



Dr. SAUGATA SAHU

(Male)

DOB: 27th Feb 1989, India

SERB-National Postdoctoral Fellow

Address: Department of Inorganic and Physical Chemistry
CLRI, Chennai-600020
India

Mobile: 07908529972

Email: saugata255@gmail.com

Highly motivated and passionate in scientific research on molecular photophysics and photochemistry ([Google Scholar Link](#)). An avid reader of scientific literature. Strong communication skills. An efficient team worker. Keen to accept challenging responsibilities and to contribute successfully with acquired skills and diligence.

ACADEMIC DETAILS

Program	Year of Completion	Institute/University
Ph.D. (<i>Dissertation title : Proton transfer and molecular logic functions of a few azole derivatives</i>)	2016	Indian Institute of Technology Guwahati
Master of Science (Chemistry)	2011	Indian Institute of Technology Guwahati
Bachelor of Science, (<i>Chemistry-Hons, Physics, Mathematics</i>)	2009	University of Calcutta (Ramakrishna Mission Vidyamandira, Belur)

TEACHING EXPERIENCES

- Teaching assistant (Quantum chemistry) – July-November 2012, Indian Institute of Technology Guwahati.
- Teaching assistant (Quantum chemistry) – July-November 2013, Indian Institute of Technology Guwahati.
- Teaching assistant (Operator of Fluorescence Lifetime Instrument) – July 2012 - April 2016, Indian Institute of Technology Guwahati.
- Teaching assistant (Physical chemistry Lab) – July-November 2017, Indian Institute of Technology Madras.

RESEARCH EXPERIENCES AND SKILLS

- Design and synthesis of organic fluorescent dyes, Characterization of dye emission, Excited state Intramolecular Charge transfer and Proton transfer fluorescent dyes.
- Physicochemical Analysis of organized media like micelles, liposome, solid lipid nanoparticle and block co-polymer.
- Design and synthesis of Molecular Imprinted Polymer for Sensory Application, Bulk Polymerization, Precipitation Polymerization, Emulsion Polymerization, Synthesis of acrylic monomer.
- Construction of molecular Logic Gate and Fuzzy Logic system.
- Theoretical calculation (Gaussian 09W)
- Hand-on experiences in Liquid Chromatography, HPLC, Differential Scanning Calorimetry, FTIR, FTNMR, UV-Visible Absorption, Fluorescence Emission, Time-resolved emission spectrometer, X-Ray Powder diffraction, Cyclic Voltmeter, Dynamic Light Scattering, Fluorescence Microscope.

POST-DOC EXPERIENCES

- Institute Postdoctoral Fellow in Indian Institute of Technology Madras (6th Dec 2016-5th Dec 2019).
- National Postdoctoral Fellow in Central Leather Research Institute (20th Dec 2019- present).

RESEARCH INTERESTS

- Molecular photophysics and photochemistry
- Excited State Proton transfer, charge transfer fluorophore
- Molecularly Imprinted Polymer
- Fluorescent Sensing and Imaging
- Organized Media

AWARD AND ACHIEVEMENTS

- Qualified **IIT-JAM** in 2009
- Qualified **National Eligibility Test** examination (2012) – CSIR rank – 56 out of 1065
- Qualified all India **GATE** (2011) – Rank-104
- Selected as **Institute Postdoc Fellow**, Indian Institute of Technology Madras (2016).
- Selected as **National Postdoc Fellow-SERB** (2019).
- Received **Young Achiever Award-InSc** (2019).

RESEARCH GRANTS

Sl.No	Title	Cost in Lakh (INR)	Duration	Role	Agency
1.	Nanostructured molecularly imprinted fluorescent polymer for the quantification of catecholamine	26.46	2 years 6 months (2019-2022)	Principle Investigator	Science and Engineering Research Board

PUBLICATIONS (16)

- **Sahu, S.**, Banu, S., Sahu, A. K., Kumar P. B. V. N., Mishra A. K., Molecular-level Insights into Inherent Heterogeneity of Maline Deep Eutectic System, *Journal of Molecular Liquids*, **2022**, 350, 118478.
- **Sahu, S.**, Karan, P., Mishra A. K., Nature of Saccharide-induced F127 Micellar Dehydration: An Insight with FDAPT (2-formyl-5-(4'-N,N-dimethylaminophenyl)thiophene), a Multiparametric Fluorescent Probe, *Langmuir*, **2021**, 37, 3067–3074.
- Prakash, S., **Sahu, S.**, Bhattacharya, S., Bisht, P. B. and Mishra, A. K., Carbon Dot-NaCl Crystals for White Light Generation and Fabry-Perot Lasing. *Chem. Asian J.* **2021**, *16*, 783-792.
- **Sahu S.**; Talele P.; Patra B.; Verma R. S.; Mishra A. K., A Multiparametric Fluorescence Probe to Understand the Physicochemical Properties of Small Unilamellar Lipid Vesicles in Poly(ethylene glycol)-Water medium. *Langmuir* **2020**, *36*, 4842-4852.
- Das, M.; **Sahu, S.**; Krishnamoorthy, G., Tweaking the proton transfer triggered proton transfer of 3,5-bis(2-hydroxyphenyl)-1H-1,2,4-triazole. *Physical Chemistry Chemical Physics* **2019**, *21*, 15669-15677.
- **Sahu, S.**; Sharma, A.; Mishra, A.K., Multi-parametric Sensing of Membrane Bilayer with an Extremely Environment Susceptible Fluorophore. *The Journal of Physical Chemistry B* **2018**, *122*, 7308-7318.
- **Sahu, S.**; Das, M.; Bharti, A. K.; Krishnamoorthy, G., Proton Transfer Triggered Proton Transfer: A Self-Assisted Twin Excited State Intramolecular Proton Transfer. *Physical Chemistry Chemical Physics* **2018**, *20*, 27131-27139.
- Talele P.; **Sahu S.**; Mishra A. K., Physicochemical Characterization of Solid Lipid Nanoparticles Comprised of Glycerol Monostearate and Bile Salts. *Colloids and Surfaces B: Biointerfaces* **2018**, *172*, 517-525.

