Dr.Renjini D	Associate Professor	Bsc Physics, MBA,Ph.D	Human Resource
12	Dr.Rakesh Krishnan M	Assistant Professor	MCom, MBA, Ph.D	Commerce, Finance and General Management
13	Dr. FezeenaKhadir	Associate Professor	MBA, Ph. D	Marketing
14	Dr.Smiju I S	Assistant Professor	M.Tech, Ph.D, Post Doc	Information System, Project Management
15	Dr.Sangeetha K. Prathap	Assistant Professor	M.Sc. Co- operation and Banking, MBA, M. Phil., Ph.D.	Management, Banking, Financial Services, Financial Management
16	Dr.Remya Ramachandran	Assistant Professor	M.Com, B.Ed, M.Phil, Ph.D, NET	Commerce / Finance
17	Dr. Nisa James	Assistant Professor	B.Tech Civil Engineering, PGDM Operations Systems & Marketing	PGDM Operations Systems & Marketing

18	Dr. NimithaAboobaker	Assistant Professor	B.Tech, MBA, Msc Applied Psychology, Ph. D	Information systems, HRM
19	Dr.MeeraPrathapan	Assistant Professor	Bcom, MBA,Net, Ph.D	Marketing Management
20	Dr. Manu Melwin Joy	Assistant Professor	B.Tech., MBA, Ph.D.	Personnel/Production, Human Resource Management
21	Lithin Thomas	Assistant Professor	B.Tech, MBA	Operations/Production Management
22	Dr.DeviSoumyaja	Assistant Professor	Msc HRD, Ph. D	Human Resource Management
23	Dr. Daly PauloseMeppurath	Assistant Professor	BTech in Civil Engineering, PG Diploma in Management, Ph. D	Marketing

Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
1	Akshay Kumar T A	UGC	Dr. Saji T G	Finance
2	Fiona Benny	UGC	Dr. Santhosh Kumar S	Finance

3	Sabu George		Dr. Saji T G	Finance
4	BhasuraValsan		Dr. Saji T G	Finance
5	Binesh George		Dr. Ajith Mohan K R	
6	Dr. Prasanth M K		Dr. Jagathy Raj V. P.	
7	Manu Abraham	UGC	Dr. Santhosh Kumar S	Finance
8	Viswajith V Vinod	UGC	Dr. Santhosh Kumar S	Finance
9	MukulDevSurira	UGC	Dr. Zakkariya K. A.	Marketing
10	Dhanya Mohan P	UGC	Dr. Rakesh Krishnan M	Finance
11	TurusunovSheroz	ICCR	Dr. Manoj Edward/Dr.MeeraPr athapan	Marketing
12	NaomyNasambuSimi yu	ICCR	Dr.Santhosh Kumar S	Finance
13	Sneha Rose George	UGC	Dr. Manoj Edward	Marketing
14	Surumi Muhammad		Dr. Devi Soumyaja	HR
15	Deepu Thomas	UGC	Dr. Santhosh Kumar S	Finance

16	Vishnu N S		Dr. Santhosh Kumar S	Finance
17	HarithaHaridasan	UGC	Dr Daly PauloseMeppurath	
18	SHUJALLAH	ICCR	Dr 34errRemya Ramachandran	18

Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer	1
2	Office Superintendent	1
3	Assistant Librarian	1
4	Junior Librarian	1
5	Assistant	3
6	Computer Assistant	2
7	Office Attendant	3
8	Sweeper cum Cleaner	1
9	Clerical Assistant	1
10	Library Assistant	1
11	Duplicator Operator	1

Technical Personnel

Sl.No.	Designation	No. of Posts
1	Professional Assistant	2
2	Technical Assistant	1

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1	Ph.D	11	7	18
2	MBA(Full Time)	59	75	134
3	MBA(Part Time)	16	14	30

Library

No of books and Journals as on 31st March of the Previous Year (2020 -21)	Additions during the current year (2020-21)
Books – 44543 Journals - 32	26 books (44569) 30

Ph.Ds Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1	INFLUENCE OF FINANCIAL INCLUSION POLICY AWARENESS AND USAGE ON THE FINANCIAL BEHAVIOUR OF SCHEDULED CASTE AND SCHEDULED TRIBE HOUSEHOLDS: A STUDY WITH SPECIAL REFERENCE TO SELECTED DISTRICTS OF KERALA	Shyni V K	Dr.D.Mavoothu
2	EFFECT OF PROTEAN ATTITUDE ON EMPLOYEE WELLBEING: EXAMINING THE ROLE OF PSYCHOLOGICAL CAPITAL AND PERCEIVED EMPLOYABILITY	Nimmi P M	Dr.K.A.Zakkariya
3	COMMUNITY SUPPORT FOR ECOTOURISM DEVELOPMENT: AN ANALYSIS WITH SPECIAL REFERENCE TO ETHNICITY AND LOCAL GOVERNANCE IN THE PROTECTED AREAS OF KERALA,INDIA	Remya R Kumar	Dr.Manoj Edward
4	A STUDY ON ANTECEDENTS AND OUTCOME OF SOCIAL CAPITAL - EXAMINING THE MODERATING ROLE OF SOCIAL PROJECT TYPE	Abhilash G Nambudiri	Dr.Sam Thomas

5	HUMAN CAPITAL MANAGEMENT PRACTICES AND EMPLOYEE PERFORMANCE IN SOFTWARE FIRMS IN KERALA	Neenu Wilson	Dr. Sebastian Rupert Mampilly
6	EMPLOYER BRAND EFFECTS ON INTENTION TO STAY: TH ROLE OF EMPLOYEE ENGAGEMENT AND INNOVATIVE WORK BEHAVIOUR	Anjali John	Dr.Jagathy Raj V P
7	BUSINESS INCUBATION AND STARTUP PERFORMANCE: THE ROLE OF ABSORPTIVE CAPACITY, ENTREPRENEURIAL ORIENTATION AND INNOVATION SPEED	Vinney Zephaniah Vincent	Dr.K.A.Zakkariya
8	GREEN PROCESSINNOVATIONS AND GREEN PRODUCT INNOVATIONS: DRIVERS AND IMPACTS ON MEDIUM AND LARGE MANUFACTURING FIRMS IN KERALA	Soumya Varghese	Dr.Jagathy Raj V P`
9	ANTECEDENTS OF DESTINATION BRAND EQUITY: SPECIAL REFERENCE TO KERALA AS AN AYURVEDIC DESTINATION	DeepaJawahar	Dr.M.K.MuhammadAslam

Publications

a. Papers

Sl.No.	Title of Paper	Author(s)	Impact Factor, if any
NimithaAboobaker			
1.	Workplace Spirituality and Employee Wellbeing in the Hospitality Sector: Examining the Influence of Fear of COVID-19	NimithaAboobaker	Psychological Studies, Vol. 67 No. 3 pp.362–371 https://doi.org/10.1007/s12646-022-00666-7 Scopus Psyinfo indexed/ ABDC-C journal; Springer Publications. H-index: 11
2.	From family incivility to satisfaction at work: role of burnout and psychological capital	Paul Vincent, M.T., NimithaAboobaker. and Devi, U.N.	Journal of Organizational Effectiveness: People and Performance, Vol. 9 No. 4, pp. 637-655 https://doi.org/10.1108/JOEPP-01-2022-0011 Scopus indexed/ ABDC- B journal; Emerald Publications. H-index: 18

Daly PauloseMeppurath			
3.	Shopping Orientations and its influence on online purchase intention: A study of young adults	Daly PauloseMeppurath; Roshna Varghese	Scopus Citescore:1.1
Dr. Manu Melwin Joy			
4.	Managing the most important asset: a twenty year review on the performance management literature	Dr. Manu Melwin Joy and Ebina Justin	ABDC – B Category
5.	Understanding the Intention to Use Virtual Currency in a Gamified E-Commerce Context	Dr. Manu Melwin Joy and Anoop George	ABDC – B Category
6.	The role of informational feedback as a game mechanic on user perceptions, attitudes and the intention to continue using a gamified Health Behaviour Change Support System	Dr. Manu Melwin Joy, SebatianPanattil and Anoop George	ABDC – B Category

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Dr.NimithaAboobaker	National Conference on “Brand Promotion Strategies of Kasturi Cotton” organized by SardarVallabhbhai Patel International School of Textiles and Management, Coimbatore on 7 th October, 2022.	Paper Presenter
Dr.NimithaAboobaker	One Week Faculty Development Program on Using Business Simulations in Teaching Management from 26th Aug to 31st Aug, 2022 conducted by CESIM in association with School of Management Studies, CUSAT	Participant
Dr.NimithaAboobaker	One Week Workshop on Basic Business Analytics, from 25 April 2022 to 29 April 2022 organized by REST Society for Research International (RSRI) Krishnagiri, Tamil Nadu,India.	Participant
Dr.Renjini D	“Globalizing Indian Thought – GIT 2021 International Conference organized by IIM Kozhikode	Paper presentation
Daly PauloseMeppurath	Faculty Induction Programme, University of Hyderabad	Participant
Daly PauloseMeppurath	International Conference on Aging Well (2022) hosted by SCMS School of Business	Panel Chair

Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Dr.NimithaAboobaker	Commerce and Business Researcher , Bi-Annual Peer Reviewed ISSN journal published by the Researchers' Forum of Department of Commerce, University of Kerala	Editorial Board Member
Dr.NimithaAboobaker	Organizational Psychology, Frontiers in Psychology	Review Editor on the Editorial Board of Organizational Psychology (specialty section of Frontiers in Psychology and Frontiers in Communication).
Daly PauloseMeppurath	Indian Society for Training and Development	Life Member
Daly PauloseMeppurath	International Journal of Risk and Contingency Management (IGI Global)	Editorial Review Board Member
Dr. Manu Melwin Joy	Indian Society for Training and Development (ISTD)	Life time member
Dr. Manu Melwin Joy	Kerala Management Association	Life time member

Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Dr.NimithaAboobaker	Emerald Literati Award 2022, Outstanding Reviewer	Emerald Publications

Daly PauloseMeppurath	Gold Medalist in Online certification exam in International Marketing	NPTEL & MHRD, Govt of India
Dr. Manu Melwin Joy	Best Academician of the Year Award	Bestow Edutrex International
Dr. Manu Melwin Joy	Outstanding Teacher Award 2022	Research India Foundation
Dr. Manu Melwin Joy	Best Professional Achievement	Rotary International
Dr. Manu Melwin Joy	Donbosco Alumni Achiever Award 2022	Past Pupils of Donbosco Schools, India

Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
1.	Workplace Buoyancy and Educators' Wellbeing during times of the pandemic: a capacity-building intervention initiative	Seed Money for New Research Initiatives (SMNRI) No.CUSAT/PL(UGC).A5/3 860/2022	1,40,000 Rs	Dr.NimithaAboobaker
2	Bridging Grey Digital Divide through Digital Onboarding	Kerala State Plan Grant (SMNRI)	150000	Daly PauloseMeppurath

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Coordinator	Funding Agency
1.	Workshop on Unravelling Text for Insights through Analytics: Hands-on Online Workshop, conducted by School of Management Studies 24th - 26th August 2022	3 days	Dr.NimithaAboobaker	Fee collected from participants
2	17 th MDP on Gamification for Learning and Development	3 days (12,13,14 January 2022)	Dr. Manu Melwin Joy	Association of Principals of Kerala Oriented CBSE Schools
3	18 th MDP on Gamification for Learning and Development	3 days (22,23,24 February 2022)	Dr. Manu Melwin Joy	Association of Principals of Kerala Oriented CBSE Schools
4	19 th MDP on Gamification for Learning and Development	3 days (24,25,26 March, 2022)	Dr. Manu Melwin Joy	Resorcio
5	20 th MDP on Gamification for Learning and Development	3 days (18,19,20 April, 2022)	Dr. Manu Melwin Joy	Resorcio
6	21 st MDP on Gamification for Learning and Development	3 days (6,7,8 July, 2022)	Dr. Manu Melwin Joy	Resorcio

7	22 nd MDP on Gamification for Learning and Development	3 days (28,29,30 July, 2022)	Dr. Manu Melwin Joy	Resorcio
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Consultancy Work

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1	CSR Impact Assessment	Dr.Renjini D	Cochin Shipyard Ltd
2	HR Requirements Study	Dr.Renjini D	Vegetable and fruit Promotion Council Kerala (VFPCCK)
3	Development of Gamification Interventions in Recruitment solutions	Dr. Manu Melwin Joy	Zappyhire Pvt Ltd
4	Integrating Gamification to the Five year LLB Curriculum. Seamless Travel Technologies Pvt Limited	Dr. Manu Melwin Joy	The National University of Advanced Legal Studies (NUALS)
5	Development of Gamification interventions for the career assessment application	Dr. Manu Melwin Joy	Lifology

Kunjali Marakkar School of Marine Engineering

Brief History of the Department:

Kunjali Marakkar School of Marine Engineering (KMSME) has started with a precise vision of creating expert marine engineers who can cope up with the demands of the ever-growing shipping industry. It is the only marine engineering training institute in India, which is under the direct control of a state owned university. This department functions under the aegis of the Directorate General of Shipping, Govt. of India, Mumbai. Located in the heart of Cochin University campus, KMSME started its first batch of 4 year B. Tech Marine Engineering programme in 2003. The presence of various other departments in the Cochin University, which have their own strong research wings, enable our students to acquire profound knowledge in every topic prescribed by the curriculum.

Admission to the course is through the rank list prepared from All India Entrance Examination conducted by the CUSAT. The girl students are also given opportunity to study this course. As an incentive to promote women participating in the maritime field, they are given 50 % exemption on their tuition fees as per the advice from the Directorate General of Shipping.

M.Tech programme in Marine Engineering was started in this department in the academic year 2014-15 which is the unique endeavor initiated first time in University level in India. The first batch of M.Tech Marine Engineering course was completed in 2016. Out of the two years in M.Tech course, first year is devoted for theory classes, labs and seminars and second year is devoted for internship and project works. For the internship, project work and lab, MoU has been made with Cochin Shipyard Ltd., for availing of their facility at their yard. Apart from this, department has commenced research programme in Marine Engineering. The department is equipped with a Full Mission Engine Room Simulator, where pre-sea and post-sea mandatory short term courses for appearing to competency exams are conducted.

KMSME has participated in the competitive bid regarding the “IMO- European Union Project on Capacity Building for Climate Change Mitigation in the Maritime Shipping Sector” and to host Maritime Technology Co-operation Centre (MTCC) in India. KMSME has been graded by independent bench marking agency CARE and by DG Shipping under Comprehensive Inspection programme.

Programmes of Study/Research

1. Pre-sea Engineering – 4 year B.Tech in Marine Engineering.
2. Engine Room Simulator course of Operational and Management levels commenced for MEO. Class IV and MEO Class II candidates respectively.
3. M Tech – 2 year Marine Engineering Programme.

Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation	Remarks
1	Prof. M P John 10/10/2019 (FN)	Director	B.Sc (Engg.), MEO Class I, M.S. in Maritime Affairs (World Maritime University, Sweden)	Marine Engineering and Maritime Statutory	
2	Mr.Venugopal R	Course-in- Charge	B Tech, M.Tech, MEO Class I	1. Marine Aux.Machinery. 2. Marine Internal Combustion Engine.	Relived on 24.02.2022
		Professor			
2	Mr. Joseph Malcom Oliver	Course-in- Charge	ME	Mechanical Engineering MEO Class I	Joined on 25.02.2022
					Relieved 28.04.2022
3	Dr. Roy V Paul	Course coordinator	M.Tech	Thermodynamics Machine Drawing	Relived on 17.01.2022
		Assistant Professor	B.Tech (Mechanical Engineering), M.Tech (Machine Design), Ph.D Faculty of Technology - Mechanical Engineering), MBA	PhD. Faculty Technology/Mec hanical Engineering	Joined on 07.02.2022

4	Mr.Jis George	Associate Professor	B Tech, M.Tech, MEO Class I	1. Marine Internal Combustion Engine 2. Marine Refrigeration and Air Conditioning	
5	Mr.George Paul	Associate Professor	BSc Engineering MEO Class I	Marine Engineering	
6	Mr. Rames V S	Associate Professor	B Tech Mechanical Engineering MEO Class I	Marine Engineering	
7	Rajappan T B	Associate Professor	B Tech Mechanical Engineering MEO Class I	Marine Engineering	
8	Mr. Biswajith H	Assistant Professor	M Tech	Automotive Engineering	
9	MrsJayarani M A	Assistant Professor	M .Tech	VLSI Design	
10	Mr. PramodRamakrishnan	Assistant Professor	M .Tech	Production and Industrial Engineering	
11	Mr. Kriparaj K G	Assistant Professor	M Tech (ME)	Thermal Engineering	
12	Mrs. Misha K M	Assistant Professor	M .Tech	Power Electronic and Control	Relived on 21.06.2021
13	Mr.Ayyappankutty	Assistant Professor	M .Tech	Thermal Engineering	Relived on 04.10.2021
14	Mrs.Aathira M J	Assistant Professor	M .Tech	Power Electronics	Relieved on 06.07.2021

15	Dr. Jayaram	Assistant Professor	M Tech	Computer Aided Structural Analysis and Design	
16	Mr. Najdan Waris CP	Assistant Professor	M Tech	B Tech (Naval Architecture and Ship Building	
17	Mrs. Anitha George	Assistant Professor	M Tech	Electrical and Electronic Engineering	
18	Mr. Vinod V Nair	Assistant Professor	M Tech	Power Electronics	
19	Vishnu S Kumar	Assistant Professor	M Tech	Thermal Engineering	

Visiting Faculty

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Mrs. Betsy Kurian	Guest Faculty	M.A.Economics	Economics & Commercial Geology
2	Mr. P.M. Sukumaran	Guest Faculty	B.Tech, B.Sc(Engg.)	Naval Architecture
3	Mr.C. ReghunadhanChettiar	Guest Faculty	B.Tech.	Mechanical Engineering
4	Capt. Jai Prakash	Guest Faculty	Senior Master Mariner	Navigation
5	Mrs. Janet Maria Thomas	Guest Faculty	M.E (Applied Electronics)	Applied Electronics and Instrumentation
6	Mr. Hasi. P Valsan	Guest Faculty	M Tech	Construction Engineering and Management
7	Mr. Praveen Samkar	Guest Faculty	B Tech	Mechanical Engineering
8	Mrs. Smijas	Guest Faculty	M Tech	VLSI and Embedded System

9	Mr. Edwin Tomson	Guest Faculty	M Phil	Coding theory non standard analysis
10	Mr. KP Elias	Guest Faculty	BSc Engineering, MEO Class I	Marine Engineering
11	Mrs. Geethanjali	Guest Faculty	MA	English Language and Literature
12	Dr. K U Abdul Salam	Guest Faculty	MSC, PhD	Chemistry
13	Dr. V J Peter	Guest Faculty	MSC, PhD	Physics
14	Dr. Rakesh VB	Guest Faculty	MSC, PhD	Environmental Studies
15	Mr. Kiran Mukund	Guest Faculty	M Tech	Engineering Design
16	Mr. Partheswaran R	Guest Faculty	B Tech, MEO Class I	Marine Engineering
17	Dr. Joseph George	Guest Faculty	M Tech, PhD	Engineering Project Management
18	Mrs. Chinchu Varghese	Guest Faculty	M Tech	Electronics Measurements & Instrumentation
19	Prof.(Dr.) K.A. Simon	Guest Faculty	B.Sc (Engg.), MEO Class I (Motor) with Steam endorsement MS(Sweden), Extra First Class Marine Engineer	Safe Watch Keeping MARPOL
20	Capt. RanjitNelleri	Guest Faculty	B Tech Higher National Diploma	Nautical Science
21	Mrs. ShaliniSanil	Guest Faculty	M B A (Operation Management) B Tech (Electrical and Electronics)	Computer Programming in C
22	Mr. Subin Jose	Guest Faculty	B Tech	Mechanical Engineering

23	Mr. Sanjeev KK	Guest Faculty	B.S c (Mechanical Engineering MEO Class I	Leas Auditor in QMS, ISM and ISP
24	Mage Reena Varghese	Guest Faculty	M .Tech	Electrical Engineering
25	George Wilson	Guest Faculty	B Tech Mechanical Engineering MEO Class I	Marine Engineering
26	Willy Mathews	Guest Faculty	BSc Mechanical Engineering MEO Class I	Marine Engineering
27	Varghese P O	Guest Faculty	MEO Class I	Marine Engineering
28	E V Harish	Guest Faculty	MSC	Mathematics
29	Capt. R S Menon	Guest Faculty	Master F G	Ship Operational and Management

Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Section Officer	1
2.	Asst. Librarian	1
3.	Assistant	2
4.	Assistant (Syndicate sanctioned)	1
5.	Clerical Assistant	1
6.	Computer Assistant	2
7.	Office Attendant	2
8.	Gardener	2
9.	Sweeper cum Cleaner	7
10.	Warden cum physical Trainer	3

Technical Personnel

Sl.No.	Designation	No. of Posts
1.	Workshop Superintendent	1
2.	Technical Assistant Grade III	1
3.	Technical Assistant Grade II	1
4.	System Analyst	1
5.	Technician Grade II	1

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1	B.Tech Marine Engineering	55	11	66
2	M.Tech Marine Engineering	4	0	4

Research Facilities**a. Laboratories**

1. Mechanical Lab (Kinematic lab)
2. Instrumentation & Control Lab
3. Engine Room Simulator
4. Ship-in-Campus
5. Machine overhauling Lab
6. Cut section Models Lab
7. Computer lab for UG & PG

b. Major equipments

- (1) Morris single Girder, EOT Crane.
- (2) Incinerator
- (3) Steam Turbine
- (4) Marine Auxiliary Water Tube, Boiler

- (5) Fresh Water Generator
- (6) Stearing Gear
- (7) Cargo Oil Pump
- (8) Refrigerator
- (9) Life boat (46 Persons) with complete kit. - 1 set
- (10) PLC Scada Training kit-
- (11) Hydraulic Circuit
- (12) Gas Turbine Model
- (13) Diesel Engine Model
- (14) Petrol Engine Model
- (15) Full Mission Engine Room Simulator
- (16) APL UPS for Engine Room Simulator
- (17) Marine Diesel Engine (Sulzer 5AL 25/30)
- (18) Air Compressor Water Cooled (Hatlapa)
- (19) Connecting Rod with cross head (35MC)
- (20) Winch
- (21) Two Stroke Cylinder Head
- (22) Fuel Pump Combine Type
- (23) Shell & Tube Heat Exchanger
- (24) Used Ship Machinery items were purchased from M/s Hoosami Metals Pvt.Ltd. Gujarat, at a total cost of Rs.30,64,320/- as follows

- a. Marine Diesel Engine (Suizer 5AL 25/30)
- b. Marine Diesel Engine Special Tools
- c. Filter's main Tools
- d. Vane Pump
- e. Gear Pump (without motor)
- f. Reciprocting Pump (with motor)
- g. Gate Valve/Relief Valve/Butterfly/Glob/Various
- h. Quick closing Valve
- i. Air Compressor water cooled (Hatiapa)
- j. Shell and Tube heat exchanger
- k. Plate type heat Exchanager
- l. Air starting Valve
- m. Crank Case relief Valve
- n. Air circuit breaker (Amps=1000)
- o. Air Start distributor
- p. Fuel pump with roller base
- q. Fuel Injector
- r. Engine Governor(UG-40)

- s. Blige Pump (without motor)
- t. Oil water separator
- u. Two stroke cylinder head
- v. Fuel pump combined type
- w. Turbo charger (BBC VTR – 250)
- x. Winch
- y. Turning gear
- z. P .V. Valve
- aa. Deflection Gauge
- bb. Outside Micrometer
- cc. Fuel testing pump
- dd. Connecting rod (4 stroke)
- ee. Weldon pump
- ff. Sounding tape
- gg. Port hole (Alu)
- hh. Float Switch
- ii. Hand air Compressor
- jj. Connecting rod with cross head (35 MC)
- kk. Bearing (various)
- ll. Trust Pedestal
- mm. Puller
- nn. Anchor chain with – approx. 130kg., 100kg.
- oo. Indicator cock
- pp. Indicator card gauge
- qq. Lub Oil/Fuel oil filter(Mistubishi SJ3000)
- rr. D.C. Motor
- ss. Inside Micrometer
- tt. Air bottle 14 mc³
- uu. Air Compressor
- vv. Centrifugal pump (without motor)
- ww. Two Stroke Engine Piston, Crown with piston- rod and stuffing box
- xx. Two stroke engine cylinder liner
- yy. Cylinder liner (900 MM Bore)
- zz. Air Venter weighted cock
- aaa. Air bottle 7m³

a. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
7242	5

Distinguished visitors:

Sl.No	Name	Affiliation	Remarks
1	Capt.Thomas W Pinto	Fleet Personnel Management,	Passing out Ceremony 2021
2	Shri Sajan P.T.	Fleet Personnel Management	Passing out Ceremony 2021
3	Capt. Philip Mathews	Seven Island Shipping	AzadiKaAmruthMahotsava
4	Sima Marine India Pvt Ltd.	Sima Marine India Pvt Ltd.	Campus Recruitment

Publications:**a. Papers:**

Sl.No	Title of Paper	Impact factor
1	Schlieren imaging investigation on azimuthally varying shock net from four-lobed corrugated nozzle- (Dr. Roy V Paul, Mr. Kriparaj K G	(Aircraft Engineering and Aerospace Technology)
2	Optimisation of bottom structure of ship using genetic algorithms- (Dr. JayaramS)	-

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students :

Sl.No	Name of Participant	Name of seminar / Conference/Workshop	Role
1	Prof. M P John	MARINIZE'21	Participant
	Mr.Venugopal R	MARINIZE'21	Participant
	Mr. Roy V Paul	MARINIZE'21	Participant
	Mr.Jis George	MARINIZE'21	Participant
	Mr. Rames V S	MARINIZE'21	Participant
	Mr. George Paul	MARINIZE'21	Participant
	Rajappan T B	MARINIZE'21	Participant
	Mr. Biswajith H	MARINIZE'21	Participant
	MrsJayarani M A	MARINIZE'21	Participant
	Mr. PramodRamakrishnan	MARINIZE'21	Participant
	Mr. Kriparaj K G	MARINIZE'21	Participant
	Mr. Mr. Ayyappankutty K M	MARINIZE'21	Participant
	Ms. AAthira M J	MARINIZE'21	Participant
	Ms. Misha K M	MARINIZE'21	Participant
	Dr. Jayaram S	MARINIZE'21	Participant
Mr. NajdanWaris CP	MARINIZE'21	Participant	
2	VIII Semester students (2017 batch)	Seminar on Structural Health Monitoring using non Destructive Technologies	Participant

Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Dr. Akhil S Karun	Institute of Engineers India	Life time member
	Indian Institute of metals	Life time member
	Tribological society of India	Life time member
Dr. Jayaram S	Royal Institute of Naval Architect	Member
	Society of Naval Architects and Marine Engineers	
	Institute of Marine Engineers India	Associate Member

Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
KMSME	Grade B1 in Comprehensive Inspection Programme (CIP)	Directorate General of Shipping
Akhil S Karun	Best PhD Thesis award	IIM
Ms. Jayarani M A	UGC- JRF Electronic Science	UGC

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department:

Sl. No	Title	Duration	Coordinator	Funding Agency
1	MARINIZE'21	8 hrs	Prof. M P John	DDF

International School of Photonics

ANNUAL REPORT 2021-22

1.	Name of the Department	INTERNATIONAL SCHOOL OF PHOTONICS
2.	Brief History of the Department:	
	<p>International School of Photonics (ISP) came into existence in 1995 by restructuring and delinking the laser laboratories along with the faculty members of the laser group from the Department of Physics in Cochin University of Science and Technology. Manpower development and establishment of research activities in Photonics and related fields are the major objectives of ISP. From the very inception, the School offers Ph.D programme in Photonics and a four semester M.Tech course in Opto Electronics and Laser Technology. During 2001 to 2005, the School offered an M.Phil course in Photonics with an objective to train teachers in the area of Photonics.</p> <p>The University Grants Commission recognized Cochin University of Science and Technology as a “University with potential for Excellence” in the field of “Lasers and Optoelectronic Sciences” in March 2002 and had released an amount of Rupees 5 Crores for various activities under this programme. Consequently a “Centre of Excellence in Lasers and Optoelectronic Sciences(CELOS)” was established under ISP in Cochin University of Science and Technology in July 2002. Under this Centre, a unique teaching programme viz. Five year Integrated M.Sc. Degree Course in Photonics was introduced, for the first time in the country, which is a 10 semester course with an annual intake of 20 students. Research activities in the area of Photonics have also been undertaken under this Centre. The funding which was initially granted for 5 years was extended for a term of 5 more years and this funding was ceased on 31st March 2012 and the centre has been merged with ISP. Most of the research projects are being funded by the national funding agencies like Department of Science and Technology (Govt. of India as well as Govt. of Kerala) UGC, AICTE, DRDO, KSCSTE etc. ISP had an International collaboration with the Technical University of Eindhoven (TU/e) under the MHO programme funded by the Netherlands Organization for International co-operation in higher education during 1999-2004. A sub Pico second laser facility is now available in the laboratory under the CELOS programme which is being used as a national facility. Now, International School of Photonics has one of the best laser laboratories in the country. The research topics span from fundamental to applied fields in Photonics and related areas. The School has undertaken a number of collaborative research activities with various institutions in India and abroad.</p> <p>ISP is having student and faculty exchange with various universities. At</p>	

	present, there are active MoUs with international Universities like the University of Rennes in France, University of Gothenburg in Sweden, Dublin City University in Ireland University of Naples in Italy. At national level, ISP has active MoUs with IIT Madras and C-MET Pune.
3.	Programmes of Study/Research <ol style="list-style-type: none"> 1 M.Sc. (5 year Integrated) in Photonics 2 M.Tech (Opto Electronics & Laser Technology) 3 Ph.D in Photonics

4 (a) Faculty Members

SI No.	Name	Designation	Qualification	Specialization
1	Dr.Pramod Gopinath	Professor and Director	M.Sc, NET, Ph.D.	Laser Plasma Spectroscopy, Nonlinear Optics and Nanophotonics
2	Dr. A Mujeeb	Senior Professor	M.Sc.,M Phil, Ph.D	Laser Speckle Interferometry Optical NDT Nano/Biophotonics
3	Dr. M. Kailasnath	Professor	M.Sc, M.Phil, M.Tech, Ph.D	Fibre Optics & Laser Technology
4	Dr. Sheenu Thomas	Professor	M.Sc, Ph.D	Experimental Solid State Physics
5	Dr.Saji K.J.	Associate Professor	M.Sc. NET, Ph.D.	Optoelectronic Devices, Nano materials and Solar cells
6	Dr.Manu Vaishakh	Assistant Professor	M.Sc, Ph.D	Non-linear optics, Optical imaging, Fiber optics
7	Mr.Muhammad Rishad K P	Assistant Professor	M.Sc.	Ultrafast laser-matter interactions, Metamaterials
8	Dr.Priya Rose T.	Assistant Professor	M.Sc, Ph.D	Photonic bandgap materials, Metamaterials, Ultrafast laser-matter Interactions

9	Dr. Praveen C S	Assistant Professor	M.Sc, Ph.D	Electronics
10	Dr. Mohamed Ameen P	Assistant Professor	M.Sc, Ph.D	Theoretical Photonics

4 (b) Contract Faculty Members

1	Dr. Rethesh R	Assistant Professor (on contract)	M.Sc. Ph.D
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4	R Fathima, A Mujeeb. “Enhanced nonlinear and thermo optical properties of laser synthesized surfactant-free Au-Pt bimetallic nanoparticles” , J Molecular Liquids, 343 (2021) 117711 doi.org/10.1016/j.molliq.2021.117711 0167-7322.	6.16
5	R Fathima, A Mujeeb, “Nonlinear optical investigations of laser generated gold, silver and gold-silver alloy nanoparticles and optical limiting applications” . Journal of Alloys and Compounds, 858 (2021): 157667 doi.org/10.1016/j.jallcom. 2020.157667.	5.31
6	Satheesh Chandran C, Suraj Kamal, A Mujeeb and Supriya M H, “Generative adversarial learning for improved data efficiency in underwater target classification” , Engineering, Science and Technology 30 (2022) 101043 doi.org/10.1016/j.jestch.2021.07.006.	4.36
7	Raj Sha M M, Correya A A, Nampoori V P N, A Mujeeb” Laser ablated silicon nanoparticles with selected solvents : A comparison of thermal diffusivity under different concentrations” Optik (Stuttg) 247 (2021) 167881. https://doi.org/10.1016/j.ijleo.2021.167881	2.44
8	S H Keerthana, R Fathima, P Radhakrishnan, A Mujeeb. “Evaluation of stability of laser ablated colloidal Silver nanoparticles using dynamic laser speckle technique” , Optics 244 (2021) 167573, doi.org/10.1016/j.ijleo.2021.167573.	2.44
9	B. Anugop, M. Kailasnath, Effect of Au/Ag bimetallic nanoparticles in the lasing characteristics of dye doped microring embedded hollow polymer optical fiber , Materials Today: Proceedings (In press)	
10	P. Gitty, K. P. Mani, A. Deepti, P.S. Baby Chakrapani, P. Prabeesh,	2.464

	V. P. N. Nampoorei, M. Kailasnath, Structural and optical properties of dysprosium-doped hydroxyapatite nanoparticles and the use as a bioimaging probe in human cells , Luminescence 2022, 37(5), 758	
11	Arindam Sarkar, Roopa Venkataraj, Akshay Krishna R., Anugop B., V.P.N. Nampoorei, M. Kailasnath, Silver nanowire mediated random lasing in silica cladded dye doped polymer microstructure , Optics Communications, Volume 504, 2022, 127466	2.310
12	Manju Joseph, Roopa Venkataraj, M. Ramya, Kamal P. Mani, V.P.N. Nampoorei, M. Kailasnath, UV induced photocatalytic and antibacterial studies of zinc oxide nanoflowers prepared via casein assisted low-temperature method , Optik, Volume 247, 2021, 168034	2.443
13	M. Ramya, T.K. Nideep, V.P.N. Nampoorei, M. Kailasnath, Shape dependent heat transfer and nonlinear optical limiting characteristics of water stable ZnO nanofluid , Surfaces and Interfaces, Volume 26, 2021, 101345	4.837
14	Arindam Sarkar, V.P.N. Nampoorei, M. Kailasnath, Spectral tuning of dye doped hollow polymer optical fiber with silver doped micro ring , Optics Communications, Volume 496, 2021, 127134	2.310
15	Arindam Sarkar, Roopa Venkataraj, V.P.N. Nampoorei, M. Kailasnath, Silver nanoparticle assisted enhanced WGM lasing by silica microresonator , Optics Communications, Volume 494, 2021, 127045	2.310
16	Jessy Simon, V.P.N. Nampoorei, M. Kailasnath, Concentration dependent thermo-optical properties and nonlinear optical switching behavior of bimetallic Au-Ag nanoparticles synthesized by femtosecond laser ablation , Optics & Laser Technology, Volume 140, 2021, 107022	3.867
17	Ramya, M. Nideep, T. K. Nampoorei, V. P. N. Kailasnath, M. Studying the role of ZnO nanostructure photoanodes for improving the photovoltaic performance of CdSe QDSSCs , Journal of Materials Science: Materials in Electronics, 2021, 17837	2.478
18	Sony Udayan, R. Lakshmi, B. Anugop, P.P. Saipriya, Ajith Vengellur, M. Kailasnath, V.P.N. Nampoorei, Sheenu Thomas, Role of bio-nanotemplates on the lasing behavior of LDS 821 dye , Optics & Laser Technology, Volume 139, 2021, 106973	3.867

19	Jessy Simon, B. Anugop, V.P.N. Nampoore, M. Kailasnath, Effect of pulsed laser irradiation on the thermal diffusivity of bimetallic Au/Ag nanoparticles , Optics & Laser Technology, Volume 139,2021, 106954	3.867
20	Manju Joseph, V.P.N. Nampoore, M. Kailasnath, Low temperature structure tunability of zinc oxide nanostructures using milk protein casein , Surfaces and Interfaces, Volume 24, 2021, 101157	4.837
21	Jessy Simon, Sony Udayan, V.P.N. Nampoore, M. Kailasnath, Investigations on nonlinear optical properties and thermal diffusivity of gold nanoparticle embedded protein complex , Optics & Laser Technology, Volume 138, 2021, 106859	3.867
22	Sony Udayan, Drishya Elizebath, D.R. Sherin, Vakayil K. Praveen, Sini Sunny, Purushothaman Jayamurthy, T.K. Manojkumar, V.P.N.Nampoore, Sheenu Thomas. Hexamethine hemicyanine dye as a thermo-optical probe for serum albumin . Optics and Laser Technology 143 (2021), 107351.	3.867
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24	Alina C. Kuriakose, Sony Udayan, T. Priya Rose, V.P.N. Nampoore, Sheenu Thomas. Synergistic effects of CdS QDs – Neutral red dye hybrid system on its nonlinear optical properties . Optics and Laser Technology 142 (2021), 107261.	3.867
25	K R Vijesh, Titu Thomas, Manu Vaishakh, VPN Nampoore, Sheenu Thomas. Fluorescence tuning, all-optical switching and OR gate realization of phloroglucinol derived carbon dots . Optik, 248(2021), 168049.	2.443
26	Sony Udayan, Alina C Kuriakose, Priya Mary, D R. Sherin, T K Manojkumar, VPN Nampoore, Sheenu Thomas. Experimental and theoretical investigation on the nonlinear optical properties of LDS 821 dye in different solvents and DNA . Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy 272 (2022) 121011	4.098

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28	Karthika Sankar, Safna Saif, EN Lafeef, T Priya Rose, Theoretical analysis on transmission characteristics of quasi-periodic Fibonacci and Octonacci one-dimensional superconductor–dielectric photonic crystals , The European Physical Journal Special Topics (2022)	3.63
29	Karthika Sankar, Rahna Manoharan, Safna Saif, T Priya Rose, An optimum design of one dimensional photonic crystal for solar cell applications , IOP Conf. Ser.: Mater. Sci. Eng, 1219, 012047 (2022)	-
30	Alina C.Kuriakose, Sony Udayan, T.Priya Rose, V.P.N.Nampoori, SheenuThomas, Synergistic effects of CdS QDs – Neutral red dye hybrid system on its nonlinear optical properties , Optics & Laser Technology, 142,107261 (2022)	3.867
31	A Subashini, V Veeramani, K Thamaraiselvi, Aurelien Crochet, Priya Rose, Reji Philip, R Ramesh Babu, K Ramamurthi, Synthesis, growth and characterization of benzylideneaniline compounds: N-(4-bromobenzylidene)-4-fluoroaniline and N-(4-bromobenzylidene)-4-methoxyaniline , Optical Materials, 117, 111081 (2021)	3.080
32	CS Praveen, Aleix Comas-Vives, Activity Trends in the Propane Dehydrogenation Reaction Catalyzed by MIII Sites on an Amorphous SiO₂ Model: A Theoretical Perspective , Topics In Catalysis, 65,242, 2022.	2.79
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34	P S Subin, A S Asha, K J Saji, M K Jayaraj, Spike-dependent plasticity modulation in TiO₂-based synaptic device , Journal of Materials Science: Materials in Electronics, 32, 13051–13061 (2021).	2.478

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36	P Hajara, T P Rose, M K Jayaraj, K J Saji, Influence of H₂S on the growth of sputter deposited Cu₂ZnSnS₄ thin film , IOP Conference Series: Materials Science and Engineering, 1166, 012008 (2021).	
37	K A Lazar, V J Cicily Rigi, D Divya, K J Saji, Effect of annealing on structural and optical properties of SnS₂ thin films grown by thermal evaporation and post sulphur annealing technique , IOP Conference Series: Materials Science and Engineering, 1166, 012004 (2021).	
38	A P Sunitha, O K Devika, K Nayana, K J Saji, T N Narayanan, Hydrothermally grown MoS₂ quantum dots for electrocatalytic applications , AIP Conference Proceedings, 2379, 030003 (2021).	0.4
39	P S Subin, K J Saji, M K Jayaraj, Plasticity and learning behavior emulated in a ZnO based transparent artificial synapse , Thin Solid Films, 737, 138924 (2021).	2.183
40	K V Vijoy, H John, K J Saji, Self-powered ultra-sensitive millijoule impact sensor using room temperature cured PDMS based triboelectric nanogenerator , Microelectronic Engineering, 251, 111664 (2022).	2.523
41	P Praveen, T P Rose, K J Saji, Top electrode dependent resistive switching in M/ZnO/ITO memristors, M= Al, ITO, Cu, and Au , Microelectronics Journal, 121, 105388 (2022).	1.605
42	V J Cicily Rigi, M K Jayaraj, K J Saji, Effect of substrate and substrate temperature on the deposition of MoS₂ by radio frequency magnetron sputtering , Journal of Vacuum Science & Technology A, 40, 032201 (2022).	2.427

b	Books
Sl.No.	Title of Book
1	Proceedings of National Photonics Symposium 2020, Praveen C S and Pramod Gopinath (Editors), IIP Publishing, 2021 ISBN: 978-1-68576-133-2
2	Fathima, A Mujeeb, "Laser assisted synthesis of surfactant free Au-Ag alloy nanoparticles in water", First International Conference on technologies for smart green society 29-30 November 2021.
3	R Fathima, A Mujeeb, "Tailoring the Photo Thermal Properties of Natural Curcumin Dye with Laser Generated Silver Nanoparticles" The Frontiers in Optics + Laser Science Conference (FiO LS) Organised by OSA October 2021.
4	Keerthana S H, P Radhakrishanan, A Mujeeb " Real time monitoring of curing process of fast drying epoxy resin using dynamic laser speckle imaging", Kerala Science Congress January 2022
5	Fathima, A Mujeeb, "Nd: YAG Laser Ablated Non-Hazardous Platinum-Gold Alloy Nanoparticles For Catalytic Degradation Of Methylene Blue Dye" Kerala Science congress, 10 - 12 February 2022.
6	Proceedings of National Photonics Symposium 2021, Dr. Priya Rose T, Prof. Pramod Gopinath, ISBN: 978-93-92592-38-9

16. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Sl.No.	Name of Participant	Name of Seminar / Conference/ Workshop	Role
1	Pramod Gopinath	International Conference on Recent Trends in Photonics (NPS-2022), International School of Photonics, Cochin University of Science & Technology, during Feb 27- Mar 1, 2022.	Conference Chair
2	Pramod Gopinath	International Conference NANO icon 2022 held at Inter University Centre for Nanomaterials and Devices, Cochin University of Science & Technology, during Jan 11-15, 2022.	Conference Chair

3	Pramod Gopinath	International Conference on Recent Trends in Photonics (NPS-2021), held at International School of Photonics, Cochin University of Science & Technology, during Feb 27- Mar 1, 2021	Conference Chair
4	Pramod Gopinath	Workshop on Rendering Your Scientific Output (RYSO-21), held at International School of Photonics, Cochin University of Science and Technology during Nov 22-30, 2021	Invited Speaker
5	Dr. Saji K J	Refresher Course in Physics, from 27 October – 10 November, 2021	Participant
6	Muhammad Rishad KP	National photonics symposium 2022	Organizing committee member and participant
7	Muhammad Rishad KP	Workshop on Rendering your Scientific Output (RYSO-21), organized by the International School of Photonics, Cochin University of Science and Technology, from 22-30 November 2021	Participant
8	Dr. Priya Rose T	NANOicon	Co-chair
9	Dr. Priya Rose T	NPS-2022	Member, Organizing committee
10	Dr. Priya Rose T	RYSO	Resource person
11	Dr. Praveen C. S.	Young Researchers Workshop on Machine Learning For materials conducted by ICTP, Trieste, Italy (Online) from 09.05.2022 to 13.05.2022	Resource person
12	Dr. Praveen C. S.	NANOicon-2022 pre-conference workshop organized by the Inter University Centre for Nanomaterials and Devices (IUCND), Cochin University of Science and Technology, Kerala, on 7 Jan 2022.	Co-ordinator

13	Dr. Praveen C. S.	Online workshop entitled “D.F.T. investigation of the electronic structure using Quantum Espresso and BURAI software (Atoms, Molecules, Compounds and Crystalline Materials)” organized by the Centre for Research, Innovation and Training (CRIT), IIS (Deemed to be University), Jaipur in collaboration with Gramin Mahila Mahavidyalaya, Sikar from 9 -17 February, 2022.	Resource person
14	Dr. Mohamed Ameen P	“Teacher Professional Development Program on Mathematical modeling using technology-enabled and student-centered learning”, 23-24 September 2021. Organized by the Dept. of Physics, CUSAT.	Attended
15	Dr. Mohamed Ameen P	International Conference on Recent Trends in Photonics, NPS 2022, Organized by the International School of Photonics, CUSAT.	Convener
16	Anugop B	International Conference on Recent Trends in Photonics (NPS 2022) held in online mode during 27 Feb- 01 March 2022 organized by the International School of Photonics, CUSAT.	Participant
17	Anugop B	ICAMIS 2022- International conference organized by Department of Science and Humanities, MLR Institute of Technology, Telangana during 18th-19th February, 2022	Participant
18	Praveen P	Workshop on Rendering Your Scientific Output (RYSO-21) organized by the International School of Photonics, CUSAT from 22 to 30 November 2021.	Participant
19	Praveen P	Golden Jubilee International Conference NANOicon 2022 held in online mode during 11- 15 January 2022 organized by Inter University Centre for Nanomaterials and Devices, CUSAT.	Participant

20	Praveen P	International Conference on Recent Trends in Photonics (NPS 2022) held in online mode during 27 Feb - 01 March 2022 organized by the International School of Photonics, CUSAT.	Participant
21	Cicily Rigi V J	Workshop on Rendering Your Scientific Output (RYSO-21) organized by the International School of Photonics, CUSAT from 22 to 30 November 2021.	Participant
22	Cicily Rigi V J	Golden Jubilee International Conference NANOicon 2022 held in online mode during 11- 15 January 2022 organized by Inter University Centre for Nanomaterials and Devices, CUSAT.	Participant
23	Cicily Rigi V J	International Conference on Recent Trends in Photonics (NPS 2022) held in online mode during 27 Feb - 01 March 2022 organized by the International School of Photonics, CUSAT.	Participant
24	Priya Mary N J	International Conference on Recent Trends in Photonics (NPS 2022) held in online mode during 27 Feb- 01 March 2022 organized by the International School of Photonics, CUSAT.	Participant
25	Priya Mary N J	Golden Jubilee International Conference NANOicon 2022 held in online mode during 11- 15 January 2022 organized by Inter University Centre for Nanomaterials and Devices, CUSAT.	Participant
26	Priya Mary N J	Workshop on Rendering Your Scientific Output (RYSO-21) organized by the International School of Photonics, CUSAT from 22 to 30 November 2021.	Participant

27	Priya Mary N J	Intellectual Property Rights Awareness Programme conducted by STIC, CUSAT.	Participant
28	Lakshmi R	International Conference on Recent Trends in Photonics (NPS 2022) held in online mode during 27 Feb- 01 March 2022 organized by the International School of Photonics, CUSAT.	Participant
29	Lakshmi R	Golden Jubilee International Conference NANOicon 2022 held in online mode during 11- 15 January 2022 organized by Inter University Centre for Nanomaterials and Devices, CUSAT.	Participant
30	Shilpa S	Workshop on Rendering Your Scientific Output (RYSO-21) organized by the International School of Photonics, CUSAT from 22 to 30 November 2021.	Participant
31	Shilpa S	International Conference on Recent Trends in Photonics (NPS 2022) held in online mode during 27 Feb- 01 March 2022 organized by the International School of Photonics, CUSAT.	Participant
32	Shilpa S	International Conference on Physics of Materials and Nanotechnology (ICPN) 2021, Mangalore University during October 28-30, 2021.	Participant
33	Shilpa S	International e- conference on Recent Advances in Physical Science ICRAPS-2021 organized under (UGC –STRIDE) Mahatma Gandhi University, Kottayam, in association with Bharata Mata College, Thrikkakkara, December 1-3, 2021.	Participant
34	Shilpa S	36th Plasma Symposium PLASMA 2021, Department of Physics, B.I.T Mesra, Jaipur Campus during December 13-15, 2021.	Participant

35	Athira T. Das	International Conference on Recent Trends in Photonics (NPS 2022) held in online mode during 27 Feb- 01 March 2022 organized by the International School of Photonics, CUSAT	Participant
36	Athira T. Das	Workshop on Rendering Your Scientific Output (RYSO-21) organized by the International School of Photonics, CUSAT from 22 to 30 November 2021	Participant
37	Jayaprasad K V	International Conference on Recent Trends in Photonics (NPS 2022) held in online mode during 27 Feb - 01 March 2022 organized by the International School of Photonics, CUSAT.	Participant
38	Lakshmi B	Workshop on Rendering Your Scientific Output (RYSO-21) organized by the International School of Photonics, CUSAT from 22 to 30 November 2021.	Participant
39	Lakshmi B	International Conference on Recent Trends in Photonics (NPS 2022) held in online mode during 27 Feb- 01 March 2022 organized by the International School of Photonics, CUSAT.	Participant
40	Lakshmi B	Golden Jubilee International Conference NANOicon 2022 held in online mode during 11- 15 January 2022 organized by Inter University Centre for Nanomaterials and Devices, CUSAT.	Participant
41	Syammohan V	International Conference on Recent Trends in Photonics (NPS 2022) held in online mode during 27 Feb- 01 March 2022 organized by the International School of Photonics, CUSAT.	Participant

42	Syammohan V	Workshop on Rendering Your Scientific Output (RYSO-21) organized by the International School of Photonics, CUSAT from 22 to 30 November 2021.	Participant
43	Hajara P	Workshop on Rendering Your Scientific Output (RYSO-21) organized by the International School of Photonics, CUSAT from 22 to 30 November 2021.	Participant
44	Hajara P	International Conference on Recent Trends in Photonics (NPS 2022) held in online mode during 27 Feb- 01 March 2022 organized by the International School of Photonics, CUSAT.	Participant
45	Karthika Sankar	International Conference on Recent Trends in Photonics (NPS 2022) held in online mode during 27 Feb- 01 March 2022 organized by the International School of Photonics, CUSAT.	Participant
46	Karthika Sankar	Workshop on Rendering Your Scientific Output (RYSO-21) organized by the International School of Photonics, CUSAT from 22 to 30 November 2021.	Participant
47	Karthika Sankar	Golden Jubilee International Conference NANOicon 2022 held in online mode during 11- 15 January 2022 organized by Inter University Centre for Nanomaterials and Devices, CUSAT.	Participant
48	Safna Saif	Workshop on Rendering Your Scientific Output (RYSO-21) organized by the International School of Photonics, CUSAT from 22 to 30 November 2021.	Participant

49	Safna Saif	Golden Jubilee International Conference NANOicon 2022 held in online mode during 11- 15 January 2022 organized by Inter University Centre for Nanomaterials and Devices, CUSAT.	Participant
50	Safna Saif	International Conference on Recent Trends in Photonics (NPS 2022) held in online mode during 27 Feb- 01 March 2022 organized by the International School of Photonics, CUSAT.	Participant
51	Maneesha M	Workshop on Rendering Your Scientific Output (RYSO-21) organized by the International School of Photonics, CUSAT from 22 to 30 November 2021.	Participant
52	Maneesha M	Golden Jubilee International Conference NANOicon 2022 held in online mode during 11- 15 January 2022 organized by Inter University Centre for Nanomaterials and Devices, CUSAT.	Participant
53	Maneesha M	International Conference on Recent Trends in Photonics (NPS 2022) held in online mode during 27 Feb - 01 March 2022 organized by the International School of Photonics, CUSAT.	Participant
54	Jose Antony V J	Workshop on Rendering Your Scientific Output (RYSO-21) organized by the International School of Photonics, CUSAT from 22 to 30 November 2021.	Participant
55	Jose Antony V J	Golden Jubilee International Conference NANOicon 2022 held in online mode during 11- 15 January 2022 organized by Inter University Centre for Nanomaterials and Devices, CUSAT.	Participant

56	Jose Antony V J	International Conference on Recent Trends in Photonics (NPS 2022) held in online mode during 27 Feb - 01 March 2022 organized by the International School of Photonics, CUSAT.	Participant
57	Anila Thomas	Workshop on Rendering Your Scientific Output (RYSO-21) organized by the International School of Photonics, CUSAT from 22 to 30 November 2021.	Participant
58	Anila Thomas	Golden Jubilee International Conference NANOicon 2022 held in online mode during 11- 15 January 2022 organized by Inter University Centre for Nanomaterials and Devices, CUSAT.	Participant
59	Anila Thomas	International Conference on Recent Trends in Photonics (NPS 2022) held in online mode during 27 Feb - 01 March 2022 organized by the International School of Photonics, CUSAT.	Participant
60	Arun pappachan	International Conference on Recent Trends in Photonics (NPS 2022) held in online mode during 27 Feb- 01 March 2022 organized by the International School of Photonics, CUSAT.	Participant
61	Arun pappachan	Golden Jubilee International Conference NANOicon 2022 held in online mode during 11- 15 January 2022 organized by Inter University Centre for Nanomaterials and Devices, CUSAT.	Participant
62	Arun pappachan	Workshop on Rendering Your Scientific Output (RYSO-21) organized by the International School of Photonics, CUSAT from 22 to 30 November 2021.	Participant

63	Reji Thankachan	Workshop on Rendering Your Scientific Output (RYSO-21) organized by the International School of Photonics, CUSAT from 22 to 30 November 2021.	Participant
64	Reji Thankachan	IEEE workshop on Bringing Research Focus on 7th April 2022	Participant
65	Sathe Mayur Anil	Workshop on Rendering Your Scientific Output (RYSO-21) organized by the International School of Photonics, CUSAT from 22 to 30 November 2021.	Participant
66	Sathe Mayur Anil	International Conference on Recent Trends in Photonics (NPS 2022) held in online mode during 27 Feb- 01 March 2022 organized by the International School of Photonics, CUSAT.	Participant

17. Role of Faculty in International/National organizations/Institutions/Editorial Board

Name of Faculty	Name of Organization	Role
Dr. Pramod Gopinath	International School of Photonics, CUSAT	Director
	Centre for Science in Society (C-SiS), CUSAT	Hon. Assistant Director
	Academic Council, CUSAT	Member
	Faculty of Technology, CUSAT	Member
	Board of Studies in Photonics, CUSAT	Member
	Board of Studies in Physics at St. Berchman's College (Autonomous), Changanassery	Member
	Board of Studies in Physics at St. Teresa's College (Autonomous), Ernakulam	Member

	Board of Studies in Physics at Rajagiri School of Engineering and Technology, Kakkanad, Cochin	Member
	Board of Studies in Physics at Sacred Heart College (Autonomous), Thevara, Cochin	Member
Dr. Pramod Gopinath	Board of Studies in Physics at Maharaja's College (Autonomous), Ernakulam	Member
	Board of Studies in Physics at St. Albert's College (Autonomous), Ernakulam	Member
	Apex Committee, Program Implementation Group, Research Council and Academic Committee of Inter University Centre for Nanomaterials and Devices (IUCND), CUSAT	Member
	ISP, CUSAT and IIT Madras - Academic and Research Collaboration	Coordinator
	Facility Management Committee of SAIF Kochi	Member (DST Nominee)
	KIIFB Project, CUSAT	Dept. Coordinator
	Technical Program Committee, Frontiers in Optics and Photonics 2021, Sept 24-27, 2021, IIT Delhi	Member
Dr. M. Kailasnath	Board of Studies in Photonics, CUSAT	Chairman
	Board of Studies in Photonics, Manipal University Dept. of Molecular and Atomic Physics	Member
	Board of Studies in Optoelectronics, University of Kerala	Member
	ERUDITE - Scholar In Residence Programme – A Scheme of the Kerala State Higher Education Council (KSHEC)	Co-ordinator
	The National University of Advanced Legal Studies (NUALS) General Council	Member

	UGC SC/ST Cell, Cochin University of Science and Technology	Member
	ERASMUS PLUS international mobility program Cochin University of Science and Technology	Co-ordinator
	Library Advisory Committee Cochin University of Science and Technology	Member
	International Cooperation agreement on student mobility within the framework of a bilateral exchange programme. ENSSAT Engineering School, University Rennes 1, France	Co-ordinator
	Faculty of Engineering and Technology, Mahathma Gandhi University	Dean

18. Awards/Honours/Fellowships etc. received

Sl. No.	Name of Participant	Name of Fellowship/Honour/Award	Awarding Agency
1.	Prof. (Dr). Pramod Gopinath	Fellow of Royal Society of Chemistry	Royal Society of Chemistry, UK
2	Praveen P	UGC SRF	University Grants Commission
3	Cicily Rigi V J	UGC SRF	University Grants Commission
4	Hajara P	NREF SRF	MNRE
5	Priya Mary N J	CSIR JRF	CSIR
6	Lakshmi R	University SRF	CUSAT
7	Athira T Das	DRDO-CUSAT	DRDO
8	Jayaprasad K V	University SRF	CUSAT

9	Shilpa S	KSCSTE Research Fellowship	KSCSTE
10	Lakshmi B	DST - WOS-A	DST
11	Syammohan V	CSIR-JRF	CSIR
12	Karthika Sankar	CSIR-SRF	CSIR
13	Safna Saif	CSIR-SRF	CSIR
14	Sathe Mayur Anil	University JRF	CUSAT

19. Sponsored Research Projects				
Sl. No	Title	Sponsoring Agency	INR of Rs.in Lakhs	Investigator(s)
1	Ultrafast laser beamlines for Multidisciplinary, Multitasking Research Programmes	Chancellor's Award Project 2019	4 crore	Prof. M K Jayaraj, Prof. N Manoj, Dr. Riju Isaac, Dr. Aldrin Antony, Dr. Sailaja, Dr. Saji K J, Dr. Baby Chakrapani, Dr. Anoop
2	Photothermal and nonlinear optical characterization of rare earth doped nanoparticles for bioimaging applications	DST-SERB	34.99 Lakhs	Dr. M. Kailasnath
3	DST-FIST Programme	DST	91 Lakhs	Director, ISP
4	DST-INSPIRE	DST		Dr. Praveen C S
5	Magnetoplasmonic studies on cobalt and nickel based nanostructures (Period from 21-02-2019 to 20-02-2022)	Department of Science and Technology (KIRAN division)	25.79 Lakhs	Lakshmi B (Research scholar, Principal Investigator) Prof. Pramod Gopinath (Project Mentor)

20. Research Programmes and Activities		
Sl.No	Problem/Topic	Investigator (s)
1	Deposition of 2D MoS ₂ by RF sputtering	Dr. Saji K J
2	Polymer memristors	Dr. Saji K J
3	Triboelectric nanogenerators	Dr. Saji K J
4	Artificial synapses	Dr. Saji K J
5	Thin film transistors	Dr. Saji K J

21. Seminar/Conference/Workshop/Refresher Courses conducted by the Department				
Sl. No	Title	Duration	Coordinator	Funding Agency
1.	International Conference on Recent Trends in Photonics (NPS-2022)	Feb 27- Mar 1, 2022	Dr. Mohamed Ameen P	CUSAT
2.	Rendering Your Scientifics Output (RYSO-2021)	Nov 21-30, 2021	Dr. Saji K J Dr. Praveen C S	
3.	Pre-conference workshop-organized jointly with Inter University Centre for Nanomaterials and Devices (IUCND), CUSAT	January 1, 2022	Dr. Praveen C S	
4.	'Advanced Molecular Dynamics Simulations' jointly organized with Katmandu University, Nepal, and Scidart academy	Sep 6-17, 2021	Dr. Praveen C S	Katmandu University

22. Consultancy Work				
Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency	
	Nil			



Cochin University College of Engineering, Kuttanad

ANNUAL REPORT 2021-22

**Name of the Department : COCHIN UNIVERSITY COLLEGE OF
ENGINEERING KUTTANAD (CUCEK)**

Brief History of the Department

Looking back to the eventful history of the Cochin University College of Engineering Kuttanad (CUCEK), Pulincunnu would invoke a mixed feeling in the mind of a CUCEK lover. The only one of its kind in the locality around, it has the capacity to grow beyond a mere Engineering College or a University Department. Offering four engineering under-graduate courses, it has been initiated under the aegis of the CUSAT on 21st October 1999 as a University own department outside its main campus, in the picturesque piece of land in Pulincunnu, Alappuzha district. Being formally inaugurated on 25th of October 1999 in the presence of Syndicate members including Dr. K C Joseph, the then MLA of Kuttanad and the visionary behind it; and Sri. James K. J., the Special Officer of CUCEK, the College began its academic activities in rented buildings which belonged to the St. Mary's ITC, Pulincunnu and the St. Joseph's HSS, Pulincunnu. There were 192 students in four B.Tech branches, Computer Science and Engineering, Electronics and Communication Engineering, Information Technology and Mechanical Engineering in the first batch (1999-2003). The faculty members were deputed from the Centre for Undergraduate Studies in Engineering (now, the School of Engineering), CUSAT and recruited on contract basis. The experience and guidance from many of the senior faculty members benefitted the student and junior faculty community of the College.

The College flourished into an institution offering six undergraduate (B.Tech) programs in Engineering (Civil, Computer Science, Electrical and Electronics, Electronics and Communication, Information Technology and Mechanical Engineering) and a post graduate program, Master of Computer Applications (MCA), within four years of its inception. An educational institution of this kind offering many technical and professional courses and admitting students from all parts of the country and initiated in a place remote from the main transportation system and townships had to face many hardships, in the recent past. But, if it is viewed from a global perspective, it could be noticed that the best educational institutions were groomed up in rural areas which are away from distractions and pollution which are part of urbanization. Kuttanad has been a place which is surrounded by many water bodies, like lakes and rivers and with limited

land transportation network. It could not offer much to education including schooling, in the past. But, given the agriculture-based living of people, pollution-less atmosphere, availability of abundance of land, encouragement and enthusiasm of the people around, possibility of research elements, like soil, water, environment, structures, appropriate technologies, etc. a catalytic development of the institution is very much promising. The institute is standing tall in the middle of the historical rice bowl of Kerala in spite of minor elements of pulling down.

The University procured nearly 40 acres of land in Pulincunnu and constructed semi-permanent buildings for the conduct of classes and administration by 2000-2001. The College was shifted to own place by the academic year 2002-2003. Initiatives to construct a permanent building became fruitful when the first five storied building of Kuttanad having 4000 square metre habitable space was opened as the main building of CUCEK by the then Chief minister of Kerala, Sri. V S Achuthanandan, on 9th January 2010. A series of laboratory buildings, a library building and limited sporting facilities are housed by a mini-campus of CUCEK in nearly 3.5 acres apart from the main campus of academic and administrative infrastructure facilities.

Sri. James K J was the Special Officer and in charge of the Principal, CUCEK for the initial five formative years of the College. Under his vision and guidance the College had been developed into a full-fledged institution. Dr. M I Thampan, Dr. Preetha Mathew K, Sri. Oomman Samuel, Dr. Job P A, Dr. Josephkutty Jacob, Dr. Mathew Cherian and Prof. (Dr.) P. S. Sreejith were the formal Principals of the College. All the permanent faculty members of the College have either secured their doctorate degree in their respective disciplines or pursuing for the same and have experience of more than 15 years. The model set and guidance imparted by them lead the young faculty members and the students in the right path. The students have achieved many milestones, including academic ranks in the University, selection in competitive examinations, like the GATE and other UPSC examinations, Civil Service examinations, sporting goals, etc., under the constant inspiration and motivation of the faculty, in the past. Apart from the eight academic divisions (Civil Engineering, Computer Science and Engineering, Electrical and Electronics Engineering, Electronics and Communication Engineering, Information Technology, Mechanical Engineering, Applied Science & Humanities and Computer Applications) there are two units of National Service Scheme, Placement and Guidance cell, Arts Club, etc., working to the benefit of the community in and around the campus.

The College got the status of **Research Centre** of the Cochin University of Science & Technology during 2017 and there are 63 Research Scholars doing their research work under Full-time/Part-time mode, at present.

The College can play a vital role in the upliftment of the society around in terms of education, living standards, solving social and environmental issues, etc. If driven in the right path, the institution has the capacity to excel not only in regular academics and research, but as a role model for community education to the country as a whole.

Programmes of Study/Research

- a. B.Tech : Civil Engineering, Electrical & Electronics Engineering, Electronics & Communication Engineering, Mechanical Engineering, Computer Science & Engineering, Information Technology
- b. MCA
- c. Ph.D

Faculty Members

a. Permanent

Sl.No	Name	Designation	Qualification	Specialization
1	Dr. Josephkutty Jacob	Associate Professor	Ph.D	Power Systems
2	Dr. Sunilkumar N	Professor & Principal	Ph.D	Computational Mechanics, Structural Engineering
3	Dr. Mathew Cherian	Associate Professor	Ph.D	Mechanical & Management
4	Dr. Senthil Prakash M N	Associate Professor	Ph.D	Marine Hydrodynamics
5	Dr. Shiyas C R	Associate Professor	Ph.D	Industrial Engineering
6	Dr. Manoj V J	Associate Professor	Ph.D	Electronics & Communication Engineering
7	Dr. Preetha Mathew K	Associate Professor	Ph.D	Cryptography
8	Dr. Asaletha R	Associate Professor	Ph.D	Chemistry
9	Smt. Salaji S	Associate Professor	M.Tech	Mechanical Engineering
10	Sri. Thomas T	Associate	M.Tech	Thermal Engineering

		Professor		
11	Smt. Priya R Krishnan	Associate Professor	M.Tech	Drives and control
12	Sri. Sajan Joseph	Associate Professor	M.Tech	Circuits Signals and systems
13	Smt. Shiny Paul	Associate Professor	M.Tech	Drives and control
14	Sri. Anilkumar K K	Associate Professor	M.Tech	Electronics & Communication Engineering
15	Sri. Manoj Kumar P	Assistant Professor	M.Tech	Software Engineering
16	Smt. Bindu P Kalakkalparambil	Associate Professor	M.Tech	Computer & Information System
17	Smt. Jayaprabha P	Associate Professor	M.Tech	Information Technology
18	Sri. Jabir K V T	Associate Professor	M.Tech	Information Technology
19	Sri. Harikrishnan D	Associate Professor	M.S	Information Technology
20	Smt. Mini Mole A	Associate Professor	M.Tech	Civil Engineering

b. Contract

Sl.No	Name	Designation	Qualification	Specialization
1	HARIKRISHNAN T K	Assistant Professor	M. Tech	CAD CAM
2	SAJIN K	Assistant Professor	M. Tech	CAD CAM
3	DEEPU J	Assistant Professor	M.Tech	Manufacturing Engineering
4	BINEESH MADHU	Assistant Professor	M. Tech	CADD
5	YADHU.G	Assistant Professor	M. Tech	Industrial Engineering & Management

6	Asif Muhammad	Assistant Professor	M. Tech	Mechanical Engineering with specialization in Industrial Refrigeration & Cryogenic Engineering
7	HARIKRISHNAN B	Assistant Professor	M.Tech	Thermal Engineering
8	HAFEESA M. HABEEB	Assistant Professor	M.Tech	Computer Science & Engineering
9	SANTHIKIRSHNA M S	Assistant Professor	M. Tech	Computer Science & Engineering
10	ANITHA MARY M O CHACKO	Assistant Professor	M. Tech	Computer Science & Engineering with Information System
12	ASWATHY SHAJI	Assistant Professor	M. Tech	Computer Science & Engineering
13	ARYA CHANDRAN	Assistant Professor	M. Tech	Image Processing
14	DEEPA NAIR	Assistant Professor	MCA	Computer Application
15	RADIKA B	Assistant Professor	MCA	Computer Application
16	AKSHAYA K	Assistant Professor	MCA	Computer Application
17	SREELEKSHMI R	Assistant Professor	MCA	Computer Application
18	ANOOP S	Assistant Professor	M.Tech	Computer Science and Engineering
19	NIDHIN SANI	Assistant Professor	M. Tech	Network & Internet Engineering
20	SREELAKSHMI H	Assistant Professor	M. Tech	Networking
21	VINEETH M V	Assistant Professor	M. Tech	Computer Science

22	SREEDEVI SREEDHARAN	Assistant Professor	M. Tech	Computer Science and Engineering
23	NAKUL SASIKUMAR	Assistant Professor	M. Tech	Power Systems
24	GEETHU ZACHARIA	Assistant Professor	M. Tech	Power Electronics
25	SARIKA E P	Assistant Professor	M. Tech/Ph.D	Solar Photo Voltaic System
26	SANKARAN NAMBOOTHIRI	Assistant Professor	M. Tech	Electronics and Drives
27	RAJI REGHUNATHAN	Assistant Professor	M. Tech	Power Systems
28	ABIN JOHN JOSEPH	Assistant Professor	M. Tech	Communication System
29	AKHILA L	Assistant Professor	M. Tech	Applied Electronics
30	DR.SETHU LAKSHMI P	Assistant Professor	Ph.D	Wireless Technology
31	NISHANTH .R	Assistant Professor	M. Tech	Applied Electronics
32	MALINI MOSHAN	Assistant Professor	M. Tech	Microwave & Television Engineering
33	JAYA SUKES	Assistant Professor	M.Tech	Signal Processing
34	SUJITH P S	Assistant Professor	ME	Communication Systems
35	DR.PARVATHY A.R	Assistant Professor	M. Tech/Ph.D	Communication Electronics
36	NEETHU LUKOSE	Assistant Professor	M. Tech	Infrastructure Engineering
37	SREELEKSHMI.R	Assistant Professor	M. Tech	Computer Application
38	KAVYA M S	Assistant Professor	M. Tech	Geo Technical Engineering
39	ANJANA JOSE	Assistant Professor	M. Tech	Environmental Engineering

40	SREELEKSHMI.K.NAIR	Assistant Professor	M. Tech	Structural Engineering & Construction Management
41	AARSHA BALAN	Assistant Professor	M. Tech	Computer Aided Structural Engineering
42	HARIJA K.S	Assistant Professor	M. Tech	Structural Engineering
43	NIGIL M	Assistant Professor	M. Tech	Transportation Engineering
44	Dr. VARGHESE MATHEW	Assistant Professor	P.hD	Material Science
45	RAJENDRAPRASAD M P	Assistant Professor	Msc	Mathematics

In addition to the above, Guest Lecturers were also engaged during the year.

Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
1	Malini Mohan	Nil	Dr. Manoj V J	Low Complexity Digital Filter Design
2	Minimole A	Nil	Dr. Sunilkumar N	Crack Propagation analysis in Engineering structures by numerical methods
3	Priya R Krishnan	Nil	Dr. Sunilkumar N	Multi physical Analysis of Electrical System using mesh based and mesh less method
4	V Anjali	Nil	Dr. Sunilkumar N	Solution to an Eigen value problem through a mesh-free method
5	Chery A Menamparamban	Nil	Dr. Sunilkumar N	Analysis of amorphous materials through FEM and mesh-free methods
6	Kunjumon Job	Nil	Dr. Sunilkumar N	Sustainable foundation practice in Kuttanad area- Analytical and Experimental study

7	RemyaGopalakrishnan	Nil	Dr. Manoj V J	Design of low complexity digital filters
8	Sunil C Behanan	Nil	Dr. Sunilkumar N	Response analysis of a two tier OHSR under dynamic force
9	Jittu Varghese Kurian	Nil	Dr. Job P A	Hybrid ceramic nanolayer coating on internal combustion engine cylinder liner for improving fuel efficiency and reducing harmful emissions
10	V L Divya	Nil	Dr. Job P A	Efficient and Secure Cloud Spatial Management
11	Cheeru G Suresh	Nil	Dr. Job P A	Fuel cell power management for electric vehicle
12	Harikrishnan T K	Nil	Dr. Job P A	An Alternate Approach to Hybrid Vehicle Technology”
13	Sajin K	Nil	Dr. Job P A	Analysis of Fatigue Crack Growth Behaviors of Propeller Shaft of Automobiles under Mode I and Mixed Mode Loading
14	Shyam P N	Nil	Dr. Job P A	Design of Organization for Sustainability
15	Nayana R	Nil	Dr. Sunilkumar N	Optimization and Application of Hybrid Numerical Methods in Earthquake Resistant Structures
16	Naveen S	Nil	Dr. Manoj V J	Application of Digital Image Processing
17	Akhila L	Nil	Dr. Manoj V J	Digital Image Processing for Steganography
18	JyothishChandran G	Nil	Dr. Manoj V J	Delta-Sigma Data Converters

19	Nidhin Sani	Nil	Dr. Manoj V J	Wireless Sensor Network Applications
20	Bindu P Kalakkalparambil	Nil	Dr. Preetha Mathew K	Studies on abstractions and issues in system software
21	Princy Ann Thomas	Nil	Dr. Preetha Mathew K	Uconfidence, Non Intrusive Active User Authentication Using Biometrics
22	Shibu V	Nil	Dr. Preetha Mathew K	Implementation of Network Security Systems
23	Sreelakshmy H	Nil	Dr. Preetha Mathew K	Three Factor Authentication Using Fingerprint Fuzzy Vault
24	Sam Varghese	Nil	Dr. Preetha Mathew K	Data Authentication
25	Shyamraj R	Nil	Dr. Shiyas C R	Artificial Neural Networks in Business Forecasting
26	Vineetha G R	Nil	Dr. Shiyas C R	Optimization of Supply Chain Systems Using Evolutionary Algorithms
27	Radhika B	Nil	Dr. Shiyas C R	Applications of evolutionary computing in supply chain networks and routing.
28	Sreeraj C	Nil	Dr. Mathew Cherian	Optimization of Supply Chain Management Strategies in Continuous Process Industry
29	Promod P Mani	Nil	Dr. Mathew Cherian	Frame work for the Integrated Resource Efficiency and Sustainable Technology (IREAST) for Mineral Processing Industry
30	Baiju V	Nil	Dr. Mathew Cherian	Incorporation of green practices in supply chain of cashew nut industry

31	Muhammed Jasim	Nil	Dr. Mathew Cherian	Role of supply chain management in traditional industry
32	Alice Joseph	Nil	Dr. Mathew Cherian	Framework and Method to Provide Privacy and Security of Big Data
33	Sreeja Nair M P	Nil	Dr. Mathew Cherian	Alternate approaches to defend ddos attack
34	Neethi S Pillai	Nil	Dr. Josephkutty Jacob	Solar Powered Sensorless Brushless DC Motor with Initial Rotor Position Estimation for Traction Purpose
35	Shiju Ramachandran	Nil	Dr. Josephkutty Jacob	Maximum Power Point Tracking For Partially Shaded Photovoltaic Arrays
36	Kanaka Xavier	Nil	Dr. Josephkutty Jacob	Analysis of Fatigue Crack Growth Behaviors of Propeller Shaft of Automobiles under Mode I and Mixed Mode Loading
37	Abin John Joseph	Nil	Dr. Asaletha R	Wireles Chemical Sensor Network
38	Aiswarya K Narayanan		Dr. Asaletha R	High Voltage sensor using electro- optic polymer
39	Arun Sebastian		Dr. Asaletha R	Study of Proprties of polymer composites and graphines used in electrical engineering applications
40	Asif Mohammed S		Dr. Asaletha R	Formation and analysis of petroloum gas hydrates; a special emphasis on Propane recovery, feasibility studies on storage and accumulation of petroleum gases as hydreates

43	Sreejith A R		Dr. AsalethaR	Preparation and applications of various polytronic devises derived from conductive composites
44	Victor Jose		Dr. Josephkutty Jacob	Artificial soiling analysis of solar panels to optimize the tilt angle at 5 climate zones of India
45	Agath Martin		Dr. Shiyas CR	Placement of Nods in Vireless sensor Network
46	Anju Mary Ealias		Dr. Sunilkumar N	New Polymer composite for Bund Protection
47	Balram S		Dr. Shiyas CR	Quality Engineering Practices in Indian Model Device Industry
48	Ganga G		Dr. Senthil Prakash	An investigation on application and impact od Block chain technology for Business enterprise
49	Rahul R		Dr. Job PA	Microstructural Evaluation and Mechanical Characterisation of friction stir welded light weight alloys
50	NeethuLukose		Dr. Sunilkumar N	A-GIS based Flood Risk Management using Remote Sensor (RS) Data: A case study from kuttanadu Region of Alappuzha District
51	Ancy Sara Varghese		Dr. Josephkutty Jacob	Development of Online Monitoring Methods for Detection and Localization of Deformations in Transformer Windings
52	Kalyani R		Dr. Josephkutty Jacob	Efficient operation of Distribution system using optimal DC Placement

53	HaseenaBeegum		Dr. Sunilkumar N	Numerical Modeling of heavy metal removal from Contaminated water in Kuttanad wet land
54	JishaBalakrishnan		Dr. Sunilkumar N	Displacement based on Seismic response study of Structures From Construction and Demolition Waste
55	Santhikrishna MS		Dr. Harikrishnan D	construction of magnetic Resonance imaging images from computerized Tomography images using Deep Learning Technique.
56	Jithin Jose		Dr. Josephkutty Jacob	Efficiency improvement in Renewable Energy System
57	Manojkumar P		Dr. Josephkutty Jacob	identification of cognitive process during object oriented programming and development of an intelligent tutoring system for C++ using Buggy Model
58	Anoop John		Dr. Shiny Paul	Analysis of different switching topologies in the performance of PMSM Drives and Development Control Algorithm for Optimum Selection
59	ArunSankar		Dr. Senthil Prakash	Green Energy Efficiency improvement in ship Propulsion using CFD

60	Chandini Mariam Chacko		Dr. Asaletha R	Investigation on the nature-based solutions for environmental problems and exploring potential of bio-polymers and their charecterisation for environmental allied applications.
61	Gayathri TJ		Dr. Sunilkumar N	Effecet of wind on high rise buiding
62	Vijeesh VS		Dr. Shiny Paul	low cost and reliable control strategy of solar H-Bridge inverter under low voltage ride through condition
63	Rakesh R		Dr. Shiny Paul	Modellng and Analysis of a New MPPT Technique for grid connect PV systems

Administrative Personnel (Permanent)

Sl.No.	Designation	No. of Posts
1	Assistant Registrar	1
2	Section Officer	2
3	Assistant	4
4	Computer Assistant	2
5	Office Attendant	4

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1	B.Tech	88	45	133
2	MCA	48	13	61
3	Ph.D	6	5	11

Research Facilities**a. Laboratories**

SI No	Division	Laboratory
1	Information Technology	One Computer Lab with 34 Computers
2	Computer Science & Engineering	Programming Lab Microprocessor Lab System software Lab Network Lab
3	Civil Engineering	Strength of Materials, Concrete Laboratory, Geotechnical Laboratory, Transportation Laboratory, Environmental Laboratory, Survey Laboratory, Non-Destructive testing Laboratory

b. Major equipments

SI No.	Division	Equipments
1	Information Technology	One Server, One Scanner, 3 Printers
2	Computer Science & Engineering	Wifi
3	Civil Engineering	CTM, CBR, Los-Angeles Compression Testing machine, Direct Shear, Vane Shear Machine, UCC Testing Machine, Consolidation Testing Machine, Concrete Mixer, Sieve Shake, Compaction Factor, Total Station, Theodolite, Dumpy Level, Ultrasonic Pulse Velocity Test, Schmidt Rebound Hammer, Anemometer, Lux Meter, Impact Testing Machine, Torsion Testing Machine, Fatigue Testing Machine, Spring Test Machine, Rockwell Hardness Testing Machine, Atterberg, Pycnometer, Light & Heavy Compaction Equipment, Hydrometer, Core Cutter, Sand Replacement Apparatus.

c. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
13463	50

Ph.Ds Awarded : 3**Consultancy Work**

Sl. No.	Name of Consultancy	Title of Consultancy Work	Name of Consultant	Sponsoring Agency
1	Kitco, Ernakulam	Structural Vetting of Accademic complex CUSAT	Prof. Dr. Sunilkumar N	
2	Kitco, Ernakulam	Cargo complex, Kannur Airport	Prof. Dr. Sunilkumar N	
3	Agri Engineering Alappuzha	Design of Godown and Vehicle shead, veeyapuram	Prof. Dr. Sunilkumar N	



Central Office For University Hostels

ANNUAL REPORT FOR THE YEAR 2021-2022

Name of the Department : Central Office for University Hostels

Brief History of the Department : Central Office of University Hostels is established in 1971. There are 13 hostels under the control of this office. Out of the 13, 7 are boys' hostels and 6 are girls' hostels. Total number of students allotted for the year 2021-22 is 2111 (boys: 986 & girls 1125).

Sl. No.	Hostel	Eligibility
1	Sanathana Hostel for Boys	UG First year
2	Sarovar Hostel for Boys	PG and UG Seniors
	Sarovar research Floor for Boys	Research (PhD)
3	Siberia Hostel for Boys	PG and UG Seniors
4	Swaraj Hostel for Boys	PG and UG (OBC)
5	Sagar Hostel for Boys	PG and UG (SC/ST/OEC)
6	Sahara Hostel for Boys	SOE UG
7	Cochin University Marine Science (CUMS) Hostel for boys	Research (PhD) and PG
8	Anaswara Hostel for Girls	PG and UG Seniors
9	Aiswarya Hostel for Girls	PG and UG First year
10	Athulya Hostel for Girls	Research (PhD)
11	Ananya Hostel for Girls	PG and UG (OBC)
12	Anagha Hostel for Girls	PG and UG (SC/ST/OEC)
13	Alakananda Hostel for Girls	SOE UG

Among the above, Sagar, Swaraj, Anagha and Ananya are Post Matric Hostels constructed by the SC/ST Welfare Department, Government of Kerala and handed over to the University.

100% seats of Athulya Girls Hostel and 60 seats of Sarovar boy's hostel are earmarked for M.Phil. and Ph.D. students. Students belonging to SC/ST/OEC and OBC communities are given admission in Sagar & Swaraj (for Boys) and Anagha & Ananya (for Girls) hostels as per the direction given by the SC/ST Welfare Department.

- Hostel No. VIII - Sagar : 60% seats for SC/ST/OEC students and 40% seats as per University rules
- Hostel No. IX - Anagha : 60% seats for SC/ST/OEC students and 40% seats as per University rules
- Hostel No. X - Ananya : 60% seats for OBC students, 20% seats for SC/ST/OEC students and 20% seats as per University rules
- Hostel No. XI – Swaraj : 60% seats for OBC students, 20% seats for SC/ST/OEC students and 20% seats as per University rules

Further, the Standing Committee for the Welfare of SC/ST in its meeting held on 31.7.2008 resolved to give preference in the 40% seats to SC/ST/OEC students in the Sagar and Anagha hostels, if there are additional applications.

2019-20 onwards, the hostel admission procedures are completely done through online mode. The students are directed to submit their applications via online through the link provided in the University website and the credentials of the same will be verified by their parent department. Priority first in allotments have been given for SC/ST/OEC and differently abled students.

The admission details pertaining to 2021-22 academic year is given below.

Sl. No.	Name of Hostel	Student strength	
1	Sanathana	162	
2	Siberia	92	
3	Sarovar	188 59 (Research)	
4	Sagar	85	
5	Swaraj	97	
6	CUMS	40	
7	Sahara	263	
8	Aiswarya	213	
9	Athulya	150	
10	Anaswara	455	
11	Anagha	92	
12	Ananya	87	
13	Alakananda	128	

Centre for Information Resource Management (Cirm)

ANNUAL REPORT 2021-22

Name of the Department: Centre For Information Resource Management

Brief History of the Department :

The Center for Information Resource Management (CIRM), conceived by the Department of Computer Science, was established in 1998 with the help of the MHO-INFOCUS project of the Netherlands Government. CIRM has been functioning as an Independent Centre with a full-fledged Office under the School of Computer Science Studies umbrella.

The main objective of CIRM is to act as the nodal center for all the University's information technology resources. It involves designing, installing, and maintaining the IT infrastructure, including the network, software resources, and IT-enabled services and facilities. CIRM also provides staff training, user support, and specialized consulting services to users and external clients on demand. The domain name cusat.ac.in is registered with the National Centre for Software Technology (NCST) India. The portal www.cusat.ac.in serves as the single window access point to all the information resources and IT-enabled services of CUSAT, which CIRM manages. The campus network is seamlessly integrated into the Internet through broadband connectivity available to the user community on a 24x7 basis.

CIRM manages the University's central information technology infrastructure and provides many services and applications in academic and administrative activities. Support is provided in the following layers:

- A communications and collaboration infrastructure robust enough to support advanced network, voice, and web-based services.
- Applications and services for departments and end-users, including email, calendaring, wireless connectivity, web authentication, and server hosting. These services are supported by a help desk, contract-support staff, online self-help, and training.
- Applications and services that support administration, including recruitment, e-tendering, public relations, Pensioners and student id card printing and general administration
- Training to the students, faculty, and staff in most modern technologies and applications on demand

Network Infrastructure

University has a solid campus-wide Gigabit Ethernet backbone offering an aggregate bandwidth of 10Gbps between switches using single and multi-mode fiber. The University currently owns a 300Mbps (1:1) leased line from the ISP (BSNL), sharing 100Mbps to Lake side campus and 70 Mbps to Kuttanad campus. University is also part of high-speed data communication network with 1 Gbps shared connectivity provided by National Knowledge Network (NKN) and 50Mbps connectivity through Power Grid to Main Campus. The network security has been provided through UTM appliance, which handles user authentication for client browsing. The Internet connection is shared through core switches deployed at the center and in the other departments. The logical structure of the campus network is designed in-house and maintained by the system administrator. The block of IP addresses obtained from the ISP is used to host various services of the University. Web servers and allied servers are in DMZ, and the intranet has been designed as a hierarchical network with private IPs.

Server Infrastructure

The server infrastructure includes a handful of hardware servers upon which most of the university services run. Virtualization has been used extensively to accommodate a number of individual hosted website requests from various departments.

Voice Infrastructure

IP based intercom facility

The intercom system completely runs on Internet Protocol Private Branch Exchange (IPPBX) network. A software-based switch handles all the calls now. This system provides centralized control with easy scalability, centered management, easy maintenance and cost saving.

WiFi Services

a) CUSAT WiFi

To convert the campus to a WiFi campus, Access Points were installed in all the departments, and administrative buildings, and access to the Internet is provided through authentication.

b) CUSAT Hotspot

A separate hotspot facility is available at student hostels. Currently, there are seven hotspots available on campus. 2Mbps shareable internet facility is available in all the hostels.

Applications and Software Services

Our policy is to use FOSS to run the university community's software services. All servers use Linux flavors as a server operating system. Websites and other services entirely run on a LAMP stack. Virtualization is achieved through KVM.

CUSAT Website

CUSAT.AC.IN is the official domain of the University and is developed and maintained by CIRM.. The website is designed in such a way to reflect the information changes as quickly as possible. This goal has been achieved by developing individual portals to change the web pages' changes at the information originating point itself. Most departments run and manage their websites, but all are hosted internally.

CUSAT WebMail

Through Google Workspace, integrated communication, and collaboration solutions, Google offers educational institutions a core suite of services, email, calendars, and other productivity tools. This solution enables the University to provide CUSAT-branded, advertising-free access to various popular cloud-based tools at no cost to the University.

Authentication Service

All users need to authenticate before accessing the Internet facility on the campus. LDAP.CUSAT.AC.IN is the authentication point. WiFi services provided on the campus have also gone through this. Hotspots installed in the university hostels use mobile number-based authentication.

E-Learning

To promote a technology-enabled teaching-learning process, the center hosts and maintains moodle platform catering to the need of faculty members and students.

Digital Library@CUSAT

The center has deployed DSpace software, an open-source repository package, to create an open access repository for scholarly and published digital content generated in the University.

Rekha@CUSAT

University gives utmost importance to the digitization of its important documents. Through <https://rekha.cusat.ac.in> all minutes are made available within the University. The digitization of Academic Council minutes is on the way.

Software Development Center

An internal software development team has been established to cater to the requirements. The center took up the responsibility of developing software required for automating many workflows of the University.

Maintenance Services

The center looks at the sustenance of the University's critical infrastructure, which includes a data center and communication services, both voice and data. Software service video recording and post-production is also supported from the center.

A rate contract has been implemented for two years for all LAN and Voice communication-related works (For New connections and Repair and maintenance works).

Training Center

The center conducts much training for students, staff, and teachers of the University. Extension activities like ICT training for the school children are also done through the center.

DATA CENTRE

The Data Centre established in 2018 supports compute and storage requirements of the University's resources. A virtualized environment has been created to run most of the applications required by the University community. 24X7 uptime is ensured for the smooth functioning of the resources.

Current Year Activities:

1. The center has completed many landmark activities this year. The architecture of Internet connectivity has changed significantly by configuring DHCP in edge switches to offer users a better experience.
2. The digitization project has been completed, and all the syndicate minutes are made available through <https://rekha.cusat.ac.in>
3. The development of IQAC portal (<https://iqac.cusat.ac.in>), Recruitment portal (<https://recruit.cusat.ac.in>), Portal for Pensioners (<https://pension.cusat.ac.in>) are the major works completed and delivered to the concerned sections of the University. A bill flow management system for the finance wing is also completed.

Administrative Personnel

Sl.No.	Designation	No. of Posts
01	Hon. Director	1
02	Assistant	1
03	Computer Assistant	1
04	Office attended	1
05	Sweeper(D/W)	1

Technical Personnel :

1. Technical Personnel on working arrangement from Department of Computer Science : 3 Nos.
2. System Analyst : 2 Nos
3. Programmer : 3 Nos.
4. Technical Assistant Grade III : 1 No.
5. Technician Grade II : 4 Nos.

List out Major equipments available**i) Computers , Servers ,Printers & Network Components.**

S/N	Item	Qty
	Server / Workstation	
1	HP server DL580G5	1
2	2U Rack server Keltron Xeon	4
3	DELL TM Power edge TM R715 Rack mount server	8
4	1U Rack mountable server Fujitsu	5
5	HPE Proliant DL385	2
6	workstation w570 power fujitsu for video editing	1
7	workstation c740 fujitsu for voice communication	1

Personal Computers		
1	Dell optiplex 3020i5 4570, 500gb hdd, 4gb ram- PC	20
2	Lenovo v520 intel core i5-7400 7th gen 4gb ddr4 500gbhdd intel graphics 510/530 -PC	25
3	Lenovo v520 intel core i3-7100 7th gen 4gb ddr4 500gbhdd -PC	12
4	Laptop	11
Peripherals, Networking components and Other items		
1	Firewall at Main Campus	2
2	Firewall at CUCEK campus	1
3	Core router cisco isir 4351 isr4351/k9	1
4	Core switch cisco con-snt 1sr4351k	3
5	Core switch Aruba 8325	2
6	Managed switches for networking	50
7	Distribution switches	30
8	Edge switches Aruba 6100 24G	30
9	Cruise split AC 2.0Tr CWCAGB-CQ5S243-C with outdoor unit	4
10	Projector epson ebx18, 6 x 8 instalock screen	1
11	Sony hxr-nx5r dig video camera	1
12	ID Card Printer	1
13	Printers	4
14	Scanner	2



Centre for Science in Society (C-SIS)

Brief History of the Department:

The Centre for Science in Society was established in 1991 under the UGC VIIIth Plan Development Assistance, with financial aid from Cochin Refineries Limited. It is instituted as endowment CRL Chair in the University. The Centre conducts various programmes about science with the view to popularize Science and Technology among children. The centre has its own facilities like Library, Workshop, Computer lab, Science labs, Science-Park, Herbal Garden, Science Pavilion, IEEE E-Scientia Exhibit, and ISRO space pavilion etc.

Some of the programmes offered by C-SiS are as follows: One Day Attachment Programme (ODAP) which is conducted for batches of students from a school. Science Talent and Total Capacity Development Programmes (STDP) is an intensive programme meant for children with special aptitude for science. This programme starts on first week of April and May every year and will continue for 4/5 weeks till the end of the month. In addition to these, C-SiS undertakes various training programmes with financial aid from Government bodies.

Programmes of Study/Research- School level/ undergraduate level

Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Sri.Baby Chakrapani	Director	B.Sc, M.Sc	Meteorology
2.	Dr. Pramod Gopinath	Asst. Director	Ph.D. in Photonics UGC-CSIR JRF M.Sc.	“X-ray and Optical Emission Processes from Laser Produced Plasma”
3.	Dr. Shaiju P	Assistant Professor	M.Sc.,Ph.D in Chemistry	Environmental Chemistry, Science Popularisation
4.	Dr. Abesh Reghuvaran	Assistant Professor	Ph.D in Environmental Biotechnology	Environment Protection, Science Communication

Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
1	Umalakshmy	CUSAT	Dr. Abesh Reghuvaran	Coir pith Degradation

Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Assistant Section Officer	1
2.	Office Superintendent	1
3.	Office Attendant (HG)	1
4.	Sweeper-cum-Cleaner	1

Technical Personnel

Sl.No.	Designation	No. of Posts
1.	Technical Assistant (Electronics)	1 (Contract Basis)

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1.	One Day Attachment Programme (ODAP)			
2.	Science Talent and Total Capacity Development Programme (STDP)			

Research Facilities

a. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
Books – 11257	Books – 73

Distinguished visitors

Sl.No.	Name	Affiliation	Remarks
1.	Pramod Narayan, MLA, Ranni		

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Dr.Shaiju.P	National Science Day Observance organized by TKM College of Arts and Science, Kollam, 28/02/2022	Keynote Speaker
Dr.Shaiju.P	Environment Management Training Workshop for Academic Fraternity organized by Bharata Mata College, Ernakulam on 5/03/2022	Resource Person
Dr.Shaiju.P	World Science Day – Building Climate Ready Communities. organized by Bharata Mata College, Ernakulam on 10/11/2021	Keynote Speaker
Dr.Shaiju.P	World Ozone Day Webinar, GHSS Kuttamassery, Aluva	Keynote Speaker
Dr.Shaiju.P	Public Lecture on ‘Climate Change - Problems and Solutions’ organized by Navayuga Kalasamithi, Nayathode, Angamaly. 26/03/2022	Keynote Speaker
Dr.Shaiju.P	Webinar on Global Warming Organised by Kerala Sasthra Sahithya Parishath, Pathanamthitta. 28/10/2021	Keynote Speaker
Dr.Shaiju.P	Training Programme on One World One Health Kerala Sasthra Sahithya Parishath, Ernakulam 21/02/2022	Resource Person

Dr.Shaiju.P	Talk on “Global Warming – What can we do?” Government Higher Secondary School, Balussery. 18/12/2021.	Keynote Speaker
Dr.Shaiju.P	Well Water Quality Test and Water Quality Awareness Programme organized by Edappally Vadakkum bhagam Service Cooperative Bank and CUSAT – 10/03/2022.	Co-Ordinator and Resource Person
Dr.Shaiju.P	Workshop on Nano Technology organized by SIET Kerala and CUSAT on 12/03/2022.	Resource Person
Dr.Shaiju.P	Little Scientist Programme Organised at Mulanthuruththi on 03/05/2022	Resource Person
Dr.Shaiju.P	Training in Good Laboratory Practice – Training programme organized by Department of Chemical Oceanography, CUSAT, 26/05/2022.	Resource Person
Dr. Abesh Reghuvaran	Kerala State Council for Science, Technology and Environment organized Seminar in connection with celebration of Vigyan Utsav on 13.04.2022	Invited Speaker
Dr.Abesh Reghuvaran	Environment Management Training Workshop for Academic Fraternity organized by Bharata Mata College, Ernakulam on 11/03/2022	Invited Speaker
Dr.Abesh Reghuvaran	National Science Day –Seminar conducted by NSS College, Cherthala on 28.02.2022	Keynote Speaker
Dr.Abesh Reghuvaran	National Science Day –Seminar conducted by NSS Unit, CUSAT on 28.02.2022	Keynote Speaker
Dr.Abesh Reghuvaran	Seminar organized by Govt. HSS Kuttamassery Science Club, Aluva in connection with Darwin Day on Feb 15, 2022	Keynote Speaker

Dr.Abesh Reghuvaran	National Conference on Climate Change conducted by Sree Sabareesa College, Kottayam on Feb 13,2022	Keynote Speaker
Dr.Abesh Reghuvaran	Lecture on Ozone Day Celebrations conducted by Post Graduate & Research, Department of Chemistry, Union Christian College, Aluva on September 16, 2021	Resource Person
Dr.Abesh Reghuvaran	Webinar on Drugs & Society conducted by NSS Unit and Antinarcotic club Govt College, Kariavattam on July 30, 2021	Keynote Speaker
Dr.Abesh Reghuvaran	Webinar on Reading Habits conducted by Jubilee Mission College of Nursing, Trissur in connection with Reading Day on June 26, 2021	Invited Talk
Dr.Abesh Reghuvaran	Webinar conducted by Higher Secondary physics teachers association, Eranakulam District on June 20, 2021	Invited Talk
Dr.Abesh Reghuvaran	Webinar conducted by Centre for Professional and Advanced Studies, Kottayam in connection with World Environment Day on June 5, 2021	Invited Talk
Dr.Abesh Reghuvaran	Webinar conducted by Department of Zoology, Morning Star home science college, Angamaly in connection with World Environment Day on June 5, 2021	Resource Person
Dr.Abesh Reghuvaran	Sasthraposhini Training Programme for School Teachers in Association with KSCSTE	Resource Person

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl. No.	Title	Duration	Coordinator	Funding Agency
1.	Little Scientist Programme Organised at Mulanthuruththi in association with Science Centre Thuruththikkara on 03/05/2022	One Day	Dr.Shaiju.P	Science Centre Thuruththikkara and CSiS.
2.	Well Water Quality Test and Water Quality Awareness Programme organized in Association with Edappally Vadakkum bhagam Service Cooperative Bank and CUSAT – 10/03/2022.	One Day	Dr.Shaiju.P	Vadakkum bhagam Service Cooperative Bank
3.	Sasthraposhini Training Programme for School Teachers in Association with KSCSTE	3 Days	Dr.Shaiju.P	KSCSTE
4.	Workshop and inauguration of C-SiS Nature Brigade, Nature Club of Centre for Science in Society	1 Day	Dr. Abesh Reghuvaran	C-SiS
5.	Science Talent and Total Capacity Development Programme (STDP)	22 Days	Dr. Abesh Reghuvaran	C-SiS



University Employment Information and Guidance Bureau (UEIGB)

ANNUAL REPORT 2021-2022

Name of the Department	:	University Employment Information & Guidance Bureau, CUSAT.
Brief History of the Department	:	Joint Venture of Cochin University of Science and Technology & National Employment Department, Kerala State. From January 10, 1973.
Programmes of Study/Research	:	Career Guidance, Organising Induction Programmes, Refresher Courses / Training to Students, Coaching Programmes for various Competitive Exams like, UGC NET, CSIR NET, IBPS, SBI PO, KPSC.

Faculty Members

Sl. No.	Name	Designation	Qualification	Specialisation
1	Dr. Saji T.G	Chief of the Bureau & Professor, SMS, CUSAT.	M.Com, M.Phil, M.B.A. Ph.D.	

Visiting Faculty (If any)

Sl. No.	Name	Designation	Qualification	Specialisation
1.	Sri. Edwin Tomson V T	Asst. Professor, St. Alberts College (Rtd)	M.Sc. Mathematics	Calculus
2.	Dr. P.T.Baburaj	Asst. Professor, M G University	M.A. Sociology, M.Sc. Psychology, M.Ed, Ph D.	Teaching & Research Aptitude
3.	Sri. Raju David C	Regional Deputy Director of Employment (Rtd)	M.Sc Statistics, MBA (HRM), Basic Counselling Course	Reasoning
4.	Sri.Polachan M.V	Employment Officer (Rtd)	M Com, MBA	Mathematical Reasoning
5.	Dr. M. Anand	Asst. Professor, School of Environmental Studies, Cusat	M Sc. Environmental Science, M.Phil	Environmental Science

6.	Prof. Dr. T. Mohammed Saleem	Principal, Farook Training College, Kozhikode	M A (History & Sociology), M Sc Psychology, M.Ed, Ph D (Education)	Teaching Aptitude
7.	Dr.Noushad P	Associate Professor School of Gandhian Thought and Development Studies, M G University	M A (Education, History & Sociology), M.Ed, Ph D (Education)	Research Aptitude

Administrative Personnel

Sl. No.	Designation	No. of Posts
1.	Chief.	1
2.	Deputy Chief.	1
3.	Clerks	2
4.	Typist	1
5.	Peon	1

Research Facilities

- a. Laboratories
- b. Major equipments
- c. Library

No. of Books and Journals as on 31 st March of the Previous Year	Additions during the current year
910 (University Fund)	NIL
708 (Directorate of Employment-Government Fund)	13

Publications

- a. Papers

Sl. No.	Name of Paper
The Bureau publishes Career Bulletin every month	

Coaching Class/Seminar / Refresher Course conducted by the Department:

Sl. No	Title	Duration	Coordinator	Funding Agency
1.	Free Coaching Class for PSC LDC 10 th level	30 Days	U E I & G B	Govt. of Kerala VG Strengthening Fund 2021-22
2.	Free Coaching Class for PSC Nurse Gr.II	15 Days	U E I & G B	Govt. of Kerala VG Strengthening Fund 2021-22
3.	Free Coaching Class for UGC-NET Humanities Paper – I)	15 Days	U E I & G B	Govt. of Kerala VG Strengthening Fund 2021-22
4.	Free Coaching Class for CSIR UGC-NET Chemical Sciences	15 Days	U E I & G B	Govt. of Kerala VG Strengthening Fund 2021-22
5.	Coaching Class for UGC-NET Humanities Paper – I)	15 Days	U E I & G B	Nominal fee collected from students
5.	“The Aesthetics of Teaching” – Teachers Day Special Webinar	One day	U E I & G B	-
6.	“Teaching for Learning” - Teachers Day Special Webinar	One day	U E I & G B	-
7.	Webinar on “Nursing Courses and Job Opportunities”	One day	U E I & G B	Govt. of Kerala VG Strengthening Fund 2021-22
8.	“Margadeepam” – Career Guidance for VHSE Students of Ernakulam District	5 days	U E I & G B	Govt. of Kerala VG Strengthening Fund 2021-22
9.	Career Talk	At 36 schools	U E I & G B	-
10.	Group Discussion	28		-



University Library

Brief History of the Department:

The Cochin University Library was established in 1977 as a central agency for meeting the information requirements of the academic community of the University. The University Library is fully automated and is one of the best scientific and technical libraries in the country. Being the information centre of the Technological University in the state, the library has built up a balanced and rich collection on all branches of sciences and technology. At the same time books of general interest in various subject fields are not neglected either.

Since the Library has to cater to the needs of a variety of users- Graduates, Post Graduates, Research Students, Administrative Staff, Teachers, Scientists working in Industries, R& D Institutions, wide range of subject fields are represented in our collection in the prime areas of Science and Technology.

As in any world class university Library, services in Cochin University of Science and Technology are the core of its academic services and the Central Library of CUSAT finds a unique place in Academic service centres. Besides Central Library, every academic department has its own departmental library which contains the core collection required by the students and faculty of the department.

The Central Library of CUSAT has a collection of more than 1,35,000 documents specially for Science and Technology. Besides conventional services, Library offers e-services such as Institutional Repository- e-thesis (dyuthi.cusat.ac.in), online databases and journals, e-books media repository (media.cusat.ac.in), bibliographic repository (yuj.cusat.ac.in) etc. The collection is strong in Science & Technology, however substantial quantity of information sources on humanities and social sciences are also available. The Library is open for bonafide members but non members are also welcome to utilize its resources. Databases are available through the campus wide networks to all users in the University. CUSAT Library is a member of various e-journal consortia such as UGC E-Shodh Sindhu Consortium, DELNET consortia etc.

The main emphasis of the Central Library is in providing digital information support which is carried out through 4 servers and more than 500 terminals. More than 15,000 electronic journals are available through the campus wide network. The University Library has completed the digitization process of all thesis produced by CUSAT and made available online through the institutional repository- DYUTHI and the UGC national repository – SHODHGANGA.

All the housekeeping and information management systems in the University Library are powered by open source software such as KOHA, DSpace, Bibapp and Media core.

University Library is conducting various sponsored research projects and workshops for knowledge discovery and knowledge management to meet the contemporary information needs of its clients.

Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer	1
2	Assistant	2
3	Typist	3
4	Photocopier / duplicating operator	1
5	Peon	4
6	Sweeper / Cleaner	2
7	Gardener	1

Technical Personnel

Sl.No.	Designation	No. of Posts
1	University Librarian	1
2	Deputy Librarian	1
3	Assistant Librarian	7
4	Professional Assistants	15
5	Information Scientist	1

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1.	Membership	403	865	1268

Research Facilities

a. Library

No of books and Journals as on 31 st March of the Previous Year		Additions during the current year
Books	134144	1033
e-books	1496	--
Indian Journals	2	--
Foreign Journals	12	--
Digital Library/Online Databases	25	--
News Papers	9	--

Publications

a. Research Papers

1.	Scientometric Study of the Journal-Carbon. Library Philosophy and Practice, 1-17(2021) : Dr.Sivankutty V.S & Dr.Jinu Sudhakaran
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b. Books

Sl.No.	Name of Books
1.	Times Higher Education Impact Ranking 2020: Ranking and Performance of Indian Institutions. In <i>Professionalism in Library Management</i> (pp.89-102), Daya Publishing House. – (2022) Dr.Jinu Sudhakaran & Dr.Sivankutty.
2.	Scientometric evaluation of the journal, Scientometrics. In <i>Professionalism in Library Management</i> (pp.145-162), Daya Publishing House.

Participation in Seminar/ Conference/Refresher Courses etc. by Faculty/Students

Name of Participant	Name of Seminar/ Conference/Refresher Courses	Role
Dr.Veerankutty Chelatayakkot	Two days National Workshop on Library Automation Software Koha – at Rajagiri School of Social Science, Kalamassery – 26-27 November, 2021	Resource Person
Dr.Shibu Ray S.	Short Term Course in MOOC	Participant
	Short Term Course in Research Methodology	



International Relations and Academic Admissions (IRAA)

ANNUAL REPORT 2021-22

Name of the Department : OFFICE OF INTERNATIONAL RELATIONS

Brief History of the Department : The Office of International Relations (OIR) was established in February 2020 by bifurcating the erstwhile unit of International Relations and Academic Admissions (IRAA).

Activities:

- I. Several foreign dignitaries have officially visited CUSAT which includes ambassador from Dominican Republic, Attache Embassy of France, representatives from different universities to discuss about possible collaborations with CUSAT.
- II. 25 International Students joined CUSAT for the academic year 2022-23
- III. The University has entered into Memorandum of Understanding (MoU) with
 - a. University Of Naples, Italy
 - b. Erasmus + Program Signed By Dublin City University
 - c. ICBAS, UNIVERSITY OF PORTO, PORTUGAL
 - d. Universite Gustave Eiffel, France
 - e. Saint Petersburg State Marine Technical University, Russia

Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Director	1
2	Assistant Registrar	1
3	Assistant	1
4	Computer Assistant	1

Distinguished visitors

Sl.No.	Name	Affiliation	Remarks
1	H.E. David Puig	Amdassador, Dominican Republic	Purpose of visit: to discuss about possible collaborations with CUSAT
2	Francois Xavier Mortreuil	Attache for Scientific and academic cooperation, Embassy of France at India	Purpose of visit: to discuss about possible collaborations with CUSAT
3	Priya Kurle	India Recruitment Manager, Indiana University Purdue University, Indianapolis	To discuss about possible collaborations
4	Dr. Ahmad Namaany	Deputy Chairman, Modern College of Buisness and Science, Muscat University, Oman	To discuss about possible collaborations with CUSAT
5	Shraddha Singaurey	India Representative, Wayne University, USA	-



Directorate of Admissions

ANNUAL REPORT 2022

INTRODUCTION

CUSAT occupies a unique place in the academic map of Asia as a premier institution for higher learning. CUSAT is a Government-owned autonomous Science and Technology University in Kochi, Kerala, India. Founded in 1971 it has three campuses: two in Cochin and one in Kuttanad, Alappuzha. CUSAT offers programmes across a spectrum of disciplines in frontier areas ranging from Engineering, Science & Technology to Marine Sciences, Humanities, Law and Management. The pursuit of excellence through these programmes has given CUSAT a National and International acclaim. Above all, this year CUSAT was conferred with NAAC A+ Grade

Every year, Directorate of Admissions, CUSAT conducts Common Admission Test (CAT) for all the courses offered and details of every course is available in the Prospectus.

CAT 2022

Admission process for the year 2022 started on 08/02/2022. The total number of applications received is 51256 in total for the PG programmes and B.Tech programmes combined and 25237 for B.Tech Programmes only against CAT 2022 notification. Application registration for all programmes except MBA/MTech was closed on 31/03/2022

The Computer Based Tests for CAT 2022 was conducted at 26 test venues for UG and 14 centres for PG. The test for PG was conducted on May 14th and 15th of 2022 and that of UG on 22,23 and 24th of June 2022.

The rank list of the P.G.Programmes published on 01.06.2022 and B.Tech Programmes was published on 21.07.2022. The University conducted 3 online allotment and 3 spot admissions for regular B.Tech /Integrated M.Sc./Integrated M.Sc (CS &AI). Allotment and admission for Marine Engineering Programmes was conducted by the KMSME, from the candidates who were in the rank lists of Indian Maritime University and those who have registered for CAT 2022. In the case of PG programmes two online allotments were conducted by DoA and the subsequent spot admissions were conducted by the concerned Departments. Third and the last spot admission for the current academic year for B.Tech//Integrated M.Sc./Integrated M.Sc (CS &AI) /B.LET programmes was conducted during 14th to 18th of November 2022 and which marked the end of admission process for the year 2022

The commencement of classes for the PG programmes was on 18/07/22. Induction programme for students of the B.Tech programme started on 20/10/22.



Directorate of Public Relations and Publications (DPR&P)

The Directorate of Public Relations and Publications (DPR&P), CUSAT did a commendable work during 2021-2022, providing a sustainable source of authentic information for all who are in pursuit of excellence in learning. DPR&P took all efforts to provide up-to-date information to other academic institutions, research schools, students and the general public regarding higher education and its related opportunities. Timely and effective media coverage assisted various departments in organizing seminars, workshops and symposia in a befitting manner.

DPR&P gave wide publicity to the Common Admission Test, 2020 through the printed and electronic media which received an overwhelming response. The staff of DPR&P took all efforts in providing information regarding the various academic programmes of CUSAT to the general public directly and over telephone. DPR&P gave wide coverage to the national / international seminars conducted by various Departments / Schools / Centres, winning appreciation from all quarters for the excellent coverage it ensured for all activities through the print and electronic media. University Hand Book – 2021 was published on time with up-to-date information of CUSAT and was circulated to all concerned in a time bound manner. Around 840 press releases (both English and Malayalam) and relevant notifications and advertisement were issued through DPR & P in both English and Malayalam dailies as well as electronic media. The well organized and systematic activities of DPR & P has contributed to boost up the image of CUSAT as a public organization committed to the cause of higher learning.

The Books published by the Directorate during 2020-21 are listed below:-

1. Malsyam Ningale Samrambhakarakkum Editors: Dr. Ginson Joseph 978-81-954804-1-8
2. International Conference on Advances in Polymer Technology (APT'20) – Proceedings Editors: Dr. Honey John, Dr. Sunil K. Narayanankutty, Dr. Jabeen Fatima M.J., Dr. Jelmy E.J. and Dr. Sreeja S. 978-81-954804-4-9

Sophisticated Test and Instrumentation Centre (STIC)

SOPHISTICATED TEST AND INSTRUMENTATION CENTRE

COCHIN UNIVERSITY CAMPUS, COCHIN – 682 022

Name of the Department : Sophisticated Test and Instrumentation Centre

Brief History of the Department :

The Sophisticated Test and Instrumentation Centre (STIC) is an autonomous institution (estd. 1995) sponsored jointly by the Kerala State Council for Science, Technology and Environment (KSCSTE) of the Government of Kerala and Cochin University of Science and Technology (CUSAT)

Programmes of Study/Research : Objectives of STIC are :

- (1) To provide the actual users from academic institutions, R&D establishments and industries with advanced instrument facilities for analysis, testing, measurement, calibration and consultancy
- (2) To undertake research and development activities in the field of instrumentation and related areas, which are of relevance to industries in the state
- (3) to organize short term courses/workshops on the use and application of various instruments, analytical and calibration techniques
- (4) To encourage taking up projects, which will motivate younger scientists for undertaking hardware generation in experimental research
- (5) To initiate new programmes in instrumentation with professionals and academic staff in frontier areas of instrumentation
- (6) To undertake training and services in the relevant fields

STIC has established highly sophisticated test, measurement, analysis and research laboratories in the areas of instrumentation, quality evaluation/calibration, chemical analysis and testing. A good number of industrial organizations, academic institutions and research establishments have recognised STIC as a potential centre for the calibration of their instruments, product testing and chemical analysis. In addition to regular calibration, testing and analysis activities, the scientific personnel are also involved in research and development activities in instrumentation and allied areas. Regular training programmes are also offered in the relevant fields.

Faculty Members

Sl.No.	Name	Designation	Qualification	Specialization
1	Dr. J. Jagannath Bhat	Director i/c. & Scientist E2	M.Sc, Ph.D	Calibration, Testing
2	Mr. Paul V. John	Scientist E1	M.Tech	Calibration, Testing
3	Ms. Sreeja V.	Scientist E1	M.Tech	Calibration, Testing
4	Dr. Shibu M. Eappen	Scientist E1	M.Sc, Ph.D	Analytical Instrumentation
5	Mr. Adarsh K.J.	Scientist E1	B.Tech, M.E.	Analytical Instrumentation

Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer	1
2.	Personal Assistants	2
3.	Office Assistants	2
4.	Helpers	2

Technical Personnel

Sl.No.	Designation	No. of Posts
1.	Technical Officers	6
2.	Technical Assistants	2

Research Facilities**a. Laboratories**

STIC has set up the following facilities to carry out its activities.

- A. Calibration laboratories
 - (i) Electro-Technical
 - (ii) Thermal
 - (iii) Mechanical
- B. Testing laboratories
- C. Sophisticated Analytical Instrument Facility (SAIF)
- D. Incubation, Research and Development laboratory (IRDL)
- E. Material Testing Laboratory
- F. Water Quality Analysis Laboratory
- G. PV Power Plant Test Laboratory

(b) Major equipment available are :

Instruments in Calibration/Test laboratories			
1	500 MHz Digital Storage Oscilloscope	24	Portable Calibrator
2	150 MHz Digital Storage Oscilloscope	25	Multifunction Calibrator
3	8½ digit Digital Multimeter	26	Scale and Tape Calibration Unit
4	<i>True RMS 4½ digit Multimeter</i>	27	High Voltage Tester
5	Portable Pneumatic Pressure Source	28	LCR Meter
6	Portable Hydraulic Pressure Source	29	Microbalance
7	High Temperature Bath	30	Impedance Analyzer
8	7-Dial Decade Resistance Box	31	Desktop Temperature and Humidity Calibrator
9	5-Dial Decade Resistance Box	32	Plastics Testing equipment
10	Data Logger	33	High Temperature Furnace 1400°C
11	Universal Testing Machine	34	Teraohm Meter
12	Standard Platinum Resistance Thermometer	35	3φ Power Analyser
13	Standard S-type thermocouple	36	Multiproduct Calibrator
14	Low Temperature Bath	37	Low Temperature Furnace
15	Decade Capacitance Box	38	Digital Pressure Gauge
16	Decade Inductance Box	39	Phase Meter
17	Temperature/ humidity cyclic chamber	40	Data Acquisition System
18	High Voltage Probes	41	RTD Sensors
19	High Temperature Furnace	42	Dry Block Calibrators
20	N Type Thermocouple	43	CHUB E4 Thermometer

21	Long Gauge blocks and Surface plate	44	Universal Counter
22	Dead Weight Test Calibrator	45	F1 Class Weight
23	Thermocouples		
	<u>Instruments in SAIF</u>		
1	ICP-AES Spectrometer	15	Mercury Analyzer
2	Thermal Analyser DSC	16	Scanning Electron Microscope with EDS
3	Thermal Analyser DTA/ TGA	17	TG/DTA with Autosampler
4	UV-VIS-NIR Spectrophotometer	18	ICP MS
5	FT-IR Spectrometer	19	MALDI TOF
6	X-ray powder Diffractometer	20	Ion Chromatography System
7	CHN Analyser	21	Manual Colony Counter
8	200 KV Transmission Electron Microscope	22	Bag Mixer, Bag Filter, Bag Clip
9	Ultramicrotome (Leica EMUC7)	23	Flame Photometer,
10	Dimple Grinder (Gatan 656)	24	Calcium, Lithium and barium Filters
11	Ultrapure Water Distillation unit	25	Bio Safety Cabinet
12	400 MHz FT-NMR Spectrometer	26	Incubator
13	Single Crystal X-Ray Diffractometer	27	Muffle Furnace
14	SAXS Attachment for XRD		

In addition, a wide variety of minor instruments and facilities are available in STIC.

Library : 1213 Books

No. of books and Journals as on 31 st March of the Previous Year	Additions during the current year
1212	1

c. Others

NABL Accreditation :

Calibration laboratories of STIC are accredited by NABL (National Accreditation Board for Testing and Calibration Laboratories, Government of India) in the following areas

Electro-Technical

Thermal

Mechanical

New Instruments installed

Data Acquisition System

RTD Sensors

Dry Block Calibrators

CHUB E4 Thermometer

Universal Counter

F1 Class Weight

Manual Colony Counter

Bag Mixer, Bag Filter, Bag Clip

Flame Photometer,

- (iii) A new website of STIC was launched by the Hon. Vice Chancellor, CUSAT on 01.11.2021. In order to streamline the sample acceptance procedure in SAIF laboratory, online registration facilities has been incorporated in the website. Presently all samples for analysis are being processed through the online registration. Operations in second shift started in the analytical division.

Special Programmes – Food Technology Development & Testing Facility.

The Kerala State Council for Science, Technology and Environment (KSCSTE) has sanctioned Food Technology Development and Testing Facility under the “Special Programme”. **For the FY 2021-22, KSCSTE has released Rs. 50 Lakhs for the Project.** As a part of implementation of the Project, Water Quality Analysis lab was set up and got the approval from Kerala State Pollution Control Board. Presently physical, chemical and microbiology parameters potable water, industries water, waste water etc is being analysed. Step are being taken for setting up of full-fledged food testing facility, Procedures for getting NABL accreditation and FSSAI approval are also initiated.

STIC-ANERT (START) FACILITY OF PV SYSTEM TESTING

Agency for New and Renewable Energy (ANERT) has sanctioned testing facility for PV power plants. For implementation of the project, an MoU was signed between the Director, ANERT and Director, STIC and a laboratory dedicated for the PV Power Plant test facility “STIC-ANERT (START) Facility for PV System Testing” was set up.

ANERT has released Rs. 158 Lakhs for the financial year 2021-22 for purchase of instruments and for other infrastructure.The necessary instruments required for testing of PV inverters were procured and installed. Training is also imparted to the lab personnel for conducting the tests as per the standard procedures. The present facility which is first of its kind in the state of KERALA, can test PV inverters both offline and online type up to a maximum capacity of 30kW. In the second phase of the project test facility for PV modules will be set up.

Publications during the year (2021-22)

In SAIF, last year alone 15639 samples received from research community were analyzed and more than 400 publications were brought out using the results obtained from the analysis carried out.

Participation in Seminars,/Conferences/ Refresher courses etc. by Faculty/ Students

Name of Participant	Name of Seminar/ Conference/Workshop
Dr. Shibu M. Eappen	“X-Ray Diffraction – Good analysis practice” during National webinar series on “From Research to Publication” on 29 July 2021
Dr. J. Jagannath Bhat	An online interactive meeting on “Testing needs of MSMEs in Kerala” on 21 st Oct. 2021 organized jointly by MSME Development Institute, Chennai, MSME Testing Centre, Chennai and Bureau of Indian Standards, Kochi
Dr. Shibu M. Eappen,	An Introductory Lecture on Analytical Techniques and X-Ray Diffraction on 16.12.2021 for Mar Athanasius College, Kothamangalam
Mr. Adarsh K.J.	Lecture on “Inductively Coupled Plasma Mass Spectrometry” in the Webinar On “GC, HPLC and ICP- Techniques and Instrumentation in Analytical Chemistry” organized by Faculty of Ocean Science and Technology (FOST), KUFOS during 22-23 February 2022

Role of Faculty in International/National organizations/institutions/Editorial Boards:

Name of Faculty	Name of Organization	Role
Dr. J. Jagannath Bhat	NABL, QCI, New Delhi	Lead / Technical Assessor
Dr. J. Jagannath Bhat	CUSAT	Member, Board of Studies in Instrumentation

Awards/Honors/Fellowships etc. received:

NABL accreditation as per ISO/IEC 17025:2017 was granted to the calibration laboratories of STIC

Research Programmes and Activities:

Sl.No.	Problem/Topic	Investigator(s)
1.	Measurement Techniques for improving calibration measurement capabilities	Dr.J. Jagannath Bhat, Mr. Paul V. John and Ms. V. Sreeja
2.	Value added services extended by SAIF to researchers by interpreting the analysis data.	Dr. J. Jagannath Bhat, Dr. Shibu M. Eappen and Mr. Adarsh K.J

Seminar/Conference/Workshop/Refresher Courses conducted by the Department

Sl.No	Title	Duration	Coordinator
1.	Webinar (MALDI TOF) “MALDI-TOF Spectroscopy and Applications” on 7 July 2021, with the following Topics : Mass spec & MALDI Applications presentation, Demo on Flex control software. Demo on Flex analysis software, Good working practices, Maintenance, Q&A. Speaker: Mr. S Venkatesh Bruker India Scientific Limited . Around 100 participants attended the Webinar.	One day	Dr. Shibu M.Eappen
2	Webinar on “Fundamentals of Single Crystal diffraction and structure solutions” on March 16, 2022. Dr. Prathap S.J., Applications Specialist, Bruker AXS India was the Speaker	One day	Dr. Shibu M.Eappen
3.	As a part of “Azadi ka Amrit Mahotsav” celebration , STIC in association with National Intellectual property Awareness Mission (NIPAM), Government of India, organized Intellectual Property Rights Awareness Programme, on March 22, 2022.	One day	Mr. Adarsh K.J.

- Consultancy Work :**

No. of Calibration and Testing work done	: 4,608
No. of users (most are industries)	: 364
No. of Sample analysis done	: 15,639
No. of users (most are researchers)	: 3,044



Department of Physical Education

Brief History of the Department:

The Department of Physical Education, Cochin University of Science and Technology is promoting Physical Education and sports on par with regular academics. The University has well recognized the value of sports and physical activities as a means of developing personality promoting social harmony and discipline. The department provides ample opportunity to the students to utilize their leisure time with physical activities to reduce their stress in their day-to-day education system. At this esteemed University, we believe in all round development of students and hence, apart from our success stories in the field of education, the University provides encouragement and support to sports in a big way. With this unconditional support, the sports department went on to bring glory to the University in several disciplines of sports. The department has evolved into a team, which is committed to produce sports persons of very high standards.

Sports & Games activities in the University Campus were very much active and alive during the year 2021-22. The University is slowly but surely making a name for itself in the sports field. This year Department has organized Cochin University of Science and Technology Intercollegiate Track & Field and Games Meet.

Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr.Ajith Mohan.K.R	Assistant Director and Head	Ph.D	

Play Field Facilities

- Multipurpose Track and Field (outdoor), Football, Cricket.
- Indoor Stadium for Shuttle Badminton and Table Tennis.
- Basket ball court (out door-2 NOS)
- Volley ball court (out door-2 NOS)
- Health and Fitness center

Programmes of the Department

- 1) Sending various teams for the South Zone/ All India championship.
- 2) Conducting Adventure sports.

- 3) Conducting Cochin University of Science and Technology Intercollegiate Track and Field and Games Meet.
- 4) Conducting Coaching camps for various teams.
- 5) Organizing various championships, with the joint venture between university and other associations.

39th CUSAT Inter-Collegiate Track & Field and Games MEET-2021-22

The 39th CUSAT Inter-Collegiate Track & Field and Games MEET-2021-22 of University for the academic year 2021-22 was conducted with pomp and show from 26th March to 2nd April 2022. The vibrant and kaleidoscopic Meet was successfully organized with the active participation 3500 students from 27 affiliated colleges and various departments.

CUSAT Athletics meet was conducted with 17 events for boys, 12 events for girls and intercollegiate games in the following discipline.

- | | |
|--------------------------|-----------------------------|
| 1. Football (Men) | 2. Cricket (Men) |
| 3. Volleyball (Men) | 4. Basketball (Men/Women) |
| 5. Badminton (Men/Women) | 6. Table Tennis (Men/Women) |
| 7. Chess (Men/Women) | 8. Throwball (Women) |
| 9. Athletics | |

Prize distribution was done by Honorable Vice Chancellor Prof. (Dr.) K.N. Madhusoodhanan in the presence of, Dr. Meera V Registrar, Syndicate Member, Dr. Sasi Gopalan and Sri. Unni A.M, Assistant Professor on 2nd March 2022 at CUSAT Main ground.

Coaches on assignment:

1. Sri. Fasalullah Mujthaba (Wayanad Dist. Cricket Association) - Cricket
2. Sri. Sajan P J- Archery Coach (Ernakulam District Sports Council)
3. Sri. Vipin Anto (Football Association) – Foot Ball
4. Sri. Ajeesh. A.P. (National Arbitor & Chess Coach)
5. Sri. Renjith Sunny (National Player cum Coach) – Badminton
6. Sri. Francis Xaviour Loise- Ernakulum District Volley Ball Association- Volley Ball team
7. Sri. Justin Francis –(District Basket ball Association) - Basket ball team
8. Prof. George John (A+ Level Qualified Coach) - Chess
9. Sri. Lalu M -Boxing team.
10. Sri. Premkrishnan. M.K. Sepak Takraw (Dist. Sports Council)

Visiting Faculty

Sl.No.	Name	Designation	Qualification	Specilisation
1	Sri. Renjith Sunny	Badminton Coach,KSSC	NIS in Shuttle Badminton	Shuttle Badminton
2	Sri. Sajeevan	Foot Ball Coach, Kerala Football Association	MPEd. and NIS in Foot Ball	Foot Ball
3	Shri.VipinAnto	Foot Ball Asst.Coach,		Foot Ball
4	Shri. Shoaib P.O	Fencing Coach,KSSC	NIS in Fencing	Fencing
5	Shri. Xaviour Loius	Volley Ball Coach	NIS in Volley Ball	Volley Ball
6	Shri.Justin Francis	Basket Ball Coach		Basket Ball
7	Shri.Jith J Bhatt	Cricket Coach	M.Phil in Physical Education	Cricket
8	Shri.Arun Raj	Asst.Coach		Cricket
9	Shri.Sujith.S	Team Manager for ShuttleBadminton (Asst.Prof in Phy.Edn NUALS, Kochi)	M.Phil in Physical Education	Shuttle Badminton
10	Shri. Lalu	Team Manager for Volley Ball(Asst.Prof in KVM College of Eng,Cherthala)	M.Phil in Physical Education	Volley Ball
11	Shri.Saju Manjaly	Team Manager for Chess(Asst.Prof in COE,Thrirkaripur)	M.ed	Chess
12	Shri.Sharath Raj	Team Manager for Table Tennis (Asst.Prof in COE,Vadakara)	M.ed	Table Tennis

Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer	1
2	Assistant	1
3	Computer Assistant	1
4	Office Assistant	1

Technical Personnel

Sl.No.	Designation	No. of Posts
1	Play Ground Marker	One
2	Health Club Instructor cum Care taker	One

Publications

a. Papers

Sl.No.	Name of Paper	Impact Factor, if any
1	Professionalism of College Physical Education Faculty in Kerala, India – Indian Journal of Adult Education	

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Dr.Ajith Mohan.K.R	UGC Sponsored Refresher course in Human Rights (Multidisciplinary) – UGC-Human Resource Development Centre, University of Kerala	Participation
Dr.Ajith Mohan.K.R	Faculty development programme on Skill Intensification of Teachers through Technological Integration – School of Legal Studies, CUSAT	Participation
Dr.Ajith Mohan.K.R	National Seminar on Sports Engineering – An Bull eye over a conveyor belt into over lives for a better us in a better tomorrow	Paper Presented

Dr.Ajith Mohan.K.R	International conference on exercise Physiology and Nutrition for Enhancing Health, fitness and Sports Performance- Influence of larkand owel's over grip strength among college women basketball players – Tamilnadu Physical education and sports University	Paper Presented
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Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Dr.Ajith Mohan.K.R	Kerala State Sports Council	Member, Governing Body as per G.O(P)No.38/2015/S&YA Dtd:01.12.2015
Dr.Ajith Mohan.K.R	Tvpm Judo Association	Vice President
Dr.Ajith Mohan.K.R	Kerala Cricket Association – International Match	Organizing Committee member
Dr.Ajith Mohan.K.R	National Games	Technical Committee member
Dr.Ajith Mohan K.R.	Expert committee member for the promotion of sports in Govt. Poly Technique College	No.C2/43952/16/D.T.E dated 07/16/2017
Dr.Ajith Mohan K.R.	Association of Indian Universities Sports Body member	Executive member



Department of Youth Welfare

Brief History of the Department:

Department of Youth Welfare is a formal platform in the University to design and implement youth policy which includes the issues related to motivation, participation, promotion and socio-economic and cultural settings within which young people grow up. The Department is acting as a supporting force for the students and youth community to epitomize their academic excellence through doing and learning.

The Department was established in November 1978 with an aim to promote cultural and social life among the university community, under the headship of the Director. A full-time Director, of Students Welfare was appointed in 1990 with independent charge of the Department of Youth Welfare. The present Director, Dr. P.K Baby assumed charge in 09th July, 2009.

Vision

Create sense of values and social life among youth and students through inculcating democratic, scientific and constructive thinking for physical and mental health.

Mission

We aim integrated youth development through

- Educating student youth on various domains of academic knowledge related to personality, skill development, cultural studies, gender issues, environmental management and other relevant areas of interest.
- Offer Short term Courses / Training programmes / orientation programmes / motivation sessions / camps.
- Conducting extension/outreach services.
- Providing advocacy services for students.
- Coordinating students' arts and cultural activities.
- Conducting academic and action research in the areas of social, cultural, economic and political domains.
- Facilitate both tangible and intangible welfare programmes and procedures.

Programmes of Study/Research

The Department is conducting short-term training programs in the areas of arts, soft skills, and personality development with an objective of achieving 5 C's – Creativity, Confidence, Compassion, Communication, and Competence.

Faculty Members

Sl.No.	Name	Designation	Qualification	Specialization
01.	Dr. P.K Baby	Director, Students Welfare	M.A (Economics); M.B.A; M.Phil; Ph.D	Cultural Economics, Environment and Resource Economics

Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Section Officer (T)	1
2.	Assistant (D/W)	1
3.	Office Attendant	1

Research Facilities

- a. Laboratories
- b. Major equipments
- c. Library
- d. Others

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
Journals and News papers- 27	Nil

Distinguished visitors (Online/offline)

Sl.No.	Name	Affiliation	Remarks
1.	Justice K Vinod Chandran	High Court of Kerala	
2.	Sri. Nisar Ahammed KT	KELSA	
3.	Smt. Aishwarya Dongre, PIS	ACP Cochin	
4.	Adv. Ferha Azeez	KELSA	
5.	Dr. Indu Agnihotri Dr.	CWSD, New Delhi	
6.	K P Aravindan,	Medical College, Trivandrum	
7.	Sri. Prajith P.K,	Quarithm	
8.	Dr. K M Sheeba,	SSUS, Kalady	
9.	DR. Myna Umaiban,		
10.	Adv. Sandhya Raju,	High Court	
11.	Dr. Shalini M,	Central University, Kerala	
12.	Dr. Meera Velayudhan,		
13.	Dr. Priya Nair,		
14.	Dr. SujaKarthika,	Hong Kong Metropolitan University	
15.	Dr. Tissy Mariam George,	University of Kerala	
16.	Dr. Sonia George,		
17.	Dr. Rosewine Joy	Presidency University Bangalore	

18.	Dr. P.K Rejula	Calicut University	
19.	Dr. Sajna Sudheer	Kerala University	
20.	Ms. K R Meera	Writer	
21.	Bijibal,	Composer, Singer, and Music Director	
22.	Sreekanth Hariharan	Playback Singer & Composer	
23.	Harisankar V	Chief Audio Engineer, My Studio, Kochi	
24.	Anantharaman A.	Composer and keyboard player	
25.	Dr. Rakkeethimothy,	Fellow, CSES	
26.	Dr. Jayan Jose Thomas,	Indian Institute of Technology (IIT), New Delhi	
27.	Shri. K.N. Gopinath,	Chairperson, Kerala Institute of Labour and Employment (KILE)	
28.	Mr. M. Salim,	PMU Head, Kerala Knowledge-Economy Mission Project	
29.	Ms. Renjini S.,	District Mission Co-ordinator, Kudumbashree Mission, Ernakulam	
30.	Ms. K.C. Ranjini,	Independent Consultant (Management & Finance)	
31.	Ms. Thripathi Shetty,	Transgender entrepreneur	

Ph.Ds Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	A study on the performance of Kudumbashree Enterprises in Thiruvananthapuram District, Kerala	Basheer M	Dr. P K Baby, External Guide, Bharathiar University, Coimbatore

Publications**a. Papers**

Sl.No.	Name of Paper	Impact Factor, if any
1.	Economics of Education- Perception and Tendency of Investment for Human Capital Formation	UGC care Group 1
2.	Economics of Education: Impact of Economic Support Factors and Intention to Join Higher Education.	5.80

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Dr. P K Baby	Environmental Amenities and Property Value Models: Implications for Policy Makers, Paper Presented at Social Science Research Colloquium 2022 on “Sustainable Development Goals and Socioeconomic Change: Learning and Practice Opportunities” 21 st and 22 nd April, 2022 at SCMS, Cochin.	Panelist

Role of Faculty In International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Dr. P.K Baby	Bharathiar University, Coimbatore	Approved Research Guide (External)

Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Dr. P K Baby	Best paper Award - Social Science Research Colloquium 2022 on “Sustainable Development Goals and Socioeconomic Change: Learning and Practice Opportunities” 21st and 22nd April, 2022.	SCMS, School of Technology, Cochin

Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1.	‘Indigenous Agricultural Practices and Food security in Tribal villages in Kerala’	State Plan Grant funded scheme ‘Seed Money for New Research Initiatives (SMNRI)	100000	Dr. P K Baby

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Coordinator	Funding Agency
1.	FDP on Gender Sensitisation and Gender Equality	07 -13, September 2021	Dr. P K Baby	CUSAT
2.	Seminar on Youth Labour Market Outcomes in Kerala: A Gender Perspective	30 th March 2021	Dr. P K Baby	CUSAT
3.	Sound of Music, Music Workshop	1 st -3 rd April 2021	Dr. P K Baby	CUSAT
4.	Creative Commons – Interaction with writer K R Meera	30 th September 2021	Dr. P K Baby	CUSAT

Other Programmes / Activities

No.	Name of the Programme	Details
01.	National Elocution Competition Resist or Regret: Taking Dowry is No Grace	
		<p>Creating awareness against the practice of dowry is the key step to end atrocities against women. The Honorable Governor of Kerala, His Excellency Sri. Arif Mohammed Khan suggested all higher education institutions to take measures for creating public awareness against the practice of dowry. To inform all stakeholders, primarily youth and students, about the social, economic, psychological, and health hazards of dowry and dowry violence in India, Department of Youth Welfare, Cochin University of Science and Technology organized a national level online Elocution Competition in the topic Resist or Regret: Taking Dowry is No Grace on 02nd September 2021.</p> <p>We received a total of 64 entries of which it was shortlisted to 21 after the first round of selection conducted on 29th August,2021. The final round was conducted on 2nd September 2021. Ms. Gayathri Prakash from NSS College, Nenmara, Kerala secured first position with Golden Jubilee citation and a cash award worth `5000. Ms. Namarta Sharma of Himachal Pradesh University, Himacahal Pradesh secured second position with Golden Jubilee citation and a cash award worth `3000. Ms. Apoorva Sigh of IMED-BVP, Pune, Maharashtra won the third prize with Golden Jubilee citation and a cash award worth `2000. Ms. Meena P of Govt. Law College. Trivandrum and Ms. ArathiSaleef of St.Albert’s College , Ernakulam bagged consolation prizes with a cash award worth `1000. Dr. K N Madhusoodanan, Vice Chancellor, Dr. P G Sankaran, Pro-Vice Chancellor, Dr. V Meera, Registrar and and Dr. P K Baby, Director Students Welfare congratulated the winners and participants.</p>
02.	Anti-Ragging Awareness Programme - September – December 2021	
		<p>Department of Youth Welfare, Cochin University of Science and Technology, District Legal Services Authority and Cochin University Legal Aid Clinic (CULAC) has jointly organised Anti Ragging Awareness activities in the campus for the year 2021-22. Due to Covid -19 restrictions, the Department organised various activities in online and offline mode. The programme was officially inaugurated by Justice K. Vinod Chandran, Hon’ble Judge, High Court of Kerala</p>

& Executive Chairman, KeLSA. Mr. Nizar Ahammed K.T, District Judge and Member Secretary, KeLSA released the handbook. Chief guest Justice K. Vinod Chandran mentioned that the word ‘ragging’ should be removed from the dictionary. Such should be the steps that has to be taken by the educational institutions to prevent ragging in the campuses. He said that the student fraternity should focus entirely on their academic and extracurricular activities.

Justice K. Vinod Chandran, Hon’ble Judge, High Court of Kerala & Executive Chairman, KeLSA released handbook. Dr. K.N Madhusoodanan, Vice Chancellor, Presided over the function. Dr. P K Baby, Director, Department of Youth Welfare received handbook. Dr. A Vani Kesari, Director School of Legal Studies welcomed the gathering and Dr. Binumole K, Coordinator CULAC proposed vote of thanks.

National Level Elocution Competition

To spread the message against ragging among the students of the country, the Department has organised an elocution competition on 29.10.2021 on the topic, ‘Ragging doesn’t Brake Ice, it Breaks Lives’ for the students of Cochin University of Science and Technology. 18 students from various departments across the University participated in the event. Ms. Anagha P, School of Legal Studies, Cochin University of Science and Technology bagged first prize worth cash award of `3000, Ms. Siva P Babu- School of Legal Studies, Cochin University of Science and Technology bagged second prize worth cash award ` 2000 and Ms. Sandra Ann T Joseph- School of Legal Studies, Cochin University of Science and Technology, bagged third prize worth cash award of ` 1000. Mr. Ajes P Mathew and Haridev Varma, School of Legal studies, Cochin University of Science and Technology received special mention from the jury.

