



DR. PRITHIDIPA SAHOO
Assistant Professor in Chemistry

Email

prithidipa@hotmail.com
prithidipa.sahoo@visva-bharati.ac.in

Contact Address

Department of Chemistry
Siksha-Bhavana (Institute of Science)
Visva-Bharati
Santiniketan- 731 235
West Bengal, INDIA

Areas of Specialisation

Organic Chemistry, Organic Synthesis, Molecular recognition, Supramolecular chemistry

Qualification

- B.Sc. (Honours) in Chemistry, Vidyasagar University, 2001.
- M.Sc. in Chemistry (Organic Chemistry Spl.), Vidyasagar University, 2003.
- Ph.D. (Science) with Professor Shyamaprosad Goswami and Prof Ajit K Mahapatra, IEST, Shibpur, 2010.
- Post-doctoral Fellow with Professor Ralf Waumuth, Rutgers University, USA, 2010 – 2012.

Teaching Experience

- Assistant Professorship (Dec., 2012- Till date); Visva-Bharati, Shantiniketan
- Lectureship (October, 2010 - July, 2012); Department of Chemistry and Chemical biology, Rutgers University, NJ, USA.

Research interests

- Organic Synthesis of fluorophore
- Molecular Recognition and Supramolecular Chemistry, exploration of different biological application of some important biomolecules through molecular recognition and drug delivery system.
- Recognition with some toxic/ hazardous elements associated with food, agriculture and environment

Research projects (Completed/Ongoing)

- "Water soluble Photoresponsive Fluorophore: Design, Synthesis and Exploration of their Biological application for specific recognition with Purine derivatives", DST, New Delhi, 2014; 20 L.
- "Water soluble photoresponsive fluoroionophore with small cavitand: Design, synthesis and live-cell imaging for heavy metal ions", UGC, New Delhi, 2014; 6 L.
- "Design and synthesis of FICT based polyacyl nanocapsules", Research Grant, Visva-Bharati, 2013; 10,000/-
- "Water soluble fluorescent chemosensors: Design, synthesis and exploration of their biological application for specific recognition with purine, pyridine derivatives and nucleotides." CSIR, New Delhi, 2019; 22 L.

Award

- Qualified CSIR-UGC NET Examination conducted by Council of Scientific and Industrial Research, India, held on December, 2003
- Young Scientist Award, Venus International Research Awards-VIRA 2018
- Professor Asima Chatterjee Best Scientist Award- 2018

Group members

Ph. D Student

1. Dr. Himadri Sekhar Sarkar [Degree awarded, presently JSPS post doctoral fellow at Tohoku University, Japan]
2. Mr. Sujoy Das [Ph D student, Thesis Submitted]
3. Ms. Ayndrila Ghosh [Ph D student, 2014-till date]
4. Ms. Shampa Kundu [Ph D student, 2017-till date]
5. Mrs. Shrabani Saha [Ph D student, 2018-till date]
6. Mr. Saurodeep Mandal [Ph D student, 2018-till date]
7. Mr. Jiko Rout [Ph D student, 2019]

