

## **Prof. Dr. Jacob Chacko**

Currently  
**Emeritus Professor**  
**Department of Chemical Oceanography**  
**Cochin University of Science and Technology**  
Email : [jjchacko@gmail.com](mailto:jjchacko@gmail.com)

*Formerly*  
*Dean and Vice-Chancellor (Acting) - Central University of Kerala*

*Professor and Director, School of Marine Sciences, CUSAT*  
*Director, IRAA, CUSAT*  
*Head, Department of Chemical Oceanography*

## **POSITIONS held in CENTRAL UNIVERSITY OF KERALA**

*(Jun 2012- Jun 2015)*

Dean, School of Mathematical & Physical Sciences

Director of Research

Professor & Head, Department of Chemistry

Vice-Chancellor (Acting) - *Mar. to Aug. 2014*

Member, Executive Council

Member, Academic Council

## **POSITIONS in CUSAT**

*(since Jun 1978)*

Emeritus Professor	: May - Jun 2012; Jan 2016 onwards
Professor	: 19 y, 10m (Jun 1992-Apr 2012)
Director, School of Marine Sciences	: 4 m (Jul - Oct 2011)
Head, Dept. of Chemical Oceanography	: 9 y, 3m (Feb 1991 - May 2000)
Director, Intl. Relns. & Acad. Admns. (IRAA)	: 4 y (Nov 2000-Oct 2004)
Reader	: 8 y (Jul 1984-Jun 1992)
Lecturer	: 6 y (Jun 1978-Jul 1984)
Member of Senate	: 22 yrs (1982-2004)
Member, Academic Council	: 20 yrs (1991-2006, 2009 onwards)
Member, Faculty of Marine Sciences	: 30 yrs (1981-2006, 2009 onwards)
Member, Faculty of Science	: 8 yrs (2004-2012)
Chairman, P G B/S in Chem. Oceanography	: 13 yrs (1996 - 2004, 2009 onwards)

## AWARDS and DISTINCTIONS

### **COMMONWEALTH ACADEMIC STAFF FELLOWSHIP**

For Post-Doctoral research at School of Ocean Sciences,  
University of Wales, Bangor, U. K.

Aug 1988 - Jul 1989

### **UNESCO AWARD (IOC, Paris)**

Training programme on 'Marine Pollution' at  
BBSR, Bermuda

Jun/Jul 1987

### **BRITISH COUNCIL AWARD**

Academic visits to UK Institutions in UK

Jul 1987

## EDUCATION

Ph. D. in Inorganic Chemistry	Department of Chemistry University of Kerala	1976
M. Sc. Analytical Chemistry	Department of Chemistry University of Kerala	1972
B. Sc Chemistry (Special)	Mar Ivanios College University of Kerala	1970

## PROFESSIONAL CREDENTIALS

- **ADMINISTRATION OF EXAMINATIONS**

Was appointed by "CGFNS INTERNATIONAL" as TEST ADMINISTRATOR for the State of Kerala for the conduct of their prestigious international professional examination for nurses -- 2003 – 2008

Was also Chief Coordinator for All India examinations (CSIR, UGC, KVPY etc) -- several years

- **MEMBER, EDITORIAL BOARD OF INTERNATIONAL JOURNAL**

Member of Editorial Board, **The International Journal of Environmental Studies** (Taylor and Francis, UK) since 2006.

