MANIPAL UNIVERSITY
JAIPUR

CHEMISTRY CHRONICLES

DEPARTMENT OF CHEMISTRY
APRIL-JUNE 2025
VOLUME 2025.2

CONTENTS

Faculty Editor

Dr. Susruta Samanta

Dr. Mainak Ganguly

Student Editor

Supriyo Kar

Chemistry is the bridge between the mysteries of the universe and the marvels of modern technology, transforming the ordinary into the extraordinary.

VISION

Promote academic excellence and research proficiency to foster leadership and global competence.

MISSION

To cultivate practical, technology-driven expertise through application, research, and innovation.

To educate students on optimal practices within the field of chemistry and integrate them with current industry requirements.

To empower students to cultivate essential skills for professional performance and ethical engagement with a global perspective

At the Department of Chemistry, we explore and try to understand various aspect of atoms, molecules, and materials, working side by side with graduate and undergraduate students through an active research program along with quality education. The faculty members in the department work to develop novel nanomaterials, catalysts, drugs, solar sensitize dyes, and organic synthesis through advance experiments and computational molecular modelling with an aim to train exceptionally good chemists and material scientist and to work for the betterment of the society.

The internal machinery of life, the chemistry of the parts, is something beautiful. And it turns out that all life is interconnected with all other life.

Dean- Research, International Affairs and Academic Administration (RIAAA)

Welcome to the School of Biological and Physical sciences, Manipal University Jaipur (MUJ).

All measures of success are increasing enrollment and accomplishments at the undergraduate level, research and graduate studies, faculty success in obtaining sponsored research, and national recognition through awards given to our faculty and students. The training our students require to compete and succeed in the workforce is our top priority, as is preparing the next generation of scientists to solve global challenges.

In my capacity as MUJ Dean, RIAAA (FOS), I actively help students develop into the greatest scholars, researchers, and policymakers. I give my coworkers a diversified and welcoming work atmosphere and, when needed, I assist them to help the school obtain the best possible funding from national and international organizations. There will be a focus on a cooperative and integrated approach to research, learning, and teaching. I have a great belief that the MUJ faculty will overcome the obstacles in their way to accomplish their aims and provide society with the best scientific services.

~

Prof. Lalita Ledwani

HoD's Message

Welcome to the Department of Chemistry at Manipal University Jaipur. The chemistry department provides a vibrant research and teaching environment, state-of-the-art laboratories, and excellent career development guidance. For both our undergraduate and graduate programs, our department seeks to entice the best academics from India. Our department presents itself as the ideal location for bright young minds pursuing further study in Chemistry. We prioritize curiosity-driven research and have multiple research clusters devoted to solving burning issues facing both industry and society. Students who have graduated from this institution have gone on to hold prominent positions in both academia and industry, thanks to the dedicated teaching and research efforts of our distinguished faculty members. With state-of-the-art research facilities and effective administration, our faculty members collaborate successfully on an international level with top experts in their fields. Numerous organizations, including DST, CSIR, SERB, to mention a few, have acknowledged the commitment of our department and its faculty members to research and teaching. In addition, our academic staff participates in outreach programs that assist young people with a strong interest in science. Our supportive technical and administrative staff members contribute significantly to our endeavors.

~

Dr. Praveen Kumar Surolia

Farewell

The farewell evening, held on **24th April 2025**, coordinated by Dr Komal Arora, began with a warm welcome by student representatives, followed by a graceful Saraswati Vandana. Dr. Ashima Bagaria, Associate Dean, School of Physical and Biological Sciences, addressed the students, appreciating their journey and motivating them to aim high in their future endeavours. Dr. Praveen Kumar Surolia, Head of the Department of Chemistry, delivered an inspiring address that highlighted the achievements of the graduating class and offered words of encouragement. Dr. Sushil Kumar Jain, Director, emphasized alumni relations, the importance of alumni relations at the university by highlighting how strong connections between the institution and its former students create long-term value for both parties. Cultural performances, including music, dance, and jamming sessions, showcased the vibrant talents of the students. A major attraction was the “Ramp Walk Competition,” where Mr. and Ms. Farewell were crowned for their outstanding presence. Juniors presented farewell goodies as tokens of love, and the event concluded with a heartfelt vote of thanks from the graduating class representative, marking a memorable send-off.

