

# COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY

## FACULTY DATABASE

### INFORMATION DATA SHEET FOR FACULTY MEMBERS

(Filled forms please send to registrar@cusat.ac.in)

(INSERT ADDITIONAL ROW(S) WHERE EVER NECESSARY)

<b>Name:</b>	<b>Dr. G. Madhu, Professor</b>	
<b>Department :</b>	<b>School of Engineering – Safety &amp; Fire Engineering Division and Chemical Engineering Division</b>	
<b>Contact Details</b>	<b>Professor</b>	
<b>Address for communication</b>	<b>School of Engineering Cochin University of Science and Technology Kochi – 682 022, Kerala, India</b>	
<b>Email</b>	<a href="mailto:profmadhu@cusat.ac.in">profmadhu@cusat.ac.in</a> , <a href="mailto:profmadhugopal@gmail.com">profmadhugopal@gmail.com</a>	
<b>Phone</b>	<b>+91 9447366900, 0484-2862180</b>	
<b>Intercom</b>	<b>2180</b>	
<b>1. Academic Background</b>		
<b>Qualifications:</b>	<b>B.TECH , M.TECH, PHD</b>	
<b>Qualifying Post Graduate Degree:</b>	PhD in Environmental Engineering, 1994 (CUSAT)	
<b>Ph. D with NET</b>		
<b>Ph. D without NET</b>		
<b>Post Graduate Degree(s)</b>	M.Tech in Chemical Engineering, 1986 (IIT Madras)	
<b>Under Graduate Degree(s):</b>	B.Tech in Chemical Engineering, 1984 (Govt. Engineering College, Thrissur – University of Calicut)	
<b>Any other PG degree/ Diploma relevant to the subject:</b>	PG Diploma in Business Administration (Annamalai University)	

Signature (in Hard Copy Only)

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<b>2. Research Performance</b>						
2.1		Each published /accepted paper in Journal/conferences				
SI. No	Authors (As published in the paper)	Title	Journal	Year	Volume	Page No
1.	<b>Madhu G.</b> George K.E, Joseph Francis D.	Characterisation and treatment of waste water from a centrifuge rubber latex concentration unit	Indian Journal of Natural Rubber Research	1991	4(2)	97-102
2.	<b>Madhu G.;</b> George K.E; and Joseph Francis D	Use of natural polyelectrolytes in the treatment of effluents from centrifuge rubber latex concentration units	Asian Environment	1992	14(3)	1-12
3.	<b>Madhu G.;</b> George K.E; and Joseph Francis D	Tamarind seed powder as coagulant aid in the treatment of effluents from natural rubber processing units	Proceedings of the Fifth Kerala science Congress, Kottayam.	1993	-	53-55
4.	<b>Madhu G.;</b> George K.E; and Joseph Francis D	Anaerobic contact filter for the treatment of effluents from a rubber latex concentration unit	Proceedings of the Sixth Kerala Science Congress, Trivandrum	1994	-	45-47
5.	<b>Madhu G.;</b> George K.E; and Joseph Francis D	Treatment of natural rubber latex concentration waste waters by stabilisation pond	International Journal of Environmental Studies	1994	46	69-74
6.	<b>Madhu G.;</b> George K.E; and Joseph Francis D	Use of synthetic polyelectrolytes in the treatment of effluents from small scale natural rubber processing units	Encology	1995	9(8)	17-22
7.	<b>Madhu G</b>	Continuous tapered flocculation in conical and cylindrical tanks	Indian Journal of Chemical Technology	1995	2	307-310
8.	<b>Madhu G.;</b> George K.E; and Joseph Francis D	Biochemical oxidation kinetics of waste waters from a natural rubber processing industry	Ecology Environment and Conservation	1996	2	1-5
9.	<b>Madhu G.;</b> George K.E; and Joseph Francis D	Characteristics of natural rubber latex concentration waste waters	International Journal of Environmental Studies	1996	50(2)	145-155
11.	<b>Madhu G</b>	Effluent treatment in a rubber latex concentration unit using rotating biological contactor	Proceedings of the Eighth Kerala Science Congress, Kochi	1996		
12.	<b>Madhu G</b>	Colour removal from pulp and paper mill effluents	Recent Advances in Environmental Science – Proceedings of the International Conference	1997	-	433-436

