

## Prof. Swapan Dey

Associate Professor  
Department of Chemistry and Chemical Biology  
Indian Institute of Technology (ISM), Dhanbad  
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### Summary of Educational Qualifications:

- ❖ B. Sc. Chem (Hons) VU 1997
- ❖ M. Sc. (Organic Chem) VU 2000
- ❖ Ph. D. (Organic chemistry) IEST, Shibpur, 2006
- ❖ RA (CSIR, Govt. of India), 2007-08
- ❖ AREAS+ Postdoc Fellow, KU Leuven, Belgium, 2014-15

**Thesis title:** *Molecular recognition of some biologically important substrates with designed receptors in different solvents (September 2006).* Thesis supervisor: Prof. Shyamaprosad Goswami, Department of Chemistry, IEST, Shibpur.

### Summary of Professional Career:

|                      |                           |                    |
|----------------------|---------------------------|--------------------|
| Senior Lecturer:     | 20-03-2008 to 04-09-2009; | IIT (ISM), Dhanbad |
| Assistant Professor: | 05-09-2009 to 11-04-2021; | IIT (ISM), Dhanbad |
| Associate Professor: | 12-04-2021 to till date   | IIT (ISM), Dhanbad |

### Awards and honours:

- ❖ **Dr. B. N. Mankad Award** for **best presentation of Organic Chemistry** in the 44<sup>th</sup> Annual Convention of Chemists 2007 by the Indian Chemical Society held in Jaipur.
- ❖ **AREAS+ Postdoc Fellow, KU Leuven, Belgium, 2014-15**
- ❖ **Fellow, Indian Chemical Society, Kolkata**
- ❖ **Fellow, Chemical Research Society of India, Bengaluru**
- ❖ **Life Member: Indian Association for the Cultivation of Science, Kolkata**

### Administrative responsibilities:

- ❖ **Faculty coordinator:** M. Sc (2009-2014), Department of Chemistry and Chemical Biology, IIT (ISM)
- ❖ **Faculty in Charge:** 400 MHz NMR instrument, Department of Chemistry and Chemical Biology, IIT (ISM)
- ❖ **Senate Member:** 2015-2018
- ❖ **Warden:** Amber Hostel 2021-2023

### Membership of professional bodies:

- ❖ **Life member:** Indian Chemical Society, Kolkata
- ❖ **Life member:** Chemical Research Society of India, Bengaluru
- ❖ **Life Member:** Indian Association for the Cultivation of Science, Kolkata

### Journal reviewers:

- Chemical Communications
- Dalton Trans.
- Organic and Biomolecular Chemistry
- New Journal of Chemistry
- Sensors and Actuators B
- Inorganic Chemistry
- Supramolecular Chemistry
- Journal of Organic Chemistry
- Organic Letters
- Chemistry - An Asian Journal

### Research Area:

- ❖ *Design and synthesis of sensors with heteronuclear building block*
- ❖ *Synthesis of imidazopyridine derivatives for anion recognition and ion transport with keen applications in medicinal chemistry (collaboration with Rega Institute, KU Leuven, Belgium)*
- ❖ *Supramolecular organo gel for ions and neutral molecules*
- ❖ *Metal free C-C arylation towards the synthesis of small molecule heterocycles.*

### Researcher ID:

Thomson-Reuters researcher ID: [AEX-9360-2022](#)

Orchid ID: [0000-0002-6168-5627](#)

Scopus Id: [7402866218](#)

Google Scholar Id: [7nRvvU8AAAAJ](#)