Objective

1. Celebrate the key achievements and valuable contributions of students throughout their time in the department.
2. Foster stronger connections among students, faculty, and staff, enhancing the sense of community.
3. Offer a platform for students to showcase their varied talents through engaging cultural performances, including music, dance, and ramp walks.
4. Include interactive segments and activities that encourage students to reflect on and cherish their departmental journey.
5. Share uplifting messages and motivational speeches from faculty members to guide and inspire students as they step into a new chapter of life.


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INSPIRED BY LIFE

Sociothon 2025

EVENTS

The *Sociothon 2025* aims to encourage innovative solutions for social problems using technology and design thinking. It's an unique opportunity for students to apply their skills and knowledge to address real world issues and create meaningful impact in the community. With a focus on creativity, teamwork, and social responsibility, Sociothon is a powerful platform for driving social change and fostering a culture of innovation and civic engagement. This sociothon will brings up a development hackathon for giving solutions to existing social problems

Objectives of the Event:

- Encourage innovation and problem-solving in social sectors.
- Encourage students to develop practical, scalable solutions.
- Provide financial support to top-performing teams

Beneficiaries of the Event:

- Students, interested in social innovation.
- Rural communities benefit from the developed solutions.
- Startups and organizations focusing on rural development.

Brief Description of the event:

Problem Statement:

- Smart Agriculture & Agri-Tech
- Rural Healthcare & Telemedicine
- Sustainable Energy & Environment
- Education & Digital Literacy

Submission Round

This round consisted of online submission of the idea developed by the team. Last date for submission was 11:59 PM, 9th April 2025. 30 teams were submitted their idea proposals.

Start: 2nd April 2025, 10:00 AM IST

End: 14th April, 2025, 11:59 PM IST

Presentation Round

This round consisted of a presentation of the idea, design, developed solution and code which was done within 10 minutes, and a 5 min Q&A. It was conducted on 17th April 2025. Shortlisted 18 teams were presented their ideas in front of the jury. The presence of all the team members during the presentation was compulsory. Six teams were awarded by 1st, 2nd and 3rd prizes.

MANIPAL UNIVERSITY JAIPUR

"GRAM ASHA" Club

in collaboration with

Department of Chemistry, SPBS, FoSTA, AIC-MUJ and E-cell

Presents

SOCIOTHON

(Social Development Hackathon)

Under

Institutional Innovation Council (IIC Activity)

Healthcare & Telemedicine

Sustainable Energy & Environment

Smart Agriculture & Agri-Tech

Education & Digital Literacy

Eligibility

- Open to all University student and PhD scholars
- Inter-college students allowed
- Each team should comprise of 2-5 members.

PRIZE POOL
Rs. 15,000

REGISTER NOW
Registration fee- Rs. 150
Free for Manipal students

https://forms.gle/zpQLRZTLFazASGAaA

Best teams will receive dedicated support to turn their ideas into successful startups or working prototypes!


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SOCIOTHON-2025
(Societal Development Hackathon)
PRIZE POOL
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Alumni Awareness Session 2025

EVENTS

A comprehensive awareness session for final-year students of the Chemistry department was successfully conducted in collaboration with the Directorate of Alumni Relations and Manipal University Jaipur alumni association. Dr. Sushil Kumar, Alumni coordinator for the chemistry department, meticulously coordinated the event, playing a pivotal role in ensuring its seamless execution. During the session, students were thoroughly introduced to the multifaceted initiatives and activities undertaken by the Directorate of Alumni Relations. These included detailed explanations of alumni networking programs, structured mentorship opportunities, focused career guidance sessions, and the ongoing efforts to strengthen and foster meaningful connections between current students and accomplished alumni. The session provided valuable insights into how students could effectively benefit from the support and guidance of alumni in shaping their career paths and achieving professional growth. The program emphasized the potential for alumni connections to open doors to various career opportunities. They learned professional development and how to stay connected to their university. This awareness program was presented as a crucial step in their journey, as they prepared to join the vibrant alumni community, and students were encouraged not to miss this opportunity to gain essential knowledge that would significantly benefit their future careers.