Publications

1. A unique dual sensor for the detection of DCNP (nerve agent mimic) and Cd²⁺ in water, AyndrilaGhosh, Sujoy Das, Saurodeep Mandal, **Prithidipa Sahoo***, Just Accepted (DOI: 10.1039/C9NJ03327K), *New J. Chem.*, **2019**.
2. A colorimetric sensor for Hydrogen Sulfide: Detection from Biogas and quantitative estimation in water, Sujoy Das and **Prithidipa Sahoo***, *Sensor and Actuator B*, **291**, 287-92, 2019.
3. Development of a new fluorescent probe for cysteine detection in processed food samples, Sujoy Das, HimadriSekharSarkar, Shrabani Saha & **Prithidipa Sahoo***, *Anal. Bioanal. Chem.*, 2019, **41**, 6203–6212.
4. A multi-signaling fluorescent chemosensing technique for simultaneous detection and quantification of Cysteine and Serine in human cancer cell, Shampa Kundu, Pulak K Maiti and **Prithidipa Sahoo*** under revision, *Org. Biomol. Chem.*, 2019.
5. Estimation of hydrogen sulfide from crude petroleum: A unique invention using a simple chemosensor, S. Kundu and **P. Sahoo***, *New J. Chem.*, **2019**, **43**, 12369.
6. Rapid and selective visual detection of DCNP (nerve gas mimic) in sea water and soil with a simple paperstrip, S. Kundu and **P. Sahoo***, Just Accepted, *Results in chemistry*, 2019.
7. S. Das, U. Mukherjee, S. Pal, S. Maitra and **P. Sahoo***, Selective sensing of Al³⁺ ion by nitrophenyl induced coordination: Imaging in zebrafish brain tissue, *Org. Biomol. Chem.*, 2019, **17**, 5230-5233.
8. Highly selective optical and fluorescence “turn on” signaling of Al³⁺: cell imaging and estimation in rice plant, Shrabani Saha, Sujoy Das and **Prithidipa Sahoo***, Submitted, *Org. Biomol. Chem.*, 2019.
9. **Inside Cover**: S. Das, U. Mukherjee, S. Pal, S. Maitra and **P. Sahoo***, *Org. Biomol. Chem.*, 2019, **17**, 5165-5172.
10. S. Kundu, H. S. Sarkar, S. Das and **P. Sahoo***, Easy and rapid estimation of ammonia in cold storage potatoes: Precautions in environment, *New J. Chem.*, 2019, **43**, 6843-6847.
11. Rare crystal structure of open spiro lactum ring along with a closed ring form of a rhodamine derivative: Sensing of Cu²⁺ ions from Spinach. S. Das, K. Rissanen and **P. Sahoo***, *ACS Omega*, 2019, **4**, 5270–5274.
12. Rapid Consumption of H₂S from our daily diet—Determination by a simple chemosensing method, AyndrilaGhosh, Sujoy Das, ShampaKundu, Himadri Sekhar Sarkar and **Prithidipa Sahoo***, *ACS Omega*, **3**, 11617, 2018.
13. 5-Hydroxymethylcytidine: Quantification in human liver cancer cell by a simple chemosensor. Himadri Sekhar Sarkar, Shampa Kundu, Sujoy Das, and **Prithidipa Sahoo***, *RSC Advances*, **8**, 39893, 2018.

14. Rapid estimation of lead in lipstick, Ayndrila Ghosh, Sujoy Das, Shampa Kundu, Pulak Kumar Maiti, and **Prithidipa Sahoo***, *Sensor and Actuator B*, 266, 80-85, 2018.
15. Visualisation of DCP, a nerve agent mimic, in Catfish brain by a simple chemosensor, Himadri Sekhar Sarkar, Ayndrila Ghosh, Sujoy Das, Pulak Kumar Maiti, Sudipta Maitra, Sukhendu Mandal and **Prithidipa Sahoo***, *Nature Sci. Rep.*, 8:3402, February, 2018.
16. A chemosensor to recognize N-acyl homoserine lactone in bacterial biofilm, Sujoy Das, Himadri Sekhar Sarkar, Debasish Mandal, Md Raihan Uddin, Sukhendu Mandal and **Prithidipa Sahoo***, *Sens. Actuators B: Chem.*, 259, 332-338, 2018.
17. First chemosensor for rapid detection and quantification of L-4-Hydroxyproline in collagen and other bio samples, Himadri Sekhar Sarkar, Sujoy Das, Kari Rissanen and **Prithidipa Sahoo***, *Anal. Chem.*, 89, 13054-13057, 2017.
18. "Turn-on" fluorescence sensing of cytosine: Development of a chemosensor for *in vivo* quantification of cytosine, Himadri Sekhar Sarkar, Sujoy Das, Debasish Mandal, Md Raihan Uddin, Sukhendu Mandal and **Prithidipa Sahoo***, *RSC Adv.*, 7, 54008-54012, 2017.
19. Selective Recognition and Quantification of 2,3-Bisphosphoglycerate in Human Blood Samples by a Rhodamine Derivative, Himadri Sekhar Sarkar, Sujoy Das, Md Raihan Uddin, Sukhendu Mandal and **Prithidipa Sahoo***, *Asian J. Org. Chem.*, 6, 71, 2017. [Selected as cover page]
20. Selective fluorescence sensing and quantification of uric acid by naphthyridine-based receptor in biological sample, **Prithidipa Sahoo***, Sujoy Das, Himadri Sekhar Sarkar, Kalipada Maiti, Md Raihan Uddin and Sukhendu Mandal, *Bioorg. Chem.*, 71, 315-324, 2017.
21. Carbazole-driven ratiometric fluorescence turn on for dual ion recognition of Zn²⁺ and Hg²⁺ by thiophene-pyridyl conjugate in HEPES buffer medium: spectroscopy, computational, microscopy and cellular studies. Ajit Kumar Mahapatra, Rajkishor Maji, Kalipada Maiti, Sanchita Mondal, Syed Samim Ali, Saikat Kumar Manna & **Prithidipa Sahoo**. *Supramolecular Chemistry*, 2016, 29, 215.
22. Pyrene appended thymine derivative for selective turn-on fluorescence sensing of uric acid in live cells, **Prithidipa Sahoo***, Himadri Sekhar Sarkar, Sujoy Das, Kalipada Maiti, Md Raihan Uddin and Sukhendu Mandal, *RSC Adv.*, 6, 66774-66778, July, 2016.
23. A highly sensitive fluorescent probe for detection of hydrazine in gas and solution phases based on the Gabriel mechanism and its bioimaging Rajkishor Maji, Ajit Kumar Mahapatra, Kalipada Maiti, Sanchita Mondal, Syed Samim Ali, **Prithidipa Sahoo**, Sukhendu Mandal, Md Raihan Uddin, Shyamaprosad Goswami, Ching Kheng Quah and Hoong-Kun Fun *RSC Adv.*, 2016, 6, 70855.
24. Molecular Recognition of Caffeine in solution and Solid state. (Review) **Prithidipa Sahoo***. *Bioorganic Chemistry*, 2015, 58, 26.

