MANIPAL UNIVERSITY
JAIPUR

October-December 2025

BIOSCIENCES PATRIKA

2025 stands as a year of growth.

Empowering minds, inspiring progress, achieving excellence.

📰 NEWSLETTER

EDITORIAL NOTE!!

It is with great pride that we present this edition of our newsletter a true reflection of the collective spirit and accomplishments of our department. More than a simple compilation of updates, it represents the creativity, dedication, and collaboration that define our community.

*Guided by **Dr. Priya Shukla**, the editorial team spearheaded the process—conceptualizing the structure, curating meaningful content, and highlighting the most impactful achievements. Their thoughtful design approach, focused on clarity, visual appeal, and engagement, has shaped the newsletter into an informative and inviting resource.*

Equally significant has been the enthusiastic involvement of our faculty members. Their valuable suggestions, active participation in discussions, and contributions of ideas enriched the content and ensured that this edition captures the breadth of expertise within the department. From sharing milestones to refining the narrative, every faculty member played a vital role in bringing this publication to life.

This newsletter stands as more than a document—it is a celebration of teamwork. When diverse perspectives, creativity, and a shared vision come together, the result is a resource that informs, inspires, and strengthens our sense of belonging. We hope this edition resonates with every reader and reinforces the pride we share in being part of such a dynamic academic family

Thank you

Editorial Board

WELCOME TO OUR NEW FACULTY MEMBERS IN BIOSCIENCES!!!

The Department of Biosciences is proud to announce the appointment of esteemed faculty members whose expertise spans bioscience, bioengineering, bioinformatics, and microbial technologies. Their diverse academic backgrounds and innovative research perspectives will further strengthen the department's interdisciplinary approach to education and discovery.

With their arrival, the department reaffirms its commitment to advancing scientific excellence, fostering collaborative innovation, and preparing the next generation of scientists. We look forward to their contributions in shaping the future of bioscience through impactful research and dedicated mentorship.

Dr. Arti Kataria

I am a trained pathobiologist and biochemist with a strong interdisciplinary background in infectious disease research. I completed my M.Sc. in Biotechnology from Banaras Hindu University, followed by a Ph.D. in Biological Sciences from the Indian Institute of Technology (IIT) Delhi, where my research focused on understanding tuberculosis and its etiological agent, Mycobacterium tuberculosis. After my doctoral training, I pursued postdoctoral research at the National Institutes of Health (NIH), United States, where I investigated Lyme disease, a tick-borne infection caused by the spirochete Borrelia burgdorferi. During this period, I gained advanced expertise in gene knockout generation, mammalian infection models using mice and rats, and the identification of metabolic vulnerabilities as potential therapeutic targets to combat Lyme disease.

I have participated in more than 20 national and international conferences and have been invited to speak on global platforms, including the American Society for Microbiology (ASM) and the Gordon Research Conference (GRC). My research contributions span over 15 publications, including peer-reviewed research articles, review papers, and book chapters.

In November 2025, I joined Manipal University Jaipur as an Assistant Professor. In the upcoming even semester, I will be teaching courses in Medical Biotechnology, Medical Microbiology, and the Effects of Pollution on Human Health, along with their associated laboratory components. In addition to my teaching

responsibilities, I have been entrusted with departmental roles as the M.Sc. Biotechnology Class Coordinator and the Training and Placement Coordinator.

Dr. Veer Singh

Dr. Veer Singh is currently working as Assistant Professor (Research) in the Department of Biosciences at Manipal University Jaipur. Prior to joining MUJ, he served as a Young Scientist at the ICMR–Rajendra Memorial Research Institute of Medical Sciences, Patna, India. He completed his Ph.D. in Biochemical Engineering from IIT (BHU), Varanasi.

He received Young Scientist Award from the Department of Health Research (DHR), Government of India, with research funding of ₹48.65 lakhs. His research is focused on wastewater treatment, development of eco-friendly adsorbents, material characterization, bioremediation, adsorption, environmental toxicity & human health and nanomaterial for wastewater treatment.

He has published 36 research/review articles in SCI/Scopus-indexed journals, 5 patents, and contributed 17 book chapters in books. He serves as an editor for several reputed journals and has edited multiple books published by reputed international publishers.

The Department warmly welcomes both Assistant Professors and anticipates their valuable contributions in strengthening our teaching, research, and collaborative initiatives.

Research Grant

Prof. Monika Sogani *has been awarded an RSC Researcher Collaborations Grant for her project* ***Scaling WASH Innovations: Building a Regional Platform for Startups and Partnerships in South Asia.*** *The* ***Royal Society of Chemistry*** *has approved funding of* ***£4,930*** *to support the initiative, following a successful review of her application.*

This achievement highlights the importance of fostering regional collaboration and innovation in WASH solutions, and we congratulate Prof. Monika on securing this support for her impactful work. The funding will enable her to strengthen networks among startups, encourage partnerships across South Asia, and accelerate the adoption of sustainable water, sanitation, and hygiene innovations. It also reflects RSC's commitment to supporting research that addresses pressing global challenges.

Prof. Monika's project is expected to create a platform that empowers entrepreneurs and researchers to scale their solutions more effectively, ultimately contributing to healthier communities and improved regional resilience.

Professor Michael Templeton from Imperial College London's Department of Civil and Environmental Engineering, together with ***Prof. Monika Sogani,*** *has been awarded* ***£10,000*** *through the* ***Imperial Global Connect Fund*** *for their collaborative project Building a regional platform for assessing* ***WASH technologies*** *for market readiness and scalable implementation in India and Nepal. The grant will support travel, accommodation, subsistence, and partial staff buy-out time for the Indian academic partner. Imperial will also provide guidance on communications to help raise awareness of the project within its global network. This award underscores Imperial's commitment to fostering international collaboration and advancing innovative solutions in water, sanitation, and hygiene.*

WELCOME FRESHERS!!!