- **RESEARCH INTERESTS :**

Coordination Chemistry  
Lanthanide / actinide compounds  
Molluscan shell chemistry  
Chemical interactions in aquatic systems – trace metals, pesticides, PHCs, PAHs etc.  
Biogeoorganic chemistry of mangroves

- **RESEARCH SUPERVISION**

Doctoral degrees supervised : 16  
M. Phil. degrees supervised : over 60

- **PUBLICATIONS** : over 60

- **RESEARCH PROJECTS**

Coordinator/Project Leader for externally funded research projects :  
Integrated Management of the Coastal Zone around Greater Cochin (NUFFIC, The Netherlands);  
Carrying Capacity studies on Greater Cochin (MoEF, Govt. Of India);  
Biome interactions in Cochin Estuary (UGC DSA - II programme);  
Assessment/ monitoring of toxicants in estuarine systems (STED, Govt. of Kerala)

- **POST GRADUATE TEACHING EXPERIENCE** : 38 years

Courses taught include topics in *Marine Chemistry, Chemical Oceanography, Water quality Analysis, Instrumental Analysis, Coordination Chemistry, Aquatic Pollution etc.*

- **EXPERT-MEMBER / EXAMINER ASSIGNMENTS**

Expert-Member in selection/assessment committees in Universities, Government/ PSUs, National Laboratories etc.  
External Examiner for Ph. D / M. Phil. / M. Sc. degrees of several Indian Universities

## **OUTREACH ACTIVITIES - scientific**

Analytical testing and instrumental facilities created through my initiative in the Department of Chemical Oceanography, Cochin University of Science and Technology were thrown open to scientists and researchers. The analytical services facility won the accreditation of the MoEF as an “**Environmental Laboratory**”. This provided a unique source of additional revenue generation.

## **OUTREACH ACTIVITIES - cultural**

**PRESIDENT,  
ASSOCIATION OF BRITISH SCHOLARS-KOCHI CHAPTER -- 2006-2011**

The Association of British Scholars-India (ABS-India), is an umbrella organization of Indians educated or trained in the UK. It facilitates professional networking, sharing of information and organizes social, cultural, and educational events. Working closely with the British Council, ABS Chapters function as the arms of the Council and echo its policies and programmes.

As President of ABS-KOCHI, conceived and launched unique programmes to enlighten, uplift and entertain members of the civil society, particularly the youth. Enlarged and embellished the nature and content of programmes -- debates, quiz competitions, environmental initiatives, interactive sessions, video screenings, cultural events and the like.

## INTERNATIONAL EXPOSURE

- **Jun. 2004**                      **Bremen, Germany**  
Presentation of paper, "*International activities of Cochin University*", at Workshop on "*Cooperation with Indian Universities*"
- **Apr. 2002**                      **Delft, The Netherlands**  
Participation in training programme on "*Integrated Management of Coastal Zones*"
- **Oct. 1995**                      **Tsukuba, Japan**  
Presentation of paper at "*Sixth International Conference on the Conservation and Management of Lakes*"
- **May 1992**                      **Amsterdam, The Netherlands**  
Presentation of five papers at "*Second European Conference on Ecotoxicology*"
- **Aug.1988 – Jul. 1989**        **University of Wales, U.K.**  
'Senior Visiting Post-doctoral Fellow' on **Commonwealth Academic Staff Fellowship** at the School of Ocean Sciences, University of Wales, Bangor, U. K.

Academic visits were also undertaken to :

- Intergovernmental Oceanographic Commission, **UNESCO, Paris**
  - Hydrographical Institute, **Hamburg**
  - Department of Marine Chemistry, **University of Kiel**
  - Department of Oceanography, **University of Liverpool**
  - Department of Oceanography, **University of Southampton**
  - Institute of Oceanographic Sciences, **Wormley**
  - Plymouth Marine Laboratory, **Plymouth**
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- **June – July, 1987**            **Bermuda**  
Participation in International training programme on "*Analysis of Marine Pollution*" at Bermuda Biological Station for Research, Bermuda

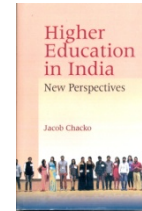
## PUBLICATIONS

- **BOOK**

**'Higher Education in India – New Perspectives'**

Jacob Chacko (Ed)

Manak Publications Pvt. Ltd., New Delhi, 2013



An interdisciplinary work, wherein eminent thinkers representing a cross section of the society analyze the theme of higher education from their respective perspectives. The book is intended to trigger invigorating discussions and lead to active improvements for India's future in higher education.

