



SURAJIT MONDAL, Ph.D.

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Personal Details

Date of birth/Place: 10th March 1991/ Mohar, India

Nationality: Indian

Language Known: Bengali, English, Hindi

Marital Status: Married

Objective

Recently, I have completed Ph.D. in the field of Synthetic Organic Supramolecular Chemistry and looking forward to an opportunity to best utilize the academic & professional skills as a team effort for an organization to let it flourish more.

Professional Summary

- An experienced organic chemist for the development of triazole based small heterocyclic host molecules for the recognition of toxic metal guests.
- Research and Development chemist for sensing and removal of hazardous ions from industrial waste water.
- Self motivated, forward thinking inventor and target oriented synthesis of the fluorescent sensor with additional expertise in analytical instrument handling ability, extraction chemistry, computational chemistry, and technical writing.
- Demonstrated strong transferable skills in communication and team-player by working with various collaborative projects.

Work Experience

May, 2013-July, 2013: Summer Project, IEST, Howrah, WB, India.

- Title of project: “*Mononuclear Cu (II)–Picolinamide Complex as Active Catalyst for Oxidation of Toluene and Ethyl Benzene*”. Project Guide: Prof. Papu Biswas, Dept. of Chemistry, IEST, Shibpur.
- Development of $[\text{CuL}_2(\text{H}_2\text{O})_2]\text{Cl}_2$ (L= 2-carboxamidine) and the complex has been used effectively used as catalysts for the oxidation of toluene and ethyl benzene in the presence of hydrogen peroxide as the oxidant

August, 2013-May, 2014: M. Sc project, IIT(ISM), Dhanbad, India.

- Title of project: “*Corrosion inhibition of mild steel in 15% HCl*”. Project Guide: Prof. M. Yadav, Dept. of Chemistry, IIT(ISM), Dhanbad.
- Target oriented synthesis and purification of the electron-rich heterocyclic compound for effective inhibition of corrosion of mild steel in acidic solution.

February, 2015 to January, 2021: Doctoral researcher

IIT(ISM) Dhanbad

- Designed, optimized, target oriented, and multistep synthesis of small triazole based heterocyclic molecules with their potential application in the molecular recognition field for the detection of toxic heavy metal ions.
- Cu(I)-catalyzed Click chemistry used to develop mono to bis triazole derivative with excellent AIEE properties for quantification of toxic metal ions.
- Development of Benzimidazole-benzothiazole conjugates as imaging agent.
- The theoretical calculation, as well as photophysical study, helps to reach a better conclusion about the recognition, resulting in the publication in peer review journals.

Educational Attainment

2015-2021:	Ph.D. IIT(ISM), Dhanbad, India 826004 Thesis title: “ <i>Synthesis of fluorescent sensors using triazole building block for toxic heavy metal ions</i> ”(Final viva-voce examination held on 22 th December 2020); <i>Supervisor: Prof. Swapan Dey, Dept. of Chemistry, Email: swapan@iitism.ac.in</i>
2012-2014:	Master of Science in Chemistry (M. Sc) from IIT(ISM), Dhanbad, (OGPA 7.88 out of 10)
2009-2012:	Bachelor in Chemistry (B. Sc) from R.K.M.V.C. College, Rahara, (West Bengal State University), Barasat, WB (64.00%)
2007-2009:	Higher Secondary (XII) from WBCHSE (80.00%)
2007:	Secondary Education (X) from WBBSE (83.10%)

Special Achievements

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- Merit-Cum-Means Scholarship, West Bengal Govt. from 2007-2009
 - Chief Minister Scholarship, West Bengal Govt. from 2007-2009
 - Sarada Kalyan Bhandar Scholarship, Medinipur, from 2007-2009

- Merit-Cum-means Scholarship, West Bengal Govt. from 2009-2012
- Merit-Cum-means Scholarship, Jharkhand Govt. from 2012-2014

Skill and Expertise

(a) Research Skill

- Experimental technique: Synthesis and purification (through column chromatography) of organic compounds, solvent distillation, and drying, TLC plate preparation, extraction of organic substances from natural sources.
- Extraction and purification of chlorophyll from spinach.
- Analysis: Mercury, MestReNova, UV-probe, Olex2, ChemDraw, Origin, EndNote
- Instrument Operated: NMR, FTIR, UV-Vis, Fluorescence, TCSPC, Gaussian optimization technique and *Gaussian 09* software, HPLC, GCMS, FESEM

