

# Shelly Bhardwaj, Ph.D.

📍 Theory & Simulation Laboratory,  
Department of Chemistry  
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## Academic Qualification

- 2021 – Present    📖 **Ph.D., Jamia Millia Islamia University** Theoretical Physical Chemistry.  
Advisor: Dr. Amit Kumar  
Thesis title: *A Mathematical Model to Evaluate the Orientation Relaxation Dynamics of Complex Polymeric Systems*
- 2017 – 2019    📖 **M.Sc. Chemistry, Amity University** Noida.  
Specialization: Physical Chemistry
- 2014 – 2017    📖 **B.Sc.(H) Chemistry, Rajdhani College**, University of Delhi, New Delhi.

## Research Topic

- 📖 **A generalized theoretical model to understand conformational heterogeneity of hyperbranched polymers and its impact on their association with nucleic acid.**






## Research Publications

- 2024    📖 **Shelly Bhardwaj and Amit Kumar \***, Theory to predict segmental relaxation of proteins in dilute solution, Under Preparation. (*Under PMRF Scheme*)
- 📖 **Shelly Bhardwaj and Amit Kumar \***, Effect of excluded volume interactions on orientational relaxation in dendrimers, Under Review, *Physical Chemistry Chemical Physics*. (*Under PMRF Scheme*)
- 📖 **Shelly Bhardwaj and Amit Kumar \***, Analytical model to deduce the conformational and dynamical behavior in dendrimers: A Review, Under revision, *Polymer Reviews*. (*Under PMRF Scheme*)
- 📖 **Shelly Bhardwaj and Amit Kumar \***, A Theoretical Perspective on Segmental Relaxation Dynamics of Model Dendrimer, Under minor revision, *Chemical Physics*. (*Under PMRF Scheme*)
- 2022    📖 **Shelly Bhardwaj and Amit Kumar \***, Electronic (e-waste): Chemical assessment and treatment methods, In Print (ISBN-9780323904636), *Elsevier*.
- 2020    📖 **Shelly Bhardwaj and R.S.Dubey \***, Pandemic Covid-19 and Water Quality: A Review, *International Journal of Engineering Sciences & Research Technology*.
- 📖 **Shelly Bhardwaj and R.S.Dubey \***, Water Pollution and Its Treatment by Various Methods : A Review, (ISBN-22786783), *Chemical Sciences Reviews and Letter*.


## Paper Presented in Conferences

- 2023    📖 **Paper Presentation**, Deshbandhu College, University of Delhi, Delhi, Theoretical Perspective on Segmental Relaxation of Model Dendrimer.
- 2020    📖 **Paper Presentation**, Jawaharlal Nehru University, Delhi, International webinar on Covid 19 Pandemic: Challenges and Recent Advancements.
- 2019    📖 **Paper Presentation**, Jawaharlal Nehru University, Delhi, International webinar on Multiscale Simulation and Mathematical Modelling of Complex Biological Systems.





## Conferences attended

- 2024     **One-day Symposium**, Jawaharlal Nehru University, Delhi, Simulation of Physical and Biological Systems.
- 2023     **Online Conference**, Bhau Rao- Devras Shodh Peet, Lucknow, Develop Skill Panorama on Research Methodology based on Data Analysis Using R.
- 2022     **Talk Presentation**, TATA Institute of Fundamental Research, Statistical Biological Physics: from single molecule to Cell.
- 2018     **Poster Presentation**, Amity University, Noida, National Student Conclave and Seminar on Science, Technology and Innovation.
- 2016     **Poster Presentation**, Gargi College, University of Delhi, National conference on combating industrial pollution for sustainable environment.


## Teaching Assignments

- Feb 2023 – . . . .     **Teaching Assistant**, Deshbandhu College, University of Delhi.
-  **Teaching Assistant**, Jamia Millia Islamia, New Delhi.
- Jan - April, 2020     **Visiting Faculty**, Amity University, Noida, Uttar Pradesh.
- 2018 – 2019     **Research Internship**, University of Delhi, New Delhi.
- 2016 – 2017     **Research Internship**, Rajdhani College, University of Delhi, New Delhi.

## Skills

- Languages     Strong reading, writing and speaking competencies for English and Hindi.
- Coding     C, C++, Fortran, Mathematica, Python,  $\text{\LaTeX}$
- Web Dev     HTML, CSS, JavaScript
- Misc.     Academic research, teaching, training, consultation,  $\text{\LaTeX}$  typesetting and publishing.

## Reference(s)

**Dr. Amit Kumar** Professor (Assistant)  
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