

Curriculum Vitae:

Dr. Ashish Kumar Chalana, India

Dr. Ashish Kumar Chalana

Assistant Professor of Chemistry,
Department of Chemistry & Biochemistry,
Sharda University,
Knowledge Park III, Greater Noida, Uttar Pradesh, (U.P.) 201310, India.



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Researcher ID: JCD-7472-2023

Education

- 2015–19** **Ph.D. in Chemistry**
Department of Chemistry, Shiv Nadar University, Greater Noida, U.P. India
Title of doctoral dissertation: Structural and Physical Properties of Chalcogen-based Copper Complexes and their Significance Copper-Related Disorders.
- 2009–14** **BS-MS (Dual Degree) in Chemistry** (First division, 6.13/10 CGPA)
Indian Institute of Science Education and Research, Thiruvananthapuram, (IISER-TVM), Kerala, India
- 2009** **Senior Secondary** (First division, 76 %), CBSE Board, Shri Ganganagar, Rajasthan, India.
- 2007** **Secondary** (First division, 90 %), Rajasthan Board, Shri Ganganagar, Rajasthan, India.

Work Experience

- 10th Nov 21–Current** **Assistant Professor** (Present)
Department of Chemistry & Bio-Chemistry, Sharda University, Greater Noida, U.P. India
- 29th Oct 20–9th Nov 21** **Post Ph.D. (SRF)**, Indian Institute of Delhi (IIT DELHI), Delhi, India
- July 2020– Dec 2020** **Chemistry Subject Matter Expert,**
Six Red Marbles (USA), Specializing in academic content development and quality review for STEM education projects.
- 14th Aug 20–23rd Oct 20** **Post Ph.D. (JRF)**, Bannett University, Greater Noida, U.P., India
- 2nd Oct 19–30th April 20** **Assistant Professor-Adhoc**
Department of Chemistry & Bio-Chemistry, Sharda University, Greater Noida, U.P. India.
- 6th June 19–20th Dec 19** **Post Ph.D. (Research Fellow)**, Department of Chemistry, Shiv Nadar University, Greater Noida, U.P., India
- 2015–2017** **Teaching Assistantship** in undergraduate courses during Ph.D.
- 15th Sep 14–31st Dec 14** **Junior Research Fellow (JRF)**, Department of Chemistry, Shiv Nadar University, Greater Noida, U.P., India.

May 13– June 14

Master Research Project, Department of Chemistry, Indian Institute of Science Education and Research, Thiruvananthapuram (IISER-TVM), Kerala, India.

Research Interest

- ✓ Synthesis and functionalization of 2D materials for biomedical and energy applications
- ✓ Enzyme-mimicking nanomaterials (peroxidase-like activity, catalytic applications)
- ✓ Chemical biology and medicinal chemistry interfaces
- ✓ Energy storage and conversion (supercapacitors, batteries)

Research Project undertaken:

Project Title: Glutathione Peroxidase-like Activities of Metal Chalcogenides: A Novel Approach in Biomedical Research

Agency Name: Sharda University, SU/SF/2022/08 (Seed Fund Grant from Sharda University)

Duration: One Year (September 22-August 23)

Students:

1. **Ongoing:** **Ms. Vinee Gupta** (Ph.D. Student, 3rd Year), **Ms. Somya** (Ph.D. Student, 3rd Year), **Ms. Priyanka Jha** (Ph.D. Student, 1st Year), **Mr. Buhari Salahuddeen (PG)**, **Aakriti Sharma (PG)**, **Sweta (PG student)**
2. **Completed:**
Ms. Nandita (PG), Synthesis of metal Chalcogenides nanoparticles and antioxidant behavior, 2022-2024
Ms. Nikhil (PG), Synthesis of Functionalized Graphene Oxide and its application in peroxidase mimic, 2022-2024
Mr. Prabhu, (PG), Synthesis of FeSe NPs and application towards mimicking of GPx-like activities, 2021-2022