Handbook ‘CURB RAGGING IN EDUCATIONAL INSTITUTIONS’

Creating awareness about ragging is the first and most important step in curbing menace of ragging in the campus. Department of Youth Welfare published a book ‘Curb Ragging and Sexual Harassment of Women Employees & Students in Higher Education Institutions’ a complete handbook on the measures on curbing ragging and prevention, prohibition and redressal of sexual harassment of women employees and students in higher education institutions, especially Kerala. This handbook contains various aspects of anti-ragging including definition, preventive measures, The Kerala Prohibition of Ragging Act, measures proposed by University Grants Commission on curbing the menace of ragging in higher educational Institutions, AICTE norms, provisions from Indian

	<p>Penal Code and UGC (Prevention, prohibition and redressal of sexual harassment of women employees and students in higher educational institutions) Regulations, 2015. This handbook will be a great help to the management, heads of the institutions, parents, students and other educational administrators across the country.</p> <p>Video Classes on Anti-Ragging</p> <p>The Department of Youth Welfare, Cochin University of Science and Technology has recorded and published anti-ragging video classes by eminent officers- Dr. K.T Nizar Ahammed, District Judge and Member Secretary, KeLSA, Sri. Aishwarya Dongre IPS, ACP Kochi and Adv. FerhaAzzez, Member Anti Ragging Committee. Cochin University of Science and Technology handled sessions on various aspects of anti-ragging. The whole classes and handbook were uploaded in the University website.</p>
03	<p>7 days FDP on Gender Sensitization</p>
	<p>Gender Justice in educational institutions involves a wide range of measures for correcting gender imbalances. Merely addressing gender-based violence is not adequate for this. Championing gender justice would involve constant un-learning and re-learning processes. Colleges and Universities being institutions of training and grooming citizens of the future, gender sensitization assumes greater importance in the higher education sphere. The Honorable Governor of Kerala, His Excellency Sri. Arif Mohammed Khan suggested all higher education institutions to take measures for creating public awareness against the practice of dowry. The Kerala State Higher Education Council and the UGC had earlier stressed upon the need for regular workshops on gender sensitization in Higher Education Institutions. The increasing cases of violence against women in the recent past have also necessitated such programmes.</p> <p>Considering these, the Department of Youth Welfare and the UGC Women's Studies Centre, CUSAT jointly organised a 7-day Faculty Development Programme (FDP) on Gender Sensitization and Gender Equality from 7th to 13th September 2021. The FDP aimed to sensitize faculty across the higher educational institutions in Kerala on the core gender themes which will raise awareness among teachers of the colleges and universities on gender dynamics, gender violence and to equip the teachers to systematically consult and involve in the issues which affect the lives of women and children. The FDP consisted of lectures, discussions, and activities.</p>

	<p>The Faculty Development programme officially inaugurated by Dr. R Bindu, Honourable Minister for Higher Education, Kerala at 2.00 pm on 07.09.2021 through online mode. What is to be aimed in these sensitization programmes is not mere knowledge dissemination, but an active constructive process whereby existing patriarchal norms and traditional notions are questioned at the individual level, leading to a new set of egalitarian values and understanding, Hon'ble minister said. She further added that the spirit of scientific temper also emphasizes questioning the obvious, and changing our perceptions in the light of new scientific evidence and the changing times. Dr. K N Madhusoodanan, Vice Chancellor; Dr. P G Sankaran, Pro Vice Chancellor; Dr. V Meera, Registrar; Dr. K Ajitha, Director, Women's Studies Centre; Dr. P K Baby, Director, Department of Youth Welfare; Dr. Chichu C and Dr. Aparna Eswar spoke on the occasion. Former Director, CWSD, New Delhi Dr. Indu Agnihotri delivered Keynote address. Dr. K P Aravindan, Sri. Prajith P.K, Dr. K M Sheeba, DR. Myna Umaiban, Dr. P K Baby, Dr. Devi Saumyaja, Dr. Chichu C, Adv. Sandhya Raju, Dr. Shalini M, Dr. Meera Velayudhan, Dr. Priya Nair, Dr. SujaKarthika, Dr. Tissy Mariam George, Dr. Sonia George, Dr. Rosewine Joy and Dr. P.K Rejula handled various sessions.</p>
04	<p>Creative Commons – Interaction with writer K R Meera</p>
	<p>Department of Youth Welfare, Cochin University of Science and Technology organised a discussion with renowned writer K R Meera, - winner of the Kerala Sahitya Academy Award (2009 and 2013), Odakkuzhal Award (2013), Vayalar Award (2014), Kendra Sahitya Academy Award (2015), MuttathVarkey Award (2018) and shortlisted for the 2016 DSC Prize for South Asian Literature -under the creative commons- interactive sessions organised by the Department of Youth Welfare on 30th September 2021. The programme was organised in Offline mode, following Covid protocols and online mode through university website. Science, art and literature are three essential pillars of humanity. Imagination is the basic element of development. Literature teaches us about the superfluousness of boundaries, Meera said. Dr. P K Baby, Director, Department of Youth Welfare, Cochin University of Science and Technology welcomed the gathering and known film director and actor Archana Padmini moderated the session. Dr. K. Girish Kumar, Director, IQAC; Dr. K. Ajitha, Dean Humanities and Member Syndicate, Dr. G. Santhosh Kumar, Director CIRM participated in the programme. Fifty persons participated offline in the programme organised at seminar complex of the University.</p>

05	CUSAT Model United Nations
	<p>The third CUSAT Model United Nations under the auspices of the Department of Youth Welfare, Cochin University of Science and Technology was launched in the Thrikkakara campus of Cochin University of Science and Technology on 25 March. About 200 students from different states of India participated in the event held on March 25, 26 and 27.</p> <p>The Six committees of CUSAT MUN 2022 were held in various halls of Science Seminar Complex, University Senate Hall and the Central Library Hall. With highly qualified Executive Board members from across the country, CUSATMUN'22 boasted into six committees - The Disarmament and International Security Committee (DISEC), with an agenda of COLD WAR 2022, discussed questions of international importance regarding the security and demilitarization throughout all countries and regions, along with ensuring that citizens across the globe remain protected is the first committee. The United Nations Human Rights Council (UNHRC) committee raised concerns over human rights violations and had thematic discussions on them, enabling a free flow of opinion. The agenda for this committee was the ongoing humanitarian crisis in Afghanistan. The All-India Political Party Meeting (AIPPM) committee discussed diverse political groups of India to reach a consensus on decisions of national importance. The agenda for this committee was 'discussing the challenges, concerns and way forward for the Indian federal structure with special reference to 75 years of centre-state relations and a discussion on the uniform civil code (UCC) with special emphasis on religious dress code in public institutions. The Continuous Crisis Committee (CCC) looked the history with its agenda set as World War 2. The International Press Delegation (IP) committee covered the developments within all the committees. The reporters organize and attend press conferences, interview delegates, and write articles to be published during the conference. This year, CUSAT MUN introduced a new committee UN Framework Convention on Climate Change (COP 27), which aims to combat the consequences of human interference with the climate. The agenda for this committee was the acceleration of the race to zero campaign with a Special Emphasis on the green economy. Furthermore, Cusatmun'22 is a part of the Refugee Challenge organised by the UNHCR. The Golden Jubilee Scholarships were awarded to 15 students as part of the University's Golden Jubilee.</p> <p>The third edition was inaugurated by Dr. K. N. Madhusoodanan, Vice-Chancellor of Cochin University of Science and Technology. The Vice-Chancellor commented that this helps students to understand political Situations, Diplomacy,</p>

	<p>and gain experience in all areas of international exposure. Pro-Vice-Chancellor Dr. P. G. Sankaran presided over the function. Dr. P K Baby, Director, Department of Youth Welfare, UNHR representative Smriti Brar and CUSAT MUN Secretary General Mukund Rajesh spoke on the occasion.</p> <p>Ms. Gopika S Nair of Cochin University of Science and Technology and Ms. Devabala Padmakumar of Elamakkara Bhavans School excelled as Amit Shah and Smriti Irani at the All India Political All Party Conference shared the Best Delegate Awards in that category. Shubashree Manikandan of PSG college, Chennai and Varshithaaa Govardhan of SRM University Coimbatore were adjudged as the best reporter and best photographer respectively by the International Press committee. Pranav Somasekaran of Thiruvananthapuram Law College and Aaron Dev Jose of Thiruvananthapuram College of Architecture were also selected as the best delegates in the International Security Council.</p> <p>Isaac Mathew and John Paul of Cochin University were selected as the Best Delegates in the International Crisis Committee. Mrinalini M Manoj of Veda Vyasa Vidyalaya, Kozhikode, Ann Treesa Baby of CUSAT and Rojin K Saji of JDT College, Kozhikode were selected as the best delegates in the International Human Rights Committee (IHRC).</p> <p>Deeksha Rajesh of PSG College, Chennai and Viswanath JR of Cochin University were selected as the best delegates in the COP committee. Bhavans school Elamakkara won the best delegation award. Dr. P. K. Baby, Director, Department of Youth Welfare, presented awards and prizes. CUSAT MUN Secretary General Mukund Rajesh, Director General Jerry Peter and Convener Osia Varghese were present.</p>
06	<p>Workshop on Youth Labour Market Outcomes in Kerala: A Gender Perspective</p>
	<p>Despite commendable achievements made by Kerala in human development, the State is often criticised for poor labour market outcomes, often reflected in low workforce participation rates and high unemployment, particularly for the youth. For young women, the situation is bleak as a significant share of them with high educational attainments are outside the labour market, neither working nor seeking jobs. The Department of Youth Welfare, Cochin University of Science and Technology (CUSAT) and the Centre for Socio-economic and Environmental Studies (CSES) jointly organised a Workshop on Youth Labour Market Outcomes in Kerala: A Gender Perspective on 30th March 2022 at the</p>

Centre for Budget Studies, CUSAT to bring together academicians, researchers, students, policymakers and practitioners to reflect on the emerging labour market dynamics concerning youth in Kerala from a gender perspective. The Workshop was inaugurated by Dr. K.N. Madhusoodanan, Vice-Chancellor, CUSAT. Dr. Jayan Jose Thomas, Professor of Economics at the Indian Institute of Technology (IIT), New Delhi, delivered the keynote address on the topic ‘Can Knowledge Create Jobs for the Youth in Kerala?’. He emphasised on the role of higher education institutions in creating jobs and Universities in the state should be equipped for meeting the needs in job market. Dr. P K Baby, Director, Department of Youth Welfare, Dr. N. Ajith Kumar, Director, CSES and Dr. Parvathy Sunaina, Associate Fellow, CSES spoke on the occasion.

In the second session, Dr. Rakkeethimothy, Fellow, CSES presented a paper on ‘Understanding Youth Labour Market in Kerala’; Ms. Neethu Thomas, BITS, Goa Campus, Dr. D. Shyjan, Associate Professor, Department of Economics, University of Calicut presented a paper on ‘Outsiders of the Labour Force in Kerala: Demystifying Deterrents of Female Work’; and Shri. K.N. Gopinath, Chairperson, Kerala Institute of Labour and Employment (KILE) spoke on ‘Youth Labour Force in Kerala: Issues and Challenges’. Dr. M.K. Sukumaran Nair, Director, Centre for Budget Studies, CUSAT chaired the session and Dr. S. Muraleedharan, Former Professor of Economics, Maharaja’s College Ernakulam and Dr. P. R. Suresh, Assistant Professor, Department of Applied Economics, CUSAT were the discussants.

The third session was on Improving Youth Labour Market Outcomes: Challenges & Way Forward. Dr. Martin Patrick, Former Professor of Economics, Maharaja’s College Ernakulam chaired the session. Mr. M. Salim, PMU Head, Kerala Knowledge-Economy Mission Project, Kerala Development and Innovation Strategic Council (K-DISC) spoke on the subject ‘Skill Development Initiatives for Youth’; Ms. Renjini S., District Mission Co-ordinator, Kudumbashree Mission, Ernakulam spoke on ‘Women Entrepreneur Development Initiatives: Experience of Kudumbashree’; Ms. K.C. Ranjini, Independent Consultant (Management & Finance) spoke on ‘Creating an Ecosystem for Self-Employment through Social Enterprises’; Ms. Thripathi Shetty, a transgender entrepreneur shared her experience on ‘Becoming An Entrepreneur: Struggle and Survival of Transgender Community Members in Kerala’ and Dr. Shaji N. Director, Rural Science & Technology Centre, Thuruthikkara spoke on ‘Employment Generation at Local Level: Experiences of Thuruthikkara’, following an open discussion.

The Workshop discussed emerging trends and patterns of the youth labour

	market in Kerala and how social conditioning affects the participation of men and women in the labour market, particularly their entry, mobility or quitting the labour market. Further, deliberation in the Workshop examined in detail how skill development programmes become a catalyst to improve youth labour market outcomes and to what extent entrepreneurship programmes are successful in Kerala.
07	<p>The Sound of Music- music workshop</p> <p>The Sound of Music - a music workshop organized by the department of Youth Welfare, Cochin University of Science and Technology with a mission to awake and nourish the unique musical spirit that lies in every student inaugurated on 01st April 2022. The objectives of the workshop were:</p> <ul style="list-style-type: none"> • To demonstrate knowledge of basic factual material related to the elements of music. • To communicate an understanding of the role and interaction of music in a changing society, both past and present. • To explore and demonstrate skills in understanding and appreciating music of other cultures and traditions. • To demonstrate knowledge of the variety of materials/media used to make music in varied settings. • To demonstrate critical listening skills through the discussion of compositions using musical terms and expressions. • To react and make informed criticisms about individual and group creative efforts through analysing and exploring the creative process. <p>Mr. Bijibal, well known music director, Mr. Harisankar V, Chief Audio Engineer/Producer at My Studio, Kochi, Ms. Sajna Sudheer A - Assistant Professor of Music & Composer, Mr. Sreekanth Hariharan, Playback Singer & Composer and Anantharaman Anil - Musician (Keyboard Artist) & Composer were the key resource persons. The workshop was officially inaugurated by Mr. Bijibal, music director at 02.00 p.m. on 01st April 2022. Dr. P.K Baby, Director Department of Youth Welfare, Ms. Sajna Sudheer A and Ms. Nivea Kesav spoke on the occasion. Mr. Bijibal talked about various techniques of singing and composition of music. He also explained the essential qualities to keep in daily life as a singer.</p> <p>The second session of the workshop was done by Harisankar V, Chief Audio</p>

Engineer/Producer at My Studio, Kochi on A walk-through Today's Music Production. He started with primary music education, which is critical in terms of the students' musical development, including music literacy. Then the workshop developed into various aspects of skills in music education, such as, voice quality, sense of rhythm, types of pitch, modulations, mic arrangements etc. The Second day started by the session of Ms. Sajna Sudheer A. - Assistant Professor of Music & Composer Accompanied by Mr. Anantharaman Anil - Musician (Keyboard Artist) & Composer on Emotional Cognizance of Music & Impact of Ragas in Music. They explained about various types of ragas and how it is used in composing music. They also demonstrated how Carnatic concerts are constructed using these ragas. The students made their own small group productions based on the learning in the workshop. Sessions in the third day were handled by Sreekanth Hariharan, Playback Singer & Composer accompanied by Anantharaman Anil - Musician (Keyboard Artist) & Composer on Understanding the Voice: Professional Singing and Voice Techniques. They explained some of the Vocal exercise techniques, singing qualities, expression, composition and lyrics and notations.

As widely accepted, music workshops help to develop brain areas involved in language and reasoning. The workshop helped the participants to physically develop the cognitive part of their brain, known to be involved with processing language, linking familiar songs to new information etc. The three days experience increased their ability to think creatively and to solve problems by imagining various solutions, rejecting outdated rules and assumptions together with increased skills in music. In general, students were in positive emotions and they enjoyed all sessions and it was an excited and innovative experience in their life.



Centre for the Study of Social Exclusion and Inclusive Policy (CSSEIP)

FORMAT FOR SUBMISSION OF THE ANNUAL REPORT 2021-22

Name of the Department: Centre for the Study of Social Exclusion and Inclusive Policy (CSSEIP)

Brief History of the Department: The Centre for the Study of Social Exclusion and Inclusive Policy (CSSEIP) has, since the commencement of its formal work in February 2009, engaged itself in building the intellectual infrastructure required for furthering research in the broad agenda of social exclusion. Following the general approach to social exclusion research, the Centre examines social exclusion as both '*a Process and a Status*'. Developing on this scheme of examining social exclusion, the Centre advocates the inclusion of the 'Process-Status-Process' approach in its research which incorporates identification and examination of the process that has led to social exclusion, evaluation of the present status/ magnitude of social exclusion and charting out of processes to achieve the desired level of social inclusion.

Programmes of Study/Research: The topics which the Centre has identified as its core 'research themes' are a) Educational and Digital Exclusion b) Housing and Basic Amenities Exclusion c) Socio-cultural and Structural Determinants of Exclusion, d) Spatial Exclusion and e) Demographic dimensions of exclusion. The primary 'contexts' of the Centre's research are a) Tribal Communities in Kerala b) Resource Based Industries in Kerala c) Rural Population in Kerala d) Workers in Unorganized Sectors in Kerala e) Exclusion of the Elderly in Kerala etc.

Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Dr. D Rajasenan	Hon. Director	Ph. D Economics	Economics (Fisheries Economics)
2.	Dr. Suresh P. R	Assistant Director	Ph. D Economics	Economics
3.	Dr. Rajeev B	Assistant Professor (Contract)	Ph. D Economics	Economics (Social Exclusion)

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1.	M. Phil in Social Exclusion and Inclusive Policy Studies	3	3	6

Research Facilities

1 Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
720	-

Distinguished visitors

Sl.No.	Name	Affiliation	Remarks
1.	Dr. M. S. Jayakumar	Assistant Professor, Department of Sociology, University of Kerala, Thiruvananthapuram	Research discussions
2.	Dr. Varghese Manaloor	John P. Tandberg Chair in Economics and Management and Associate Professor at, University of Alberta, Canada	Research discussions

Ph.Ds Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
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Publications**a. Papers**

Sl. No.	Name of Paper	Impact Factor, if any
1	Rajasenan, D and Rajeev B (2021) "Poverty Reduction as a Social Inclusion Agenda: A Social Class Analysis in the Tribal Belts of Wayanad District of Kerala", in Agricultural and Rural Development in Backward Regions of India, Sunil Narwade (ed.), Kailash Publications, Aurangabad.	
2	Rajasenan, D, Surabhi Ghai and Rajeev B (2021), "Problems of Juvenile Delinquents in Kerala: The Success of 'Kaval Project' in Reorienting the Delinquents", South Asian Journal of Socio-Political Studies. VOL.XXI NO.2.	

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Dr. Rajeev B	Webinar on Policy Lessons from Multi-Dimensional Poverty Analysis in India, organized by NIRD, 23.07.2021	Discussant
Dr. Rajeev B	Towards Zero Hunger: Evidence and Policy Recommendations, organized by NIRD, 18.08.2021	Participant

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Coordinator	Funding Agency
1	Session on the Emigration and exclusion of elderly left behind in Kerala during COVID 19 period, 2021.	2 hours	Dr. D. Rajasenan and Dr. Rajeev B	-

Deen Dayal Upadhyay Kaushal Kendra (DDUKK)

Brief History of the Department:

UGC has sanctioned DDU KAUSHAL KENDRA (DDUKK) to Cochin University of Science and Technology and sanctioned rupees four crores as financial assistance to establish the same in CUSAT. CUSAT started offering the following two M.Voc programmes from the academic year 2015-16 and one B.Voc programme from the academic year 2018-19 onwards.

Sl.No	Name	Designation	Qualification	Specialization
1	Prof.(Dr.) Zakkariya K.A.	DIRECTOR	M.A,MBA,MHRM, Ph.D,	Organization Behaviour,Human Resource Management& Marketing
2	Dr.Renjini D	Associate Professor	MBA, Ph.D,	Marketing, Business Model Analysis,
3	Sri.Vinu Varghese V V	Assistant Professor	B.Tech, M.Tech,	Android App Development, Data Mining ,
4	Dr.NimithaAboobaker	Assistant Professor	B.Tech, MBA, NET, Ph.D,	Business Process and Management, Strategic Human
5	Dr.Elizabeth George	Assistant Professor	B.Com, MBA M.Phil, ,Ph.D, NET	HRD,HRM
6	Mr.AthulMithran	Assistant Professor	BCA,MCA,NET	Mobile & Web Development
7	Ms.Suji Jose	Assistant Professor	B.Tech, M.Tech, (Computer Science)	Cyber forensics and Information security

8	Dr.Rajeswari.R	Assistant Professor	B.A,MBA, PGDBA,MHRM,Master of foreign Trade,NET, Ph.D,	Human Resource Management, Marketing
9	Dr.Vinney Zephaniah Vincent	Assistant Professor	B.Tech, MBA,	General Management, Entrepreneurship, Operation Management
10	Mr.Shajin .P	Assistant Professor	B.Sc,MBA, NET,	Operations Management& Human Resource Management
11	Ms.Hashmy Hassan	Assistant Professor	B.Tech, M.Tech,NET, Post Graduate Diploma in Data Science	Data Science & Network Computing, Information Retrieval
12	Ms.Sukrutha A.K.	Assistant Professor	B.Tech, M.Tech,	Data Analytics, Computer and information Science

1. M.Voc. in Mobile Phone Application Development
2. M.Voc. in Technology and Management Consulting

Sl.No	Name	Designation	Qualification	Specialization
1	Vinod V Nair	Visiting Faculty (Former Sr.Manager (E), BZL, Binanipuram)	B.Tech, MBA, M.Tech	Operations Management
2	Leo Prince	Guest Faculty	Bachelor Graduate in Electronics And Communication Engineering	Cloud and Advance Technologies
3	Arun Chand	Guest Faculty	B.Tech in Electronics and Communication Engineering	Kotlin Programming
4	Reena J Andrews	Guest Faculty	Post Graduate certificate in the Teaching of English.M.Phil, PhD	<ul style="list-style-type: none"> English Language Skills Strategic Communicatio n for Workplaces
5	Dr.Santhosh Kumar P.K.	Guest Faculty	MA,PhD.	Economics for business decisions
6	DeepaJawahar	Guest Faculty	M.Com Finance,MBA HR and Marketing, PhD(Commerce)	Financial Accounting, Management Accounting
7	Sreeja V Sharma	Guest Faculty	MBA Finance and Marketing, MSc Maths	Quantitative Techniques
8	SabiraNalakath	Guest Faculty	M.Phil in Applied Economics	Economics for Business
9	Unnikrishnan.P	Guest Faculty	MCA,DIIT	Database and Backend Technologies

10	SmithaXavier.P	Guest Faculty	B.Sc,MBA,M.Com	Finance, Marketing
11	Abraham Charly	Guest Faculty	B.A, M.A,MBA	Sales and Marketing

3. B.Voc. in Business Process and Data Analytics

The B.Voc programme is six semester degree programme. The M.Voc programmes are four semester masters programmes with multiple entry and exit options as instructed by the UGC in the guidelines of the DDUKK scheme. That is, the proposed M.Voc. Courses are designed in such a way that students who successfully complete first two semesters can discontinue the programme if they wish and can get a Post-graduate Diploma in the respective trades. Those who continue the course further and finish four semesters successfully will be eligible for M.Voc. Degree. Students who discontinue after second semester with P.G. Diploma can come back and take a lateral entry to third semester on a later time if they wish to do so and can finish their M.Voc Degree.

Programmes of Study/Research:

- 1) M.Voc in Technology and Management Consulting.
- 2) M.Voc in Mobile Phone Application Development.
- 3) B.Voc. in Business Process and Data Analytics.

Administrative Personnel:

Sl.No	Designation	No.of Posts
1	Director	1
2	Assistant Section Officer	1
3	Computer Assistant Sel. Grade	1

Technical Personnel:

Sl.No	Designation	No.of Posts
1	Technical Assistant (Contract)	1
2	Lab Attendant (Daily Wage)	1
3	Professional Assistant Grade II (Contract)	1

Student Enrolment:

Sl.No	Programme of Study	Men	Women	Total
1	M.Voc in Technology and Management	9	23	32
2	M.Voc in Mobile Phone Application	8	13	21
3	B.Voc in Business Process and Data Analytics	25	8	33

Research Facilities:

Desktop computers	Lenovo Think Center M93	25
	acer Computer system	25
Phone	I-Phone 6S	2
	Android Phone (Samsung Galaxy S7 Edge)	5
	Windows Phone Lumia 960	2
Tablets	Lenovo-PHAB PB1	3
	Apple I-pad	1
iOS Machines	Apple MacBook	2
	Apple Mac mini	19
	I-Mac-MK442HN/A	2
	Usb mouse	15
Interactive White Board		1
Android Tabs	Lenovo phab 2 plus	5
LED Monitors		19
TV	Sony 32 inch LED TV	1
Extention code		3
HDMI cable		1
LCD projector	EPSON	3

a. **Laboratories** – A computer lab & Mobile App development lab consisting of following machines is set up in the centre.

b. **Library:**

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
844	16(books)

Distinguished visitors

Sl No	Name	Affiliation	Remarks
1	Sri. JeevanBabu K. IAS	Director of General Education, Kerala	
2	Sri. Balagopal C.	Chairman, the Federal Bank Founder and Former MD, TermoPenpol,Former IAS Officer	
3	Mr Dinesh Thampi,	VP & Delivery Head, TCS Kerala	
4	Ms.Reeja George	Talent Development Head, TCS Kochi	
5	Mr.Arun Narayan	Delivery Partner, TCS	
6	Mr.AnandVenkitaraman	Cochin Chamber of Commerce & Industry	
7	Mr. A.S. Girish	Former Head, HR and Admin, AppoloTyres and Dean XIME, Kochi	
8	Sri. Mohammed Hanish	IAS Principle Secretary, Education and Industries	
9	Dr. B. Shaji	State Programme Officer, SamagraShiksha Kerala	

Publications:**a. Papers**

Sl.No	Name of Paper	Name of Author	Impact Factor, if any
1.	2021, “Family Incivility, Burnout and Job Satisfaction: examining the mediation effects”, Benchmarking, an International Journals, ABDC-‘B’ journal, Scopus/ESCI indexed; Emerald Publications Vol.28No.6, pp.2110-2120; ISSN:1463-5771 http://doi.org/10.1108/BIJ-10-2020-0534	Tresia.M, Dr.Nimitha Aboobaker and Devi Uma	3.93
2.	2021 Effectiveness of web-based learning motivation, computer self-efficacy, and learner engagement”, Development and Learning in Organizations; Vol. ahead of print No. ahead of print. https://doi.org/10.1108/DLO-07-2021-0139 Scopus indexed/ABCD-C journal; Emerald Publications, ISSN:1477-7282	Dr.Nimitha Aboobaker and Muneer K.H.	0.39
3.	2021, ”Spiritual Leadership and Intention to Stay: examining the mediating role of employee voice behaviour”, Journal of Management Development (Scopus/ESCI indexed/ABDC-‘C’ journal/Emerald Publications) Vol.40No.5, pp.352-364. https://doi.org/10.1108/JMD-05-2019-0182 ; CiteScore 2018:1.75; ISSN:0262-1711	Prof(Dr.) Zakkariya K.A and Dr.Nimitha Aboobaker	2.37
4.	Assessment methods and interventions to develop computational thinking—A literature review	Mr.Vinu Varghese V.V, Ms.V.G. Renumol	10
5.	Design of Mini-Games for Assessing Computational Thinking	Mr.Vinu Varghese V.V, Ms.V.G. Renumol	0.5

6.	Role of Business incubation on the financial and non-financial performance of technology startups: a multivariate multiple regression analysis. Journal of Entrepreneurship Education,24 (5),1-16.	Mr.Vincent V.Z. &Prof.(Dr.) Zakkariya K.A.	1.36
7.	Business incubation and innovation speed: mediating role of absorptive capacity. The Dynamic Relationship Management Journal,10(1),57-72	Mr.Vincent V.Z. &Prof.(Dr.) Zakkariya K.A.	0.15
8.	IMPACT OF INTERNAL MARKETING ON CUSTOMER ORIENTATION OF EMPLOYEES: MEDIATING ROLE OF EMPLOYEE BRAND IDENTIFICATION International Journal of Management (IJM) Volume 11, Issue 12 , December 2020,pp. 2300-2306 ISSN Print : 0976-6502 and ISSN Online : 0976-6510	Dr.Renjini.D	0.1
9.	“MODELLING CONSUMER BEHAVIOUR DURING PANDEMICS: A CONCEPTUAL MODEL” authored by “Renjini.D and George Joseph” International Journal of Management (IJM), Volume 11 Issue 11, November 2020,pp. 816-822; ISSN Print : 0976-6502 and ISSN Online : 0976-6510	Dr.Renjini .D	
10.	Enhancing the efficacy of Peer-learning among post –graduate students	Dr. Elizabeth George	ISBN-978-93-950596-0-7.
11.	Assessment Methods and Interventions to Develop Computational Thinking- A Literature Review :IEEE Xplore	Mr. Vinu Varghese V.V. & Dr.Renumol V.G.	10.96

b. Books:

Sl. No.	Name of Books	Authors
1.	COUNSELLING SKILLS FOR MANAGERS – A Holistic Perspective (Himalaya Publishing House 2021)	Dr. Elizabeth George

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students:

Name of Participant	Name of Seminar/Conference/Workshop	Role
Prof.(Dr.) Zakkariya K.A.	Invited speaker in the inaugural session of International Management conference organized by Bhavan's Royal Institute of Management on 14-01-2022.	Speaker
Prof.(Dr.) Zakkariya K.A.	Presented a paper titled "Social media engagement, Relationship Satisfaction and Brand love as determinants of e-WOM: the case of business Schools in India at the ISDI-Global Conference 2021: Leading business in a FLUID world held at Indian Institute of Management Nagpur from December 27-30, 2021 (Online)	Paper Presentation
Prof.(Dr.) Zakkariya K.A.	Presented a paper titled "The Role of Environmental concern in Ridesharing Intention in the Context of Covid-19" at the ISDI-Global Conference 2021: Leading business in a FLUID world held at Indian Institute of Management Nagpur from December 27-30, 2021 (Online).	Paper Presentation
Prof.(Dr.) Zakkariya K.A.	Presented a paper titled "Determinants of Virtual Care Continuance Intention after the Pandemic" in the 9 th International Conference on Emerging Trends in Management (INTCONF-22) conducted by Marian College Kuttikanam Autonomous (Marian Institute of Management) held on January 21, 2022 (Online).	Paper Presentation
Prof.(Dr.) Zakkariya K.A.	Induction Programme for newly recruited Assistants organized by Centre for Employee Empowerment and Skill Acquisition on 09-03-2022.	Resource Person

Prof.(Dr.) Zakkariya K.A.	Induction Programme for newly recruited Teachers organized by Centre for Employee Empowerment and Skill Acquisition on 10-03-2022.	Resource Person
Prof.(Dr.) Zakkariya K.A.	Induction Programme for newly recruited Office Attendants organized by Centre for Employee Empowerment and Skill Acquisition on 11-03-2022.	Resource Person
Prof.(Dr.) Zakkariya K.A.	Induction Programme for newly recruited Teachers organized by Centre for Employee Empowerment and Skill Acquisition on 14-03-2022.	Resource Person
Prof.(Dr.) Zakkariya K.A.	Delivered an invited lecture on “Self-Development” as part of the one day orientation programme conducted for the PG students of MES College Marampally, Aluva, on 16 th December 2021.	Resource Person
Prof.(Dr.) Zakkariya K.A.	Delivered an invited lecture on “Self-management for Career Success” to the students of Kannur University on 18 th November 2021 as part of the FOCUS 2021- Orientation programme conducted by the IQAC of the Kannur University.	Resource Person
Prof.(Dr.) Zakkariya K.A.	Delivered invited talk on “Corporate Expectations From MBA Students” as part of PRATIPAD-2021 (MBA induction programme) at Bhavan’s Royall Institute of Management, Tripunitura on 17 th September 2021.	Resource Person
Prof.(Dr.) Zakkariya K.A.	Delivered an Invited lecture on “Scope and Career Opportunities of IT Sector & B.Voc programmes” at St.Joseph’s College (Autonomous) Irinjalakkuda, Thrissur, on 5 th November 2021.	Speaker
Prof.(Dr.) Zakkariya K.A.	Delivered a Training session on “Self-Management Techniques” at Bharatmata School of Legal Studies, Choondy, Aluva on 25 th November 2021.	Resource Person

Prof.(Dr.) Zakkariya K.A.	Delivered an invited lecture on “national Education Policy (NEP) 2020” in a webinar organized by Bhavan’s Royall Institute of Management, Tripunitura in association with AICTE, New Delhi on 31 st May 2021.	Speaker
Dr.NimithaAboobaker	“Social media engagement, Relationship satisfaction, and Brand love as determinants of e-WOM: the case of Business Schools in India”, at the ISDSI-G 2021 Conference, organized by IIM Nagpur, December 27-30, 2021	Paper Presenter
Dr.NimithaAboobaker	“Family Incivility and Burnout among Medical Practitioners: A Moderated Mediation model of Life Satisfaction and Psychological Capital” at the ISDSI-G 2021 Conference, organized by IIM Nagpur, December 27-30, 2021.	Paper Presenter
Dr.NimithaAboobaker	“Workplace Spirituality and Contextual Performance in the hospitality sector: examining the influence of Fear of COVID-19 and Employee Wellbeing”, at the PAN IIM World Management Conference, organized by IIM Kozhikode, December 16-18, 2021	Paper Presenter
Dr.Renjini.D	National Conference on Recent innovations in Science & Engineering-2021(RISE-2021) SAMBHRAM INSTITUTE OF TECHNOLOGY, November 20,2021	Presenter
Dr.Rajeswari.R	Swayam online course	Passed the Swayam Course-Academic Writing (15 weeks Course)
Dr. Elizabeth George	International research conference 2021 on Embracing change and transformation	Participated and Presented a paper

Mr.Vinod V Nair (Assistant Professor)	Localizing supply and reforming business models in disruptive times electricity sector in transition economies	Participant
Dr.NimithaAboobaker	Short Term Training Programme on Mixed Methods in Social Science Research A Statistical Package Approach, SCMS Cochin School of Business	Participant
Mr.Vinu Varghese V.V.	Education Technology Tools: SOE CUSAT	Participant
Mr.Vinu Varghese V.V.	AGIL Methodology: SOE CUSAT	Participant
Ms.Sukrutha A K	Data Analytics- Beginner's Tool kit - 30 hrs hands programme	Participant
Ms.Sukrutha A K	DST PURSE - II SPONSORED FIVE DAY ONLINE WORKSHOP ON BIG DATA CONCEPTS, TOOLS & TECHNIQUES (Hands on Using PySpark)	Participant
Ms.Sukrutha A K	Two day Workshop on SAS for Predictive Modeling	Participant
Ms.Sukrutha A K	Three-Day Workshop: Big Data: Hands-on experience	Participant
Ms.Sukrutha A K	Skill Acquisition Programme on Data Analytics - SQL	Resource Person
Dr.Vinney Zephaniah Vincent	International Certified Career Coach- 2 day course by Mindler- Jan 28, 29; 2022	Participant
Dr.Vinney Zephaniah Vincent	Startup India Learning Program by Startup India and Upgrad, February 14	Participant
Mr.Shajin.P	3 Day Online FDP- Empower Your Teaching Pedagogy	Participant
Mr.Shajin.P	One day workshop - Fragile to Agile	Participant
Ms.Suji Jose	Data Analytics- Beginner's Tool kit - 30 hrs hands programme	Co-ordinator
Ms.Suji Jose	DST PURSE - II SPONSORED FIVE DAY ONLINE WORKSHOP ON BIG DATA CONCEPTS, TOOLS & TECHNIQUES (Hands on Using	Participant

	PySpark)	
Ms.Suji Jose	Skill Acquisition Programme on Data Analytics - SQL	Co-ordinator
Ms.Suji Jose	Data Analytics- Beginner's Tool kit - 30 hrs hands programme	Resource Person
Ms.Suji Jose	Python Training(DCS,CUSAT)	Resource Person
Mr.Vinu Varghese V.V.	2021 International Conference on Innovative Trends in Information Technology (ICITIIT)	Paper Presentation
Mr.Vinu Varghese V.V.	Sixth International Conference on Information and Communication Technology for Competitive Strategies (ICTCS 2021)	Paper Presentation
Dr.Rajeswari.R	"Academic Writing" Swayam course for 15 weeks	Participant, Passed the exam
Dr.Rajeswari.R	Chair for the technical session at the online national multidisciplinary seminar organised by Model College, Mumbai	Resource person for a national conference technical session chair.
Dr.Rajeswari.R	A webinar series organised by Jawaharlal business school, Palakkad - on the topic Integrated disaster management	Resource person for webinar series
Dr.Rajeswari.R	Analysis of data by Ms Excel for research by REST society for research international	Attended FDP as participant
Dr.Rajeswari.R	Entrepreneurship Development Program - Session on Managing people organised by KITCO	Resource person (28.09.2021,18.10.2021, 22.12.2021,27.12.2021,03.03.2022)
Dr.Rajeswari.R	ATAL FDP :- Leading Self to excellence	Attended 5 days ATAL FDP as participant.
Dr.Rajeswari.R	Conference Chair for the HR stream in the international level entrepreneurship summit AVALOKA 2.0 from 10th to 12th January 2022, titled "Beyond Sustainability – Trends in	Resource Person

	Regenerative, Socially Responsible, Community Ventures”	
Dr.Rajeswari.R	Presented a paper titled “ Work Life Balance during work from home for Indian working women during Covid – 19 at 2nd international conference on changing business paradigm (ICCBP – 2022) Theme- Rethinking Business Agility during Uncertainty organised by Management Development Institute (MDI) Murshidabad	Participant – Paper presentation
Dr.Rajeswari.R	Soft Skill Development Workshop organised by Chathamkulam Institute of Research and Advanced Studies	Resource Person
HariPriya B, M Voc TMC 1st year Student	V th Beinnial virtual international conference on Aging Well (ICW2022) on Digital transformation: Redegining the Experience for the aged Presented a Paper titled :- The impact of transformation towards Digital India on elderly population	
AnazAzeez V A, M Voc TMC 1st year Student	V th Beinnial virtual international conference on Aging Well (ICW2022) on Digital transformation: Redegining the Experience for the aged Presented a Paper titled :- The impact of transformation towards Digital India on elderly population	

Role of Faculty in International/National organizations/Institutions/Editorial Boards:

Name of Faculty	Name of Organization	Role
Prof.(Dr.) Zakkariya K.A.	Indian Society for Training and Development (ISTD)	Chairman Kochi Chapter and National Council Member
Prof.(Dr.) Zakkariya K.A.	FRACTION Project Funded by European Union.	Coodinator ,
Prof.(Dr.) Zakkariya K.A.	All India Management Association (AIMA)	Life Member
Prof.(Dr.) Zakkariya K.A.	Indian Academy for Management (INDAM)	Member
Prof.(Dr.) Zakkariya K.A.	Was invited reviewer for the Joint Advisory aimed at ensuring safety of students and other stakeholders in the Post Covid-19 scenario by AHPI &GCCMC.	
Prof.(Dr.) Zakkariya K.A.	Indian Maritime University, Chnnai.	Doctoral committee Member
Prof.(Dr.) Zakkariya K.A.	VIT Vellore	Doctoral Committee Member
Dr.Rajeswari.R	ISTD	Life member and Management committee member, Kochi Chapter
Dr.Renjini .D Dr.NimithaAboobaker Dr. Elizabeth George Ms.Suji Jose Dr. Vinney Zephaniah Vincent Mr.Shajin P.	Indian Society for Training and Development (ISTD)	Life Members
Mr.Vinu Varghese V.V.	Computer Science Teachers Association	Member
Dr.NimithaAboobaker	Journal of Global Hospitality and Tourism, University of South Florida (USF) M3 Publishing	Editorial Review Board Member

Dr.NimithaAboobaker	Journal of Global Hospitality and Tourism, University of South Florida (USF) M3 Publishing	Editorial Review Board Member
Dr.NimithaAboobaker	Indian Academy of Management	Annual Member
Dr.Rajeswari.R	Palghat Management Association	Member and Associate Editor of the journal of Organisational Management
Dr.Vinney Zephaniah Vincent	Indian Society for Training and Development	Life Member
Dr.Vinney Zephaniah Vincent	Indian Academy of Management	Annual Member
Ms.Sukrutha A K	ISTD	Life-time member
Mr.Shajin.P	ISTD, Kochi Chapter	Life-time member
Dr.Rajeswari.R	Associate Editor, Journal of Management - Palakkad Management Association affiliated to AIMA	Associate Editor
Dr.Rajeswari.R	Palakkad Management Association	Annual Member
Dr.Rajeswari.R	Indian Society for Training and Development (ISTD - Kochi Chapter)	Life time member and Management Committee coopted member

Awards/Honours/Fellowships etc. received:

Name of Recipient	Name of Fellowships/ Honours/ Awards	Awarding Agency
Prof.(Dr.) Zakkariya K.A.	Best Member Award	for the distinguished service to the organization for the year 2019-20- Indian Society for Training and Development
Prof.(Dr.) Zakkariya K.A.	Won the Best Paper Award	for the paper titled "Determinants of Virtual Care Continuance Intention after the Pandemic" for the 9 th International Conference on Emerging Trends in Management (INTCONF-22) conducted by Marian College Kuttikanam

		Autonomous (Marian Institute of Management) held on January 21, 2022.
Dr.NimithaAboobaker	Emerald Literati Award 2021, Outstanding Reviewer	Emerald Publications
Mr.Shajin.P	Certified Trainer of trainers- A grade	MEPSC & BOSCH
Mr.AnazAzeez V A, M Voc TMC 1 st YEAR	2 nd PRIZE, Spotlight Visual Storytelling	
Mr.AlenJoji, M Voc TMC 1 st year	2 nd PRIZE, Spotlight Visual Storytelling	
Ms.Anjali Dennis M Voc TMC 1 st year	3 rd Prize in Spotlight Visual Storytelling	
Mr.AlenJoji, M Voc TMC 1 st year	1 st Prize Business Quiz competition	
Mr.AlenJoji, M Voc TMC 1 st year	1 st Prize Business Quiz competition	

Sl.No	Title	Duration	Chairman/Coordinator	Funding Agency
1.	Planned and conducted three-day Training Programme on leadership for the Naval Officers at the Centre of Excellence in Ethics, Leadership & Behavioural Studies of Indian Navy, Naval Base, Kochi	From 25 th to 27 th October 2021.	Prof. (Dr.) Zakkariya K.A.	Indian Navy
2.	Planned and conducted Four-day workshop on “Industry Collaboration and Networking” for VHSC Teachers in Association with SamagraSiksha Kerala, Govt. of Kerala	From 16 th to 19 th March 2022	Prof. (Dr.) Zakkariya K.A.	SamagraShiksha Kerala Govt. of Kerala
3.	Three-day Workshop on Career Orientation and Aptitude Development, December 20-22, 2021	Three days	Prof. (Dr.) Zakkariya K.A. and Dr.NimithaAboobaker	Self Financing Board
4.	Three day workshop on “Mastering Group Discussions and Interviews”, 10, 11 and 12 of January 2022	Three days	Prof. (Dr.) Zakkariya K.A. and Dr.NimithaAboobaker	Self Financing Board
5.	Two day Workshop on “SAS for Predictive Modeling”, January 4th and 5th	Two days	Prof. (Dr.) Zakkariya K.A. and Dr.NimithaAboobaker	Self Financing Board

6.	Three-Day Workshop: Big Data: Hands-on experience, 6 & 7 JANUARY 2022	Two days	Prof. (Dr.) Zakkariya K.A. and Dr.NimithaAboobaker	Self Financing Board
7.	Startup Stories (Oct, Nov, Dec- 2021) and Jan, Feb, Mar, Apr - 2022)	Monthly Once	Dr.Vinney Zephaniah Vincent/ Mr.Shajin P.	NA
8.	5 Day workshop on Personal Productivity (2,3,4,5,7 March 2022)	5 days	Prof. (Dr.) Zakkariya K.A. and Dr.Vinney Zephaniah Vincent	Self Financing Board
9.	4 Day workshop on Employability Enhancement (March 8,9,10,11 March 2022)	4 days	Prof. (Dr.) Zakkariya K.A. and Dr.Vinney Zephaniah Vincent	Self Financing Board
10.	Skill Acquisition Programme on Data Analytics – SQL (Add on course)	30hrs.	Ms.Suji Jose and Mr.Vinu V Varghese	Self Financing Board
11.	Data Analytics-Beginner's Tool kit - 30 hrs hands programme	30hrs.	Ms.Suji Jose and Dr.Elizabeth George	Self Financing Board
12	Online Research Workshop- Series II on "Data Analysis using SPSS"	15,16,17 April 2021	Prof.(Dr.) Zakkariya.K.A. Dr.Renjini.D Dr.NimithaAboobaker	Self-Financing mode by DDUKK
13.	DDUKK_Three-day Workshop on Group Discussion and Mock Interview	19, 20 and 21 April 2021	Prof.(Dr.) Zakkariya K.A, Dr.NimithaAboobaker	Self-Financing mode by DDUKK
14.	DDUKK Two days Online Workshop on BIG DATA: HANDS-ON EXPERIENCE	26 & 27 April 2021	Prof.(Dr.) Zakkariya K.A, Dr.NimithaAboobaker	Self-Financing mode by DDUKK

15.	Three-day Online workshop on Career Orientation and Aptitude Development	28,29,30 April 2021	Prof.(Dr.) Zakkariya K.A, Dr. Elizabeth George Dr.NimithaAboobaker	Self-Financing mode by DDUKK
16.	Two-day Online workshop on Advanced Data Analysis with MS-Excel	3,4 May 2021	Prof.(Dr.) Zakkariya K.A, Dr.NimithaAboobaker	Self-Financing mode by DDUKK
17.	International Webinar VII “Publishing in High Impact Journal: Do’s and Don’ts”	30 April 2021	Prof.(Dr.) Zakkariya.K.A. Dr.Renjini.D Dr.NimithaAboobaker	Self-Financing mode by DDUKK
18.	International Webinar VIII “ERP as an Enabler of Digital Transformation”	31 May 2021	Prof.(Dr.) Zakkariya.K.A. Dr.Renjini.D Dr.NimithaAboobaker	Self-Financing mode by DDUKK
19.	International Webinar IX “B2B e Commerce:Beyond Selling”	23 June 2021	Prof.(Dr.) Zakkariya.K.A. Dr.Renjini.D Dr.NimithaAboobaker	Self-Financing mode by DDUKK
20.	International webinar X “Sustainable Innovations at the Grassroots”	30 July 2021	Prof.(Dr.) Zakkariya.K.A. Dr.Renjini.D Dr.NimithaAboobaker	Self-Financing mode by DDUKK
21.	International Webinar XI “ABCD of Entrepreneurship”	27 August 2021	Prof.(Dr.) Zakkariya.K.A. Dr.Renjini.D Dr.NimithaAboobaker)	Self-Financing mode by DDUKK
22.	International Webinar XII “Scaling up and Global Market Access for startups”	7 September 2021	Prof.(Dr.) Zakkariya.K.A. Dr.Renjini.D Dr.NimithaAboobaker	Self-Financing mode by DDUKK
23	”International Webinar Series, November 2020-September 2021, organized by DDU KAUSHAL Kendra, CUSAT	November 2020-September 2021	Prof.(Dr.) Zakkariya.K.A. Dr.Renjini.D Dr.NimithaAboobaker	Conducted Online Workshop

Sponsored Research Projects:

Sl. No	Title	Sponsoring Agency	Amount	Investigator(s)
1.	FRACTION	European Union	50 Lakhs	Prof.(Dr.) Zakkariya K.A



Centre for Excellence in Advanced Materials (CAM)

Brief History of the Department:

Centre of Excellence in Advanced Materials is a unique centre established in Cochin University of Science and Technology in the year 2011 with a single goal of promoting and coordinating research in the broad area of material science. Centre was initiated under the mentorship of Prof. M.K. Jayaraj of Department of Physics and was the Honorary Director of the centre from inception. The centre was formally inaugurated by Prof. C. N. R. Rao, Chairman and Scientific Advisory to the Prime Minister on 15th January 2011. CAM is conceived to be an interdisciplinary centre coordinating and combining the research activities of Departments of Physics, Chemistry, Polymer Science and rubber technology, Photonics, Instrumentation, Bio-technology and Electronics in order to better understand material properties and design and create new materials for optoelectronics, photonics and electronic applications. In 2017, University approved CAM as an Independent research centre of the University under the Faculty of Science, and to commence research programs leading to Ph.D.

Since Prof. Jayaraj who was the Hon. Director of CAM was appointed as the new Vice Chancellor of Calicut University; Dr. Aldrin Antony, Associate Professor, Department of Physics has been nominated as the Hon. Director of the CAM from September 2020.

Programmes of Study/Research

The CAM acts as the centre for interdisciplinary research in materials science at the University. Different sponsored research projects supported by different funding agencies are also being implemented through the centre. Interdisciplinary elective courses for master's students of the University are offered as inter departmental electives; The courses that have been offered through the centre are complex networks, Solar photovoltaic Technology. Doctoral and post-doctoral students are also working here under the guidance/mentorship of different faculty. CAM regularly organizes different regional, national and international scientific conferences and workshops in collaboration with other centres and departments of the University.

Associated Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr. Aldrin Antony	Honorary Director, CAM. Associate Professor	PhD	Photovoltaics, Optoelectronic materials and devices
2	Dr. M. K. Jayaraj	Professor (Retd)	PhD	Optoelectronic materials and devices
3	Dr. Honey John	Professor	PhD	Nanomaterials/Polymer nanocomposites
4	Dr. C. K. Anandan	Professor	PhD	Microwaves, Antennas, Electromagnetics, RCS, Imaging
5	Dr. S. Jayalekshmi	Professor Emeritus (Retd)	PhD	Polymer Light emitting Diodes (PLED), Rechargeable Lithium-Ion cells, Nonlinear Optics (NLO), Nanophotonics, Bio-nanophotonics and Organic Electronics
6	Dr. Sunil Narayanankutty	Professor	PhD	Conducting Polymers, Nano Composites, hort Fiber-Elastomer Composites, Polymer Recycling, Fracture Mechanics, Novel, Compounding Ingredients, Low Formaldehyde PF Resins
7	Dr. Rajeev Kumar K.	Professor (Retd)	PhD	Vacuum Technology, Material Science, Atomic Layer Deposition
8	Dr. Prathapan Sreedharan	Professor	PhD	Synthetic and Mechanistic Organic Chemistry, Photochemistry, Electron Transfer Reactions, Porphyrin Chemistry
9	Dr. Sarita G. Bhat	Professor	PhD	Studies on endotoxins, Bioactive compounds from Marine organisms, Studies on exopolysaccharides Marine Metagenomics, Vibrio phages, Fish Metagenomics, Salmonella Phages, Biofilm metagenomics

10	Dr. Ajith Vengellur	Asst. Professor	PhD	Cell Signaling, Pathways in Normal Physiology and Disease - Hypoxic Signaling, Mitochondrial Biology, Development of Biomaterials for Medical Devices and Diagnostics
11	Dr. Saji K. J.	Asst. Professor	PhD	Two dimensional materials for opto-electronic and nano-electronic applications, thin film solar cells, thin film transistors, electrical conduction mechanism in nano structures
12	Dr. G. S. Sailaja	Associate Professor	PhD	Biomaterials, Nanotechnology, Cancer biology, Antibacterial Formulations
13	Dr. Manoj N.	Associate Professor	PhD	Bulk heterojunction solar cells, Photochemistry
14	Dr. K.P. Vijayakumar	Professor Emeritus (retired)	Ph.D.	Photovoltaics
15	Dr. Riju C Issac	Associate Professor	Ph.D.	Laser Science and processing
16	Dr. A. S Asha	Asst. Professor	Ph.D.	Nanomaterials for solid-state technology
17	Dr. P. Shaiju	Asst. Professor	Ph.D.	Marine sciences, water testing, waste management

Emeritus Professor/Scientist (if any)

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Dr. S. Jayalekshmi	Professor Emeritus KSCSTE	Ph.D.	Polymer Light emitting Diodes (PLED), Rechargeable Lithium-Ion cells, Nonlinear Optics (NLO), Nanophotonics, Bio-nanophotonics and Organic Electronics

2	Dr. K.P. Vijayakumar	Professor Emeritus KSCSTE	Ph.D.	Thin film Photovoltaics
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Research Scholars:

Sl.No.	Name	Funding Agency	Guide	Area of Work
1.	Subin P. S.	UGC - JRF	Dr. M. K. Jayaraj and Dr. S. Jayalekshmi	Memristor and Artificial synapse
2.	Priya M. J.	CSIR - JRF	Dr. K. Rajeev Kumar	Metal oxide gas sensors
3.	Soumya Ravi	DST-SERB JRF	Dr. M. K. Jayaraj	Energy storage materials and batteries
4	Antony Sharon	CUSAT	Dr. Aldrin Antony and Dr. M. K. Jayaraj	2D materials for Optoelectronic application
5	Dhanya P Jacob	Project	Dr. Aldrin Antony	Synthesis of nano materials for sensing and biological applications

Technical Personnel:

Sl.No.	Designation	No. of Posts
1	Technical Assistant Gr.3	1

Student Enrollment:

Sl.No.	Programme of Study	Men	Women	Total
1	PhD	2	3	5

Research Facilities**a. Laboratories****b. Major equipments**

1. Spin Coater
2. Nanofibre Electrospinning Unit
3. UV-Vis Spectrophotometer
4. High Temperature Furnace
5. Multi-dip Coating System
6. Refrigerator Centrifuge
7. Biosafety Cabinet – Class 2A II
8. Material Measurement System and Resonant Cavity
9. Microbalance
10. Keithley SMU
11. External Quantum Efficiency(EQE)
12. 3D Printer

Publications**c. Papers**

Sl.No.	Title of the Paper	Author(s)	Impact Factor, if any
1	"Selective detection of hydrogen sulphide from the background of low concentration reducing gases." Materials Chemistry and Physics 260 (2021): 124038.	Priya, M. J., P. P. Subha, P. M. Aswathy, K. W. Merin, M. K. Jayaraj, and K. Rajeev Kumar..	4.094
2	"Effect of substrate temperature on the optoelectronic properties of chemically sprayed SnS thin films." Materials Today: Proceedings 39 (2021): 1978-1980.	Mohan, Visakh V., K. C. Akshaya, A. S. Asha, M. K. Jayaraj, and K. P. Vijayakumar.	1.24
3	"Spike-dependent plasticity modulation in TiO ₂ -based synaptic device." Journal of Materials Science: Materials in Electronics 32, no. 10 (2021): 13051-13061.	Subin, P. S., A. S. Asha, K. J. Saji, and M. K. Jayaraj.	2.478
4	"Fabrication and Characterization of Au/MoO _x /n-Si/Ag Heterojunction Diode" Annual Physics Symposium 18-19 February 2021, St. Teresa's College, Ernakulam	Sneha Babu , Sreena S , Aldrin Antony.	

5	“Hole selectivity studies of of V2O5/n-Si junction for application in dopant free c-Si solar cell” National Conference on Optoelectronic and Nano Materials for Advanced Technology (nc-ONMAT 2021) 18-19 March 2021	Sreena S , Aldrin Antony	
6	“Exploring MgO/Al as the Electron Selective Contact for Silicon” National Conference on Optoelectronic and Nano Materials for Advanced Technology (nc-ONMAT 2021) 18-19 March 2021	Sneha Banu, Aldrin Antony.	
7	“Fluorescence based selective sensing of Fe3+ ions using Mn3O4 nanoparticles” National Conference on Optoelectronic and Nano Materials for Advanced Technology (nc-ONMAT 2021) 18-19 March 2021	Dhanya P Jacob, Subin Thomas, S. Prasanth, K.N Madhusoodanan, Aldrin Antony.	
8	“Green Synthesis and photoluminescence of copper iodide nanoparticles” National Conference on Optoelectronic and Nano Materials for Advanced Technology (nc-ONMAT 2021) 18-19 March 2021	Saramgi C S, Subha. P. P, Aldrin Antony.	
9	Enhanced Triboelectric Performance of Graphene oxide-Conducting Polymer Hybrid Modified Polydimethylsiloxane Composites. <i>Materials Advances</i> 2022	Jelmy, E. J., Jose, D., Vijoy, K. V., Saji, K. J., & John, H.	
10	Effects of metal nanoparticles on the performance of PDMS based triboelectric nanogenerators. <i>Physica B: Condensed Matter</i> , 413952.2022	Anlin, L. K., Vijoy, K. V., Pradeesh, K., Thomas, S., John, H., & Saji, K. J.	
11	Crystal lattice engineering in a screw-dislocated ZnO nanocone photocatalyst by carbon doping. <i>Materials Advances</i> .(2022)	Louis,J.,Padmanabhan, N. T., Jayaraj, M. K., & John, H.	
12	Polypyrrole with appreciable solubility, crystalline order and electrical conductivity synthesized using various dopants appropriate for device	John, J., & Jayalekshmi, S.	

	applications. <i>Polymer Bulletin</i> , 1-18.(2022)		
13	Polymer blend based solid electrolyte membranes for fully solid state sodium ion cell applications. <i>Materials Today: Proceedings</i> .(2022)	Augustin, C., Wilson, M. K., & Jayalekshmi, S.	
14	Fe ₂ O ₃ /Carbon nanocomposite as anode material for Li-ion cells. <i>Materials Today: Proceedings</i> .(2022)	Wilson, M. K., Jayaraj, M. K., & Jayalekshmi, S.	
15	Polyaniline wrapped carbon nanotube/exfoliated MoS ₂ nanosheet composite as a promising electrode for high power supercapacitors. <i>Carbon Trends</i> , 7, 100154 (2022)	Jasna, M., Pillai, M. M., Abhilash, A., Midhun, P. S., Jayalekshmi, S., & Jayaraj, M. K.	
16	An introduction to biosensors. In <i>Nanomaterials for Sensing and Optoelectronic Applications</i> (pp. 91-107). Elsevier.(2022)	Thomas, S., Saji, K. J., & Jayaraj, M. K.	
17	Metal oxide semiconductor thin-film transistors for gas sensing applications. In <i>Nanomaterials for Sensing and Optoelectronic Applications</i> (pp. 25-45). Elsevier.(2022)	Shaji, M., Saji, K. J., & Jayaraj, M. K.	
18	Resistive switching in metal oxides for various applications. In <i>Nanomaterials for Sensing and Optoelectronic Applications</i> (pp. 273-299). Elsevier.(2022)	Subin, P. S., Saji, K. J., & Jayaraj, M. K.	
19	Recent developments in 2D MoS ₂ thin films for gas sensing applications. <i>Nanomaterials for Sensing and Optoelectronic Applications</i> , 45-63.(2022)	Midhun, P. S., Saji, K. J., & Jayaraj, M. K.	
20	Optoelectronic synaptic plasticity mimicked in ZnO-based artificial synapse for neuromorphic image sensing application. <i>Materials Today Communications</i> , 33, 104232(2022)	Subin, P. S., Midhun, P. S., Antony, A., Saji, K. J., & Jayaraj, M. K.	

21	Mixed tin-lead perovskite nanorod-based resistive memory device. <i>Thin Solid Films</i> , 758, 139437.(2022)	Vijila, C. M., Subin, P. S., Antony, A., & Jayaraj, M. K.	
22	Observation of Magnéli Phase Filament Formation in MoO _x Artificial Synapse. <i>Advanced Electronic Materials</i> , 2200729.(2022)	Subin, P. S., Antony, A., Saji, K. J., & Jayaraj, M. K. (2022).	
23	Emulating synaptic plasticity in ionic liquid-gated zinc tin oxide neuromorphic transistor. <i>Journal of Materials Science: Materials in Electronics</i> , 1-13.(2022)	Shaji, M., Jose, F. P., Saji, K. J., Antony, A., & Jayaraj, M. K.	
24	Exploring the Surface-Enhanced Raman Scattering on Electrospun TiO ₂ /Ag Hybrid Structure for Pesticide Detection. <i>Plasmonics</i> , 1-10(2022)	Mohan, P. A., & Antony, A.	
25	Phase Modifications of WO ₃ Nanoparticles with Green Capping Agents for Effective Removal of Copper Ions from Waste Water. <i>Journal of Inorganic and Organometallic Polymers and Materials</i> , 32(2), 367-382.(2022)	Antony, A. J., Kala, S., Joel, C., Bennie, R. B., & Raj, A.	
26	Perovskite Solar Cells: Concepts and Prospects. . In <i>Energy Harvesting and Storage</i> (pp. 97-133). Springer, Singapore.(2022)	Vijila, C. V., Antony, A., & Jayaraj, M. K.	
27	Solar Cell Technologies: An Overview. <i>Energy Harvesting and Storage</i> , 1-59.(2022)	Markose, K. K., Antony, A., & Jayaraj, M. K.	
28	An overview of the advances in porous and hybrid materials research for air pollution mitigation. . <i>Hybrid and Combined Processes for Air Pollution Control</i> , 17-63.(2022)	Antony, A., Saini, H., Vinayakumar, K., Kumar, S. N., Kumar, N. S., & Sil, S.	
29	Electrode materials for stretchable triboelectric nanogenerator in wearable electronics. <i>RSC advances</i> , 12(17), 10545-10572(2022)	Aazem, I., Mathew, D. T., Radhakrishnan, S., Vijoy, K. V., John, H., Mulvihill, D. M., & Pillai, S. C.	

30	Surface Area Enhanced Nylon-6, 6 Nanofiber Engineered Triboelectric Nanogenerator for Self-Powered Seat Monitoring Applications. ACS Sustainable Chemistry & Engineering. (2022)	Treasa Mathew, D., KV, V., Nayar, N. V., Manoj, N., Saji, K. J., Pillai, S. C., & John, H.	
31	Recent trends in industrial and academic developments of green tyre technology. Polymer Bulletin, 1-30. (2022)	Bijina, V., Jandas, P. J., Joseph, S., Gopu, J., Abhitha, K., & John, H.	
32	Self-powered ultra-sensitive millijoule impact sensor using room temperature cured PDMS based triboelectric nanogenerator. Microelectronic Engineering, 251, 111664. (2022)	Vijoy, K. V., John, H., & Saji, K. J	
33	Emulating synaptic plasticity with PDMS-Graphite composite memristor. Materials Letters, 326, 132934. (2022)	Praveen, P., Vijoy, K. V., John, H., & Saji, K. J.	
34	Microwave Induced Growth of {1010} Faceted Zno/Graphene 2d/2d Nanostructures for Visible-Light Photocatalysis and Hydrogen Evolution Reaction. Graphene 2d/2d Nanostructures for Visible-Light Photocatalysis and Hydrogen Evolution Reaction.	Louis, J., Padmanabhan, N. T., Jayaraj, M. K., & John, H.	
35	A Comparison Study on the Acetone Sensing Performance of Preeminent Nanostructures of Sno2. Available at SSRN 4264074.	Priya, M. J., Subha, P. P., Antony, A., Jayaraj, M. K., & Rajeev Kumar, K.	

d. Books

Sl.No.	Title of Book
1	M. K. Jayaraj, Aldrin Antony, P P Subha eds. Energy Harvesting and Storage : fundametals and materials, Springer 2022
2	M. K. Jayaraj, Subha P P ed. Nanomaterials for sensing and optoelectronics applications, Elesiver 2022

Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1	Novel Heterocyclic Hole Transporting medium for Perovskite solar Cell Applications	DST-GITA Project	10.425 Lakhs	Dr. N. Manoj, Dr. M. K. Jayaraj
2	Ultrafast LASER beam lines for Multidisciplinary Multitasking Research Programmes	Chancellors Award	4 crore	Dr M. K. Jayaraj, Dr. Aldrin Antony, Dr. Riju Isac, Dr. Chakrapani, Dr. Sailaja, Dr. Saji K.J., Dr. Manoj N

Research Programmes and Activities:

Sl.No.	Problem / Topic	Investigator (s)
1	Photovoltaics	Dr. Aldrin Antony, Dr. M. K. Jayaraj, Dr. R. Sreekumar, Dr. Rajeev Kumar K.
2	Up Conversion Phosphors	Dr. M. K. Jayaraj
3	Surface Enhanced Raman Spectroscopy	Dr. M. K. Jayaraj
4	Laser Plasma	Dr. Riju C Issac
5	Transparent electronics	Dr. M. K. Jayaraj and Saji K. J.
6	Energy storage materials and batteries	Dr. S. Jayalekshmi
7	Bulk Heterojunction solar cells	Dr. Manoj N.
8	Two dimensional materials	Dr. K. Rajeev Kumar, Dr. Aldrin Antony
9	Polymer composite films	Dr. Honey John

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Coordinator	Funding Agency
1	nc-ONMAT 2021	18-03-2021 to 19-03-2021	Dr. Aldrin Antony	CAM
2	Energy swaraj talk “energy, climate change and I” by Prof. Chetan Singh Solanki	04-04-2022	Dr. Aldrin Antony	
3	International Conference on Materials science: a Kaleidoscopic Journey (ic-MKJ)	17-03-2022 to 18-03-2022	Dr. Aldrin Antony, Dr. Asha A S, Dr. Saji K J	

Consultancy Work

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1	6 kW Off Grid Floating Solar PV Plant with Storage for Floating Fish Farming	Dr. Aldrin Antony	M/s. Adrak Engineering and Construction India Pvt. Ltd.



Centre for Budget Studies

Format for submission of the Annual Report for the year 2021-22

Name of the Department

Centre for Budget Studies

Brief History of the Department : Centre was started in the year 2012 with focus on research. In 2021-22 M.Sc Econometrics and Financial Technology course was rolled out.

Programmes of Study/Research : M.Sc Econometrics & Financial Technology

Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Prof. M.K Sukumaran Nair	Honorary Director	PhD	Public Economics and Development Economics
2.	Prof.Dr.S Harikumar	Adjunct Faculty	PhD	Development Economics & Financial Economics
3.	Dr.P K Santhosh Kumar	Associate Professor	Ph.D	Econometrics

Administrative Personnel

Sl.No.	Designation	No. of Posts
	Co-ordinator	1

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1.	M.Sc Econometrics & Financial Technology	9	8	17

Research Facilities

- a. Laboratories
- b. Major equipments
- c. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
150	200

Consultancy Work:

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
	Salary and Pension Payment and Fiscal Management in South Indian States	11 th Pay Revision commission, Government of Kerala	



Cochin University Students Union

Brief History:

The Cochin University Students Union is the umbrella student organization, constituted under the Cochin University of Science and Technology Act in 1986 by the Government of Kerala. The objective of the Union is to promote the corporate, social and cultural life of the students of the University and to incorporate in them make them aware of their duties and rights as the citizens of the country. All students pursuing a full-time course of the duration of at least one academic year in the Departments / Colleges / Institutions of the University shall be members of the Cochin University Students Union. The office bearers of the Cochin University Students Union are:

The Vice Chancellor as the Patron

The Staff Advisor

The Members of the Executive Committee.

The present Office Bearers are

The Patron: Dr. K. N. Madhusoodanan, Vice-Chancellor

The Hon. Treasurer: Dr. Girish Kumar K. K., Staff Advisor, Cochin University Students Union

Other major activities:

1. Conducting election to the General Council of Cochin University Students Union and election of the Office bearers.
2. To organise cultural/Arts/Sports/Academic welfare programmes for the benefit of University/ Community especially Students. It also acts as a liaison body between students and University authorities.

Faculty Members

Sl. No.	Name	Designation	Qualification	Specilisation
1.	Dr. Girish Kumar K. K.	Staff Advisor, Cochin University Students Union	M.A, M.phil, Ph.D	Modern and Contemporary Hindi Literature, Comparative Literature, Contemporary Hindi Poetry

Programmes Conducted

Sl. No.	Date of the programme	Name of the Programme
1	September 2021 – May 2022	CUSU Election 21 - 22



National Centre for Aquatic Animal Health (NCAAH)

COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

NATIONAL CENTRE FOR AQUATIC ANIMAL HEALTH

Name of the School/Department : National Centre for Aquatic Animal Health
Established : 2000

Brief history of the department:

National Centre for Aquatic Animal Health (NCAAH) was established as Centre for Fish Disease Diagnosis and Management (CFDDM) through an University Order (PLB2/28061/99 dated 18-1-2000) on 18th January 2000 based on a proposal submitted by Dr. I.S. Bright Singh, Reader, School of Environmental Studies (SES/CFDDM) 99-2000/537 dated 1-12-1999) with the mandate to work towards protection of aquatic animal health and their environment. Considering the progress achieved and based on the proposal submitted by Dr. I.S. Bright Singh, CFDDM was re-designated as NCAAH on 2005 January, having the same mandate with functional autonomy, and to start M. Tech. programme in Marine Biotechnology supported by the Department of Biotechnology (DBT), Government of India (PL(UGC) 1/131/M.Tech/MBT/04 dated 3-1-2005). During this process the Centre could establish full-fledged Marine Biotechnology Research Laboratory on 18th January, 2006 (opened by the then CUSAT Vice Chancellor Dr. (Prof.) P.K. Abdul Azis) sponsored by DBT, Govt. of India under the scheme 'Programme Support in Marine Biotechnology'. Subsequently, on 2008, DBT empowered the Centre to offer M.Tech. programme in Marine Biotechnology with full financial support having considered the uniqueness of the facility and infrastructure created over time sponsored by DBT, Government of India under its network programme in Human Resource Development in Biotechnology. Selection of students to the programme is through all India Combined Entrance Examination conducted by Jawaharlal Nehru University, New Delhi for DBT, Govt. of India.

Over the years, the Centre was working towards protection of aquatic animal health through the introduction of recent advancements in Marine Biotechnology. To achieve the goal, it continually endeavors to transfer the output of research directly to the end users, the aqua farmers. The research and development activities of the Centre use cutting edge technologies to bring in novel innovations for the development of sustainable aquaculture in India. A unique feature of the Centre is its in-house production facility, the Aquaculture Health Products Division, to meet the needs of the

aquaculture industry. Aquaculture extension cell acts as the link between the Centre and farmers and transfers the required technology to implement scientific farming and management practices in India. The Network of Aquaculture Centers in Asia Pacific, Bangkok, recognized the Centre as its Regional Resource Centre for Aquatic Animal Health in 2007. The Centre could develop state of the art infrastructure for furthering research and development in Marine Biotechnology and Aquatic Animal Health through externally funded projects over the years.

From the inception, the Centre could undertake major research and academic initiatives such as Indo - US knowledge initiatives, Newton - Bhaba Fund in Aquaculture, Coordination of the multi-institutional programme in Establishing Virus Repository in support of Aquaculture, and of late establishment of Backyard RAS units in the country as part of Blue Revolution sponsored by National Fisheries Development Board, Ministry of Agriculture and Farmers Welfare, Govt. of India and farmers involved will be provided subsidy through the Centre. Also, the Centre has been identified by National Institute of Agricultural Extension Management (MANAGE), Hyderabad, Ministry of Agriculture and Farmers Welfare, Govt. of India as its Nodal Training Institute to work towards developing Aquapreneurs in support of Aquaculture. Collaborating with several International Universities and Centers, NCAAH, as a premier Centre in India, is working towards developing global perspectives in Aquatic Animal Health and Marine Biotechnology in the country.

Department of Biotechnology Government of India established Bioinformatics Centre (BIC) for Marine Bioresource Conservation and Sustainable Utilization at NCAAH on February 2021. The DBT-Bioinformatics Centre at NCAAH envisages human resources development in the subject area by organizing training programs on Bioinformatics and Computational Biology for the candidates at graduate level (7 days), postgraduate/PhD level (15 days) and postdoctoral/faculty levels (21 days). The research areas under the DBT- Bioinformatics Centre include the determination of the extent of perturbation of a typical marine ecosystem by human activity and generation of early warning signs in the form of accurate NGS genomic data,. Targeted drug discovery from marine biological systems focusing on applications such as virtual screening prediction and drug efficacy and ADMET prediction, building up synthetic biology platform for biosynthesis of various molecules such as pyocyanin and human resource development in the associated areas and the application of NGS in aquatic animal model in assessing xenobiotics deleterious to environmental health under "one health concept", and development of human resource in the discipline. In addition, Functional Genomics and Metabolomics Platforms for Augmented Production of Aquatic Bio-Resources and Discovery of Novel Molecules of Biomedical Importance is

established at the Centre under the Performance Linked Encouragement for Academic Studies and Endeavour (PLEASE) scheme of Kerala State Higher Education Council.

Over the years, the Centre could implement 47 externally funded research projects, generated more than 150 publications in peer reviewed journals, two patents granted, three under process, one technology commercialized and 7 aquaculture health products developed and being supplied regularly to farmers across the country as part of the extension activities and 4 other products are in pipeline. An Aquaculture Medicine Production Unit has been functioning from the beginning onwards to cater to the requirements of aqua farmers in preventive health care.

