



# Miranda House

## UNIVERSITY OF DELHI

---

**Name:** Dr. Swati Rani

**Department:** Chemistry

**Current Designation:** Assistant Professor (Guest Faculty)

**Email id:** swati.rani@mirandahouse.ac.in

### **Academic Qualifications:**

Ph.D. in Chemistry at Department of Chemistry, University of Delhi, India (2021)

M.Sc. Chemistry (Specialization: Physical chemistry), Miranda House, University of Delhi, 2014.

B.Sc. (H) Chemistry, Miranda House, University of Delhi, 2012.

**Field of Specialization under the Subject/Discipline:** Chemistry (Physical Chemistry)

**Total Teaching Experience:** 3 Years

Guest Faculty at Miranda House, University of Delhi, Delhi (13 January to till date)

Guest Faculty at Department of Chemistry, University of Delhi, Delhi. (12 January to 12 September 2022)

Assistant Professor (Adhoc) at Miranda House, University of Delhi (Nov. 2021- Dec. 2021)

Guest Faculty at Department of Chemistry, University of Delhi, Delhi (Dec. 2020 to August 2021)

**Teaching at Miranda House since:** September 2023

### **List of Publications:**

1. **Swati Rani**, Sushil Mishra, Manisha Sharma, Abhishek Nandy & Subho Mozumdar, Solubility and stability enhancement of curcumin in Soluplus® polymeric micelles: a spectroscopic study, Journal of Dispersion Science and Technology (2019) 523-536.

2. **Swati Rani**, Damayanti Bagchi, Uttam Kumar Pal, Mamta Kumari, Manisha Sharma, Arpan Berab, Samir Kumar Pal, Tanusri Saha Dasgupta and Subho Mozumdar, Role of Imidazolium based SAILs to restrain the ESIHT Dynamics of medicinal pigment curcumin: Theoretical and Experimental Approach, ACS Omega 2020, 5(40), 25582–25592.

3. J. Shabir, **Swati Rani**, C. Garkoti, and S. Mozumdar\*, Nitrolotriactic acid assisted one step synthesis of highly stable silver nanoparticles in an aqueous medium: Investigation of catalytic activity, Materials Letters 209 (2017)207-211.

4. Shabir, J.; **Rani, S.**; Sharma, M.; Garkoti, C.; Mozumdar, S.; Synthesis of dendritic fibrous nanosilica



# Miranda House

## UNIVERSITY OF DELHI

---

over a cubic core (cSiO<sub>2</sub>@DFNS) with catalytically efficient silver nanoparticles for reduction of nitroarenes and degradation of organic dyes. *RSC Advances* 2020, 10 (14), 8140-8151.

5. Kumar Y.; **Rani, S.**; Shabir J.; Kumar L.; Nitrogen-Rich and Porous Graphitic Carbon Nitride Nanosheets Immobilized Palladium Nanoparticles as Highly Active and Recyclable Catalyst for the reduction of nitro compounds and degradation of organic dyes. *ACS Omega* 2020, 5 (22), 13250–13258.

6. Kumari, M., Sharma, M., **Rani, S.**, Bagchi, Bera, A., D., Mukherjee, D., Pal, S.K., and Mozumdar, S.\*, Solvent dependent photophysics of stable and medicinally active pyrazole derivatives of Curcumin: A Spectroscopic Study, *Journal of Photochemistry and Photobiology A: Chemistry*, 2021, 416, p.113337.

7. Yogesh Kumar, **Swati Rani**, Rahul Kaushik, Sahar Rafat, Javaid Shabir, Kapil Dev, Lalita S Kumar, Curcumin Immobilized Metal Organic Framework Based Fluorescent Nanoprobe for Selective Sensing and Bioimaging of Fe (II), *Materials Today Communications*, 2021, 28, 102563.

8. J. Shabir, C. Garkoti, P. Gupta, M. Sharma, **Swati Rani**, M. Kumari and S. Mozumdar\*, RuxPdy Alloy Nanoparticles Uniformly Anchored on Reduced Graphene Oxide Nanosheets (RuxPdy@rGO): A Recyclable Catalyst". *ACS Omega* 2021, 6(2), 1415–1425.

