

Rachana Sharma

*Department of Chemistry
Indian Institute of Technology
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Education

Ph.D., Origin of Life and Prebiotic Chemistry (*Thesis submitted*)

Thesis Title: “Double Metal Cyanides and Their use as Prebiotic Catalyst”
Indian Institute of Technology Roorkee, Roorkee, INDIA.

Senior Research Fellow

Indian Institute of Technology Roorkee, Roorkee, INDIA, Since July, 2014.

Junior Research Fellow

Indian Institute of Technology Roorkee, Roorkee, INDIA, July, 2012 to July, 2014.

M.Sc., Chemistry (82.30%)

Raj Rishi Government College (affiliated to University of Rajasthan), Alwar, INDIA, 2012.

B.Sc.Hons (Chemistry), (70.96%)

Raj Rishi Government College (affiliated to University of Rajasthan), Alwar, INDIA, 2010.

12th (79.38%)

Board of Sec. Education Rajasthan, INDIA, 2006.

10th (78.17%)

Board of Sec. Education Rajasthan, INDIA, 2004.

Academic Activity

Laboratory/ Teaching assistantship: B.Tech. and M.Sc., Chemistry Lab (2012–2015).

Additional Qualification



Joint CSIR-UGC for JRF and NET, 2012 (Awarded by JRG Rank-94/1054)
Conducted by Council of Scientific & Industrial Research (CSIR), India.



Graduate Aptitude Test in Engineering (GATE), 2012 (All India Rank-265)
Conducted jointly by the Indian Institute of Science and seven IIT's on behalf of the National Coordination Board-GATE, Department of Higher Education, Ministry of Human Resource Development (MHRD) and Government of India.

Instrumentation Skills

1. Powder X-ray diffraction
2. IR Spectroscopy
3. UV-Vis Spectroscopy
4. Elemental Analyzer
5. Thermo Gravimetric Analysis (TGA)
6. GC-Mass
7. High Performance Liquid Chromatography (HPLC)
8. Atomic Absorption Spectroscopy (AAS),
9. Field Emission Scanning Electron Microscopy (FE-SEM)
10. Atomic Force Microscopy (AFM)
11. Transmission electron microscopy (TEM)
12. BET surface analysis
13. Vibrating sample analysis (VSM)

Publications

1. Kumar A., **Sharma R.** and Kamaluddin (2014) Formamide-Based Synthesis of Nucleobases by Metal (II) Octacyanomolybdate (IV): Implication in Prebiotic Chemistry. *Astrobiology* 14(9): 769-779.
2. **Sharma R.**, Kumar A., Iqbal M.A. and Kamaluddin (2015) Role of Double Metal Cyanides in Chemical Evolution: Interaction of Ribose Nucleotides with Metal Hexacyanocobaltate (III). *Journal of Astrobiology & Outreach* 3:138.
3. Iqbal M.A., **Sharma R.** and Kamaluddin (2015) Studies on interaction of ribonucleotides with zinc ferrite nanoparticles using spectroscopic and microscopic techniques. *Karbala International Journal of Modern Science*, 1(1), 49-59.

4. **Sharma R.**, Iqbal M.A. and Kamaluddin (2016) Possible role of Prussian blue nanoparticles in chemical evolution: interaction with ribose nucleotides. *International Journal of Astrobiology*, 15(01): 17–25.
5. Iqbal M.A., **Sharma R.** and Kamaluddin. (2016) Surface interaction of ribonucleic acid constituents with spinel ferrite nanoparticles: a prebiotic chemistry experiment. *RSC Advances* 6.73: 68574–68583.

Papers Presented in Conferences

1. **Rachana Sharma** and Kamaluddin, Role of Prussian blue nanoparticles on adsorption of ribonucleotides, 51st annual convention of chemists, Kurukshetra University, Kurukshetra, December 09-12, 2014.
2. **Rachana Sharma** and Kamaluddin, Role of Double Metal Cyanides in Chemical Evolution: Interaction of Ribose Nucleotides with Metal hexacyanocobaltate (III), National conference on recent advancements in chemical sciences, MNIT Jaipur, August 21-23, 2015.
3. **Rachana Sharma** and Kamaluddin, Metal hexacyanocobaltate nanoparticles and their use in prebiotic chemistry, International conference on advanced materials for energy, environment and Health (ICAM-2016), IIT Roorkee, Roorkee, March 4-7, 2016.

Participated in Conferences

1. National conference on “Green Chemistry –Safer Chemistry” at Govt. Raj Rishi College, Alwar (Rajasthan), September 23-24, 2011.
2. International workshop on “Chemical Evolution and Origin of Life” at IIT Roorkee, Roorkee, March 21-23, 2013.

References

1. Dr. Kamaluddin
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Chemistry Department, IIT Roorkee
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Ph No. – +91 9897011949

2. Dr. Vivek Mishra
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4. Dr. Sunita Tandon
Faculty
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Personal Details

Father's Name: Surajbhan Sharma
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Category: General

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