3. Programme of study/Research

1. M.Tech. in Marine Biotechnology (Sponsored by the Department of Biotechnology, Government of India – 4 semesters)
2. Ph.D. Programme in Marine Biotechnology and Aquatic Animal Health under the Faculties of Environmental Studies and Marine Sciences

4. Faculty Members:

Sl. No.	Name	Designation	Qualification	Specialization
1.	Dr. Valsamma Joseph	Director, and Professor	M.Sc., Ph. D.	Marine Biotechnology
2.	Dr. T.P.Sajeevan	Assistant Professor	M.Sc. Ph. D	Marine Biotechnology
3.	Dr. Jayesh P.	Assistant Professor	M.Sc., Ph.D.	Cellular and Molecular Biology
4.	Mr. Shibin S.P.	Assistant Professor	M.Tech., MBA	Bioprocess Technology

5. Emeritus Faculty/Scientist

Sl. No	Name	Designation	Qualification	Specialization
1.	Prof. I.S. Bright Singh	University Emeritus Professor	M.Sc, Ph.D	Environmental (Marine) Microbiology & Biotechnology and Aquatic Animal Health

6. Visiting Faculty:

Sl. No	Name	Designation	Qualification	Specialization
1.	Dr. N. Nandini Menon	Scientist, Nansen Environmental Research Centre, India (NERCI) (Kochi)	M.Sc., Ph.D.	Marine Biology
2.	Mr. S. Girishkumar	Managing Director, HMT International Ltd., Bangalore	MBA	Industry Management

Research Staff:

1. Dr. Seena Jose, CUSAT, Postdoctoral Fellow
2. Dr. Salini K, DST-SERB National Postdoctoral Fellow
3. Dr. Jeswin Joseph, KSCSTE, Postdoctoral Fellow
4. Dr. Riya George, Project Scientist, Aquatic Animal Health, Production Unit (temporary)
5. Dr. Ammu Thomas, Project Scientist, Aquatic Animal Health (Temporary)

Research Scholars:

Sl. No	Name	Supporting agency	Guide	Area of Research
1.	Mr. Devassy Christo	UGC-BSR	Dr. Valsamma Joseph	Metagenomics
2.	Mr.Linu Balan	MoES Project/ University Fellowship	Prof.I.S.Bright Singh	Marine Biotechnology
3.	Ms.Vinusree K.P.	DST JRF/ University JRF	Prof.I.S.Bright Singh	Aquaculture Biotechnology
4.	Mr.Sivakumar K.C	Part time	Dr.Sajeevan T.P	Marine Biotechnology
5.	Ms.Merlin T.S	KSCSTE	Dr.Sajeevan T.P	Marine Biotechnology
6.	Ms.Deepa G	UGC-BSR fellowship	Dr.Sajeevan T.P	Marine Biotechnology
7.	Ms.Krishnapriya R.	KSCSTE	Dr.Sajeevan T.P	Fish Immunology
8.	Mr.Md Umar	KSCSTE Project fellow	Dr.Sajeevan T.P.	Marine Biotechnology
9.	Ms. Indira K.	University Fellowship	Dr. Valsamma Joseph	Marine Biotechnology
10.	Ms. Saranya M	DST-INSPIRE	Dr. Valsamma Joseph	Marine Biotechnology
11.	Ms. Thasreefa K	UGC-Maulana Azad Fellowship	Dr. Valsamma Joseph	Marine Biotechnology
12.	Ms. Ahna Ameer	UGC	Prof. I.S. Bright Singh	Marine Biotechnology

13.	Ms. Gopika V.S.	University Fellowship	Prof. I.S. Bright Singh	Aquatic Animal Health
14.	Ms. Soumya Balakrishnan	CSIR Fellowship	Prof. I. S. Bright Singh	Animal Cell Culture
15.	Ms. Limmy T.P	University Fellowship	Dr. Valsamma Joseph	Bioprocess Technology
16.	Ms. Jini Jimmy	DBT Fellowship	Prof. I. S. Bright Singh	Synthetic Biology
17.	Mr. Suresh K	DBT-Fellowship	Dr. Jayesh Puthumana	Aquatic Animal Health
18.	Mr. Ambadi Kannan M.S	NFDB Project Fellowship	Dr. Jayesh Puthumana	Recirculating Aquaculture System
19.	Ms. Aswathy C	University Fellowship	Dr. Jayesh Puthumana	Genome Editing
20.	Ms. Linu Eldho	DBT-Project Fellowship	Prof. I. S. Bright Singh	Aquatic Animal Health- Virology
21.	Ms. Diya Dominic	DBT-Project Fellowship	Prof. I. S. Bright Singh	Aquatic Animal Health- Virology
22.	Mr. K.A. Muneer	DBT-Project Fellowship	Prof. I. S. Bright Singh	Aquatic Animal Health
23.	Rojin Joseph	University JRF	Dr. Sajeevan TP	Marine Biotechnology
24.	Akshay PS	E-Grantz Fellowship	Prof. Valsamma Joseph	Marine Biotechnology

Administrative Personnel:

Sl.No.	Designation	No. of posts
1	Assistant Section Officer: Mr. Jaison K.Joseph	1

Technical Personnel

Technical Staff: 9 (Temporary)

Students enrollment

Sl.No.	Programme of study	Men	Women	Total
1	M.Tech. Marine Biotechnology	6	8	14
2	Ph.D.	7	17	24

Research facilities

a. Laboratories

- (1) Animal tissue culture
- (2) Immunodiagnostics
- (3) Molecular diagnostics
- (4) Virology
- (5) Marine bioprospecting
- (6) Bioprocess and fermentation
- (7) Bacteriology
- (8) Marine Biotechnology
- (9) Aquatic animal health assessment
- (10) Aquaculture medicine production unit
- (11) Aquatic animal bioassay unit
- (12) Environmental chemical analyses

b. Major Equipments:

1. Laminar Flow Hoods
2. Colony Counter
3. Vacuum Filtration system
4. Fermentors- 2L, 5L and 100L
5. Spectrophotometers-2
6. Sulphur Bacteria Cabinet
7. Tangential Flow filtration system
8. Balances
9. Water baths
10. Temperature controlled rotary shakers with light
11. Temperature controlled rotary shakers
12. Low temperature cabinets
13. Environmental Test Chamber

14. BOD Incubator
15. pH meters
16. FISKE Osmometer
17. Colorimeter - Systronics
18. PCR Machines
19. Fluorescent Microscope
20. Ultra Sonicator
21. Microscopes
22. Lyophilizer
23. Incubators
24. Refrigerated Centrifuges
25. Luminometer
26. Cytocentrifuge
27. Conductivity Meter
28. Photo colorimeter (Turbidometer)
29. Electrophoresis Systems with power pack
30. UV Transilluminator
31. Microcentrifuge
32. Amicon filtration system with magnetic stirrer and Nitrogen Cylinder
33. Inverted Microscope
34. Inverted Microscope
35. CO₂ Incubator, Sanyo
36. CO₂ Incubator, Heraeus with water bath
37. Low temperature Incubator
38. Gel Rocker/ Oscillator
39. Hot air Oven -2 nos
40. CO₂ Cylinders – 3nos
41. Histology Work Station
42. Computer Work Station
43. -80 Degree Freezer -2 nos
44. -20 Degree Freezer – C Horizontal
45. -20 Degree Freezer – C Vertical
46. Refrigerated Centrifuge - Sigma
47. Microfuge - Eppendorf
48. Milli Q Water Purification System
49. Water Bath - Julabo
50. Microplate Reader
51. Real Time PCR
52. Hybridization Oven
53. FISH Microscope
54. DGGE System
55. RNA Extraction Hood
56. Electroporator
57. Horizontal Gel Electrophoresis System – Large – 1No. with power Pack

58. Horizontal Gel Electrophoresis System – Small – 3 No. with power Pack
59. Pulsed Field Gel Electrophoresis System
60. Microwave Oven
61. Mini Spin – 2nos
62. Vacuum Pump
63. Water bath – Julabo
64. Vibrator – Remi
65. Vertical Electrophoresis System – Large with Power Pack
66. Vertical Electrophoresis System – Small with Power Pack
67. Low temperature Cabinet
68. 2D Gel Electrophoresis System
69. Column Chromatography system
70. HPLC
71. Solid Phase Extraction System
72. Ice Flaking Machine
73. White Light Transilluminator
74. Gel Rocker/Oscillator
75. Laminar Flow
76. Sealing Machine
77. Heavy Duty Centrifuge
78. 100 Litre Fermentor with boiler
79. 5 litre fermentor 2nos with water circulating units and air compressors
80. Rotary Evaporator – 2nos
81. Ultrasonicator
82. Vacuum Pump
83. Heating Mantles – 3 nos
84. TLC Systems
85. Compressors -6 nos
86. Nitrifying Bioreactor (SBSBR and PBBR)
87. Nitrifying bacterial culture production system
88. Water Pumps and Pumping and distribution system
89. Power Generator
90. Photobioreactor
91. Automated autoclave
92. Student microscopes (4 Number)
93. Fluorescent microscope (Inverted)

c. Library

No. of books and journals s on 31st March of the previous year	Additions during the current Year
631	18

Ph.D. awarded

Sl. No.	Title of thesis	Research Scholar	Supervising Guide
1.	Cytotoxic and genotoxic evaluation of effluents discharged from petrochemical Industries in Cochin	Ajitha V	Prof. A. Mohandas

Publications:**(a) Papers**

- Sathyan, N., Muhammed Musthafa, S., Anju, M.V., Archana, K., Athira, P.P., Namitha, P., Chaithanya, E.R., Priyaja, P., Bright Singh, I.S., Rosamma, P., 2022. Functional characterization of a histone H2A derived antimicrobial peptide HARRIOTTIN-1 from sicklefin chimaera, *Neoharriotta pinnata*. *Dev. Comp. Immunol.* 104554. <https://doi.org/10.1016/j.dci.2022.104554>
- Athira, P.P., Anooja, V.V., Anju, M.V., Neelima, S., Archana, K., Muhammed Musthafa, S., Antony, S.P., Singh, I.S.B., Philip, R., 2022. A β -defensin isoform from the Flathead grey mullet, *Mugil cephalus* (Linnaeus 1758): Structural and functional characterisation in silico. *Anim. Gene* 25, 200128. <https://doi.org/10.1016/j.angen.2022.200128>
- Balakrishnan, S., Ameer, A., Pazhur Mohandas, S., Maliyekkal Sajeewan, A.K., Bhaskaran Sathyabhama, A., Singh, B., 2022. Pyocyanin as a safe aquaculture drug for the control of vibriosis in shrimp recirculating aquaculture system (RAS). *Aquac. Int.* 30, 2129–2144. <https://doi.org/10.1007/s10499-022-00890-y>
- Balakrishnan, S., Singh, I.S.B., Puthumana, J., 2022. Status in molluscan cell line development in last one decade (2010–2020): impediments and way forward. *Cytotechnology*, 74, 433–457. <https://doi.org/10.1007/s10616-022-00539-x>
- Geethakumari, D., Bhaskaran Sathyabhama, A., Raji Sathyan, K., Mohandas, D., Somasekharan, J. V., Thavarool Puthiyedathu, S., 2022. Folate functionalized chitosan nanoparticles as targeted delivery systems for improved anticancer efficiency of cytarabine in MCF-7 human breast cancer cell lines. *Int. J. Biol. Macromol.* 199, 150–161. <https://doi.org/10.1016/j.ijbiomac.2021.12.070>
- James, G., Das, B. C., Jose, S., & VJ, Rejish Kumar. 2021. *Bacillus* as an aquaculture friendly microbe. *Aquaculture International*, 1-31

7. Krishna Priya, R. S., Premraj, A., Sajeevan, T.P., 2022. Antiviral radical SAM enzyme viperin homologue from Asian seabass (*Lates calcarifer*): Molecular characterisation and expression analysis. *Dev. Comp. Immunol.* 136, 104499. <https://doi.org/10.1016/j.dci.2022.104499>
8. Krishna Priya, R.S., Premraj, A., Sivakumar, K.C., Sajeevan, T.P., 2022. Identification of two ISG15 homologues involved in host immune response against RGNNV in Asian seabass (*Lates calcarifer*). *Fish Shellfish Immunol. Reports* 3, 100054. <https://doi.org/10.1016/j.fsirep.2022.100054>
9. Krishnapriya, R. S., Premraj, A., Sajeevan, T.P., 2022. Molecular characterization and expression analysis of two RING-between-RING (RBR) ubiquitin ligase orthologues from the Asian seabass (*Lates calcarifer*). *Aquac. Int.* 30, 1953-70 <https://doi.org/10.1007/s10499-022-00883-x>
10. Krishnapriya, Raji Sathyan, Premraj, A., Thavarool Puthiyedathu, S., 2022. Molecular characterization and expression analysis of two type I interferons from Asian Seabass (*Lates calcarifer*) during nervous necrosis virus infection. *Aquac. Res.* [in press] <https://doi.org/10.1111/are.15964>
11. Merlin, T.S., Umar, M., Dhaneesha, M., Joseph, V., Sajeevan, T.P., 2022. Screening and molecular identification of marine sponges with cytotoxic activities, collected from Gulf of Mannar, Indian Ocean. *Indian J. Geo-Marine Sci.* 51, 06, 529-535.
12. Merlin, T.S., Umar, M., Puthiyedathu, S.T., 2022. Genomic insights into symbiosis and host adaptation of an ascidian-associated bacterium *Bacillus aryabhatai* MCCB 387. *Symbiosis.* [in press] <https://doi.org/10.1007/s13199-022-00860-1>
13. Niveditha, L., Fu, P., Leao, T.F., Li, T., Wang, T., Poulin, R.X., Gaspar, L.R., Naman, C.B., Thavarool Puthiyedathu, S., 2022. Targeted Isolation of Two New Anti-inflammatory and UV-A Protective Dipyrroloquinones from the Sponge-associated Fungus *Aspergillus tamarii* MCCF102. *Planta Med.* 88, 774–782. <https://doi.org/10.1055/a-1769-8480>
14. Ajitha, V., Sarasan, M., Parvathi Sreevidya, C., Aswathy, C., Kachiprath, B., Mohandas, A., Singh, I.S.B., Hameed, A.S.S., Schlenk, D., Magnuson, J.T., Puthumana, J., 2021a. Cytotoxic impacts of treated electroplating industrial effluent and the comparative effect of their metal components (Zn, Hg, and Zn+Hg) on *Danio rerio* gill (DrG) cell line. *Sci. Total Environ.* 793, 148533. <https://doi.org/10.1016/j.scitotenv.2021.148533>
15. Ajitha, V., Sreevidya, C.P., Sarasan, M., Park, J.C., Mohandas, A., Singh, I.S.B., Puthumana, J., Lee, J.-S., 2021b. Effects of zinc and mercury on ROS-mediated oxidative stress-induced physiological impairments and antioxidant responses in the microalga *Chlorella vulgaris*. *Environ. Sci. Pollut. Res.* 28, 32475–32492. <https://doi.org/10.1007/s11356-021-12950-6>
16. Anoop, B.S., Puthumana, J., Vazhappilly, C.G., Kombiyil, S., Philip, R., Abdulaziz, A., Bright Singh, I.S., 2021. Immortalization of shrimp lymphoid cells by

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GenBank Submissions: ~750 entries

Role of Faculty in International/National Organizations and Institutions/Editorial Boards

Name of Faculty	Name of Organization	Role
Prof. I.S. Bright Singh	National Academy of Agricultural Sciences	Fellow
Dr. Valsamma Joseph	Centre for Nanotechnology, Vellore Institute of Technology	Member, Advisory Board

Sponsored Research Projects:

Ongoing Research Projects

Sl No.	Name of Scheme	Agency	Year	Funds Received (Lakhs)	PI
1.	Establishment of Bioinformatics Centres (BIC) in India Establishment of Bioinformatics Centre (BIC) for Marine Bio-resource Conservation and Sustainable Utilization (Tentative Ref. No. BI-71/198 (5)),	Department of Biotechnology	2021-2026	74.992	Principal Investigator & Project Coordinator Dr. Valsamma Joseph Director, National Centre for Aquatic Animal Health, Co -Principal Investigators Dr. Sajeevan T.P., Assistant Professor, NCAAH, CUSAT Dr. Jayesh Puthumana, Assistant Professor, NCAAH, CUSAT Dr. Rosamma Philip, Department of Marine Biology, Microbiology and Biochemistry, SMS, CUSAT

					<p>Dr. M.V. Judy, Associate Professor, Department of Computer Application, CUSAT</p> <p>Dr. Jereesh, A.S., Assistant Professor, Department of Computer Science, CUSAT</p> <p>Dr. Sanjeev C. Ghadi, Department of Biotechnology, Goa University</p> <p>Co -Investigator</p> <p>Shibin S.P., Assistant Professor, NCAAH, CUSAT</p> <p>Mentors</p> <p>Prof. Achuthsankar S. Nair Head Department of Computational Biology and Bioinformatics, University of Kerala, Trivandrum</p> <p>Prof. I.S.Bright Singh, KSCSTE Emeritus Scientist, NCAAH, CUSAT</p>
2.	Bioprospecting for Neuroprotective compounds from an endosymbiotic fungi <i>Aspergillus</i> sp. MCCF102 isolated from a marine sponge as potential drug candidates against neurodegenerative disorders	Department of Biotechnology	2019-2022	53.886	Dr. Sajeevan T P

3.	Nutritional evaluation, segregation and production optimization of novel marine microalgae for establishment as live feeds in fish and shellfish culture	Department of biotechnology, Government of India	2018-2021	70.912	Dr Valasamma Joseph ,Dr Sajeevan T P
4.	Microbiome of Glaciomarine system of Svalbard; diversity and its variability:	National Centre for Polar and Ocean Research, Ministry of Earth Sciences	March 2019 To March 2022	40.843 lakhs	Co-PI; Sajeevan T.P,
5.	Establishment of Functional Genomics and Metabolomics Platform for Augmented Production of Aquatic Bio-Resources and Discovery of Novel Molecules of Biomedical Importance.	Higher Education Department Govt. of Kerala	16-02-2022 to 15-02-2024	372.43	Prof. Valsamma Joseph (Coordinator), Dr.Sajeevan T .P (PI) Dr. Jayesh Puthumana (PI) , Shibir SP, (Co-Investigator)
6.	Bioprospecting of Marine microbial diversity for various products under the Marine Bioresource and Biotechnology Network Programme	Department of Biotechnology, Govt. of India	28-09-2021 to 27-09-2024	83.0416	Dr. Sajeevan TP (PI)

7.	Cell and Developmental Biology of Marine Organisms	Department of Biotechnology, Govt. of India	02-09-2021 to 01-09-2024	301.23	Prof. I.S. Bright Singh (Coordinator), Prof. Valsamma Joseph (PI), Dr. Jayesh Puthumana (PI) Shibin SP, (Co-Investigator)
8.	Development of Shrimp anti-WSSV-IgY Antibody Therapeutics (WSSV-IgY-T) from immunoglobulin Y (IgY) using WSSV Antigens and Synthetic Peptides and their Commercial Applications in Aquaculture Industries	SERB, Govt. of India	19-11-2019 to 18-3-2022	27.95	Dr Jayesh Puthumana
9.	Development of an appropriate delivery system for dsRNA of CMG family hormone genes to effect maturation and spawning of <i>Penaeus monodon</i> under captivity	Kerala State Council for Science Technology and Environment (Emeritus Scientist Scheme)	19-12-2018 to 18-12-2021	20.82	Prof. I.S. Bright Singh

Research programmes and activities

SI No	Name of Research Scholar	Name of Research Guide	Topic of Research
1	Merlin TS	Dr.T.P.Sajeevan	Ascidians of Indian Coast Diversity biology Ex-situ and in vitro propagation
2	Indira.K	Dr. VALSAMMA JOSEPH	Structure and biosynthesis of hydrocarbons of biofuel significance from marine algae.
3	Vinusree.K.P	Prof. I.S.BRIGHT SINGH	Preventive health care and growth enhancement in microbrachium rosenbergil from hatchery to grow out by way of gut micro biome manipulation employing probiotics
4	Limmy T P	Dr.VALSAMMA JOSEPH	Bio prrrroces for High Density Biomass production of the Bioaugmentor Bacilluseerus,MCCB 101 (Detrodigest TM) and a suitable carrier based Delivery system for Detritus Management in Aquaculture.
5	Saranya.M	Dr.VALSAMMA JOSEPH	Quorum quenching molecules from marine cynobacteria against vibrio harveye for application in aquaculture
6	Gopika.V.S	Prof.I.S.BRIGHT SINGH	Metabolic Engineering in Penaeus mondon to accomplish maturation and spawning under captivity by way of RNA mediated silencing of CMG family hormone genes.
7	Thasreefa	Dr.VALSAMMA JOSEPH	Production of marine microalga picochlorum maculatum MACC3 based feed for aquaculture nutrition

8	Suresh .K	Dr. JAYESH PUTHUMANA	Reprogramming bioremediation and integrated disease management coupled with preventive health care in zero water exchange shrimp culture
9	Sreevidya.C.P	Dr. JAYESH PUTHUMANA	Development of cell culture systems and induces pluripotent stem cells from <i>Daphnia pulex</i>
10	Ambadi Kannan.M.S	Dr.JAYESH PUTHUMANA	Improvisation & process optimization of the high density fish culture developed under RAS mode integrated with vegetable cultivation for versatility sustainability and geographical flexibility
11	Soumya Balakrishnan	Prof.I.S.BRIGHT SINGH	Development of cell culture systems from marine molluscs and isolation of viral pathogens
12	Jini Jimmy	Dr.I.S.BRIGHT SINGH	Pyocyanin as the drug of choice in aquaculture synthetic biology based production downstream process product design and application
13	Diya Dominic	Dr.I.S.BRIGHT SINGH	Virus Multiplication cycle in shrimp: Epidemiology transmission host pathogen interaction & release.
14	Muneer.A	Dr.I.S.BRIGHT SINGH	Virus multiplication cycle in fin fishes:Epidemiology,Transmission, Host Pathogen Interaction and release
15	Aswathy.C	Dr. JAYESH PUTHUMANA , DR VALSAMMA JOSEPH	CRISPR-Cas9-Medicated targeted mutagenesis and efficient Genome Editing in Teleost Fisheries
16	Soumya S.Prakash	Dr.VALSAMMA JOSEPH	Marine microalgal biomass production in indigenous photobioreactor :kinetic modelling and downstream processing

17	Linu Eldho	Dr.I.S.BRIGHT SINGH	Molecular screening, cell culture based isolation and characterization of finfish & shellfish viruses & establishment of National Repository
18	Rojin Joseph	Dr.T.P.SAJEEVAN	Genomics-Driven Discovery and Biosynthetic pathway elucidation of natural products from marine actinomycetes
19	Akshay .P.S	Dr.VALSAMMA JOSEPH	Development of aerobic sulphur oxidizing bacterial consortia from aquatic ecosystem and their applications in aquaculture for the bioremediation of hydrogen sulphide
20	Deepa G.	Dr.Sajeevan T.P.	Development of polymer based nanoparticle of marine derived anticancer drugs for targeted delivery and reduction of toxicity
21	Krishnapriya R	Dr.Sajeevan T.P.	Characterization of immunocytokines of <i>Lates calcarifer</i>
22	Md. Umar	Dr. Sajeevan T.P.	Microbial biodiversity and ecology of Arctic fjord.

Research projects under M.Tech Marine Biotechnology programme

Student Name	Project Topic	Supervisor
Avanthika Kammath	Comparative analysis of cryopreservation methods and optimization of cryobanking of fish embryos	Dr. Jayesh Puthumana
Kubera Chandran	Comparative effects of the antidepressant drugs sertraline and fluoxetine on zebrafish gill cell line	Dr. Jayesh Puthumana

Achintya Acharya	Effect of IgY antibody therapeutic against White spot syndrome viruses in <i>Penaeus monodon</i>	Dr. Jayesh Puthumana
Akash Kumar	Development of sea weed associated nitrogen fixing bacterial formulation for application in seaweed micropropagation	Dr. Valsamma Joseph
Ritam Dhadra	Development of anticancer drugs from the marine fungi <i>Aspergillus</i> sp. MCCF 103, MCCF 111 and MCCF 119."	Dr. Sajeewan TP
Ashok Kumar L	Heterologous expression of WSSV proteins in <i>Candida sake</i> (MCCF 101) and recombinant proteins production for vaccinating shrimp	Prof. IS Bright Singh
Sheetal Soni	Anticancer drugs from mangrove actinomycetes	Dr. Sajeewan TP
Roshan Ara	Heterologous gene expression of <i>Vibrio harveyi</i> phage lysin gene in <i>Candida sake</i> MCCF 101 for aquaculture applications	Prof. IS Bright Singh

Consultancy/ extension work

The Centre has undertaken consultancy/extension works in **Aquatic Animal Health Management** at National level through the following activities:

- 1 Disease Diagnosis
- 2 Preventive Health care in finfish and shellfish culture systems through bioremediation and gut probiotics and immunostimulants
- 3 Support to Biofloc ponds in the generation of floc and maintenance of the system
- 4 Support to Aquaponics Systems in health management
- 5 Animal Quarantine and Certification Services to various companies under the Animal Quarantine and Certification Services of Ministry of Agriculture and Farmers Welfare, Government of India; more than 28 companies have availed services during the reporting period.
- 6 Technology implementation of High Density GIFT (Genetically Improved Farmed Tilapia) under recirculation mode, integrated with vegetable cultivation

The National Centre for Aquatic Animal Health has developed a technology for High Density Genetically Improved Farmed Tilapia (GIFT) culture under recirculation mode integrated with vegetable cultivation and transferred the technology to several farmers in the State of Kerala, livelihood expansion, nutritional security and women empowerment. During the period the technology could be transferred to 20 aquafarmers.

- 7 Implementation of Zero water Exchange Shrimp Culture Technology and integrated disease management.
- 8 Implementation of Integrated Disease Management in Finfish Culture systems
- 9 Supply of nitrifying bioreactors to aquaculture systems
- 10 Continuing education programme: Education of farmers at various levels.

Revenue generated through extension activities (1-4-2022 to 31-3-2022)

Month	Rs.
April 2021	404621/-
May 2021	362307/-
June 2021	152403/-
July 2021	166674/-
August 2021	289939/-
September 2021	147680/-
October 2021	61919/-
November 2021	93675/-
December 2021	185625/-
January 2022	333445/-
February 2022	274466/-
March 2022	24,72,754/-
Total	49,45,508.0

Inter University Centre for Nanomaterials and Devices (IUCND)

ANNUAL REPORT FOR THE YEAR 2021– 22

1. Name of the Department: Inter University Centre for Nanomaterials and Devices

(IUCND)

2. Brief History of the Department:

The Centre was established by the Cochin University of Science and Technology in September 2009 with a view to promoting research in the area of Nano Science and Nanotechnology and also for fostering interdisciplinary research activities in the area of nanotechnology, both intra as well inter university. The center hosts 22 adjunct faculty members who are also part of the Project Implementation Group of the Centre. Dr. Honey John, Professor, Dept of Polymer Science and Rubber technology, Cochin University of Science and Technology is the Honorary Director of the centre. The department has strong research programs in the fields of nanomaterial synthesis, Ferro fluids, energy generation and storage and biomedical implants. The centre has expertise in the synthesis of functional nanomaterials and fabrication of devices for application in the thrust areas proposed. Characterization facilities Atomic force microscope, UV-Vis Diffuse Reflectance Spectrometer, Electrometer, Optical Microscope are available at the centre. Besides these Facilities such as electro spinning unit, spin coater, Microwave synthesizer etc are available in the Centre.

3. Programmes of Study/Research

- a) Introduction to applied Nanotechnology (IND 2101) (Elective Course)
- b) Nanotechnology: Concepts and Applications (IND 3201) (Elective Course)

4. Faculty Members

Sl.No.	Name	Designation	Qualification	Specialization
1	Dr. Honey John	Professor, Hon Director	PhD	Conducting polymers, Nano composites, Nonlinear optical studies, Organic solar cells, Optical Materials
2	Dr. Manoj N	Professor	PhD	Organic Chemistry
3	Dr. Pramod Gopinath	Professor	PhD	Emission Spectroscopy of Laser Produced Plasma, Nonlinear Optics and Nanophotonics
4	Dr. Sarita G. Bhat	Professor	PhD	Studies on endotoxins, Bioactive compounds from Marine organisms, Studies on exopolysaccharides Marine Metagenomics, Vibrio phages, Fish Metagenomics, Salmonella Phages, Biofilm metagenomics
5	Dr. Sailaja G S	Professor	PhD	Biomaterials, Nanotechnology, Cancer biology, Antibacterial Formulations
6	Dr. Usha K Aravind	Professor	PhD	Advanced Oxidation Process, Biophysical studies of proteins, Fate of emerging contaminants, Membrane Technology
7	Dr. Aldrin Antony	Associate Professor	PhD	Solar Cells, Transparent conducting oxides, nanotextures
8	Dr. Jayalatha Gopalakrishnan	Associate Professor	PhD	Polymer blends, Shortfibre composites

9	Dr. Saji K J	Associate Professor	PhD	Two dimensional materials for opto-electronic and nano-electronic applications, thin film solar cells, thin film transistors, electrical conduction mechanism in nano structures
10	Dr. Baby Chakrapani P.S	Assistant Professor	PhD	Neural stem cell research Neurodegenerative Diseases Scaffolds for regenerative medicine Microbiota-Gut-Brain axis
11	Dr. Priya Rose T	Assistant Professor	PhD	Photonic bandgap materials, metamaterials, Ultrafast laser-matter interactions, Laser produced plasma
12	Dr. Ajith Vengellur	Assistant Professor	PhD	Cell Signaling, Pathways in Normal Physiology and Disease - Hypoxic Signaling, Mitochondrial Biology, Development of Biomaterials for Medical Devices and Diagnostics
13	Dr. Anoop K. K	Assistant Professor	PhD	Ultrashort Laser Ablation, Laser Produced Plasma Diagnostics, Laser Induced Plasma Spectroscopy, Pulsed Laser Deposition, Optical-vortex Laser Ablation, and Femtosecond Laser Surface Micro/Nanostructuring and its Applications
14	Dr.Asha,A.S	Assistant Professor	PhD	Solar cells, development of transparent conducting oxide thin films
15	Dr. Nybin R	Assistant Professor	PhD	Artificial Photosynthesis Water Oxidation
16	Dr. Senoy Thomas	Assistant Professor	PhD	Magnetic nanostructures

18	Dr. Kala R	Assistant Professor	PhD	Functionalized nanomaterials, fluorescent nanoprobe for sensing application and two dimensional/polymer based materials for photovoltaic applications.
19	Dr. SujaHaridas	Assistant Professor	PhD	Heterogenous and Photocatalysis, Nanomaterials for energy and environmental applications and polymer nanocomposites.
20	Dr. Praveen C. S.	Assistant Professor	PhD	Electronic Structure of Bulk and 2D materials and their functionalization, Homogenous and Heterogenous catalysis, Materials for battery applications, and developing various functional materials.
21	Dr. Abhitha K.	Assistant Professor	PhD	Rubber vulcanization, Plastic recycling, Carbon dioxide adsorption
22	Dr. Yoosaf. K	Professor	PhD	Raman spectroscopy, Surface Enhanced Raman spectroscopy, spectroscopic devices and methodologies for sensing and diagnosis, and organic solar cells.
23	Dr. Sreeja Narayanan	Welcome Trust / DBT Early Career Fellow	PhD	Biomimetic constructs for specific stimulation of the immuno-microenvironment in TNBC so as to aid improved therapy.

2. Research/Project Staff

Sl.No.	Name	Designation	Qualification	Specilisation
1	Christeena Sabin	Project fellow	M.Sc	Chemistry

3. Postdoctoral Fellow

Sl.No	Name	Funding Agency	Guide	Area of Work
1	Dr.AnshidaMayeen (KairaliGaveshakaPuraskaram Awardee 2020 in Physical Science)	UGC -Dr. DS Kothari Fellowship Kerala State Higher Education Council	Dr. Honey John	Biocompatible piezoelectric nanocomposites for implantable device applications

4. Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
<i>Main registration</i>				
1	Mrs. Mubeena Rafi	UGC	Prof. Pramod Gopinath/Prof. Honey John	Magnetoplasmonics in graphene systems
2	Ms. Divya Krishnan	CUSAT	Dr. Jayalatha Gopalakrishnan/ Dr. Priya Rose T	Electrode materials for Supercapacitors
3	Mrs. Amrutha Thomas	DST	Prof.Honey John/Prof.Pramo d Gopinath	Studies on nano semiconductor oxides/2-D nanomaterials and its composites for hydrogen production and allied applications.
4	Mrs. Lakshmi Srinivasan	CUSAT	Prof. Pramod Gopinath/Prof. Manoj N	Plasmonic Solar Cells

5	Mr. Amruth Kumar. N. T.		Prof. Honey John/Prof. M K Jayaraj	Studies on Inorganic/Organic Nanohybrids for Environmental Remediation: Special Emphasis on Water Pollution and Air Pollution.
6	Ms. AadithyaS albi	CUSAT	Prof. Sailaja G.S/Prof. Sunil K Narayanankutty	Luminescent Nanotheranostic Materials for Cancer Therapy
7	Ms. Akhila R	CUSAT	Dr. Jayalatha Gopalakrishnan	Polymer Nanocomposite for Environmental Applications
8	Jency J	CUSAT	Dr. Jayalatha Gopalakrishnan	Supercapacitors
9	Bini Abraham	CUSAT	Dr. Yoosaf K.	Development of spectroscopic device for disease diagnosis
<i>Co- Registration</i>				
6	Mr. Vijoy K.V	MNRE	Dr. Saji K.J./Prof. Honey John	Ultra-sensitive Biosensors using MoS ₂ Thin film transistors Fabricated by RF Magnetron sputtering, Nanogenerators fabrication and application studies
7	Ms. Dhanu Treasa Mathew	CSIR	Prof. Honey John/Prof. Manoj N	Studies on Nano semiconductor Oxides and its Inorganic and Organic Hybrids for Electro – Optical Applications
8	Ms. Jesna Louis	MNRE	Prof. Honey John/Prof. M K Jayaraj	Synthesis, Characterization & Property evaluation of Nanomaterials for Photoreduction/photo sensing Applications

5. Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Section Officer (PS&RT Dept. on Additional Charge)	1
2	Assistant (on daily wage basis)	1
3	Sweeper cum Cleaner (on daily wage basis)	1

6. Technical Personnel

Sl.No.	Designation	No. of Posts
1	Technical Assistant	0

7. Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1	Ph.D	0	2	2

8. Research Facilities**a. Laboratories**

Nano synthesis Laboratory

Material characterization laboratories

b. Major equipment

Atomic force microscopy

Vacuum Oven

Hot air oven

Source measuring unit

Fume hood
 Hot air oven
 Solar Simulator
 Ultrasonicator
 Glove Box
 Rotary Evaporator
 Microwave Synthesizer
 Electrometer
 Optical Microscope

c. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
410	NIL

9. Publications

a. Papers

- 1) Louis, J., Padmanabhan, N.T., Jayaraj, M.K. and John, H., 2022. Crystal Lattice Engineering in Screw-dislocated ZnONanocone Photocatalyst by Carbon Doping. *Materials Advances*.
- 2) Treasa Mathew, D., KV, V., Nayar, N.V., Manoj, N., Saji, K.J., Pillai, S.C. and John, H., 2022. Surface Area Enhanced Nylon-6, 6 Nanofiber Engineered Triboelectric Nanogenerator for Self-Powered Seat Monitoring Applications. *ACS Sustainable Chemistry & Engineering*.
- 3) Bijina, V., Jandas, P.J., Joseph, S., Gopu, J., Abhitha, K. and John, H., 2022. Recent trends in industrial and academic developments of green tyre technology. *Polymer Bulletin*, pp.1-30.

- 4) Radhakrishnan, S., Joseph, S., Jelmy, E.J., Saji, K.J., Sanathanakrishnan, T. and John, H., 2022. Triboelectric nanogenerators for marine energy harvesting and sensing applications. *Results in Engineering*, p.100487.
- 5) Anlin, L.K., Vijoy, K.V., Pradeesh, K., Thomas, S., John, H. and Saji, K.J., 2022. Effects of metal nanoparticles on the performance of PDMS based triboelectric nanogenerators. *Physica B: Condensed Matter*, p.413952.
- 6) Padmanabhan, N.T., Gopalakrishnan, J. and John, H., 2022. Effect of reaction variables on facet-controlled synthesis of anatase TiO₂ photocatalysts. *Bulletin of Materials Science*, 45(2), pp.1-15.
- 7) Sathyan, M., Jandas, P.J., Venkatesan, M., Pillai, S.C. and John, H., 2022. Electrode material for high performance symmetric supercapacitors based on superparamagnetic Fe₃O₄ nanoparticles modified with cetyltrimethylammonium bromide. *Synthetic Metals*, 287, p.117080.
- 8) Vijoy, K.V., John, H. and Saji, K.J., 2022. Self-powered ultra-sensitive millijoule impact sensor using room temperature cured PDMS based triboelectric nanogenerator. *Microelectronic Engineering*, 251, p.111664.
- 9) Padmanabhan, N.T., Thomas, R.M. and John, H., 2022. Antibacterial self-cleaning binary and ternary hybrid photocatalysts of titanium dioxide with silver and graphene. *Journal of Environmental Chemical Engineering*, p.107275.
- 10) Padmanabhan, N.T., Gopalakrishnan, J. and John, H., 2022. Effect of reaction variables on facet-controlled synthesis of anatase TiO₂ photocatalysts. *Bulletin of Materials Science*, 45(2), pp.1-15.
- 11) Aazem, I., Mathew, D.T., Radhakrishnan, S., Vijoy, K.V., John, H., Mulvihill, D.M. and Pillai, S.C., 2022. Electrode materials for stretchable triboelectric nanogenerator in wearable electronics. *RSC advances*, 12(17), pp.10545-10572.
- 12) Subin, P.S., Antony, A., Saji, K.J. and Jayaraj, M.K.E., 2022. Observation of Magnéli Phase Filament Formation in MoO_x Artificial Synapse. *Advanced Electronic Materials*, p.2200729.
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- 25) Subin, P.S., Saji, K.J. and Jayaraj, M.K., 2021. Plasticity and learning behavior emulated in a ZnO based transparent artificial synapse. *Thin Solid Films*, 737, p.138924.
- 26) Subin, P.S., Asha, A.S., Saji, K.J. and Jayaraj, M.K., 2021. Spike-dependent plasticity modulation in TiO₂-based synaptic device. *Journal of Materials Science: Materials in Electronics*, 32(10), pp.13051-13061.
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- 35) Balachandrakurup, V., George, N. and Gopalakrishnan, J., 2021. Effect of compatibiliser on the mechanical, rheological and thermal properties of natural rubber/Cellulose nanofibre composites. *Materials Today: Proceedings*, 47, pp.5345-5350.
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- 38) Sumitha, N.S., Prakash, P., Nair, B.N. and Sailaja, G.S., 2021. Degradation-Dependent Controlled Delivery of Doxorubicin by Glyoxal Cross-Linked Magnetic and Porous Chitosan Microspheres. *ACS omega*, 6(33), pp.21472-21484.
- 39) Sneha, K.R., Benny, N., Nair, B.N. and Sailaja, G.S., 2021. Natural rubber latex assisted shape-attuned synthesis of intrinsically radiopaque and magnetic bioceramic nanocomposite with hyperthermia potential for cancer therapeutics. *New Journal of Chemistry*, 45(22), pp.9892-9903.
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- surface-anchored quaternary poly (4-vinylpyridine) polyelectrolyte. *Reactive and Functional Polymers*, 172, p.105190.
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- 46) George, L.H., Arakkal, A., Sreedharan, P. and Sailaja, G.S., 2021. Injectable polyelectrolyte complex-nascent HAP biodegradable antibiotic delivery system for the treatment of osteomyelitis. *Biomedical Materials*, 17(1), p.015011.
- 47) Sirajunnisa, P., Sabna, C., Arackal, A., Prathapan, S. and Sailaja, G.S., 2022. Lawsons-Bentonite Hybrid Systems for pH-Dependent Sustained Release of Ciprofloxacin. *New Journal of Chemistry*.
- 48) Sreeja, S., Parameshwar, R., Varma, P.H. and Sailaja, G.S., 2021. Hierarchically Porous Osteoinductive Poly (hydroxyethyl methacrylate-co-methyl methacrylate) Scaffold with Sustained Doxorubicin Delivery for Consolidated Osteosarcoma Treatment and Bone Defect Repair. *ACS Biomaterials Science & Engineering*, 7(2), pp.701-717.
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- 50) Arakkal, A., Aazem, I., Honey, G., Vengellur, A., Bhat, S.G. and S Sailaja, G.C., 2021. Antibacterial polyelectrolytic chitosan derivatives conjugated natural rubber latex films with minimized bacterial adhesion. *Journal of Applied Polymer Science*, 138(1), p.49608.

10. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

1. Ms. Divya Krishnan, Research Scholar of IUCND, has won best paper award in International conference entitled Macromolecules: Synthesis, Morphology, Processing, Structure, Properties and Applications (ICM- 2021), Organized by Mahatma Gandhi University, Kottayam.
2. Ms. Divya Krishnan, Research Scholar of IUCND, has won best paper presentation on Golden Jubilee International Conference on Sustainable Technology and Innovation for Industry 4.0 -2022, April 21-22 2022, organized by Virtual Centre for Advanced Research in Engineering Science and Technology, Cochin University of Science and Technology (CUSAT), Kochi - 682022.
3. Akhila R, research scholar IUCND, presented a paper entitled “ Nanocellulose based materials for dye absorption – A short review in International conference on Sustainable Technology and Innovation for Industry 4.0 -2022, April 21-22 2022, organized by Virtual Centre for Advanced Research in Engineering Science and Technology, Cochin University of Science and Technology (CUSAT), Kochi - 682022.
4. Mubeena Rafi, Research scholar IUCND, presented a paper entitled “Magnetic and optical properties magnetic –graphene oxide nanohybrids” in International Conference NANOicon 2022, IUCND, CUSAT, Kochi – 682022.
5. Lakshmi Srinivasan, Research scholar IUCND, presented a paper entitled “ Plasmonic Nature of Graphene Quantum Dots – An Alternative to Noble Metal Plasmonics” in International Conference NANOicon 2022, IUCND, CUSAT, Kochi – 682022.
6. Amruth Kumar, Research scholar IUCND, presented a paper entitled “TiO₂ photocatalysts Synthesized from surfactant free water-DCM interface” in International Conference NANOicon 2022, IUCND, CUSAT, Kochi – 682022.
7. Vijoy K V, Research scholar IUCND, presented a paper entitled “Effect of Frequency and Thickness in the Performance of Polydimethylsiloxane Based Triboelectric Nanogenerators” in International conference on advances in polymer technology (APT) 2021, Department of polymer science and rubber technology, CUSAT, May 27-29, 2021.
8. Vijoy K. V., “Enhancing the triboelectric performance of flexible PDMS/Boron nitride composite nanogenerators” in -NPS-2022 (International conference on recent trends in Photonics. ISP, CUSAT

9. Mubeena Rafi, Research scholar IUCND, participated in National Photonics Symposium(NPS) 2021, organized by International School of Photonics, Cochin University of Science and Technology.
10. Amrutha Thomas, Research scholar IUCND, participated in International Conference NANOicon 2022, IUCND, CUSAT, Kochi – 682022.
11. Amrutha Thomas, Research scholar IUCND, participated in International conference on Recent Trends in Photonics, organized by International School of Photonics, Cochin University of Science and Technology, CUSAT.
12. Advances in Polymer Technology, organized by department of Polymer Science and Rubber Technology, CUSAT.
13. Amrutha Thomas, Research scholar IUCND, participated in Workshop on Rendering your Scientific Output (RYSO -2021), organized by International School of Photonics, Cochin University of Science and Technology, CUSAT.
14. Amruth Kumar, Research scholar IUCND, participated in International conference on Advances in Polymer Technology, organized by department of Polymer Science and Rubber Technology, CUSAT.
15. Amruth Kumar, Research scholar IUCND, participated in Workshop on Rendering your Scientific Output (RYSO -2021), organized by International School of Photonics, Cochin University of Science and Technology, CUSAT.

11. Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of the Organization	Role
Prof. (Dr.) Honey John	Results in Engineering, Elsevier (Journal)	Editor

12. Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Mrs. Amrutha Thomas	Women Scientist A	Department of Science and Technology
Dr. AnshidaMayeen	Dr. D S Kothari Postdoctoral Fellowship	University Grants Commission

13. Sponsored Research Projects

Sl.No.	Title	Funding Agency	Duration & Amount	Status
1	Wearable wireless triboelectric nanogenerator sensor for respiratory rate and sleep monitoring (Accepted Funded Project)	SERB India	3 Years	Approved Recently
2	Advanced Research in Tactical Oceanography, Modern Sensors, Signal Processing and Telemetry	DRDO	4 Years Rs. 1,83,95,308	Ongoing
3	Fabrication of ternary hybrid of Ag-MoS ₂ -carbon nanostructures for wastewater treatment	DST-WOS A	3 Years Rs. 25,58,304	Ongoing
4	Development of Visible light responsive Micro reactor systems for water purification	DST-SERB, Govt. of India	3 Years Rs. 30,47,264	Ongoing
5	Development of Superhydrophilic Graphene/Semiconductor Oxide Nanohybrids for Self-Cleaning Applications	DST-SERB, Govt. of India	2017-2020 30.482 lakhs	Completed

22. Research Programmes and Activities:

Sl.No.	Problem / Topic	Investigator (s)
1.	Environment (Self Cleaning Technology, Sensors and superhydrophilic coatings)	Dr. Honey John, (Director, IUCND)
2	Energy Generation and Storage (Solar cells, Hydrogen generation, Super capacitors and Li ion batteries)	Dr. Honey John, (Director, IUCND), Dr. Asha,

		(Dept. of Physics) Dr. N. Manoj, Dr.Nybin (Dept. of Applied Chemistry)
3	Communication technology: (Development of photonic materials and thin film transistors (TFT), Radar absorbers, EMI shielding materials etc)	Dr.Priya Rose, Dr.Pramod Gopinath, Dr.Saji K J (International School of Photonics)
4	Biomedical Applications (Tissue Engineering, Bio-imaging and Drug Delivery)	Dr. Saritha G. Bhat, Dr. Ajith Vengallur, Dr.Chakrapani (Dpt of Biotechnology) Dr. Sailaja G S (Dpt of PS&RT)

• **Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department**

Sl.No.	Title	Duration	Coordinator
1	International Conference NANOicon 2022	January 11-15, 2022	Dr. Honey John
1.	Pre-conference workshop: Computational Modelling of Materials	January 7, 2022	Dr. Praveen C S
2.	Nature-Inspired Nanoscience and Nanotechnology	January 10, 2022	Dr. Sailaja G S



Inter University Centre for IPR Studies (IUCIPRS)

FORMAT FOR SUBMISSION OF THE ANNUAL REPORT 2021-22

Name of the Department : Inter University Centre for IPR Studies

Brief History of the Department: The Centre for IPR Studies, established in the School of Legal Studies of the Cochin University of Science & Technology in 2003, is converted into IUCIPRS to encourage multidisciplinary teaching and research in the area of Intellectual Property Rights. Centre for IPR Studies was originally established with Dr. K.N. Chandrasekharan Pillai, Dean, Faculty of Law as the Hon. Director and Dr. N.S. Gopalakrishnan as the Coordinator. The Centre is also supported by the Ministry of Human Resources Development, Government of India, which established HRD Chair on Intellectual Property Rights in CUSAT in 2003. The Government of India also extended financial support to develop a depository of IPR materials. The Govt. of Kerala has converted the Centre for IPR Studies in to Inter University Centre for Intellectual Property Rights Studies in 2010 vide Go. Go. (Ms) No. 348/10/H.Edn. dated 13/10/2010 which was modified by G.O (Ms) No.235/11/ H.Edn. dated 23/09/2011. In 2013 the Government of Kerala issued a common G.O. No.59/2013/H.Edn dated 06.03.2013 for Inter University Centres. The Centre, at present, receives financial assistance from both the State Government and the Central Govt. At present the Centre has one of the best collections on IPR from different parts of the world.

Programmes of Study/Research: The main activities of the Centre include policy research support to both Central and State Government, supporting/assisting Government of India in International Negotiations conducting extensive research in Intellectual Property related areas, conducting different types of academic programmes which include Ph.D programmes with fellowships, facilitating multi-disciplinary research, undertaking post graduate courses for students of School of Legal Studies, from science, technology and management disciplines of CUSAT, short-term fellowship for students from other universities who have registered for PhD on any IP related areas, visiting fellowship for eminent academics from India and abroad, financial support for students giving them an opportunity to associate with conferences and workshop on emerging issues on Intellectual Property Law and conduct training programmes for Judges, Professionals, Scientists. It also extends supports to scientists, industrialists and other technical experts from CUSAT and outside in obtaining different forms of IP protection. The Centre has prepared Policy Research Papers for the Government of India for international text based negotiations in World Intellectual Property Organisation for different treaties on protection of traditional knowledge, traditional cultural expression

/folklore and genetic resources. Also supported Government of Kerala in implementing the IPR Policy of Kerala.

Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Dr. I G Rathish	Assistant Professor	PhD	Chemistry
2.	Dr. Anson C J	Assistant Professor	PhD	Intellectual Property
3.	Dr. Vishnu Sankar P	Research Officer	LLM (IPR) PhD	Intellectual Property
4.	Dr.Kavitha Chalakkal	Assistant Professor	M.Phil, PhD	Intellectual Property

Research/Project Staff

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Naveen Gopal	Research assistant	LLM (IPR)	IPR
2.	Sulok S K	Research assistant	LLM (IP)	IPR

Research Scholars

Sl. No.	Name	Funding Agency	Guide	Area of Work
1.	Ms. Amrutha P Murali	Government of Kerala	Dr. Vishnu Sankar P & Dr. I G Rathish	Protection of new Ayurvedic Medicines under the Indian Patent Act and Drugs and Cosmetics Act 1940
2.	Mr. Joyson Sajan	Government of Kerala	Dr. Vishnu Sankar P & Dr.	Copyright Expansionism and its Impact on Access to

			Anson C J	Works in Digital Era
3.	Mr. Lan Francis	Government of Kerala	Dr. I G Rathish & Dr. Anson C J	Patenting of Stem Cells and Related Inventions
4.	Ms. Simi K K	Government of Kerala	Dr. Kavitha Chalakkal	Marine Genetic Resources and Associated Traditional Knowledge from Areas beyond National Jurisdiction – The need for an International Legal Framework to Regulate Sustainable Use and Sharing of Benefits
5.	Mr. Sreenath K P	Government of Kerala	Dr. Vishnu Sankar P & Dr. Anson C J	Protection of Traditional Cultural Expressions (TCE) in State of Kerala - An Empirical Study
6.	Arathi Ashok	Part-time	Dr. T.G. Agitha & Prof. N.S. Gopalakrishnan	Shift of Indian copyright regime: Entrepreneur to Author
7.	Kioko Nzuki Mwanja	Part-time	Dr. T.G. Agitha	Management of Cultural Assets in Museums in Kerala and Intellectual Property
8.	Somlatha Moly T S	Converted to Part-time	Dr. T.G. Agitha	IP & Agriculture
9.	Bilal A Nazeer	Fellowship period over	Dr. T.G. Agitha & Dr. I G Rathish	Patent Law and Modern Biotechnology Industry
10.	Naveen Gopal	Fellowship period over	Prof. N.S. Gopalakrishnan	Protection of Undisclosed Information in India
11.	Sulok S K	Fellowship period over	Prof. N.S. Gopalakrishnan	Geographical Indications: The Concept and the Beneficiaries
12.	Sruthy Rajendran	Fellowship period over	Prof. N.S. Gopalakrishnan	Patenting of Public Funded Innovations in India
13.	Anjana Girish	Part Time	Dr. P S Seema	Visually Impaired Treaty and Human Rights

14.	Vidyuth K S	Part-time	Dr. P S Seema	Reconstructing a conception of Social Access Facilitating Intellectual Property from John Rawl's theory of Justice
15.	Archana P	Fellowship period over	Dr. I G Rathish & Dr. Vishnu Sankar P	Role of Copyright Societies in Safeguarding the Interest of Authors in the Music & Film Industry
16.	Lakshmi Menon S	Fellowship period over	Dr. I G Rathish	The Influence of CSOs/NGOs in IP Public Policy Formulation
17.	Muhammed Faris V	Fellowship period over	Dr. I G Rathish & Dr. Vishnu Sankar P	The Chaos behind Patenting of Nanotechnology Inventions
18.	Muthumani Somasundaran	Fellowship period over	Dr. I G Rathish & Dr. T G Agitha	A Study on the effectiveness of the Copyright Act, 1957, in the Copyright Protection of Authors and Performers of Indian Films
19.	Ms. Deepa B.	Fellowship period over	Dr. T G Agitha	Need for an International Initiative to Resolve the Orphan Works Issue
20.	Ms. Rani Mol D	Fellowship period over	Dr. T G Agitha	The Concepts of Well Known Marks and Trademark Dilution: A Critical Analysis of the Indian Trademark Law
21.	Ms. Fiona Saju	Fellowship period over	Dr. M Bhasi & Dr. T G Agitha	Analysis of Patentability of Technologies used in the Realisation of Internet of Things (IoT)
22.	Ms. Sreelakshmi M S	Fellowship period over	Dr. T G Agitha & Dr. Feroz Ali Khader	Problems in Patenting Artificial Intelligence (AI) Related Inventions in Unmanned Technologies
23.	Ms. Sheethal M S	Discontinued	Dr. T G Agitha & Dr. Anson C J	A Behavioural Study on Competition Commission of India's approach towards Regulating IP Related Anti-Competitive Practices
24.	Ms. Agnes Augustian	Govt. of India	Dr. Vishnu Sankar P & Dr.	Personality Right: Concept and Protection in India

			Anson C J	
25.	Ms. Athulya M P	Discontinued	Dr. T G Agitha & Dr. Anson C J	Working of Benefit Sharing System in Compensating Local And Indigenous Communities in India
26	Ms.Karunyapriya Maryam Mathews	Govt. of India	Dr. Arul George Scaria & Dr. Anson C J	The Scope of Protection of Immunology related Inventions under the Indian Patent System

Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Director	1
2.	Assistant	2
3.	Steno-cum-Documentation Assistant	1
4.	Cleaner-cum-Peon	2
5.	Gardener	1

Technical Personnel

Sl.No.	Designation	No. of Posts
1.	Assistant Librarian	1
2.	Professional Assistant	2

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1	Ph D	3	2	5
2	LLM (IPR) PhD	1	5	6
3	LLM (IP) PhD	-	3	3
4	One Year LLM (IPR)	2	13	15

Research Facilities: Nil

- a. Laboratories
- b. Major equipments
- c. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
Books – 4758 Journals – 2	Books – 4 Journals – 1 News Papers - 2

- d. Others

Ph.Ds Awarded

Sl. No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Pai Yogesh Anand	The Standard-Essential Patents Dispute Resolution Impasse: In Search of Bright-Line Rules and Balancing Tests for India	Dr. T.G. Agitha

Publications

- e. Papers

Sl. No.	Title of the Paper	Author(s)	Impact Factor, if any
1	Book proposal submitted to oxford university press titled 'A decade of geographical indications in India: empirical and legislative incongruity' waiting for the review comments of the external	Dr. Anson C J	
2	'Fair Use Provisions under the Indian Copyright Act: Awareness Among Librarians of Colleges and Universities' in Maharashtra, Jagdish Wamanrao Khobragade and Anson CJ, Journal of intellectual property rights, 2022 January.	Dr. Anson C J	

3	'Fair Use Provisions under the Indian Copyright Act: Awareness Among Librarians of Colleges and Universities' in Maharashtra, Jagdish Wamanrao Khobragade and Anson CJ, Journal of intellectual property rights, 2022 January.	Dr. Anson C J	
4	Can TCE fit into the shoes of GI law? A comparative legal analysis of laws of India and Indonesia with a case study analysis. Journal world intellectual property rights.	Dr. Anson C J	
5.	Intellectual Property and Gender in Geographical Indications: A Case Study of Chendamangalam handlooms in Kerala. Journal world intellectual property rights.	Dr. Anson C J	
6.	Kavitha Chalakkal and Anjali Prabhakaran, (2021) "The Importance of Structural Reforms for an Efficient Indian Judiciary" 11 The IUP Law Review (2021) p. 36.	Dr.Kavitha Chalakkal	
7.	Kavitha Chalakkal (2022) "Copyright Protection for Cinematographic Films in India" in Sivakumar S and Lisa P Lukose (ed) Novel Dimensions of Copyright Law, Thomson Reuters, India.	Dr.Kavitha Chalakkal	
8.	A Critical Analysis of the Patentable Eligibility and Patentability of Pharmaceutical Drugs with Special Reference to Ayurvedic Drugs, (accepted for publication as part of Book with ISBN Number published on behalf of Kerala State Medicinal Plants Board and CG-3 Connecting Governed Governing Governance)	Dr.Vishnu Sankar P	
9.	Published a column titled "Biologics: The Game Changers in Pharma That India Must Focus On" in the Quint on 13 May 2021.	<u>Naveen Gopal</u>	
10.	Blog Post Titled "The Curious Case of Saravanas and Aryas: An Analysis of Trademark Status of the Restaurants" in Verdictum on 6 Jan 2022.	<u>Naveen Gopal</u>	

11.	“A Re- View of Copyright Ownership”, Bangalore University Law Journal (Forthcoming volume)	Arathi Ashok	
12.	“Understanding (Romantic) Authorship in the Context of Artificial Intelligence” TNDALU Intellectual Property Law Review(Forthcoming volume)	Arathi Ashok	
13.	Muhammed Faris Vazhathodi, A Study on Patentability of Nanotechnology Inventions at the European Patent Organisation Based on Decisions by the Examination Division, the Opposition Division and the Technical Board of Appeal, GRUR International, 2022;, ikac003, https://doi-org.ezproxy.ip.mpg.de:8443/10.1093/grurint/ikac003	Muhammed FarisV	
14.	"Understanding the Technological Aspects of AI: An Intellectual Property Law Perspective." Artificial Intelligence and Law, Bharti Publications (ISBN:978-93-90818-57-0), August 2021, pp.98-109	Sreelakshmi M.S.	
15.	Research paper titled “Autonomous Driving Sensor Technology Lidar Data Processing System- Patent Document Analysis” in the International Journal Of Law Management And Humanities, Volume 4, Issue 4, Page633 – 646; ISSN: 2581-5369	Fiona Saju	
16.	"The Concurrence of Intellectual Property rights and Traditional Knowledge, International Journal of Law Management and Humanities, Volume 4, Issue 2, Page 1556 - 1564), (available at http://doi.one/10.1732/ IJLMH.26330) [ISSN 2581-5369]	Agnes Augustian	

f. Books

Sl. No.	Title of Book
1.	Book Chapter titled "Concept and Ownership of Geographical Indications under the TRIPS Agreement" in "Roadmaps of Intellectual Property Rights", Dr. Vanita Khanna and Dr. Komal Krishna Mehta (Eds.) (Accepted).
2.	Book Chapter titled "Role of UNESCO in protection of Traditional Cultural Expressions" in "Community Intellectual Property Rights", Prof.S.C Roy (Ed.), Satyam Law International, New Delhi, 2021.

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Dr. I G Rathish	Delivered a talk on "Intellectual Property Rights: A Panoramic perspective" in the webinar on Intellectual Property Rights organised by St. Albert's College, Ernakulam on April 15, 2021	Invited Talk
Dr. I G Rathish	Coordinated an 8 days virtual workshop on ACCESS TO MEDICINES, TRIPS AND PATENTS organised jointly by IUCIPRS and Third World Network from May 6th to 30th, 2021 (on May 6, 7, 13, 14, 20, 21, 29 & 30th).	Coordinator
Dr. I G Rathish	Delivered a talk on "Introduction to Pharmaceutical Patents" in the 8 day workshop on Access To Medicines, Trips And Patents organised Jointly by IUCIPRS and Third World Network on May. 20, 2021 (on May 6, 7, 13, 14, 20, 21, 29 & 30th).	Invited Talk
Dr. I G Rathish	Delivered a talk on "IPR Dimensions in the Indian Context "DBT Supported Webinar by S N College, Varkala, Department of Chemistry on May. 24, 2021	Invited Talk
Dr. I G Rathish	Delivered a talk on "Instrument of Intellectual Property Rights in the Indian Context Webinar on IPR in Mathematics, Physics and Computational Sciences Amal College of Advanced Studies, Nilambur on May. 26, 2021.	Invited Talk
Dr. I G Rathish	Delivered a talk on "Patent Law in India and Traditional Knowledge"Talk at Indira Gandhi National Forest Academy for IFS Probationary Officers on June. 18, 2021.	Invited Talk
Dr. I G Rathish	Delivered a talk on "An overview of the Patent System in India" National level workshop on IPR organised by Sri. HDDGFGC, Paduvalahippe on June 29, 2021.	Invited Talk

Dr. I G Rathish	Delivered a talk on "Tools of IPR in the Indian Context" in one week FDP from July 1 st to 7 th 2021 on Dynamics of Research organised by St. Xavier's College for Women, Aluva on July 6, 2021.	Invited Talk
Dr. I G Rathish	Delivered a talk on "Patent Protection in India: Law and Practice" in one week FDP from July 1 to 7th, 2021 on Dynamics of Research organised by St. Xavier's College for Women, Aluva on July 7, 2021.	Invited Talk
Dr. I G Rathish	Delivered a talk on "An Outline of the Indian Patent System" IQAC Lecture Series organised by IQAC, University of Calicut on July 22, 2021	Invited Talk
Dr. I G Rathish	Coordinated Jointly the 5 days ATAL FDP on Innovation and Acquisition of IPRs organised by IUCIPRS from July 26-29, 2021.	Coordinator
Dr. I G Rathish	Delivered a talk on "Patent Search and its importance" in the 5 days ATAL FDP on Innovation and Acquisition of IPRs organised by IUCIPRS on July 28, 2021.	Invited Talk
Dr. I G Rathish	Delivered a talk on "Startup Ecosystem and IPRs" in the 5 days ATAL FDP on Innovation and Acquisition of IPRs organised by IUCIPRS on July 30, 2021.	Invited Talk
Dr. I G Rathish	Delivered a talk on "Overview of IPR in the Indian Context" Impact Lecture series 2 organised by IIC Morning Star Home Science College, Angamaly on October 7, 2021.	Invited Talk
Dr. I G Rathish	Delivered a talk on "A Panoramic perspective of Patent System in India" Two Day National Seminar on IPR and research Ethics organised by St. Pious X College, Hyderabad on Oct. 22, 2021.	Invited Talk
Dr. I G Rathish	Delivered a talk on "Vaccine Inequity and Patent Barriers" in the One Day National Webinar on Patenting of COVID-19 Vaccines: Issues and Challenges organised by Indian Institute of Legal Studies, Darjeeling on Nov. 13, 2022.	Invited Talk
Dr. I G Rathish	Coordinated a Three Days Patent Opposition Workshop Jointly organised by Inter University Centre for IPR Studies, CUSAT & Third World Network from Dec. 13 to 15th, 2021.	Coordinator
Dr. I G Rathish	Delivered a talk on "Outlook of a Patent Document" in the Three Day Patent Opposition Workshop Jointly organised by	Invited Talk

	Inter University Centre for IPR Studies, CUSAT & Third World Network on Dec. 13, 2021	
Dr. I G Rathish	Delivered a talk on "Third Party Observation - PCT and PGO Case Studies - India" in the Three Days Patent Opposition Workshop Jointly organised by Inter University Centre for IPR Studies, CUSAT & Third World Network on Dec. 15, 2021.	Invited Talk
Dr. I G Rathish	Delivered a talk on "Indian patent system: Requirements and procedure" Webinar organised by Aquinas College, Edacochin on Dec. 15, 2021.	Invited Talk
Dr. I G Rathish	Delivered a talk on "Panoramic Perspective of IPRs in the Indian Context" Faculty Induction Program organised by UGC HRDC, Kannur University on January 14, 2022.	Invited Talk
Dr. I G Rathish	Delivered a talk on "Patent System in India: Law and filing procedure" in the Two day webinar on IPR Business Innovation & Incubation Centre, MG University on Jan. 25, 2022.	Invited Talk
Dr. I G Rathish	Delivered a talk on "Patent as a tool for Safeguarding Inventions" in the Webinar on IPR organised by Albertian Incubation Centre, Albertian Institute of Management on Feb. 23, 2022.	Invited Talk
Dr. I G Rathish	Delivered a talk on "Patent - Tool for Technology and Research Innovations" in the 4 day Webinar on IPR in Academics and Research organised by KVASU on March 24, 2022.	Invited Talk
Dr. I G Rathish	CUSAT Knowledge Forum - Talk 50	Invited Talk
Dr. I G Rathish	CUSAT Knowledge Forum - Talk 51	Invited Talk
Dr. I G Rathish	CUSAT Knowledge Forum - Talk 52	Invited Talk
Dr. I G Rathish	Coordinated an 8 days virtual workshop on Access To Medicines, TRIPS And Patents organised jointly by IUCIPRS and Third World Network from March 10th to April 8th, 2022.	Coordinator

Dr. Anson C J	Handled one session titled ‘Basics of Intellectual Property Rights at the Department of Space Science, St. Albert’s College (Autonomous), Ernakulam at a National webinar on Intellectual Property Rights on 13 th April 2021.	Presenter
Dr. Anson C J	Organised and handled five sessions related to the title empirical research in IPR on Third Hands on training on Research methods in intellectual property rights in Association with Gujarat National Law University DPIIT Chair and DPIIT Chair, Inter University Centre for IPR Studies on June 7 th to 9 th June 2021 in online mode.	Presenter
Dr. Anson C J	Handled one session titled "Intellectual Property Rights in the Digital World". seminar on 17 th June 2021 at Carmel College, Kerala	Presenter
Dr. Anson C J	Handled one session in the online international webinar on ‘Intellectual Property Rights’ on Saturday, 11 th September 2021 on the topic ‘Trademark and IP Commercialisation’. The conference is jointly organized by Inter University Centre for IPR Studies, CUSAT, Kerala, India, Titus II Teachers College, Tiruvalla,	Presenter
Dr. Anson C J	Handled one session titled ‘Basics of intellectual property rights on the national webinar on intellectual property rights at Mary Matha College of arts and Science, Mananthavady, Wayanad on 25 th September 2021.	Presenter
Dr. Anson C J	Handled one session on Impact Lecture Series Session 2 lecture 1 on the topic 'Intellectual Property Rights' on 25 th October 2021 at St. Pauls College, Kalamassery, Kochi.	Presenter
Dr. Anson C J	Organised and handled four sessions related to the title empirical research in IPR Organised in association with DPIIT-IPR Chair and CIPR at MNLU, Nagpur in association with IUCIPRS, Cochin University of Science and Technology (CUSAT) titled ‘Hands On Training: Research Methods in Intellectual Property Rights’ organised From September 25 th to October 3, 2021	Presenter
Dr. Anson C J	Handled one session on the topic Quantitative Methods in Legal Research on Faculty Enrichment Sessions on Research Methods - Bharata Mata School of Legal Studies (BSOLS), Aluva, Kerala State on Friday, February 11, 2022.	Presenter
Dr. Anson C J	Handled one session titled ‘concepts and registration procedure of Trademark and copyright’ on 24 th February 2022 at Albertian Institute of Management, Kochi, Kerala.	Presenter

Dr. Kavitha Chalakkal	Resource person in the “Digital Era and Its Impact on Understanding of Constitution” in Inter-Disciplinary Faculty Development Program on Constitutional Values and Fundamental Rights conducted by Amity Academic Staff College and Amity Law School , Noida on 10 June 2021.	Resource person
Dr. Kavitha Chalakkal	Resource person in the “Women in domestic ecosystem and need of democracy in domestic relations” in the National Webinar on <i>A Poignant Declension from Creator to Commodity</i> , IQAC, Govt Law College, Thiruvananthapuram on 15th and 16th July 2021.	Resource person
Dr. Kavitha Chalakkal	Resource person in the “An Introduction to Patent law In India” Impact lecture Series, St Pauls College, Kalamassery, August 2022.	Resource person
Dr. Kavitha Chalakkal	Resource person in the “An Introduction to Patent law In India” in Two weeks Professional Development Program (PDP) on Relevance and Protection of Intellectual Property Rights, conducted by Department of Chemistry, Integral University, U.P., November 8 to 22 November 2021.	Resource person
Dr. Kavitha Chalakkal	Resource person in the “Copyright and Library Management Challenges in Digital Era” in the National Library Week Celebration organised by University Library CUSAT and Kerala Library Association Ernakulam Region, 17 November 2021.	Resource person
Dr. Kavitha Chalakkal	Resource person in the Chairing Second session International Conference on Reproductive Choice of Women: A Fundamental Right organised by the Centre for Women and Law Mar Gregorios College of Law", 20 November 2022.	Resource person
Dr. Kavitha Chalakkal	Resource person in the “Introduction to IPR, IQAC U C college, Aluva 05 February 2022	Resource person
Dr. Kavitha Chalakkal	Special Invite Lecture in Autonomous Weapons, Artificial Intelligence & The Laws of War, Department of Lifelong Learning and Extension (DLLE) Mahatma Gandhi University on 09 March 2022.	Invited Talk
Dr. Kavitha Chalakkal	Resource person in the Intellectual Property Law for Nursing Profession in Faculty Development Program organised by Nehru College of Nursing, Vaniyamkulam, Palakad on 14 march 2022.	Resource person
Dr. Vishnu	Resource Person for the session ‘Introduction to Intellectual	Resource

Sankar P	Property Rights’ in the 4-day Workshop on Intellectual Property Rights in Academics and Research organised by Kerala Veterinary and Animal Science University, Mannuthy, March, 2022	person
Dr. Vishnu Sankar P	Resource Person for the sessions ‘An Overview of Patent System in India and its Impact on Research and Development’ and ‘Access to Copyrighted Works with Special Reference to Educational Needs’ in the One Day National Seminar on An Overview of IPR: A Developmental Perspective organized by PG Department of Commerce and IQAC, Government College Malappuram, December, 2021	Resource person
Dr. Vishnu Sankar P	Resource Person in the IQAC Lecture Series ‘An Overview of the Indian Copyright Law’ organized by University of Calicut, July, 2021	Resource person
Dr. Vishnu Sankar P	Resource Person in the Webinar ‘Intellectual Property Rights: An Overview of Importance of IPR Protection’ organized by SCMS School of Engineering and Technology (SSET), Karukutty, Ernakulam, June, 2021	Resource person
Sulok S K	Conducted Webinar on “Trade Secrets and Access to Medicines” held on 22 nd September 2021, organised by the Third World Network and Inter University Centre for Intellectual Property Rights Studies in association with DPIIT Chair on IPR, CUSAT, Cochin- SULOK S K (Joint Programme Coordinator).	Webinar conductor
Sulok S K	“Third hands on Training: Empirical Research Methods” jointly conducted by IPR Chair, GNLU and IPR Chair, IUCIPRS, CUSAT from 11-13 June 2021- Sulok S K (Part of Organising team).	Resource person
Sulok S K	World IP Day celebrations on the topic “IP and SMEs: Taking your ideas to market”, organised by the Inter University Centre for Intellectual Property Rights Studies & MHRD Chair on IPR on April 26, 2021- Sulok S K (Programme Coordinator).	Webinar conductor

Sulok S K	Took an online lecture on “Commercialisation of IP: promotion & Protection of Branding, & Geographical Indications” for students at United International University, Bangladesh on 22nd April, 2021- Sulok S K	Resource person
Sulok S K	Handled an online academic session on “Intellectual property Right” organized by the Post Graduate Department of English in association with Internal Quality Assurance Cell, St. Alberts College (Autonomous), Ernakulam on Saturday 3 rd July 2021-SULOK S K	Resource person
Sulok S K	Interacted as a researcher in the ‘Independent Dialogue on Geographical Indications (GI)’ held online in the framework of UN Food Systems Summit 2021 organised by the French Agricultural Research Centre for International Development (CIRAD) and the Food and Agriculture Organization of the United Nations (FAO) with the support of origin and the Swiss Intellectual Property Institute (IPI) on 27 th May 2021-SULOK S K	Resource person
Sulok S K	Participated in the Webinar on “Overview of WIPO and its Activities-An Introduction to Geographical Indications”, organised by WIPO on 30 th September, 2021.- SULOK S K	Participant
Sulok S K	Conducted one day webinar on Intellectual Property Rights on 17 December 2021 jointly organised by Cell for IPR Promotion and Management (CIPAM) and DPIIT Chair on IPR, IUCIPRS, CUSAT for the students and staff of National Institute of Electronics and Information Technology (NIELIT), Calicut.	Webinar conductor
Sulok S K	Conducted one day webinar on Intellectual Property Rights on 14 January 2022 jointly organised by Cell for IPR Promotion and Management (CIPAM) and DPIIT Chair on IPR, IUCIPRS, CUSAT for the students and staff of Sree Narayana College, Nattika, Thrissur.	Webinar conductor
Sulok S K	Conducted one day webinar on Intellectual Property Rights on 11 February 2022 jointly organised by Cell for IPR Promotion and Management (CIPAM) and DPIIT Chair on IPR, IUCIPRS, CUSAT for the students and staff of IIC Bishop Moore College, Mavelikkara.	Webinar conductor

Sulok S K	Conducted one day webinar on Intellectual Property Rights on 17 March 2022 jointly organised by Cell for IPR Promotion and Management (CIPAM) and DPIIT Chair on IPR, IUCIPRS, CUSAT for the students and staff of MES Asmabi College, Vembalur, Thrissur.	Webinar conductor
Naveen Gopal	Conducted Webinar on “Trade Secrets and Access to Medicines” held on 22 nd September 2021, organised by the Third World Network and Inter University Centre for Intellectual Property Rights Studies in association with DPIIT Chair on IPR, CUSAT, Cochin- NAVEEN GOPAL (Moderator).	Webinar conductor
Naveen Gopal	“Third hands-on Training: Empirical Research Methods” jointly conducted by IPR Chair, GNLU and IPR Chair, IUCIPRS, CUSAT from 11-13 June 2021- NAVEENGOPAL (Part of Organising team).	Conductor
Naveen Gopal	World IP Day celebrations on the topic “IP and SMEs: Taking your ideas to market”, organised by the Inter University Centre for Intellectual Property Rights Studies & MHRD Chair on IPR on April 26, 2021- NAVEEN GOPAL (Programme Coordinator).	Coordinator

Naveen Gopal	Conducted one day webinar on Intellectual Property Rights on 17 December 2021 jointly organised by Cell for IPR Promotion and Management (CIPAM) and DPIIT Chair on IPR, IUCIPRS, CUSAT for the students and staff of National Institute of Electronics and Information Technology (NIELIT), Calicut.	Webinar conductor
Naveen Gopal	Conducted one day webinar on Intellectual Property Rights on 14 January 2022 jointly organised by Cell for IPR Promotion and Management (CIPAM) and DPIIT Chair on IPR, IUCIPRS, CUSAT for the students and staff of Sree Narayana College, Nattika, Thrissur.	Webinar conductor
Naveen Gopal	Conducted one day webinar on Intellectual Property Rights on 11 February 2022 jointly organised by Cell for IPR Promotion and Management (CIPAM) and DPIIT Chair on IPR, IUCIPRS, CUSAT for the students and staff of IIC Bishop Moore College,	Webinar conductor

	Mavelikkara.	
Naveen Gopal	Conducted one day webinar on Intellectual Property Rights on 17 March 2022 jointly organised by Cell for IPR Promotion and Management (CIPAM) and DPIIT Chair on IPR, IUCIPRS, CUSAT for the students and staff of MES Asmabi College, Vemalur, Thrissur.	Webinar conductor
Dr. Asha R	Invited Talks on “Turn your research into IPR: Possible ways and solutions” in webinar organized by the research cell of Sree Narayana College, Kollam on IPR on 7 th April 2021	Invited Talk
Dr. Asha R	Invited Talks on “Intellectual Property Rights - An Overview”, organized by the Internal Quality Assurance Cell (IQAC), Newman College, Thodupuzha, Kerala on 9 April, 2021	Invited Talk
Dr. Asha R	Invited Talks on ‘Importance of Intellectual Property Rights in Academics: An Overview’ in National Webinar Series ‘TWISHA 2K21’ organized by IQAC & Research & Post Graduate Department of Chemistry & Polymer Chemistry, K.S.M.D.B College, Sasthamcotta on 05 May 2021	Invited Talk
Dr. Asha R	Invited Talks on “Overview of IPR” at Sree Ayyappa College Eramallikara, on 24 th May 2021.	Invited Talk
Dr. Asha R	Invited Talks on ‘Patenting Life: Where Should We Draw the Line?’, organized by the Department of Botany and Centre for Research in association with the Institution’s Innovation Council, St.Terasas College, Ernakulam on 1 st July 2021	Invited Talk
Dr. Asha R	Invited Talks on “Hands-on-session on Patent search”, five day online faculty Development program (FDP) on Innovation and Acquisition of Intellectual Property Rights under ATAL Academy - FDP scheme organized by IUCIPRS on 28 th July 2021.	Invited Talk
Mr. Bilal A Nazeer	Invited talk on “Intellectual Property Rights : An overview” at Online Workshop on Intellectual Property Rights (IPRs) and IP Management for Start-Up as part of Mentor-Mentee Program under Institution's Innovation Council (IIC) organised by Innovation & Entrepreneurship Development Centre (IEDC-MCET) of Mohandas College of Engineering & Technology,	Invited Talk

	Trivandrum, Kerala on 26 th April 2022	
Mr. Bilal A Nazeer	Attended the Webinar on “Is the leaked TRIPS Waiver text a loss for India” organised by JanSwasthya Abhiyan (JSA), People’s Vaccine Alliance (India) and Campaign for Access to Medicines, Diagnostics and Devices (CAMD-India) on 30/03/2022.	Participant
Mr. Bilal A Nazeer	Attended the webinar on “Voluntary Licenses on COVID-19 Therapeutics: A Competition Law Perspective” organized by Third World Network on 28/2/2022.	Participant
Mr. Bilal A Nazeer	Handled two sessions in the Faculty Induction Programme organized by UGC Human Resource and Development Centre, Kannur University, Kerala on 18/12/2021.	Resource person
Mr. Bilal A Nazeer	Participated in the “ Third Hands on Training: Research Methods in Intellectual Property Rights” organized by DPIIT Chair, Gujarat National Law University held from 11-13/6/2021	Participant
Mr. Vishnu Sankar P, Research Officer	Resource Person in the Webinar ‘Intellectual Property Rights: An Overview of Importance of IPR Protection’ organized by SCMS School of Engineering and Technology (SSET), Karukutty, Ernakulam, June, 2021	Resource person

Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Dr. Anson C J	The Journal of World Intellectual Property	Peer Reviewer
Dr. Anson C J	of International Journal of Law and Management	Reviewer
Naveen Gopal	NUALS Intellectual Property Law Review Volume III	Peer Reviewer

Awards/ Honours/ Fellowships etc. received: Nil

Sponsored Research Projects: Nil

Research Programmes and Activities:

Sl. No.	Problem / Topic	Investigator (s)
1.	Submitted project report titled role of cooperative societies in enhancing GI's contribution to national economy: empirical evidences from selected Kerala GI products under the scheme for Pedagogy & Research in <i>IPRs</i> for Holistic Education & Academia (SPRIHA) DPIIT Chair, Government of India.	Dr. Anson C J
2.	Submitted a the pilot study report titled 'Tourism linked destination marketing options for Geographical Indications of Kerala to Minster Tourism, Directorate of Tourism, Government of Kerala, and is under review of Krishna Teja, IAS for the Extended Study.	
3.	Submitted a project proposal titled 'a study on impact of Covid-19 in among the producers of geographical indications of Kerala: Empirical Evidences from Selected Kerala GI Products' under the Market Access Initiative (MAI) Scheme of Government of India.	
4.	Submitted a project proposal titled 'Market Promotion of the Geographical indications of Kerala international shopping areas and international Airports' under the Market Access Initiative (MAI) Scheme of Government of India.	