### Supervised Ph. D. Theses:

1. **Dr. Dibyendu Sain (December 2014)** Thesis title: Synthesis and complexation studies of various sensors with different substrates. **(Sole Guide)**
2. **Dr. Ashish Kumar (March 2018)**, Thesis title: Synthesis of rhodamine, coumarin and BODIPY-based fluorescent chemosensors for the recognition of selective metal ions with in vitro cell imaging studies. **(Sole Guide)**
3. **Dr. Chanda Kumari (August 2018)**, Thesis title: Design and development of rhodamine-based organic chemosensors for the recognition of metal ions and neutral substrates along with cell imaging studies. **(Sole Guide)**
4. **Dr. Neha Saxena (June 2020)**, Thesis title: Synthesis of Surfactants from Natural Resources and their Characterization for Application in Enhanced Oil Recovery. **(Co-Guide). Guide: Prof. Ajay Mandal**
5. **Dr. Kumari Somlata Kashyap (July 2020)**, Thesis title: Synthesis of BODIPY-based chemosensors for the recognition of metal ion and their cell imaging study. **(Sole Guide)**
6. **Dr. Surajit Mondal (December 2020)**, Thesis title: Synthesis of fluorescent sensors using triazole building block for toxic heavy metal ions. **(Sole Guide)**
7. **Dr. Rajkumar Manna (February 2021)**, Thesis title: Design and synthesis of epoxy-based macromolecular sensors **(Internal Guide). External Guide: Dr. Samarendra Ghosh.**
8. **Dr. Santosh Kumar Singh (January 2022)**, Thesis title: "Synthesis of Low Molecular Weight Gelators and their Applications as Surfactant and Demulsifier for Oil Spill Recovery" **(Sole Guide)**
9. **Dr. Rashmi Singh (March 2022)**, Thesis title: "Synthetic Methodologies for Polycyclic Heterocycles Based on Condensation Reactions of Substituted 1,4-Benzoquinones" **(Internal Guide). External Guide: Prof. Wim Dehaen**
10. **Dr. Annu Kumari (December 2022)**, Thesis Title: "Syntheses of Heterocyclic Fluorescent Materials and Their Application in Light-Emitting, Supercapacitor and Ion Sensing" **(Sole Guide).**
11. **Dr. Dhrubajyoti Majumder (December, 2022)**, Thesis Title: "Chemistry of Zinc, Cadmium Complexes Containing Nitrogen and Oxygen Donor Ligand" **(Internal guide). External Guide: Dr. Dipankar Mishra.**
12. **Dr. Niraj Kumar (June 2024)**, Thesis Title: Exploring the Medicinal Value of *Enicostemma Littorale* Blume using Phytochemical and Computational Approaches" **(Internal guide). External Guide: Dr. Chiranjib Banerjee.**

### Current Ph. D. Students:

#### Post-Doc

1. Dr. Kingshuk Debsharma

#### Full-time Research Scholar

1. Ms. Segufa Rahamn, JRF, Institute Fellow
2. Mr. Suhag Singh Sahay, JRF, Institute Fellow
3. Ms. Himayel Zehra Naqvi, JRF, Institute Fellow
4. Mr. Vipin Kumar, JRF, Institute Fellow
5. Ms. Sampurna Sarkar, JRF, Institute Fellow
6. Ms. Ananya Dutta, JRF, Institute Fellow

### Supervised M. Phil Theses:

1. Ms. Shweta Kumari

### Supervised M. Sc Theses:

|       |                                                                                       |       |                                                                    |
|-------|---------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------|
| 2009: | Mr. Somnath Chatterjee<br>Mr. Piyush Panini                                           | 2010: | Mr. Dibyendu Sain<br>Mr. Basaki Baral                              |
| 2011: | Mr. Soumyadip Ghosh<br>Mr. Mrinmoy Mondal<br>Mr. Soumik Lahiri<br>Mr. Sandip Ghosh    | 2012: | Mr. Sankha S Ganguly<br>Mr. Partha Malakar<br>Mr. Syed Samim Ali   |
| 2013: | Ms. Chanda Kumari<br>Mr. Nirmal Mondal<br>Mr. Supriyo Ghosh<br>Ms. Ankita Gangopadhya | 2014: | Ms. Mandira Nandi                                                  |
| 2015: | Mr. Sourav Suman<br>Mr. Mahasis Shom                                                  | 2016: | Mr. Saikat Mandal<br>Ms. Debomita Bhattacharya<br>Ms. Shilpi Anand |
| 2017: | Mr. Sudip Sau<br>Mr. Harmesh Kumar<br>Ms. Sunita Sahoo<br>Ms. Anusmita Sen            | 2018: | Mr. Sidharta Samanta<br>Mr. Subhankar Santra<br>Ms. Ruchi Tyagi    |
| 2019: | Mr. Subhradeep Ghosh                                                                  | 2020: | Ms. Priyanka Chhabra<br>Mr. Ghokivi Hezheto Sumi                   |
| 2021: | Mr. Suraj Kumar<br>Mr. Rajeev Kumar<br>Mr. Rohan Kundu<br>Mr. Mrinmoy Khan            | 2022: | Ms. Itu Mallik<br>Mr. Siddhartha Pal                               |