- **BOOK REVIEWS**

Jacob Chacko, 2007. **The Revenge of Gaia**, by James Lovelock, Allen Lane, Penguin, London, 2006, xiii + 177 pp., £16.99; Penguin India, £11.99 (ISBN 13:9780713999143), *International Journal of Environmental Studies*, **64** (2): 280-283.

A. A. Mohamed Hatha and Jacob Chacko, 2012. **World Atlas of Mangroves**, by Mark Spalding, Mami Kainuma and Lorna Collins, Earthscan, London and Washington, DC, 2010, xvi + 319 pp., £65.00, (ISBN 978 1 84407657 4), *International Journal of Environmental Studies*, **69** (6): 998-999.

- **GUEST EDITOR OF INTERNATIONAL JOURNAL**

Jacob Chacko, 2007. **Alternative Energy Options for India, Special Issue, International Journal of Environmental Studies**, **64** (6)

(Also, Member of the Editorial Board)



## ❖ JOURNALS

1. Jacob Chacko, C. P. Prabhakaran and C. G. R. Nair, 1975. Complexes of La, Pr, Nd, Sm, Dy and Y with Lanthanide perchlorates. *Ind. J. Chem.*, **13**: 411
2. Jacob Chacko, C. P. Prabhakaran and C. G. R. Nair, 1976. Lanthanide nitrate complexes of 4-amino antipyrine. *J. Inorg. Nucl. Chem.*, **38**: 1555
3. Jacob Chacko and C. G. R. Nair, 1976. Magnetic properties of 4-aminoantipyrine complexes of lanthanide perchlorates and nitrates. *Curr. Sci.*, **45**: 452
4. C. G. R. Nair and Jacob Chacko, 1978. Complexes of 4-aminoantipyrine with Lanthanide thiocyanates. *Curr. Sci.*, **47**: 568-570
5. Jacob Chacko, 1982. Synthesis and structural studies of complexes of Thorium (IV) and Dioxouranium (VI) with some antipyrine derivatives. *Synth. React. Inorg. Met. Org. Chem.*, **12**: 361-371
6. Abdul Rasheed, K. K., Jacob Chacko and P. N. K. Nambisan, 1983. Thermal, spectral and magnetic studies on transition metal complexes of Embelin. *Polyhedron*, **2**: 282-299.
7. Abraham, T. J., K. Y. M. Salih and Jacob Chacko, 1986. Effect of heavy metals on the filtration rate of bivalve *Villorita cyprinoides* (Hanley) var. *Cochinensis*. *Ind. J. Mar. Sci.*, **15**: 195-196.
8. Abdul Rasheed, K. K., Jacob Chacko and P. N. K. Nambisan, 1987. Lanthanide and actinide complexes of Embelin. *Ind. J. Chem.*, **26**: 966-968.
9. Abdul Rasheed, K. K., Jacob Chacko and P. N. K. Nambisan, 1988. Complexes of Embelin with Cr (III) and Fe (III). *Inorg. Chim. Acta*, **151**: 1-3.
10. Satyanathan, B., S.M. Nair, Jacob Chacko and P. N. K. Nambisan, 1988. Sublethal effects of copper and mercury on some bio-chemical constituents of the estuarine clam, *Villorita cyprinoides* var. *Cochinensis*. *Bull. Environ. Contam. Toxicol.*, **40**: 510-517
11. Sujatha, C. H. and Jacob Chacko, 1991. Malathion sorption by sediment from a tropical estuary. *Chemosph.*, **23**: 167-180.
12. Babukutty, Y. and J. Chacko, 1992. Trace metals in an estuarine bivalve from the southwest coast of India. *Ambio*, **21**: 292-296.
13. Sujatha, C. H. and J. Chacko, 1992. Organophosphorus pesticide adsorption variability in diverse estuarine sediments. *Toxicol. Environ. Chem.*, **36**: 65-73.
14. Sujatha, C. H., S. M. Nair, N.C. Kumar and J. Chacko, 1993. Distribution of organochlorine pesticides in a tropical waterway - HCH isomers. *Toxicol. Environ. Chem.*, **39**: 103-111.
15. Nair, C.K., Balchand, A.N. and Jacob Chacko, 1993. Sediment characteristics in relation to changing hydrography of Cochin estuary, *Ind. J. Mar. Sci.*, **22**: 33-36.
16. Sujatha, C. H., S. M. Nair, N. C. Kumar and Jacob Chacko, 1994. Distribution of DDT and its metabolites in an Indian waterway. *Environ. Toxicol. Water Qual.*, **9**: 155-160.
17. Sujatha, C. H., S. M. Nair and Jacob Chacko, 1994. Sorption of Malathion and Methyl Parathion by tropical aquatic sediments: Influence of pH. *Toxicol. Environ. Chem.*, **41**: 47-55.
18. Sujatha, C. H., S. M. Nair and Jacob Chacko, 1994. Sorption of Malathion and Methyl Parathion by tropical aquatic sediments: Influence of salinity. *Toxicol. Environ. Chem.*, **43**: 175-181.