			on Environmental Science, Trivandrum, 1996.			
13.	<b>Madhu G.</b> ; George K.E; and Joseph Francis D.	Oxidation pond for the treatment of natural rubber processing effluents	Indian Journal of Environmental Health	2000	42(2)	79-81
14.	<b>Madhu G</b>	An integrated approach for waste water treatment in a petroleum refinery	Journal IAEM	2000	27	246-251
15.	<b>Madhu G</b>	Low cost options for waste management	Proceedings of the Regional Seminar on Industrial Waste Management, Kollam	2001	-	
16.	<b>Madhu G</b>	Determination of mass transfer coefficient for the waste water from a centrifuge rubber latex concentration unit	Indian Journal of Engineering & Material Sciences	2001	8	149-152
17.	<b>Madhu G</b>	Modelling of pool fires	Journal of Fire Engineering	2001	1(2)	1-10
18.	<b>Madhu G</b>	Biofouling and cathodic protection	Proceedings of the National Seminar on Corrosion and Marine Coatings, IE(I), Cochin.	2001	-	
19.	<b>Madhu G</b>	Environmental risk assessment of an oil storage installation	Proceedings of the 17 <sup>th</sup> National Convention of Chemical Engineers, IE(I), Kochi.	2001	-	
20.	<b>Madhu G</b>	Polyelectrolytes as coagulant and coagulant aid in waste water treatment	Proceedings of the 17 <sup>th</sup> National Convention of Environmental Engineers, IE(I), Kochi	2001	-	
21.	Asokan A.; <b>Madhu G</b>	Industrial pollution – Modern approach for abatement	Journal of the Institution of Public Health Engineers India	2002	3	
22.	<b>Madhu G</b>	Recent trends in water quality management	Proceedings of the National Seminar on Inland Water Resources and Environment, Thiruvananthapuram	2004	-	
23.	<b>Madhu G</b>	Risk assessment of a cross country pipeline transporting hydrocarbons'	Proceedings of the International Conference on 'Bhopal and its Effects	2004	-	

			on Process Safety', IIT, Kanpur			
24.	<b>Madhu G</b>	Management of chemical accidents – an Indian perspective	Journal of the Institution of Engineers (India) – Chemical Engineering Division	2006	86	
25.	Madhu G.; Nirmala V.U	Role of microorganisms in composting and soil health	Journal of the Institution of Public Health Engineers India	2007	1	
26.	Vimalamma T. Abraham; Radhakrishnan Nair N.; and <b>Madhu G</b>	Natural rubber skim serum effluent treatment by solar energy	STARS : International Journal (Sciences)	2007	1(2)	196-204
27.	Renjith V.R, <b>Madhu G</b>	Explosion modeling of hazardous materials stored in Udyogamandal industrial area – a case study.	Proceedings of the first National Conference on Hydrocarbon Safety – PETROSAFE, Kochi,	2007	-	
28.	Vijith H.; and <b>Madhu G.</b>	Application of GIS and frequency ratio model in mapping the potential surface failure sites in the Poonjar sub-watershed of Meenachil river in Western ghats of Kerala	Photonirvachak : Journal of the Indian Society of Remote Sensing	2007	35(3)	
29.	Satheesh Kumar K.; and <b>Madhu G</b>	Analysis of ductility and rolling load of austenitic stainless steel AISI type 316L; A study using hot torsion test technique	Proceedings of the International Conference on Materials for the Future(ICMF), Thrissur	2008		
30.	Vijith H.; and <b>Madhu G.</b>	Estimating potential landslide sites of an upland sub-watershed in Western Ghat's of Kerala (India) through frequency ratio and GIS	Environmental Geology (Springer)	2008	55	1397-1405
31.	Nimmi V.; and <b>Madhu G.</b>	Effect of pre-sowing treatment with permanent magnetic field on germination and growth of chilli ( <i>Capsicum annum. L.</i> )	International Agrophysics	2009	23	195-198
32.	Vimalamma T. Abraham; Radhakrishnan Nair N.; and <b>Madhu G</b>	Electrochemical treatment of skim serum effluent from natural rubber latex centrifuging units	Journal of Hazardous Materials (Elsevier)	2009	167	494-499
33.	Vijith H.; Renjith P.G.; and <b>Madhu</b>	Using Info Val and GIS techniques for the spatial modeling of landslide susceptibility in the upper catchment of river Meenachil in Kerala	Photonirvachak: Journal of the Indian Society of Remote Sensing	2009	37	241-250

