Dr. Usharani Subuddhi

Assistant Professor

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Academic profile

- Ph. D., Indian Institute of Technology, Madras (Physical Photochemistry)
- M. Sc., Sambalpur University, Odisha

Research & Professional Experience :

- Assistant Professor, NIT Rourkela, India: July 2009 – till date
- Research Associate, IIT Madras: April 2008 to June 2009
- Postdoctoral Researcher, University of Alberta, Canada: Jan 2007 to Jan 2008

Honours and Affiliation:

- University Gold Medal (M. Sc., Chemistry, Sambalpur University)
- 2007-2008 Post Doctoral Fellow (CIHR)
- 2010 Life Member, Orissa Chemical Society
- 2011 Life Member, Luminescence Society of India

Research Interest:

- Physical Photochemistry, Biophysical Chemistry, Protein Fluorescence, Novel Drug Delivery Systems, Photophysical Studies of Biosurfactants and Dendrimers

Research Group:

Ph.D. Students:
(1) Ms. Subhraseema Das (July 2010- Ongoing)
(2) Ms. Smruti Snigdha Mishra (July 2011- Ongoing)

M.S. Students:
Ongoing (2011-2012)
(1) Mr. Arnab Mahato
(2) Ms. Ititshree Ratha
(3) Ms. Dipika Priyadarsini Jena
(4) Ms. Juisa Nandini Patra
Alumni
(1) Mr. Swapnadip Roy (2009-2010)
(2) Ms. Smruti Snigdha Mishra (2010-2011)
(3) Ms. Nivedita Bose (2010-2011)
(4) Ms. Swati Rekha Gouda (2010-2011)

List of Publications:

- **Usharani Subuddhi**, Prasanna K. Vuram, Anju Chadha and Ashok K. Mishra, Photophysical investigation of microenvironment in glycerol based dansylated polyether dendrons, *J. Photochem. Photobiol. A*, 217, (2011), 411–416.

- Linda J. Reha-Krantz, Chithra Hariharan, **Usharani Subuddhi**, Shuangluo Xia, Chao Zhao,Jeff Beckman, Thomas Christian, and William Konigsberg, Structure of the 2-Aminopurine-Cytosine Base Pair Formed in the Polymerase Active Site of the RB69 Y567A-DNA Polymerase, Biochemistry, 50, (2011), 10136−10149.

- Vuram Prasanna Kumar, **Usharani Subuddhi**, Anju Chadha, and Ashok Kumar Mishra, Synthesis and Aggregation Properties of Dansylated Glycerol Based Amphiphilic Polyether Dendrons, , *Eur. J. Org. Chem.* (2010), 5030–5040.

- Monalisa Mohapatra, **Usharani Subuddhi** and Ashok K. Mishra, Photophysical behaviour of ground state anion and phototautomer of 3-hydroxyflavone in liposome membrane, *Photochem. Photobiol. Sci.* 8**,** (2009), 1373 – 1378.

- **Usharani Subuddhi**, Sourav Haldar, S. Sankararaman and Ashok K. Mishra, Unusual fluorescence spectral response of 1-(4-N,N dimethylaminophenylethynyl)pyrene towards the thermotropic phase change in lipid bilayer membranes. *Journal of Photochemistry Photobiology A* (2008), 200, 381–387.

- **Usharani Subuddhi**, Matthew Hogg and Linda J. Reha-Krantz ,Use of 2-Aminopurine Fluorescence to Study the Role of the β Hairpin in the Proofreading Pathway Catalyzed by the Phage T4 and RB69 DNA Polymerases. *Biochemistry* (2008), 47, 6130-6137.

- Subhendu K. Mohanty, **Usharani Subuddhi**, Sundarababu Baskaran and Ashok K. Mishra , Photophysical Properties of Newkome-Type Dendrimers in Aqueous Medium., *Photochem. Photobiol. Sc.* (2007), 6, 1164-1169. (**Appeared as a cover-page article**)

- **Usharani Subuddhi** and Ashok K. Mishra, Micellization of bile salts in aqueous medium: A fluorescence study., *Colloids and Surfaces B: Biointerfaces* (2007), 57, 102-107.

- **Usharani Subuddhi** and Ashok K. Mishra, Interaction of bile salts with DPPC vesicles: A fluorescence anisotropy study using diphenylhexatriene., *Journal of Chemical Sciences* (2007), 119, 169–174. (**Invited article for the special issue on fluorescence spectroscopy**)

- **Usharani Subuddhi** and Ashok K. Mishra, Micellization of sodium cholate in aqueous medium as studied by fluorescent probe 1,6-diphenylhexatriene. *Proceedings of International Conference on Molecules to Materials (ICMM)*, March 3-4, 2006, 418-423.

- **Usharani Subuddhi**, Sourav Haldar, S. Sankararaman and Ashok K. Mishra, Photophysical behaviour of 1-(4-N,N-dimethylaminophenylethynyl) pyrene (DMAPEPy) in homogeneous medium. *Photochem. Photobiol. Sc*. (2006), 5, 459-466.

- **Usharani Subuddhi** and Ashok K. Mishra, Prototropism of 1-hydroxypyrene in liposome suspensions: implications towards fluorescence probing of lipid bilayers in alkaline medium. *Photochem. Photobiol. Sc.* (2006), 5, 283-290.

Conferences:

- **Usharani Subuddhi** and Ashok K. Mishra, Implications of 1-hydroxypyrene prototropism towards fluorescence probing of lipid bilayer in alkaline medium, Trombay Symposium on Radiation and Photochemistry (TSRP-2006), BARC-Mumbai, January 5-9, 2006. (Received best poster presentation award)

- **Usharani Subuddhi** and Ashok K. Mishra, Micellization of sodium cholate in aqueous medium as studied by fluorescent probe 1,6-diphenylhexatriene, International Conference on Molecules to Materials (ICMM), Longowal, March 3-4, 2006.

- **Usharani Subuddhi** and Ashok K. Mishra, Interaction of bile salts with dipalmitoylphosphatidylcholine (DPPC) vesicles: A fluorescence study, Annual IIT Madras Symposium & The First Mid-Year Meeting of the Chemical Research Society of India, Chennai, July 12-13, 2006.

- **Usharani Subuddhi**, Subhendu K. Mohanty, Sundarababu Baskaran and Ashok K.Mishra, Time- Resolved fluorescence decay studies: a new insight into aggregation of Newkome-type dendrimers in aqueous medium, Progress on tunable lasers for ultrafast processes and applications (PTLUPA6), Dec. 21-22, 2006.

- **Usharani Subuddhi** and Ashok K. Mishra, Effect of Denaturation of Human and Bovine Serum Albumins on the Fluorescence Properties of Bound Coumarin-1, Fluorescence 2009, An International Conference of Fluorescence in Biology, March 16-19, 2009, TIFR, Mumbai, India.

- **Usharani Subuddhi** and Swapnadip Roy, Effect of Bile Salt Micellar Environment on the Spectral Properties, Isomerisation and Aggregation of 1,6-Diphenylhexatriene, 3rd Asia Pacific Symposium on Radiation Chemistry & DAE-BRNS Tenth Biennial Trombay Symposium of Radiation and Photochemistry (APSRC-TSRP 2010), Lonawala, India.

Sponsored/ Consultancy Projects:

S.No	Title of the Project	Sponsoring Agency	Year	Value (lakhs)	Co-Investigators, if any	Completed/ ongoing
1	Design and Physico-Chemical Properties of Cyclodextrin Incorporated Smart Hydrogels: Towards Improved Delivery of Hydrophobic Drugs	**DST**	2010-14	19.83	NIL	Ongoing