19. Babukutty, Y., T. S. Geetha and J. Chacko, 1994. Chemical toxicity of bipartite mixture of copper and cadmium. *Asian J. Chem.*, 6: 630-635
20. Babukutty, Y. and J. Chacko, 1995. Comparative bioavailability of zinc and cadmium to an estuarine bivalve. *Environ. Toxicol. Chem.*, 47: 37-46
21. Sujatha, C. H., S.M. Nair and Jacob Chacko, 1995. Tissue lipid level of the clam, *Villorita cyprinoides* var. *cochinensis*, exposed to Endosulfan, Malathion and Methyl Parathion. *Environ. Toxicol. Water Qual.*, 10: 231-235
22. Foster, P. and J. Chacko, 1995. Minor and Trace elements in the shell of *Patella Vulgata* (L.). *Mar. Environ. Res.*, 40: 55-76
23. Shibu, M. P., Jacob Chacko and A.N. Balchand, 1995. Speciation and estuarine modification of Zinc during transport in a tropical fluvial environment. *Toxicol. Environ. Chem.*, 47: 23-36
24. Babukutty, Y. and Jacob Chacko, 1995. Chemical partitioning and bioavailability of lead and nickel in an aquatic system. *Environ. Toxicol. Chem.*, 14: 427-434.
25. T. V. Nayar, J. Chacko and N. Chandramohanakumar, 1995. Distribution of petroleum hydrocarbons in sediments of the Cochin estuary, south west coast of India. *Ind. J. Mar. Sci.*, 24: 240-242
26. Veena, K. B., C. K. Radhakrishnan and J. Chacko, 1995. Sialic acid and cholesterol variations during oogenesis of an estuarine teleost. *Oebalia* 21: 177-180
27. Sujatha, C. H., S.M. Nair and J. Chacko, 1995. Pesticide induced physiological changes in an estuarine clam. *Oebalia* 21: 181-186
28. Sujatha, C. H., S.M. Nair and J. Chacko, 1996. TBTO induced physiological and biochemical changes in a tropical estuarine clam. *Bull. Environ. Contam. Toxicol.*, 56: 303-310
29. Foster, P., J. Chacko and M. Badran, 1997. Minor and trace metal concentrations in shells of four *Nerita* species (*N. Albicilla*, *N. Costata*, *N. Polita* and *N. Undata*) from Ko Phuket, Thailand. *J. Mar. Atm. Res.*, 1: 25-32
30. Veena, K. B., C. K. Radhakrishnan and J. Chacko, 1997. Heavy metal induced biochemical effects in an estuarine teleost. *Indian J. Mar. Sci.*, 26 : 74-78
31. Veena, K. B., C. K. Radhakrishnan and J. Chacko, 1997. Depletion of energy reserves during ovarian development in *Etroplus maculatus* (Bloch). *Ind. J. Mar. Sci.*, 26 : 101-103
