



Surbhi Jain

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Profile

Dr. Surbhi Jain is an Assistant Professor of Chemistry at IcfaiTech, The ICFAI University, Jaipur, with academic and research expertise in synthetic chemistry, bioinorganic chemistry, biological chemistry, supramolecular chemistry, coordination chemistry, crystal engineering, and biomaterials. Her academic career reflects a strong combination of research, teaching, student mentoring, academic administration, and institutional engagement. Her research interests primarily focus on the design and synthesis of metal-based compounds, particularly copper(II) complexes, and the investigation of their structural, spectroscopic, biological, and molecular interaction properties. Dr. Jain completed her Ph.D. in Chemistry from the Central University of Rajasthan under the supervision of Dr. Anuj K. Sharma. Her doctoral research, titled “Bio-affinity and Molecular Interactions of Novel Engineered Copper(II) Complexes,” focused on the synthesis, characterization, and biological evaluation of novel copper-based coordination compounds. Her research involved the study of molecular interactions between metal complexes and biologically relevant molecules, with particular emphasis on DNA and protein binding, DNA cleavage, cytotoxicity, and structure–activity relationships. She was awarded the prestigious DST-INSPIRE Senior Research Fellowship (SRF) during her doctoral research.

She completed her M.Sc. in Chemistry from the Central University of Rajasthan, graduating as a Gold Medalist with 83% marks. She was also awarded a merit-based fellowship for two years during her postgraduate studies. She completed her B.Sc. from Maharani College, Jaipur, University of Rajasthan, securing 82.80% marks and ranking second overall in the college. Her academic excellence is further reflected in her performance in national-level competitive examinations. She secured All India Rank 86 in the UGC-JRF examination in December 2013 and All India Rank 180 in GATE 2014, placing her among the top 2.5% of candidates. Dr. Jain has received several academic distinctions and research opportunities during her career. She was selected for a Summer Internship through the Indian Academy of Sciences at the National Institute of Science Education and Research (NISER), Bhubaneswar, where she worked on “Fused Expanded Porphyrins: Syntheses and Application as Metal Ion Receptor” under the guidance of Prof. T. K. Chandrasekar, former Director, NISER. She also undertook a research project at the Central University of Rajasthan on single-crystal X-ray studies of copper(II) complexes with N- and O-donor ligands under the guidance of the late Dr. Sunil G. Naik, FRSC. These research experiences provided her with a strong foundation in coordination chemistry, molecular recognition, crystallography, and bioinorganic chemistry.

Her research work has resulted in peer-reviewed publications in reputed national and international journals, covering diverse aspects of coordination and bioinorganic chemistry. Her publications have appeared in journals such as the *Journal of Inorganic Biochemistry*, *Dalton Transactions*, *Transition Metal Chemistry*, *Polyhedron*, *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, *Journal of Biomolecular Structure and Dynamics*, and *Journal of Photochemistry and Photobiology B: Biology*. Her research contributions include the development and biological evaluation of benzothiazole-derived copper(II) complexes, synthesis and characterization of terpyridine–Cu(II) complexes, investigations into DNA and bovine serum albumin interactions, DNA cleavage and cytotoxicity studies, copper and iron coordination systems, fluorescent chemosensors for biologically relevant metal ions, and phenoxo-bridged dicopper complexes with catalytic activity. A significant aspect of Dr. Jain's research is the exploration of the relationship between the molecular structure of coordination compounds and their biological behaviour. Her work combines synthetic chemistry with spectroscopic, structural, electrochemical, and biological approaches to understand metal–biomolecule interactions. Her broader research interests include metal-based therapeutic agents, molecular recognition, bio-affinity studies, supramolecular chemistry, crystal engineering, and the development of functional coordination compounds. Dr. Jain has actively presented her research at several national and international conferences, symposia, and scientific meetings. Her research has been presented at prestigious forums including the 7th EuCheMS Conference on Nitrogen Ligands in Lisbon, Portugal, the Rajasthan Science Congress, the International Conference on Frontiers at the Chemistry–Allied Sciences Interface (FCASI), the International Symposium on Advanced Biological Inorganic Chemistry (SABIC), the Mid-Year CRSI Symposium in Chemistry, and national conferences on emerging trends in applied chemical sciences. She was also awarded the First Prize in Rapid Presentation at the University level on National Science Day 2020 at the Central University of Rajasthan.