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl. No.	Title	Duration	Coordinator	Funding Agency
1.	World IP Day celebrations on the topic "IP and SMEs: Taking your ideas to market" jointly with DPIIT Chair on IPR, IUCIPRS	(one day) April 26, 2021	Sulok S K & Naveen Gopal	Govt. of India
2.	Third Hands on training on Research methods in intellectual property rights in Association with Gujrat National Law University DPIIT Chair on IPR and DPIIT Chair on IPR, IUCIPRS, CUSAT	(2 days) June 7 th to 9 th June 2021	Dr. Anson C J	Govt. of India

3.	ATAL Faculty Development Programme	(5 days) 26th to 30th July, 2021	Dr. M Bhasi	Govt. of India
4.	Webinar on “Trade Secrets and Access to Medicines” organised by Third World Network and Inter University Centre for Intellectual Property Rights Studies in association with DPIIT Chair on IPR, IUCIPRS, CUSAT	(one day) 22nd September 2021	Naveen Gopal	Govt. of India
5.	Webinar on “Digital Sequence Information (DSI): Implications on Access and Benefit Sharing” organised by Inter University Centre for Intellectual Property Rights Studies in association with DPIIT Chair on IPR, CUSAT	(3days) 4th-7th October 2021	Sulok S K	Govt. of India
6.	‘Hands On Training: Research Methods in Intellectual Property Rights’ in association with DPIIT IPR Chair and CIPR at MNLU, Nagpur	(10 days) September 25 th to October 3, 2021	Dr. Anson C J	-
7.	Patent Opposition Workshop Jointly organised with Third World Network	(2 days) 13 th to 15 th December 2021	Dr. I G Rathish	TWN
8.	Webinar on Intellectual Property Rights jointly organised by Cell for IPR Promotion and Management (CIPAM) and DPIIT Chair on IPR, IUCIPRS, CUSAT for the students and staff of National Institute of Electronics and Information Technology (NIELIT), Calicut	(one day) 17 th December 2021	Sulok S K & Naveen Gopal	-
9.	Webinar on Intellectual Property Rights jointly organised by Cell for IPR Promotion and Management (CIPAM) and DPIIT Chair on IPR for the students and staff of Sree Narayana College, Nattika, Thrissur	(one day) 14 th January 2022	Sulok S K & Naveen Gopal	-

10.	Webinar on Intellectual Property Rights jointly organised by Cell for IPR Promotion and Management (CIPAM) and DPIIT Chair on IPR for the students and staff of IIC Bishop Moore College, Mavelikkara	(one day) 11 th February 2022	Sulok S K & Naveen Gopal	-
11.	Webinar on Intellectual Property Rights jointly organised by Cell for IPR Promotion and Management (CIPAM) and DPIIT Chair on IPR, IUCIPRS, CUSAT for the students and staff of MES Asmabi College, Vembalur, Thrissur	(one day) 17 March 2022	Sulok S K & Naveen Gopal	-

Consultancy Work

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1.	Institutional Consultant, IP Consultancy for Novelty Assessment of an Invention (1 Nos.) and assistance to provisional application filing (5 Nos.).	Dr. I G Rathish	User self sponsored
2.	IP Advisory services to 15 students/individuals/entrepreneurs/inventors/teachers etc.	Dr. I G Rathish	Free counseling



Advanced Centre for Atmospheric Radar Research (ACARR)

ANNUAL REPORT FOR THE YEAR 2021 - 2022

Name of the Department

**Advanced Centre for Atmospheric Radar Research
Cochin University of Science & Technology
Kochi – 682022**

Brief History of the Department



Aim of establishing the Advanced Centre for Atmospheric Radar Research (ACARR) in Cochin University of Science and Technology (CUSAT) is to provide advanced techniques to monitor the Earth's atmosphere, including highly sophisticated radar, LIDAR, SODAR, GPS sonde, flux measurement systems, integrated sounding systems, etc. These facilities allow investigators, mainly Indian scientists, get the detailed information and necessary data for their research programs and can incorporate in numerical weather prediction techniques.



The ST Radar at Cochin is the first Wind Profiler Radar in the near-equatorial site to study the monsoon features operating at 205 MHz VHF range. ST Radar at CUSAT investigates major atmospheric processes understand climate change, global warming, its impacts on monsoon variability, tropical cyclones, extreme rainfall events, such as occurrence of frequent floods or droughts over the Indian subcontinent, especially in the Kerala region. Accurate predictions of the onset, intensification, weakening, break conditions, and withdrawal state of the summer monsoon system is one of the major challenging objectives of this Centre. Regional climate modeling studies are also undertaken to understand the regional variability and changes in the tropical climate and identify suitable methods of adaptation techniques.

The ST Radar Facility at Advanced Centre for Atmospheric Radar Research, Cochin University of Science and Technology, sponsored by Science & Engineering Research Board, was inaugurated and dedicated to the nation on 11th July 2017 by Dr. Harsh Vardhan, Hon'ble Union Minister for Science & Technology & Earth Sciences, Govt of India.

From April 2019, onwards ACARR is supported by Ministry of Earth Sciences, Government of India under the project "Support for ST Radar Facility at ACARR, CUSAT, Kochi.

Programmes of Study/Research:

Vision

The vision of Advanced Center for Atmospheric Radar Research (ACARR) is to become a Centre of Excellence in "Observations and Modeling".

Mission:

ACARR facilitates advanced techniques to monitor the Earth's atmosphere, including highly sophisticated stratosphere-troposphere wind profiler radar, Microwave Radiometer (MWR), Microwave Rain Radar, and 2-D Video Disdrometers, Sodar, GPS Radiosonde, Automatic Weather Stations, flux measurement systems, integrated sounding systems, etc. In addition, a high-tech Electronics laboratory facility is also available.

These facilities allow investigators, mainly Atmospheric scientists, to get the detailed information and necessary data for their research programs in Weather and Climate Science and incorporate numerical weather prediction techniques.

In order to achieve the goals, ACARR has six focus groups namely

Radar Technology and Ionospheric studies

Satellite remote sensing and applications

Atmospheric process studies

Atmospheric turbulence and UT/LS process

Climate Variability and Change and

Atmospheric modeling and Weather forecasting.

These focus groups attempt to bridge the gap between observational studies and model development by incorporating the most up-to-date information into the numerical models and also ensuring the adequate flow of information among various stakeholders.

By integrating the inter and trans-disciplinary knowledge with the traditional knowledge system, the center also focuses on understanding and testing effective ways of co-producing and communicating knowledge through meaningful interactions between researchers, knowledge intermediaries, and stakeholders.

Ph. D. Programs Under

Faculty of Marine Sciences

Faculty of Technology

Faculty of Engineering

1. Dr. S. Abhilash:

- a. Synoptic Meteorology & Weather Forecasting (M.Sc. in Meteorology) (M.Sc. 20-302- 0202)
- b. Numerical Weather Prediction (M.Sc. in Meteorology) (M.Sc. 20-302-0301)
- c. Weather Analysis and Forecasting Techniques (M. Tech in Atmospheric Sciences) (M.Tech. 20-433-0104)

2. Dr. M.G. Manoj

- a. Advanced Atmospheric Dynamics (M. Tech in Atmospheric Sciences)
- b. Physics of the Atmosphere & Ocean (PhD Course Work, ACARR, CUSAT)

3. Dr. Ajil Kottayil

- a. Satellite Remote Sensing (M.Sc. in Meteorology)
- b. Observational Techniques (M.Sc. in Meteorology)

Faculty Members

Sl.No.	Name	Designation	Qualification	Specialisation
1.	Dr. Abhilash S.	Director ACARR & Associate Professor, Department of Atmospheric Sciences, CUSAT	M. Sc. Ph. D.	Climate Modeling, Numerical Weather Prediction
2.	Prof. K. Satheesan	Co-ordinator, ACARR, ST Radar Facility & Professor, Department of Atmospheric Sciences, CUSAT	M. Sc. Ph. D.	Wind Profiler Radar & Atmospheric Turbulence
3.	Dr. Manoj M. G.	Scientist – D, ACARR	M. Sc. Ph. D.	LIDAR and RADAR Remote Sensing, Cloud Physics, Atmospheric Modelling
4.	Dr. Ajil Kottayil	Scientist – C ACARR	M. Sc., Ph. D.	Atmospheric Remote Sensing, Satellite Meteorology
5.	Mr, Rakesh V.	Scientist – B, ACARR	M. Tech	Radar Meteorology

Emeritus Professor/Scientist (if any)

Sl.No.	Name	Designation	Qualification	Specialisation
1.	Prof. K. Mohanakumar	Founder. Director ACARR, ST Radar Facility & Emeritus Professor, Department of Atmospheric Science CUSAT	M. Sc., Ph.D.	Stratosphere Troposphere Coupling
2.	Prof. P. Mohanan	Co-ordinator, ACARR, ST Radar Facility & Emeritus Professor, Department of Electronics CUSAT	M.Sc. Ph.D.	Phased Array Antennas
3.	Prof. K. Vasudevan	Co-ordinator, ACARR, ST Radar Facility & Emeritus Professor, Department of Electronics CUSAT	M.Sc. Ph.D.	Microwave Devices and Circuits
4.	Dr. K. R. Santosh	Co-ordinator, ACARR, ST Radar Facility & Professor, Department of Atmospheric Sciences CUSAT	M. Sc., Ph. D.	Observational Techniques
5.	Prof. C. K. Aanandan	Co-ordinator, ACARR, ST Radar Facility & Emeritus Professor, Department of Electronics CUSAT	M.Sc. Ph.D.	Radar Cross Section & Digital Signal Processing

Visiting Faculty (If any)

Sl.No.	Name	Designation	Qualification	Specialisation
1.	Dr. V. K. Anandan	Visiting Scientist ACARR & Senior Scientist, ISTRAC Indian Space Research Organisation, Bangalore, India	M. Sc., M. Tech, Ph. D.	Doppler radar Wind profiler Radars & Radar Signal Processing.
2.	Dr. Max Martin	Associate Tutor Geography, University of Sussex	M. Sc. Ph.D.	Climate modeling

Research/Project Staff

Sl.No.	Name	Designation	Qualification	Specialisation
1.	Dr. Syam Sankar	Project Scientist – C, MoES project ACARR	M.Sc., M. Tech, Ph. D.	Air-sea interaction processes Monsoon studies
2.	Dr. Liby Thomas	Project Scientist – B, MoES project ACARR	M. Sc., Ph. D.	Numerical Weather prediction
3.	Dr. Vijaykumar P.	Consultant Scientist, MoES Project ACARR	M. Sc., Ph. D.	Climate Modeling, Numerical Weather Prediction
4.	Mr. Sarathkrishna S.	Project Scientist – B, MoES Project ACARR	M. Tech	Phased Array Radar
5.	Mr. Sivan C.	Junior Research Fellow, MoES Project ACARR	M. Sc.	Monsoon Studies, Wind Profiler Radar, Satellite Meteorology

6.	Mr. Abhiram Nirmal C. S.	Junior Research Fellow, MoES Project ACARR	M. Sc.	Numerical Weather prediction
7.	Dr. Sreekumar Haridas	Post-Doctoral Fellow, ACARR	M. Sc., Ph. D.	Ionospheric Studies, Space Physics
8.	Dr. Kavya Johnny	Research Associate, MoES Thunder Project	M. Tech, Ph. D.	Computer Science, Numerical Weather Prediction
9.	Mr. Ashish Shaji	JRF, MoES Thunder Project	M. Sc.	Numerical Weather Prediction
10.	Mrs. Sunitha Nair	Administrative Officer, MoES Project ACARR	M. Com, ICWA Inter	Taxation, Finance Management

Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
1.	Mr. Rakesh V.	Part Time	Dr. Binu Paul	Ionospheric Studies
2.	Ms. Angel Anita Chirsty	University JRF, CUSAT	Dr. Manoj M.G.	Atmospheric Boundary Layer
3.	Mr. Ashish Shaji (INSPIRE Fellow)	Ministry of Earth Sciences (MoES)		Thunderstorm Studies
4.	Ms. Meera M. Nair	Part Time		Wind Profiler Radar
5.	Ms. Rona Maria Sunil	INSPIRE Fellow		Monsoon Studies

Sl.No.	Name	Funding Agency	Guide	Area of Work
6.	Mr. Preetham Das Mahapatra		Dr. Abhialsh S.	Aerosols
7.	Mr. Sreentah A. V.			Tropical Convection
8.	Ms. Athira U. N.			Air-Sea interaction, Monsoon
9.	Mr. Abhiram Nirmal C. S.	MoES		Tropical Cyclones
10.	Mr. Krishnakumar E. K.			Climate Change and extreme weather events
11.	Mr. Prabath H. Kurup	Univeristy JRF		Numerical Weather prediction & Climate modeling
12.	Mr. Sivan C	MoES	Prof. Satheesan K.	Tropical Tropopause layer
13.	Ms. Devika M. V.	University JRF	Dr. Ajil Kottayil	Monsoon Studies
14.	Mr. Prajwal K.	University JRF	Dr. Ajil Kottayil	sub seasonal variability and extreme rainfall
15.	Mr. Sarathkrishna S.	Part Time	Dr. Mridula S.	Radar Engineering

Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Section Officer/ Accountant	1 (contract)
2.	Helper	1 (Contract)

Technical Personnel

Sl.No.	Designation	No. of Posts
1.	Engineers	3 (1-permanent & 2-Contract)

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1.	Ph. D.	10	5	15
2.	Internships in 2021 -2022	7	10	17

Research Facilities**a. Laboratories****RF Electronics Lab**

ACARR is housing a RF electronics lab. The instrument details are given below

Sl. No:	Instrument Name:
1.	Vector Signal Generator N5172 B Keysight
2.	Vector Network Analyzer N9914A Keysight
3.	Mixed Signal Oscilloscope MSO 7054B Keysight
4.	EM Scanner (Antenna Characterization Near Field Scanner)
5.	CNC Machine for PCB Stepcraft Q-408

6.	Transmit/Receive USRP Modules NI MyRIO, USRP 2901
7.	Embedded and Communication System Design Kits
8.	USRP 2945 & USRP 2944R
9.	Blade RF

b. Major equipments

Sl. No:	Equipment Name:
1.	205 MHz ST Radar
2.	GPS Radiosonde
3.	Micro Rain Radar
4.	Ceilometer
5.	Automatic Weather Station Network 3 m
6.	Automatic Weather Station 32 m
7.	2D – Video Disdrometer
8.	Humidity And Temperature PROfilers - RPG-HATPRO
9.	Impact Disdrometer
10.	Aethalometer

Distinguished visitors in 2021 - 2022

Sl.No.	Name	Affiliation	Remarks
1.	Dr. R. Bindu	Minister for Higher Education, Government of Kerala	-
2.	Group Captain S. K. Singh	Southern Air Command Trivandrum.	-
3.	Adv. Pramod Narayan	MLA – Ranni Constituency	-
4.	Mrs. Mariamma Thomas	Post Master General, Indian Postal Department	-



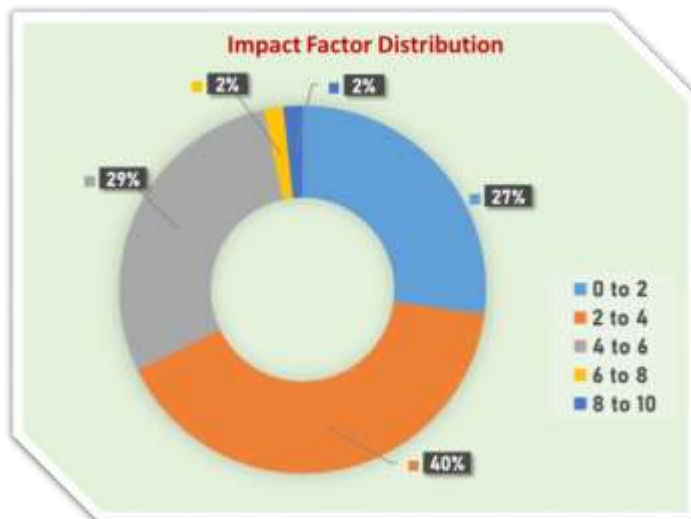
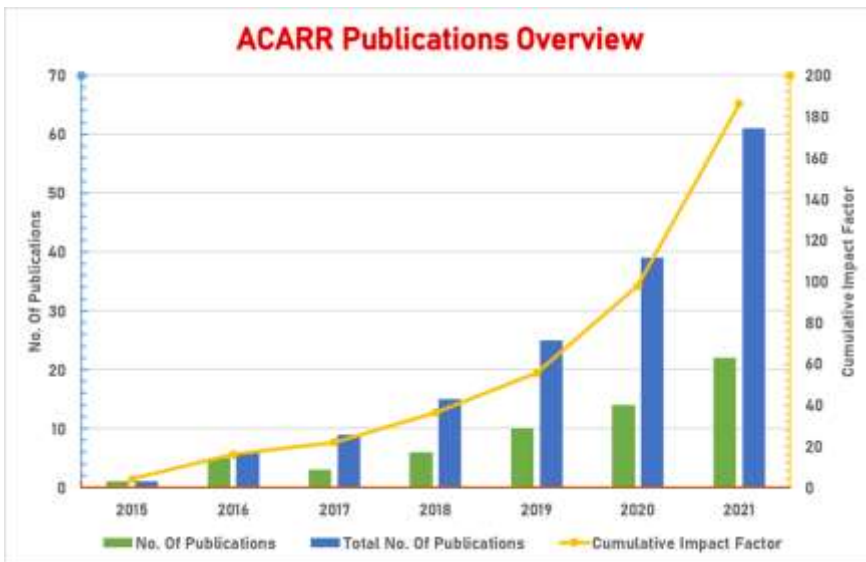
Ph.D.s Awarded

Sl.No.	Title of Thesis	Name of Research Scholar	Supervising Guide
1.	Impact of Indo-Pacific Oceans on Indian Summer Monsoon and Tropical Cyclones	Mr. Shinto Roose	Prof. (Dr.) K. Mohankumar
2.	The Tropical Easterly Jetstream over Indian Summer monsoon region and its association with adjacent and remote factors	Ms. Nithya K	Prof. (Dr.) K. Mohankumar

3.	A Study on the Features of Monsoon Circulation and Extreme Rainfall Events using ST Radar and Complementary Datasets	Ms. Anu Xavier	Prof. (Dr.) K. Mohankumar
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Publications

c. Papers



Sl. No.:	Publication details	Impact Factor
1.	P. P Baburaj, S. Abhilash, C. S. Abhiram Nirmal, A. V. Sreenath, K Mohankumar, and A. K. Sahai. "Increasing incidence of Arabian Sea cyclones during the monsoon onset phase: Its impact on the robustness and advancement of Indian summer monsoon". In: Atmospheric Research (Nov. 2021), p. 105915. DOI: 10.1016/j.atmosres.2021.105915	5.369
2.	Martin, Max, S. Abhilash, Vijaykumar Pattathil, R. Harikumar, N. T. Niyas, TM Balakrishnan Nair, Yatin Grover, and Filippo Osella. "Should I stay or should I go? South Indian artisanal fishers' precarious livelihoods and their engagement with categorical ocean forecasts." Weather, Climate, and Society 14, no. 1 (2022): 113-129., Weather, Climate and Society. DOI: https://doi.org/10.1175/WCAS-D-20-0044.1	2.746
3.	Sreenath, Avaronthan Veettil, Sukumarapillai Abhilash, and Pattathil Vijaykumar. "Variability in lightning hazard over Indian region with respect to El Niño–Southern Oscillation (ENSO) phases." Natural Hazards and Earth System Sciences 21.8 (2021): 2597-2609. https://doi.org/10.5194/nhess-21-2597-2021	4.345
4.	Sreenath, A. V., Neelam Malap, S. Abhilash, Gayatri Urankar Kulkarni, and Thara Prabhakaran. "Precipitation processes over Indian region under different environmental conditions from in situ measurements." Atmospheric Research 262 (2021): 105775. https://doi.org/10.1016/j.atmosres.2021.105775	5.369
5.	Mukhopadhyay, P., Bechtold, P., Zhu, .Krishna, R. P. M., Kumar, S., Ganai, M., Tirkey, S., Goswami, T., Mahakur, M., Deshpande, M., Prasad, V. S., Johny, C.J., Mitra, A., Ashrit, R., Sarkar, A., Sarkar, S., Roy, K., Andrews, E., Kanase, R., Malviya, S., Abhilash, S., Domkawle, M., Pawar, S. D., Mamgain, A., Durai, V. R., Nanjundiah, R. S., Mitra, A. K., Rajagopal, E. N., Mohapatra, M., & Rajeevan, M. Mechanism for Extreme Rain Events in Kerala, India. Bulletin of the American Meteorological Society, Notes Section, May 2021, https://doi.org/10.1175/BAMS-D-20-0094.1	9.384
6.	Kottayil, A., Xavier, A., Xavier, P., Koovekkallu, P., & Mohanakumar, K. (2021). Evolution of large-scale factors influencing extreme rainfall over south western coast of India. International Journal of Climatology, 1– 15. https://doi.org/10.1002/joc.7455	4.069
7.	Manoj M.G., Sivan C., Rakesh V., Rejoy Rebello, Abhilash S., K. Mohankumar (2021) Atmospheric response to the annular solar eclipse of 26 December 2019 over Cochin, India. Advances in Space Research, 68(9), 3610-3621, https://doi.org/10.1016/j.asr.2021.07.001	2.177

Sl. No.:	Publication details	Impact Factor
8.	Belova, E., Kirkwood, S., Voelger, P., Chatterjee, S., Satheesan, K., Hagelin, S., . . . Körnich, H. (2021). Validation of aeolus winds using ground-based radars in antarctica and in northern sweden. <i>Atmospheric Measurement Techniques</i> , 14(8), 5415-5428. doi: http://dx.doi.org/10.5194/amt-14-5415-2021	4.176
9.	Lee, S.S., Ha K-J, M.G. Manoj, Kamruzzaman, M., Kim, H., Utsumi N., and Guo, J. (2021) Mid-latitude mixed-phase stratocumulus clouds and their interactions with aerosols: how ice processes affect microphysical, dynamic and thermodynamic development in those clouds and interactions? <i>Atmospheric Chemistry and Physics</i> , 21, 16843–16868, https://doi.org/10.5194/acp-2020-1318 .	5.414
10.	Mukhopadhyay, P., Bechtold, P., Zhu, Abhilash, S., Domkawle, M., etal. Unravelling the mechanism of extreme (more than 30 sigma) precipitation during August 2018 and 2019 over Kerala, India. <i>Weather and Forecasting</i> . https://doi.org/10.1175/WAF-D-20-0162.1 2.950	2.950
11.	Shahi, N.K., Rai, S., Sahai, A.K., S. Abhilash (2021): Prediction of dominant daily modes of the Indian summer monsoon in the NCEP GFS model. <i>Meteorol Atmos Phys</i> https://doi.org/10.1007/s00703-021-00793-2	2.204
12.	Sankar, S., Vijaykumar, P., Abhilash, S., & Mohanakumar, K. (2021). “Influence of the strongest positive Indian Ocean Dipole and an El Niño Modoki event on the 2019 Indian summer monsoon”. <i>Dynamics of Atmospheres and Oceans</i> , 101235. https://doi.org/10.1016/j.dynatmoce.2021.101235 .	1.592
13.	Sivan. C, V. Rakesh., S. Abhilash., K. Mohanakumar: “Evaluation of Global Reanalysis Winds and High Resolution Regional Model Outputs with the 205 MHz Stratosphere-Troposphere Wind Profiler Radar Observations”, <i>Quarterly Journal of the Royal Meteorological Society</i> , https://doi.org/10.1002/qj.4041 .	3.471
14.	Athira, U. N., S. Abhilash, and R. D. Ruchith., “Role of Unusual Moisture Transport across Equatorial Indian Ocean on the Extreme Rainfall event during Kerala flood 2018”. <i>Dynamics of Atmospheres and Oceans</i> , 101225. (2021), Impact factor: 1.592	4.592
15.	P. Vijaykumar, S. Abhilash, A.V. Sreenath, U.N. Athira, K. Mohanakumar, B.E. Mapes, B. Chakrapani, A.K. Sahai, T.N.	4.698

Niyas, O.P. Sreejith (2021). Kerala floods in consecutive years - Its association with mesoscale cloudburst and structural changes in monsoon clouds over the west coast of India, *Weather and Climate Extremes*, 100339, ISSN 2212-0947, <https://doi.org/10.1016/j.wace.2021.100339>. (

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| 16. | Thara A.M., Neelam Malap, M.G. Manoj, Jayarao Y., Kiran Todekar, Rakesh V, Rejoy Rebello, Mohankumar K, Thara P. (2021), Pre-monsoon convective events and thermodynamic features of southwest monsoon onset over Kerala, India – A case study, <i>Atmospheric Research</i> , 248, 105218, https://doi.org/10.1016/j.atmosres.2020.105218 | 4.676 |
|------------|--|-------|

Sl. No.:	Publication details	Impact Factor
17.	Manoj MG, Lee, S, Li, Z (2021) “Competing aerosol effects in triggering deep convection over the Indian region”, <i>Climate Dynamics</i> , 56(5), 1815-1835, DOI: 10.1007/s00382-020-05561-3.	4.486
18.	Remya, R., Manoj, M. G., Rakesh, V., Mohanakumar, K., & Sivan, C. (2021). Influence of high latitude sudden stratospheric warming on tropical weather: Observations from a 205 MHz stratosphere troposphere radar and surface meteorological parameters. <i>Earth and Space Science</i> , 8, e2020EA001418. https://doi.org/10.1029/2020EA001418	2.31
19.	Saranya. S, Abhilash. S, Joseph. S, Kaur. M, A. Dey, R. Mandal, R. Phani, R. Chattopadhyay, D. R. Pattanaik and A. K. Ssahai : “A review of the development and implementation of a tropical cyclone prediction system for North Indian Ocean in a multi-model ensemble framework”, <i>Mausam</i> 72	0.21
20.	Cairo, Francesco, et al. "Lidar observations of Cirrus clouds at Palau island (7° 33 N, 134° 48 E)." <i>Atmospheric Chemistry and Physics</i> (2021).	5.414
21.	Kottayil, Ajil, K. Satheesan, Viju O. John, and Roshny Antony. "Diurnal variation of deep convective clouds over Indian monsoon region and its association with rainfall." <i>Atmospheric Research</i> 255 (2021): 105540.	4.676
22.	Sreenath. A. V and Abhilash. S : “Convection over the eastern equatorial Indian Ocean and Iranian branch of Asian summer monsoon anticyclone modulates the wet and dry phases of summer monsoon rainfall over Kerala”, <i>Int.J Climatol.</i> , https://doi.org/10.1002/joc.7042 .	3.96

d. Books

Sl.No:	Authors & Title	Book Details	Publisher	ISBN
1.	Abhilash. S, " <i>Science of Climate Change</i> "	<i>"Climate Change: Science and Politics"</i> Edited by P. K. Ravindran	Kerala Shastra Sahitya Parishad	
2.	Abhilash. S and A. K. Sahai, " <i>Accelerated hydrological cycle under warming climate and Role of extended range prediction system</i> "	<i>"Impact of Climate change on hydrological cycle, ecosystem, fisheries and food security"</i> . Edited by B. Madhusoodhana Kurup, M. R. Boopendranath, M. Harikrishnan, A. V. Shibu	Om Publications	9789390309115
3.	Abhilash. S and Abhiram Nirmal C S, " <i>Increasing cyclones and Impacts on Coastal Kerala</i> "	<i>"Between Sea and Development : Sea, Land and Climate"</i>	Transition studies, , Thrissur	NA
4.	Cherchi, A., P. Terray, S.B. Ratna, S. Sankar, K.P. Sooraj and S. Behera, 2021 " Indian Ocean Dipole influence on Indian summer monsoon and ENSO : A Review "	<i>Indian Summer Monsoon Variability: ENSO teleconnections and beyond. Editors: J.S. Chowdary, A. Parekh, C. Gnanaseelan</i>	Elsevier	9780128224021

2. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

No.:	Paper/ Workshop details	Conference/ Workshop
1.	Manoj M.G., Rakesh V., Rejoy Rebello, Titu Samson and K. Mohankumar <i>“Estimating air vertical velocity from ascending radiosondes”</i>	Session on Advances in Quantitative Remote Sensing and Application for Global Terrestrial Ecosystems, 43rd COSPAR Scientific Assembly held at Sydney Australia during 28 Jan-04 February, 2021
2.	M.G. Manoj, Seoung-Soo Lee, and Zhanqing Li, <i>“Contrasting Aerosol Effects in Triggering Deep Convection: Result from GVAX Campaign, in Aerosols, Clouds, Precipitation and Climate (ACPC)”</i>	International Geosphere–Biosphere Programme (IGBP) and the World Climate Research Programme (WCRP), Virtual meeting, 24–27 May, 2021.
3.	Thara Anna Mathew, Neelam Malap, M.G.Manoj, Jayarao Y, Kiran Todekar, K. Mohankumar, Thara V Prabhakaran , <i>“Thermodynamic Features of Southwest Monsoon Onset over Kerala – A Case Study”</i>	
4.	P.C.S. Devara, K. Vijayakumar, P.R.C. Reddy and M.G. Manoj , <i>“Aerosol-Cloud-Precipitation-Climate Feedbacks and Pathways: Urban Versus Rural Locations”</i>	International Commission on Clouds and Precipitation (ICCP) held at the Indian Institute of Tropical Meteorology, Pune Aug 03, 2021.
5.	Manoj MG, Neelam Malap, Thara Prabhakaran, K. Mohankumar <i>“Aerosol effects on monsoon cloud microphysics using data from CAIPEEX - Phase II and CERES observations”</i>	
6.	Sreenath A V, Neelam Malap, Abhilash S, Gayatri Urankar Kulkarni, Thara Prabhakaran, <i>“An investigation of the micro-physics of convective clouds in a different large scale environment”</i>	

7.	Someshwar Das, Subrat Kumar Panda, Merlin Jestice, P.P. Musaid and M.G. Manoj, <i>“Numerical Simulation of Heavy Rainfall events over Kerala and its relationship with the West Pacific Typhoons”</i>	Asia Oceania Geosciences Society (AOGS-2021) Virtual Conference (section AS-63 related to AsiaPEX), August 06, 2021
8.	Sreekumar Haridas, Rakesh V., M G Manoj, K. Unnikrishnan, and Binu Paul., <i>“A case study on the response of the observed ionospheric irregularities due to a geomagnetic storm event using 205 MHz VHF radar at Cochin.”</i>	International Symposium on Tropical Meteorology “Changing Climate: Consequences and Challenges; INTROMET-C4”. 23rd – 26th November 2021, Advanced Centre for Atmospheric Radar Research, Cochin University of Science and Technology, Cochin, India.
9.	<i>Rakesh V., Sreekumar Haridas, M G Manoj, Binu Paul, Rejoy Rebello, and K. Unnikrishnan, “A statistical study of nocturnal F-region irregularities during geomagnetically quiescent conditions using 205 MHz VHF radar at Cochin.”</i>	International Symposium on Tropical Meteorology “Changing Climate: Consequences and Challenges; INTROMET-C4”. 23rd – 26th November 2021, Advanced Centre for Atmospheric Radar Research, Cochin University of Science and Technology, Cochin, India.
10.	Rejoy Rebello, Titu K. Samson, Rakesh V., Sreekumar Haridas, M. G. Manoj, Abhilash S., Mohanan P. and K. Mohanakumar, <i>“Meteor Trail Induced Backscattered Echoes observed with 205 MHz Stratosphere Troposphere (ST) Radar at CUSAT, Kochi.”</i>	
11.	<i>“Differential wind regimes over Kerala during contrasting northeast monsoons of 2019 and 2020”</i> Syam Sankar, Achanya Unni V., Abhilash S., Abhiram Niramal C. S., Vijaykumar P.	

12.	<p><i>Analysis of Melting Layer Characteristics over Kochi by making use of a Micro Rain Radar and a 205 MHz Stratosphere Troposphere wind profiler Radar,</i> Dishi P. Thomas, Syam Sankar, Rakesh Varadarajan, Abhilash. S and Mohanakumar. K</p>	
13.	<p><i>Trend and variabilities of high cloud and aerosols over Indian monsoon region.</i> Sivan C., Ajil Kottayil and Satheesan K.</p>	
14.	<p>Anagha P.S., MG Manoj, Abhilash S., and Vijaykumar P. <i>Aerosol Radiative forcing during the pre-monsoon to monsoon transition over the Indian monsoon region</i></p>	
15.	<p>Sruthi K.P., Anagha P.S., MG Manoj <i>Investigation of pre-monsoon to monsoon transition of atmospheric conditions as observed with a 205 MHz wind profiling Radar over Cochin</i></p>	
16.	<p>Pritam Das Mahapatra, Abhilash S, Ruchith R.D., <i>"Distribution of Aerosols over South Asia and its Distinct Regional Influence on the Dry and Wet Phases of the Indian Summer Monsoon"</i></p>	
17.	<p>Pritam Das Mahapatra, Abhilash S, Ruchith RD., <i>"Seasonal Aerosol Distribution over South Asia an Its Influence on Different phases of the Indian Summer Monsoon"</i></p>	

18.	Baburaj P P, S Abhliash , K Mohankumar, P Vijaykumar, C S Abhiram Nirmal and A. K. Sahai, <i>"Distinct response of different phases of Madden Julian Oscillation on the Monsoon Onset over Kerala"</i>	International Symposium on Tropical Meteorology “Changing Climate: Consequences and Challenges; INTROMET-C4”. 23rd – 26th November 2021, Advanced Centre for Atmospheric Radar Research, Cochin University of Science and Technology, Cochin, India.
19.	Athira U. N., Abhilash S., Ruchith R. D, "Role of South Indian Ocean dynamics during 2018 and 2019 Kerala flood"	
20.	Krishna Kumar E.K.; Abhilash S. ; Vijaykumar P. and Santosh K.R, "Increasing trend of extreme rainfall events over Kerala in recent decades"	
21.	Sreenath A V, Abhilash S, "Convection over the eastern equatorial Indian Ocean and Iranian branch of Asian summer monsoon anticyclone modulates the wet and dry phases of summer monsoon rainfall over Kerala"	
22.	Syam Sankar, Achanya Unni V., Abhilash S.,Abhiram Niramal C. S.,Vijaykumar P, 2021 <i>"Differential wind regimes over Kerala during contrasting northeast monsoons of 2019 and 2020 "</i>	
23.	Dishi P. Thomas, Syam Sankar, Rakesh Varadarajan, Abhilash. S and Mohanakumar. K, 2021 "Analysis of Melting Layer Characteristics over Kochi by making use of a Micro Rain Radar and a 205 MHz	

	Stratosphere Troposphere wind profiler Radar”	
24.	M. V. Devika and Ajil Kottayil, "A Study on the Changes in the Vertical Distribution of Water Vapor for Different Modes of Climatic Conditions and Monsoon Intraseasonal Oscillations"	
25.	Dr. P. Vijaykumar “Mini-Cloudburst Events in Kerala and the Structural Changes in Monsoon Clouds”	
26.	Prajwal K , Ajil Kottayil, and Prince Xavier, "Influence of Madden Julian Oscillation on the Diurnal Cycle Of Convection and Wind over the West Coast of India"	
27.	Dr. P. Vijaykumar, “Seasonal Variability of Surface Temperatures and Sea Ice concentrations over the Peninsular Antarctica”	International Seminar on Antarctica (MISA9) held at Malaysia during 25-27 October 2021
28.	M. G. Manoj, Seoung-Soo Lee, and Zhanqing Li. <i>How is Deep convection favored under heavily polluted environment?</i>	AGU Fall Meeting, New Orleans, USA, December 16, 2021.
29.	Seoung-Soo Lee, Ha K-J, M.G. Manoj <i>Mid-latitude mixed-phase stratocumulus clouds and their interactions with aerosols: how ice processes affect microphysical, dynamic and thermodynamic development in those clouds and interactions?</i>	AGU Fall Meeting, New Orleans, USA, December 16, 2021.

3. Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Sl. No.:	National Collaboration	International Collaboration
1	Indian Institute of Tropical Meteorology (IITM), Pune	University of Miami, USA
2	Indian Meteorology Department (IMD)	University of Sussex, UK
3	Ministry of Earth Sciences (MOES)	LMD, France, Paris
4	National Institute of Technology (NIT), Rourkela	European Space Agency
5	Central University of Rajasthan (CU-RAJ)	ESSIC, University of Maryland, USA
6	Manipal Academy of Higher Education, Manipal, India	CDCE, Louisiana State University, USA
7	National Centre for Polar and Ocean Research (NCPOR), Goa	University of Nizwa, Oman
8	National Centre for Medium Range Weather Forecasting (NCMRWF)	University Malaysia Sabah, Sabah, Malaysia
9	National Centre for Earth Science Studies (NCESS)	National Research Council, Institute of the Atmospheric Science and Climate (CNR-ISAC), Bologna, Italy
10	Indian National Centre for Ocean Information Services (INCOIS)	UK Met Office
11	National Institute of Oceanography (NIO), Goa	EUMETSAT Germany
12	Central Marine Fisheries Research Institute (CMFRI), Kochi	Swedish Institute of Space Physics
13	University of Allahabad	
14	Centre for Water Resources Development	

	and Management (CWRDM), Calicut	
15	Data Pattern PVT, Chennai	
16	Toc H institute of Science and Technology	
17	SNM College, Maliankara	
18	Space Physics Laboratory (SPL), VSSC	
19	National Atmospheric Research Laboratory (NARL)	

4. Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Mr. Prajwal K.	Best Poster Awards in International Symposium on Tropical Meteorology (INTROMET-2021)	Ministry of Earth Science
Mr. Preetham Das Gupta		
Ms. Sruthi K. P.		

5. Sponsored Research Projects: Nil

6. Research Programmes and Activities:

Collaborative institute/ Programme	Collaborators	Activity	Outcome
International			
University of Miami, USA	Prof. B. E. Mapes, Dr S Abhilash	Studies of clouds, convection and extremes	1) Sreenath A V, Abhilash S, K Vijayakumar, and Brian Mapes (2022). “West coast India’s rainfall is becoming more convective”.npj Climate and Atmospheric Science, DOI:10.1038/s41612-022-00258-2 2) P. Vijaykumar, S. Abhilash, A.V. Sreenath, U.N. Athira, K. Mohanakumar, B.E. Mapes, B. Chakrapani, A.K. Sahai, T.N. Niyas, O.P. Sreejith. Kerala floods in consecutive years - Its association with

			mesoscale cloudburst and structural changes in monsoon clouds over the west coast of India Weather and Climate Extremes, 33, https://doi.org/10.1016/j.wace.2021.100339
University of Sussex, UK	Prof. Filippo Osella, Dr. S Abhilash	Forecasting with Fishers	Max Martin, Abhilash S, Vijaykumar Pattathil, Harikumar R, NT Niyas, TM Balakrishnan Nair, Yatin Grover, and Filippo Osella., Should I stay or should I go? South Indian artisanal fishers' precarious livelihoods and their engagement with categorical ocean forecasts Weather, Climate and Society, DOI:https://doi.org/10.1175/WCAS-D-20-0044.1
Collaborative institute/ Programme	Collaborators	Activity	Outcome
International			
University of Nizwa, Oman	Dr. Baiju Dayanandan, Dr S Abhilash	Aerosols and Climate	Baiju Dayanandan, Ajay P, Pritam Das Mahapatra, Abhilash S, Lakhima Chutia, Binita Pathak, Issa Al-Amri, Ahmed Al-Harrasi, "Regime shift in aerosol optical depth and long-term aerosol radiative forcing implications over the Arabian Peninsula Region" Atmospheric Environment, 283, https://doi.org/10.1016/j.atmosenv.2022.119298
UK Met office	Dr. Ajil Kottayil, Dr. Prince Xavier	Sub seasonal variability and extremes	Kottayil, A., Xavier, A., Xavier, P., Koovekkallu, P., & Mohanakumar, K. (2022). Evolution of large-scale factors influencing extreme rainfall over south western coast of India. International Journal of Climatology, 42(8), 4164–4178. https://doi.org/10.1002/joc.7455
EUMETSAT Germany	Dr. Ajil Kottayil, Dr. Viju O John	Climate studies using historical satellite data	Ajil Kottayil, K. Satheesan, Viju O. John, Roshny Antony, Diurnal variation of deep convective clouds over Indian monsoon region and its association with rainfall, Atmospheric Research, Volume 255, 2021,

			105540, ISSN 0169-8095, https://doi.org/10.1016/j.atmosres.2021.105540 .
European Space Agency- Aeolus wind profiler	Dr. Ajil Kottayil	Validation of Aeolus wind using wind profiler radar	Ajil Kottayil, K Prajwal, M V Devika, S Abhilash, K Satheesan, Roshny Antony, Viju O. John & K Mohanakumar (2022): Assessing the quality of Aeolus wind over a tropical location (10.04 N, 76.9 E) using 205 MHz wind profiler radar, International Journal of Remote Sensing, 43:9, 3320-3335, DOI: 10.1080/01431161.2022.2090871
ESSIC, University of Maryland, USA	Dr. M.G. Manoj Dr. Zhanqing Li Dr. Seoung Soo Lee	Aerosol radiative and microphysical impacts on clouds	1. Manoj MG, Lee, S, Li, Z (2021) Competing aerosol effects in triggering deep convection over the Indian region, Climate Dynamics, 56(5), 1815-1835, DOI: 10.1007/s00382-020-05561-3 2. Lee, S.S., Ha K-J, M.G. Manoj, Kamruzzaman, M., Kim, H., Utsumi N., and Guo, J. (2021) Mid-latitude mixed-phase stratocumulus clouds and their interactions with aerosols: how ice processes affect microphysical, dynamic and thermodynamic development in those clouds and interactions? Atmospheric Chemistry and Physics, 21, 16843–16868, https://doi.org/10.5194/acp-2020-1318
LMD, France, Paris	Dr. Ajil Kottayil, Dr. Bernard Legras, Mr.Sivan C	TTL processess	Sivan C, Kottayil A, Legras B, Bucci S, Mohanakumar K, Satheesan K. Tracing the convective sources of air at tropical tropopause during the active and break phases of Indian summer monsoon. Climate Dynamics. 2022 Mar 21:1-8.
CDCE, Louisiana State University, USA	Dr. M.G. Manoj Prof. Valsaraj Kalliat	Air Pollution Research on Health Impacts	Manoj MG, Satheesh Kumar MK, Valsaraj KT, Sivan C, Soumya K Vijayan (2020) Potential link between compromised air quality and transmission of the novel corona virus (SARS-CoV-2) in affected areas, Environmental Research, 190, 110001, https://doi.org/10.1016/j.envres.2020.110001

Collaborative institute/ Programme	Collaborators	Activity	Outcome
International			
University Malaysia Sabah, 88400 Kotakinabalu, Sabah, Malaysia.	Vijaykumar Pattathil, Justin Sentian, Abhiram Nirmal C S and Abhilash S	Polar Sciences	Seasonal variability of Sea Ice Concentration and Surface Temperatures on the rim of Antarctica Continent, presented at 9TH MALAYSIAN INTERNATIONAL SEMINAR ON ANTARCTICA (MISA9) YEAR 2021 held during 25-27 October 2021
	Vijaykumar Pattathil, Justin Sentian, Ajil Kottayil, Abhiram Nirmal C S, Abhilash S and Franky Herman		Seasonal variability of Sea Ice Concentration and Surface Temperatures around Antarctica Continent, Presented at 4th Euro-Mediterranean Conference for Environmental Integration (EMCEI), 1-4 November 2022, Sousse, Tunisia
	Vijaykumar Pattathil, Justin Sentian, Prabhath H Kurup and Abhilash S		Diurnal Variation in Frequency of Precipitation over the Maritime Continental Area, Accepted for presentation at Mediterranean Geoscience Union (MedGU), 27-30 November 2022.
National Research Council, Institute of the Atmospheric Science and Climate (CNR-ISAC), Bologna, Italy	Annalisa Cherchi, Pascal Terray, Satyaban B Ratna, Syam Sankar, K. P. Sooraj, Swadhin Behera	The teleconnections of Indian summer monsoon with ENSO and IOD	Indian Ocean Dipole influence on Indian summer monsoon and ENSO: A review, Chapter 8 - Indian Summer Monsoon Variability, Elsevier, 2021, pp 157-182, https://doi.org/10.1016/B978-0-12-822402-1.00011-9 .
National			
Indian Institute of Tropical	Dr. M.G. Manoj	Thunderstorms &	Thara A.M., Neelam Malap, M.G. Manoj, Jayarao Y., Kiran Todekar, Rakesh V.

Meteorology (IITM), Pune	Dr. Thara Prabhakaran	Monsoon Onset Experiments	Rejoy Rebello, Mohankumar K, Thara P. (2021), Pre-monsoon convective events and thermodynamic features of southwest monsoon onset over Kerala, India – A case study, Atmospheric Research, 248, 105218, https://doi.org/10.1016/j.atmosres.2020.105218
Central University of Rajasthan (CU-RAJ)	Prof. Someshwar Das Dr. Subrat Kumar Panda	Influence of west-Pacific Typhoons on Indian monsoon variability	Musaid P.P., Manoj M.G., Panda S, Das S, and Mohankumar K (2021) Investigation of Influence of West Pacific Typhoons on the 2018 Historic Flood of Kerala using WRF Model (Climate Dynamics, 2022)
Collaborative institute/ Programme	Collaborators	Activity	Outcome
National			
National Institute of Technology (NIT), Rourkela	Dr. M.G. Manoj Dr. Jagabandhu Panda	Satellite analysis of aerosol-cloud-precipitation interaction	Kant, S., Panda, J., and Manoj M.G., (2019) A Satellite Observation-based Analysis of Aerosol-cloud-precipitation Interaction during the February 2016 Unseasonal Heatwave Episode over Indian Region, Aerosol and Air Quality Research, 19(7):1508-1525, DOI: 10.4209/aaqr.2018.04.0144
Manipal Academy of Higher Education, Manipal, India	Dr. M.G. Manoj Dr. M.K. Satheesh Kumar	Air Pollution Research on Health Impacts	Manoj MG, Satheesh Kumar MK, Valsaraj KT, Soumya K Vijayan, Nishanth T (2022); Exacerbation of COVID-19 fatality rates induced by poor air quality from open-air funeral pyre cremation during the second wave. Toxics, 10(6), 306: 1-10; https://doi.org/10.3390/toxics10060306
NCPOR- MARA Radar , Antarctica	Dr K Satheesan	CUSAT-NCPOR collaboration for utilizing MARA wind profiler radar data over Antarctica	Validation of the ESA Aeolus Winds in the Troposphere and Lower Stratosphere Using Atmospheric Radars in Arctic Sweden and in Antarctica, E Belova, S Kirkwood, P Voelger, S Chatterjee... - AGU Fall Meeting Abstracts, 2021
Indian Institute of Tropical	Dr. S.Abhilash	Understanding and	1) Mukhopadhyay, P., Bechtold, P., Zhu, Krishna, R. P. M., Kumar, S., Ganai, M.,

<p>Meteorology (IITM), Pune</p>	<p>Dr. P. Mukhopadhyay</p>	<p>predicting extreme rainfall events and validation of high resolution models using ACARR radar data.</p>	<p>Tirkey, S., Goswami, T., Mahakur, M., Deshpande, M., Prasad, V. S., Johny, C.J., Mitra, A., Ashrit, R., Sarkar, A., Sarkar, S., Roy, K., Andrews, E., Kanase, R., Malviya, S., Abhilash, S., Domkawle, M., Pawar, S. D., Mangain, A., Durai, V. R., Nanjundiah, R. S., Mitra, A. K., Rajagopal, E. N., Mohapatra, M., & Rajeevan, M. Mechanism for Extreme Rain Events in Kerala, India 2) Mukhopadhyay, P., Bechtold, P., Zhu, Abhilash, S., Domkawle, M., etal. Unravelling the mechanism of extreme (more than 30 sigma) precipitation during August 2018 and 2019 over Kerala, India</p>
	<p>Dr. Thara Prabhakaran Dr. S Abhilash</p>	<p>Process studies related cloud micro physics and cloud aerosol interactions using in-situ, aircraft and ACARR radar data.</p>	<p>1) A.V. Sreenath, Neelam Malap, S. Abhilash, Gayatri Urankar Kulkarni, Thara Prabhakaran, Precipitation processes over Indian region under different environmental conditions from in situ measurements 2) Thara A.M., Neelam Malap, M.G. Manoj, Jayarao Y., Kiran Todekar, Rakesh V, Rejoy Rebello, Mohankumar K, Thara P. (2021), Pre-monsoon convective events and thermodynamic features of southwest monsoon onset over Kerala, India – A case study</p>
<p>Collaborative institute/ Programme</p>	<p>Collaborators</p>	<p>Activity</p>	<p>Outcome</p>
<p>National</p>			
<p>Indian Institute of Tropical Meteorology (IITM), Pune</p>	<p>Dr. S. Abhilash, Dr. A. K. Sahai, Dr. Susmitha Joseph, Dr. Rajib Chattopadhyay</p>	<p>Prediction of extreme rainfall events, radar data assimilation and analysis, extended range prediction, cyclogenesis prediction.</p>	<p>1) P. Vijaykumar, S. Abhilash, A.V. Sreenath, U.N. Athira, K. Mohanakumar, B.E. Mapes, B. Chakrapani, A.K. Sahai, T.N. Niyas, O.P. Sreejith. Kerala floods in consecutive years - Its association with mesoscale cloudburst and structural changes in monsoon clouds over the west coast of India Weather and Climate Extremes, 33, https://doi.org/10.1016/j.wace.2021.100339</p>

- 2) Shahi, N.K., Rai, S., Sahai, A.K., S. Abhilash (2021): Prediction of dominant daily modes of the Indian summer monsoon in the NCEP GFS model. Meteorol Atmos Phys <https://doi.org/10.1007/s00703-021-00793-2>
- 3) Saranya. S, Abhilash. S, Joseph. S, Kaur. M, A. Dey, R. Mandal, R. Phani, R. Chattopadhyay, D. R. Pattanaik and A. K. Ssahai : A review of the development and implementation of a tropical cyclone prediction system for North Indian Ocean in a multi-model ensemble framework. Mausam, 72, 1 (January 2021), 57-76
- 4) M. Mohapatra, D.S. Pai, A.K. Saha,.....S. Abhilash etal : Contribution of Monsoon Mission to operational advances: Short to medium range, extended range and seasonal forecasts. The CLIVAR Exchanges, DOI: 10.36071/clivar.79.2020
- 5) Ganesh, S. S., Sahai, A. K., Abhilash, S etal: An improved cyclogenesis potential and storm evolution parameter for North Indian Ocean Earth and Space Science, doi.org/10.1029/2020EA001209
- 6) Baburaj, P. P., S. Abhilash, Sahai. A. K etal, : On the epochal variability in the frequency of cyclones during the pre-onset and onset phases of the monsoon over the North Indian Ocean Adv. Atmos. Sci. doi.org/10.1007/s00376-020-9070-5
- 7) Kaur M., Krishna R., Joseph S., D. Avijit, .., Abhilash S.: Dynamical downscaling of a multi-model ensemble prediction system: Application to tropical cyclones Atmospheric Science Letters, DOI:10.1002/asl.971
- 8) Abhilash S., Krishnakumar E K, Shai A. K. etal : Changing Characteristics of Droughts over Kerala, India: Inter-Annual Variability and Trend Asia-Pacific Journal of Atmospheric Sciences. doi:

			<p>10.1007/s13143-018-0060-9.</p> <p>9) Suryachandra A. Rao, B. N. Goswami, A. K. Sahai, ...S. Abhilash, S., etal. : Monsoon Mission: A Targeted Activity to Improve Monsoon Prediction across Scales Bull. Amer. Meteor. Soc. doi.org/10.1175/BAMS-D-17-0330.1</p> <p>10)R Chattopadhyay, S. Joseph, S. Abhilash, etal., : Understanding the intraseasonal variability over Indian region and development of an operational extended range prediction system Mausam Vol.70, 1, 31-56 10)S Joseph, A. K. Sahai, ...S. Abhilash.: Skill Evaluation of Extended-Range Forecasts of Rainfall and Temperature over the Meteorological Subdivisions of India Weather and Forecasting DOI: 10.1175/WAF-D-18-0055.1</p>
Collaborative institute/ Programme	Collaborators	Activity	Outcome
National			
Indian Institute of Tropical Meteorology (IITM), Pune	Dr S Abhilash , Dr. Madhu Chandra Reddy	Cloud and precipitation process understanding using radar data and feasibility study for MoES central Indian Test bed.	Feasibility study of ST radar at Central Test bed in Bhopal
Indian Institute of Tropical Meteorology (IITM), Pune	Dr. Kaustav Chakravarthy, Dr. S Abhilash	Cloud and precipitation process understanding using radar, MRR and disdrometer	Mutual data collection using Disdrometer at ACARR campus.

<p>Indian Meteorology Department</p>	<p>Dr. Sreejith O P, Mr. Niyas. N. T, Dr. S Abhilash</p>	<p>Prediction of monsoon, extreme rainfall events, monitoring of monsoon using radar data.</p>	<p>1)P. Vijaykumar, S. Abhilash, A.V. Sreenath, U.N. Athira, K. Mohanakumar, B.E. Mapes, B. Chakrapani, A.K. Sahai, T.N. Niyas, O.P. Sreejith. Kerala floods in consecutive years - Its association with mesoscale cloudburst and structural changes in monsoon clouds over the west coast of India. Weather and Climate Extremes, 33, https://doi.org/10.1016/j.wace.2021.100339</p> <p>2) Max Martin, Abhilash S, Vijaykumar Pattathil, Harikumar R, NT Niyas, TM Balakrishnan Nair, Yatin Grover, and Filippo Osella., Should I stay or should I go? South Indian artisanal fishers’ precarious livelihoods and their engagement with categorical ocean forecasts Weather, Climate and Society, DOI:https://doi.org/10.1175/WCAS-D-20-0044.1</p>
<p>Indian Meteorology Department</p>	<p>Dr. S.Abhilash, Dr. D. R. Pattanaik</p>	<p>Extended range prediction of cyclones and monsoon.</p>	<p>1) Saranya. S, Abhilash. S, Joseph. S, Kaur. M, A. Dey, R. Mandal, R. Phani, R. Chattopadhyay, D. R. Pattanaik and A. K. Ssahai : A review of the development and implementation of a tropical cyclone prediction system for North Indian Ocean in a multi-model ensemble framework Mausam, 72, 1 (January 2021), 57-76</p> <p>2) M. Mohapatra, D.S. Pai, A.K. Saha,.....S. Abhilash etal : Contribution of Monsoon Mission to operational advances: Short to medium range, extended range and seasonal forecasts. The CLIVAR Exchanges, DOI: 10.36071/clivar.79.2020</p> <p>3) Suryachandra A. Rao, B. N. Goswami, A. K. Sahai, ...S. Abhilash, S., etal. : Monsoon Mission: A Targeted Activity to Improve Monsoon Prediction across Scales Bull. Amer. Meteor. Soc. doi.org/10.1175/BAMS-D-17-0330.1</p>

			4) R Chattopadhyay, S. Joseph, S. Abhilash, et al., : Understanding the intraseasonal variability over Indian region and development of an operational extended range prediction system Mausam Vol.70, 1, 31-56
Collaborative institute/ Programme	Collaborators	Activity	
National			
NCMRWF	Dr. S.Abhilash, Dr. Preveen Kumar. D, Dr. John P George, Dr. Indira Rani, Dr. Gibies George, Dr. Jayakumar. A	Data sharing mutual collaboration on assimilation of ACARR data in NCMRWF models. Convection permitting modeling studies using ACARR data to improve the extreme rainfall and cloudburst events in Kerala.	
NCESS	Dr. S.Abhilash, Dr. Resmi E A, Dr. Unnikrishnan A	Cloud and convection studies using ACARR radar and collocated data and NCESS data.	
INCOIS	Dr. S.Abhilash, Dr. Balakrishnan Nair, Dr. Harikumar. R	Development of community level coastal weather monitoring system for	Max Martin, Abhilash S, Vijaykumar Pattathil, Harikumar R, NT Niyas, TM Balakrishnan Nair, Yatin Grover, and Filippo Osella., Should I stay or should I go? South Indian artisanal fishers' precarious livelihoods and their engagement with categorical ocean forecasts Weather, Climate and Society, DOI:https://doi.org/10.1175/WCAS-D-

		Trivandrum Coast.	20-0044.1
NIO, Goa	Dr.S.Abhilash, Dr. Ruchith R D	Climate Projection and bias correction of forecasts	1)Pritam Das M, S Abhilash and Ruchith. R. D (2022) “Aerosol Distribution during Spring and Summer and its relationship with Inter-Annual Variability of Summer Monsoon Rainfall Over Indian Region”Geocarto International, DOI: 10.1080/10106049.2022.2058622 2)U.N. Athira, S. Abhilash and R.D. Ruchith. Role of unusual moisture transport across Equatorial Indian Ocean on the extreme rainfall event during Kerala flood 2018 Dynamics of Atmospheres and Oceans, 95, https://doi.org/10.1016/j.dynatmoce.2021.101225
CMFRI, Kochi	Dr S Abhilash, Dr. Shinoj Parappurathu	Climate change and Fisheries	K.K. Baiju, Shinoj Parappurathu, S. Abhilash, C. Ramachandran, P.S. Swathi Lekshmi, Praveen Padmajan, Shelton Padua, Thomson Kaleekal, “Achieving governance synergies through institutional interactions among non-state and state actors in small-scale marine fisheries in India” Marine Policy, https://doi.org/10.1016/j.marpol.2022.104990 .
University of Allahabad	Dr S Abilash, Dr. Shailendra Rai	Monsoon Intra-Seasonal Oscillations and extended range prediction	Shahi, N.K., Rai, S., Sahai, A.K., S. Abhilash (2021): Prediction of dominant daily modes of the Indian summer monsoon in the NCEP GFS model. Meteorol Atmos Phys https://doi.org/10.1007/s00703-021-00793-2
CWRDM, Calicut	Dr S Abhilash, Dr. Gireesh Gopinath,	Climate change and Agriculture	Girish Gopinath, U. Surendran, S. Abhilash etal : Assessment of drought with a real-time web-based application for drought management in humid tropical Kerala, India, Environmental Monitoring and

	Dr. Surendran. U		Assessment, DOI:10.1007/s10661-020-08665-9
SPL, VSSC	Dr S Abhilash , Dr. V. Sathymurthy	SCATSAT Applications	Athira, U. N and S. Abhilash and V. Sathiyamoorthy : Distinct atmosphere-ocean coupling processes on the onset phase of Indian summer monsoon during 2017 and 2018 as revealed through SCATSAT-1 and its comparison with CFSv2 International Journal of Remote Sensing, DOI: 10.1080/01431161.2020.1767827

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Coordinator	Funding Agency
1.	International Symposium on Tropical Meteorology-2021	23-26 November 2021	Dr. Abhilash S.	MoES, Government of India. & IITM Pune



Centre for Innovation, Technology Transfer & Industrial Collaboration (CITTIC)

ACTIVITY REPORT FOR THE YEAR 2021-2022

Centre for Innovation, Technology Transfer & Industrial Collaboration (CITTIC) was set up in the year 2014 with the mission of providing a vibrant, innovative, and entrepreneurial environment for faculty and students to run university-connected start-up companies. Based on the proposal submitted by the centre, CITTIC was sanctioned Rs 1 crore by the state government in the financial year 2015-16 to set up a Technology Business Incubator (TBI). The fund was released to us in March 2016. We have set up a Technology Business Incubator in November 2016 within a space of 5000 square feet with the necessary facilities utilizing this fund. CUSAT is the first University in State of Kerala to possess such a facility.

CITTIC started incubating startup companies from February 2016 and since then, CITTIC has incubated 120+ startup companies years providing employment support for over 300 youngsters. At present there are 59 startups in CUSAT run by CUSAT students, Alumni and professionals from various domains including electronics, marine science, polymer, bio technology and ship technology working in CITTIC. Many firms incubated with CUSAT TBI have won startup grants from various agencies including Nidhi Prayas, BIRAC, KSUM and Maker village.

A new 3000 sq ft TBI named **RUSA Innovation and Startup Ecosystem (RISE)**, was set up in 2021 with financial support from RUSA for hardware and biotech startups. Sanction is accorded for the construction of another 10000 sq ft. space to expand the existing TBI facilities. A **CUSAT FABLAB sponsored by Kerala Startup Mission** was set up in 2022 to provide the students and startups easy access to digital fabrication technologies. Fablab mainly comprises of Laser Engraver, Top Notch 3D Printers, CNC Milling Machine with scan unit, Vinyl Cutter, Electronics Workbench, Dexter boards etc.

With the objective to promote the entrepreneurial culture among students from the start of their study programs to change their mindset from job seeker to job provider CITTIC regularly organizes entrepreneurial awareness programmes and expert talks to create a culture of innovation and to spread the spirit of startup and entrepreneurship, regular events organized by CITTIC in the campus.

Mobile Application Development Workshop

<u>List of companies incubated at CITTIC from</u> <u>April 2021 to March 2022</u>		
Sl. No.	Name of Company	Date of Incubation
1.	Luxin Autonomy	August 2021
2.	Centric Innovations	September 2021
3.	Ultra	November 2021
4.	BalancedEat	December 2021
5.	Yarok 14	January 2022
6.	Ballista	March 2022
7.	Learnwing Overseas	March 2022
8.	Mind Power Empowerment	March 2022

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FOR COLLEGE STUDENTS & GRADUATES
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📅 3rd and 10th October 2021
🕒 10 AM to 4 PM
📍 CITIC, Thrikkakara Campus, Cochin University, Kochi- 22

For more enquiry 📞 928 8033 638

Mobile Application Development Workshop

Femme.org conducted a free one day workshop on mobile application development at CITIC, CUSAT on the 3rd of October 2021. This workshop aimed to give a comprehensive idea of the various aspects of Mobile Application development, along with practical demonstration.

The event started at 10 AM, opened with a brief introduction to Mobile Application Development in the real world. This was followed by a detailed explanation of technologies used for it and a live demonstration of mobile application development

using React Native. The session also covered the required system configuration, basics of React Native, UI, etc.

The session was handled by Senior Software Engineer, Muhammed Sulthan A. Around 20 participants, including B-tech students of CUSAT and graduates from other collages in Kerala attended the program. The active participation of all the participants made this program a grand success.



Mobile Application Development 10th October 2021



Talrop organizes a free workshop on **Mobile Application Development** for college students & graduates!

Sunday, 3rd, 10th October 2021
10.00 AM - 4.00 PM

Talrop conducted a free workshop on mobile application development at CITTIC, CUSAT on the 24th of October 2021. This workshop aimed to give a comprehensive idea of the various aspects of Mobile Application development, along with practical demonstration.

The event duration was from 10 AM to 4pm, opened with a brief introduction to Mobile Application Development in the real world. This was followed by a detailed explanation of technologies used for it and a live demonstration of mobile application development

using React Native. The session also covered the required system configuration, basics of React Native, UI, etc.

The whole session was handled by Senior Software Engineer, Avin Premraj, and there were around 27 participants, including B-tech students and graduates. The active participation of all the participants made this program a grand success!



Motivational Talk - 27th November 2021

Motivational talk by Mr. Ronit Ranjan was conducted at CITTIC, CUSAT on 27th November 2021, Saturday from 3:00pm to 6:00pm. Ronit Ranjan is a TedX Speaker. He is the youngest person in the world to have walked from Kanyakumari to Kashmir for mental health awareness and he came to Kochi from Bengaluru to enlighten the students on spreading "Cycle of love" for college students. The participants learnt about perseverance and resilience. The aim of the event was to make aware to the participants that when one door closes, they can always open other doors and that failure does not mean a full stop to life. It's just a comma for a new beginning, and also how one must keep learning new technical skills. The students from CUSAT and nearby colleges who attended this session was inspired by his talks on how he faced his failures in life and bounced back. The Event was a huge success with 40 people from different colleges attending the session

MIND EMPOWERED & 



Speaker
Ronit Ranjan
(TedX speaker)

VENUE : CITIC, CUSAT, KOCHI

27 NOVEMBER | 4:00pm to 5:00pm



1. MAKE-A-TON 4.0



MAKE-A-TON



The organizing committee,
Centre for Innovation Technology Transfer and
Industrial Collaboration (CITTIC), Cochin
University of Science and Technology
cordially invite you to the programme


MAKE-A-TON 4

The Hon. Vice-Chancellor Prof. (Dr.) K. N. Madhusoodanan will inaugurate the ceremony. Mr Shilen Sagunan, Chairman, Malabar Innovation Zone will be the guest of honour. The welcome speech by Dr Bijoy A Jose, Asst. Prof, SOE CUSAT. Presidential Address will be given by Dr Sam Thomas, Director, CITTIC, CUSAT. Dr Jayadas N H, Asst. Director, CITTIC will conclude the inaugural session with a Vote Of Thanks.


Date: Friday, 25th February 2022

Venue: Online

2.



MAKE-A-TON



Make-A-Ton is a 24 hour open hackathon, conducted by CITTIC, for students from Universities and Technical Institutions across India, to bring together phenomenal minds from different disciplines to embrace the spirit of innovation. The venture aims to empower innovators and encourage progressive ideas that might hold key solutions to challenges faced today.