34.	Renjith. V.R, <b>G. Madhu</b>	Individual and societal risk analysis and mapping of human vulnerability to chemical accidents in the vicinity of an industrial area	International Journal of Applied Engineering Research	2010	1(1)	135-148
35.	Thankachan T.Pullan, M. Bhasi and <b>G. Madhu</b>	Application of concurrent engineering in manufacturing industry	International Journal of Computer Integrated Manufacturing	2010	23(5)	425-440
36.	V.R.Renjith, <b>G.Madhu</b> , V. Lakshmana Gomathi Nayagam and A.B.Bhasi	Two dimensional fuzzy fault tree analysis for chlorine release from a chlor-alkali industry using expert elicitation	Journal of Hazardous Materials (Elsevier)	2010	183(1-3)	103-110
37.	C.Rajendran, and <b>G. Madhu</b>	A CFD based multibody dynamics approach in horizontal axis wind turbine	International Journal of Dynamics of Fluids	2010	6(2)	219-230
38.	Praveen R.P, Ravichandran M.H, V.T.Sadasivan Achari, Dr.Jagathy Raj, <b>Dr.G. Madhu</b> and Dr.G.R.Bindu	Design and analysis of hybrid stepper motor for torquing the gimbal of a control moment gyroscope	International Review of Electrical Engineering	2010	5(4)	
39.	R. Premnath, <b>G. Madhu</b>	Data centre airflow dynamics- need for a qualitative airflow management system for data centres.	International Journal of Fluids Engineering	2010	2(2)	75-85
40.	Premnath R, Suresh P.R, <b>Madhu G</b>	Studies on effect of pitch on the merging characteristics of isothermal two dimensional twin jets using CFD	International Journal of Dynamics of Fluids	2011	7(1)	17-23
41.	R. Premnath, <b>G. Madhu</b>	Studies on merging characteristics of isothermal two dimensional identical triple jets using CFD	International Journal of Dynamics of Fluids	2011	7(1)	101-107
42.	Thankachan T.Pullan, M. Bhasi and <b>G. Madhu</b> ,	Application of object-oriented framework on manufacturing domain	Journal of Manufacturing Technology Management	2011	22(7)	906-928
43.	Praveen R.P, Ravichandran M.H, V.T.Sadasivan Achari, Dr.Jagathy Raj, <b>Dr.G. Madhu</b> and Dr.G.R.Bindu	Design and analysis of zero clogging brushless DC motor for space craft applications	ECTI Transactions on Electrical Engineering, Electronics and Communications	2011	9(1)	
44.	Mary Lissy P N, <b>G Madhu</b>	Removal of heavy metals from waste water using water hyacinth	ACEEE Int. J. on Transportation and Urban Development	2011	1(1)	

45.	Praveen R.P, Ravichandran M.H, V.T.Sadasivan Achari, Dr.Jagathy Raj, <b>Dr.G. Madhu</b> and Dr.G.R.Bindu	A Novel Slotless Halbach Array Permanent Magnet Brushless DC Motor for Spacecraft Applications	IEEE Transactions on Industrial Electronics	2012	59(9)	3553-3560
46.	Thankachan T.Pullan, M. Bhasi and <b>G. Madhu</b>	Decision support tool for lean product and process development	Production Planning & Control	2013	24(6)	449-464
47.	Lakshmi E, <b>G. Madhu</b>	Modeling of dissolved oxygen and temperature of Periyar river, South India using QUAL2K	International Journal of Computational Engineering Research	2014	04 (8)	24-31
48.	B.K. Bindhu, <b>G. Madhu.</b>	Selection pressure theory for aerobic granulation – an overview	Int. J. Environment and Waste Management (Inderscience)	2014	13 (3)	317-329
49.	E.R. Ushakumary and <b>G. Madhu</b>	Removal of cadmium, chromium, copper, lead and zinc ions by alisma plantago aquatic	Int. J. Environment and Waste Management (Inderscience)	2014	13(1)	75-89
50.	C.K. Ambilikumar, M. Bhasi and <b>G. Madhu,</b>	Modelling and analysis of Coordination of a three-level supply chain with use of price discount along with delay in payment	Int. J. Business Performance and Supply Chain Modelling (Inderscience)	2015	7(1)	71-91
51.	B.Sajeena Beevi, <b>G.Madhu,</b> Deepak Kumar Sahoo	Performance and kinetic study of semi-dry thermophilic anaerobic digestion of organic fraction of municipal solid waste,	Waste Management (Elsevier)	2015	36(2015)	93-97
52.	H. Vijith, K.N. Krishnakumar, G.S. Pradeep, M.N. Ninu Krishnan and <b>G. Madhu.,</b>	Shallow landslide initiation susceptibility mapping by GIS-based weights-by-evidence analysis of multi-class spatial data-sets: a case study from the natural sloping terrain of Western Ghats, India	Georisk (Taylor & Francis)	Accepted		
53.	Bindhu B.K and <b>Madhu G</b>	Influence of three selection pressures on aerobic granulation in sequencing batch reactor	Indian Journal of Chemical Technology (CSIR)	Accepted		

