Curriculum vitae

Dr. Ajay Kumar
Prof. Uday Maitra's Group
Department of Organic Chemistry
Indian Institute of Science
Bengalore-560012, India

Email: ajayk8039@gmail.com
ajaykumar@alum.iisc.ac.in
Mobile: +919541881293
Skype Id: live:ajaymattu224

Academic Qualifications

Jan 2020-May 2021	***Research Associate*** Advisor**:** *Prof. Uday Maitra* Department of Organic Chemistry, Indian Institute of Science Bangalore, India
Jan 2015-Jan 2020	***Doctor of Philosophy in Organic Chemistry*** Advisor: *Prof. Uday Maitra* Thesis entitled "**Bile Salts in Supramolecular Chemistry: synthesis of fluorescent nanoclusters, oxide nanoflowers, and anion effect on metallogels"** Department of Organic Chemistry, Indian Institute of Science Bangalore, India
2012-2013	***Bachelor of Education (B.Ed) in Science*** Govt. College of Education, Jammu (University of Jammu) J&K, India
Nov 2009- June-2012	***Master of Science in Organic Chemistry*** Govt. Degree College Bhaderwah (University of Jammu), J&K, India
Aug 2006-May 2009	***Bachelor of Science in Chemistry*** Govt. Gandhi Memorial Science College, Jammu (University of Jammu) J&K, India

Teaching Experience

- ✓ Served as a **Teaching Assistant** in the Organic Chemistry course with Prof. Uday Maitra and Dr. Mrinmoy Dey (Associate Prof.) in Indian Institute of Science for six months.
- ✓ Served as a lecturer in Govt School in Jammu and Kashmir and State board school for 10+2 for 1 year.

List of Publications

1. Facile bile salt-induced synthesis of porous MnO2 nanoflowers: applications in dye removal and oxidation. **Ajay Kumar** and Uday Maitra. *SN Appl. Sci.* **2,** 1973 (2020). https://doi.org/10.1007/s42452-020-03731-w
2. Water in organic solvents: rapid detection by a Terbium based turn off luminescent sensor. **Ajay Kumar**, Manaranjan Sahu and Uday Maitra. *Asian J. Org. Chem.* 2021, 10, 1695 . https://doi.org/10.1002/ajoc.20210027
3. A bile-salt derived porous hierarchical MnO2 nanoflowers as electrodes for symmetric supercapacitors. Ajay Kumar, G. R. Dillip, Abhishek Bharti, Uday Maitra and Aninda J. Bhattacharya. *Electrochem. Sci. Adv.* 2021, e2100043. https://doi.org/10.1002/elsa.202100043
4. Design, preparation and applications of gel nanocomposites from bile acids – A brief review, *J. Indian Chem. Soc*, 2021, 100222, Ajay Kumar and Uday Maitra. https://doi.org/10.1016/j.jics.2021.100222.
5. Anion Induced Tuning of morphological and Mechanical properties of bile salts based metallogel. **Ajay Kumar**, Ramesh Kandanelli, Raju Laishram and Uday Maitra. (*Manuscript under preparation)*
6. Synthesis of multicolour CdTe NCs from bile salt derived Cd-precurosor: photphysical studies, ligand exchange and probe for metal detection. **Ajay Kumar**, Sayantan Chatterjee and Uday Maitra. (*Manuscript under preparation)*
7. pH triggered color tuning of mixed lanthanides using methyl salicylate as a sensitizer. **Ajay Kumar**, Manaranjan Sahu and Uday Maitra. (*Manuscript under preparation)*

Awards and Fellowships

- ✓ Awarded Senior Research Fellowship (**SRF**) by Council of Scientific and Industrial Research, New Delhi, India (Jan **2017**-Dec-**2019**).
- ✓ Awarded Junior Research Fellowship (**JRF**) by Council of Scientific and Industrial Research, New Delhi, India (**2015-2017**).
- ✓ Qualified for *Council of Scientific and Industrial Research - National Eligibility Test* ***(CSIR-NET-JRF)*** **June-2014**.
- ✓ Qualified JKSET (Jammu and Kashmir State Eligibility Test) **2013**.

Symposia Attended

- ✓ Delivered a talk on "***Mesoporous MnO2 Nanoflowers: Facile Bile Salt-Induced Synthesis and Preliminary Investigations as an Oxidant"*** **Pfizer symposium on Organic Chemistry**, IISc, Bangalore, February, 2018.
- ✓ **Presented a poster in 26th National Symposium in Chemistry (CRSI-NSC-26) & 14th CRSI-RSC Joint Symposium** on 7th of Feb 2020, Indian Vellore Institute of Technology, Tamil Nadu, India.
- ✓ **Presented a poster in 23rd National Symposium in Chemistry (CRSI-NSC-23)** on 19th December 2018, Indian Institute of Science Education and Research, Pune, CSIR- National Chemical laboratory and Savitribai Phule Pune University Pune, India

- ✓ **Presented a poster in SPSI-MACRO-2018, 15th International Conference on Polymer Science and Technology** on 5th July2018, Indian Institute of Science and Education Research, Bhopal, India.

Technical Skills

- ✓ Organic synthesis from milligram to gram scale, purification, and characterization
- ✓ Materials characterization using spectroscopy (FTIR, UV-Vis, Fluorescence, and NMR), Mass spectrometry, and combustion elemental analysis. UV/Vis spectroscopy, Fluorescence spectroscopy, Polarized Optical Microscopy (POM), Atomic Force Microscopy (AFM), Transmission Electron Microscopy (TEM), Scanning Electron Microscopy (SEM), Raman spectroscopy, Dynamic Light Scattering, TA Rheometer, Powder X-ray Diffractometer (PXRD), X-ray photoelectron spectroscopy (XPS), Adsorption analyser for BET (Brunauer Emett Teller) and BJH (Barret Joyner Halenda). Thermogravimetric analysis (TGA). Lifetime of fluorescent materials. Quantum yield measurements using the Integrated sphere.
- ✓ Well-versed with Chemistry/Computer packages like ChemDraw, SciFinder Scholar, Reaxys, Microsoft Office, Gaussian etc.

Personal Details

Date of Birth	: 2nd Jan, 1989
Nationality	: Indian
Gender	: Male
Marital Status	: Single
Mobile	: +91-9541881293

References

Prof. Uday Maitra
Department of Organic Chemistry
Indian Institute of Science
Bangalore - 560 012, India
Tel: +91-80-2293-2690
E-mail: maitra@iisc.ac.in

Dr. Mrimoy De (Associate Professor)
Department of Organic Chemistry
Indian Institute of Science
Bangalore - 560 012, India
Tel: +91-80-2293-2042
E-mail: md@iisc.ac.in