Awards and Achievements

- 12th Feb, **First Prize in an Oral talk at the Conference** “Emerging Trends and Future Challenges in Chemical Sciences” Conference Center, University of Delhi (KMC, College, DU).
- 2022 **DST, International Travel support Grant to attend the "7th International Conference on Multifunctional, Hybrid and Nanomaterials, Italy (19 October 2022 to 22 October 2022)" conference** for a Poster presentation. (File number ITS/2022/002050)
- 2022 **Young Scientist Award (Kalp) by the National Conference on Multidisciplinary Research & Innovation (NCMRI)**
- 2016 Qualified **CSIR-UGC-NET-LS** with AIR-19.
- 2015-19 **Research Fellowship and Teaching Assistantship** award from Shiv Nadar University, India.
- 2009–14 **Inspire fellowship** (Dept. of Science & Technology, MHRD) during BS-MS in Indian Institute of Science Education and Research, (IISER)-Thiruvananthapuram, Kerala, India.
- 2009 AIR-1658 in the **IIT-JEE** (extended merit list)

Courses Taught

- Analytical Chemistry (MSc Chemistry, 1st year)
- Group theory (MSc Chemistry, 1st year)
- Organometallic Chemistry (MSc Chemistry, 1st year)
- Chemical thermodynamics (BSc Forensic Science, 1st year)
- Principle of Physical Chemistry (BSc Chemistry & Biochemistry, 1st year)

Academic Responsibilities Undertaken

- Program coordinator (BSc chemistry), Chemistry & Biochemistry, Sharda University, Greater Noida, U.P.
- Placement Cell Coordinator of Chemistry & Biochemistry, Sharda University, Greater Noida, U.P.
- Member of NAAC Criteria-1, Chemistry & Biochemistry Department, Sharda University, Greater Noida, U.P.
- Class Coordinator of BSc (Hon.) Chemistry & Biochemistry (1st year), Sharda University, Greater Noida, U.P.
- Member of Exam Cell, Sharda University, Greater Noida, U.P.
- School Coordinator, LAU NEET Course, School of Basic Sciences & Research, Sharda University, U.P.

Scientific Publications

1. **Chalana, A.**, Photocatalytic Efficacy of Copper Telluride Nanoparticles toward the Degradation of Methylene Blue, **Manuscript Submitted.**
2. Ahuja, M., Buhari, S., Soni. D., Babu, B., **Chalana, A.** Exploring the Bifunctional Electrochemical behaviour of Cu_{2-x}Te@reduced Graphene Oxide for Energy Storage and Water Splitting Applications, **Manuscript Submitted.**
3. Ahmad, H., Buhari, S., Dabas, R., Kronu, T., Sharma. A., Tomar, S., **Chalana, A.** Advancements in MXene Hybrid Materials: Synthesis, Characterization, and Applications in Energy Storage Technologies. *Precision Chemistry*, 2025, XX, XX-XX, (I.F. 6.2, **Q1**)
4. Buhari, S., Ahuja, M., Babu, B., **Chalana, A.**, Advances in MXenes: Synthesis and Electrochemical Applications, *Adv. Sustain. Syst.*, 2025, 9(9), e00419. (I.F. 6.1, **Q1**)
5. Buhari. S., Gupta. V., Sharma. A., Tomar. S., Ranjan. N., Sharma. K., Singh. V., Rajeev. M., Kumar. A., **Chalana. A.** A mini-review of MXenes in biomedicine: From synthesis to revolutionary applications. *J. Chem. Rev.*, 2025, 7(1), 108-130. (**Q1**)
6. **Chalana, A.**, Bijwe. J., Marathe, U., Non-covalent functionalization at Titanium carbide nano-particles for strengthening the interface with polyaryletherketone matrix for developing high-strength adhesives, *J. Mater. Res. Technol.*, 2024, 31, 570-578. (I.F. 6.4, **Q1**)
7. Pathan, J., Tripathi, D. K., Poluri, K. M., **Chalana, A.**, Adhikari, S. Molecular insight into the structural and functional aspects of arene Ru (II) complexes bearing bulky thiourea ligands. *J. Inorg. Biochem.*, 2024, 257, 112584. (I.F. 2.1, **Q1**)
8. Das. R., Karri. R., **Chalana. A.**, Rai. R., Roy. G. Uncovering the Role of Methylmercury on DNA Lesions at Cytotoxic Concentrations in Glutathione-depleted Cells: Insights from Experimental and Computational Studies. *Inorg. Chem.* 2024, 63, 10455–10465. (I.F.=5.43, **Q1**)
9. Chauhan, N., Sharma. N., Buhari. S., Das. P. P., Kumar.S., **Chalana. A.**, Facile Synthesis of Copper Telluride Nanoparticles as a Robust Nanoenzymatic Catalyst for Intrinsic Peroxidase- Like Activity, *ChemistrySelect*, 2024, 9,1-9, (I.F. 2.1, **Q3**)
10. Rai, R. K., **Chalana, A.**, Karri, R., Islam, A., Pati, R. S., Sarathy, V. P., & Roy, G. Synthesis, structures and DFT study of copper coordination with bis-benzimidazole based thiones and selones: Scope for nonstoichiometric Cu_{2-x}Se nanoparticles. *Inorganica Chim. Acta.*, 2024, 562, 121880 (I.F.2.8, **Q2**). (Equal First Author contribution)
11. Pathan, J., Quraishi, S., Das, S., **Chalana, A.**, Sutradhar D., Adhikari, S., Exploring Benzene Ru (II) Complexes of 2-Substituted Quinoline/Napthyridine Ligands: Synthesis, Biomacromolecular Binding and DFT Investigations, *J. Mol. Struct.*, 2024,1295, 136690. (I.F. 3.80, **Q2**)