25. A BODIPY/pyrene-based chemodosimetric fluorescent chemosensor for selective sensing of hydrazine in the gas and aqueous solution state and its imaging in living cells. Ajit Kumar Mahapatra, Rajkishor Maji, Kalipada Maiti, Saikat Kumar Manna, Sanchita Mondal, Syed Samim Ali, Srimanta Manna, **Prithidipa Sahoo**, Sukhendu Mandal, Md Raihan Uddin and Debasish Mandal, *RSC Adv.*, 2015, 5, 58228.
26. Colorimetric and Ratiometric Fluorescent Chemosensor for Fluoride Ion Based on Phenanthroimidazole (PI): Spectroscopic, NMR and Density Functional Studies, Ajit Kumar Mahapatra*, Parthasarathi Karmakar, Jagannath Roy, Kalipada Maity, **Prithipa Sahoo**, Debasish Mandal, *RSC Advances*, 2015, 5, 37935.
27. Aminomethylpyrene-based imino-phenols as primary fluorescence switch-on sensors for Al³⁺ in solution and in Vero cells and their complexes as secondary recognition ensembles toward pyrophosphate. Ajit Kumar Mahapatra*, Kalipada Maity, Saikat Kumar Manna, Rajkishor Maji, Sanchita Mandal, **Prithidipa Sahoo**. *RSC Advances*, 2015, 5, 81203.
28. A cyclization-induced emission enhancement (CIEE)-based ratiometric fluorogenic and chromogenic probe for the facile detection of a nerve agent simulant DCP. Ajit Kumar Mahapatra*, Kalipada Maity, Saikat Kumar Manna, **Prithidipa Sahoo**, Debasish Mandal. *Chem Comm.*, 2015, 51, 9729.
29. Carbazolephenylthiosemicarbazone-based ensemble of Hg²⁺ as selective fluorescence turn-on sensor toward cysteine in water. Ajit Kumar Mahapatra*, Jagannath Roy, **Prithidipa Sahoo**, Subhra Kanti Mukhopadhyay, Abhishek Banik, Debasish Mandal. *Tetrahedron Letters*, 2013, 54, 2946.
30. A new colorimetric and fluorescent bis(coumarin)methylene probe for fluoride ion detection based on the proton transfer signaling mode. Ajit Kumar Mahapatra*, Kalipada Maiti, **Prithidipa Sahoo**, Prasanta Kumar Nandi. *Journal of Luminescence*, 2013, 143, 349.
31. First Theophylline-Based Ratiometric Fluorescent Synthetic Receptor for Selective Recognition of Dihydrogenphosphate and Biological Phosphate Ions. Ajit Kumar Mahapatra*, Giridhari Hazra, **Prithidipa Sahoo**, *Bioorganic & Medicinal Chemistry Letters*, 2012, 22, 1358.
32. Carbazole-thiosemicarbazone-Hg(II) ensemble-based colorimetric and fluorescence turn-on toward iodide in aqueous media and its application in live cell imaging. Ajit Kumar Mahapatra*, Jagannath Roy, **Prithidipa Sahoo**, *Organic and Biomolecular Chemistry*, 2012, 10, 2231.
33. Hg²⁺-selective "turn-on" fluorescent chemodosimeter derived from glycine. Ajit Kumar Mahapatra*, Jagannath Roy, Supratim Kundu, **Prithidipa Sahoo**, *Photochemistry & Photobiology A*, 2012, 240, 26.
34. Fluorescence sensing of caffeine in aqueous solution with carbazole-based probe and imaging application in live cells. Ajit Kumar Mahapatra*, Jagannath Roy, **Prithidipa Sahoo**, Subhra Kanti Mukhopadhyay, Anindita Mukhopadhyay. *Bioorganic & Medicinal Chemistry Letters*, 2012, 22, 5379.