2.2	Text Books / Reference Books/subject books/monograph/Chapters of Books Published		
SI No.	Title with ISBN Number	Publisher with Place of Publication	Year
1.	<b>Madhu G.</b> Biological problems in industrial cooling and control in <i>Encyclopedia of Environmental Pollution</i>	Enviromedia, Karad, India	1995

2.	Joseph Francis D.; <b>Madhu G.</b> ; and George K.E. Evaluation of the treatment feasibility of wastewater from rubber latex concentration units by stabilization pond in <b>Advances in Industrial Wastewater Treatment</b>	Technoscience	1999
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2.3	Patents / Technology transfer/Product/Process:		
2.3.1	Each patent awarded		
<b>SI No.</b>	<b>Title</b>	<b>Sanction Number</b>	<b>Year</b>

2.3.2	Each Technology transfer through Central / State / University / Quasi Government agencies.				
<b>SI No.</b>	<b>Name of Technology transfer</b>	<b>Agency</b>	<b>Year</b>		
1.					
2.4	Externally Funded Research / Consultancy Projects through University / Institution (Both completed and Ongoing Projects):				
<b>Project Cost in Lakhs</b>	<b>SI No.</b>	<b>Title</b>	<b>Funding Agency</b>	<b>Amount &amp; Duration</b>	<b>Principal investigator/ Co-investigator</b>
13.5 lakhs	1.	Modernisation of industrial hygiene lab	AICTE	Rs. 13.5 lakhs, 2 years (2006-2008)	Dr. G. Madhu

2.5	Research Guidance :				
2.5 (a)	Ph D – Degree Awarded				
<b>SI No.</b>	<b>Title</b>	<b>Name of co-guides (if any)</b>	<b>Name of student</b>	<b>University</b>	<b>Year</b>
1.	Studies on the phytotoxic stress impact of a synthetic detergent on some freshwater	Dr. A.P. Thomas	Smt. Lekha Nair	Mahatma Gandhi University	2008

	macrophytes of lower Kuttanad wetland, Kerala				
2.	Modelling landslide susceptibility on a regional scale using remote sensing and GIS : An assessment of parts of the Meenachil river basin of western ghats, India	-	Sri. Vijith H.	Mahatma Gandhi University	2009
3.	Analysis of power systems compensated by series FACTS devices	Dr. Paulose Jacob	Sri. Josephkutty Jacob	CUSAT	2009
4.	Coconut cake – A novel adsorbent for the removal of water pollutants	-	Sri. Thomas Mathew	Mahatma Gandhi University	2009
5.	Consequence modeling, vulnerability assessment, and fuzzy fault tree analysis of hazardous storages in an industrial area	-	Sri. Renjith V.R	CUSAT	2011
6.	An investigation on pesticide residue in soil and water with particular reference to carbofuran in Wayanad District, Kerala.	-	Sri. Devasia M.J	Mahatma Gandhi University	2011
7.	Techniques for enhancing wind energy generation – a CFD based multibody dynamics approach in horizontal axis wind turbines .	-	Sri. Rajendran C	CUSAT	2012
8.	An Analysis of work related stress factor in selected industries in Kerala, India.	-	Sri. Satheesh Kumar K.	CUSAT	2012
9.	Quantitative air flow modelling analysis of data centre air conditioning as multiple jet array	-	Sri. Premnath R	CUSAT	2012
10.	Geospatial characterization and conservation potential for	-	Sri. Subin K Jose	Mahatma Gandhi University	2012

