



UNIVERSITY OF CALCUTTA

Department of Marine Science

FACULTY ACADEMIC PROFILE/ CV

Full name of the faculty member: DR. SANDIP KUMAR MUKHOPADHYAY

Designation: ASSOCIATE PROFESSOR

Specialization : Marine & Estuarine Biogeochemistry

Contact information :

Address : Department of Marine Science
University of Calcutta
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Academic qualifications:

College/ university from which the degree was obtained	Abbreviation of the degree
University of Calcutta, 1993	B.Sc. (Honors)
University of Calcutta, 1995	M.Sc.
University of Calcutta, 2003	Ph.D.

Positions held/ holding:

- Presently working as Associate Professor since 2008
- Worked as Scientist Gr. IV (1) in Central Salt and Marine Chemicals Research Institute, Bhavnagar, CSIR, from 2004-2008
- Worked as Scientist-B in National Institute of Ocean Technology, Chennai from 2003-2004

Research interests:

Chemical Oceanographic aspects of coastal and estuarine systems covering

- Marine and estuarine Biogeochemistry and Biogeochemical cycles of elements,
- Air-sea and Biosphere – atmosphere exchange of radiatively active gases.
- Biogeochemical process in the mangrove sediment with special emphasis on anaerobic organic matter mineralization.
- Biogeochemistry & photochemistry of methane in the mangrove environment.
- Organic matter cycling and source characterisation in the mangrove dominated estuaries.

- f. Carbon dioxide system and nutrient dynamics in the mangrove dominated estuaries.
9. **Research guidance :**
Number of researchers awarded M.Phil/ Ph.D degrees: 3 (Three)
Number of researchers pursuing M.Phil/ Ph.D : 5 (Five)

Projects :

Completed projects:

1. Title: Carbon sequestration and annual increase of carbon stock in a mangrove forest. Acted as Co-Principal Investigator. Tenure 2009-2012. Funded by the Department of Science & Technology, Govt. of India.

Current projects:

1. Title: Biogeochemical dynamics of the Hooghly-Matla estuarine systems along the northeast coast of the Bay of Bengal, India. Acting as Principal Investigator. Tenure 2011 ongoing . Funded by the Ministry of Earth Science, Govt. of India. Sanction no. MoES/36/OOIS/SIBER/07 dated 09.09.2011.
2. Title: Water quality and pollution monitoring in the mangrove dominated estuaries of the Sundarbans. Acting as Principal Investigator. Tenure 2012-2017. Funded by the Ministry of Earth Science, Govt. of India. Sanction no. MoES/36/OOIS/SIBER/07 dated 09.09.2011. But fund for 12th five year plan was not received.
3. Title: Biogeochemical process and paleo oceanographic studies of the Easter Indian Ocean, Acting as Co -Principal Investigator. Tenure 2015-ongoing . Funded by the Ministry of Earth Science, Govt. of India. Sanction no. MoES/36/OOIS/Extra/34/2013 dated 28.04.2015.

Select list of publications:

A. International journal:

1. Daniel M. Alongi, Sandip K. Mukhopadhyay, 2015, Contribution of mangroves to coastal carbon cycling in low latitude seas. *Agricultural and Forest Meteorology* 213 (2015)
2. Manab Kumar Dutta, Raghav Ray, Rishmita Mukherjee, Tapan Kumar Jana, **Sandip Kumar Mukhopadhyay, 2015**. Atmospheric fluxes and photo-oxidation of methane in the mangrove environment of the Sundarbans, NE coast of India; A case study from Lothian Island. *Agricultural and Forest Meteorology*, 213, 33 – 41.
3. Manab Kumar Dutta, Rishmita Mukherjee, Tapan Kumar Jana, **Sandip Kumar Mukhopadhyay, 2015**. Biogeochemical dynamics of exogenous methane in an estuary associated to a mangrove biosphere; the Sundarbans, NE coast of India. *Marine Chemistry*, 170, 1 – 10.
4. [M.K. Dutta](#), [C. Chodhury](#), [T.K. Jana](#), [S.K. Mukhopadhyay](#), Dynamics and exchange fluxes of methane in the estuarine mangrove environment of the Sundarbans, NE coast of India, [Atmospheric Environment](#), [Volume 77](#), October 2013, Pages 631–639.
5. Raghav Ray, Chumki Chowdhury, Natasha Majumder, Manab Kumar Dutta, Sandip Kumar Mukhopadhyay and Tapan Kumar Jana, Improved model calculation of atmospheric CO₂ increment in affecting carbon stock of tropical mangrove forest. *Tellus B* 2013, 65, 18981, <http://dx.doi.org/10.3402/tellusb.v65i0.18981>
6. M. Dey, C. Chowdhury, D. Ganguly, S. K. Mukhopadhyay, T. K. De & T. K. Jana, Comparison of Monsoonal change of water quality parameters between 1983 and 2008 in

a tropical estuary in Northeastern India: role of phytoplankton and community metabolism; 2012, *Marine Ecology*, (Wiley Blackwell) 1–16.