2023: Mr. Soham Das Adhikari  
Mr. Arun Kumar Manna  
Mr. Kalimulla Molla

2024: Ms. Riswanya Das  
Mr. Akhsay Man

2025: Ms. Madhu  
Ms. Priti Khan  
Ms. Arpita Sen

2026: Mr. Suryanarayan Dash  
Mr. Surajit Shee  
Mr. Sourav Mandal

### Sponsored Projects as a Principal Investigator/ Co-Principal Investigator:

#### (i) Research project completed:

| S. No | Title & No.                                                                                                              | Cost in Lakh | Duration                       | Role as PI/Co-PI | Agency                 |
|-------|--------------------------------------------------------------------------------------------------------------------------|--------------|--------------------------------|------------------|------------------------|
| 1.    | Molecular Recognition and Applications of Fluorescence Sensors in Host-Guest Chemistry<br><b>SR/FT/CS-061/2009</b>       | 19.90        | 29-03-2010<br>To<br>28-03-2013 | PI               | DST Fast track         |
| 2.    | <i>Synthesis of abiotic receptors for biologically important substrates</i><br><b>FRS/10/2010-2011/AC</b>                | 7.90         | 01-04-2011<br>to<br>31-03-2014 | PI               | FRS, IIT-ISM, Dhanbad  |
| 3     | Medicinal aspect of supramolecular chemistry: Anion recognition<br><b>EMR/2016/002183</b>                                | 36.69        | 28-12-2016<br>To<br>27-12-2019 | PI               | SERB-DST               |
| 4     | Supramolecular gelator for oil demulsification<br><b>RD/PRO/COL/407/2019</b>                                             | 18.82        | 16-07-2019<br>To<br>15-12-2020 | PI               | Tata Steel, Jamshedpur |
| 5     | Bulk Production of Supramolecular Gelator for Demulsification of CRM Scum<br><b>TATA STEEL / 2021-2022/856/CHEMISTRY</b> | 12.98        | 17-12-2021<br>To<br>16-12-2022 | PI               | Tata Steel, Jamshedpur |

**(ii) Consultancy Projects:**

| S. No | Title & No.                                                                                                                | Cost in Lakh | Role as PI/Co-PI | Agency                                                |
|-------|----------------------------------------------------------------------------------------------------------------------------|--------------|------------------|-------------------------------------------------------|
| 8     | Tailor made polymer/polymer composite for high temperature, high salinity reservoirs                                       | 60.0 lakhs   | Co-PI            | Kuwait University, Kuwait                             |
| 7     | "Phase IV: The Evaluation and Interpretation of Dust-Suppressant material INDION-6251" Consultancy No. 7477C.              | 0.708 lakhs  | PI               | M/s. Organo Catalyst Private Limited, UP              |
| 6     | "Evaluation of water and soil samples and recommendation for Improvement if necessary" Consultancy No. CONS/7266/2024-25.  | 2.36 lakhs   |                  | M/s. Globus Spirit Pvt. Ltd. Panagarh, WB,            |
| 5     | "Phase III: The Evaluation and interpretation of Dust-Suppressant material INDION-6251" Consultancy No. CONS/7222/2023-24. | 0.708 lakhs  | PI               | M/s. Organo Catalyst Private Limited, UP,             |
| 4     | "Phase II: Evaluation of Dust-Suppressant Material INDION-6251" Consultancy No. CONS/7211/2023-24                          | 1.77 lakhs   | PI               | M/s. Ion Exchange India Limited, Hyderabad,           |
| 3     | "Evaluation of Dust-Suppressant Material Indion-6251" Consultancy No. CONS/7127/2023-24.                                   | 1.298 lakhs  | PI               | M/s. Organo Catalyst Private Limited, UP,             |
| 2     | "Characterisation of Impurities in Barytes" Consultancy No. CONS/7012/2022-2023                                            | 5.40 lakhs,  | CoPI             | M/S Pidilite Industries Limited, Mumbai               |
| 1     | "Study on use of fly ash for the manufacture of polypropylene composites for various products" - 2012.                     | 5.50 lakhs   | CoPI             | Rihand Super Thermal Power Project, Rihand Nagar, UP, |