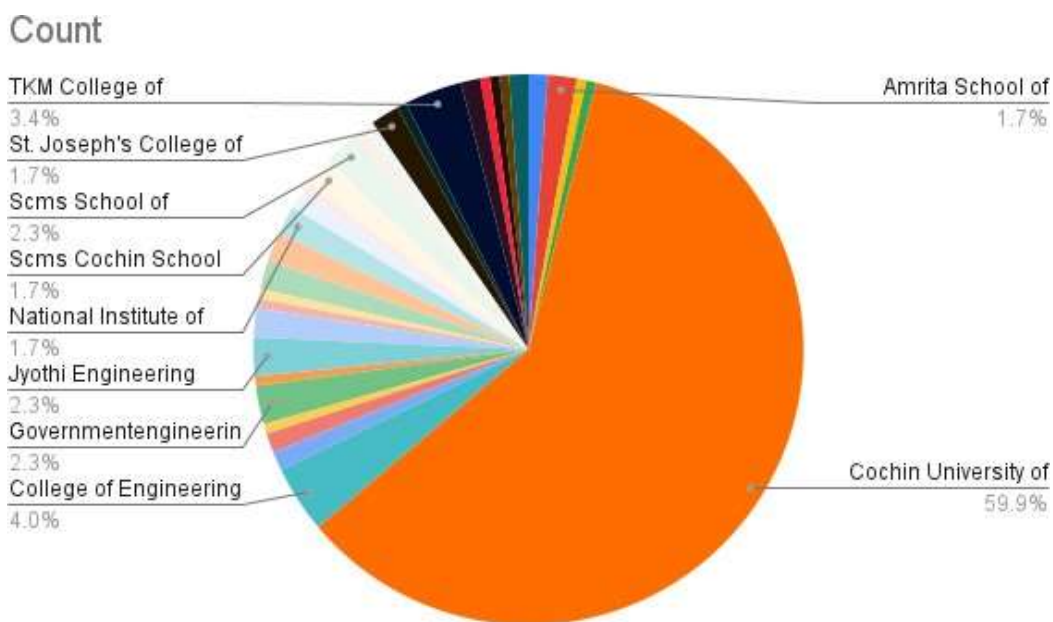
Dr. Sam Thomas
Director
CITTIC

Dr. Jayadas N H
Asst. Director
CITTIC

Naseem Shah
Cordinator
MAKE-A-TON

Make-a Ton, conducted by the Centre for Innovation, Technology Transfer and Industrial Collaboration (CITTIC), was a 24-hour online hackathon organized with the aim to bring together phenomenal minds from different disciplines to embrace the spirit of innovation. The event was held on 26th and 27th of February, 2022. Like its previous edition, it was conducted online considering the global pandemic. Since it was conducted online, we were able to host a much wider palette of an audience with participants coming from all parts of the country. It was an open hackathon allowing teams to work on projects which they were passionate about. Additionally, there were four extra sponsored tracks for teams who implemented their prototypes using Tezos, Polygon, Filecoin and Celo technologies. A special track was conducted, Hack 4 CUSAT, exclusively for CUSAT students for solving problems related to the university.

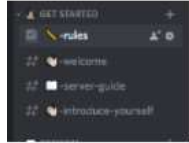
The official event website went live on February 5th. The registrations were closed within the first week after receiving 410 registrations. From these registrations 218 candidates submitted their profiles for review. Out of those 192 were accepted and we sent them the acceptance mails. The event enjoyed participation from students from different universities across the country. Until the registrations were closed, participants were given constant updates through the website, email correspondence and social media.



The orientation, inauguration, interactive sessions, and the valedictory function werestreamedliveonYouTube.Thesewerenotrestrictedtotheparticipantsaloneandwereopen to all.

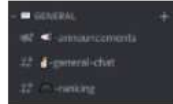
Get Started Section

This section has basic onboarding details and all. This will make



General Section

This part has server announcements and other details.



Make-a-Ton 4 Section

Here announcement related to Make-a-Ton 4 will be shared.



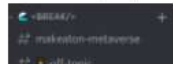
Get Help Section

This section allows mentors, organizers and participants to help each other in specific domains.



General Section

This part has games and other activities you can have fun with other people



Help Desk Section

This is a direct line of contact with you and the organizers. You can raise a ticket to ask your queries and any one of the organizers will try to help



The event was inaugurated on 25th February 2022 by the Honorable Vice-Chancellor of Cochin University of Science and Technology, Prof. K N Madhosoohan. During his inaugural speech, he quoted that CUSAT and CITTIC are at the forefront in upholding the spirit of entrepreneurship and innovation. Mr. Prasad Balakrishnan Nair, special officer, Kerala Paper Products Ltd was the guest of honor for the event. He emphasized that innovation is the way forward after the pandemic.

Entrepreneurs from various startups provided continuous mentoring for the participants. The mentors included Sarath Shaji from Agrivator, Megna Sudeep from TCS, who is also the secretary of RFID council (IEEE Kerala section), Hadi Abdulla N from

Deep Flow technologies who is also the Joint Secretary of RFID council (IEEE Kerala section). Our Alumnus Siddharth Shivkumar, Kiran Ashok, Akashy CJ, Sachin Nair, Sahil Athrij, Karthik Sankar were also lending a helping hand as mentors for the smooth functioning of the event. The mentoring took place in two stages. The first milestone check was to guide the teams in the right direction with their products. The second and final milestone check focused on business development, the polishing of the solution and a pitch workshop to teach the participants the art of pitching.

Students were actively involved through out the 24 hours to develop their solutions. They were discussing their solutions with the mentors, positively taking feedback, and interacting and networking with their fellow participants. There were no dull moments and the atmosphere was always lively..

The judges Mr. Balesh Lakshminarayanan Co-founder Absyz, Dr Nalesh S, Chair IEEE RFID and Assist. Prof DOE, CUSAT and Sreekanth S, President SOE Alumni Association TCS, appreciated the participants for their innovative solutions.

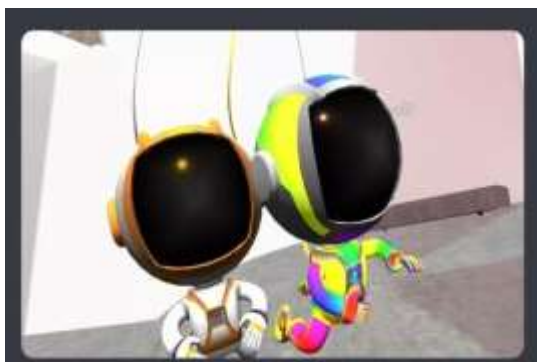
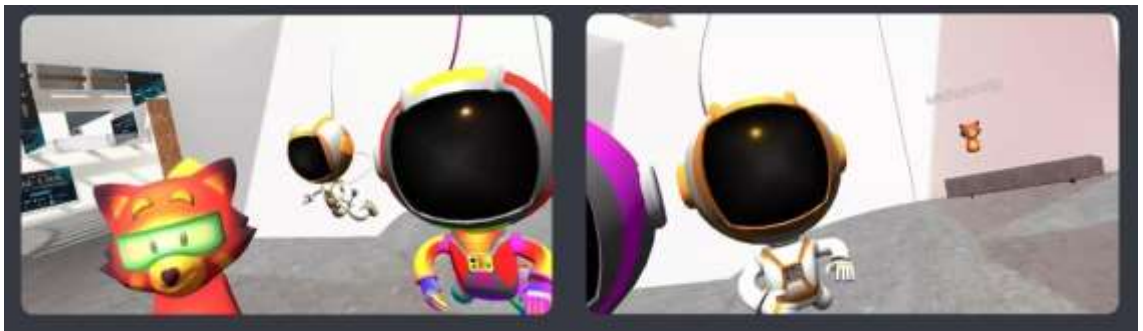
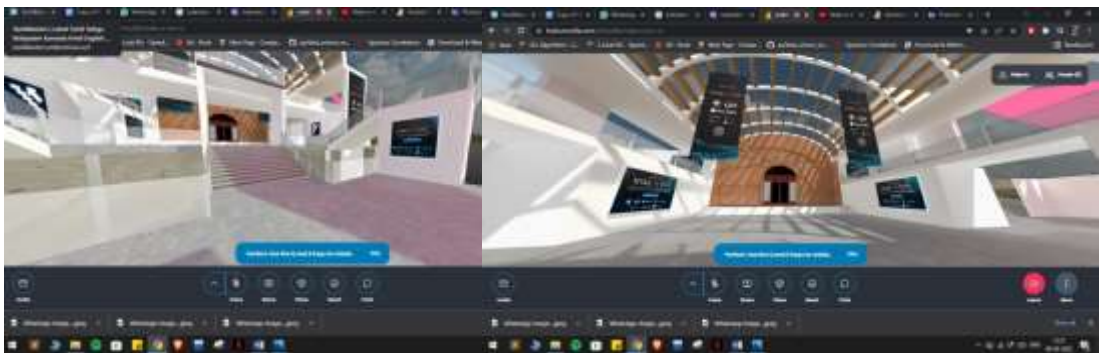
The first prize winner of Make-a-Ton was team Hack Bytes from SOE, CUSAT. They were awarded a cash prize of Rs.15,000. The team consisted of 4 members, Anito Anto, Abhishek V J, Mohammed Abrar and Harikumar. Their submission was regarding the tracking and analytics of attentiveness during an online meeting.

There were two runner-ups. They were awarded a cash prize of Rs.5,000 each. First one was team Dev from GEC, Thrissur. They created Curia, a block chain-based evidence management system to prevent manipulation in Indian courts. The team had 4 students, Neha Susan, Rosemary Benny, Muhammed Hashir and Abdul Adhil.

The next one was team CodeX from SOE, CUSAT. They created Garduino, an IOT based Horti culture system. The team consisted of 4 members, Abhinand Manoj, Alish Denny, Anton Prince and Adithya Biju.

TeamBroCode was awarded the 'Hack4CUSAT' prize for developing digital solutions catering to problems faced by students in the university. They were awarded a cash prize of Rs. 5,000. The team of 4 students from SOE, CUSAT built an automatic documents and notes printing solution to print shops near CUSAT. The team members were Aiswarya Syam, Sanjay Suresh, Anand M A and Alen V G.

This year we also integrated a Metaverse Hall using experimental technology like AR/VR, where participants could join and network with other people in a virtual 3d world. This was an entirely new experience for the participants.



Every year Make-a-Ton makes it appoint that the participants take something of value with them after the event. Make-a-Ton received a massive positive response formal lits participants as it provided a platform for students to start their journey in innovation. Inshort, Make-a-Tonwas nothing less than a massivesuccess!

FABLAB INAGURATION

Cochin University of Science and Technology

CUSAT FABLAB
A place for learning & Innovation

(Supported by Kerala Startup Mission & RUSA)

CITTC

RUSA

KERALA STARTUP MISSION

FAB LAB KERALA

CUSAT is one of the select institutions to host a FABLAB inhouse set up with the support of Kerala Startup Mission. A Fabrication Laboratory (FabLab) is a technical prototyping platform for innovation and invention which aims at providing stimulus for local entrepreneurship and serves as a platform for learning and innovation. Fab Labs provide access to the environment, the skills, the materials and the advanced technology to allow anyone anywhere to make (almost) anything.

Give ordinary people
the right tools, and
they will design and
build the most
extraordinary things.

Neil Gershenfeld



The Fablab will provide the students and startups easy access to digital fabrication technologies. The main aim is to foster the culture of making and entrepreneurship among our stakeholders.

Fablab mainly comprises of Laser Engraver, Top Notch 3D Printers, CNC Milling Machine with scan unit, Vinyl Cutter, Dexter boards etc. Also an Electronic workbench is available consisting of digital oscilloscope, function generator, electronic microscope, soldering station etc. with their components.



CUSAT FABLAB RESOURCES

Machine

Description

Applications



Laser Engraver
Eva-32

Acrylic, wood & Paper
Engraving & cutting



3D Printers
Ultimaker-s5 & Ender 3

3D Printing casing,
Architecture
models, sculptures



CNC Milling Machine,
ROLAND Model
MDX- 40A

PCB ,Wax ,Acrylic,
Wood milling



Vinyl Cutter
Roland GX-24

Vinyl Stickers,
Decals,Logos



Digital Oscilloscope &
Analog soldering station

Electronic Testing &
Electronic soldering

HOW TO APPLY

Anyone who has setup / proposing to set up a technology-based company to pursue commercial applications of science/technology-based innovations is eligible to apply for incubation at CUSAT - TBI. Also anyone can use CUSAT FABLAB with nominal service charge. The applicant has to submit an application in the prescribed format to co-ordinator, CUSAT TBI.

The application form may be mailed to tbi@cusat.ac.in. For details on the incubation policy and to download the application form, please visit our website.



For details contact:

Ph:0484-2862183,

Dr. Sam Thomas, Co-ordinator, CUSAT - TBI : 9846152127

Dr. Bijoy A Jose, Deputy Co-ordinator, CUSAT - TBI : 9900634422

Mr. Shonu V Paul, Technical Officer, CUSAT - TBI : 8113846556

Mrs. Sindhu R K, Office Assistant, CUSAT - TBI : 7907600633

Email: tbi@cusat.ac.in, cittic@cusat.ac.in

Website: <https://cittic.cusat.ac.in>

A new FABLAB sponsored by Kerala Startup Mission is opened in CUSAT for use by its students, faculty and startups. The FABLAB setup in Students Amenities Centre of CUSAT was inaugurated by Sri. P Rajeeve, Hon'ble minister for Industries, Law and Coir on 31st March 2022. The Vice Chancellor of CUSAT Sr. K N Madhusoodanan presided over the function.

The minister spoke on

The FABLAB comprises of equipment such as Laser Engraver, Top Notch 3D Printers, CNC Milling Machine with scan unit, Vinyl Cutter, Electronics Workbench and Dexter boards. The main aim of the FABLAB is to foster the culture of making and entrepreneurship among students, alumni and other stakeholders of CUSAT.

The minister honoured 23 startups selected for the award of RUSA supported CUSAT STARTUP GRANT. They include CUSAT faculty, Alumni, students and outsiders. An exhibition of the products built by these award winning startups was arranged at CUSAT TBI facility.

CUSAT has become the first state university to permit its faculty members to start their own startups in their research domains. The CUSAT Faculty Startup policy, modelled on MHRD Guidelines and premier IITs in the country, will give a big boost to the university centric startup ecosystem motivating teachers and research scholars to convert their research work into useful products and services.

Sri John M Thomas, CEO, Startup mission gave a special address. The PVC Dr P G Sankaran, Registrar Dr V Meera, Syndicate members Mr C J George, Dr Poornima Narayan, CUSAT TBI Advisory Board members Dr Suresh Nair, Mr Prasad Balakrishnan, RUSA Coordinator Dr N Manoj, CUSAT TBI Coordinator Dr Sam Thomas and Deputy Co-ordinator Dr Bijoy Jose also spoke in the function.

CUSAT has been offering incubation support to startups through its Technology Business Incubators namely CITTIC and RISE. There are more than 50 startups functioning out of CUSAT TBIs in varied domains such as Electronic hardware, Bio Technology, Marine Science, Polymer and Software applications.



Inter University Centre for Development of Marine Biotechnology (IUCDMB)

THE ANNUAL REPORT FOR THE YEAR 2021 - 2022

Name of the Department **INTER UNIVERSITY CENTRE FOR**
DEVELOPMENT OF MARINE BIOTECHNOLOGY (IUCDMB)

Brief History of the Department. A detailed review of the present scenario of Marine Biotechnology presented a lean research status for the field in India, with most of the work concentrating in identifying the bioactivity of crude and sometimes partially refined extracts of marine plants/organisms. The economic as well as societal requirements to identify and commercialising the bioactive components have taken place only very rarely. **It is in this backdrop this centre, Inter University Centre for Development of Marine Biotechnology (IUCDMB), was established by the Government of Kerala in 2009** at the Cochin University of Science and Technology to emerge as a global centre of excellence to offer cutting-edge technology and infrastructure facilities to support researchers and scientists working in the interdisciplinary field of Marine Resources. The most important area of expertise of the IUCDMB is in the field of Marine natural products and its bioactivity. The centre also provides training for young scientist, teachers, research scholars, and students. The objectives of the Centre are

Developing novel drugs; Marine Natural products

Producing diagnostic devices for monitoring health;

Discovering new types of composite materials/ biopolymers/enzymes for industries;

ensuring safety of aquaculture and fisheries;

Providing new techniques for management of marine environments

Programmes of Study/Research :

I) Marine natural products:

- a. Isolation of bioactive compounds from marine invertebrates and aquatic plants –**
- b. Bioactive compounds from marine microorganisms**

c. Isolation and characterisation alpha-amylase inhibitors from marine sources

d. Bioactive compounds from marine microorganisms

II) Biomarker Studies - Biomarkers are compounds used as signatures of individual organisms or groups of organisms, or of certain environmental processes

III) Natural Products from Mangroves / Wetland plants

IV) Prediction the bio activity of compounds identified

V) Screening of secondary metabolites from various medicinal plants and its application to marine environment

VI) Chemoinformatics analysis of a large collection of bioactive compounds

Faculty Members

1. Dr. N. Chandramohanakumar, Ph. D; Professor (Retd) and Hon Director, IUCDMB
2. Dr. Habeeb Rehman Ph.D. Asst Professor, Dept of Chem. Oceano. – Adjunct Faculty
3. Dr. S. Muraleedharan Nair, Ph. D; Professor, Dept of Chem. Oceano. – Adjunct Faculty
4. Dr. Ratheesh Kumar Ph.D. Asst Professor, School of Env'tal Studies - Adjunct Faculty
5. Dr Baby Chakrapani Ph.D. Asst Professor, Dept of Biotechnology - Adjunct Faculty
6. Dr. Jayesh Puthumana Ph.D. Asst Professor, N C A A H, CUSAT - Adjunct Faculty

Research Scholars:

Sl.No.	Name	Funding Agency	Guide	Area of Work
1	Stephy	CUSAT	Dr. S. Muraleedharan Nair	Natural Products and bioactivity
2	Deepthi	CUSAT	Dr. Habeeb Rehman	Natural Products and bioactivity
3	Devika S Mohan	CUSAT	Dr. Ratheesh Kumar	Natural Products and bioactivity

Research Facilities**e. Laboratories****Instrumentation Laboratories 1****Wet Lab. 1**

f. Major equipments : LCMS, GC, GCMS, FTIR, NMR, UV-VIS Spectrophotometer, Flash Chromatograph, HPLC, Microplate Reader, Refrigerated centrifuge, Insitu fermenter, Rotary evaporator, Freeze Dryer, TOC Analyser, Lyophiliser

Publications Journal Papers

- Murukesh, Nebula; N., Chandramohanakumar, 2021. Nutrients and isotopic composition in Rhizophoraceae mangroves of Kochi, South west coast of India. Journal of Plant Science Research . Vol. 37 Issue 2, p331-344.
- P. Resmi, Gireeshkumar T R, Ratheesh Kumar C S, Chandramohanakumar N., Manju Mary Joseph, Udayakrishnan P. Triterpenoids and fatty alcohols as indicators of mangrove derived organic matter in Northern Kerala Coast, India. February 2021 Environmental Forensics, DOI:10.1080/15275922.2020.1850554
- K Deepthi, PK Renjith, K Shameem, K Habeeb Rahman, N Chandramohanakumar, 2022. Phytochemical screening of leaves and flower

extracts of Sesbania grandiflora (L.) Pers. and its antimicrobial activity against fish pathogens , Vegetos 1-8

7. KS Moushmi, AS Cheriyan, E Cheriyan, N Chandramohanakumar, 2022. Iron and phosphorus geochemistry in the core sediments of an urbanized mangrove ecosystem, Southwest coast of India, Marine Pollution Bulletin 178, 113636
8. CS Ratheesh Kumar, OS Gayathry, VB Rakesh, A Sudha, Roshni Mohan, PM Salas, P Resmi, Manju Mary Joseph, K Shameem, N Chandramohanakumar, 2022 Lipid biomarkers as organic matter source indicators of estuarine mangrove ecosystems, Chemistry and Ecology Volume 38, 6, 564-585
9. Anu Susan Cheriyan, KS Moushmi, Eldhose Cheriyan, Libin Baby, N Chandramohanakumar, 2022. Sources and degradation of organic matter and its relation to trophic status in the core sediments of a tropical mangrove ecosystem along the Southwest coast of India, Marine Chemistry, 104137
10. K.S.Moushmi, Anu SusanCheriyan, EldhoseCheriyan, ManuMohan, N.Chandramohanakumar, 2022.Trace metal distribution and ecological risk assesment in the core sediments of a highly urbanized tropical mangrove ecosystem, Southwest coast of India, Marine Pollution Bulletin, Volume 175, February 2022, 113163

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students. :
Nil



School of Marine Sciences

ANNUAL REPORT FOR THE YEAR 2021 - 2022

Name of the School : **School of Marine Sciences**

Brief History of the School :

The School of Marine Sciences is one of the oldest institutions in India imparting postgraduate teaching, training and research in all branches of Ocean Science and Technology. The School comprises of five departments (1) Department of Atmospheric Sciences, (2) Department of Chemical Oceanography, (3) Department of Marine Biology, Microbiology and Biochemistry, (4) Department of Marine Geology and Geophysics and (5) Department of Physical Oceanography. The School is coordinating several teaching and research programmes. It has an excellent library and has earned the special recognition of the University Grants Commission under DRS, COSIST and SAP Programmes. The School has completed the Phase III of the DSA programme and is aiming for the Center of Excellence in Ocean Sciences.

Programmes of Study/Research : Nil

Faculty Members :

Sl.No.	Name	Designation	Qualification	Specialisation
1	Prof.(Dr) Babu C A	DIRECTOR 30-11-2020 to to 09-06-2022	MSc, PhD	Monsoon boundary layer dynamics

Administrative Personnel

Sl.No.	Designation	No. of Posts
1	Assistant	1
2	Computer Assistant (Grade II)	2
3	Security Guards	5
4	Assistant Librarian	1
5	Junior Librarian	1
6	Professional Asst. (Gr.I)	1
7	Library Assistant	1
8	Office Attendant	1

Technical Personnel

Sl.No.	Designation	No. of Posts
1	Driver Senior Grade	1

Research Facilities : Has been provided by the constituent Department.

- a. Laboratories
- b. Major equipments
- c. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
20127 Books + 35 Journals	66 Books

- d. Others : Boat Jetty

Ph.Ds Awarded : Has been provided by the constituent Department.

Publications : Has been provided by the constituent Department.

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students:

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Has been provided by the constituent Department		

Role of Faculty in International/National organizations/Institutions/ Editorial Boards: Nil

Name of Faculty	Name of Organization	Role
Has been provided by the constituent Department		

Awards/ Honours/ Fellowships etc. received :NIL

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Has been provided by the constituent Department		

Sponsored Research Projects : NIL

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
Has been provided by the constituent Department				

Research Programmes and Activities : Nil

Sl.No.	Problem / Topic	Investigator (s)
Has been provided by the constituent Department		

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the departmentyt: Nil

Consultancy Work : Nil

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
Has been provided by the constituent Department			



Women's Studies Centre (WSC)

WOMEN'S STUDIES CENTRE ANNUAL REPORT FOR THE YEAR 2021-22

Name of the Department - Women's Studies Centre

Brief History of the Department:

Women's Studies Centre (WSC), Cochin University of Science and Technology started its formal functioning in the year 2010 with the financial assistance from the University Grants Commission with a view to build up Women's capacity for their empowerment. It was formally inaugurated on 18-08-2010 by the Hon'ble Vice-Chancellor, Dr. Ramachandran Thekkedath. Since then the Centre has been conducting various programmes like Seminars (both National and International), Workshops, Awareness campaigns and gender- sensitization activities. The Centre is publishing a journal named Journal of Women, Empowerment, and Technology (WET) and conducts research projects as well.

Programmes of Study/Research

Sl.No.	Name	Designation	Qualification	Specialization
1	Dr. Chinchu C.	Post Doctoral Fellow	Ph. D Psychology	Gender Studies

Faculty Members

Sl.No.	Name	Designation	Qualification	Specialization
1	Dr. K. Ajitha (from 01-04-2019 onwards till present)	Hon. Director	Ph. D Hindi	Literature & Women's Studies

Research/Project Staff

Sl.No.	Name	Designation	Qualification	Specialization
1	Suchithra Lal.	Research Assistant	MA, M.Phil	Gender Studies

Research Scholars:Nil

Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Data Entry Operator/Computer Assistant	1
2.	Office Attendant	1

Research Facilities

- a. Laboratories
- b. Major equipments
- c. Library

No of books and Journals as on 31 st March of the Previous Year	Additions during the current year
831 books	No books acquired

- d. Others

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Dr. Chinchu C. and Aparna Eswaran	International Institute of Migration and Mobility	Paper Presentation
Dr. Chinchu C.	APA Convention 2021 Virtual	Paper Presentation

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Coordinator	Funding Agency
1	Celebration of International day of Yoga on 21st June 2021. Dwithheeya Pathiramanna, Consultant Psychologist and Early Interventionist delivered a talk on 'Mental Well being in the time of Pandemic'.	One day Online	Dr.K.Ajitha	CUSAT
2	Panel Discussion on Kerala's Paradox : The Menace of Dowry and Violence against Women	One day 12 th August 2021	Dr.K. Ajitha	CUSAT
3	FDP on Gender Sensitization and Gender Equality	7 days 7 th September to 13 th September 2021	Dr.K. Ajitha	CUSAT
4	Online interactive session 'Are Women Vulnerable? Redefining Empowerment'	17th December 2021	Dr.K. Ajitha	CUSAT
5	Online Awareness Session on 'National Girl Child Day', on the topic 'Gender and Legislation'	21 st January 2022	Dr.K.Ajitha	CUSAT
6	Two day international Webinar in connection with International Women's Day Observance on the theme "GENDER AND STEM associated with CUWWO, CUSAT and Indhira Gandhi National Centre For Arts.	2 days 8 th and 9 th March 2022	Dr. K.Ajitha	CUSAT
7	Associated with School of Management Studies, CUSAT one week long commemorative in connection with international women's day 2022.	5 days 7 th to 11 th March 2022	Dr. K.Ajitha	CUSAT



V. R. Krishna Iyer Chair on Human Rights Studies

FORMAT FOR SUBMISSION OF THE ANNUAL REPORT 2021-22

Name of the Department Justice V.R. Krishna Iyer Chair on Human Rights, School of Legal Studies

Brief History of the Department : The chair was established in CUSAT vide U.O. No. PL (UGC) 3/376 Krishna Iyer Chair/2010 dtd.09-09-2010 for a one time grant of Rs. 83 lakhs from the State Government in 2012 September. The Chair was established in honour of the Late Justice V. R. Krishna Iyer, the ardent champion of Human Rights who through his various landmark judgments has espoused the cause of Human Rights. (also see Order No. PL(UGC) 3/376/VRKC/2010 dated 03-09-2012.)

Administrative Personnel (Using the Administrative Staff of the School of Legal Studies)

Research Facilities

- a. Laboratories
- b. Major equipments
- c. Library Using the Library of the School of Legal Studies
- d. Others

Publications

- e. Papers
- f. Books

Sl.No.	Title of Book
1	On Human Rights in Healthcare (Edited by Harigovind P.C. and Arathi Ashok, Assistant Professors, SLS) Published by Directorate of Public Relations and Publications, CUSAT.

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Coordinator	Funding Agency
1.	One Day Human Rights Awareness Lectures	One Day	Dr. Seema P.S., Associate Professor, SLS	
2.	Webinar on Rights of Girl Child in India	One Day	Dr. Seema P.S., Associate Professor, SLS	
3.	Faculty Enrichment Programme on Human Rights	One Day	Dr. Seema P.S., Associate Professor, SLS	

Centre for Integrated Studies

Brief History of the Department:

The Centre for Integrated Studies was established in the Academic Year 2019-20, with a minimum staff strength of one Section Officer, one Computer Assistant and one Assistant (on daily wages). Currently there are two courses in the Centre for Integrated Studies.

1. M.Sc. Forensic Science – 2 year Course- (Strength 15 + 5 Supernumerary + 5 sponsored)
2. 5 Year Integrated M.Sc. (Biological Science/ Chemistry/ Physics/ Mathematics/ Statistics) (Strength -75)

Currently 2 batches of M.Sc. Forensic Science and 4 batches of 5 Year Integrated M.Sc. are running. The current student strength in the Centre for Integrated Studies is 300.

The staff strength available in the Centre for Integrated Studies office now is:-

Existing Staff Strength				
Sl. No.	Post	Number		
		Regular	Temporarily created by Syndicate	Non-sanctioned
1	Section Officer	1		
2	Assistant	1	1	
3	Office Attendant			1
4	Sweeper-cum-Cleaner			2
5	Professional Assistant Grade I			1
6	Technical Asst. Gr. II			1
7	Technical Asst. Gr. III	3		
8	Computer Assistant	2		

Programmes of Study/Research:

1. Five Year Integrated M.Sc. (Biological Science/ Chemistry/ Physics/ Mathematics/ Statistics)
2. M.Sc. Forensic Science

Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr. Praveen Kumar Yadav	Asst. Professor on Contract basis	Ph.D Degree from Punjabi University	M.Sc. Forensic Science
2	Dr. Aswathi A	Asst. Professor on Contract basis	M.Sc. Forensic Science, Ph.D.Biological Science	Biotechnology
3	Mr. Shanu Kumar	Asst. Professor on Contract basis	M.Sc. Forensic Science, Jharkhand Raksha Shakti University, Ranchi	M.Sc. Forensic Science

Visiting Faculty

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr. Lalitha Mathew	Guest Faculty	Ph.D English	English Literature
2	George P T	Guest Faculty	Retired Forensic Photographer	M.Sc. Forensic Science Photography
3	Aiswarya C R	Guest Faculty	M.Tech. Computer Science	Computer and Information Science

Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Coordinator	1
2.	Section Officer	1

3.	Assistant	2
4.	Computer Assistant	2
5.	Professional Assistant	1
6.	Office Attendant	1
7.	Sweeper-cum-Cleaner	2

Technical Personnel

Sl.No.	Designation	No. of Posts
1	Technical Asst. Gr. II	1
2	Technical Asst. Gr. III	3

Student Enrollment

Sl.No.	Programme of Study	Men	Women	Total
1	5 Year Integrated M.Sc. (Biological Science/ Chemistry/ Physics/ Mathematics/ Statistics)	69	171	240
2	M.Sc. Forensic Science	9	32	41

Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Nanditha Vijay	Summer School for Women in Mathematics and Statistics in Online mode conducted by 'International Centre for Theoretical Sciences' Bengaluru	Student
Krishnapriya R S		
Malavika Sreekumar		
Namitha C		
Arya D		
Gayathri G		
Meenakshi D		

Arya S Renjith		
Unnimaya Padmakumar		
Agnes Jerome	<ol style="list-style-type: none"> 1) International Workshop on Advance statistical Data Analysis Using SPSS(at Science Tech Institute, Lucknow) 2) Vigyan Vidushi Programme in Mathematics (at TIFR) 3) Cusat science day Seminar on Women in Science(at Cusat) 	
Anjana Babu	<ol style="list-style-type: none"> 1) Internship NIUS Chemistry, Mumbai 2) Step, IISER TVM 	
Anna Jo	<ol style="list-style-type: none"> 1) International Workshop on Advance statistical Data Analysis Using SPSS(at Science Tech Institute, Lucknow) 2) Webinar on Artificial intelligence , machine learning and deep applications conducted by NIT Warangal 	
Anupama OS	<ol style="list-style-type: none"> 1) STEP, IISER TVM 2) KSoMTNP 2019 3) Internship at Loyola College 4) MATLAB workshop, NIT Calicut 5) NPTEL Course on 'Introduction to Abstaract Algebra' 	
Devika AV	1) Basic course in Astronomy: introduction to stars conducted by Breakthrough science society in association with ASI-POEC	
Devika P Kumar	Computational modelling in chemistry, biology and materials, CUSAT	
Gitika Rameshan	<ol style="list-style-type: none"> 1. Basic course in Astronomy: introduction to stars conducted by Breakthrough science society in association with ASI-POEC November 2021 2. NIUS exposure cum nurtured camp June 2019 at HBCSE 3. Workshop on strophotography techniques and basics of astrospectroscopy by Positron foundation (Dhishna) February 2020 	
Gopika N Nair	<ol style="list-style-type: none"> 1. International summer program 2021 by The graduate school of science Ozaka 2. KCSTE SRBS -Webinar on stereochemistry 3. KCSTE- Magnetic resonance society. Webinar series on spectroscopical methods. 	Student

	<p>4. National level student enrichment program for chemistry.</p> <p>5. Matcon 2021</p> <p>6. Worship on computational methods and modelling , CUSAT</p>	
Joel Eldhose	<p>1) CUSAT Science day WEBINAR, February 2020</p> <p>2) MATCON 2019- Department of Applied Chemistry, CUSAT</p> <p>3) MATCON 2021- Department of Applied Chemistry, CUSAT</p> <p>4) Worship on Computational modelling in Chemistry, Biology and materials, CUSAT</p>	Student
Kesav Mohandas	<p>1. Basic Course in Astronomy, organized - Breakthrough Science Society.</p> <p>2. Gravitation: From Newton to Padmanabhan and Beyond - Breakthrough Science Society.</p> <p>3. Webinar - General Physics Seminar: Closing in on the Standard Model like Higgs Boson - Korea Institute for Advance Study.</p> <p>4. Webinar - General Physics Seminar: Engineering quantum transport in low dimensional electron systems - California Institute of Technology, USA.</p> <p>5. Webinar - Particles And Fields In Superfluids: Insights From The Two-Dimensional Gross-Pitaevskii Equation - IISc, Bangalore</p>	Student
Saga PS	<p>1.Indian Academy Of Science Bangalore - Science day Workshop, 2021</p> <p>2.CUSAT Science day WEBINAR, February 2020</p> <p>3.NIT Calicut-Thatva Workshop</p> <p>4.Indian Women In Mathematics -Workshop at IISER trivandrum during December 2019</p> <p>5.Science Talent Enrichment Programme- Programme at IISER during May, 2019</p> <p>6.ISI Kolkata - Webinar Series August 2021</p> <p>7.MATCON 2019- Department of Applied Chemistry</p>	Student
Vismaya Vinod	<p>1.Lecture on pattern recognition, machine intelligence to data science (conducted by NIT, Calicut)</p>	Student
Deny Mol Benny	<p>1. Winter school in Mathematics for Undergraduates at St Berchmans college, Changanassery, Kerala.</p> <p>2.International webinar celebrating women in Mathematics at Sacret Heart college, Chalakudy.</p> <p>3. online bridge course on "Mathematical Analysis,</p>	Student

	<p>Abstract Algebra & Linear Algebra" Organized by Farook college, Kozhikode.</p> <p>4. International webinar on Special functions and discrete Mathematics (University of Kerala) .</p> <p>5.National webinar on Uniformly continuous functions (Periyar EVR college (Autonomous) , Thiruchirappalli) .</p> <p>6. International webinar on Deep learning in Mathematical Perspective (St Joseph's Institute of technology, Chennai) .</p> <p>7. Webinar on Homomorphisms on cyclic groups (Govt college for Women (Autonomous), Kumbakonam, Tamil Nadu) .</p> <p>8. Seminar on Women in Science organized by KSCSTE, at CUSAT.</p> <p>9. Lecture on Pattern Recognition at NIT, Calicut.</p> <p>10. Lecture on Astrobiology at NIT Calicut.</p> <p>11. One day Workshop on ExpEYES, at TKM college of Arts and Sciet, Kollam.</p> <p>12. Online training on Data Science.</p> <p>13. Participating in the panel discussion on Climate Change at CUSAT.</p>	
Anupama C K	<p>Workshop:</p> <p>1. Matcon-2019 at cusat</p> <p>2. Matcon-2021 at cusat</p> <p>3. Workshop on computational methods and modelling-2021 at cusat</p>	Student
Resma Mohan	<p>1.Matcon 2019</p> <p>2. Matcon 2021</p> <p>3. Workshop on computational methods and modelling, 2021</p> <p>4. International summer programme 2021 by the graduate schools of science Ozaka</p> <p>5. Online webinar on "Magnetic Resonance" conducted by Magnetic Resonance Society of Kerala and Srinivasa Ramanujan institute for Basic Sciences.</p> <p>6. Attended online workshop series, GINA 1.0</p> <p>7. National level student enrichment programme for chemistry</p>	Student

Akhila P P	Workshops: 1. Matcon-2019 at cusat 2. Matcon-2021 at cusat 3. Computational methods and modelling-2021 at cusat	Student
Hijra M	4. Webinar on ESR -2021(magnetic resonance society)	Student
Rashida Samarin	Workshop on computational modeling in chemistry, biology and materials	Student
Akhila P S		Student
Fidha Rafeeqe	computational chemistry work shop	Student
Meenu M Mohan	Summer school for Women in Mathematics and statistics in online mode	Student
Meenu M Mohan	International summer program (Online) by Graduate School of Science (GSS), Osaka University, Japan	Student
Yami George		
Aparna k		
Malavika Sreekumar		
Anusree T R		
Gayathri G		
Navaneeth R Varma		



Centre for Neuro Sciences

ANNUAL REPORT 2021-22

Name of the Department: Centre for Neurosciences

Brief History of the Department:

The Centre for Neuroscience (CNS), CUSAT was established in 2000 and has been actively involved in search of new dimensions of Neuroscience since its inception. The centre promotes a healthy brain through research, debate and discourses over various neurodegenerative conditions and does encourage the participation of non-academic communities in order to accomplish the vision of the centre. The basic functioning of the Centre for Neuroscience lies in the inherent associations of the research areas pertaining to developmental neuroscience, neuroregeneration, neurodegeneration, gut-brain interaction, Neuromechanics, Neural tissue engineering, Cancer neuroscience etc. and its tremendous influence on improving or influencing the brain health. The Centre focuses on research on basic molecular mechanisms in various neurologic conditions to translational research-level utilising multidisciplinary expertise encompassing all areas of neuroscience research through national, international and industrial collaborations.

The focus of the Centre has not been limited to identifying and studying the reciprocal relations and its effects on the human brain. The Centre takes special initiative to disseminate the knowledge to the society. Thus, Prajñā has been brought into place as a platform of CNS to bridge science and society.

The Centre organises industrial visits to its students and faculty yearly. The aim of this activity is to bring the scientific and student community nearer to the industry and enable them to understand the current scenario in research and development pertaining to drug discovery and other aspects of neuroscience applications.

Vision

“Empower the society by fostering a meaningful engagement through translational research, education and community intervention for brain health.”

Mission

To act as a bridge between science and society for exchanging knowledge and thereby building a better future.

Objectives

- ✚ To facilitate interdisciplinary discourses, debate, and research in the realm of Neuroscience.
- ✚ To organize workshops, conferences, inter-university meetings, lectures, certificate courses and awareness programmes.
- ✚ To conduct extension activities like neurological surveys, diagnosis, and clinical testing.
- ✚ To establish a platform for neuroscience research implementing advances in neuro-mechanics and disease pathology through clinical and pre-clinical research activities.
- ✚ To set up an inter-sectoral collaboration with industries, governmental and non-governmental institutions, panchayath raj institutions, health systems for brain health and research.
- ✚ To promote the significance of brain health through community health intervention programmes

1. Programmes of Study/Research

Area: Neuroregeneration

Project Title: Neurotrophic Factors of the Neurogenic niches involved in brain plasticity

Extensive research on adult neurogenesis was carried out in the past, which is defined as the generation of neurons in the adult brain. More facts on neurogenesis and the effect of neurotrophic factors on neural stem cells are yet to be excavated. However, the question is whether neurogenesis in the adult human brain is manifested only to preserve the neurons present or does it have a crucial role in brain plasticity and memory registration. If that is the case, then enhancing the neurogenic activity in the brain should help in preventing the onset of neurodegenerative diseases like Alzheimer's disease, etc. The study aims to find out the neurotrophic factors involved in the regulation of adult neurogenesis, their role in the plasticity of the brain, and whether they can curb neuronal loss seen in Alzheimer's and other neurodegenerative conditions.

Project Title: Biocompatible 3D scaffolding through femtosecond LASER Photopolymerization for tissue engineering and regenerative medicine

The project aims to develop a 3D scaffold by using femtosecond lasers for neural tissue engineering applications. The state-of-the-art femtosecond lasers use a two-photon polymerisation approach to cure the photopolymer in the presence of a photoinitiator in a predefined path specified by the software. The incorporation of the right combination

of growth factors in the scaffold and fine-tuned physiochemical properties of the polymer material provides the proper niche for the growth and differentiation of the cell. The somatic cells taken from the host are an ideal cell source as they will not induce any immune reaction. The somatic cell from other tissue can be reprogrammed to become neuron-like cells using a combination of growth factors and small molecules. The project by nature is multidisciplinary and requires expertise in the field of physics, polymer science and biotechnology. The ultimate aim is to create a construct that is capable of integrating with the host tissue and performing all necessary functions of the cortical region lost due to injury without an immune reaction.

Project Title: Differentiation of peripheral blood mononuclear cell (PBMNC) towards dopaminergic neuronal lineage using composite 3D matrix combined with specific growth factor induction

Parkinson's *disease* is a progressive neurodegenerative disease caused by the region-specific loss of dopaminergic neurons from the brain. It leads to the development of characteristic motor symptoms such as tremors, rigidity, slow movement, poor balance, difficulty in walking and non-motor symptoms. An estimated 5-6 million people are affected by Parkinson's disease globally. The incidence of Parkinson's disease increases with age, but an estimated 4% of people with PD are diagnosed before 50. Almost 70% of the dopaminergic neurons are already lost by the time of diagnosis. Men are one and a half times more likely to have Parkinson's than women. The Discovery of L-dopa revolutionized Parkinson's disease treatment. Replenishment of dopamine through the oral administration of the dopaminergic precursor L-dopa alleviates most symptoms. But after several years of therapy, most of the patients develop involuntary movements, which significantly impair their quality of life. Other treatment strategies such as surgical procedures and inhibiting enzymes only alleviate the clinical symptoms and do not influence underlying neurodegenerative processes.

Stem cells have been increasingly studied for transplantation into PD models. The use of embryonic stem cells differentiated in vitro has provided variable results. Still, this approach is not satisfactory due to the formation of tumours and ethical concerns regarding embryo disruption. Stem cells have great promise as a source for introducing new neurons or glial cells to the damaged CNS. They are multipotent cells that can be easily propagated in vitro, genetically tagged with markers or therapeutic genes, and grafted into the CNS. These characteristic features make them advantageous for research and potential therapy. Our study proves that Peripheral Blood Mononuclear Cells (PBMNCs) contain Neural progenitor cells (NPCs), which can be isolated and induced into a neuronal lineage with the support of biomimetic matrix composition. During the in vitro culture of PBMNC derived NPC, we demonstrated the expression of tyrosine

hydroxylase (TH), which indicates the probability of dopamine synthesis, confirmed by the ELISA test. Quantitative data revealed ~85 – 90 % of TH+ cells are obtained upon culturing using specific growth factor combinations. Hence we concluded that the intermediate NPCs obtained from the culture might differentiate into functional dopaminergic neurons upon transplantation into the patients with PD. This method may be considered for translation into clinical PD in human subjects because it is feasible to collect autologous NPC from circulating blood at the proliferating and lineage-committed stage.

Project Title: The role of gp130-associated cytokines in the regulation of adult neural stem cells (NSC) proliferation and differentiation

The Subventricular Zone (SVZ) of adult mice brain is one of the prominent areas of adult neurogenesis. Neural Stem Progenitor Cells (NSPCs) isolated from this area and cultured as Neurospheres in vitro have been widely used as a model system to study the role of neural stem cells in various neurodegenerative diseases. CNTF effect on these neural stem cells has been thought to direct them towards an Astrocytic fate (Johe et al., 1996; Bonni et al., 1997; Koblar et al., 1998). However, we speculate that the reported bias towards the astrocytic fate may be equivalent to the maintenance of stem cells fate. To prove this, NSPCs were isolated from the SVZ region of young adult mice cultured as neurospheres and were treated with 20ng/mL CNTF. GFAP expression was quantified using immunocytochemistry. mRNA expression levels of the following genes were assessed: Sox2, Glast (progenitors); Thbs4, CD15 (NSCs), Tuj1 (immature neuron); Notch1 (Stem cell maintenance). RNA Seq analysis (Day 3) of the samples was also done. Results show that GFAP expression was maintained throughout the time points. The proliferation of the progenitor population was found to be downregulated, while Neural stem cell populations were slightly upregulated. Both Notch1 pathway and Tuj1 expressions were significantly upregulated under CNTF treatment. RNA sequence analysis revealed the enrichment of genes involved in neural stem progenitor cells maintenance. These results might give us the indication that the actual role of CNTF is to maintain the neural stem progenitor population.

Project Title: Comparative Analysis of Neural Stem/Progenitor Cells Derived from The Two Major Neurogenic Niches in The Adult Mice Brain

Stem cells have caught researchers' attention faster due to their applications in regenerative medicine. They can be used to treat degenerative disorders and in replacement therapy of damaged or diseased tissues. Generally, the potency of stem cells decreases as they differentiate into more specialised cells, which happens mainly

during different stages of mammalian development. However, adult tissue/organ-specific stem cells are retained even during the late stages of an organism's life. These stem cells are useful for endogenous repair mechanisms.

Neurogenesis is defined as the formation of neurons from neuronal precursor cells, which occurs throughout life in the nervous system. Neural stem cells (NSCs) are a group of ectodermal progenitor cells that can self-renew and differentiate into committed neural sub-types, such as neurons, astrocytes, or oligodendrocytes (Stroke, Sixth Edition, 2016). Adult neurogenesis is regulated at physiologically different levels. For example, the shift of NPCs towards proliferation or differentiation determines the fate of progenitor cells' survival, maturation, and integration of newborn neurons. Several studies show that these stem cells may be involved in learning and memory function (Zhao et al., 2008).

In the mature brain of an adult organism Neural Stem Cells (NSCs) act as the tissue-specific stem cells in the brain, which are present throughout the life of the organism. Adult NSCs are mainly found in two regions of the adult brain, the Subventricular zone (SVZ) of lateral ventricles and the Subgranular zone (SGZ) of the Dentate Gyrus (DG) of the Hippocampus. These NSCs of the adult brain can be cultured as neurospheres and can form all cell types of the Central Nervous System (CNS). In contrast to embryonic stem cells, the molecular properties of NSC, such as the genes controlling self-renewal and multipotency, are poorly characterised. Therefore, they are considered a promising source for cell replacement therapies.

Studying endogenous populations of adult neural stem cells can aid in diverse therapeutic applications in various diseases. Neural stem cells are very sensitive to changes in the brain and can migrate to the site of injury and regenerate. This ability can be utilised to treat many neurodegenerative diseases like Alzheimer's disease, Parkinson's disease, Huntington's disease and other nervous system disorders. This finding was a breakthrough in regenerative medicine (Thored et al., 2006). Besides neurodegenerative diseases, dysfunction of adult hippocampal NSCs is related to depression and anxiety disorders. It is postulated that a reduction in neurogenesis can lead to depression, and its restoration can reverse the symptoms. Identifying neural progenitors and expressed markers may assist in discovering new therapies and identifying novel drugs with more bioavailability and effective mode of action (Harris, 2016).

The still relatively new finding that even in the adult CNS, neurogenesis takes place opens up interesting alternative therapeutic possibilities, either directly through transplantation of neural stem cells (NSCs) or through the activation of endogenous NPCs. However, a prerequisite for successful approaches of this kind is based on

understanding the mechanisms that govern 'self-renewal' of NPCs on the one hand and the controlled production of differentiated neurons or glial cells from the NPCs on the other hand. The exact identity of the NPCs in this niche is still controversial. It had been speculated that the NSCs derived from both these regions act the same. However, recent studies have shown otherwise, even though these cells' mechanisms and destined lineage are poorly understood.

Even though a wide range of studies are done on the characteristics of neurogenesis of each of these specific regions, the exact process and difference in neurogenesis in these zones are poorly understood. These are some crucial obstacles to using these cells for therapeutic purposes. In this study, we aim to characterise and compare these zones using different methods to analyse the difference in neurogenesis and also are trying to predict the destiny of each of these stem cells. This study will help in regenerative medicine and other similar applications where a specific function or set of cells is to be targeted.

AREA: GUT-BRAIN AXIS

Project Title: Alterations in neuroplasticity and neurogenesis via antibiotic-induced dysbiosis: Analysis of Gut-Microbiota-Brain Axis in young and aged mice

The gut microbiota is vast and varied, with a diverse community of bacterial species that exist in a symbiotic nature with the host and are required to perform specific physiologic functions. The gut communicates with the brain via direct neuronal communication, endocrine signalling of hormones or through the immune system by cytokines. This brain-gut axis has a bidirectional communication system that affects the host in multiple ways. The gastrointestinal tract communicates with the central nervous system and supports neuronal maintenance. The enteric nervous system (ENS) is highly organized and plays a critical role in controlling physiologic functions like gut motility, absorption, immune response, glucose metabolism, hormone secretion etc. Recent research has demonstrated the existence of neural stem cells/ neural precursor cells in the adult gut. However, their activation remains unknown. If dysbiosis is induced with the help of antibiotics, an inflammatory response could ensue due to bacterial load alterations. Neurogenesis could be affected. The CNTF (ciliary neurotrophic factor) is said to have multiple roles, and neurogenesis is a critical function. The neuroinflammation caused and its effect on CNTF is, however, not known. How can the change in microbiota affect neurogenesis? Can the effect be reversed by repopulating the gut with the help of probiotics? What is the effect of dysbiosis in neurodegeneration are some of the questions to be answered with this study.

Antibiotics are essential to combat several diseases, but their activity can be imprecise. The human microbiome is excessively exposed to antibiotics due to their medical use and application in farm animals and crops. It has been reported that antibiotic administration can result in imbalances in gut microbiota (dysbiosis), leading to Gut-Brain-Axis imbalance and neurobehavioral changes. Dysbiosis could alter critical innate and adaptive immune signaling within the gut and at sites anatomically remote such as the brain.

Early exposure to antibiotics has a significant impact on life-long health, the development of a healthy microbiome, and neuroplasticity. During adulthood, such exposures lead to alterations in hormones, gene expression, decreased adult hippocampal neurogenesis, anxiety-related responses, exploratory behavior, and cognitive abilities. Hence it is essential to explore the perturbation of the gut microbiota and its effects during critical periods (Infancy and senescence). And also, to explore mechanisms to reverse such alterations.

Project Title: Effect of antibiotic-induced dysbiosis during pregnancy and its effects on brain

The serendipitous discovery of antibiotics has revolutionized modern medicine, unleashing the tremendous hidden power of nature against disease-causing microorganisms. It was once believed that we had won the battle against microbe-mediated diseases. However, antibiotic administration had unwarranted consequences like the evolution of antibiotic-resistant microbes known as “superbugs”, which WHO considers one of the 13 urgent health challenges for the next decade. Another significant consequence is related to the altered gut microbiota, called dysbiosis. When an individual is born, indigenous microbes have been found to rapidly and densely habituate and occupy the intestines of newborn babies. The maternal gut microbiota is a leading force during pregnancy in defining offspring gut microbiota. A broad gap of knowledge remains to be narrowed to understand the exact mechanisms by which maternal gut dysbiosis alters neuronal niche, behaviour, and gut microbiota of offspring.

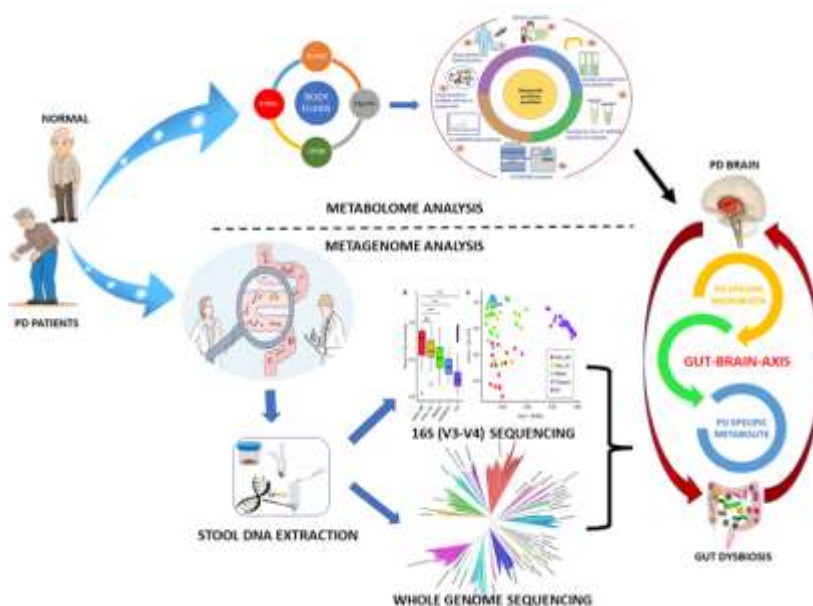
AREA: GUT-BRAIN AXIS/ NEURODEGENERATION

Project Title: Exploring the human gut microbiome and metabolome in health and Parkinson’s disease - a window to the gut-microbiota-brain axis alterations in Parkinson’s disease

Parkinson’s disease (PD) is a progressive neurodegenerative disorder characterized by impairments in motor activities such as tremors, rigidity, balance difficulties, etc. Recent

evidence suggests that there exists a bidirectional communication system called gut – microbiota – brain axis (GMBA) between the central nervous system (CNS) and the peripheral nervous systems (PNS) that can link the cognitive behaviour and emotions with gastrointestinal health. GMBA is generally established through multiple interaction pathways involving the vagus nerve, immune systems and metabolic products of gut microbiota.

The main focus of the current project is to establish how dysbiosis in gut microbiota in PD patients of the South Indian population affect brain health. Previous clinical study reports revealed that the PD patients had altered gut microbiota compared to control despite the inconsistency in consensus taxa across PD populations. However, available reports are insufficient to propose dysbiosis in the gut microbial community structure of PD patients as a potential biomarker for the prognosis of PD risk and diagnosis. Detailed metagenome analysis of gut microbiome structure in a larger sample size (n=150) is expected to translate the gap in existing information related to pathogenesis in PD. The study will help to find abundant taxa that predominate and the major taxa that are depleted in PD patients compared to control. The metabolome analysis of samples from PD patients will define the major microbial metabolites involved in PD pathogenesis. The overall result of the current study is expected to provide a comprehensive description of the mechanism by which gut microbiome dysbiosis influences gastrointestinal inflammations in PD patients.



Project Title: Development of bioavailable formulations of phytonutrients with cognitive and memory enhancing properties for the management of neurodegenerative conditions and traumatic brain injury

The project aims to develop bioavailable phytonutrient formulations from Ayurvedic herbals and spices for plausible usage as cognitive and memory enhancers for the management of neurodegenerative diseases like Parkinson's and Alzheimer's disease and traumatic brain injury conditions. Our industrial partner, Akay Natural Ingredients, has already identified some herbals and spices and developed certain oral delivery technologies. In one aspect of the project, these herbals and their phytonutrients will be extracted and formulated in a form suitable for better systemic bioavailability and in another aspect, these formulations will be screened against various in vitro and in vivo tests for their bioavailability, BBB-permeability and pharmacological effects pertaining to various brain health functions. Depending on the outcome of the preclinical work, these leads will be taken for further human clinical trials to use as Nutraceuticals in the management of Dementia, Parkinson's disease, Alzheimer's, Traumatic brain injury etc. Investigation of Anti-neuroinflammatory effect, neurogenesis, and mitochondrial biogenesis forms the basis of the project.

CANCER- NEUROSCIENCE

Project Title: Role of gut microbiome in cancer origin progression and origin

The enteric system is one of the most important sites of multidirectional interaction between immune, stromal, glia and, of course, the gut microbiome and its metabolites. Several studies have correlated gut microflora composition with cancer occurrences and prognosis. Evidence suggests Gut microbiota mediated lung cancer metastasis via non-coding RNAs and therefore is a potential target for treatment modalities. Another offsite implication of gut microbiota is observed during gut bacterial dysbiosis in Glioblastoma, where the immune microenvironment alterations enhanced its progression. Studying this complex interaction in Gut- cancer axis would help us combat highly advanced cancers through multifactorial approaches.

Project Title: The role of neurons in the formation of metastatic and primary tumor niches

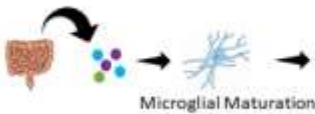
A tumour is more than just a collection of cancer cells; It's also a mix of invading and resident host cells, many secreted substances, and an extracellular matrix. To support tumour development and progression, tumour cells cause major genetic, cellular, and physical alterations in their host tissues. A developing tumour microenvironment is a

dynamic and ever-changing phenomenon. Although numerous features of the microenvironment generated are being investigated, the involvement of neurons and their released substances has received less attention. In this research project, in vitro and in vivo models are used to investigate how neurons and their secreted factors influence cancer initiation, progression, and invasion.

AREA: NEURO-IMMUNOLOGY

Project Title: Elucidate the role of microglia in synaptic plasticity on gut dysbiosis

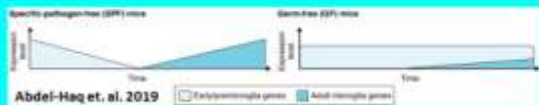
Gut-Microglia talk!



- Neuronal Survival
- Differentiation of neural progenitors
NGF, BDNF, IGF-1

- Shape neural circuitry for cognitive function and Social Behavior
- Removal of excess synapses

When Gut doesn't meet up with Microglia in GF/Dysbiosis



Result in Immature microglia even in adult stage!

Cell

Article

Microglia Require CD4 T Cells to Complete the Fetal-to-Adult Transition

Emmanuela Pascual,^{1,2,3} Oliver T. Barton,^{4,5} Carlos P. Roca,^{1,2} Vanisha Lagou,^{1,2} Wensong D. Pagan,^{1,2} Tom Thery,⁶ Ramon Muzquiz,^{1,2} Raaf Y. Tilo,^{1,2} Lubica Kozner,⁷ Zsuzsanna Calzavara-Vogt,⁸ Abner D. de la Fuente,⁹ Teresa Provenzani,¹⁰ Louisa G. Massali,¹¹ Aleksandra Bragan,¹² Carly E. Whyte,¹³ Laila Yalin,¹⁴ Anna Martinez-Muriana,¹⁵ Michelle Naughton,¹⁶ Andrew Young,¹⁷ Alexa Moudra,¹⁸ Pierre Lemaire,¹⁹ Sarah Pothof-Walger,²⁰ Jesse Rhee,²¹ Bart De Strooper,^{1,12} Debra C. Fitzgerald,²² James Dowling,²³ and Ashkan Luiten^{1,2,3,4}

Microbiome requires to prime CD4 T cells to meet microglia

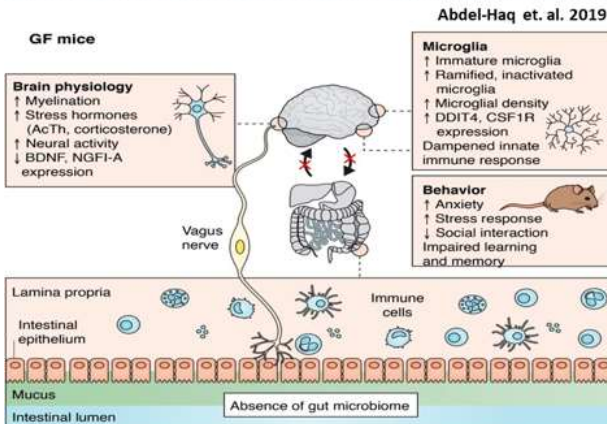
Cells, 2021 Oct. 10(10): 2648
Published online 2021 Oct 4. doi: 10.3390/cells10102648

PMCID: PMC8534187
PMID: 34685628

Antibiotics Treatment Modulates Microglia-Synapses Interaction

Federica Cordella,^{1,2,†} Caterina Sanchini,^{1,2,†} Maria Rosito,^{2,†} Laura Ferrucci,¹ Natalia Pediconi,² Barbara Cortese,³ Francesca Guerrieri,⁴ Giuseppe Rubens Pascucci,⁴ Fabrizio Antonangeli,^{5,†} Giovanna Peruzzi,² Maria Giubertini,⁶ Bernadette Basiglio,^{1,6} Francesca Pagani,^{2,3} Alfonso Grimaldi,² Giuseppina D'Alessandro,^{1,7} Cristina Limatola,^{7,6} Davide Ragozzino,^{1,9,†} and Silvia Di Angelantonio^{1,2,†}

Reduced spontaneous postsynaptic glutamatergic currents and decreasing synaptic connectivity at CA3-CA1 synapses



Objectives:

1. To characterize microglial morphological dynamics in gut dysbiosis model
2. To study the role of gut microbiome-derived metabolites on microglia, direct or indirect?
3. To explore the role of BDNF dependent activity of microglia on synaptic plasticity during dysbiosis (we can exploit BDNF KO models)
4. To modulate microglia function in dysbiosis for better Learning and memory and social behavior via reprogramming gut microbiome

2. Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr. Baby Chakrapani P S,	Assistant Professor	PhD	Neuroscience
2	Dr. Ajith Vengellur,	Assistant Professor	PhD	Cell and Molecular Biology
3	Dr. Unnikrishnan Sivan	DHR-HRD NRI Fellow	PhD	Cancer Neuroscience

3. Emeritus Professor/Scientist (if any)

Sl.No.	Name	Designation	Qualification	Specilisation
1	Prof. K.P Joy,	Advisor	PhD	
2	Prof. Edathil Vijayan	Advisor	PhD	

4. Research/Project Staff

Sl.No.	Name	Designation	Qualification	Specilisation
1	Dr. Mohind C Mohan	RUSA-Post Doc	PhD	Biochemistry
2	Dr. Aiswarya Deepthi	U-Post Doc	PhD	Neuroscience
3	Dr. Athita Krishnan	RUSA-Post Doc	PhD	Microbiology
4	Dr. Aneesa P A	ICMR-RA	PhD	Biochemistry
5	Dr. Krishnapriya Chandrababu	Post Doc	PhD	Stem Cell Neuroscience
6	Anjana A S	Project Staff	MSc	Biotechnology
7	Muhammed Asif M	Project Staff	MSc	Biochemistry
8	Hrishitha G	Project Staff	MSc	Biotechnology

5. Research Scholars

Sl.No.	Name	Funding Agency	Guide	Area of Work
1	Prabha Prakash	U-SRF	Dr. Baby Chakrapani P S	Neural differentiation
2	Bins K C	U-SRF	Dr. Baby Chakrapani P S	Neural differentiation
3	Krishnapriya	U-JRF	Dr. Baby Chakrapani P S(PI), Dr. Unnikrishnan Sivan (Co-PI)	Gut-Brain-Axis
4	Dayamritha K K	U-JRF	Dr. Baby Chakrapani P S(PI), Dr. Unnikrishnan Sivan (Co-PI)	Gut-Brain-Axis
5	Rishikesh	U-JRF	Dr. Baby Chakrapani P S (PI), Dr. Unnikrishnan Sivan (Co-PI)	Gut-Brain-Axis
6	Krishnakumar	U-JRF	Dr. Baby Chakrapani P S	Neuroplasticity
7	Rahul Rajan	CSIR-JRF	Dr. Baby Chakrapani P S	Regenerative medicine
8	Merin Johny	U-JRF	Dr. Unnikrishnan Sivan (PI) Dr. Baby Chakrapani P S (Co-PI)	Cancer Neuroscience
9	Athira Menon	JRF	Dr. Unnikrishnan Sivan	Cancer Neuroscience
10	Divya Menon	U-SRF	Dr. Ajith Vengellur	Cancer Biology
11	Sreelakshmi S	INSPIRE-SRF	Dr. Ajith Vengellur	Neurobiology
12	Saipriya P P	U-SRF	Dr. Ajith Vengellur	Neurobiology

Laboratories

Cell and Molecular Biology Lab

Major equipments

Flow cytometer

Inverted fluorescent microscope

Phase contrast microscope

RT-PCR

6. Distinguished visitors

Sl.No.	Name	Affiliation	Remarks
1	Dr. Gayathri Eiswar	Senior Scientist, Phytochemistry and Phytopharmacology Division, Jawaharlal Nehru Tropical Botanic Garden and Research Institute Govt of Kerala, Palode, Trivandrum	Interacted with student and research community

7. Publications**a. Papers**

Sl.No.	Title of the Paper	Author(s)	Journal Name and Impact Factor, if any	Year of Publication & Vol (issue)
	Natural self-emulsifying reversible hybrid-hydrogel delivery (N'SERH) of tocopherol enhances bioavailability and modulates alcohol-induced reproductive toxicity in rats.	Vismaya, K. U., Noorjasmine, T. N., Syam Das, S., Kesavan, L., Baby Chakrapani, P. S., Krishnakumar, I. M., & Kumar, C. S.	Andrologia 2.532	2022, 54(2)

2	Thymoquinone-rich black cumin oil improves sleep quality, alleviates anxiety/stress on healthy subjects with sleep disturbances—A pilot polysomnography study.	SyamDas, S., Kannan, R., George, S., PS, B. C., Maliakel, B., Ittiyavirah, S., & Krishnakumar, I. M.	Journal of Herbal Medicine 2.542	2022, 32
3	Anti-excitotoxicity and neuroprotective action of asiaticoside encapsulated polymeric nanoparticles in pilocarpine rodent seizure model.	Kunjumon, R., Viswanathan, G., Jayasree, D. V., Biju, P. G., Prakash, P., Sasidharan, B. C. P., & Baby, S.	Canadian Journal of Chemistry 1.051	2022, 100(6), 396-404.
4	Structural and optical properties of dysprosium-doped hydroxyapatite nanoparticles and the use as a bioimaging probe in human cells.	Gitty, P., Mani, K. P., Deepti, A., Baby Chakrapani, P. S., Prabeesh, P., Nampoori, V. P. N., & Kailasnath, M.	Luminescence 2.613	2022, 37(5), 758-765
5	Radio frequency plasma assisted surface modification of Fe ₃ O ₄ nanoparticles using polyaniline/polypyrrole for bioimaging and magnetic hyperthermia applications.	Mol, B., Beeran, A. E., Jayaram, P. S., Prakash, P., Jayasree, R. S., Thomas, S., Chakrapani B., Anantharaman M, R. & Bushiri, M. J.	Journal of Materials Science: Materials in Medicine 4.727	2021, 32(9), 108
6	Eggshell Derived Europium Doped Hydroxyapatite Nanoparticles for Cell Imaging Application.	Krishnapriya, T. K., Deepti, A., Chakrapani, P. S., Asha, A. S., & Jayaraj, M. K.	Journal of Fluorescence 2.525	2021,31, 1927-1936
7	Multi-functional bioactive secondary metabolites derived from endophytic fungi of marine algal origin	Harikrishnan, M., Prakash, P., Jayabaskaran, C., & Bhat, S. G	Current Research in Microbial Sciences	2021, 2, 100037
8	Degradation-dependent controlled delivery of doxorubicin by glyoxal cross-linked magnetic and porous chitosan microspheres.	Sumitha, N. S., Prakash, P., Nair, B. N., & Sailaja, G. S.	ACS Omega 4.132	2021, 33: 21472-21484.

9	Active bayerite underpinned Ag ₂ O/Ag: an efficient antibacterial nanohybrid combating microbial contamination.	Aazem, I., Rathinam, P., Pillai, S., Honey, G., <u>Vengellur, A.</u> , Bhat, S. G., & Sailaja, G. S.	Metallomics 4.636	2021, 13(8)
10	Development of thin-film hydroxyapatite coatings with an intermediate shellac layer produced by dip-coating process on Ti6Al4V implant materials.	Ritwik, A., Saju, K. K., <u>Vengellur, A.</u> , & Saipriya, P. P.	Journal of Coating Technology and Research 2.339	2022, 19(2), 597-605.
11	Antibacterial natural rubber latex films with surface-anchored quaternary poly (4-vinylpyridine) polyelectrolyte	Arakkal, A., Rathinam, P., Sirajunnisa, P., Gopinathan, H., <u>Vengellur, A.</u> , Bhat, S. G., & Sailaja, G. S.	Reactive and Functional Polymer 4.966	2022, 172, 105190.
12	Role of bio-nanotemplates on the lasing behavior of LDS 821 dye	Udayan, S., Lakshmi, R., Anugop, B., Saipriya, P. P., <u>Vengellur, A.</u> , Kailasnath, M., ... & Thomas, S.	Optics and Laser Technology 4.4939	2021, 139, 106973.

b. Books

Sl.No.	Title of Book
1	Micro- and Nano-containers for Smart Applications, ISBN: 978-981-16-8146-2

8. Participation in Seminar/Conference/Refresher Courses etc by Faculty/Students.

Name of Participant	Name of Seminar / Conference/ Workshop	Role
Dr. Baby Chakrapani P S	41th Annual Conference of the Indian Association for Cancer Research organized by Amity Institute of	Resource Person

	Molecular Medicine (AIMMSCR) and Amity University, Uttar Pradesh Noida	
	CUSAT Golden Jubilee International Conference NANOicon 2022 organized by Inter University Centre for Nanomaterials and Devices (IUCND), CUSAT	Session Chair
	41st Annual International Conference of Indian Association for Cancer Research (IACR) IACR-2022	Invited Speaker
Dr. Unnikrishnan Sivan	Workshop on Advanced Microscopic Techniques” Organised by American Microbiology Society, Cochin	Resource Person
	Emerging Trends and Frontiers in Applied Microbiology and Biotechnology	Resource Person
Ms. Prabha Prakash	Biotechpectrum 2022	Oral Presentation
Dr. Dania Alphonse Jose	Biotechpectrum 2022	Oral Presentation
Dr. Aiswarya Deepthi	6 th International Anatomical Sciences and Cell Biology Conference.	Oral Presentation
Mr. Bins K C	XXXIX Annual meeting of Indian Academy of Neurosciences, December 2021, Kolkata, India	Oral Presentation
Dr. Aiswarya Deepthi	XXXIX Annual meeting of Indian Academy of Neurosciences, December 2021, Kolkata, India	Oral Presentation

Ms. Prabha Prakash	XXXIX Annual meeting of Indian Academy of Neurosciences, December 2021, Kolkata, India	Oral Presentation
Divya Menon	Biotechspectrum 2022	Oral Presentation

9. Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Dr. Unnikrishnan Sivan	DHR-HRD NRI Fellowship	Department of Health Research, Govt. of India
Ms. Prabha Prakash	Best Oral Presentation	Biospectrum 2022

10. Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1	Biocompatible 3D Scaffolding through Femtosecond Laser Photo-polymerization for Tissue Engineering and Regenerative Medicine.	Chancellors Grant	4 Crore	Dr .Riju .C Issac, Prof. M K Jayaraj, Dr. Aldrin Antony, Dr. Baby Chakrapani P S , Dr. Sailaja G S
2	The role of neurons in the formation of metastatic and primary tumour niches.	Department of Health Research, Govt. of India	72,00,000'00/-	Dr. Unnikrishnan Sivan and Dr. Baby Chakrapani P S
3	Brain Awareness Week	International Brain Research Organaization	93,748.00/-	Dr. Baby Chakrapani P S

11. Research Programmes and Social Activities:

Sl.No.	Problem / Topic	Investigator (s)
1	Pan Kerala Survey	Dr. Baby Chakrapani P S
2	International Brain Awareness Week Observance 2022	Dr. Baby Chakrapani P S
3	Bodhi-Project, 2022	Dr. Baby Chakrapani P S

12. Seminar/Webinar/Conference/ Workshop/ Refresher Courses conducted by the Centre

Sl.No.	Title	Duration	Coordinator	Funding Agency
1	SUICIDE: A Multidimensional Approach	1.00 Hrs	Dr. Baby Chakrapani P S	-
2	Alzheimer's Disease Diagnosis And Treatment	1.30 Hrs	Dr. Baby Chakrapani P S	-
3	A Primer on OCD and Its Brain Basis	1.30 Hrs	Dr. Baby Chakrapani P S	-
4	Alzheimer's disease: Exploring the Ayurvedic Possibilities	1.30 Hrs	Dr. Baby Chakrapani P S	-
5	Mindfulness Meditation: Designing A Healthy Mind	1.30 Hrs	Dr. Baby Chakrapani P S	-
6	Plants And Nanoparticles - 'Green Nanochemistry	1.30 Hrs	Dr. Baby Chakrapani P S	-
7	Dynamics of Endogenous Neuronal	2.00 Hrs	Dr. Baby Chakrapani P S	-

	Progenitors in Adult Hippocampal Neurogenesis Following Kainate Induced Status Epilepticus			
8	Receptor Code of Hippocampal Synaptic Plasticity	1.30 Hrs	Dr. Baby Chakrapani P S	-
9	Contemporary Perspectives for The Treatment Options In The Parkinson Disease	2.00 Hrs	Dr. Baby Chakrapani P S	-
10	Basics Of Brain Healing And Optimizing The Functioning Of The Brain	1.30 Hrs	Dr. Baby Chakrapani P S	-
11	Brain Health And Organ Donation - A Bird's Eye View	1.30 Hrs	Dr. Baby Chakrapani P S	-
12	Age-Dependent Degenerative Mechanisms In The Brain	1.30 Hrs	Dr. Baby Chakrapani P S	-

13. Consultancy Work

Sl. No.	Name of Consultancy	Name of Consultant	Sponsoring Agency
1	Industrial consultancy project	Dr. Unnikrishnan Sivan and Dr. Baby Chakrapani P S	Akay Natural Ingredients Pvt. Ltd

SOCIAL ACTION RESEARCH PROJECTS

Pan Kerala Survey

(The survey started on 30th December 2021, and was finished by 2nd June 2022)

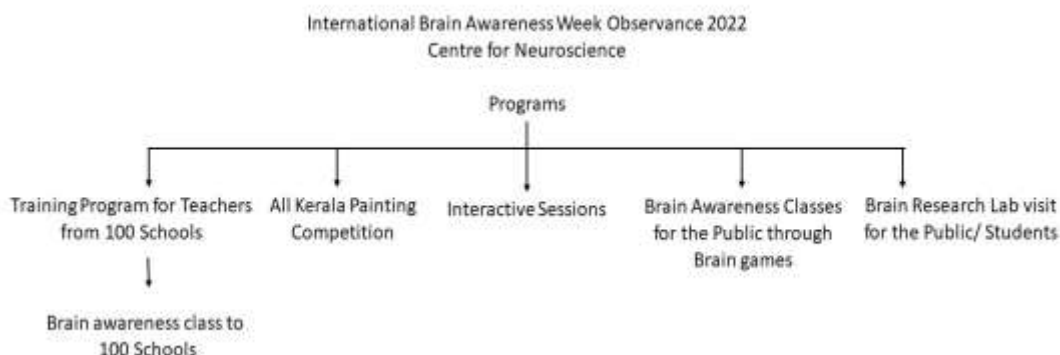
The Centre for Neuroscience, Cochin University of Science and Technology (CUSAT) along with The National Service Scheme (NSS) of the Directorate of General Education (DDE), Government of Kerala conducted a state-wide preliminary survey to understand the perception of people above 60 years about dementia in the context of COVID-19. Kerala, being a state with the highest number of senior citizens and having higher morbidity rate in terms of non-communicable diseases, the effects of COVID-19 is yet to be studied. An in-depth study is not a viable solution at the present stage therefore, a preliminary enquiry was conducted to shed some light on the challenges that the elders have faced during and after the lockdown due to COVID-19. The Survey was conducted with the main objectives as to understand the effects of COVID-19 among the old age population in Kerala. The program was a preliminary survey essential to understand the perception of people above 60 years about dementia. Moreover, the general health, various disabilities, socio-economic status, mental health and overall well being of the aged were surveyed. The program also aimed to develop social responsibility among the adolescents by facilitating the community intervention programmes, to train the NSS students to conduct a community survey, to create awareness about dementia among the student volunteers of NSS-HSC in Kerala and also, to improve the interpersonal communication skills among the student volunteers of NSS. The survey showed an active participation from the elderly population in Kerala. Around one lakh eighty thousand people participated in the survey.