9. Sharma, M., Pal, U., Kumari, M., Bagchi, D., **Rani, S.**, Mukherjee, D., Bera, A., Pal, S.K., Dasgupta, T.S. and Mozumdar, S., Effect of solvent on the photophysical properties of isoxazole derivative of curcumin: A combined spectroscopic and theoretical study, *Journal of Photochemistry and Photobiology A: Chemistry* 2021, 410, p.113164.

10. Manisha Sharma, **Swati Rani**, and Subho Mozumdar, Perturbations in the photophysical properties of isoxazole derivative of curcumin up on interaction with different anionic, cationic and non-ionic surfactants, *Journal of Molecular Liquids*, 2021 (doi- 10.1016/j.molliq.2021.116981)

11. Manisha Sharma, Mamta Kumari; **Swati Rani**, Amit Yadav,; Pratima Solanki,; Subho Mozumdar, "Influence of pH,  $\beta$ -cyclodextrin and metal ions on the solubility and stability of medicinally competent Isoxazole derivative of curcumin: A Photophysical study" *ACS Applied Bio Materials*, 2021 (doi- /10.1021/acsabm.1c00957).

12. Padmini Gupta; **Swati Rani**; Digvijay Sah; Javaid Shabir; Surabhi; Bholey Singh, Balaram Pani and subho Mozumdar\* Basic ionic liquid grafted on magnetic nanoparticles: An efficient and highly active green catalyst for the synthesis of  $\beta$ -nitroalcohols and 4H-benzo[b]pyrans. *Journal of Molecular structure* ( doi.org/10.1016/j.molstruc.2022.134351).

13. Nutan Rani; **Swati Rani**; Hardi Patel; Bhavna ; Sapna Yadav; Mona Saini; Seema Rawat, Kalawati Saini\* Characterization and Investigation of Antioxidant and Antimicrobial activity of zinc oxide nanoparticles prepared using leaves extract of *Nyctanthes arbor-tristis*, *Inorganic Chemistry Communications*, (<https://doi.org/10.1016/j.inoche.2023.110516>)

### Conferences Organised

- Organized one day International conference on “**International conference on smart materials- Perspectives and prospectives (SMPP-2023)**” at Department of Chemistry, University of Delhi, March 28, 2023.



# Miranda House

## UNIVERSITY OF DELHI

---

- Organized one day National conference on **“Recent Trends in Chemistry and Nano-Biotechnology (RTCN-2022)”** at Department of Chemistry, University of Delhi, December 13, 2022.
- Organized one day International conference on **“Nanomedicine: Chemistry Medicine Interface (NCMI-2022)”** at Department of Chemistry, University of Delhi, December 6, 2022.
- Organized two days International conference on **“Contributions of Acharya Prafulla Chandra Ray”** at Department of Chemistry, University of Delhi, 2-3 August 2022.
- Organized a face to face five days’ training program on **“Understanding the vulnerability and risk associated with urban areas”** organized by National Institute of Disaster Management” at Miranda House, University of Delhi, Nov. 2021.

### **Seminars/Workshops/Conferences attended:**

- Presented poster in International Conference on Nano Science and Technology (ICONSAT-2020), Biswa Bangla Convention Centre, New Town, Kolkata, March 5-7, 2020.
- Presented poster in INDO-GERMAN WORKSHOP on Multivalent Macromolecular Architectures for Biomedical Application, Department of Chemistry, University of Delhi, Delhi, India April 5- 6, 2019.
- Presented poster in International Conference on “Science: Emerging Scenario and Future Challenges”, National Institute of Technology Hamirpur, Himachal Pradesh, India, September 8-9, 2018.
- Presented poster in International Conference on Nanoscience and Technology (ICONSAT-2018), Centre for Nano and Soft Matter Sciences, IISc, Bengaluru, India, March 21-23, 2018.
- Presented poster in International Conference on Nanobiotechnology, Centre for Interdisciplinary Research in Basic Sciences, Jamia Milia Islamia, New Delhi, India, February 5-6, 2018.
- Presented poster in International Conference on Advances in Nanomaterials and Nanotechnology (ICANN-2016), Centre for Nanoscience and Nanotechnology, Jamia Milia Islamia, New Delhi, India, November 4-5, 2016.