## List of publications:

1. **Oxidative Esterification via Cleavage of C(sp<sup>2</sup>)-N Bond of Imidazo[1,2-a]pyridine: Access to the  $\alpha$ -Ketoester and Late-Stage Modification**, Segufa Rahaman, Suhag Singh Sahay, Annu Kumari, and Swapan Dey, [\*The Journal of Organic Chemistry\*](#), 2025, DOI: 10.1021/acs.joc.5c02391.
2. **A broad perspective on metal complex-based optical recognition of fluoride ions: Twelve years (2014-2025) of innovations and applications**, Kingshuk Debsharma, Sunanda Dey, Swapan Dey, and Chittaranjan Sinha, [\*Inorganic Chemistry Frontiers\*](#), 2025, (accepted, Review article).
3. **Small molecular N-heteroaromatics-based optical sensing of noxious Hg<sup>2+</sup> ion: A comprehensive insight into recent advancements, existing challenges, and future perspective** Kingshuk Debsharma, Sunanda Dey, Basudeb Dutta and Swapan Dey, [\*Analyst\*](#), 2025, 150, 2725-2775. (Review article)
4. **A Comprehensive Review on the Imidazole, Benzimidazole and Imidazo[1,2-a]pyridine Based Sensors for the Detection of Fluoride Ion**, Annu Kumari, Chandan Kumar Maity and Swapan Dey, [\*Organic and Biomolecular Chemistry\*](#), 2025, 23, 2281-2301. (Review article)
5. **Iodine-Assisted Regioselective C3-H Chalcogenation of 4-Phenyl Aminocoumarin: Access to Unusual Dual Selenylation of N-Substituted Derivatives**, Suhag Singh Sahay, Segufa Rahaman, Rwishanya Das, Swapan Dey, [\*European Journal of Organic Chemistry\*](#), 2025, 28, e202401163.
6. **Multicomponent Cross-Dehydrogenative Coupling of Imidazo[1,2-a]pyridine: Access to Abnormal Mannich and Mannich-Type Reaction**, Segufa Rahaman, Suhag Singh Sahay, Annu Kumari, and Swapan Dey, [\*The Journal of Organic Chemistry\*](#), 2024, 89, 10773-10784.
7. **A novel class of highly flexible transparent boranil/polydimethylsiloxane composites for white light emission**, Annu Kumari. Sukhendu Nandi, Swapan Dey. [\*Journal of Luminescence\*](#), 2023, 253, 119466-119473.

8. **Polynaphthalene-Based Oxazaborinine Complexes Formulated as Red Light Emitters and High-Performance Asymmetric Supercapacitors**, Annu Kumari, Chandan K. Maity, G. C. Nayak, and Swapan Dey [Langmuir](#), 2023, 39, 8450-8462.
9. **Imidazopyridine-fluoride interaction: Solvent-switched AIE effects via S...O conformational locking**, Annu Kumari, Wim Dehaen, Deepak Chopra and Swapan Dey, [New Journal of Chemistry](#), 2022, 46, 10628-10636.
10. **D-Mannitol based surfactants for cosmetic and food applications and hydrogels to produce stabilized Ag nanoparticles**, Santosh Kumar Singh, Swapan Dey, Manfred P. Schneider and Sukhendu Nandi, [New Journal of Chemistry](#), 2022, 46, 6193-6200.
11. **Strategy to Design a Flexible and Macromolecular Sensor to Bind Cd<sup>2+</sup> Ions: A Complete Photophysical Analysis and Bio-Imaging Study**, Surajit Mondal and Swapan Dey, [ACS OMEGA](#), 2021, 6, 42, 27936–27945.
12. **Tandem Nenitzescu Reaction/Nucleophilic Aromatic Substitution to Form Novel Pyrido Fused Indole Frameworks**, Rashmi Singh, Harshita Bhatia, Dr. Prabhat Prakash, Dr. Elke Debroye, Dr. Swapan Dey, Prof. Wim Dehaen, [European Journal of Organic Chemistry](#), 2021, 2021, 4865-4875.
13. **Dicyanamide-intertwined assembly of two new Zn complexes based on N2O4-type pro-ligand: Synthesis, crystal networks, spectroscopic insights, and selective nitroaromatic turn-off fluorescence sensing**, Dhruba jyoti Majumdar, Swapan Dey, Annu Kumari, Tapan Kumar Pal, Kalipada Bankura, and Dipankar Mishra, [Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy](#), 2021, 254, 119612.
14. **Application of the Meerwein reaction of 1,4-benzoquinone to a metal-free synthesis of benzofuropyridine analogues**, Rashmi Singh, Tomas Horsten, Rashmi Prakash, Swapan Dey and Wim Dehaen, [Beilstein Journal of Organic Chemistry](#), 2021, 17, 977–982.
15. **Unusual absence of FRET in triazole bridged coumarin–hydroxyquinoline, an active sensor for Hg<sup>2+</sup> detection**, Surajit Mondal, Niladri Patra, Hari Pada Nayek, Sumit K. Hira, Soumit Chatterjee, Swapan Dey, [Photochem. Photobiol. Sci.](#), 2020, 19, 1211-1221.