International Brain Awareness Week Observance 2022

International Brain Research organisation (IBRO), a global association of neuroscience societies established in 1961 that aims to promote and support neuroscience around the world based on France along with DANA foundation, USA has granted 1250USD to The Centre for Neuroscience for conducting various programs related to International Brain awareness week. These programs were aimed to educate the public about the benefits of neuroscience research and increase awareness about the wonders of the brain by increasing opportunities for outreach and awareness campaigns in regions challenged by a lack of resources, support and /or public understanding about the brain.

As a part of the Brain awareness week, The Centre for Neuroscience conducted a week-long program from March 14th to March 20th, 2022. In connection with 2022 Brain Awareness week, we educated the young high school students. School students are a

dynamic population and awareness classes need to be conducted every year to cover the new students every year. Considering this, CNS trained and equipped around 100 high school teachers (at least one volunteer teacher (Biology teachers will be given preference) from each school) from the local corporation (Cochin corporation, Kerala) and made them as a channel to reach the younger generation.



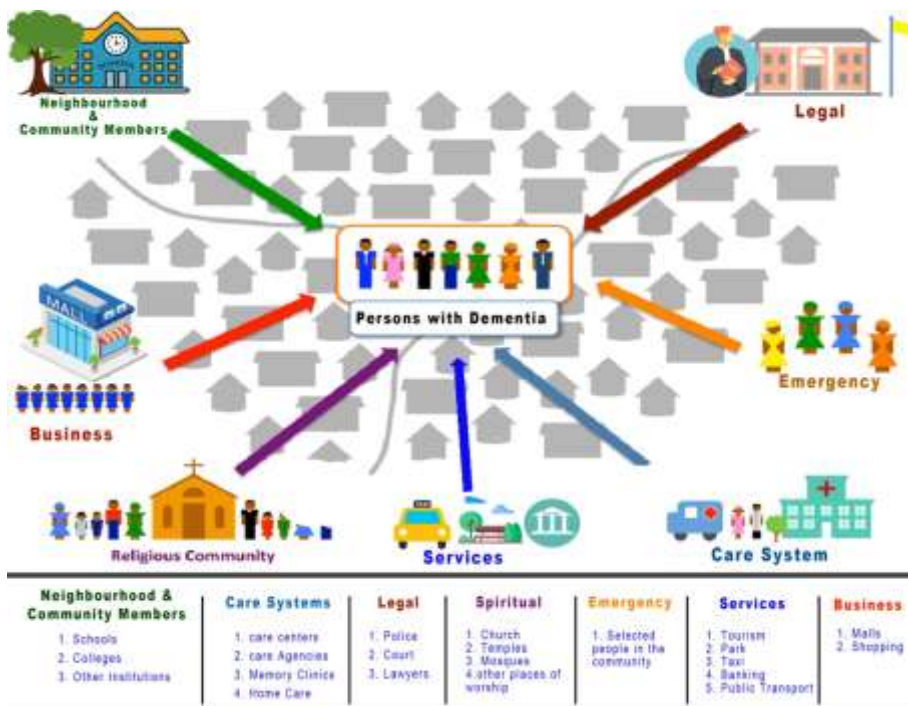
BODHI PROJECT-2022

Bodhi is a joint venture of **Prajñā of The Centre for Neuroscience, Cochin University of Science & Technology and District administration, Ernakulam**. The department of Social Justice (SJD) and Kudumbasree mission will be active partners of the project. The term ‘Bodhi’ is derived from ‘**Sanskrit**’; **meaning to Awaken (enlightenment)**, and is deeply rooted in the Indian cultural context and meaning of Bodhi is awakening or enlightenment. Awakening happens only when you are educated and the knowledge makes a person to accept the social reality.

The major goal of Bodhi is to create dementia friendliness in Ernakulam district and make the society to accept people with dementia. India, being a country with no dementia policy and lack of proper enumeration system on dementia is facing great challenges in providing care and support. As well, the health care expenditure is minimalizing year after year and it is most unlikely for the government system to carry forward dementia care programme. Therefore, involvement of community along with the support of care partners is the only possible solution to ensure proper care to people with dementia. Kerala is purported to be a state where the older population is much higher and after 20 years, the number of older people will surpass the young population. So, banking only on institutional care, then, would be most difficult as there would not be any human resources for providing individual care. Therefore, a society with greater acceptance for people with dementia is the only possible solution for dementia care.

Bodhi has two major divisions. The first one is the community health intervention program which includes awareness programmes, orientation programmes, education programme, and public campaigns followed by the development of person centred care systems such as memory café, memory clinics and linkage of social and medical care system with governmental departments. Upon the accomplishment of activities in both divisions, Ernakulam district will be equipped to look after of people with dementia and community care system will be developed.

Bodhi at a glance



Goal

- 1. To convert Ernakulam as the first Dementia-Friendly District in India.**

Specific Objectives

- To educate people in Ernakulam district about Dementia.
- To provide support to improve dementia caring skills for health care professionals.
- To organize dementia preliminary screening in Ernakulam district.
- To extend help to establish a memory clinic in Ernakulam District.
- To initiate memory cafés at selected places in Ernakulam district.
- To create dementia friendliness in the public transport systems and social service systems in Ernakulam district.

- To identify the gap between clinical care services and dementia health care needs
- To develop proper care manual and standard operating procedure (SOP) for dementia care.
- To provide knowledge support to develop dementia care centres at grass root level
- To initiate educational support for formal care giving system

Bodhi has developed 7 major areas to address the challenges of dementia and the implementation of the project will be in six phases. Each phase comprises of 6 months and the activities of the project will be completed by the end of 3rd year. The activities of the project are prioritised based on the felt need at the grass root level. A tentative framework of the project is given below.

Phase –I: HR management, rapport with Governments agencies and NGOs, Educational material preparations, information, education and communication material (IEC) preparations etc.

Phase –II: Community programmes

Phase – III: Community programmes

Phase – IV: Development of dementia care & support systems

Phase – V: Development of dementia care & support systems, dementia care course, and Dementia care centre.

Phase -VI: Impact assessment survey, Report and Termination and announcement of Dementia Friendly district.

The project Bodhi will cover the entire district of Ernakulam by the end of the 6th phase. A top to bottom approach will be adopted to establish partnership and it shall be used to generate government level as well as community level support to implement the project at grassroots level. A working partnership between the department of social justice Ernakulam and District Kudumbasree unit, Ernakulam will be developed. The social justice department will be requested to extend its support for developing institutionalised care systems in the community. The Kudumbasree, which is one of the largest community based organization may support the project by incorporating its workforce for disseminating knowledge about dementia in the community. As well, the Kudumbasree workers shall be used as the formal care givers for dementia. The project will also establish partnership with local self-government departments (LSGD) in Ernakulam and the active support of LSGD will be used to establish care systems at the grass root level.



Centre for Particle Physics

ANNUAL REPORT 2021-2022

Name of the Department : IUCAA Center for Astronomy Research and Developement (ICARD)

Brief History of the Department:

This is an extension center of the Inter University of Science and Technology, Pune, a world class center of research in Astronomy and Astrophysics. Department of Physics has been collaborating with this center for more than ten years. First, in the form of the IUCAA Resource center, it has been restructured as ICARD.

Th ICARD aims to act as a nucleus for Astronomy and Astrophysics education in Kerala, Popularisation of Astronomy, and also concentrate on leading our state to the front of the various research programs in this area.

Programmes of Study/Research: Research in Astronomy, Astrophysics, Grvavity and Cosmology

Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Prof. Titus K Mathew	Coordinator	M.Sc ., Ph.D	Gravitation, Cosmology and Astrophysics
2	Dr. Ramesh babu T	Project Collaborator	M.Sc., Ph.D	Astrophysics
3	Dr. Rhine kumara A K	Faculty	M.Sc, Ph.D.	Nuclear Physics

Research Scholars associating with the centers

Sl.No.	Name	Funding Agency	Guide	Area of Work
1.	Sarath N	CSIR	Prof. Titus K Mathew	Particle Physics and Cosmology
2	Hassan Basari	UJRF	Prof. Titus K Mathew	Cosmology
3	Manosh T M	CSIR	Prof. Titus K Mathew	Particle Physics and Cosmology
4	Nandidha Krishnana P	Kerala Govt.	Prof. Titus K Mathew	Cosmology
5	Dheepika M	CSIR	Prof. Titus K Mathew	Cosmology
6	Emy Mons	UJRF	Dr. Charles Jose	Astrophysics

Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Coordinator	1
2	Co-Cordinator	1

a. Major equipments: Optical Astronomical Telescope**Distinguished visitors**

Sl.No.	Name	Affiliation	Remarks
1.	Prof. Mncy V John	M G University	Visited the center and made interactive session with the members
2.	Dr. Sumanta Chakraborty	IACS, Kokatta	Gave a lecture
3.	Prof. K Papooty	KSSP	Gave a talk

Publications**b. Papers**

Sl.No.	Name of Paper	Impact Factor, if any
1.	Krishna P B, Hassan Basari and Titus K Mathew, " Emergence of cosmic space and its connection with thermodynamic principles ", <i>Gen.Rel.Grav.</i> 54 (2022) 6, 58	5.235
2	Dheepika M and Titus K Mathew, " Tsallis holographic dark energy reconsidered ", <i>Eur.Phys.J.C</i> 82 (2022) 5, 399	3.853

Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Prof. Titus K Mathew	IUCAA	Visiting Fellow
Prof. Titus K Mathew	TMT, Hawai, USA	Member of ISDT of TMT
Prof. Titus K Mathew	IAQG (International national society for Quantum Gravity)	Member
Prof. Titus K Mathew	IAGR (International Society for)	Member
Prof. Titus K Mathew	APT (Academy of Physics Teachers, Kerala)	President of the APT

Research Programmes and Activities:

Sl.No.	Problem / Topic	Investigator (s)
1.	Research on Neutrino Physics in Collaborartion with FERMI Lab, USA	1. Prof. Titus K Mathew 2. Dr. Ramesh Babu T



Inter University Centre for the Studies on Kerala Legacy of Astronomy and Mathematics (IUCKLAM)

FORMAT FOR SUBMISSION OF THE ANNUAL REPORT 2021-2022

Name of the Department : Inter University Center for Studies on Kerala Legacy of Astronomy and Mathematics (IUCKLAM)

Brief History of the Department:

The Inter University Center for the studies on Kerala Legacy of Astronomy and Mathematics has been came into existence in the year Prof. K Gopalakrishnan Nair (Retired Professor) was the first honorary director. The center was functioned with the financial support form the Higher Education Commission of the Kerala Govt. In 2019, the University has appointed Prof. Titus K Mathew as new Hon. Director of the center and since then the center has conducted many programmes for the promotion and popularization of ancient astronomy and Mathematics of our tradition.

Programmes of Study/Research: Popularization of the Astronomy, particular Keral Astronomy.

Faculty Members

Sl.No.	Name	Designation	Qualification	Specilisation
1.	Prof. Titus K Mathew	Hon. Director	M.Sc ., Ph.D	Gravitation, Cosmology and Astrophysics
2	Dr. Charles Jose	Hon. Deputy Director	M.Sc., Ph.D	Astrophysics

Research Scholars associating with the centers

Sl.No.	Name	Funding Agency	Guide	Area of Work
3	Sarath N	CSIR	Prof. Titus K Mathew	Particle Physics and Cosmology
4	Hassan Basari	UJRF	Prof. Titus K Mathew	Cosmology
5	Manosh T M	CSIR	Prof. Titus K Mathew	Particle Physics and Cosmology
6	Nandidha Krishnana P	Kerala Govt.	Prof. Titus K Mathew	Cosmology
7	Dheepika M	CSIR	Prof. Titus K Mathew	Cosmology
8	Emy Mons	UJRF	Dr. Charles Jose	Astrophysics
9	Sorryan	CSIR	Dr. Charles Jose	Astrophysics

Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Hon. Director	1
2	Joint Hon. Director	1

Research Facilities**a. Major equipments:****Optical Astronomical Telescope****Distinguished visitors**

Sl.No.	Name	Affiliation	Remarks
1.	Prof. Mncy V John	M G University	Visited the center and made interactive session with the members
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Publications**b. Papers**

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1	Krishna P B, Hassan Basari and Titus K Mathew, " Emergence of cosmic space and its connection with thermodynamic principles ", <i>Gen.Rel.Grav.</i> 54 (2022) 6, 58	5.235
2	Jerin Mohan, and Titus K Mathew, "On the feasibility of truncated Israel-Stewart model in the context of late acceleration", <i>Class. Quantum Gravity</i> , 38 (2021) 14, 145016	3.853

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Prof. Titus K Mathew	IAQG (International national society for Quantum Gravity)	Member
Prof. Titus K Mathew	IAGRG (International Society for	Member
Prof. Titus K Mathew	APT (Academy of Physics Teachers, Kerala)	President of the APT

Research Programmes and Activities:

Sl.No.	Problem / Topic	Investigator (s)
1.	Research on Emergent gravity and recent acceleration of the universe which are potential problems in the current fields of Astronomy	1. Prof. Titus K Mathew 2. Dr. Charles Jose,



IUCAA Centre for Astronomy Research and Development (ICARD)

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6	Nandidha Krishnana P	Kerala Govt.	Prof. Titus K Mathew	Cosmology
7	Dheepika M	CSIR	Prof. Titus K Mathew	Cosmology
8	Emy Mons	UJRF	Dr. Charles Jose	Astrophysics

Administrative Personnel

Sl.No.	Designation	No. of Posts
1.	Coordinator	1
2	Co-Cordinator	1

Research Facilities

a. Major equipments: Optical Astronomical Telescope

Distinguished visitors

Sl.No.	Name	Affiliation	Remarks
1.	Prof. Mncy V John	M G University	Visited the center and made interactive session with the members
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Publications

b. Papers

Sl.No.	Name of Paper	Impact Factor, if any
3.	Krishna P B, Hassan Basari and Titus K Mathew, " Emergence of cosmic space and its connection with thermodynamic principles ", <i>Gen.Rel.Grav.</i> 54 (2022) 6, 58	5.235

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Prof. Titus K Mathew	TMT, Hawaii, USA	Member of ISDT of TMT
Prof. Titus K Mathew	IAQG (International national society for Quantum Grvainty)	Member
Prof. Titus K Mathew	IAGRQ (International Society for	Member
Prof. Titus K Mathew	APT (Academy of Physics Teachers, Kerala)	President of the APT

Research Programmes and Activities:

Sl.No.	Problem / Topic	Investigator (s)
1.	Research on Emergent gravity and recent acceleration of the universe which are potential problems in the current fields of Astronomy	1. Prof. Titus K Mathew 2. Dr. Charles Jose,



CUSAT-NCPOR Centre for Polar Sciences

ANNUAL REPORT FOR THE YEAR 2021 - 2022

Name of the Centre: CUSAT-NCPOR CENTRE FOR POLAR SCIENCES

Brief History of the Centre: CUSAT-NCPOR Centre for Polar Sciences came out as a result of an MoU between the two institutions in 2020. One of the major objectives of the MoU between CUSAT and NCPOR is that both institutes will start a joint CUSAT-NCPOR Centre for Polar Sciences at CUSAT, Kochi which will be recognized by CUSAT as a research centre. It has been proposed that this joint centre will facilitate research and development in polar sciences by conducting relevant courses and taking up joint research programmes. The joint centre will be hosted at School of Marine Sciences, CUSAT with its administrative/infrastructure support.

Programmes of Study/Research: The centre currently has the following ongoing project

‘Microbiome of glaciomarine environment in the Arctic – diversity, its variability and bioprospecting’. PACER – POP Project funded by National Centre for Polar and Ocean Research, Govt. of India (INR 40.84 Lakhs) – 2019-2023.

Faculty Members

Sl.No.	Name	Designation	Qualification	Specialisation
1	Dr. A.A. Mohamed Hatha	Professor	M.Sc., Ph.D.	Microbiology
2	Dr. P.S. Sunil	Associate Professor	M.Sc., Ph.D.	Marine Geophysics

Research/Project Staff

Sl.No.	Name	Designation	Qualification	Specialisation
1	Farsana Shanu	Junior Research Fellow	M.Sc.	Marine Biology

Ph.Ds Awarded – 3 Ph.D.'s are ongoing

Publications

a. Papers

Sl.No	Title of the Paper	Author(s)	Impact Factor, if any
1	Abundance and diversity of diazotrophs in the surface sediments of Kongsfjorden, an Arctic fjord. World Journal of Microbiology and Biotechnology . https://doi.org/10.1007/s11274-020-02993-1	Jabir, T., Vipindas, P.V., Krishnan K. P., and A.A. Mohamed Hatha (2021)	2.51
2	Screening of actinomycetes from Arctic sediment for L-asparaginase activity and optimization by response surface methodology. <i>Journal of Basic Microbiology</i> . Doi: https://doi.org/10.1002/jobm.202200116	Shahana Kabeer, Jeslin, I.J., Joseph, K.J., Krishnan, K.P and A.A. Mohamed Hatha (2022)	2.28
3	<i>Phenylobacteriumglaciei</i> sp. Nov. isolated from Vestrebroggerbreen, a valley glacier in Svalbard, Arctic. International Journal of Systematic and Evolutionary Microbiology . Doi: https://doi.org/10.1099/ijsem.0.005375 .	Femi Anna Thomas, Rupesh Kumar Sinha, Mohamed Hatha, A.A. and K.P. Krishnan (2022)	2.74
4	Microcosm studies on the survival of <i>Escherichia coli</i> in the Kongsfjorden an Arctic fjord. Polar Science . https://doi.org/10.1016/j.polar.2021.100722	Mohamed Hatha, A.A. , Jabir, T., Akhil Prakash, E and K.P. Krishnan (2021)	1.96

5	Dissemination of multidrug resistant bacteria into the polar environment: Role of longest migratory bird Arctic tern (<i>Sterna paradisaea</i>). Science of the Total Environment, 815(4): 152727. DOI: https://doi.org/10.1016/j.scitotenv.2021.152727.	Akhil Prakash, E., Tereza Hromadkova, Jabir Thajudheen, Vipindas, P.V., Krishnan, K.P., Mohamed Hatha, A.A and Martins Briedis (2022)	10.9
6	Bacterial Community structure and functional profiling of high Arctic fjord sediments. World Journal of Microbiology and Biotechnology, 37: 133. https://doi.org/10.1007/s11274-021-03098-z	Vishnupriya, S., Jabir, T., Krishnan, K.P and A.A. Mohamed Hatha (2021)	2.51
	Isotope hydrochemistry of the lakes in Schirmacher Oasis, East Antarctica <i>Indian Journal of Geo Marine Sciences</i> , Vol. 49(6), Pages, 947-953	G. Gopinath, T. R. Resmi, M. Praveenbabu, M. Pragath, P. S. Sunil, R, Rawat (2020)	0.37
	Seismic induced Ground deformation and Ionospheric perturbations of the 29 th July 2021, M _w 8.2 Chignik earthquake, Alaska, <i>Journal of Geophysical Research: Space Physics</i> , https://doi.org/10.1029/2022JA030576	A.S. Sunil, P.S. Sunil, M.N. Shrivastava, A.K. Maurya, D. Thomas, G. Gonzalez (2022)	3.27
	Revealing the Contemporary Kinematicsof Antarctic Plate Using GPS and GRACE Data, <i>Earth and Environmental Sciences, Springer Nature</i> , ISBN-13:978-3030870775, https://doi.org/10.1007/978-3-030-87078-2_18 .	P.S. Sunil, A.P. Saji, K.V. Kumar, M. Ponraj, S. Amirtharaj, A.Dhar (2022),	Book Chapter
	Chemical and Isotopic Characterization of Lakes in the Larsemann Hills, East Antarctica, Assessing the Antarctic Environment from a ClimateChange Perspective, <i>Earth and</i>	T.R. Resmi, G. Gopinath, <u>P.S. Sunil</u> , M. Praveenbabu, P.	Book Chapter

	<i>Environmental Sciences, Springer Nature, ISBN-13:978-3030870775,https://doi.org/10.1007/978-3-030-87078-2_10.</i>	Arjun, R. Rawat (2022),	
	Racking the ionospheric responses over Antarctica during 04 December 2021 total solar eclipse, <i>Climate Change and Geodynamics in Polar Regions, Taylor & Francis Group, ISBN-9781003284413https://doi.org/10.1201/9781003284413.</i>	A.S. Sunil, K. K. Ajith, P.S. Sunil, D. Thomas (2022)	Book Chapter
	Isotope Hydrochemistry of Lakes and Transient Ponds of East Antarctica with Varying Degree of Environmental condition, <i>Climate Change and Geodynamics in Polar Regions, Taylor & Francis Group, ISBN-9781003284413https://doi.org/10.1201/9781003284413</i>	T.R. Resmi, G. Gopinath, P.S. Sunil, M. Praveenbabu, R. Rawat (2022)	Book Chapter

Role of Faculty in International/National organizations/Institutions/ Editorial Boards

Name of Faculty	Name of Organization	Role
Dr. A.A. Mohamed Hatha	NCPOR	Research Advisory Committee (RAC) Member
Dr. A.A. Mohamed Hatha	Society of Fishery Technology (ICAR)	Sub Editor, Fishery Technology Journal

Awards/ Honours/ Fellowships etc. received

Name of Recipient	Name of Fellowship/ Honour /Award	Awarding Agency
Dr. A.A. Mohamed Hatha	Planning Board Member (working group on Science and Technology)	Kerala State
Dr. A.A. Mohamed Hatha	Country Ambassador	American Society of Microbiology

Sponsored Research Projects

Sl.No.	Title	Sponsoring Agency	Amount	Investigator(s)
1	'Microbiome of glaciomarine environment in the Arctic – diversity, its variability and bioprospecting'	NCPOR	40.84 Lakhs	Dr. A.A. Mohamed Hatha, Dr. T.P. Sajeevan and Dr. K.P. Krishnan

Research Programmes and Activities: Current research project is to understand the microbiome of the glacio-marine environment of Svalbard, Arctic. The project will look at the microbial diversity, both culturable and unculturable as a function of climate change. It will also look at the presence of mesophilic pathogens in the arctic environment and the routes by which they reach there such as role of migratory birds and entry of warm water currents from the tropics. Probable presence of bioactive substances and industrially important enzymes in the cold adapted bacteria will also be explored.

Already given the details under the section 19.

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Coordinator	Funding Agency
1	How do barnacle geese cope with the changing environment? Presented by Prof. (Dr.) Maarten Loonen, Wageningen University, The Netherlands.	One day. 4 th February 2021	Dr. A.A. Mohamed Hatha and Dr. P.S. Sunil	Webinar (free of cost)
2	Wandering of geomagnetic poles – by Dr. Manoj C Nair, Research Scientist, University of Colorado, Boulder, USA.	One day. 16 th February 2021	Dr. A.A. Mohamed Hatha and Dr. P.S. Sunil	Webinar (free of cost)
3	History and Development of Polar Travel from 19 th Century to today	One day 19.3.2021	Dr. A.A. Mohamed Hatha and Dr. P.S. Sunil	Webinar (free of cost)



Centre for Employee Empowerment and Skill Acquisition(CEESA)

ANNUAL REPORT FOR THE YEAR 2021 - 2022

Name of the Department: CEESA

Seminar/ Conference/ Workshop/ Refresher Courses conducted by the Department

Sl.No.	Title	Duration	Coordinator	Funding Agency
1.	Induction Programme for Newly Recruited Teachers in CUSAT	One week	Dr M Bhasi	CUSAT
2.	Induction Programme for Newly Recruited Assistants in CUSAT	One week	Dr M Bhasi	CUSAT
3.	Induction Programme for Newly Recruited Office Attendants in CUSAT	One week	Dr M Bhasi	CUSAT
4.	Induction Programme for Newly Recruited Assistants in CUSAT	One week	Dr M Bhasi	CUSAT
5.	Induction Programme for Newly Recruited Office Attendants in CUSAT	One week	Dr M Bhasi	CUSAT
6.	Induction Programme for Newly Recruited Computer Assistants in CUSAT	One week	Dr M Bhasi	CUSAT

Prof. N. R. Madhava Menon Interdisciplinary Centre for Research Ethics and Protocols (ICREP)

ANNUAL REPORT FOR THE YEAR 2021- 2022

Name of the Department : Prof. N. R. Madhava Menon Interdisciplinary Centre for Research Ethics and Protocols, An Inter University Centre of Excellence

Brief History of the Department : Prof. N. R. Madhava Menon Interdisciplinary Centre for Research Ethics and Protocols was launched on 10th of January, 2020 by Dr. Michael Levitt, 2013 Nobel Prize Winner in Chemistry. On 26th of February, 2021, the Centre was recognized as an Inter University Centre of Excellence by the Government of Kerala and was thereby entrusted with the responsibility of providing Research and Publication Ethics Two Credit Mandatory Course Work program to the research scholars (both M. Phil and Ph. D) of CUSAT as well as other Universities in India and abroad.

In addition, the Centre carries out a variety of academic and research activities including the conduct of an Online 6-month Advanced Certificate Program in Medical Law, Clinical Research and Bioethics, issuance of short term research grants, conduct of lecture series etc. The Centre has also invited applications via CAT, 2022 for admission to the Two Year Masters in Bioethics program.

Programmes of Study/Research :

- a) Research and Publication Ethics Two Credit Mandatory Course Work program
- b) Advanced Certificate Program in Medical Law, Clinical Research and Bioethics
- c) Two Year Masters in Bioethics Program

Faculty Members :

Sl.No.	Name	Designation	Qualification	Specialisation
1	Dr. Vani Kesari A.	Co-ordinator	Ph. D.	Constitutional and Administrative Law

Research/ProjectStaff

Sl.No.	Name	Designation	Qualification	Specialisation
1	Gayathri Jiji	Research Assistant (on Contract)	B.B.A., LL.M.	Human Rights Law

: Nil

AdministrativePersonnel

Sl.No.	Designation	No.of Posts
1	Assistant (Daily wages)	1
2	Office Attendant (Daily wages)	1

StudentEnrollment

Sl.No.	Programmeof Study	Men	Women	Total
1	Advanced Certificate Program in Medical Law, Clinical Research and Bioethics	5	9	14
2	Research and Publication Ethics Two Credits Course Work Program for Research Scholars and M. Phil Students	191	110	301

Distinguished visitors

Sl.No.	Name	Affiliation	Remarks
1	Dr. M. Chandrasekharan	Emeritus Professor, Department of Biotechnology, CUSAT	Virtual
2	Dr. Reidar K Lie	Professor of Philosophy and the Head of the Department of Philosophy of the University of Bergen, Norway	Virtual
3	Dr. David Hunter	Associate professor of Medical Ethics, University of Adelaide	Virtual
4	Justice (Retd. Hariharan Nair)	Retd. Judge, High Court of Kerala	Virtual
5	Dr. Bismi Gopalakrishnan	Head, Dept of Law, University of Kerala and Dean Faculty of Law, M. G. University	Virtual
6	Dr. Mala Ramanathan	Prof., SCTIMST	Virtual
7	Dr. Srikumar Vasudevan	Chairman IMA Ethics Committee	Virtual
8	Ms. Neethi K Dinamany	Asst. Prof., BMSOL	Virtual
9	Dr. Anish V Pillai	Asst. Prof, School of Legal Studies CUSAT	Virtual
10	Dr. Chandrika Singh	Asst. Professor, Amity Law School Noida	Virtual
11	Dr. Mathew Numpeli	Manager, National Health Mission	Virtual
12	Dr. Bindumol V. C.	Associate Professor, Govt, Law College, Ernakulam	Virtual
13	Dr. Sindhu Soman	Vice Principal, S. N. Law College, Poothotta	Virtual
14	Dr. Ganesh Mohan	Medical Supdt., Govt. Medical College, Ernakulam	Virtual
15	Dr. Harisankar K. S.	Asst. Prof. Law, School f Legal Studies, CUSAT	Virtual
16	Dr. LijiSamual	Director, Centre for health law and policy, NUALS	Virtual
17	Dr. K. V. Beena	Addtl. Medical Supdt. AIMS, Kochi	Virtual
18	Dr. Rajeev Jayadevan	Former President, IMA, Kochi	Virtual
19	Dr. P. S. Seema	Associate. Prof. Law, School of Legal Studies, CUSAT	Virtual

20	Ms. Jean Vinitha Peter	Asst. Prof. Law, School of Legal Studies, CUSAT	Virtual
21	Dr. Venugopal V. P.	Consultant Psychiatrist, Govt. Mental Health Centre, Thrissur	Virtual
22	Dr. Raheemudheen P. K.	Clinical Psychologist, Govt. Mental Health Centre, Thrissur	Virtual
23	Dr Sapna Bansal	Assistant Professor, Law, Symbiosis Law School	Virtual
24	Dr. Veena Roshan Jose	Director, Centre for Research In Environmental Law, Dharamashastra National Law University, Jabalpur	Virtual
25	Dr. Athira P. S	Assistant Professor, NUALS Kochi	Virtual
26	Dr. Anuja S.	Associate Professor, Law, Ramaiah College of Law	Virtual
27	Dr. BishwaKallyan Dash	Assistant Professor, KIIT School of Law	Virtual
28	Dr. Bikash Medhi	Professor, PGIMER, Chandigarh	Virtual
29	Dr. Amar Jesani	Editor, Indian Journal of Medical Ethics	Virtual
30	Dr. Harigovind P. C.	Asst. Prof. Law, School of Legal Studies, CUSAT	Virtual
31	Dr. Roli Mathur	Head, ICMR Bioethics Unit	Virtual
32	Dr. NeethaSreedharan	Asst. Professor, Cochin Cancer Research Centre	Virtual
33	Dr Ramesh L. Gardas	Professor, Indian Institute of Technology Madras	Virtual
34	Dr. Siby K. George	Associate Professor, Indian Institute of Technology Bombay	Virtual
35	Dr. M. R. Rajagopal (Father of Palliative Care in India)	Chairman and Founder, Pallium India Trust	Virtual

Publications

a. Papers

1. Dr. Vani Kesari A. Published an article titled,” Water Quality in Agriculture: The Need for a Revisit of Land Use Patterns and Policies”, in MK Ramesh & Sairam Bhat, Agricultural Water Governance : Sustainable Practices & Strategies published by CEERA, NLSIU, ISBN 978-93-91111-06-9 pp119-129
2. Ms. Gayathri Jiji published a case comment article on “Shilpa Mittal v. State of NCT, Delhi and anr.” In the Indian Journal of Law and Legal Research, Vol. III Issue II, ISSN: 2582-8878 on 10-01-2022, <https://doi-ds.org/doi/10.21799835/IJLLR/V3/I2/A187>
3. Ms. Gayathri Jiji published a case comment article on “Federation of Obstetrics and Gynecological Societies of India v. Union of India and anr.” In the Journal of Multidisciplinary Legal research, Vol. II Issue II on 08-02-2022, doi: 10.5281/zenodo.6011662

Participation in Seminar/Conference/Refresher Courses set by Faculty/Students.

- i. Dr. Vani Kesari A acted. as a Resource Person for the Six Day Family Law Lecture Series organised by Manik Chand Pahade Law College, Aurangabad and delivered a lecture on the theme” Matrimonial Remedies under Muslim Law” on 27th January, 2021
- ii. Dr. Vani Kesari A Acted as Resource Person for the Online 15 days Online Refresher Program for Faculty and Research Scholars organised by the SVKM's Jitendra Chauhan College of Law & Droit Penale Group, Prayagraj. U.P in association with the Guru Angad Dev Teaching Learning Centre, Pandit Madan Mohan Malviya National Mission on Teachers and Teaching (PMMMNTT), Ministry of Education, Government of India and delivered lecture on “Methods in Teaching International & Humanitarian Laws” scheduled for 15-02-2021
- iii. Dr. Vani Kesari A Acted as a Resource Person for the the 5th “International Conference on Health, Human Rights and Intellectual Property Rights”, organised by the Centre For Health Law, Centre For Human Rights and Centre For Intellectual Property Rights, National University of Advanced Legal Studies, Kochi from 24-26 February, 2021
- iv. Dr. Vani Kesari A Acted as a Chair in the Technical Session 3 of the Three Day National Seminar organised by the Government Law College, Thiruvananthapuram “Reproductive Rights of Women: Issues and Challenges”

on 10.3.2021

- v. Dr. Vani Kesari A was Invited Guest Speaker for the International Women's Day for the Webinar organised by Department of Clinical Psychology, Amrita Institute of Medical Sciences, Kochi on March 8th, 2021,
- vi. Dr. Vani Kesari A Acted as a Resource Person for the Online National Seminar on "Strengthening Agricultural Water Use Law, Policy and Management" in India' on the 26th of March, 2021 organised by CEERA, National law School of India University, Bangaluru in association with University of Agricultural Sciences, GKVK in collaboration with ICAR
- vii. Dr. Vani Kesari A Acted as a Resource Person in an FDP organized by VM Salgoacar College of Law, and delivered a lecture on Ethics in teaching and Research in law on 1.9.2021
- viii. Dr. Vani Kesari A Acted as a Resource Person and delivered an online lecture on "An overview of Mental Health Act, 2017" organized by Department of Law, DR Ambedkar College, Deekshabhoomi, Nagpur on 11.11.2021
- ix. Dr. Vani Kesari A Acted as Chief Guest and Key Speaker in an awareness programme on Sexual Harrassment in Workplace (Prevention, Prohibition and Redressal) Act 2013 at Central Institute of Fisheries, Nautical and Engineering Training on 8.12.2021
- x. Dr. Vani Kesari A Acted as a Resource Person for an FDP on Improving Research For Effective Teaching Learning at Mar Gregorious College of Law, and delivered lecture on "Writing Academic Research Papers- Do's and Don't's" on 30. 11.2021
- xi. Dr. Vani Kesari A Participated in a UGC sponsored Short Term course in Leadership Development Programme conducted by UGC- HRDC , Kerala University from 1.12.2021 to 7.12.2021
- xii. Dr. Vani Kesari A Acted as a Resource Person for the FIP program organized by Kannur University on 18-12-2021 on the theme Rights of Women
- xiii. Dr. Vani Kesari A Chaired a session on " Culture & Ethics on the Online National Conference on Education in Globalised Era ; New Trends and Modern Approaches organized by KC law College Mumbai in association with GAD-TLC, Government of India on 23-10-21
- xiv. Dr. Vani Kesari A Delivered an Online Invited Lecture at Symbiosis Law School on January 2, 2021 on for both PG & UG students on two themes "Philosophical Edifice of Human Rights : A Synoptic Overview " & "Menstrual Health : A

human rights issue".

- xv. Dr. Vani Kesari A Acted as a Resource Person for the FIP conducted by UGC-HRDC Kannur University on 24—1-2022
- xvi. Dr. Vani Kesari A Acted as a Resource Person for the Online Refresher Course organized by Centre for Teacher Education Pandit Madan Mohan Malviya National Mission on Teachers&Teaching, CIHTS, University of Allahabad &others on 14.2.2022
- xvii. Ms. Gayathri Jiji participated in a One Day Workshop on ‘Bringing Research Focus’ on 7thApril, 2022 conducted as a part of the IEEE Education Week

Role of Faculty in International/National organizations/ Institutions/ Editorial Board : Nil

Awards/Honours/Fellowshipsetc.received : Nil

SponsoredResearchProjects :

- Project proposal on “Gaps in Enrollment and Informed Consent Process in Clinical Trials Relating to Cancer Drugs, Diagnosis and Therapy in the State of Kerala.” Shortlisted by National Human Rights Commission.

ResearchProgrammesandActivities:

Sl.No.	Problem/Topic
1	Research Grants for Short Term Projects
2	Summer School Internship Programs

Seminar/Conference/Workshop/RefresherCoursesconductedbytheDepartment:

- Lecture Series by Chancellor’s Chair Professor Dr. David Hunter
- Faculty Researcher Interaction Program on the theme “Relevance of Ethics in Scientific Investigations”
- Special Lecture on the topic “Biosafety and Bioethics” (In association With Dep’t

of Biotechnology, CUSAT)

- Special Lecture on the theme “The Pandemic: Ethical Issues in Health Research” In Collaboration with Kerala University of Health Sciences
- Lecture on “Principles and Practices in Bioethics and Biosafety with Reference to Marine Sciences” In collaboration with the Faculty of Marine Sciences, CUSAT
- Special lecture on “Bioethics and Research Methodology” In collaboration with Cochin Cancer Research Centre, Regional Cancer Care, Trivandrum and Government Medical College Hospital, Ernakulam.
- Special Lecture on “Clinical trials and the Covid 19 pandemic - Emerging Ethical Issues and Challenges” In collaboration with School of Legal Studies, CUSAT
- International Webinar on “Vaccines and Immunization: Ethical and Legal Implications” In association with National University of Advance Legal Studies, Kerala, India
- Special Lecture on the topic “Building Bioethics into Life Sciences Research and Innovations" In association with the Kannur University, Kerala
- Special lecture on ‘Academic Writing Skills: Do’s and Don’ts’ by Prof. (Dr.) Ramesh Laxminarayan Gardas
- Special Lecture on “Interlinkage between Philosophy and Ethics and its relevance in structuring research” by Dr. Siby K. George

Consultancy Work

: Dr. Vani Kesari A. is a Member of
Institutional Stem Cell Committee, Albot
Technologies, Bionest, KINFRA



Annual Accounts of The University

Cochin University of Science Technology		6		Annual Accounts 2021-2022			
FUNDS AT A GLANCE							
(As per Books of the University)		GENERAL FUND			(Figures in Rupees)		
PARTICULARS I	NON-PLAN II	PLAN III	DEBT HEAD (PF only) IV	SOE V	KMSME VI	CUCEK VII	TOTAL VIII
Opening Balance as on 01.04.2021	1,07,64,84,275.08	32,52,21,388.00	76,56,21,880.00	(13,48,97,320.50)	8,60,51,022.50	(2,42,85,466.00)	2,09,41,95,779.08
(Add) Receipts During 2021-2022	2,21,36,98,859.40	43,75,38,810.33	27,46,12,354.00	19,63,27,253.50	5,75,07,272.04	4,53,84,314.00	3,22,50,68,863.27
(Less) Payments During 2021-2022.	2,41,49,02,075.00	45,18,92,119.85	15,59,25,516.26	32,12,77,937.50	4,12,13,148.50	10,33,17,449.00	3,48,85,28,246.11
Closing Balance as on 31.03.2022	87,52,81,059.48	31,08,68,078.48	88,43,08,717.74	(25,98,48,004.50)	10,23,45,146.04	(8,22,18,601.00)	1,83,07,36,396.24
PENSION FUND							
PARTICULARS I	CUF II	SOE III	KMSME IV	CUCEK V	TOTAL VI		
Opening Balance as on 01.04.2021	41,27,05,263.00	27,54,15,546.00	62,01,644.00	24,01,74,989.00	93,44,97,442.00		
(Add) Receipts During 2021-2022	3,71,59,953.00	2,50,05,329.00	5,61,062.00	2,20,90,096.00	8,48,16,440.00		
(Less) Payments During 2021-2022	-	-	-	-	-		
Closing Balance as on 31.03.2022	44,98,65,216.00	30,04,20,875.00	67,62,706.00	26,22,65,085.00	1,01,93,13,882.00		

Cochin University of Science and Technology		7		Annual Accounts 2021-2022		
3 BREAK-UP OF RECEIPTS		(Figures in Rupees)				
Detailed Budget Head	Budget Estimate	Revised Estimate	Actuals	Variance		
3 A. BREAK-UP OF NON-PAN RECEIPT						
i	University Main Office	2,01,80,000	2,01,80,000	7,26,82,396.79	5,25,02,396.79	F
ii	Recognised colleges	2,38,39,768	2,38,39,768	1,71,22,785.00	(67,16,983.00)	U
iii	DOA (IRAA)	5,25,89,000	5,25,89,000	5,57,60,622.90	31,71,622.90	F
iv	Examinations	8,11,28,000	8,11,28,000	6,07,92,562.43	(2,03,35,437.57)	U
v	Non Academic Departments	74,07,500	74,07,500	32,62,291.00	(41,45,209.00)	U
vi	Dept. of Study & Research	11,15,33,732	11,15,33,732	12,81,71,002.83	1,66,37,270.83	F
	Sub-Total (Internal Revenue)	29,66,78,000	29,66,78,000	33,77,91,660.95	4,11,13,660.95	F
vii	Assistance for Courses	7,00,00,000	7,00,00,000	-	(7,00,00,000.00)	U
viii	Scholarship/Prizes	2,44,000	2,44,000	21,00,000.00	18,56,000.00	F
ix	Non-Plan Grant from State Govt.	1,53,37,00,000	1,53,37,00,000	1,53,37,00,000.00	-	F
	TOTAL NON-PAN RECEIPT	1,90,06,22,000	1,90,06,22,000	1,87,35,91,660.95	(2,70,30,339.05)	U
3 B. BREAK-UP OF PLAN RECEIPT						
i	Bulk Grants	71,50,000	71,50,000	42,80,520.00	(28,69,480.00)	U
ii	Plan Grant from State Govt.	23,00,00,000	23,00,00,000	19,77,84,175.00	(3,22,15,825.00)	U
iii	N.S.S.Grant-in-Aid	-	-	2,13,636.00	2,13,636.00	F
iv	Assistance for Courses	-	-	55,24,434.00	55,24,434.00	F
v	Scholarships	1,72,00,000	1,72,00,000	2,37,87,191.00	65,87,191.00	F
vi	Works	-	-	-	-	
vii	Schemes	53,33,94,000	53,33,94,000	20,59,48,854.33	(32,74,45,145.67)	U
	TOTAL PLAN RECEIPT	78,77,44,000	78,77,44,000	43,75,38,810.33	(35,02,05,189.67)	U
3 C. BREAK-UP OF DEBT HEADS RECEIPTS						
i	Receipts affecting CUF Reconciliation	33,17,65,000	33,17,65,000	34,01,07,198.45	83,42,198	U
ii	PF Receipts	-	-	27,46,12,354.00	27,46,12,354	F
	TOTAL DEBTHEADS RECEIPT	33,17,65,000	33,17,65,000	61,47,19,552.45	28,29,54,552	F
3 D. SCHOOL OF ENGINEERING (SOE) RECEIPTS						
i	Internal Revenue	24,40,96,000	24,40,96,000	19,59,99,383.00	(4,80,96,617.00)	U
ii	Others	-	-	3,14,070.50	3,14,071	F
iii	Scholarship (Coir Technology)	-	-	-	0	
iv	Debt Heads	22,34,000	22,34,000	13,800.00	(22,20,200.00)	U
	TOTAL OF SOE RECEIPTS	24,63,30,000	24,63,30,000	19,63,27,253.50	(5,00,02,746.50)	U
3 E. KUNJALI MARAKKAR SCHOOL OF MARINE ENGINEERING- RECEIPTS						
i	Internal Revenue	7,80,65,000	7,80,65,000	5,46,02,404.84	(2,34,62,595.16)	U
ii	Others	-	-	26,48,838.00	26,48,838.00	F
iii	Debt Heads	12,22,000	12,22,000	2,56,029.20	(9,65,970.80)	U
	TOTAL OF KMSME ENGG RECEIPTS	7,92,87,000	7,92,87,000	5,75,07,272.04	(2,17,79,727.96)	U
3 F. COCHIN UNIVERSITY COLLEGE OF ENGINEERING, KUTTANAD- NON PLAN RECEIPTS						
i	Internal Revenue	8,56,48,000	8,56,48,000	4,52,72,270.00	(4,03,75,730.00)	U
ii	Others	-	-	1,12,044.00	1,12,044.00	F
iii	Debt Heads	19,00,000	19,00,000	-	(19,00,000.00)	U
	TOTAL CUCEK RECEIPTS	8,75,48,000	8,75,48,000	4,53,84,314.00	(4,21,63,686.00)	U
	TOTAL - SELF FINANCING SECTOR	41,31,65,000	41,31,65,000	29,92,18,839.54	(11,39,46,160.46)	U
3 G. PENSION FUND RECEIPTS						
i	CUF	-	-	3,71,59,953.00		
ii	SOE	-	-	2,50,05,329.00		
iii	KMSME	-	-	5,61,062.00		
iv	CUCEK	-	-	2,20,90,096.00		
	TOTAL OF PENSION FUND RECEIPTS	-	-	8,48,16,440.00	0	
		-	-	-	0	
	TOTAL RECEIPTS	3,43,32,96,000	3,43,32,96,000	3,30,98,85,303.27	(20,82,27,136.73)	U

	Detailed Budget Head	Budget Estimate	Revised Estimate	Actuals	Variance	
4 A	BREAK-UP OF NON-PLAN EXPENDITURE					
P	Salaries and Allowances	1,04,15,90,000	1,04,15,90,000	1,05,34,16,368.00	1,18,26,368	U
Q	Contingencies & other expenses	1,36,90,30,000	1,36,90,30,000	94,18,77,069.00	(42,71,52,931.00)	F
S	Scholarships/Fellowships/Prizes	7,45,90,000	7,45,90,000	8,13,84,108.00	67,94,108	U
T	Works		0		0	
U	Schemes	6,00,00,000	6,00,00,000		(6,00,00,000.00)	F
	TOTAL NON-PLAN EXPENDITURE	2,54,52,10,000	2,54,52,10,000	2,07,66,77,545.00	(46,85,32,455.00)	F
4 B	BREAK-UP OF PLAN EXPENDITURE					
P	Salaries and Allowances	1,31,56,000	1,31,56,000	42,33,574.00	(89,22,426.00)	F
Q	Contingencies and other expenses	14,30,47,000	14,30,47,000	11,08,87,799.00	(3,21,59,201.00)	F
R	Bulk Grants	2,78,50,000	2,78,50,000	39,91,767.00	(2,38,58,233.00)	F
S	Scholarships/Fellowships/Prizes	1,90,29,000	1,90,29,000	2,04,55,148.00	14,26,148.00	U
T	Works	10,20,00,000	10,20,00,000	9,75,82,802.00	(44,17,198.00)	F
U	Schemes	53,82,94,000	53,82,94,000	21,47,41,029.85	(32,35,52,970.15)	F
	TOTAL PLAN EXPENDITURE	84,33,76,000	84,33,76,000	45,18,92,119.85	(39,14,83,880.15)	F
4 C	BREAK-UP OF DEBT HEADS EXPENDITURE					
i	Payments affecting CUF Reconciliation	33,17,65,000	33,17,65,000	33,82,24,530.00	64,59,530	U
ii	PF Payments		0	15,59,25,516.26	15,59,25,516	U
	TOTAL DEBT HEADS EXPENDITURE	33,17,65,000	33,17,65,000	49,41,50,046.26	16,23,85,046	U
4 D	SCHOOL OF ENGINEERING - (EXPENDITURE)					
i	Salaries and Allowances	28,56,65,000	28,56,65,000	26,51,42,315.00	(2,05,22,685.00)	F
ii	Contingencies and other expenses	10,12,80,000	10,12,80,000	5,45,08,169.50	(4,67,71,830.50)	f
iii	Scholarships/Fellowships/Prizes	0	0	-	-	
iv	Works	1,65,00,000	1,65,00,000	7,21,388.00	(1,57,78,612.00)	F
v	Schemes	30,00,000	30,00,000	-	(30,00,000.00)	F
vi	Debt heads	22,34,000	22,34,000	9,06,065.00	(13,27,935.00)	F
	TOTAL SOE-EXPENDITURE	40,86,79,000	40,86,79,000	32,12,77,937.50	(8,74,01,062.50)	F
4 E	KUNJALI MARAKKAR SCHOOL OF MARINE ENGINEERING- EXPENDITURE					
i	Salaries and Allowances	4,22,20,000	4,22,20,000	2,66,19,783.00	(1,56,00,217.00)	F
ii	Contingencies and other expenses	2,25,10,000	2,25,10,000	1,15,16,287.50	(1,09,93,712.50)	F
iii	Scholarships/Fellowships/Prizes	0	0	-	-	
iv	Works	20,00,000	20,00,000	21,04,938.00	1,04,938.00	U
v	Schemes	25,00,000	25,00,000	-	(25,00,000.00)	F
vi	Debt heads	12,22,000	12,22,000	9,72,140.00	(2,49,860.00)	F
	TOTAL KMSME-EXPENDITURE	7,04,52,000	7,04,52,000	4,12,13,148.50	(2,92,38,851.50)	F
4 F	COCHIN UNIVERSITY COLLEGE OF ENGINEERING, KUTTANAD- EXPENDITURE					
i	Salaries and Allowances	10,11,50,000	10,11,50,000	8,93,55,777.00	(1,17,94,223.00)	F
ii	Contingencies and other expenses	5,42,82,000	5,42,82,000	1,31,67,038.00	(4,11,14,962.00)	F
iv	Works	75,00,000	75,00,000	6,85,134.00	(68,14,866.00)	F
v	Schemes	25,00,000	25,00,000	-	(25,00,000.00)	F
vi	Debt heads	19,00,000	19,00,000	1,09,500.00	(17,90,500.00)	F
	TOTAL CUCEK EXPENDITURE.	16,73,32,000	16,73,32,000	10,33,17,449.00	(6,40,14,551.00)	F
	TOTAL SELF FINANCING SECTOR	64,64,63,000	64,64,63,000	46,58,08,535.00	(18,06,54,465.00)	F
	TOTAL EXPENDITURE	4,36,68,14,000	4,36,68,14,000	3,48,85,28,246.11	(87,82,85,753.89)	F

ENGINEERING DEPARTMENT

ANNUAL REPORT 2021-22 (MINOR WORKS)				
Sl. No.	CB No.	Name of Contractor	Amount	Name of Work
1	1000	a) M/s. Pine Electrics b) Sri. Premanandan V c) M/s. CW Edathala	₹ 30,667.00	Petty Works
2	1001	a) Sri. Shaji V. K. b) Sri. Manu K. A. c) Sri. Abdul Aziz M. M.	₹ 18,032.00	Petty Works
3	1002	M/s. Central Warehousing Edathala	₹ 28,212.00	Petty Works
4	1003	a) Smt. Sugii Xavier b) Sri. Polly Mathew c) Sri. Manu K. A.	₹ 10,528.00	Petty Works
5	1004	a) Sri. Manu K. A b) M/s. Bharath Power Engineers Pvt. Ltd c) M/s. Aircol Enterprises	₹ 7,593.00	Petty Works
6	1005	a) Sri. Polly Mathew b) Sri. Shaji V. K.	₹ 122,343.00	Petty Works
7	1006	a) Sri. Vinod O. T b) Smt. Sugii Xavier c) M/s. Bharath Power Engineers Pvt. Ltd	₹ 39,651.00	Petty Works

8	1007	a) Sri. Manu K. A b) Smt. Sugii Xavier c) M/s. SAT Agencies	₹ 50,580.00	Petty Works
9	1008	PA	₹ 15,420.00	Amount Reimbursible to a) Purchase of 100AH battery 2 nos of DG Set at Seminar Complex b) Cost of transportation of battery c) Repair of fridge in various hostel
10	1009	PA	₹ 5,550.00	Amount reimbursible to a) Urgent purchase of materials to store b) Removing earth dumped in the main ground in connection with the sports meet held in March 2021
11	1010	M/s. Global Airtec	₹ 16,568.00	

12	1011	Sri. Polly Mathew	₹ 32,788.00	Re- construction of small portion of collapsed drain in the main road of CUSAT
13	1012	M/s. PB Electrical Company	₹ 35,400.00	Urgent hiring of 320 KVA DG Set at Substation No.2
14	1013	M/s. Techno Grade Sales & Services	₹ 35,813.00	250kVA DG Set Radiator maintenance at Substation No.2
15	1014	M/s. Austinroz India Pvt. Ltd.	₹ 113,280.00	Supply of water cooler at International students hostel, CUSAT
16	1015	M/s. Aircol Enterprises	₹ 402,632.00	Supply, Installation, Testing and Commissioni ng of 1.5ton AC at International Hostel, CUSAT
17	1016	M/s. Pine Electricals	₹ 37,048.00	Supply of pedestal fan to store
18	1019	Sri. Rajendran P. V.	₹ 349,896.00	Providing light roof covering to prevent the leakage over the ground floor sloped

				roof of CIRM at Thrikkakara Campus
19	1020	a) M/s. SAT Agencies b) M/s. Bharath Power Electric c) M/s. Vibjuthi Infratech d) M/s. K & K Electricals	₹ 36,056.00	a) Purchase of LED tube and tube frames a) Purchase of energy meter to Savanna & Post office c) Purchase of wall fan to store d) Purchase of materials for MOOC studio, LED tube
20	1021	Sri. Polly Mathew	₹ 6,160.00	Clearing the blocks in wash area of main canteen
21	1022	Sri. Polly Mathew	₹ 59,707.00	Clearing light jungles in Thrikkakara campus for one year
22	1023		₹ 30,269.00	Reimbursible to purchase of plumbing materials for the installation of pump in the courtyard of SIF building at Marine Science Campus Supplying

				Inaugural plates for Environmental studies building and Academic block & name board for Academic block
23	1024	a) M/s. Ensemble Electric b) M/s. SAT Agencies c) Sri. Manu K. A.	₹ 26,934.00	
24	1025	PA	₹ 16,192.00	Reimbursible to Urgent purchase AA battery to store Urgent purchase of Electrical items to store Repairing of washing machine at Athithi Bhavan Supply & laying casing & capping for cable TV cables at Guest House
25	1026	a) Sri. Polly Mathew b) M/s. SAT Agencies c) M/s. Trans Engineering	₹ 56,643.00	

26	1027 (Adj)		₹ 37,917.00	Adjustment towards vide SR 21/20-21 towards purchase of plumbing materials to store
27	1028	M/s. Austinroz India Pvt. Ltd.	₹ 65,756.00	AMC for water coolers & water purifiers in Thrikkakara campus, Pulinkunnu campus & Lakeside campus
28	1029	Sri. Shaji V. K.	₹ 355,286.00	Renovation works in the office of Director, International Relations in Administrative building
29	1030	Smt. Sugii Xavier	₹ 136,800.00	AMC for cleaning of Seminar Complex - November & December 2020
30	1031	M/s. Central Warehousing Corporation	₹ 19,914.00	Disinfection at various places
31	1032	M/s. Austinroz India Pvt. Ltd.	₹ 257,080.00	AMC for water coolers & water purifiers in Thrikkakara campus, Pulinkunnu

				campus & Lakeside campus
32	1033	M/s. PCI Pest Control Pvt. Ltd	₹ 19,700.00	Termiseal service in School of Marine Biology at Marine Science Campus
33	1034	Sri. Polly Mathew	₹ 77,507.00	Petty Works
34	1037	Adjustment SR 01/21-22	₹ 37,628.00	Purchase of Plumbing materials
35	1038		₹ 4,124.00	Reimbursible to Application fee of rerouting existing 11kv feeder towards STIC through swimming pool site Purchase of 1 flexible hose and its accessories for pumping the rain water from the drain of SIF building at Lakeside campus

36	1039	M/s. South Indian Metals	₹ 72,502.00	Reimbursement to the contractor towards the cost of the retained portion of the demolished building in Marine Science Campus
37	1041	M/s Aircol Enterprises Enterprises	₹ 57,050.00	Purchase of 2 ton split AC at Doctor's consulting room, Amenity Centre
38	1042	Smt. Sugii Xavier	₹ 68,400.00	AMC for cleaning inside and premises of Science Seminar complex, maintaining landscaping
39	1043	M/s. Grand Contractors	₹ 24,362.00	Providing UPS power supply to MOOC studio room and office, Amenity Centre
40	1044		₹ 7,419.00	Reimbursible to various petty works done
41	1045	Sri. Abdul Aziz M. M.	₹ 177,333.00	Replacing roofing sheet in hatchery building in School of Industrial

				Fisheries
42	1046	M/s. Cochin Stove Centre	₹ 20,000.00	Maintenance and servicing of cooking gas system in Siberia Boys' Hostel
43	1047	Sri. Abdul Aziz M. M.	₹ 39,995.00	Providing and fixing new collapsible gate in Sarovar Boy's Hostel
44	1048	M/s Aircol Enterprises	₹ 201,000.00	Supply and installation of Air conditioners at new IRAA office (Room 313)
45	1049	Adjustment	₹ 199,399.00	Shifting charges of Engineerin Deptsrment to Athithi Bhavan building in connection with the demolishing of existing building
46	1050	Sri. Shaji V. K.	₹ 39,295.00	Deepening of old pond by removing the deposited mud
47	1051		₹ 19,500.00	Reimbursible - Digital land surveying and preparing the survey

				sketch of Lakeside Campus
48	1052	M/s. Cochin Stove Centre	₹ 2,308.00	Annual maintenance of burners and gas line in CUMS hostel at Marine Science Campus
49	1053	M/s. Voltair Building Solutions	₹ 130,195.00	Supply and installation of aerial bunched cable for removing OH line to ladies hostel side, passing through KIIFB site
50	1054	Adjustment	₹ 39,867.00	Purchase of Plumbing materials to store at Engineering Dept.
51	1055	Sri. Shaji V. K.	₹ 22,297.00	Repairing of window fittings and enamel painting and replacing of window shutter glass
52	1056	M/s. Voltair Building Solutions	₹ 142,067.00	Urgent replacement of damaged overhead line near Guest house

53	1057		₹ 3,584.00	Sanitizing in public utility building, CUSAT
54	1058	a) Sri. Manu K. A b) Smt. Sugii Xavier	₹ 42,168.00	Petty Works
55	1059	a) Sri. Manu K. A b) Sri. Polly Mathew	₹ 21,631.00	Petty Works
56	1060	a) Smt. Sugii Xavier b) Sri. Manu K. A.	₹ 51,435.00	Petty Works
57	1061	M/s. Art co Ltd.	₹ 308,020.00	Purchase of L - shaped office table
58	1062	Smt. Sugii Xavier	₹ 114,000.00	Seminar Complex - Annual contract for maintenance
59	1063	Sri. Abdul Aziz M. M.	₹ 21,530.00	Painting of research laboratory in the first floor of Physics Dept.
60	1064	a) Sri. Shiju P P b) Sri. Manu K. A c) Sri. Abdul Aziz M. M.	₹ 37,424.00	Petty Works
61	1065	a) Smt. Sugii Xavier b) Sri. Manu K. A c) M/s. Voltair Builing Solutions	₹ 25,816.00	Petty Works

62	1066	a) Sri. John Joseph b) M/s. Roots Cottons c) M/s. Pearl Craft Metal Graphics d) M/s. Kalamassery Decorations e) Sri. Manu K. A f) M/s. Manath Traders	₹ 25,176.00	Reimbursible towards various Petty works
63	1067	PA Account	₹ 13,216.00	Reimbursible towards the work stage arrangements at Mini Seminar Hall and Fixing Boards in venue and other locations
64	1069	M/s. Trans Engineering	₹ 128,700.00	Fully comprehensive AMC for Air Conditioners in Seminar Complex Main Auditorium
65	1070	a) Sri. Manu K. A b) Sri. Shaji V. K c) Sri. Vinod O. T.	₹ 69,327.00	Petty Works
66	1071	PA Account	₹ 14,545.00	Reimbursible towards various petty works done
67	1072	a) Smt. Sugii Xavier b) Sri. Manu K. A c) Sri. Subin M. Pattani	₹ 27,362.00	Petty Works

68	1073	a) Sri. Polly Mathew b) Sri. Abdul Aziz M. M c) Smt. Sugii Xavier	₹ 82,712.00	Petty Works
69	1074	M/s. M N Agencies	₹ 33,300.00	Purchase of washing machine through GEM portal for International Hostel
70	1075	M/s. Makma Tech	₹ 36,450.00	Providing power supply for AC at Registrar's cabin, Administrative block
71	1076	Adjustment	₹ 149,337.00	Purchase of electricals items to the store of Engineering Dept.
72	1077	a) M/s. Grand Contractors b) M/s. M K Enterprises c) Sri. Manu K. A.	₹ 25,902.00	Petty Works
73	1078	M/s. Vibjuthi Infra Tech	₹ 404,918.00	Providing standby generator supply to Administration block from the 250kVA DG Set installed at Seminar Complex
74	1079	M/s. Aircol Enterprises	₹ 211,600.00	Supply and installation of Air Conditioners at Registrar's

				cabin
75	1080	Sri. Shiju. P. P.	₹ 315,236.00	Providing RCC drain at the southern side IF building at Lakeside Campus
76	1081	a) M/s. Axiom Aqua Solutions b) M/s. Aircol Enterprises	₹ 5,635.00	Petty Works
77	1082	a) Sri. Subin M. Pattani b) Sri. Polly Mathew	₹ 14,448.00	Petty Works
78	1083	Smt. Sugii Xavier	₹ 8,176.00	Minor works in Guest House
79	1084	Adjustment	₹ 39,155.00	Plumbing materials to store
80	1085	PA	₹ 63,440.00	Reimbursible towards Various Petty works
81	1086	M/s. B3 Macbis Ltd.	₹ 941,684.00	Providing an installing stainless steel kitchen equipments exhaust system and gas lining (including

				AMC for 5 years) in 120 bedded boys hostel
82	1087	PA	₹ 31,815.00	Reimbursible towards various petty works done
83	1088	PA	₹ 14,000.00	Reimbursible towards purchasing of plastic net for providing fencing around butterfly garden
84	1089		₹ 14,997.00	Reimbursible towards the purchase of plumbing materials to the store of Engineering Dept.
85	1092		₹ 8,000.00	Reimbursible towards the supply of 2no of wooden door frames to the faculty rooms in Mathematics Dept.
86	1093		₹ 40,000.00	Adjustment towards vide SR 27/2-22 towards purchase of plumbing materials to store

		TOTAL	₹ 7,203,402. 00	
		1-97-0-T-1-046		
Sl. No	CB No. & Date(21-22)	Name of work	Name of Contractor	Bill Amount (₹)
1	1502	Construction of 3rd and 4th floor in IUCIPR building(vertical extension) at Thrikkakara campus		989002
2	1503	Construction of 3rd and 4th floor in IUCIPR building(vertical extension) at Thrikkakara campus		
TOTAL				<u>98</u> <u>90</u> <u>02</u>

1-01-0-Q-2-105

Sl. No	CB No. & Date(21-22)	Name of work	Name of Contractor	Bill Amount (₹)
1	1575	Purchase of furniture to Aiswarya ladies hostel, new block (SR No.27/20-21)	FIT, Aluva	161849
2	1630	Purchase of Anjili wood double draw table to 120 bedded boys hostel	FIT, Aluva	268941
3	1804	Purchase of furniture for IQAC new allotte room no.310 in the Admn block.	SIDCO	420080
TOTAL				<u>85</u> <u>08</u> <u>70</u>

CUSATECH

FOUNDATION

Sl. No	CB No. & Date(21-22)	Name of work	Name of Contractor	Bil l Amount (C)
1	1626	Vertical Extension of Students Amenity Centre	George Thomas	14 22 60 9
2	1692	Vertical Extension of Students Amenity Centre		211 255 3
3	1720	Archictural and structural consultancy work for 'Vertical Extension of Students Amenity Centre	Sony Joseph	937 50
TOTAL				<u>362</u> <u>891</u> <u>2</u>

Engineering Department**ANNUAL REPORT 2021-22 (MINOR WORKS)**

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4	1003	a) Smt. Sugii Xavier b) Sri. Polly Mathew c) Sri. Manu K. A.	₹ 10,528.00	Petty Works
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7	1006	a) Sri. Vinod O. T b) Smt. Sugii Xavier c) M/s. Bharath Power Engineers Pvt. Ltd	₹ 39,651.00	Petty Works
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16	1015	M/s. Aircol Enterprises	₹ 402,632.00	Supply, Installation, Testing and Commissioning of 1.5ton AC at International Hostel, CUSAT
17	1016	M/s. Pine Electricals	₹ 37,048.00	Supply of pedestal fan to store

18	1019	Sri. Rajendran P. V.	₹ 349,896.00	Providing light roof covering to prevent the leakage over the ground floor sloped roof of CIRM at Thrikkakara Campus
19	1020	a) M/s. SAT Agencies b) M/s. Bharath Power Electric c) M/s. Vibjuthi Infratech d) M/s. K & K Electricals	₹ 36,056.00	a) Purchase of LED tube and tube frames a) Purchase of energy meter to Savanna & Post office c) Purchase of wall fan to store d) Purchase of materials for MOOC studio, LED tube
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22	1023		₹ 30,269.00	Reimbursible to purchase of plumbing materials for the installation of pump in the courtyard of SIF building at Marine Science Campus Supplying Inaugural plates for Environmental studies building and Academic block & name board for Academic block
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24	1025	PA	₹ 16,192.00	Reimbursible to Urgent purchase AA battery to store Urgent purchase of Electrical items to store Repairing of washing machine at Athithi Bhavan Supply & laying casing & capping for cable TV cables at Guest House
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26	1027 (Adj)		₹ 37,917.00	Adjustment towards vide SR 21/20-21 towards purchase of plumbing materials to store
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30	1031	M/s. Central Warehousing Corporation	₹ 19,914.00	Disinfection at various places

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38	1042	Smt. Sugii Xavier	₹ 68,400.00	AMC for cleaning inside and premises of Science Seminar complex, maintaining landscaping

39	1043	M/s. Grand Contractors	₹ 24,362.00	Providing UPS power supply to MOOC studio room and office, Amenity Centre
40	1044		₹ 7,419.00	Reimbursible to various petty works done
41	1045	Sri. Abdul Aziz M. M.	₹ 177,333.00	Replacing roofing sheet in hatchery building in School of Industrial Fisheries
42	1046	M/s. Cochin Stove Centre	₹ 20,000.00	Maintenance and servicing of cooking gas system in Siberia Boys' Hostel
43	1047	Sri. Abdul Aziz M. M.	₹ 39,995.00	Providing and fixing new collapsible gate in Sarovar Boy's Hostel
44	1048	M/s Aircol Enterprises	₹ 201,000.00	Supply and installation of Air conditioners at new IRAA office (Room 313)
45	1049	Adjustment	₹ 199,399.00	Shifting charges of Engineering Department to Athithi Bhavan building in connection with the demolishing of existing building
46	1050	Sri. Shaji V. K.	₹ 39,295.00	Deepening of old pond by removing the deposited mud
47	1051		₹ 19,500.00	Reimbursible - Digital land surveying and preparing the survey sketch of Lakeside Campus
48	1052	M/s. Cochin Stove Centre	₹ 2,308.00	Annual maintenance of burners and gas line in CUMS hostel at Marine Science Campus

49	1053	M/s. Voltair Building Solutions	₹ 130,195.00	Supply and installation of aerial bunched cable for removing OH line to ladies hostel side, passing through KIIFB site
50	1054	Adjustment	₹ 39,867.00	Purchase of Plumbing materials to store at Engineering Dept.
51	1055	Sri. Shaji V. K.	₹ 22,297.00	Repairing of window fittings and enamel painting and replacing of window shutter glass
52	1056	M/s. Voltair Building Solutions	₹ 142,067.00	Urgent replacement of damaged overhead line near Guest house
53	1057		₹ 3,584.00	Sanitizing in public utility building, CUSAT
54	1058	a) Sri. Manu K. A b) Smt. Sugii Xavier	₹ 42,168.00	Petty Works
55	1059	a) Sri. Manu K. A b) Sri. Polly Mathew	₹ 21,631.00	Petty Works
56	1060	a) Smt. Sugii Xavier b) Sri. Manu K. A.	₹ 51,435.00	Petty Works
57	1061	M/s. Art co Ltd.	₹ 308,020.00	Purchase of L - shaped office table
58	1062	Smt. Sugii Xavier	₹ 114,000.00	Seminar Complex - Annual contract for maintenance

59	1063	Sri. Abdul Aziz M. M.	₹ 21,530.00	Painting of research laboratory in the first floor of Physics Dept.
60	1064	a) Sri. Shiju P P b) Sri. Manu K. A c) Sri. Abdul Aziz M. M.	₹ 37,424.00	Petty Works
61	1065	a) Smt. Sugii Xavier b) Sri. Manu K. A c) M/s. Voltair Building Solutions	₹ 25,816.00	Petty Works
62	1066	a) Sri. John Joseph b) M/s. Roots Cottons c) M/s. Pearl Craft Metal Graphics d) M/s. Kalamassery Decorations e) Sri. Manu K. A f) M/s. Manath Traders	₹ 25,176.00	Reimbursible towards various Petty works
63	1067	PA Account	₹ 13,216.00	Reimbursible towards the work stage arrangements at Mini Seminar Hall and Fixing Boards in venue and other locations
64	1069	M/s. Trans Engineering	₹ 128,700.00	Fully comprehensive AMC for Air Conditioners in Seminar Complex Main Auditorium
65	1070	a) Sri. Manu K. A b) Sri. Shaji V. K c) Sri. Vinod O. T.	₹ 69,327.00	Petty Works
66	1071	PA Account	₹ 14,545.00	Reimbursible towards various petty works done