	Agasthyamala biosphere reserve, Western Ghats, India				
11.	Modeling of work-related musculoskeletal disorders in chemical process industry in India	-	Sri. Praveensal C.J	CUSAT	2013
12.	Waste water treatment using low cost natural adsorbents	-	Smt. Ushakumary E.R	CUSAT	2014
13.	Assessment of energy conservation in Indian cement industry and forecasting of CO2 emissions	-	Sri. A. Ramesh	CUSAT	2014
14.	Influence of major operational parameters on aerobic granulation for the treatment of wastewater	-	Smt. Bindhu B.K	CUSAT	2014

2.5 (b)	Ph D – Thesis submitted				
SI No.	Title	Name of co-guides (if any)	Name of student	University	Year
1.	Studies on the application of low cost natural materials in drinking water treatment	-	Sri. T.J. Thomas	Mahatma Gandhi University	2013
2.	A study of single stage semi-dry anaerobic digestion of organic fraction of municipal solid waste	Dr. Dipak Kumar Sahoo	Smt. Sajeena Beevi B.	CUSAT	2015

2.6	Awards / Medals / Fellowships Academic Recognitions:				
<b>Award</b>		<b>Particulars</b>			
<b>1.Young Scientist Award (1994) for Ecology and Environment</b>		<b>Instituted by State Committee on Science, Technology and Environment, Government of Kerala</b>			
<b>2. Platinum Jubilee Award (2010) of the Institution of Engineers (India), Karnataka State Centre.</b>		For meritorious service in the field of Safety & Chemical Engineering on the occasion of the 26 <sup>th</sup> National Convention of Chemical Engineers, Bangalore, October 22-23, 2010.			

2.7				
Organiser / Convenor of International / National Conferences / Symposia / Seminars:				
	SI No.	Title and year	Chief organiser/ Convener	Co-organiser/ co-convener
International Level	1	International Conference on Recent Advances in Chemical Engineering and Technology (RACET 2011), Indian Institute of Chemical Engineers, Kochi Regional Centre, Kochi, 10-12 March 2011.	Organising Secretary	
National Level	1	National Seminar on Safety, Health and Environment organized by FACT Technical Society, Cochin, December 1998.	-	Joint Convener
	2	National Seminar on Biotechnology in Industry, Indian Institute of Chemical Engineers, Kochi Regional Centre, September 2002	Organising Secretary	
	3	National Seminar on Value addition to Beach sand minerals, Indian Institute of Chemical Engineers, Kochi Regional Centre, June 2004	Organising Secretary	
	4	All India Seminar on Environment Management in Infrastructure Projects and Chemical Industries, The Institution of Engineers (India) – Cochin Local Centre, February 2007	Organising Secretary	
	5	Twenty fifth National Convention of Chemical Engineers and National Seminar on Energy for Sustainable Society : Role of Chemical Engineering, The Institution of Engineers (India) Cochin Local Centre, Kochi, October 2009	Organising Secretary	
	6	All India Seminar on Corrosion of Marine Installations organized jointly by School of Engineering, CUSAT and the Institution of Engineers (India) – Kochi Local Centre under TEQIP II	Organising Secretary	

<b>3</b>	<b>Assessment of Domain Knowledge</b>				
<b>3.1</b>	<b>Experience</b> Additional Teaching / Industrial Experience after obtaining minimum eligibility criteria for the particular post (Only Full-time teaching assignments and/ Industrial Experience not below the rank of Lecturer in UGC/AICTE approved institutions/ Assistant Manager / Officer in a public / multi-national Company, after obtaining the minimum educational qualifications for this post)				
	SI No.	Institution	Post held	Period (from ... to..)	No. of years
University PG Level	1.	School of Engineering, CUSAT	Professor	From July 1 <sup>st</sup> , 2004	11 years
University UG/College level	1.	School of Engineering, CUSAT	Professor	From July 1 <sup>st</sup> , 2004	11 years
Industrial Experience	1.	FACT Ltd., Udyogamandal, Kochi	Process Engineer, senior Design Engineer, Deputy Manager, Design Manager	From 02/01/1986 to 30/06/2004	18 years 6 months