16. **Template-Assisted Regioselective Identification of Metal Ions on Coumarin-Furan Conjugated Chemosensors: AIEE Effect and Photo-Switching pH Indicator by ICT**, Ashish Kumar, Sumit Kumar Hira, Swapan Dey, *Eur. J. Inorg. Chem.* 2020, 3771-3777.
17. **Novel Class of Isoxazole-Based Gelators for the Separation of Bisphenol A from Water and Cleanup of Oil Spills**, Santosh Kumar Singh, Priyanka Saha, Swapan Dey, and Sukhendu Nandi, *ACS Omega* 2020, 5, 15, 8613-8618.
18. **Dual core clickate fluorophores for selective recognition of Cu<sup>2+</sup> and Ni<sup>2+</sup> along with live cell imaging**, Surajit Mondal, Chanda Kumari, Sumit K. Hira and Swapan Dey, *Inorganica Chimica Acta*, 2020, 509, 1196552.
19. **Photo-physical aspects of BODIPY-coumarin conjugated sensor and detection of Al<sup>3+</sup> in MCF-7 cell**, Kumari Somlata Kashyap, Sumit Kumar Hira and Swapan Dey, *Supramolecular Chemistry*, 2019, 31, 695-702.
20. **Recognition of Al<sup>3+</sup> through the off-on mechanism as a proficient driving force for the hydrolysis of BODIPY conjugated Schiff base and its application in bio-imaging**, Kumari Somlata Kashyap Ashish Kumar, Sumit Kumar Hira, Swapan Dey, *Inorganica Chimica Acta*, 2019, 498, 1191572.
21. **Detection of Hg<sup>2+</sup> ion using highly selective fluorescent chemosensor in real water sample and in-vitro cell study upon breast adenocarcinoma (MCF-7)**, Ashish Kumar, Sumit Kumar Hira, Partha Pratim Manna, and Swapan Dey\*, *Supramolecular Chemistry*, 2019, 31, 382-390.
22. **"Epoxy-based polymer incorporating 1-Naphthylamine and sebacic acid moieties: A selective fluorescent sensor for ferric ions"** Samaresh Ghosh, Rajkumar Manna, and Swapan Dey, *Journal of Molecular Structure*, 2019, 1180, 406-410.
23. **Syntheses, crystal structures and photo physical aspects of azido-bridged tetranuclear cadmium (II) complexes: DFT/TD-DFT, thermal, antibacterial and anti-biofilm properties**, Dhrubajyoti Majumdera, Swapan Dey\*, S. S. Sreejith, Jayanta Kumar Biswas, Monojit Mondal, Pooja Shukla, Sourav Das, Tapan Pal, Dhiraj Das, Kalipada Bankura, Dipankar Mishra\*, *Journal of Molecular Structure*, 2019, 1179, 694-708.

24. *Nitrato, Pseudohalo-Linked Zn(II)/Cd(II) Schiff-Base Complexes with 1,3-Diimine Spacer Group: Syntheses, Crystal Structures, DFT, TD-DFT and Fluorescence Studies*, Dhrubajyoti Majumdar, **Swapan Dey\***, Sreejith S. Sreekumar, Sourav Das, Dhiraj Das, Ramesh K. Metre, Kalipada Bankura, Dipankar Mishra, [ChemistrySelect](#), 2018, 3, 12371-12382.
25. *Water switched aggregation/disaggregation strategies of a coumarin-naphthalene conjugated sensor and its selectivity on Cu<sup>2+</sup> and Ag<sup>+</sup> ions along with cell imaging study on human osteosarcoma cells (U-2 OS)*, Ashish Kumar, Surajit Mondal, Kumari Somlata Kayshap, Sumit Kumar Hira, Partha Pratim Manna, Wim Dehaen and **Swapan Dey\***, [New Journal of Chemistry](#), 2018, 42, 10983 - 10988.
26. "Synthesis, characterization, physical and thermodynamic properties of a novel anionic surfactant derived from *Sapindus laurifolius*" Neha Saxena, Nilajan Pal, **Swapan Dey**, and Ajay Mondal, [RSC Advances](#) 2018, 8, 24485 – 24499.
27. *Polyurethane network using 1-Naphthylamine embedded epoxy-based polymer: Ferric ion selective Fluorescent probe*" Samaresh Ghosh, Rajkumar Manna and Swapan Dey, [Polymer Bulletin](#) 2018, 1-9.
28. *Highly selective and safe 'in vitro' detection of biologically important 'Uric acid' in living cells by a new fluorescent 'turn-on' probe along with quantum chemical calculation*, Chanda Kumari, Dibyendu Sain, and Swapan Dey\*, [Sensors and Actuators, B: Chemical](#), 2018, 264, 208-215.
29. *Characterizations of surfactant synthesized from palm oil and its application in enhanced oil recovery*, Neha Saxena, Nilanjan Pal, Swapan Dey and Ajay Mandal\*, [Journal of the Taiwan Institute of Chemical Engineers](#), 2017, 81, 343–355.
30. *A Non-Perilous Coumarin-Based Ratiometric Probe for 'In Vitro' Detection of Cu through Cell Imaging Technique*, Chanda Kumari, Dibyendu Sain, Ashish Kumar, Hari Pada Nayek, Sushanta Debnath, Partha Saha and **Swapan Dey\*** [ChemistrySelect](#), 2017, 2, 8270–8277.