67	1072	a)Smt. Sugii Xavier b) Sri. Manu K. A c) Sri. Subin M. Pattani	₹ 27,362.00	Petty Works
68	1073	a) Sri. Polly Mathew b) Sri. Abdul Aziz M. M c) Smt. Sugii Xavier	₹ 82,712.00	Petty Works
69	1074	M/s. M N Agencies	₹ 33,300.00	Purchase of washing machine through GEM portal for International Hostel
70	1075	M/s. Makma Tech	₹ 36,450.00	Providing power supply for AC at Registrar's cabin, Administrative block
71	1076	Adjustment	₹ 149,337.00	Purchase of electricals items to the store of Engineering Dept.
72	1077	a) M/s. Grand Contractors b) M/s. M K Enterprises c) Sri. Manu K. A.	₹ 25,902.00	Petty Works
73	1078	M/s. Vibjuthi Infra Tech	₹ 404,918.00	Providing standby generator supply to Administration block from the 250kVA DG Set installed at Seminar Complex
74	1079	M/s. Aircol Enterprises	₹ 211,600.00	Supply and installation of Air Conditioners at Registrar's cabin
75	1080	Sri. Shiju. P. P.	₹ 315,236.00	Providing RCC drain at the southern side IF building at Lakeside Campus

76	1081	a) M/s. Axiom Aqua Solutions b) M/s. Aircol Enterprises	₹ 5,635.00	Petty Works
77	1082	a) Sri. Subin M. Pattani b) Sri. Polly Mathew	₹ 14,448.00	Petty Works
78	1083	Smt. Sugii Xavier	₹ 8,176.00	Minor works in Guest House
79	1084	Adjustment	₹ 39,155.00	Plumbing materials to store
80	1085	PA	₹ 63,440.00	Reimbursible towards Various Petty works
81	1086	M/s. B3 Macbis Ltd.	₹ 941,684.00	Providing an installing stainless steel kitchen equipments exhaust system and gas lining (including AMC for 5 years) in 120 bedded boys hostel
82	1087	PA	₹ 31,815.00	Reimbursible towards various petty works done

1-97-0-T-1-046

83	1088	PA	₹ 14,000.00	Reimbursible towards purchasing of plastic net for providing fencing around butterfly garden
84	1089		₹ 14,997.00	Reimbursible towards the purchase of plumbing materials to the store of Engineering Dept.
85	1092		₹ 8,000.00	Reimbursible towards the supply of 2no of wooden door frames to the faculty rooms in Mathematics Dept.
86	1093		₹ 40,000.00	Adjustment towards vide SR 27/2-22 towards purchase of plumbing materials to store
		TOTAL	₹ 7,203,402.00	

Sl. No	CB No. & Date(21-22)	Name of work	Name of Contractor	Bill Amount ()
1	1502	Construction of 3rd and 4th floor in IUCIPR building(vertical extension) at Thrikkakara campus		989002
2	1503	Construction of 3rd and 4th floor in IUCIPR building(vertical extension) at Thrikkakara campus		
TOTAL				<u>989002</u>

1-01-0-Q-2-105

Sl. No	CB No. & Date(21-22)	Name of work	Name of Contractor	Bill Amount ()
1	1575	Purchase of furniture to Aiswarya ladies hostel, new block (SR No.27/20-21)	FIT, Aluva	161849
2	1630	Purchase of Anjili wood double draw table to 120 bedded boys hostel	FIT, Aluva	268941
3	1804	Purchase of furniture for IQAC new allotte room no.310 in the Admn block.	SIDCO	420080
TOTAL				<u>850870</u>

CUSATECH FOUNDATION

Sl. No	CB No. & Date(21-22)	Name of work	Name of Contractor	Bill Amount ()
1	1626	Vertical Extension of Students Amenity Centre	George Thomas	1422609
2	1692	Vertical Extension of Students Amenity Centre		2112553
3	1720	Architectural and structural consultancy work for 'Vertical Extension of Students Amenity Centre	Sony Joseph	93750
TOTAL				<u>3628912</u>

Recognized College/institutions

Recognized College / Institutions

Sl. No.	Name of Institution	course offered	sanctioned intake 2019-20
1	TKM School of Architecture, Musaliar Hills, Karuvelil P O, Ezhukone, Kollam-691 505. Ph:+91 474 - 2484665,2484666,2165248 Website:www.tkmsa.org	B.Arch.	40 seats
2	Nizar Rahim & Mark School of Architecture, Nizar Estates, Road Vila, Oyur, Kollam-691516 Ph: +91 474- 2466666,+91- 9526045555 Website: www.nrmsa.com	B.Arch.	40 seats
3	Marian College of Architecture and Planning, Kazhakkuttam, Thiruvananthapuram-695582 Ph:+91 471- 2704405,8281388111 Website: www.mcap.edu.in	B.Arch.	80 seats
4	CONSPI Academy of Management Studies, Plankalamukku, Industrial Estate P O, Pappanamcode, Thiruvananthapuram-695019 Ph:+91 471- 2492948,3296684,+91- 9497606684 Website: www.camstvm.org	MBA (60 seats)	60 seats

5	Bhavan's Royal Institute of Management, Off Hill Palace, Thripunithura, Ernakulam-682305. Ph: +91 484-2774461,2775437 Website: www.brim.ac.in	MBA	60 seats
6	Central Institute of Fisheries Nautical and Engineering Training, Fine Arts Avenue, Kochi-682016 Ph:+91 484-2351493,2351790,2351610 Website:www.cifnet.nic.in	B.F.Sc (Nautical Science)	33 +7(LE)seats
7	KVM College of Science & Technology, Kokkothamangalam P O, Cherthala, Alapuzha-688527. Ph: +91 478-2811707,2811080 Website: www.kvmcst.in	M.Sc. Biotechnology	30 seats
8	Asian School of Business, Technocity, Pallipuram, Thiruvananthapuram-695 316 Ph: +91 471-2168899 Website: www.asbindia.in	MBA	90 seats, from 2021-22 intake increased to 120
9	College of Engineering Thalassery Kundoormala, Eranholi, Thalassery, Kerala - 670107 Ph:+91 490 2307190,2388930 Website: www.cethalassery.ac.in	MBA	60 Seats

Academic Programmes

DETAILS OF COURSES 2021 - 2022

Sl. No.	Name of the Departments	Name of Courses
I	B.Tech Programmes (Regular) (8 Semesters)	
1	School of Engineering/CUCEK	B.Tech Civil Engineering
2	School of Engineering/CUCEK	B.Tech Computer Science and Engineering
3	School of Engineering/CUCEK	B.Tech Electrical & Electronic Engineering
4	School of Engineering/CUCEK	B.Tech Electronics and Communication Engineering
5	School of Engineering/CUCEK	B.Tech Information Technology
6	School of Engineering/CUCEK	B.Tech Mechanical Engineering
7	School of Engineering	B.Tech Safety and Engineering
8	Kunjali Marakkar School of Marine Engineering	B.Tech Marine Engineering
9	Department of Ship Technology	B.Tech Naval Architecture and Ship Building
10	Department of Polymer Science and Rubber Technology	B.Tech Polymer Science and Engineering
11	Department of Instrumentation	B.Tech Instrumentation and Control Engineering
II	Lateral Entry to 3rd Semester of B.Tech Programme	
1	School of Engineering/CUCEK	B.Tech Civil Engineering
2	School of Engineering/CUCEK	B.Tech Computer Science and Engineering
3	School of Engineering/CUCEK	B.Tech Electrical & Electronic Engineering
4	School of Engineering/CUCEK	B.Tech Electronics and Communication Engineering
5	School of Engineering/CUCEK	B.Tech Information Technology
6	School of Engineering/CUCEK	B.Tech Mechanical Engineering
7	School of Engineering	B.Tech Safety and Engineering
8	Department of Polymer Science and Rubber Technology	B.Tech Polymer Science and Engineering
9	Department of Instrumentation	B.Tech Instrumentation Technology
III	B.Voc Programmes	
1	Deen Dayal Upadhyay Kaushal Kendra	Business Process and Data Analytics
IV	M.Sc. 5 Year Integrated Programmes	
1	International School of Photonics	M.Sc. (Five Year Integrated) in Photonics
2	Department of Computer Science	M.Sc. (Five Year Integrated) in Computer Science (Artificial Intelligence & Data Science)

3	Centre for Integrated Studies	M.Sc.5 – year Integrated (Chemistry/Mathematics/Physics/ Statistics/Biological Science)
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V	Law Programmes	
1	School of Legal Studies	Five Year BBA, LL.B (H)
2	School of Legal Studies	Five year B.Com LL.B (H)
3	School of Legal Studies	3 Year LL.B
4	School of Legal Studies	One Year LL.M.
5	(IUCIPRS)	Two Year LL.M. Degree Programme (IPR)
6	(IUCIPRS)	LL.M (IP) Ph.D. (5 year Integrated Programme)
7	(IUCIPRS)	LL.M (IPR) Ph.D. (5 year Integrated Programmes)
VI	M.Sc. Programmes	
1	Department of Mathematics	M.Sc. in Mathematics
2	Department of Physics	M.Sc. in Physics
3	Department of Applied Chemistry	M.Sc. in Chemistry
4	Department of Statistics	M.Sc. in Statistics
5	Department of Computer Applications	M.Sc. in Computer Science with Specialisation in Artificial Intelligence
6	Department of Computer Applications	M.Sc.in Computer Science with Specialisation in Data Science
7	Centre for Integrated Studies	M.Sc. in Forensic Science
8	Department of Electronics	M.Sc. in Electronic Science
9	Department of Chemical Oceanography	M.Sc. in Hydrochemistry
10	Department of Physical Oceanography	M.Sc. in Oceanography
11	Department of Marine Geology and Geophysics	M.Sc. in Marine Geology
12	Department of Marine Geology and Geophysics	M.Sc. Marine Geophysics
13	Department of Atmospheric Science	M.Sc. in Meteorology
14	School of Environmental Studies	M.Sc. Environmental Science and Technology Stream I
15	School of Environmental Studies	M.Sc. Environmental Science and Technology Stream II
16	Department of Biotechnology	M.Sc.in Biotechnology

17	Department of Biotechnology	M.Sc.in Microbiology
18	Department of Marine Biology, Microbiology and Biochemistry	M.Sc. in Marine Biology
19	School of Industrial Fisheries	M.Sc. in Industrial Fisheries
20	School of Industrial Fisheries	Master of Fisheries Science (MFSc) in Seafood Safety and Trade
21	Centre for Budget Studies	M.Sc. in Econometric and Financial Technology

VII	Master of Vocation (M.Voc)	
1	Deen Dayal Upadhyay Kaushal Kendra	M.Voc. Mobile Phone Application Development
2	Deen Dayal Upadhyay Kaushal Kendra	M.Voc. Technology and Management Consulting
VIII	Master of Computer Applications (MCA)	
1	Department of Computer Applications/CUCEK	MCA Regular
2	Department of Computer Applications/CUCEK	MCA Cost Sharing
IX	Master of Arts (MA) Programmes	
1	Department of Applied Economics	M.A. Applied Economics
2	Department of Hindi	M.A. Hindi Language and Literature
X	Master of Business Administration (MBA) Programmes	
1	School of Management Studies	MBA (Full Time) – 2 Years
2	School of Management Studies	MBA (Part-Time) - 3 Years
XI	M.Tech (Regular)	
1	Department of Computer Science	M.Tech in Computer Science and Engineering , Specialisation in Data Science Artificial Intelligence
2	Department of Computer Science	M.Tech in Computer Science and Engineering Specialization in Software Engineering
3	Department of Ship Technology	M.Tech in Computer Aided Structural Analysis Design
4	Department of Electronics	M.Tech in Electronics and communication Engineering with Specialisation in VSLI Embedded Systems, Microwave and Radar Engineer and Robotics & Intelligent Systems.
	Department of Electronics	M.Tech in Defence Technology
5	Department of Instrumentation	M.Tech in Instrumentation Technology
6	Department of Polymer Science and Rubber Technology	M.Tech in Polymer Technology

7	International School of Photonics	M.Tech in Optoelectronics and Laser Technology
	Department of Statistics	M.Tech in Engineering Statistics
8	Department of Statistics	M.Tech in Data Science and Analytics (2021-2022 onwards in lieu of M.Tech in Engineering Statistics)
9	Kunjali Marakkar School Marine Engineering	M.Tech in Marine Engineering
10	School of Engineering	M.Tech in Mechanical Engineering (Thermal Engineering)
11	School of Engineering	M.Tech in Computer Science and Engineering with specialization in Network Computing
12	School of Engineering	M.Tech in Electronics and Communication Engineering with Specialization Wireless Technology
13	School of Engineering	M.Tech in Industrial Safety (Specialization in Health Safety and Environment Management
14	School of Engineering	M.Tech in Civil Engineering (Geotechnical Engineering.
15	School of Engineering	M.Tech in Software Systems
16	School of Engineering	M.Tech Full Time Programme Civil Engineering Specialization Structural Engineering
17	Department of Atmospheric Sciences	M.Tech in Atmosphere Science
18	Department Physical Oceanography	M.Tech in Ocean Technology
19	National Centre for Aquatic Animal Health	M.Tech in Marine Biotechnology
XII	M.Tech Programmes (Part Time)	
1	Department of computer Science	M.Tech in Computer Science and Engineering (Data Science and Artificial Intelligence)
2	School of Engineering	M.Tech in Civil Engineering (Construction Engineering and Management)
3	School of Engineering	M.Tech in Chemical Engineering (Process Engineering)
4	School of Engineering	M.Tech in Electrical and Electronics Engineering (Power Electronics)
5	School of Engineering	M.Tech in Mechanical Engineering (Production Engineering)
XIII	Non-Professional Diploma and Certificate Programmes	
1	Department of English and Foreign Languages	Certificate Programme in French/German
2	Department of English and Foreign Languages	P.G. Diploma in Communicative English
3	Department of English and Foreign	Integrated Diploma in Japanese

	Languages	
4	Department of Hindi	P.G. Diploma in Translation, Journalism and Hindi Language Computing
5	Inter University Centre for Intellectual Property Rights Studies	P.D. Diploma in Intellectual Property Rights (Part-Time)
6	Department of English and Foreign Languages	Short Term online Programmes in Communicative English/French/German/Japanese & Arabic
7	Department of Hindi	Certificate Course in Communicative Hindi
8	Prof.N.R. Madhava Menon Interdisciplinary Centre for Research Ethics and Protocols	Advanced Certificate Programme in Medical Law, Clinical Research and Bio Ethics

Ph.D. Programmes are offered in the following School/Departments/Centres

1	Department of Applied Chemistry
2	Department of Applied Economics
3	Department of Atmospheric Science
4	Department of Biotechnology
5	Department of Chemical Oceanography
6	Department of Computer Applications
7	Department of Computer Science
8	Department of Electronics
9	Department of Hindi
10	Department of Marine Biology, Microbiology and Biochemistry
11	Department of Marine Geology and Geophysics
12	Department of Mathematics
13	Department of Physical Oceanography
14	Department of Physics
15	Department of Polymer Science and Rubber Technology
16	Department of Ship Technology
17	Department of Statistics
18	Department of Instrumentation
19	International School of Photonics
20	School of Engineering

21	School of Environmental Studies
22	School of Industrial Fisheries
23	School of Legal Studies
24	School of Management Studies
25	National Centre for Aquatic Animal Health (NCAAH)
26	Inter University Centre for Intellectual Property Rights Studies(IUCIPRS)
27	Cochin University College of Engineering Kuttanadu (CUCEK)
28	Advanced Centre for Atmospheric Radar Research (ACARR)
29	Inter University Centre for Nanomaterials and Devices (IUCND)
Ph.D. Programmes are offered in the following recognized research centres also	
1	National Institute of Oceanography (NIO), Regional Centre, Kochi- 682 019.
2	Rubber Research Institute of India (RRII), Kottayam, 686 009.
3	Cochin Base of Fishery Survey of India (FSI), Kochi – 682 005.
4	Centre Institute of Fisheries Technology (CIFT), Kochi – 682 029.
5	Kerala Forest Research Institute (KFRI), Peechi, Thrissur – 680 653.
6	Kerala Institute of Local Administration (KILA), Thrissur-680 581.
7	Central Marine Fisheries Research Institute (CMFRI), Kochi-682 019.
8	Naval Physical Oceanographic Laboratory (NPOL), Kochi – 682 021.
9	Vikram Sarabhai Space Centre (VSSC), Thiruvananthapuram – 695 022.
10	Marine Products Export Development Authority (MPEDA), Kochi – 682 016.
11	Centre for Earth Science Studies (NCESS), Thiruvananthapuram – 685 031.
12	Central Coir Research Institute (CCRI), Coir Board, Alappuzha – 688 522.
13	Centre for Marine Living Resources and Ecology (CMRLE), CSEZ P.O, Kochi- 682037.
14	Space Physics Laboratory, Vikram Sarabhai Space Centre (SPL, VSSC), Trivandrum – 695 022
15	National Institute of Fisheries Post Harvest Technology and Tainting (NIPHSTT), Kochi -16.
16	Centre for Water Resources Development and Management (CWRDM), Calicut-673 571.
17	Central Institute of Fisheries Nautical and Engineering Training (CIFNET), Kochi-682 016.
18	National Institute for Interdisciplinary Science and Technology (NIIST), Thiruvananthapuram – 695 019.
19	CIPET: Institute of Plastic Technology (IPT), Udyogamandal, Kochi- 683 501.
20	Indian Institute of Information Technology and Management – Kerala, (IIITM-K), Nila Techno park, Trivandrum – 695 581.
21	Gulati Institute of Finance and Taxation Chavadimukku, Sreekariyam P.O., Thiruvananthapuram – 695 017.
22	HLL Lifecare Limited, HLL Bhavan, Poojappura, Thiruvananthapuram – 695 012.

Exam Results

RESULT DETAILS OF PG AND UG COURSES FOR ACADEMIC YEAR 2021-2022

PG COURSES - FINAL YEAR EXAM 2022									
SI N o	Course	Date of Publicatio n of Results	Registered	Appeared	I Class with Distinctio n	I Clas s	II Clas s	Total Passe d	Pass %
1	MCA – CUCEK	7/13/2022	36	32	24	8	0	32	100.00
2	MSc Photonics	7/7/2022	18	18	4	11	0	15	83.33
3	M.Tech Electronics & Communication Engg	7/6/2022	25	25	17	5	0	22	88.00
4	M.Tech Computer Aided Structural Analysis & Design	7/16/2022	19	19	18	1	0	19	100.00
5	M.Sc Oceanography	7/14/2022	11	11	10	1	0	11	100.00
6	M.Tech Marine Engineering	6/2/2022	3	3	3	0	0	3	100.00
7	M.A. Applied Economics	7/14/2022	17	17	17	0	0	17	100.00
8	MSc Computer Science with Specilization in Data Science	7/13/2022	24	24	24	0	0	24	100.00
9	MSc Computer Science with Specilization in Soft Computing	7/13/2022	20	19	18	1	0	19	100.00
10	MSc Instrumentation	3/6/2022	13	13	12	1	0	13	100.00
11	M Tech Computer Science and Engineering with Specialization in Network Computing	6/29/2022	5	5	4	1	0	5	100.00

12	M.Phil. Applied Economics	6/22/2022	4	4	4	0	0	4	100.00
13	M.Sc Mathematics	7/14/2022	29	29	25	3	0	28	96.55
14	M.Sc Chemistry	6/4/2022	25	25	22	3	0	25	100.00
15	M.Sc Statistics	5/7/2022	22	22	18	4	0	22	100.00
16	M.Tech Industrial Safety (HSEM)	5/7/2022	17	17	17	0	0	17	100.00
17	M.A Hindi Language and Literature	6/29/2022	29	29	16	13	0	29	100.00
18	M.Sc Polymer Science	7/4/2022	28	28	25	2	0	27	96.43
19	M.Sc Bio Polymer Science	7/4/2022	22	22	19	1	0	20	90.91
20	M.Tech Instrumentation Technology	6/9/2022	17	17	15	2	0	17	100.00
21	M.Tech Engineering Statistics	7/1/2022	9	9	3	6	0	9	100.00
22	M.Tech Mechanical Engineering with Thermal Engineering	7/4/2022	13	13	8	5	0	13	100.00
23	M.Tech Civil Engineering with Geotechnical Engineering	7/4/2022	17	17	17	0	0	17	100.00
24	M.Tech Electronics & Communication Engineering (Wireless Technology) (Full Time)	6/30/2022	8	8	8	0	0	8	100.00
25	M.Tech Software Systems	7/1/2022	4	4	2	2	0	4	100.00

B.TECH COURSES - FINAL YEAR EXAM 2022

	COLLEGE/DEPARTMENT	Date of Publication of Results	Registered	Appeared	I Class with Distinction	I Class	II Class	Total Passed	Pass %
1	School of Engineering CUSAT (B.Tech)	6/4/2022	674	674	204	246	0	450	66.77
2	Cochin University College of Engineering Kuttanad (B.Tech)	6/4/2022	256	256	40	101	0	141	55.08
3	Department of Polymer Science & Rubber Technology (B.Tech PS&E)	6/14/2022	21	21	10	3	0	13	61.90
4	Department of Ship Technology (B.Tech NA&SB)	6/8/2022	41	41	29	11	0	40	97.56

5	Department of Instrumentation (B.Tech Instrumentation)	6/4/2022	26	26	11	12	0	23	88.46
Total			1018	1018	294	373	0	667	65.52

Bachelor of Fishery Science (Nautical Science) - FINAL YEAR EXAM 2022									
SI No	COLLEGE/DEPARTMENT	Date of Publication of Results	Registered	Appeared	I Class with Distinction	I Class	II Class	Total Passed	Pass %
1	CIFNET Kochi	6/21/2022	30	30	27	2	0	29	96.67
Total			30	30	27	2	0	29	96.67

List of Ph. D Degree Awardees

SI No	NAME OF THE CANDIDATE	TITLE OF THE THESIS	NAME OF RESEARCH GUIDE	VIVA DATE	FACULTY
1	Sona Stanly	STUDIES ON POLYVINYL ALCOHOL NANOCOMPOSITE FILMS AND AEROGELS WITH MODIFIED CLAY AND ITS REDUCED GRAPHENE OXIDE HYBRID FOR CARBON DIOXIDE ADSORPTION AND ORGANIC DYE REMOVAL	Dr.Honey John	12.04.2021	Technology
2	Sunitha A S	An Assessment of Social Progress in the Context of Social Exclusion: A study of Tribal Community in Kerala	Dr. D Rajasenan	13.04.2021	Social Sciences
3	Abdul Rasheed Paloly	Growth of Multi functional Tin Oxide Nano - arranged Thin Films by chemical Spray Pyrolysis	Dr. M Junaid Bushiri	16.04.2021	Science

4	Ajay Singh O T	SUSTAINABILITY OF RESPONSIBLE TOURISM INITIATIVES IN KUMARAKOM : A STUDY ON LOCAL STAKEHOLDERS	Dr. Manoj P K	19.04.20 21	Social Sciences
5	A R Aswini	Characterisation of Carbonaceous aerosols in distinct geographical environments over the Indian region	Dr. Prabha R Nair & Dr. Prashanth Hedge	19.04.20 21	Science
6	Ranjini R Mohan	Engineering the material properties of polyaniline and its hybrids for specific technological applications	Dr. S Jayaleskhmi	20.04.20 21	Science
7	Pai Yogesh Anand	The Standard Essential Patents Dispute Resolution Impasse : In search of Bright-Line Rules and Balancing Tests for India	Dr. T G Agitha	20.04.20 21	Law
8	Pinky	A STUDY ON SOME LATTICE PROBLEMS IN L-TOPOLOGY AND RELATED TOPICS	Dr. T P Johnson	21.04.20 21	Science
9	Sritha K S	Salmonella lytic phages and recombinant endolysin LysStpI as antibacterial biocontrol agents	Dr. Sarita G Bhat	22.04.20 21	Science
10	Don Xavier N D	Ecotoxicology of selected heavy metals, their responses and trophic transfer in marine organisms from the Cochin Coastal system	Dr. S Bijoy Nandan	26.04.20 21	Marine Sciences
11	Renuka V	Production of Chitooligosaccharides and its application in Bio - Nano composites films	Dr. C N Ravishankar	17.06.20 21	Marine Sciences
12	Avudaiappan G	Development of Porphyrin Cored Dendritic Polymers for Catalysis and Sensing Applications	Dr. K Sreekumar	17.06.20 21	Science
13	Mary Geena K G	Hindi Aur Malayalam Navajagarankaleen Upanyasom Ka Tulanatmak Adhyayan	Dr. N Mohanan	18.06.20 21	Humanities

14	Ragesh N	Biology and life history of the purpleback squid <i>Sthenoteuthis oualaniensis</i> from the Arabian Sea	Dr. K Sunilkumar Mohamed	18.06.2021	Marine Sciences
15	Baiju M V	Optimization of hull of a fuel efficient deep sea multipurpose fishing vessel using Computational Fluid Dynamics	Dr. K Sivaprasad	21.06.2021	Technology
16	Jesna A	Studies on 1,3- dipolar cycloaddition reaction of nitrones and a few reaction of nitrones as aldehyde surrogates	Dr . S Prathapan	22.06.2021	Science
17	Shiny Paul	Performance Analysis of Solar Photo Voltaic System with Different Converter Topologies and Maximum Power Tracking Algorithms along with Comparative Results	Dr. K Paulose Jacob	22.06.2021	Technology
18	Anju K R	SWATANTHRYOTAR HINDI UPANYASON MEIN VESHYA JEEVAN	Dr. K Ajitha	24.06.2021	Humanities
19	Harilal B	Behaviour of cold bonded alternate aggregate concrete exposed to elevated temperatures	Dr. Job Thomas	29.06.2021	Engineering
20	Archana V N	Tailoring Magnetic Nanofluids for Microwave, Magneto - Optical and Sustainable Energy Applications	Prof. M R Anantharaman	29.06.2021	Science
21	Sreekala P S	Synthesis and Characterization of Novel Doped Conducting Polymer Composites for Microwave Applications	Dr. C K Aanandan	30.06.2021	Technology
22	Suresh Kumar M G	STABILITY ANALYSIS OF NONLINEAR SMIB POWER SYSTEM BASED ON SLOW FLOW EQUATIONS AND TUNING OF PIDPSS EMPLOYING TIDAL FORCE FIREFLY ALGORITHM	Dr. C A BABU	01.07.2021	Engineering

23	Nishamol M	Tribal Sub Plan on the Human Capability formation of the Tribal Community in Kerala	Dr. D Rajasenan	02.07.2021	Social Sciences
24	Krishnaprasad C	Solar Energetic Particles Associated with Coronal Mass Ejections and Corotating Interaction Regions and their Influence on Martian Plasma Environment	Dr. Smitha V Thampi	05.07.2021	Science
25	Kurias K Markose	Development of carrier selective contacts and up conversion phosphors for silicon solar cells	Dr. M K Jayaraj Dr. Aldrin Antony	06.07.2021	Science
26	Cerene Mariam Abraham	Novel Data Mining Strategies for the Trend Analysis in the Equity Domain	Dr. M Sudheep Elayidom Dr. T Santhanakrishnan	06.07.2021	Engineering
27	Sethu Lakshmi P	Enhancement of Network Lifetime in Wireless Sensor Networks using Energy Harvesting Protocols	Dr. Jibu Kumar M G	08.07.2021	Engineering
28	Anjusree P K	SAMAKALEEN HINDI KATHA SAHITHYA MEIN KASHMIR	Dr. K N Aneesh	09.07.2021	Humanities
29	Shyni V K	INFLUENCE OF FINANCIAL INCLUSION POLICY AWARENESS AND USAGE ON THE FINANCIAL BEHAVIOUR OF SCHEDULED CASTE AND SCHEDULED TRIBE HOUSEHOLDS: A STUDY WITH SPECIAL REFERENCE TO SELECTED DISTRICTS OF KERALA	Dr. D Mavoothu	09.07.2021	Social Sciences
30	Gopalakrishna Pillai M	Influence of Beam Focus Position on Penetration of Characteristics and Effect of Heat Treatment on Ti6Al4V Electron Beam Weld Properties	Dr. P S Sreejith Dr. Bhanu Pant Dr. Rohith Kumar Gupta	12.07.2021	Engineering
31	Greeshma P	Foraging ecology of Selected birds of Kole wetlands of	Dr. E A Jayson	12.07.2021	Environmental Studies

		Thrissur, Kerala, India			
32	Mary Priya Sebastian	An Improved Phrase - Based English - Malayalam Machine Translation System using Refined Bilingual Alignments	Dr. G Santhosh Kumar	13.07.2021	Technology
33	SOBHAN KUMAR KOMPALLI	INVESTIGATIONS ON AEROSOL MICROPHYSICAL PROPERTIES OVER DISTINCT ENVIRONMENTS OF INDIA AND ADJOINING OCEANIC REGIONS	Dr. S Suresh Babu	16.07.2021	Marine Sciences
34	Salaji S	Analysis, Modification and Evaluation of Chaulmoogra oil (<i>Hydnocarpus Wightianus</i>) as a base oil for Industrial Lubricants	Dr. Jayadas N H Dr. Tide P S	19.07.2021	Engineering
35	Sudha Hariharan	Characterization of ligninolytic enzymes - lignin peroxidase, manganese peroxidase and laccase, produced under solid - state fermentation from <i>Ganoderma lucidum</i> strain GD88	Dr. Padma Nambisan	19.07.2021	Science
36	Nandita M	Bacteriophages as arsenal against biofilm forming MDR non -cholera Vibrios and in-silico prediction of endolysins to augment protein engineering	Dr. Sarita G Bhat	23.07.2021	Science
37	Remisha O	Calcium bentonite clay mineral as dietary supplement in reducing aflatoxin B1 toxicity and its effect on growth, biochemical and histopathological changes in Nile tilapia, <i>Oreochromis niloticus</i> (Linnaeus, 1758)	Dr. Saleena Mathew	23.07.2021	Marine Sciences
38	Tejpal C S	Synthesis , Characterization and assessment of bioactivity of vitamins loaded phenolic	Dr. Suseela Mathew Dr. Niladri	26.07.2021	Marine Sciences

		acid grafted chitosan micro - particles	Sekhar Chatterjee		
39	Michael George	Efficient Approaches for Image/ Video Analysis in Surveillance	Dr. Babita Roslind Jose	26.07.2021	Engineering
40	Nimmi P M	EFFECT OF PROTEAN ATTITUDE ON EMPLOYEE WELLBEING : EXAMINING THE ROLE OF PSYCHOLOGICAL CAPITAL AND PERCEIVED EMPLOYABILITY	Dr. Zakkariya K A	26.07.2021	Social Sciences
41	Boni Samuel	Investigations on synthesis and Characterization of CdSe and CdSe-ZnSe nanostructures for photonic applications	Dr. A Mujeeb Dr. V P N Nampoori	27.07.2021	Technology
42	Jayasree P Kuttamassery Mana	Biosorption Chromium (VI) from waste water using plant based biomass	Dr. G Madhu Dr. Dipak Kumar Sahoo	27.07.2021	Engineering
43	Jiss Paul	Evaluation of Inter -Digital Capacitive Structures for Sensing proximity, Relative Humidity and Gas species concentration	Dr. Jacob Philip	29.07.2021	Technology
44	Anisha P U	NAKSALVAD KE PARIPREKSHYA MEIN SATTOTHARI HINDI KAVITA: EK ADHYAYAN	Dr. Girish Kumar K K	29.07.2021	Humanities
45	Nikhila T Bhuvan	Design and Implementation of a Multimodal Learning To Rank Model for Ranking WebPages	Dr. Sudheep Elayidom M	02.08.2021	Engineering
46	Remya R Kumar	Community Support for Ecotourism Development: an Analysis with Special reference to Ethnicity and Local Governance in the Protected Areas of Kerala , India	Dr. Manoj Edward	02.08.2021	Social Sciences
47	Deepthi John	Synthesis , Characterization and testing of TiO ₂ - Reduces Graphene Oxide Nanocomposites for the Photocatalytic Removal of	Dr. V Sivanandan Achari Dr. Suguna Yesodharan	02.08.2021	Environmental Studies

		Pollutants from water			
48	Vineetha P K	Synthesis of a Few Pyran Based Bipodal D- π -A- π -D Triads and Studies on Their Excited State Dynamics: Applications in Photovoltaics, Nonlinear Optics and Metal Ion Sensing	Dr. N Manoj	04.08.20 21	Science
49	Vinaya K K	ISOLATION AND CHARACTERIZATION OF MARINE MACROALGAE ASSOCIATED BACTERIAL FLORA AND THEIR BIOTECHNOLOGICAL POTENTIAL	Dr. Kajal Chakraborty	04.08.20 21	Marine Sciences
50	Anu Xavier	A Study on the features of Monsoon Circulation and Extreme Rainfall Events using ST Radar and Complimentary Datasets	Dr. K Mohan Kumar	06.08.20 21	Marine Sciences
51	Namitha K	Learning Concept Drift and Recurrence from Data Streams : A Clustering Approach	Dr. G Santhosh Kumar	09.08.20 21	Technology
52	Ranju R	Taxonomy and Systematics of Benthic foraminifera from the Indian Seas	Dr. R Damodharan	10.08.20 21	Marine Sciences
53	Rabiya Rasheed	A Reduced Switch Multilevel Inverter Topology for DC - AC Conversion	Dr. K K Saju	10.08.20 21	Engineering
54	Abhilash G Nambudiri	A Study on Antecedents and outcome of Social Capital - Examining the moderating role of Social Project Type	Dr. Sam Thomas	11.08.20 21	Social Sciences
55	Divya N G	Zn ²⁺ ion assisted growth of α -Fe ₂ O ₃ and electrochemical sensing of α -Fe ₂ O ₃ and ZnFe ₂ O ₄ / α -Fe ₂ O ₃ -graphene hybrid nanomaterial	Dr. M Junaid Bushiri	12.08.20 21	Science
56	Joby Bhaskar	Right to Religious Practices in India	Dr. D Rajeev	12.08.20 21	Law

57	Parvathy O C	STUDIES OF A FEW HETROCYCLIC D- π - A SYSTEMS: STRUCTURE AND MEDIUM EFFECTS IN AGGREGATION INDUCED EMISSION, METAL ION SENSING AND MECHANOCROMISM	Dr. S Prathapan Dr. N manoj	13.08.20 21	Science
58	N R Sethu Lakshmi	BHARATIYA UPANYASON MEIN DHARAMNIRAPEKSHAT HA (Chune Huye Upanyason ke Vishesh Sandarbh Mein)	Dr. K Ajitha	13.08.20 21	Humanities
59	Santhosh G	A Study on Utilization of Jarofix in Construction Application	Dr. K S Beena	13.08.20 21	Engineering
60	Sariga I V	Premchand Ke Kathasahitya Ka Sampathi Shastriya Vivechan	Dr. N Mohanan	24.08.20 21	Humanities
61	Rinu Elizabeth Philip	SAMAKALEEN HINDI KAHANIYOM MEIN GAAV	Dr. K N Aneesh	25.08.20 21	Humanities
62	Shailesh S	COMPUTATIONAL FRAMEWORK FOR IDENTIFICATION OF SPATIO - TEMPORAL PATTERNS IN CLASSICAL DANCE USING MACHINE LEARNING TECHNIQUES	Dr. M V Judy	25.08.20 21	Technology
63	Roopak S	Detection and Characterization of Android Malware Using Graph and Stochastic Models	Dr. Tony Thomas	27.08.20 21	Technology
64	Shini Renjith	An Autodidactic Algorithm for Enhancing the Performance of Review-based Recommender Systems	Dr. A Sreekumar Dr. M Jathavedan	31.08.20 21	Technology
65	Anilkumar K	Internal Waves : Their characteristics , dynamics and application with special Emphasis on Indian waters	Dr. P V Hareesh Kumar	02.09.20 21	Marine Sciences
66	Jasna M	Development of flexible carbon nanotube - polymer composites for optoelectronic, energy	Dr. M K Jayaraj	03.09.20 21	Science

		storage and electromagnetic shielding applications			
67	Vivek R	INVESTIGATIONS ON THE RADIATION CHARACTERISTICS OF COPLANAR WAVEGUIDE FED COMPACT ANTENNAS WITH SHORTED SIGNAL STRIP AND GROUND PLANE	Dr. K Vasudevan	03.09.2021	Technology
68	Mathew M Mecheril	Investigations on Fluorescence quenching in selected nanoparticles doped organic dyes	Dr. Jacob Philip	04.09.2021	Technology
69	HARIKRISHNAN DAMODARAN NAIR	An Effective Framework for Addressing Security Issues in Biometric Fingerprint Authentication System	Dr. Sunil Kumar N Dr. Shelbi Joseph	06.09.2021	Engineering
70	Diana Benjamin	Taxonomy of Elamobranchs and life history traits of Bigeye thresher shark <i>Alopias superciliosus</i> along the Southwest coast of India	Dr. B Madhusoodana Kurup	07.09.2021	Marine Sciences
71	P N MUSFIR	Germanium based Chalcogenide Glasses for Photonic Applications	Dr. Sheenu Thomas	07.09.2021	Technology
72	Renuka R	Chemistry of mangrove soils in Kerala	Dr. S Sandeep	07.09.2021	Environmental Studies
73	Nissamuddeen Kunnath	Structural , Dielectric and Piezoelectric properties of selected Lead-free Ceramic Nanocomposites exhibiting Morphotropic Phase Boundary	Dr. Jacob Philip	08.09.2021	Technology
74	Anupama K M	Studies on the life history traits of Malabar puffer fish , <i>Carinotetradon travancoricus</i> (Hora and Nair , 1941) inhabiting Pamba and Chalakudy rivers, South India	Dr. M Harikrishnan	09.09.2021	Marine Sciences

75	Linu Pinto	<i>AN ANALYTICAL APPROACH ON THE APPROXIMATIONS OF DEEP NEURAL NETWORK FOR CLASSIFICATION FUNCTIONS IN FUZZY DOMAIN</i>	Dr. Sasi Gopapalan	14.09.20 21	Science
76	Sajikumar K K	Use of Statoliths for age and Growth Studies of Squids along Southwest coast of India	Dr. K Sunil Kumar Mohamed Dr. V Kripa.	15.09.20 21	Marine Sciences
77	Dayana Mathew	Chemistry of specialized coastal environments : A Case Study of Alappuzha mud banks , Southwest coast of India	Dr. Gireesh Kumar T R	17.09.20 21	Marine Sciences
78	Neenu Wilson	HUMAN CAPITAL MANAGEMENT PRACTICES AND EMPLOYEE PERFROMANCE IN SOFTWARE FIRMS IN KERALA	Dr. Sebastian Rupert Mampilly	23.09.20 21	Social Sciences
79	Rakhi Krishna R	Magneto-Electric and associated properties of selected Lead-free Multiferroic Perovskite-Ferrite Nanocomposites	Dr. Johney Issac	24.09.20 21	Technology
80	Nimya Ann Mathews	Zn(II) AND Cu(II) COMPLEXES OF ONS DONOR THIOSEMICARBAZONES: SYNTHESIS, STRUCTURES, SPECTRAL STUDIES AND BIOLOGICAL APPLICATIONS	Dr. P M Sabura Begum	27.09.20 21	Science
81	Praveena K	INFRASTRUCTURE DEVELOPMENT AND INEQUALITIES IN KERALA : AN INTERDISTRICT ANALYSIS	Dr. S Harikumar	29.09.20 21	Social Sciences
82	Shyja K	IKKISVEEM SADI KE PRATHAM DASHAK KE HINDI KATHASAHITYA	Dr. R Sasidharan	30.09.20 21	Humanities

		MEIN SAMPARADAYIKATA KA VIRODH			
83	Jaseera K V	SCREENING, CHARACTERIZATION AND BIOPROSPECTING OF POTENTIAL MARINE PROTISTS WITH SPECIAL REFERNCE TO PUFA	Dr. P Kaladharan	04.10.20 21	Marine Sciences
84	Sreejith V N	Distribution, genetic characterization and antimicrobial resistance profile of pathogenic <i>Vibriyo parahaemolyticus</i> from retail markets and aquaculture farms in Kerala (India)	Dr. K V Lalitha Dr. Toms C Joseph	05.10.20 21	Science
85	Shylaja G	ASSESSMENT OF LITTER WITH SPECIAL REFERENCE TO PLASTICS AND ITS IMPACT ON THE BIOTA OF VEMBANAD WETLAND ECOSYSTEM , KERALA ,INDIA	Dr. V Kripa	06.10.20 21	Environmenta l Studies
86	Vinesh P V	DESIGN AND DEVELOPMENT OF COMPACT CAPACITIVE COUPLED MULTIBAND PLANAR INVERTED F ANTENNAS	Dr. K Vasudevan	07.10.20 21	Technology
87	Ajina C	Pseudo binary chalcogenide glass for the realization of IR photonic devices	Dr. Sheenu Thomas	08.10.20 21	Technology
88	Reethy P S	Ecology and Genetic Diversity of <i>Vibriyo cholerae</i> in Seafood and Aquatic Environment	Dr. K V Lalitha	12.10.20 21	Science
89	Renu George	Software Design Consistency Checking of UML Models using Artificial Intelligence Techniques	Dr. Philip Samuel	12.10.20 21	Technology
90	Ajitha S	COMPUTER VISION BASED RETINAL IMAGE PROCESSING FOR GLAUCOMA DETECTION	Dr. M V Judy	21.10.20 21	Technology

91	Philip Cherian	DEVELOPMENT OF ULTRA WIDEBAND ANTENNAS FOR DIELECTRIC PROFILE IMAGING FOR BREAST TUMOUR DETECTION	Dr.P.Mythili	21.10.20 21	Engineering
92	Krishna Sagar C K	Photoluminescence studies of Europium doped ZnS microspheres and Zn ₂ SnO ₄ nanostructures for bioimaging applications	Dr. M Junaid Bushiri	26.10.20 21	Science
93	Paxy George	Studies on holographic running vacuum model of the late accelerating Universe	Dr. Titus K Mathew	28.10.20 21	Science
94	Anupama V	Investigations on Ternary Ge-Se-Sb Chalcogenide Glass-A Potential Composition for Mid IR Photonics and Sensing Applications	Dr.Sheenu Thomas	02.11.20 21	Technology
95	Sarika E P	Design and Development of Standalone Photovoltaic System with Novel Hybrid MPPT Suitable for Normally Varying and Partial Shading Atmospheric Condition	Dr.Josephkutty Jacob	02.11.20 21	Engineering
96	ANJALI JOHN	Employer Brand Effects on Intention to Stay : The Role of Employee Engagement and Innovative Work Behaviour	Dr.Jagathy Raj V P	05.11.20 21	Social Sciences
97	Sumi E S	Biochemical Studies on the antioxidant defence of squalene against methotrexate induced oxidative stress in rats	Dr.R Anandan	09.11.20 21	Marine Sciences
98	Jessy Simon	Synthesis and optical characterization of certain metallic and bimetallic nanoparticles for biophotonic applications	Dr.M. Kailasnath Dr.V P N Nampoori	09.11.20 21	Technology
99	Rani Oomman Panicker	DEEP NEURAL NETWORK BASED APPROACHES FOR DETECTING TUBERCULOSIS BACILLI FROM SPUTUM SMEAR MICROSCOPIC IMAGES	Dr.Sabu M K	10.11.20 21	Technology

100	Sangeetha Sadanandan	PRASADYUGEN HINDI NATAKON MEIN RASHTRIYA CHETNA	Dr.K Ajitha	15.11.2021	Humanities
101	Uma Narayanan	An Efficient Security Architecture for Secure Authentication and Data Sharing in Cloud Enabled Big Data Environment	Dr.Varghese Paul	15.11.2021	Engineering
102	Anu P R	Toxicity effects of trace metals and their trophic transfer in selected species of microalgae and mussel, Perna viridis	Dr.S.Bijoy Nandan	16.11.2021	Marine Sciences
103	Sindhurani P J	A Critical Analysis of Sulbasutras in the Perspective of Geometry and Algebra	Dr.T P Johnson Dr.V P N Nampoori	18.11.2021	Science
104	Sreeram P R	Fabrication of Thermoelectric Devices Based on Telluride and Manganites - A Material to Device Approach	Dr. M R Anantharaman	19.11.2021	Science
105	Shiji T P	DETECTION AND CHARACTERIZATION OF ABNORMALITIES IN BREAST ULTRASOUND IMAGES FOR CANCER DETECTION	Dr.Vinu Thomas	19.11.2021	Engineering
106	Revathy S	SAMAKALEEN HINDI KAVITHA KI BHASHA: EK ADHYAYAN	Dr.K Vanaja	19.11.2021	Humanities
107	Bindu M D	EXPERIMENTAL AND NUMERICAL INVESTIGATION ON FRICTION STIR WELDING OF AA 7068-T6 ALUMINUM ALLOY	Dr. Tide P S Dr. A B Bhasi	26.11.2021	Engineering
108	LEKSHMI N	Sponge associated fungus Aspergillus tamarii MCCF 102 is a potential source of the anti-inflammatory dipyrrolobenzoquinones Terreusinone and Terreusinone B for neuroprotective drug development	Dr. T P Sajeevan	01.12.2021	Marine Sciences

109	Jomon Geroge	Novel Detection and Countermeasure Techniques for Torpedo Defence Systems	Dr. T.Santhanakrishnan	07.12.2021	Technology
110	Freddy P Paul	Studies on Tropical Cyclones over the Bay of Bengal and the Arabian Sea using the Regional Numerical Weather Prediction Model COSMO	Dr. Damu Bala Subrahmanyam	07.12.2021	Science
111	Sanu K Anand	SENSORS FOR INDIVIDUAL, DUAL AND SIMULTANEOUS DETERMINATION OF SOME CLINICALLY SIGNIFICANT MOLECULES - ELECTROCHEMICAL AND OPTICAL APPROACHES	Dr. K Girish Kumar	08.12.2021	Science
112	Arya Viswanath	SAMAKALEEN HINDI-MALAYALAM MAHILA KAHANIKARON KI KAHANIYON KA TULANATMAK ADHYAYAN : CHITRA MUDGAL AUR CHANDRAMATI KI KAHANIYON KI VSHESH SANDARBH MEIN	Dr. R Sasidharan	09.12.2021	Humanities
113	Deepthi K	Computational Drug Repurposing through the Target Micro RNAs : An Integrated Approach	Dr. Jereesh A S	10.12.2021	Technology
114	Tessla Arakal	FUNCTIONAL OUTCOMES OF PERFORMANCE MANAGEMENT SYSTEM AMONG SCIENTISTS IN RESEARCH AND DEVELOPMENT ORGANISATIONS	Dr. Sebastian Rupert Mampilly	14.12.2021	Social Sciences
115	Krishna P B	Emergence of cosmic space and the thermodynamics of horizons	Dr. Titus K Mathew	14.12.2021	Science
116	Anand V R	Polymer optical fibre based active and passive whispering gallery mode	Dr. M Kailasanath Dr. P	16.12.2021	Technology

		resonators for microlasing and sensing applications	Radhakrishnan		
117	Nisha T P	FACET ORIENTED CRYSTAL GROWTH IN TITANIUM DIOXIDE PHOTOCATALYST AND ITS NANOHYBRIDS WITH GRAPHENE AND SILVER : MECHANISTIC INSIGHTS AND ENVIRONMENTAL APPLICATIONS	Dr. Honey John	16.12.2021	Technology
118	Manomi S	Entophytic fungi from marine macro algae : Molecular phylogeny and bioactive potential	Dr. Rosamma Philip Dr. Swapna P Antony	17.12.2021	Marine Sciences
119	Vinney Zephania Vincent	BUSINESS INCUBATION AND STARTUP PERFORMANCE : THE ROLE OF ABSORPTIVE CAPACITY, ENTREPRENEURIAL ORIENTATION AND INNOVATION SPEED	Dr. Zakkariya K A	22.12.2021	Social Sciences
120	Jabin T	STUDIES ON THE MECHANICAL, ELECTRICAL AND THERMAL PROPERTIES OF POLYTHIOPHENE COATED BANANA FIBER COMPOSITES BASED ON PU, PE AND PP	Dr. Sunil K Narayanankutty	11.01.2022	Technology
121	Hema Krishnan	Design and Optimization of efficient classification models for sentiment analysis of product reviews	Dr. Sudheep Elayidom M Dr. T Santhana Krishnan	13.01.2022	Engineering
122	Vijesh K R	Studies on carbon dots and carbon dots decorated graphene oxide for nonlinear optical applications	Dr. Sheenu Thomas	17.01.2022	Technology
123	Sivakumar K C	Structure based in silico screening for antiviral lead compounds from marine sources against White Spot Syndrome Virus: a multi-	Dr. T P Sajeevan	21.01.2022	Environmental Studies

		target drug discovery approach			
124	Anuraj Mohan	Representation Learning From Time-varying Networks and its Applications to Temporal Link Prediction	Dr. K V Pramod	21.01.2022	Technology
125	Elias George K	Studies on Epoxy Nanocomposites Coatings for Corrosion Protection	Dr. A Mathiazhagan	25.01.2022	Technology
126	Soumya Varghese	Green Process Innovations and Green Product Innovations: Drivers and Impacts on Medium and Large Manufacturing Firms in Kerala	Dr. Jagathy Raj V P	28.01.2022	Social Sciences
127	Nishanth N	Modeling and Detection of Certain Flooding Based Denial-of-Service Attacks in Wireless Ad Hoc Networks	Dr. A Mujeeb	31.01.2022	Technology
128	M Kathiresan	Studies on Stronium and Lanthanum co-doped PZT Thin Films for Acoustic Sensing Application	Dr. T Santhanakrishnan Dr. M K Jayaraj	01.02.2022	Science
129	Aneesh P A	Optimization of Supercritical fluid extraction, characterization and accessment of bioactivities of astaxanthin oil from processing discards of Ridgeback Shrimp(<i>Solenocera choprai Nataraj, 1945</i>)	Dr. Susheela Mathew	08.02.2022	Marine Sciences
130	Anu A R	Design and Development of Dielectric Resonator Antenna using Planar Slots	Dr. Abdulla P	10.02.2022	Engineering
131	Sreela S R	Design and Development of Framework for Visual Attention Based Automatic Image Description Generation with Game-theoretic Optimization	Dr. Sumam Mary Idiccula	10.02.2022	Technology
132	Bony John	Analysis of Hydrokinetic turbine based hybrid energy systems for tropical climate	Dr. James Varghese	11.02.2022	Engineering

		conditions			
133	Mymoona P	SAMKALEEN HINDI KAHANI MEIN GHAR: EK VISHLESHNATMAK ADHYAYAN	Dr. R Sasidharan	14.02.20 22	Humanities
134	Sooraj N P	Studies on Ecophysical Perspectives of Terrestrial Plant Invasion	Dr. Ammini Joseph Dr. R Jaishanker	15.02.20 22	Environmenta l Studies
135	Jerin Mohan N T	Full causal and truncated viscous models for the recent acceleration of the universe	Dr. Titus K Mathew	15.02.20 22	Science
136	Deepa Jawahar	ANTECEDENTS OF DESTINATION BRAND EQUITY: SPECIAL REFERENCE TO KERALA AS AN AYURVEDIC DESTINATION	Dr. M K Muhammed Aslam	17.02.20 22	Social Sciences
137	Sudeep Kumar B L	Observational Aspects of Atmospheric Boundary Layer Features over West Coast of India with Emphasis to Southwest Monsoon	Dr. C A BABU	18.02.20 22	Marine Sciences
138	Suja C Nair	Design and Implementation of Efficient Data mining models using CDR data for Density Analysis and Prediction	Dr. Sudheep Elayidom Dr.Sasi Gopalan	21.02.20 22	Engineering
139	Devassy Christo	Cellulolytic potential assessment of the Silent Valley National Park top soil through metagenomic approaches	Dr. Valsamma Joseph	22.02.20 22	Environmenta l Studies
140	Naveen S	Legal Regime on climate change in India: A Study Based on International Framework	Dr. D Rajeev	22.02.20 22	Law
141	Esha Arshad	DIFFERENTIAL EXPRESSION, ISOLATION, AND CHARACTERISATION OF GENES RESPONSIVE TO ENVIRONMENTAL STRESSORS IN MAGALLANA BILIMEATA (RÖDING, 1798)	Dr. K K Vijayan	22.02.20 22	Marine Sciences

14 2	Rasila V A	Studies on Some Steiner Distance Notions in Graphs	Dr. A Vijayakumar	24.02.20 22	Science
14 3	Binu M Issac	BEHAVIOUR OF LATERISED GEOPOLYMER CONCRETE EXPOSED TO ELEVATED TEMPERATURES	Dr. Geroge Mathew	25.02.20 22	Engineering
14 4	Jacob Joshua	Genesis and Validation of Aerosol Surveillance for Air Quality Assessment in the Prevailing hotspots of India	Dr. Sujitha C H	25.02.20 22	Marine Sciences
14 5	Jeevamol Joy	Ontology-Based Techniques to Solve Cold Start Problem in E-Learning Content Recommender Systems	Dr. Renumol V G	28.02.20 22	Engineering
14 6	Sanju Sreedharan	Bio-Fuel Cells: Sustainable Technology for the Treatment of Coconut Industry Wastewater	Dr. Renu Pawels	03.03.20 22	Engineering
14 7	Sam Kollannore U	Design and Development of Microstrip-fed Contact Planar Antennas for Ultra-wideband Applications	Dr. Abdulla P	04.03.20 22	Engineering
14 8	Rahnamol A M	EPOXY/ POLYANILINE/ REDUCED GRAPHENE OXIDE NANOCOMPOSITE FOR ELECTROMAGNETIC INTERFERENCE(EMI) SHIELDING	Dr. Jayalatha Gopalakrishnan G	08.03.20 22	Technology
14 9	Neethu P J	SAMKALEEN HINDI KAHANI MEIN UPBHOKTAVAD	Dr. K Ajitha	11.03.20 22	Humanities
15 0	Sony U	Investigation on linear and non-linear optical properties of hemicyanine laser dye for bio-photonics application in the context of technology development	Dr. Sheenu Thomas Dr. V P N Nampoore	18.03.20 22	Technology
15 1	Vinod Sankar N	STUDIES ON WESTERN DISTURBANCES AFFECTING NORTH INDIA DURING WINTER	Dr. C A Babu	25.03.20 22	Marine Sciences

15 2	Roshny S	Representation of Atmospheric Boundary Layer and Convective Processes in RANS and LES Models	Dr. Damu Bala Subrahmanyam	29.03.20 22	Science
15 3	Manoj M	DESIGN, DEVELOPMENT AND ANALYSIS OF HARMONIC SUPPRESSED STEPPED IMPEDANCE DIPOLE ANTENNAS	Dr. P Mohanan	30.03.20 22	Technology
15 4	Jaseena K U	Intelligent Framework for Weather Forecasting using Deep Learning Techniques	Dr. Binsu C Kovoov	31.03.20 22	Engineering

Recognized Research Centres of CUSAT

Sl. No.	Name	Address	Area/Faculty	Year of Recognition
1	HLL	HLL Lifecare Limited, HLL Bhavan, Poojappura, Thiruvananthapuram-695 012	Science	2018
2	GIFT	The Director, Gulati Institute of Finance and Taxation, Chavadimukku, Sreekariyam P.O., Thiruvananthapuram-695 017	Social Sciences	2018
3	IIITM-K	The Director, Indian Institute of Information Technology & Management, Kerala, Nila, Technopark, Thiruvananthapuram-695 581	Technology	2013
4	CBPST	The Manager (Projects), Centre for Biopolymer Science & Technology A unit of CIPET, Central Institute of Plastics Engineering &	Technology and academic programmes including Ph.D	2012

		Technology, Ministry of Chemicals & Fertilizers, Udyogamandal, Eloor-683 501		
5	CMLRE	The Director, Centre for Marine Living Resources and Ecology Block C, 6 th Floor, Kendriya Bhavan, P.B. No. 5415, CSEZ P.O.	Marine Science, Environment Studies	2012
6	NIFPHATT	The Director, National Institute of Fisheries Post Harvest Technology and Training, (Formerly Integrated Fisheries Project) P.B. No. 1801, Kochi-682 016	Fishing Craft, Gear Technology, Fisheries Products	1980 re-recognized in 2000
7	CWRDM	The Director, Centre for Water Resources Development and Management, Kunnamangalam, Kozhikode-683 571	Science, Marine Science, Environment Studies	2010
8	MEC	The Principal, Model Engineering College, B.M.C. P.O., Thrikkakara, Kochi-682 021	Electronics and Communication Engineering	2010
9	SPL	The Director, Space Physics Laboratory, Vikram Sarabhai Space Centre, Thiruvananthapuram-695 022	Science, Marine Science, Technology, Environment Studies	2002
10	VSSC	The Director, Vikram Sarabhai Space Centre, Department of Space, Government of India, Thiruvananthapuram-685 022	For interaction with the following divisions: a) Solid Propulsion, propellants and Chemical group, b) Avionics & Mission dynamics, c) Quality assurance control division, d) Programme planning & evaluation division, e) Materials & Mechanical systems division, f) Computer & Information division	1986

11	RRII	The Director of Research, Rubber Research Institute of India, Rubber Board P.O., Kottayam-686 009, Kerala	Technology	1973
12	RRII	The Director of Research, Rubber Research Institute of India, Rubber Board P.O., Kottayam-686 009, Kerala	Social Sciences	1998
13	NIST	The Director, National Institute for Interdisciplinary Science and Technology, (Formerly Regional Research Laboratory) Industrial Estate P.O., Pappanamcode, Thiruvananthapuram-685 019	Chemicals Division Science Technology, Process Engineering Division Technology	1987
14	NIST	The Director, National Institute for Interdisciplinary Science and Technology, (Formerly Regional Research Laboratory) Industrial Estate P.O., Pappanamcode, Thiruvananthapuram-685 019	Environment Studies	1999
15	NIO	The Scientist-in-charge, National Institute of Oceanography Regional Centre, Kochi, P.B. No. 1913, Dr. Salim Ali Road, Kochi-682 018	Marine Science	2000
16	NPOL	The Director, Naval Physical and Oceanographic Laboratory, Government of India, Ministry of Defence, Department of Defence Research and Development, Thrikkakara P.O., Kochi-682 021	Physics (Acoustics), Oceanography, Electronics	1976
17	MPEDA	The Director, Marine Products Export Development Authority (Ministry of Commerce, Government of India), Kochi-16	Marine Science	1980
18	KILA	The Director, Kerala Institute of Local Administration, Thrissur-680 581	Social Sciences	2000
19	KFRI	The Director, Kerala Forest Research Institute, Peechi, Thrissur-680 653	For Research in areas that come within the purview of various faculties of the University	1985
20	FSI	The Director, Cochin Base of Fishery Survey of India, P.B. No. 853, XIII/488, Kochangadi, Kochi-682 005	Marine Science	2002

21	CCRI	The Director, Central Coir Research Institute, Coir Board, Kalavoor, Alappuzha-688 522	Science, Technology, Engineering	2006
22	NCESS	The Registrar, National Centre for Earth Science Studies, P.B. No. 7250, Akkulam, Thiruvananthapuram-685 031	Science, Marine Science	1980
23	CIFNET	The Director, Central Institute of Fisheries Nautical and Engineering Training Division, Diwans Road, Kochi-682 016	Marine Science	1973
24	CMFRI	The Director, Central Marine Fisheries Research Institute, (Indian Council of Agricultural Research) P.O. Box 1603, Ernakulam North P.O., Kochi-682 018	Marine Science	2000
25	CIFT	The Director, Central Institute of Fisheries Technology (Indian Council of Agricultural Research) Willington Island, Matsyapuri P.O., Kochi-682 029	Marine Science, Science	1972

Details of Endowments, Prizes, Awards, Medals, Scholarships and Fellowships

Details of Endowments awarded during 2020-21(2021 pass out)

SI No.	Name of Endowment	Name of the Department	Name of the Awardee
1	Dr. P Madhavan Pillai Gold Medal	Department of Applied Chemistry	Ms. Leji Mariya Joy
2	Prof. S. Sugunan Endowment	Department of Applied Chemistry	1) Ms. Leji Mariya Joy 2) Linu Varghese
3	Prof. Wazir Hassan Abdi Endowment	Department of Mathematics	Vishnu K S

List of Fellows

Dept/School/Research Centre	Sl.No	Name of the Student	Date of Joining	Period sanctioned		Vacancy	Mode
				From	To		
ACAAR	1	Prajwal K.	24.08.2021	24.08.2021	23.08.2023	Electronics	T
ACAAR	2	Devika M. V	24.08.2021	24.08.2021	23.08.2023	Statistics	T
Applied Chemistry	3	Sithara Soman	23.07.2018	23.03.2021	22.03.2022	Physics	T
Applied Chemistry	4	Athira Mohan	20.11.2020	03.12.2021	02.12.2023	Marine Biology	T

Applied Chemistry	5	Sooraj M	19.01.2021	10.12.2021	09.12.2023	Computer Application	T
Applied Chemistry	6	Athulya K.R.	15.09.2021	15.09.2021	14.09.2023	Common pool (New)	
Applied Chemistry	7	Arathy Chandran	13.09.2021	13.09.2021	12.09.2023	Common pool (New)	
Applied Chemistry	8	S. Nayana Lakshmi	13.09.2021	13.09.2021	12.09.2023	Common pool (New)	
Applied Economics	9	Munappy Gayatri Gopinathan Nimmy	23.09.2021	23.09.2021	22.09.2023	Hindi	T
Applied Economics	10	Fairoose M.E	12.01.2018	06.07.2021	05.07.2023	SMS	T
Atmospheric Sciences	11	Reshma T	02.09.2021	02.09.2021	01.09.2023	Atmospheric Sciences	R
Atmospheric Sciences	12	Vishnu M Warriar	01.09.2021	01.09.2021	31.08.2023	Common pool (New)	
Atmospheric Sciences	13	Jisha K Vishal	22.09.2021	22.09.2021	21.09.2023	Marine Geology	T
Atmospheric Sciences	14	Sreeshma K	22.09.2021	22.09.2021	21.09.2023	Common pool (New)	
Atmospheric Sciences	15	Abbad Lutfi A	02.09.2021	02.09.2021	01.09.2023	Common pool (New)	
Biotechnology	16	Thasny K K	01.12.2021	01.12.2021	30.11.2023	Marine Geology	T
Biotechnology	17	Sinoy Johnson	01.12.2021	01.12.2021	30.11.2023	Common Pool	T
Biotechnology	18	Adheena P B	01.12.2021	01.12.2021	30.11.2023	Common Pool	T
Biotechnology	19	Krishna Kumar	01.12.2021	01.12.2021	30.11.2023	Marine Biology	T
Biotechnology	20	Suhara Shebin A A	18.11.2021	18.11.2021	17.11.2023	Common pool (New)	
Biotechnology	21	Aiswarya P	13.12.2021	13.12.2021	12.12.2023	Marine Biology	T
Biotechnology	22	Kiran Bosco	01.12.2021	02.12.2021	01.12.2023	ISP	T
Biotechnology	23	Merin Johny	29.01.2022	01.05.2022	30.04.2024	SES	T
Biotechnology	24	Akhila U	01.12.2021	23.03.2022	22.03.2024	Physics	T
Computer Applications	25	Gayathri Soman	17.08.2021	17.08.2021	16.08.2023	SMS	T
Computer Applications	26	Asmitha K A	17.08.2021	17.08.2021	16.08.2023	Common pool (New)	
Computer Applications	27	Sameera K M	17.08.2021	17.08.2021	16.08.2023	Common pool (New)	
Computer Science	28	Richu Norman	28-10-2021	28.10.2021	27.10.2023	SMS	T

Computer Science	29	Preena K P	22-10-2021	22.10.2021	21.10.2023	Common Pool	T
Computer Science	30	Hafsath C A	20-10-2021	20-10-2021	19.10.2023	Common pool (New)	
Chemical Oceanography	31	Soumya K P	23.12.2021	23.12.2021	22.12.2023	Chemical Oceanography	R
CUCEK	32	Nayana R	13.09.2017	12.01.2022	11.01.2024	Applied Economics	T
CUCEK	33	Kalyani R	16.11.2020	12.01.2022	11.01.2024	Chemical Oceanography	T
Environmental Studies	34	Amal R	02.09.2021	02.09.2021	01.09.2023	Environmental Studies	R
Environmental Studies	35	Riya K Alex	09.12.2021	09.12.2021	08.12.2023	Environmental Studies	R
Environmental Studies	36	Abhinab Borah	13.12.2021	31.12.2021	30.12.2023	Computer Application	T
Environmental Studies	37	Yadu Krishnan Namboothiri K	16.09.2021	16.09.2021	15.09.2023	Common pool (New)	
Environmental Studies	38	Aishwarya S	03.09.2021	03.09.2021	02.09.2023	Common pool (New)	
English and Foreign Languages	39	Deepthy Krishna D	01.11.2021	01.11.2021	31.10.2023	SOE	T
Hindi	40	Fathimath Ramseena	23.07.2020	23.07.2020	22.07.2022	Marine Sciences	T
Hindi	41	Irin Ann Abraham	15/12/2021	15.12.2021	14.12.2023	Hindi	R
Hindi	42	Chris P George	31/12/2021	31.12.2021	30.12.2023	Marine Biology	T
Hindi	43	Tinu Alex K	02/11/2021	01.05.2022	30.04.2024	Marine Sciences	T
Hindi	44	Rahul K S	15/12/2021	15.12.2021	14.12.2023	Hindi	R
Instrumentation	45	Namitha Venugopal	14.07.2021	01.12.2021	30.11.2023	Common pool (New)	
Instrumentation	46	Abdul Nazer K H	13.07.2021	01.01.2022	31.12.2023	ISP	T
Industrial Fisheries	47	Freeda Rebecca Bastian	21/12/2021	21.12.2021	20.12.2023	Industrial Fisheries	R
Industrial Fisheries	48	Manjunath C Manoharan	21/12/2021	21.12.2021	20.12.2023	SOE	T
Industrial Fisheries	49	Haritha Haridas	21/12/2021	21.12.2021	20.12.2023	Common pool (New)	
Industrial Fisheries	50	Merin Thomas	23/12/2021	01.04.2022	31.03.2024	SLS	T
Legal Studies	51	Sarath Mohan	01.09.2021	01.09.2021	31.08.2023	SLS	R
Mathematics	52	Minnumul P K	06.09.2021	06.09.2021	05.09.2023	Applied Chemistry	T
Mathematics	53	Midhuna V Ajith	20.10.2021	20.10.2021	19.10.2023	SLS	T
Mathematics	54	Rinusha T R	06.09.2021	06.09.2021	05.09.2023	SLS	T
Mathematics	55	Maneesha K K	18.10.2021	18.10.2021	17.10.2023	Common pool (New)	
Management Studies	56	Ann Maria Kurien	26.08.2020	26.11.2020	25.11.2022	SOE	T
Management Studies	57	Vishnupriya O.S	25.08.2020	06.10.2020	05.10.2022	Mathematics	T
Management Studies	58	Chinju Chandran S	10.06.2020	10.06.2020	09.06.2022	Hindi	T

Management Studies	59	Deepu S	08.02.2021	08.02.2021	07.02.2023	SMS	R
Management Studies	60	Dhanya Mohan P	01.09.2021	01.09.2021	31.08.2023	Common (New) pool	
Marine Biology, Microbiology & Biochemistry	61	Vishnudattan N K	30.12.2019	01.10.2021	30.09.2023	Common (New) pool	
Marine Biology, Microbiology & Biochemistry	62	Athira Menon T	25/10/2021	25.10.2021	24.10.2023	Common (New) pool	
Marine Biology, Microbiology & Biochemistry	63	Anne Maria Thomas	25/10/2021	25.10.2021	24.10.2023	Common (New) pool	
Marine Biology, Microbiology & Biochemistry	64	Anjali S Mohan	16/12/2017	01.04.2022	15.12.2023	Common Pool	T
Physics	65	Muhammed Anees P	30.11.2021	30.11.2021	29.11.2023	Common (New) pool	
Physics	66	Vishnu A Pai	01.11.2021	01.11.2021	31.10.2023	Common (New) pool	
Physics	67	Fazil Najeeb	08.11.2021	08.11.2021	07.11.2023	Common (New) pool	
Photonics	68	Maneesha M	20.10.2021	20.10.2021	19.10.2023	ISP	R
Photonics	69	Mitty George	03.11.2021	03.11.2021	02.11.2023	Common Pool	T
Photonics	70	Jose Antony V J	20.10.2021	20.10.2021	19.10.2023	Common (New) pool	
Photonics	71	Jijo George	01.11.2021	01.11.2021	31.10.2023	Common (New) pool	
Polymer Science & Rubber Technology	72	Jishana Basheer	07.09.2021	07.09.2021	06.09.2023	PS&RT	R
Polymer Science & Rubber Technology	73	Alvina Augusthy	31.08.2021	31.08.2021	30.08.2023	PS&RT	R
Polymer Science & Rubber Technology	74	Reshma Varghese	02.09.2021	02.09.2021	01.09.2023	Common (New) pool	
Polymer Science & Rubber Technology	75	Ajith Mathew	07.09.2021	07.09.2021	06.09.2023	Common (New) pool	
Physical Oceanography	76	Anup N	23/07/2018	08.01.2022	07.01.2024	Hindi	T
Physical Oceanography	77	Abhishek V A	14/09/2021	14.09.2021	13.09.2023	Physics	T
Physical Oceanography	78	Anisha L G	14/10/2021	14.10.2021	13.10.2023	Marine Biology	T
Statistics	79	Rhea Davis	01.09.2021	01.09.2021	31.08.2023	Common (New) pool	T
Statistics	80	Sneha Babu	01.09.2021	23.12.2021	22.12.2023	Instrumentation	T
Statistics	81	Saranya P	20.11.2020	08.01.2022	07.01.2024	Common Pool	T
School of Engineering	82	Vivek V S	14.09.2021	14.09.2021	13.09.2023	Common (New) pool	
School of Engineering	83	Lekshmi R	30.12.2020	13.03.2022	12.03.2024	SES	T

School of Engineering	84	Anilett Benny	23.02.2021	04.03.2022	03.03.2024	Applied Economics	T
School of Engineering	85	Arun G Nair	17.09.2018	10.09.2021	09.09.2023	Common pool (New)	
School of Engineering	86	Ashik Mabrook K	14.09.2021	14.09.2021	13.09.2023	Common pool (New)	
School of Engineering	87	Vivek K Sidhan	29.12.2020	01.04.2022	31.03.2024	Physics	T
School of Engineering	88	Devika A.K	14.09.2021	10.06.2022	09.06.2024	SMS	T
CAM	89	Soumya Ravi	08.01.2018	19.03.2021	10.12.2021	SOE	T
IUCND	90	Aadithya Salbi	26/08/2021	10.03.2022	09.03.2024	Biotechnology	T
NCAAH	91	Rojin Joseph	15.12.2021	30.03.2022	29.03.2024	Hindi	T
NCAAH	92	Jini Jimmy	23.03.2018	23.03.2022	22.03.2024	SES	T