32. Xavier, K. O., K. K. Abdul Rasheed, B. Sen, K. K. Mohammed Yusuff and Jacob Chacko. Support effects on Cu-Cr / Al<sub>2</sub>O<sub>3</sub> catalysts for CO oxidation in "Recent Advances in Basic and Applied Aspects of Industrial Catalysis", T. S. R. Prasada Rao and G.S. Murali Dhar (Eds.) - *Studies in Surface Science and Catalysis*, Vol. 113 , Elsevier, Amsterdam, 1998, pp. 821-828.
33. Sujatha, C. H., Nair, S.M., and J. Chacko, 1999. Determination and distribution of Endosulfan and Malathion in an Indian Estuary. *Water Res.*, 33 (1): 109 - 114
34. K. O. Xavier., K. K. M. Yusuff and J. Chacko. Catalytic partial oxidation using zeolite encapsulated Cu(II) complexes. *Advances in Environmental Materials*, Vol. 1, 2001, 59-66.
35. K. O. Xavier, J. Chacko and K. K. M. Yusuff. Intrazeolite cobalt (II), nickel(II) and copper(II) complexes of 3-formylsalicylic acid for oxidation reactions, 2002. *J. Mol. Catal. A. Chemical*, 178, 275-281.
36. Lalu Raj, C. H. Sujatha, S. M. Nair, N. C. Kumar and J. Chacko, 2002. Studies on the chemical constituents of Kayamkulam estuary near the newly commissioned NTPC power station. *Ind. J. Environ. Protection*, 22: 721-731.
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38. Zeolite-encapsulated Co(II), Ni(II) and Cu(II) complexes as catalysts for partial oxidation of benzyl alcohol and ethyl benzene, 2004. K. O. Xavier, J. Chacko, and K. K. M. Yusuff, *Appl. Catal. A. General*, 258: 251-259.
39. P. V. Joseph and Jacob Chacko, 2005. Distribution of dissolved and particulate heavy metals in Chitrapuzha - a tropical tidal river, Kerala, India. *Poll. Res.*, 24 (3): 513 - 521.
40. Rini Sebastian and Jacob Chacko, 2006. Distribution of organic carbon in tropical mangrove sediments (Cochin, India). *Int. J. Envot. Stud.*, 63 (3): 303-311.
41. P. V. Joseph and Jacob Chacko, 2006. Distribution of trace metals in the surface sediments of Chitrapuzha, a tropical river on the southwest coast of India and implications to industrial pollution. *Ind. J. Eviron. Prot.*, 26 (10): , 892-904.
42. K. J. Prashob Peter, N. Manu, Jacob Chacko and S. M. Nair. Synthesis of silver nanoparticles and of self-assembled supramolecules from marine humic acid, 2012. *J. Exper. Nanoscience*, 7 : 1-9 iFirst.