31. *"Synthesis of Rhodamine-Based Chemosensor for Fe<sup>3+</sup> Selective Detection with off-on Mechanism and its Biological Application in DL-tumor cells"* Ashish Kumar, Dibyendu Sain, Chanda Kumari and Swapan Dey\* *ChemistrySelect* 2017, 2, 2969-2974.
32. *'Intracellular detection of hazardous Cd<sup>2+</sup> through a fluorescence imaging technique by using a nontoxic coumarin based sensor'* Chanda Kumari, Dibyendu Sain, Ashish Kumar, Sushanta Debnath, Partha Saha and Swapan Dey\* *Dalton Trans.*, 2017, 46, 2524-2531.
33. *Detection of Hg<sup>2+</sup> and Cs<sup>+</sup> with a Rhodamine-based Sensor and Ethoxy-substituted Dihydroimidazole Ring Formation Associated with the Reduction of Hg<sup>2+</sup> to Hg<sup>0</sup>* Ashish Kumar, Dibyendu Sain, Chanda Kumari and Swapan Dey\* *ChemistrySelect* 2017, 2, 1106– 1110.
34. *'A bis-hydrazone derivative of 2,5-furandicarboxaldehyde with perfect hetero-atomic cavity for selective sensing of Hg(II) and its intracellular detection in living HeLa S3 cell'* Chanda Kumari, Dibyendu Sain, Ashish Kumar, Hari Pada Nayek, Sushanta Debnath, Partha Saha and Swapan Dey\* *Sensors and Actuators B* 243 (2017) 1181–1190.
35. *'A real time colorimetric 'two in one' kit for tracking ppb levels of uric acid and Hg<sup>2+</sup> in live HeLa S3 cells and Hg<sup>2+</sup> induced keto-enol tautomerism'* Chanda Kumari, Dibyendu Sain, Ashish Kumar, Sushanta Debnath, Partha Saha and Swapan Dey\* *RSC Adv.*, 2016, 6, 62990.
36. *'Lead ion induced chemodosimeter approach of a tripodal hydroxyl-quinoline based phospho-ester through P–O bond cleavage'* Dibyendu Sain, Chanda Kumari, Ashish Kumar, Hari Pada Nayek and Swapan Dey\* *Dalton Trans.*, 2016, 45, 9187 – 9192.
37. *"Indole based distinctive chemosensors for 'naked eye' detection of CN<sup>-</sup> and HSO<sub>4</sub><sup>-</sup>, associated with hydrogen bonded complex and their DFT study'* Dibyendu Sain, Chanda Kumari, Ashish Kumar and Swapan Dey\* *Supramolecular Chemistry*, 2015, 28, 239-48.
38. *'Colorimetric 'turn on TBET' sensors for 'on the spot' visual detection of HSO<sub>4</sub><sup>-</sup> in semi-aqueous medium: experimental and quantum chemical (DFT) studies'*

Dibyendu Sain, Chanda Kumari, Ashish Kumar and Swapan Dey\* [Sensors and Actuators B: Chemical](#), 2015, 221, 849-856.