<b>3.2</b>	<b>Additional Research Experience after Ph. D</b>				
		<b>Institution</b>	<b>Post Held</b>	<b>Period</b>	<b>No. of years</b>
Post-Doctoral Research					
Design of Experiments for P. G. Level laboratory course		School of Engineering, CUSAT	Professor	From 01/07/2004	11
Maintenance and operations of sophisticated equipments		School of Engineering, CUSAT	Professor	From 01/07/2004	11
(In the case of Teachers who are also doing research work, their teaching experience alone will be counted – credit for both teaching and research will not be awarded concurrently)					

<b>3.3</b>	<b><i>Academic / Administrative Experience (give particulars):</i></b>		
3.03 (a)	<i>Administrative experience:</i>		
<b>SI No</b>	<b>Post Held</b>	<b>Period</b>	<b>No. of years</b>
1	Design Manager, FACT Engineering and Design Organisation, Udyogamandal	January 2000 - June 2004	4 years 6 months
2	Head, Division of Safety and Fire Engineering, School of Engineering, CUSAT	August 2004 – March 2013	8 years 6 months
3	Principal, School of Engineering, CUSAT	From July 2013	2 years
4	Dean, Faculty of Engineering, CUSAT	From May 2013	2 yers
5	Member, Syndicate, CUSAT	May 2013 – March 2015	22 months

3.03 (b)	Academic experience (Member, Board of studies, Academic council / Faculty etc.)		
<b>SI No</b>	<b>Positions held</b>	<b>Period</b>	<b>No. of years</b>
1	Member, Board of Studies in Environmental Studies, CUSAT	From September 1998 onwards	16 years
2	Member, Board of Studies in Environmental Sciences, Mahatma Gandhi University	2005-2008.	3 years
3	Member, Board of Studies in Engineering (PG), Cochin University of science and Technology	2008-2010	2 years
4	Member, Board of Studies in Chemical Engineering, University of Calicut,	2010-2013	3 years
5	Chairman, Board of Studies in Engineering (PG), Cochin University of Science and Technology	From May 2011	4 years
6	Member, Faculty of Environmental Studies, Cochin University of Science and Technology	From September 2011	3 years
7	Member, Faculty of Engineering, Cochin University of Science and Technology	From May 2011	4 years
8	Member, Academic Council, CUSAT	From May 2011	4 years

3.04	Participation in Training Programs/Workshop/Summer Winter-Schools, (organized by Govt. agencies/ UGC/AICTE, ICTP or similar International Organisations) :		
Duration of Course	Title	Agency	Period
3 days	Refresher Course on Industrial Waste Water treatment	Regional Engineering College, Calicut	17-19 January 1994
2 days	Workshop on Environment Audit	Fertiliser Association of India, New Delhi,	April 1994
3 days	Training Workshop for Energy Managers, An International Joint Programme	UN-ESCAP and Energy Management Centre , Kerala, Thiruvananthapuram,	March 1998
2 days	Training Programme on New Techniques in Environmental Assessment	Confederation of Indian Industry	26-27 November 1998
5 days	Advanced EMS Auditing Course for Quality & Environmental Professionals	Marsden International and FICCI Quality Forum	10-14 August 1999
3 days	Staff Development Programme on question Paper Setting and Evaluation Methods	National Institute of Technical Teachers Training & Research	10-12 December 2009
5 days	Short-term Training Programme on Safety and Fire Protection in Buildings and Industries	School of Engineering, CUSAT under TEQIP II	3-7 December 2012
3 days	Programme for Leadership in University Management	Temasek Foundation – National University of Singapore	3-5 September 2013
5 days	Short-term Training Programme on Modern Trends in Energy Environment and Green Technology	School of Engineering, CUSAT under TEQIP II	21-25 April 2014

### Declaration

I, Dr. G. Madhu, have read the notification and all other related instructions. All information and data furnished above are true to the best of my knowledge and belief.

Place: CUSAT, Kochi  
Date: 12<sup>th</sup> May 2015

**Signature**

Signature (in Hard Copy Only)

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