7. R. Ray, D. Ganguly, C. Chowdhury, M. Dey, S. Das, M. K. Dutta, S. K. Mandal, N. Majumder, T. K. De, **S. K. Mukhopadhyay**, T. K. Jana, Carbon sequestration and annual increase of carbon stock in a mangrove forest. 2011, *Atmospheric environment*, article in press.
8. **S. K. Mukhopadhyay**, T. K. De and T. K. Jana, Fluxes of nutrients from the tropical river Hooghly at the land-ocean boundary of Sundarbans, NE coast of Bay of Bengal, India. 2006, *Journal of Marine System*, (Elsevier Science Ltd.) 62, 9-21.
9. **S. K. Mukhopadhyay**, B. K. Sen, S. Sen and T. K. Jana, Impact of Sundarban mangrove biosphere on the carbon dioxide and methane mixing ration at the NE coast of Bay of Bengal, India. 2002, *Atmospheric Environment*, (Elsevier Science Ltd.), 36, 629 – 638.
10. **S. K. Mukhopadhyay**, H. Biswas, T. K. De, S. Sen and T. K. Jana, Seasonal effects on the air-water carbon dioxide exchange in the Hooghly estuary, NE coast of Bay of Bengal, India. 2002, *Journal of Environmental Monitoring*, (The Royal Society of Chemistry, U. K.) 4, 549 - 552.
11. **S. K. Mukhopadhyay**, T. K. Jana, T. K. De & S. Sen. Measurement of exchange of CO₂ in mangrove forest of Sundarbans using micrometeorological method. 2000, *Tropical Ecology*, (International society of Tropical Ecology) 41 (1): 57-60.
12. H. Biswas, **S.K. Mukhopadhyay**, S. Sen and T.K. Jana, Spatial and temporal patterns of methane dynamics in the tropical mangrove dominated estuary, NE coast of Bay of Bengal, India. 2007, *Journal of Marine System*, (Elsevier Science Ltd.), 68 (2007) 55–64.
13. S. Basha, P. M. Gaur, R. B. Thorat, R. H. Trivedi, **S. K. Mukhopadhyay**, N. Anand, S. H. Desai, K. H. Mody & B. Jha, Heavy Metal Content of Suspended Particulate Matter at World's Largest Ship-Breaking Yard, Alang-Sosiya, India. *Water Air Soil Pollution* (Springer Sciences) 2007, 178:373–384.
14. H. Biswas, **S. K. Mukhopadhyay**, T. K. De and T. K. Jana.. Methane Emission from the Wetland Rice Fields in Sagar Island, NE Coast of Bay of Bengal, India. 2006, *International Journal of Agricultural Research*, 1(1), 76-84.
15. H. Biswas, A. Chatterjee, **S. K. Mukhopadhyay**, T. K. De, S. Sen, T. K. Jana., Estimation of ammonia exchange at the land–ocean boundary condition of Sundarban mangrove, northeast coast of Bay of Bengal, India. 2005, *Atmospheric Environment* (Elsevier Science Ltd.), 39 (25), 4489-4499.
16. H. Biswas, **S. K. Mukhopadhyay**, T. K. De and T. K. Jana.. Biogenic controls on the air-water carbon dioxide exchange in the Sundarban mangrove environment, NE coast of Bay of Bengal, India. 2004, *Limnology and Oceanography* (American Society for Limnology and Oceanography) 49 (1), 95-101.
17. H. Ghatak, **S. K. Mukhopadhyay** and T. K. Jana. Interaction of Cu (II), Fe(III) with mangal humic substances studied by synchronous florescence spectroscopy and potentiometric titration. 2004, *Wetlands Ecology and Management* (Kluwer Publishers), 12, 145 – 155.

B. National journal:

1. **S. K. Mukhopadhyay**, H. Biswas, K. L. Das, T. K. De and T. K. Jana. Diurnal variation of carbon dioxide and methane exchange above Sundarban mangrove forest, in NW Coast of India. 2001, *Indian Journal of Marine Sciences* (NISCOM,CSIR) 30, 70-74.
2. H. Ghatak, **S. K. Mukhopadhyay**, H. Biswas, S. Sen and T. K. Jana. Quantitative study of Co(II) complexation by synchronous fluorescence spectroscopy with Sundarban mangrove habitat humic substances. 2002, *Indian Journal of Marine Sciences* (NISCOM, CSIR), 31(2), 136-140.

3. Saha, **S. K. Mukhopadhyay** and T. K. Jana. Physico-chemical characterization of the extrapallial fluid of a common tellinid bivalve *Macoma birmanica* (Philippi) in the mud flats of Sundarban mangrove, Bay of Bengal. 2000, Indian Journal of Marine Sciences (NISCOM, CSIR) 30, 158-164.

C. List of papers presented in conferences:

1. **S.K. Mukhopadhyay**, S. Sen and T.K. Jana, Fluxes of materials at the land ocean boundary of Hooghly estuary, India. Sustained Indian Ocean Biogeochemical and Ecological Research to be held on 3-6 October, 2006 at National Institute of Oceanography, Goa.
2. **S.K. Mukhopadhyay** and T.K. Jana, Overview of the Hooghly estuarine system and material fluxes at its land ocean boundary condition, NE coast of Bay of Bengal, India. 'Study of Indian Estuaries' to be held on 25 – 26th June, 2007 at National Institute of Oceanography, Goa.

Invited lectures delivered :

During 2013 a series of invited lecture was delivered as a part of INSA Indo-Australian Fellowship in the following institutes:

1. Institute for Marine and Antarctic Studies (IMAS), University of Tasmania, Hobart, Tasmania, Australia
2. Centre for Coastal Biogeochemistry, School of Environment, Science and Engineering, Southern Cross University PO Box 157 Lismore NSW 2480 Australia
3. The School of Biological Sciences, The University of Queensland, St Lucia, QLD 4072, Australia

Awards :

1. Received **CSIR Young Scientist Award** for the year 2006 in Earth, Atmosphere, Ocean and Planetary Sciences. The award was given for the significant research contribution towards understanding the estuarine biogeochemical processes and greenhouse gas emission from coastal wetlands with its impact on regional climate.
2. Awarded Indo-Australia Early career S & T visiting fellowship under the joint venture of Australia Academy of Science and Indian National Science Academy, Govt. of India during the year 2013 to carry out research as Visiting Scientist at Australian Institute of Marine Science, Townsville, Queensland.