With a strong teaching background, Dr. Jain has experience in teaching Chemistry at both undergraduate and postgraduate levels. Her teaching portfolio includes Inorganic Chemistry, Physical Chemistry, Organic Chemistry, Engineering Chemistry, Green Chemistry, Bioinorganic Chemistry, Bioorganic and Biophysical Chemistry, Advanced Inorganic Chemistry, and Organotransition Metal Chemistry. She has also served as a Teaching Assistant for laboratory techniques for four years at the Central University of Rajasthan, where she contributed to practical instruction and student training. In addition, she has guided and trained several postgraduate students in the execution of their M.Sc. research projects. Dr. Jain began her full-time teaching career as an Assistant Professor at Alankar P.G. Girls College, where she served from August 2020 to May 2021. She subsequently joined The ICFAI University, Jaipur, where she has been contributing to teaching, research, student development, and institutional activities. Her approach to teaching emphasizes conceptual understanding, experimental learning, interdisciplinary applications, and the development of scientific and analytical thinking among students. She strives to connect fundamental chemical concepts with contemporary scientific developments and real-world applications.

In addition to her teaching and research responsibilities, Dr. Jain has made significant contributions to student development and academic administration at IcfaiTech. She has been serving as the Student Council Coordinator, IcfaiTech, The ICFAI University, Jaipur, since January 2022. In this role, she works closely with students in planning and coordinating academic, cultural, technical, and co-curricular activities and facilitates opportunities for students to develop leadership, teamwork, communication, and organizational skills. She also served as the Coordinator of the B.Sc. Forensic Sciences programme at The ICFAI University, Jaipur, from May 2022 to December 2023. Her association with the programme reflects her interdisciplinary interest in the application of scientific principles to forensic investigations. Her background in Chemistry, combined with an interest in analytical techniques and scientific evidence, supports her engagement with emerging interdisciplinary areas connecting Chemistry and Forensic Science.

Dr. Jain has also contributed to institutional academic communication and outreach as the Chief Editor of the IcfaiTech quarterly magazine, "TechChroniques." Through this responsibility, she contributes to the documentation and dissemination of academic achievements, research activities, student accomplishments, institutional initiatives, and other significant developments of IcfaiTech. Her editorial involvement complements her broader contributions to academic communication and institutional development. Professional development and continuous learning form an important part of Dr. Jain's academic journey. She has participated in workshops and training programmes related to bioinorganic chemistry, chemistry at the interface of biology, computer-aided drug design, intellectual property awareness, exploratory data analysis, research methodology, research ethics, and scientific publishing. She has also contributed to the organization of academic workshops and faculty development programmes at IcfaiTech. Her involvement in these activities reflects her commitment to keeping abreast of emerging research methodologies, interdisciplinary developments, and contemporary practices in higher education and scholarly communication. Dr. Jain has hands-on expertise in several advanced laboratory and analytical techniques, including UV-Visible spectroscopy, fluorescence spectroscopy, FT-IR spectroscopy, NMR spectroscopy, CHNS analysis, flame photometry, polarimetry, column chromatography, crystallization techniques, and agarose gel electrophoresis. Her experience with these techniques supports both her research activities and her practical teaching, enabling her to provide students with exposure to experimental methods used in modern chemical research.

Overall, Dr. Jain's academic profile represents a balanced integration of research, teaching, student mentoring, academic leadership, and institutional service. Her research contributions in copper-based coordination compounds and bioinorganic chemistry have established a foundation for further work in the interdisciplinary areas of metal-based therapeutics, molecular interactions, supramolecular chemistry, crystal engineering, biomaterials, and biologically active coordination compounds. At IcfaiTech, she continues to contribute to the development of students through classroom teaching, laboratory instruction, mentoring, and student-centric initiatives, while simultaneously pursuing research and scholarly activities. Dr. Jain is committed to advancing scientific education and research through interdisciplinary collaboration, innovative teaching, meaningful research, and continuous academic development. Her professional objective is to build a sustained academic career that integrates her expertise in synthetic and biological chemistry with emerging areas of interdisciplinary science. Through her research publications, conference presentations, teaching contributions, student development initiatives, editorial responsibilities, and participation in institutional activities, she continues to contribute to the academic environment and the overall growth of IcfaiTech, The ICFAI University, Jaipur.