Objective of the Event

To familiarize all beneficiaries with the Alumni Portal and its features.

The following features of the Alumni Portal were explained

- Search Alumni
- Alumni support
- Campaign
- Mentorship program
- Alumni admission referral link
- Placement and internship opportunities


MANIPAL UNIVERSITY
JAIPUR
Department of Chemistry
School of Physical and Biological Sciences
IN COLLABORATION WITH
DIRECTORATE OF ALUMNI RELATIONS
MANIPAL UNIVERSITY JAIPUR ALUMNI ASSOCIATION
Awareness session
For
Department of
chemistry
Apr. 11, 2025
12:00 PM to 1:00pm
Room 221, AB2
alumni@jaipur.manipal.edu
alumnimuj
MUJ-AlumniConnect
mujalumni.in


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Ongoing projects

S. No.	Name of the Investigator	Project No.	Funding Agency	Title of the project and duration (Start and end date)	Amount sanctioned (INR, Lakh)
1	Dr Praveen Kumar Surolia	CRD/2024/000885	ANRF	Design and development of ordered mesoporous materials-based heterojunctions for wastewater treatment (Two Years; Selected for Funding)	35.0
2	Dr Praveen Kumar Surolia	CRG/2021/002477	SERB	Development of Air and Moisture Stable Novel Perovskite Charge Mediators for Sensitized Solar Cells (22-Dec-2021 – 26-June-2025)	46.97
3	Dr. Saurabh Srivastava	SRG/2023/001007	SERB	Covalent Organic Framework (COF) Based Novel Molecular Gears on Solid Surfaces: A Quantum Mechanical Investigation (2022-2025)	24.56
4.	Dr. Lalita Ledwani (Coordinator & PI)	SR/PURSE/2022/142	DST PURSE	Development and Utilization of high value products from waste resources: Circular solution for agricultural and non-agricultural applications	1000

				(2022 -2026)	
5.	Dr. Rahul Shrivastava	DST/R and D/2016/4871	DST, Rajasthan	A selective and sensitive nano sensor based test kit for visual sensing of fluoride ion in drinking ground water (2017-2020)	4

Publications

S. No.	Name of the faculty	Title of the paper	Journal Name	Month, Year
1.	Dr Amrita Biswas	A comparative study of copper corrosion inhibition in various industrial environments	Journal of Adhesion Science and Technology	April, 2025
2.	Dr Mainak Ganguly	Evolution of strong fluorescence from the thiolated nanoclusters for the detection of H_2O_2 and Ba^{2+}in one pot	Journal of Molecular Structure	April, 2025
3.	Dr Mainak Ganguly	Application of the synergism between eggshells and copper in nanotechnology	Nanoscale Advances	April, 2025
4.	Dr Praveen Kumar Surolia	Polymer Grafting in Drug Delivery	Advances in Pharmaceutical Technology for Drug Delivery Systems (PTDDS)	May, 2025
5.	Dr Mainak Ganguly	Fluorescent silver hydrosol for the dual fluorometric sensing of gallic acid and Cd^{2+}	RSC Advances	May, 2025