- **Sahu, S.;** Ila, V.; Shankar, B.; M. Sathiyendiran; Krishnamoorthy, G., Molecular Aggregation to Obtain Conformer Specific Enhanced Emissions from a Triple Emissive ESIPT Dye. *Journal of Photochemistry and Photobiology A: Chemistry* 2018, 353, 416-423.
- **Sahu, S.;** Dutta, S.; Krishnamoorthy, G., An Unusual Deprotonation Trend in 2-(2'-Hydroxyphenyl)pyridoimidazoles. *Physical Chemistry Chemical Physics* 2016, 18, 29905-29913.
- **Sahu, S.;** Das, M.; Krishnamoorthy, G., Switching Between Cis and Trans Anions of 2-(2'-hydroxyphenyl)benzimidazole: A Molecular Rotation Perturbed by Chemical Stabilization. *Physical Chemistry Chemical Physics* 2016, 18, 11081-11090.
- **Sahu, S.;** Sil, T. B.; Das, M.; Krishnamoorthy, G., A Single Fluorophore to Address Multiple Logic Gates. *Analyst* 2015, 140, 6114-6123.
- Shankar, B.; **Sahu, S.;** Deibel, N.; Schweinfurth, D.; Sarkar, B.; Elumalai, P.; Gupta, D.; Hussain, F.; Krishnamoorthy, G.; Sathiyendiran, M., Luminescent Dirhenium(II)-Double-Heterostranded Helicate and Mesocate. *Inorganic Chemistry* 2014, 53, 922-930.
- Mishra, A.; **Sahu, S.;** Tripathi, S.; Krishnamoorthy, G., Photoinduced Intramolecular Charge Transfer in Trans-2-[4'-(N,N-Dimethylamino)Styryl]Imidazo[4,5-B]Pyridine: Effect of Introducing a C=C Double Bond. *Photochemical & Photobiological Sciences* 2014, 13, 1476-1486.
- Mishra, A.; **Sahu, S.;** Dash, N.; Behera, S. K.; Krishnamoorthy, G., Double Proton Transfer Induced Twisted Intramolecular Charge Transfer Emission in 2-(4'-N,N-Dimethylaminophenyl)Imidazo[4,5-B]Pyridine. *The Journal of Physical Chemistry B* 2013, 117, 9469-9477.
- **Sahu, S.;** Mishra, A.; Krishnamoorthy, G., Specific Site Binding of Metal Ions on the Intramolecular Charge Transfer Fluorophore in Micelles. *Analyst* 2013, 138, 5942-5948.

CONFERENCES & PROCEEDINGS

- Effects of β -Cyclodextrin on Dual Fluorescence of 2-(2'-Hydroxyphenyl)-3H-imidazo[4,5-b]pyridine and 2-(2'-Hydroxyphenyl)-3H-imidazo[4,5-c]pyridine. *Conference on Photochemistry and Luminescence*, Indian Institute of Technology Guwahati, Guwahati (Assam), **March 2012**.
- Effective Controlling of Metal ion Binding Site by Surfactant. *International Conference on Emerging Trends in Chemical Science*, Vellore Institute of Technology, Vellore (Tamil Nadu), **December 2013**.
- Inhibition of Excited State Intra molecular Proton Transfer to Detect Different Anions. *Chemcon*, Indian Institute of Technology Guwahati, Guwahati (Assam), **April, 2014**.
- Fluorescence Based Molecular Keypad Lock Device, Half Subtractor and Anion Sensor. *Asian Photochemistry Conference (APC 2014)*, Indian Institute of Science Education and Research Thiruvananthapuram, Trivandrum (Kerala), **November 2014**.
- Subtraction Using Molecular Logic Gate. *Research Conclave*, Indian Institute of Technology Guwahati, Guwahati (Assam), **March, 2015**.
- National Workshop on "Photoluminescence and Functional Materials (NWPFM-2019)", National Centre for Ultrafast Processes, Chennai (Tamil Nadu), **June 2019**.

LANGUAGE KNOWN

- English (speaking, reading & writing) • Bengali (mother tongue) • Hindi (speaking)

PERSONAL INTERESTS

- Novels • Table Tennis • Badminton • Tourism

REFERENCES

- i) Dr. Ashok Kumar Mishra, Professor, Department of Chemistry, Indian Institute of Technology Madras, Chennai-600036, Tamil Nadu, India (Postdoc Mentor). Email-mishra@iitm.ac.in.
- ii) Dr. G. Krishnamoorthy, Professor, Department of Chemistry, Indian Institute of Technology Guwahati, Guwahati-781039, Assam, India (PhD Supervisor). Email-gkrishna@iitg.ernet.in.
- iii) Dr. S. Easwaramoorthi, Principal Scientist, Inorganic and Physical Chemistry Lab, CSIR-Central Leather Research Institute, Chennai-600020, Tamil Nadu, India (Postdoc Mentor). Email-moorthi@clri.res.in.

I hereby declare that all the information furnished above are true to the best of my knowledge and behalf.

Saugata Sahu