12. Pathan, J. M., Gautam, T., Chalana, A., Sutradhar, D., & Adhikari, S. Synthesis, crystal structure and hydrogen bonding of a Cp*Rh(III) complex bearing pyridyl azine ligands: a combined experimental and DFT approach, *J. Coord. Chem.*, 2023, 1-12. (I.F. 1.90, **Q2**)
13. Marathe, U., **Chalana, A.**, Bijwe, J. Performance augmentation of epoxy adhesives with TiN nanoparticles, *ACS Omega.*, 2022, 7, 4150–4157. (I.F. 4.13, **Q1**)
14. **Chalana, A.**, Rai, R. K., Karri, R. Jha, K. K. Kumar, B., Roy, G. Interplay of the intermolecular and intramolecular interactions in stabilizing the thione-based copper complexes and their significance in protecting the biomolecules against metal-mediated oxidative damage *polyhedron.* 2022, 215, 115647. (I.F. 3.05, **Q2**)
15. Tripathy, S, **Chalana, A.**, Talukdar. A Rajesh. P. V., Saha, A, Pramanik, G, Ghosh, S. Limited-Resource Preparable Chitosan Magnetic Particles for Extracting Amplification-Ready Nucleic Acid from Complex Biofluid." *Analyst*, 2022, 147, 165-177. (I.F.=4.61, **Q1**)
16. **Chalana, A.**, Karri, R., Mandal. S., Pathak. B., Roy, G. Chemical Degradation of Mercury Alkyls Mediated by Copper Selenide Nanosheets, *Chem. Asian J.* 2019, 14, 4582–4587. (I.F.=4.56, **Q1**)
17. **Chalana, A.**, Karri, R., Das, R., Kumar, B., Rai, R. K., Saxena, H., Gupta, A., Banerjee, M., Jha, K. K., Roy, G. Copper-driven Deselenization: A Strategy for Selective Conversion of Copper Ion into Nanozyme and Its Implication for Copper-Related Disorders, *ACS Appl. Mater. Interface* 2019, 11, 4766–4776. (I.F.=10.38, **Q1**)
18. Karri, R., **Chalana, A.**, Kumar, B., Jayadev. M., Roy, G., Exploiting the κ^2 -Fashioned Coordination of [Se₂]-Donor Ligand L₃Se for Facile Hg–C Bond Cleavage of Mercury Alkyls and Cytoprotection against Methylmercury-Induced Toxicity, *Chem. Eur. J.* 2019, 25, 12810–12819. (I.F.=5.02, **Q1**)
19. Karri, R., **Chalana, A.**, Das, R., Rai, R. K., Roy, G. Cytoprotective effects of imidazole-based [S₁] and [S₂]-donor ligands against mercury toxicity: a bioinorganic approach, *Metallomics* 2019, 11, 213-225. (I.F.=3.79, **Q1**)
20. Rai, R. K., **Chalana, A.**, Karri, R., Das, R., Kumar, B., Roy, G. Role of Hydrogen Bonding by Thiones in Protecting Biomolecules from Copper (I)-Mediated Oxidative Damage, *Inorg. Chem.* 2019, 58, 6628–6638. (I.F.=5.43, **Q1**)
21. Karri, R., Banerjee, M., **Chalana, A.**, Jha, K. K.; Roy, G., Activation of the Hg–C Bond of Methylmercury by [S₂]-Donor Ligands, *Inorg. Chem.* 2017, 56, 12102–12115. (I.F.=5.43, **Q1**)
22. Banerjee, M., Karri, R., **Chalana, A.**, Das, R., Rai, R. K., Rawat, K. S., Pathak, B., Roy, G. Protection of Endogenous Thiols against Methylmercury by Benzimidazole-based Thione via Unusual Ligand Exchange Reactions. *Chem. Eur. J.* 2017, 23, 5696–5707. (I.F.=5.02, **Q1**)
23. Johnson, J., Ashokan. A., **Chalana, A.**, Venugopal, A.; Neutral and Cationic β -Ketoiminato Bismuth Complexes, *Z. Anorg. Al. Chem.* 2017, 643, 607. (I.F.=1.41, **Q2**)