39. '*Studies on Crystal Engineering Networks of Amidopyridine N-oxides in Solid State by NMR, mass and X-ray Techniques*' Swapan Dey\*, Ashish Kumar, Dibyendu Sain, Hari Pada Nayek, Anita Hazra, Shyamaprosad Goswami, Subrata Jana, Hoong-Kun Fun and Samil Isik, [Lett. Org. Chem.](#), 2015, 12, 584-590.
40. '*A series of ditopic receptors for succinic acid Binding*' Swapan Dey\*, Dibyendu Sain, Ashish Kumar and Chanda Kumari, [RSC Adv.](#), 2014, 4, 51486-51495.
41. '*Steric inhibition of hydrogen bonding in molecular recognition of dicarboxylic acids: di-topic receptors containing a nitro group designed to behave like monotopic receptors*' Shyamaprosad Goswami\*, Rinku Chakrabarty, Swapan Dey and Hoong-Kun Fun, [RSC Adv.](#), 2014, 4, 49663-49671.
42. '*Directed Molecular Recognition: Furfurylamine appended ditopic receptor for succinic acid*' Swapan Dey\* and Dibyendu Sain [Supramolecular Chemistry](#), 2014, 26, 769-776.
43. '*Naphthyridine Based Fluorescent Receptors for the Recognition of Uric Acid*' Swapan Dey\*, Dibyendu Sain and Shyamaprosad Goswami [RSC Adv.](#), 2014, 4, 428-433.
44. '*Recognition of a dicarboxylic acid with dipicolyl urea in solution and in solid phases: intramolecular hydrogen bond inhibiting both pyridine nitrogens from binding carboxyl groups*' Shyamaprosad Goswami\*, Subrata Jana, Swapan Dey, Debabrata Sen, Hoong-Kun Fun, Suchada Chantrapromma [Tetrahedron](#), 2008, 64, 6426-6433.
45. '*Design and synthesis of a unique ditopic macrocyclic fluorescent receptor containing furan ring as a spacer for molecular recognition of dicarboxylic acids*' Shyamaprosad Goswami\*, Swapan Dey, and Subrata Jana, [Tetrahedron](#), 2008, 64, 6358-6363.
46. '*Specificity in crystal engineering: polymerization and dimerisation motif design in pyridine system*' Shyamaprosad Goswami\*, and Swapan Dey, subrata Jana, [Letters in Organic Chemistry](#), 2007, 4, 448-451.

47. *'Tailor-made Naphthyridines: Self-Assembling Multiple Hydrogen-Bonded Supramolecular Architectures from Dimer to Helix'* Shyamaprosad Goswami\*, **Swapan Dey**, John F. Gallagher, Alan J. Lough, Santiago Garcí'a-Granda, Laura Torre-Ferna'ndez, Ibon Alkorta, Jose' Elguero, [Journal of Molecular Structure](#), 2007, 846, 97-107.
48. *'Microwave-expedited one-pot, two-component solvent-free synthesis of functionalised pyrimidines'* Shyamaprosad Goswami\*, Subrata Jana, **Swapan Dey** and Avijit Kumar Adak, [Australian Journal of Chemistry](#), 2007, 60, 120-123.
49. *'Directed Molecular Recognition: Design and Synthesis of Neutral Receptors for Biotin to bind both its functional groups'* Shyamaprosad Goswami\* and **Swapan Dey**, [Journal of Organic Chemistry](#), 2006, 71, 7280-7287.
50. *'Recognition of Dicarboxylic Acid by 6,6/-Dipivaloylamino- 3,3/-bipyridine and the Supramolecular Solid State Locking of the Carboxyls in the anti Form'* Shyamaprosad Goswami\*, Subrata Jana, **Swapan Dey**, Ibrahim Abdul Razak, Hoong-Kun Fun. [Supramolecular Chemistry](#), 2006, 18, 571-576.
51. *'2-Amino-6-hydroxymethylpyridine'* Shyamaprosad Goswami, **Swapan Dey**, Suchada Chantrapromma, Hoong-Kun Fun; [Acta Crystallographica](#), 2006, E62, o3225-o3227.
52. *'Dynamic molecular recognition in the generation of a new crystal engineering motif: a unique case study of a dicarboxylic acid with a ditopic receptor favouring a polymeric over a dimeric hydrogen bonded supramolecular complex'* Shyamaprosad Goswami, **Swapan Dey**, Hoong-Kun Fun, Shazia Anjum and Atta-ur-Rahman, [Tetrahedron Letters](#), 2005, 46, 7187-7191.
53. *'Directed H-bonding inhibition in molecular recognition: A NMR case study of the H-bonding of a dicarboxylic acid with a new mixed diamide receptor having one adjacent pyridine-N-oxide'* Shyamaprosad Goswami, **Swapan Dey**, Annada C. Maity and Subrata Jana, [Tetrahedron Letters](#), 2005, 46, 1315-1318.
54. *'A Convenient Palladium Catalyzed Synthesis of Symmetric Biaryls, Biheterocycles and Biaryl Chiral Diamides'* Shyamaprosad Goswami, Avijit Kumar