(b) Teaching Skill

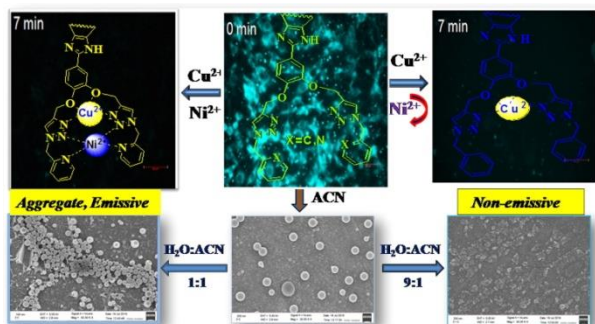
- July 2015-November 2015: Organic Chemistry Practical of M. Sc 1st Semester
- January 2016-July 2016: Organic Chemistry Practical of M. Sc 3rd Semester
- July 2016-November 2016: Organic Chemistry Practical of M. Sc 1st Semester
- January 2017-July 2017: Organic Chemistry Practical of M. Sc 3rd Semester
- July 2017-November 2017: Organic Chemistry Practical of M. Sc 1st Semester
- January 2018-July 2018: Organic Chemistry Practical of M. Sc 3rd Semester
- July 2018-November 2018: Organic Chemistry Practical of M. Sc 1st Semester
- Teaching assistant of Physical Chemistry of M. Sc 2nd Semester from January 2019-July 2019
- July 2019-November 2019: Physical Chemistry Practical of M. Sc 3rd Semester

(c) Computer Skill

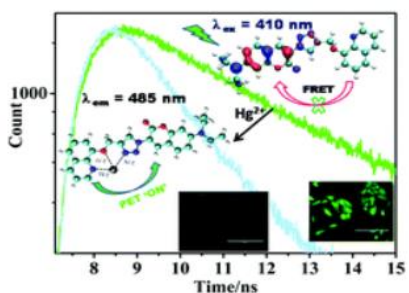
- Microsoft office
- Paint
- Adobe Photoshop
- C++ programming

List of Publications

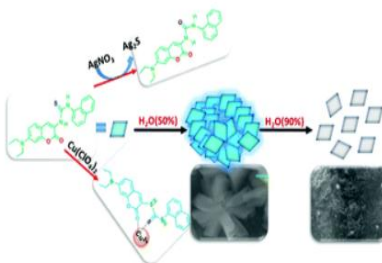
1. Mondal, Surajit, Chanda Kumari, Sumit K. Hira, and Swapan Dey. "Dual Core Clickate Fluorophores for Selective Recognition of Cu^{2+} and Ni^{2+} along with Live Cell Imaging." *Inorganica Chimica Acta* (2020): 119655.



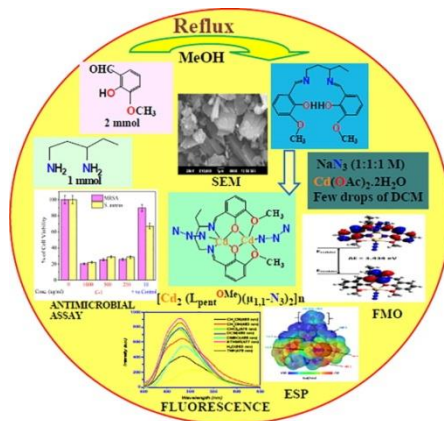
2. Mondal, Surajit, Niladri Patra, Hari Pada Nayek, Sumit K. Hira, Soumit Chatterjee, and Swapan Dey. "Unusual absence of FRET in triazole bridged coumarin–hydroxyquinoline, an active sensor for Hg^{2+} detection." *Photochemical & Photobiological Sciences* (2020).



3. Kumar, Ashish, Surajit Mondal, Kumari Somlata Kayshap, Sumit Kumar Hira, Partha Pratim Manna, Wim Dehaen, and Swapan Dey. "Water switched aggregation/disaggregation strategies of a coumarin–naphthalene conjugated sensor and its selectivity towards Cu^{2+} and Ag^{+} ions along with cell imaging studies on human osteosarcoma cells (U-2 OS)." *New Journal of Chemistry* 42, no. 13 (2018): 10983-10988.



4. Majumdar, Dhrubajyoti, Dhiraj Das, S. S. Sreejith, Sudip Nag, Swapan Dey, **Surajit Mondal**, Kalipada Bankura, and Dipankar Mishra. "Synthesis, characterizations and single crystal structure of di-nuclear azido-bridged Cd (II) coordination polymer with Schiff base precursor (H2LpentOMe): DFT, fluorescence, solvatochromism and in vitro antimicrobial assay." *Inorganica Chimica Acta* **496** (2019): 119069.



5. "A triazole benzimidazole connected single probe selective 'turn-on' sensor for Cd^{2+} ", Surajit Mondal, Sumit K Hira and Swapan Dey* (*Communicated*)

6. "Triazole modified fluorescent sensors for detection of Al^{3+} and Bi^{3+} in aqueous solution"; **Surajit Mondal** and Swapan Dey, (*Ready to communicate*)

Seminar/Conference attended

ICEFN2016: Oral Presentation on "A rhodamine scaffold bis-triazole as highly fluorescent and chemosensor for selective detection of Fe^{3+} ion and reversible off-on fluorescence response" – Organized by Kumaun University, Uttarakhand, India

ICCHD 2018: Poster Presentation on "Selective sensing of Hg^{2+} with an on-off sensor and its cell imaging study"- organized by Calcutta University, Kolkata, WB, India.

Project Mentor

During my Ph.D., I have assisted three M.Sc project students (Mr. Saikat Mondal, Mr. Subhankar Santra, Mr. Sudip Sau) in completing their dissertation in IIT(ISM) Dhanbad.

References

Prof. Swapan Dey
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IIT(ISM) Dhanbad

Prof. Parthasarathi Das
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