PANKAJ KUMAR CHATURVEDI

Ph.D. (PMRF) at the Department of Organic Chemistry, Indian Institute of Science, Bangalore: 560012, India.
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INFORMATION

Mailing Address
Lab No. E205, 2nd Floor,
Chemical Science Building,
Indian Institute of Science,
Bangalore: 560012, India

Personal Information
Father: Mr. Santosh Kumar Chaturvedi
Date of Birth: January 28, 1997
Gender: Male (B^+ blood group)
Marital Status: Unmarried

EDUCATION

Indian Institute of Science, Bangalore, India **2019-present**
Doctor of Philosophy (Ph.D.) in Chemistry, CGPA: 8.6/10
Thesis: *Photoluminescent Lanthanocholate Gel-Based Sensors for Health Monitoring*.
Supervisor: Prof. Uday Maitra

Banaras Hindu University, Varanasi, India **2017-2019**
Master of Science in Chemistry, CGPA: 8.8/10
Project: *Multicomponent Synthesis of Sulfonamide-Thiazolidinone Hybrids*.
Supervisor: Prof. Krishna Nand Singh

Hindu College, University of Delhi, New Delhi, India **2014-2017**
Bachelor of Science (Hons.) in Chemistry, Percentage: 86.3%

Saraswati Higher Secondary School, Deosar, Singrauli, M.P., India **2009-2014**
Higher Secondary (12th) in Science (Mathematics) group, 91.0%
High School/Secondary (10th), 90.5%

FELLOWSHIPS & AWARDS

- Prime Minister's Research Fellowship (**PMRF**) for Ph.D. Degree.
- National-level Graduate Aptitude Test in Engineering (**GATE-Chemistry**) India, in 2019, 2020 & 2021 with the All-India Ranks of **81, 93 & 176**, respectively.
- National Eligibility Test (**NET:** Dec-2017, Chemical Sciences) India, as Junior Research Fellow (**CSIR-JRF-2018**) with an All-India Rank of **52**.
- National-level Joint Admission test for Masters (**JAM:** Chemistry-2017) India with an All-India Rank of **293**.
- **INSPIRE** Scholarship Holder (Bachelor's & Master's Degree).

BROAD AREA OF RESEARCH

We explore the applications of supramolecular chemistry using bile acids and their salts by designing functional soft materials (hydrogels). Currently, we are working on the luminescent metallocholate hydrogels and energy transfer in these systems to develop a '*pro-sensitizer*' based sensing of ions (F^-), clinically important enzymes (α-galactosidase, α-glucosidase, neuraminidase) and their associated diseases (*e.g.*, Influenza).

RESPONSIBILITIES & LEADERSHIP

- **Teaching duties and assistantship:** Taught MSc students at Ramaiah Degree College for one hour/week for a year. Teaching assistant for undergraduate students (100+) in an Organic Chemistry course at IISc, Bangalore, for a semester.
- **Co-guide:** Trained 3 intern students who worked in Prof. Maitra's lab during my Ph.D.
- **Laboratory maintenance:** Maintained laboratory inventory, equipment, and supplies; troubleshooting issues when necessary to ensure a safe and productive lab.

RESEARCH SKILLS & INSTRUMENTS

- **Synthesis and Characterization:** Expertise in carrying out multi-step organic synthesis, purification by crystallization and column chromatography, followed by characterization and detailed analysis of products (structure and properties) by NMR, HRMS, and FTIR. Further, these molecules were used for various applications in biological and material science, including hybrid/composite materials and luminescent materials.
- **Instrumentation:** Operation of IR, UV-Visible-NIR, Dynamic Light Scattering (DLS) and Circular Dichroism (CD) spectrophotometers; Polarized Optical Microscopy and Atomic Force Microscopy (AFM); High-Performance Liquid Chromatography (HPLC).
- **Photophysical study:** Steady-state and *time-delayed* fluorescence, lifetime, and quantum yield measurements using Varian Cary Eclipse Spectrofluorometer and Multimode Plate Readers (Varioskan® Flash & Tecan) followed by data processing and interpretations.
- **Softwares:** Origin, ChemDraw, MestReNova, Microsoft Office, Mendeley, *etc*.

PUBLICATIONS

1) Chaturvedi, P. K.; Maitra U. A sensitive paper-based sensor for fluoride detection in water using Tb^{3+} photoluminescence. *Sens. Diagn.* **2024**, *3*, 809–816. (**https://doi.org/10.1039/d4sd00078a**).
2) Sakthivel, S.;† Chaturvedi, P. K.;† Maitra U. A supramolecular gel-based protocol for detecting α-glycosidases and screening potential drug inhibitors. *Chem. Asian J.* **2024**, e202401091 (1–9). (**https://doi.org/10.1002/asia.202401091**).
3) Chaturvedi, P. K.;† Sakthivel, S.;† Maitra U. Catalytic promiscuity: A novel glucosidase activity of *bovine* Alkaline Phosphatase (***Manuscript submitted***).
4) Chaturvedi, P. K.;†, Sharma, M.;† Rao, H.; Chhabria, B.; Tripathi, S.; Maitra, U. Neuraminidase-based photoluminescent probes for *Influenza* diagnostics and antiviral drug screening (***Manuscript under preparation***).

CONFERENCES & SYMPOSIUM

1) Poster presentation in "*3rd French Supramolecular Chemistry International Congress (Surp@Paris) 2024*" on May 15-17, **2024**, in Paris, France.
2) Poster presentation in "*Macrocyclic & Supramolecular Chemistry (MASC) International Conference 2023*" on December 17-18, **2023**, in Birmingham, UK.
3) Poster presentation in "*PMRF Annual Symposium 2023*" at IIT Madras, India.
4) Poster presentation in "*29th CRSI National Symposium in Chemistry & CRSI-ACS Symposium Series in Chemistry*" on July 7-9, **2022**, at IISER Mohali, India.
5) Poster presentation in "*ChemSci 2023: Leaders in the Field Symposium*" on January 23-25, **2023**, at JNCASR Bangalore, India.