Patent

Roy, G., Banerjee, M., Karri, R., **Chalana, A.**, Das, R. Derivatives of Imidazole and Benzimidazole, Method of Preparation and Use Thereof. (*Patent granted*) (International Publication Number WO 2017/168451 A1)

Book Chapter and Conference Paper

1. Chauhan, N, Sharma, N., Das, P. P, and **Chalana, A.** "Synthesis of Metal Telluride Nanomaterials and Their Application in Catalysis." In International Symposium on Emerging Trends in Synthesis and Catalysis, pp. 333-342. Singapore: Springer Nature Singapore, 2023. (https://link.springer.com/chapter/10.1007/978-981-97-5169-3_23)
2. **Chalana, A.**, Singh, K., Sharma, S., Bhardwaj, V., Rai, R.K. (2023). E-waste Management: Prospects and Strategies. In: Debbarma, P., Kumar, S., Suyal, D.C., Soni, R. (eds) Microbial Technology for Sustainable E-waste Management. Springer, Cham. (https://doi.org/10.1007/978-3-031-25678-3_19)

3. Banerjee, M.; Karri, R.; Muthuvel, K, **Chalana, A.**, Roy, G. "Detoxification of Mercury: Bioremediation to Chemical Degradation, in "Metal-Microbe interactions and bioremediation: Principle and applications for toxic metals." Published by Taylor & Francis (CRC Press), Ed: Das, S. and Dash, H. R.; 2016.

Invited Lectures

- 13-18 June 2022 Faculty development program on green technology and approaches for waste valorization, Department of Life Science, School of Basic Sciences & Research, Sharda University, U.P.

Event Organized

- 4th -5th June 2024 Event Coordinator and Speaker in Two-Day "Hands-on Training on Software to Design an Effective Manuscript and Data Interpretation" Department of Chemistry & Biochemistry, SSBSR, Sharda University, U.P.
- 13th-18th June 2022 Member of Organizing Committee in Faculty Development Program (FDP) on green technology and approaches for waste valorization, Department of Life Science, SSBSR, Sharda University, U.P.
- 24.2.2022 Convener/Coordinator in Career and Placement Awareness Session-Final Year Students in the Department of Chemistry & Biochemistry, SSBSR, U.P.

Seminar and Conferences

- 21-26 Feb-22 Online Faculty development program (FDP) on "*Analytical Techniques for Molecular The characterization*" organized by Department of Chemistry, SRM University, Delhi-NCR, Sonapat, Haryana
- 5-7 Dec 2018 **Chalana A., Roy, G.** "*Copper-driven Deselenization: Strategy for Selective Conversion of Copper Ion in Nanozyme and Its Possible Implication for Copper-Related Disorders*".
Poster presented in "BENGALURU INDIA NANO 2018" organized by the Biotechnology and Science & Technology, Government of Karnataka, JNCASR at Bengaluru, India.
- 7-11 Jan 2017 **Chalana, A., Roy, G.** "*Structural and Physical Properties of Chalcogen Based Copper Complexes and their Significance in Wilson's Disease*".
Poster presented in "*Advanced Biological Inorganic Chemistry (SABIC-2017)*" organized by the TIFR and IACS in Kolkata, India.
- 15 Dec 2016 **Chalana A., Roy, G.** "*Structural and Physical Properties of Chalcogen Based Copper Complexes and their Significance in Wilson's Disease*".
Oral presentation in "*Recent advancement in Inorganic Chemistry*" Department of Chemistry, Shiv Nadar University, RSC-North India Section, and GCNC University of Delhi, India.
- 9 April 2016 **Chalana A., Roy, G.** "*Structural and Physical Properties of Chalcogen Based Copper Complexes and their Significance in Wilson's Disease*".
Poster presented in "*Emerging Trends Translational Research in India*" one-day symposium, Department of Chemistry, Shiv Nadar University.

References

Prof. Bimlesh Lochab

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