6.	Dr Amrita Biswas	Limited cudoping effect on morphological, structural, optical and electrochemical properties of nickel oxide nanocomposite thin films	Micro and Nanostructures	May, 2025
7.	Dr Praveen Kumar Surolia	Kinetic and thermodynamic characterization of cellulosic materials using Coats-Redfern method	Biomass and Bioenergy	May, 2025
8.	Dr Mainak Ganguly	Synergism of Ag^{+} and Na^{+} in *N*-acetyl-p-quinoneimine matrix for dual sensing applications	Scientific Reports	June, 2025
9.	Dr Mainak Ganguly	Fluorometric detection of Pb^{2+} with the manipulation of metal-enhanced fluorescence behaviour of copper nanoparticles	Materials Letters	June, 2025
10.	Dr Praveen Kumar Surolia	Recent Advances in Catalyst Development for Enhanced p-Xylene Production via Toluene Methylation	ChemBioEng Reviews	June, 2025
11.	Dr Praveen Kumar Surolia	Cellulose-based quasi-solid electrolytes for dye-sensitized solar cell: a mini review	Ionics	June, 2025
12.	Dr Praveen Kumar Surolia	Catalyst Modification Strategies and Reactor Engineering for Enhanced p-Xylene Production via Toluene Methylation: A Review	ChemistrySelect	June, 2025

Meet our faculty member

DR. VEENA DHAYAL

0000-0001-9170-4748

Scopus 17342057400

Professor, Department of Chemistry

Department of Chemistry; School of Physical and Biological Sciences

91-141-3999100-320

+91-9929666807

veena.dhayal@jaipur.manipal.edu; dhayal21v@gmail.com

Manipal University Jaipur, School of Physical and Biological Sciences, Office 358, Faculty Block 6, Academic Block 2

ABOUT

Dr. Veena is **Professor of Chemistry** at Manipal University Jaipur, India. She teaches Inorganic Chemistry and Engineering Chemistry at UG and PG levels. Her area of research includes Metal-organic Chemistry; Nano-synthesis: Nano-powder and nano-scaled coatings; nanocomposites, photocatalysis and Corrosion protective coatings.
She has published number of research papers in peer reviewed international journals and patents.

Before joining MUJ, she was with **University of Cologne, Germany.**

DEGREES

- PhD: University of Rajasthan, Rajasthan, India
- MSc: University of Rajasthan, Rajasthan, India

FELLOWSHIPS

- Teacher Associateship for Research Excellence (TARE), SERB, New Delhi, (2020)
- Research Associateship, CSIR, New Delhi (2010)
- Junior Research Fellowship, CSIR (2004) (SPM Call)

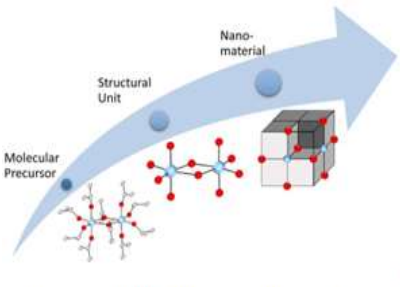
AWARDS

- MUJ Academic Excellence Award, Manipal University Jaipur, 2022, 2023, 2024
- Dr. Ramdas M. Pai Award for Professional Excellence, Manipal University Jaipur, 2024

PRIOR WORK EXPERIENCE

- Central University of Rajasthan (July 2010 – Dec. 2011)
- Post-Doctoral Researcher, University of Cologne, Germany (2012)

RESEARCH HIGHLIGHTS



Nano-synthesis: Bottom-up approach

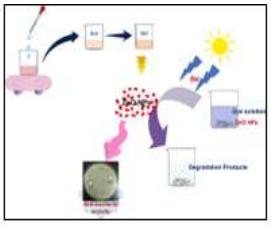
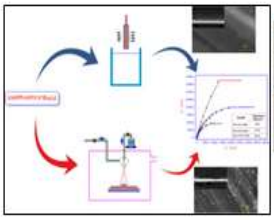
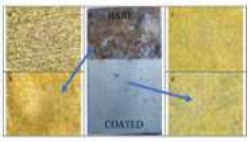