35. Visible near-infrared chemodosimeter for mercury ion via specific thioacetaldeprotection in aqueous solution Ajit Kumar Mahapatra*, Rajkishor Maji, **Prithidipa Sahoo**, *Tetrahedron Letters*, 2012, 53, 7031.
36. 2-Amino-4-methylpyrimidine: a simple supramolecular scaffold for carboxylic acid both in solid and solution states. Ajit Kumar Mahapatra*, **Prithidipa Sahoo**, Shyamaprosad Goswami, Hoong- Kun Fun and Chin Sing Yeap. *Journal of Luminescence*, 2011, 131, 59.
37. A simple coumarin-based colorimetric and ratiometric chemosensor for acetate and a selective fluorescence turn-on probe for iodide. Ajit Kumar Mahapatra*, Giridhari Hazra, Jagannath Roy, **Prithidipa Sahoo**, *Journal of Luminescence* 2011, 131, 1255.
38. Fluorescent carbazolyldithiane as a highly selective chemodosimeter via protection/deprotection functional groups: A ratiometric fluorescent probe for Cd (II). Ajit Kumar Mahapatra*, Jagannath Roy, **Prithidipa Sahoo**, *Tetrahedron Letters* 2011, 52, 2965.
39. A highly sensitive and selective ratiometric fluorescent probe based on 1,8-Naphthyridine moiety for Hg²⁺. Ajit Kumar Mahapatra*, Giridhari Hazra, Nirmal Kumar Das, **Prithidipa Sahoo**, Shyamaprosad Goswami, Hoong-Kun Fun, *Photochemistry & Photobiology A*, 2011, 222, 47.
40. Color response of tri-armed azo host colorimetric sensors and test kit for fluoride. Ajit Kumar Mahapatra*, Saikat Kumar Manna, **Prithidipa Sahoo**. *Talanta*, 2011, 85, 2673.
41. Model Pharmaceutical Co-crystallization: Guest-Directed Assembly of Caffeine and Aromatic tri-hydroxy and dicarboxylic Acids into Different Heteromolecular Hydrogen Bonding Networks in Solid State. Ajit Kumar Mahapatra*, **Prithidipa Sahoo**, Shyamaprosad Goswami and Hoong- Kun Fun. *Journal of Molecular Structure*, 2010, 963, 63.
42. Synthesis of indolylcarbazole based new colorimetric receptors for anions: a unique color change for fluoride ions. Ajit Kumar Mahapatra*, Giridhari Hazra, **Prithidipa Sahoo**. *Beilstein Journal of Organic Chemistry*, 2010, 6.
43. A simple 1,10-phenanthroline-based receptor for in solution and 1,10-phenanthroline in solid state urea recognition. Ajit Kumar Mahapatra*, **Prithidipa Sahoo**, Shyamaprosad Goswami, Hoong- Kun Fun. *Journal of Luminescence*, 2010, 130, 1475.
44. Fluorescence sensing of theobromine by simple 2,6-diamino-pyridine and the novel cyclic chair-like hydrogen bonded tetramer of its diacetyl derivative. Ajit Kumar Mahapatra*, **Prithidipa Sahoo**, Shyamaprosad Goswami, Suchada Chantrapromma and Hoong- Kun Fun. *Tetrahedron Letters*, 2010, 50, 89.
45. Hydrogen Bonding Selectivity in Molecular Assembly: A Novel 2:1 Molecular complex of Caffeine and 4-Hydroxybenzoic Acid via C-H...O / O-H...O / O-H...N Hydrogen Bond Coupling. Ajit Kumar Mahapatra*, **Prithidipa Sahoo**, Shyamaprosad Goswami, Hoong-Kun Fun. *Asian Journal of Chemistry*, 2008, 20, 1761.

46. First Artificial Acidic Fluorescence Receptors for Caffeine and other Xanthine Alkaloids. Ajit Kumar Mahapatra*, **Prithidipa Sahoo**, Shyamaprosna Goswami, Hoong- Kun Fun and Chin Sing Yeap. *Journal of Inclusion Phenomenon and Macrocyclic chemistry*, 2009, 67, 99.

BOOKS

Molecular Recognition of Xanthine alkaloids and some Biomolecules. Prithidipa Sahoo, 2014, Scholars' Press, Omni Scriptum GmbH & Co. KG, Heinrich-Boecking Str. 6-8 D - 66121 Saarbrücken, Germen. **ISBN: 978-3-639-66353-2**