- Adak, Reshmi Mukherjee, Subrata Jana, **Swapan Dey**, and John F. Gallagher, **Tetrahedron**, 2005, 61, 4289-4295.
55. '*N*-[6-(Hydroxymethyl)pyridin-2-yl]-2,2-dimethyl-propanamide' Shyamaprosad Goswami, **Swapan Dey**, Suchada Chantrapromma, Hoong-Kun Fun, **Acta Crystallographica**, 2005, E61, o105-o107.
56. '*A Simple and Convenient Manganese Dioxide Oxidation of Benzyl Halides to Aromatic Aldehydes under Neutral Condition*' Shyamaprosad Goswami, Subrata Jana, **Swapan Dey**, and Avijit Kumar Adak **Chemistry Letters**, 2005, 34,194-195.
57. '*Side chain bromination of mono and dimethyl heteroaromatic and aromatic compounds by solid phase N-bromosuccinimide reaction without radical initiator under microwave*' Shyamaprosad Goswami, **Swapan Dey**, Subrata Jana, and Avijit Kumar Adak **Chemistry Letters**, 2004, 33, 916-918.
58. '*Multiple hydrogen bonds and tautomerism in naphthyridine derivatives*' Carmen Alvarez-Rua, Santiago García-Granda, Shyamaprosad Goswami, Reshmi Mukherjee, **Swapan Dey**, Rosa M. Claramunt, M. Dolores Santa María, Isabel Rozas, Nadine Jagerovic, Ibon Alkorta, and José Elguero, **New Journal of Chemistry**, 2004, 28, 700-707.

#### **Invited Lectures/Guest Lectures/ technical talks:**

1. "*Molecular Recognition: Principles and Applications*" One day National Seminar on *Methodology of Scientific Research: A Systematic Development*" **Organized by the Department of Chemistry, Tamralipta Mahavidyalaya, Tamluk, Purba Medinapur, WB on 2nd April 2025.**
2. "*Recent Advances in Chemical Sciences*" (RACS - 2024) **at the Department of Chemistry, Indian Institute of Engineering Science and Technology (IIEST) Shibpur during November 07-09, 2024, Title: Highly Fluorescent Boranil Materials and Their Applications as a Light Emitter.**

3. *“Directed Molecular Recognition: Theory and its Potential Applications” held on the 21<sup>st</sup> June, 2024, in One Day International Seminar on Recent Advances in Chemical and Biological Sciences, Department of Chemistry, Alipurduar University, West Bengal.*
4. *International Symposium on “Supramolecular Chemistry and Materials” held on 21<sup>st</sup>-22<sup>nd</sup> May 2015 in the Department of Chemistry, KU Leuven: Title: Molecular Recognition: The techniques for complexation of the substrates with designed receptors.*
5. *Indole based Fluorogenic chemosensor for visual detection of HSO<sub>4</sub><sup>-</sup> and CN<sup>-</sup> ions CTric-2014, CUSAT, 17<sup>th</sup>-18<sup>th</sup> January 2014.*
6. *Dicarboxylic Acids: Good Supramolecular Synthons for Crystal Engineering, 46<sup>th</sup> Annual Convention of Chemists 2009 and International Conference on Recent Research Trends in Chemical Sciences by Indian Chemical Society held on 2<sup>nd</sup> -6<sup>th</sup> December 2009 at VIT, Vellore, Tamilnadu, India.*
7. *Appliance of Molecular Recognition: Urea-Uric Acid-Biotin-Creatinine: 45<sup>th</sup> Annual Convention of Chemists 2008 and by Indian Chemical Society held on 23<sup>rd</sup> to 27<sup>th</sup> November, 2008 at Dharwad, Karnatak University, India.*
8. *Presentation on, ‘Molecular Recognition and Fluorescence Sensors for Urea and Uric Acid’ in 44<sup>th</sup> Annual Convention of Chemists 2007 by Indian Chemical Society held in Jaipur, November 2007.*

#### Work shop attended:

- i. **“Introduction to Gaussian: Theory and Practice”**, New Delhi, India, January 6<sup>th</sup>-10<sup>th</sup> 2014 organised by Gaussian and Scube India Pvt. Ltd. New Delhi.
- ii. **“National workshop on Green Chemistry”** organized by Department of Chemistry, S. G. B. Amravati University, Amravati, Maharastra from February 17<sup>th</sup> – 18<sup>th</sup>, 2010.

#### Seminar/Symposium/ Work shop organized as a coordinator:

- i. "Chemical and Bio-Chemical Industries Meet-2025" organised by the Department of Chemistry and Chemical Biology on 3<sup>rd</sup> May 2025.
- ii. “Synergistic Training program Utilizing the Scientific & Technological Infrastructure (STUTI)” funded by the DST, Govt. of India on 1st-7th February 2023 in the Department

of Chemistry and Chemical Technology, Vidyasagar University, WB under DST-STUTI program of Indian Institute of Technology (ISM) Dhanbad- 826004.

- iii. "Pollutions in Industrial Environment, Analysis and their Remediation with Green Techniques" organised by the Department of Chemistry and Chemical Biology on 24<sup>th</sup> - 26<sup>th</sup> July 2017.

*Updated on the 12<sup>th</sup> December, 2025*