Photo-catalysis & Antimicrobial applications





Corrosion protective coatings

Team: Department of Chemistry

Provost

Dr. Nitu Bhatnagar

RIAAA

Dr. Lalita Ledwani

HOD

Dr. Praveen K. Surolia

Dr. Aman Kumar

Dr. Amrita Biswas

Dr. Anjani K. Pandey

Dr. Babia Malik

Dr. Deepak Kumar

Dr. Jagadeesh K. Alagarasa

Dr. Komal Arora

Dr. Mainak Ganguly

Dr. Meenakshi Pilania

Dr. Michel P. Inbaraj

Dr. Rahul Shrivastava

Dr. Saurabh Srivastava

Dr. Sriparna Ray

Dr. Suranjan De

Dr. Sushil Kumar

Dr. Susruta Samanta

Dr. Veena Dhayal

Meet our new faculty member

Dr. Deepak Kumar is serving as an Associate Professor (Research) in the Department of Chemistry at Manipal University Jaipur since May 2025. Before joining MUJ, he worked as an Assistant Professor in Lovely Professional University. He is known as an environmental chemist specializing in the study of organic pollutants in aquatic environments. In particular, he has expertise in adsorption, photocatalysis, membranes, activated carbon, nanomaterials, and surface science. Additionally, he is working in the area of energy storage, and supercapacitor. He supervised five PhD students, currently he is supervisor of three PhD students. He has published numerous research papers in reputed international journals and H-Index is 23.

Degrees:

Ph.D. in Applied Chemistry, Defence Institute of Advanced Technology, Pune in 2017.
M.Sc in Chemistry, Maharaja Gangasingh University, Bikaner, in 2009.
B.Sc. in Maharaja Gangasingh University, Bikaner, in 2007.

Acadamic Experience:

Assistant Professor in Department of Chemistry at Lovely Professional University, (2018-25).

Research Areas:

Photocatalysis; Wastewater Treatment; Energy Storage devices.

Selected Publications:

1) Kumar, R., **Kumar, D***., Lokhande, P.E., Kadam, V., Jagtap, C., Vedapathak, A.S., Singh, K., Mishra, Y.K. and Kaushik, A., **2025.** Emergence of perovskites oxides as advanced Photocatalysts for energy and environmental remediation applications. ***Coordination Chemistry Reviews***, *534*, p.216556.

2) Soni, R., Soni, V., Lokhande, P.E., **Kumar, D*.,** Mubarak, N.M., Kumar, S.P., Kumar, R., Singh, K., Rednam, U., Aepuru, R. and KRISHNAMOORTHY, S., **2025.** Recent advances in Lead-free carbon supported perovskites based on Z-scheme and S-scheme for the photocatalytic energy conversion. ***Materials Horizons*.**

3) Amika,Lokhande, P.E., Bhaskar, R.U., **Kumar, D*.,** Awasthi, S. and Pandey, S.K., **2024**. Experimental and DFT insights on hydrothermally synthesized PbS doped bismuth titanate perovskites: An Outperforming photocatalytic hydrogen production performance. ***International Journal of Hydrogen Energy*,** 78, pp.534-546.

4) Malik, A.Q., Jabeen, T., Lokhande, P.E., **Kumar, D*.,** Awasthi, S., Pandey, S.K., Mubarak, N.M. and Abnisa, F., **2024.** Molecularly imprinted Ag2S quantum dots with high photocatalytic activity for dye removal: Experimental and DFT insights. ***Journal of Environmental Management***, *366*, p.121889.

5) Lokhande, P.E., Kulkarni, S., Chakrabarti, S., Pathan, H.M., Sindhu, M., **Kumar, D*.,** Singh, J., Kumar, A., Mishra, Y.K., Toncu, D.C. and Syväjärvi, M., **2022.** The progress and roadmap of metal–organic frameworks for high-performance supercapacitors. ***Coordination Chemistry Reviews***, *473*, p.214771.