### ❖ SEMINAR PRESENTATIONS

1. C. G. R. Nair and J. Chacko, 1977. Actinide complexes of some pyrazolone ligands. *XVIII International Confernce on Coordination Chemistry*, Sao Paulo, Brazil.
2. Geetha, T.S., Y. Babukutty and Jacob Chacko, 1988. Carotenoides as an index of heavy metal stress in an estuarine bivalve. *Proc. Symp. Fate and Effects of Toxic Chemicals in Large Rivers and their Estuaries*, Quebec, p. 14.
3. Sujatha, C. H. and Jacob Chacko, 1988. Toxic effects of DDT, BHC and Endosulfan on an estuarine bivalve. *Proc. Symp. Fate and Effects of Toxic Chemicals in Large Rivers and their Estuaries*, Quebec, p. 15.
4. Benny Mathew, Jacob Chacko and N. Chandramohanakumar, 1989. Distribution of Urea in Cochin Backwaters. *International Symposium on Marine Pollution*, Porto Novo, India.
5. Sreevalsan, S. V. and Jacob Chacko, 1991. Variation of Ca/Mg content in the shell of some bivalves in the coastal belt of Cochin. *Proc. Kerala Science Congress*, pp. 51-52.
6. Sujatha, C. H. and Jacob Chacko, 1991. Pesticide sorption by sediment from a tropical estuary. *XX General Assembly IUGG*, Vienna, p. 90.
7. Babukutty, Y. and Jacob Chacko, 1991. Chemical exchange of metals in an aquatic system. *XX General Assembly IUGG*, Vienna, p. 85.
8. Shibu M. Paul, Jacob Chacko and Balchand, A.N., 1992. A behavioral profile of cadmium in a tropical estuarine environment --- a speciation approach. *Second European Conference on Ecotoxicology*, Amsterdam, P1-49.
9. Babukutty, Y. and Jacob Chacko, 1992. Bioavailability of copper in the Cochin estuary. *Second European Conference on Ecotoxicology*, Amsterdam, S2-7.
10. Veena, K. B., C.K. Radhakrishnan and Jacob Chacko, 1992. Effect of copper and Malathion on the developing ovary of *Etroplus maculatus* (Block) in the Cochin backwaters. *Second European Conference on Ecotoxicology*, Amsterdam, P2-43.
11. Sujatha, C. H. and Jacob Chacko, 1992. Effect of sublethal concentration of Malathion and Endosulfan on an estuarine bivalve *Villorita cyprinoides* var. *cochinensis*. *Second European Conference on Ecotoxicology*, Amsterdam, P2-43.

12. Geetha, T. S. and Jacob Chacko, 1992. Effect of selenium on the bioaccumulation of mercury in an estuarine bivalve. *Second European Conference on Ecotoxicology*, Amsterdam, P2-175.
13. Sujatha, C. H. and Jacob Chacko, 1993. Identification and speciation of tin compounds in the water/sediment of the Cochin estuary, India. *International Conference on Heavy Metals in the Environment*, Toronto, Canada.
14. Sujatha, C. H., S.M. Nair and Jacob Chacko, 1995. Effect of organotin and copper on the metabolic consequences of an estuarine bivalve, *Meretrix casta*. *Tenth International Conference on Heavy Metals in the Environment*, Hamburg, Germany.
15. Sujatha, C. H., M. Rethi., S. M. Nair, and J. Chacko, 1995. Determination and distribution of some hydride elements in the sediments of an Indian Waterway. *Tenth International Conference on Heavy Metals in the Environment*, Hamburg, Germany.
16. Babukutty, Y. and J. Chacko, 1995. Chemical partitioning of sediment bound manganese to an estuarine organism. *Sixth International Conference on the Conservation and Management of Lakes*, Tsukuba, Japan.
17. Karthikeyan, P. and Chacko, J. 1996. Interactive effects of H<sup>+</sup> and Al<sup>3+</sup> ions on the acute toxicity of copper to *Villorita cyprinoides* var *cochinensis*. *Eighth Kerala Sci. Cong.* India. 73-75.
18. Xavier, K.O., K.K. Abdul Rasheed, B. Sen, K.K. Mohammed Yusuff and Jacob Chacko, 1997. Support effects on Cu - Cr/Al<sub>2</sub>O<sub>3</sub> catalysts for CO oxidation. *Thirteenth National Symposium on Catalysis*, Dehradun, India.
19. Jacob Chacko, 2005. Heavy metal interactions in water bodies around Greater Cochin. *Workshop on status of pollution of Heavy Metals and Persistent Toxic substances in India*, Annamalai University, India.
20. Jacob Chacko, 2004. *International activities of Cochin University*, Workshop on "Cooperation with Indian Universities", Bremen University, Germany.