The Department of Biosciences hosted its Freshers' Welcome Ceremony on 9th October at the Sharda Pai Auditorium. The event marked the beginning of an exciting journey for students joining B.Sc. (Hons.) Biotechnology and Microbiology, M.Sc. Food Science and Technology, and M.Sc. Biotechnology. The Head of Department and faculty members extended warm greetings, highlighting the importance of innovation, collaboration, and research excellence. The ceremony set a positive tone for the academic year, as the department looks forward to guiding its new scholars toward success in biosciences department.

Ph.D. Award Announcements!!!

The Department of Biosciences at Manipal University Jaipur is proud to announce the successful completion and award of doctoral degrees to three of its distinguished research scholars. Their work reflects the department's commitment to advancing scientific knowledge, fostering innovation, and contributing to global research in biosciences.

Abhishek Kumar Verma

Guide: *Prof. Sandeep Kumar Srivastava*

Thesis Title: *Computational studies to identify novel therapeutics against mycobacterial NaMN adenyltransferase targeting NAD biogenesis*

Abhishek Kumar Verma's research introduces a comprehensive computational pipeline that highlights the efficacy of computational strategies in expediting early-stage drug discovery. His work provides a reliable basis for further SAR optimization, scaffold enhancement, and subsequent in vitro and in vivo validation. By presenting promising novel chemotypes that target a vital enzyme in Mycobacterium tuberculosis NAD biosynthesis, his thesis significantly advances the understanding of tubercular drug development. His findings have been published in several reputed journals, including Computers in Biology and Medicine, Molecular Simulation, Journal of Biomolecular Structure and Dynamics, and Current Topics in Medicinal Chemistry, underscoring the impact and relevance of his work.

Smita Sisodiya

Guide: *Prof. Mousumi Debnath*

Thesis Title: *Studies on different cultivars of olive and exploring the possibility for applications of raw materials obtained from olive leaf extracts* ***Date of Award:*** *3rd October 2025*

Smita Sisodiya's research focuses on the diverse cultivars of olive and the potential applications of raw materials derived from olive leaf extracts. Her work contributes to the growing body of knowledge in plant biotechnology and natural product research, with implications for food science, nutraceuticals, and sustainable resource

utilization. The study highlights innovative approaches to harnessing plant-derived compounds for industrial and medicinal applications.

Hemlata Sharma

Guide: *Dr. Nitesh Poddar*

Thesis Title: *Studies on the effect of Nano-Osmolyte Conjugate on Structural and Functional Aspects of Physiologically Important Proteins*

Hemlata Sharma's doctoral research explores the role of nano-osmolyte conjugates in modulating the structural and functional aspects of physiologically important proteins. Her findings provide valuable insights into protein stability, folding, and function, contributing to the emerging field of nanobiotechnology. This work opens new avenues for therapeutic applications and enhances our understanding of protein–nanomaterial interactions, which are critical in biomedical research.

The Department of Biosciences celebrates the achievements of these scholars, whose dedication and innovative research have added significant value to their respective fields. Their success reflects the department's mission to nurture scientific talent and drive impactful research. We extend our heartfelt congratulations to ***Abhishek Kumar Verma, Smita Sisodiya, and Hemlata Sharma****, and wish them continued success in their academic and professional journeys.*

📰 International Conference on WASTE Management-2025 (Waste Assessment, Sustainability & Technological Empowerment for Solid and Liquid Waste Management)

*The Department of Biosciences at Manipal University Jaipur organized the **International Conference on WASTE Management-2025** on **11–12 November 2025**, bringing together researchers, academicians, industry experts, and policymakers from across the globe. Centered on the theme "Waste Assessment, Sustainability & Technological Empowerment for Solid and Liquid Waste Management", the two-day event served as a dynamic platform for knowledge exchange and collaboration.*

The conference featured insightful inaugural addresses, technical sessions on bioremediation, waste-to-energy technologies, and circular economy models, as well as panel discussions on policy frameworks and community participation. Students and scholars presented innovative research through papers and posters, highlighting practical solutions for pressing waste management challenges.

By fostering dialogue between academia, industry, and government, the conference underscored the importance of integrating scientific research, sustainable practices, and technological innovation to address global waste concerns, marking a significant step toward building a cleaner and more sustainable future.

Day 1. Inauguration

The inaugural ceremony of the International Conference on WASTE Management-2025 at Manipal University Jaipur began with on-desk registration of participants and dignitaries, followed by the traditional lamp lighting and Saraswati Vandana, symbolizing the pursuit of wisdom and knowledge. Guests were warmly welcomed, setting a gracious tone for the proceedings.

*The ceremony featured welcome remarks by **Prof. Kuldip Singh Sangwan, Dean, Faculty of Science, Technology and Architecture**, who emphasized the importance of sustainability and technological empowerment in waste management. This was followed by an address from **Prof. Ashima Bagaria, Associate Dean, School of Physical and Biological Sciences**, highlighting the role of interdisciplinary collaboration in tackling global waste challenges. Further reflections were shared by **Dr. G. V. Raghunath Reddy, Chief Guest from the Department of Science & Technology, Government of India**, and **Prof. A. B. Gupta, Guest of Honor from MNIT Jaipur**, who stressed the need for innovative approaches and policy support in the field. The session concluded with insights from **Mr. Jai Uppal, Special Guest and Former Director General of IFGE, Noida**, who elaborated on the academic and industrial commitment to fostering innovation and research in sustainable waste management*

Keynote speakers then offered opening reflections on the conference themes, providing valuable insights into waste assessment, sustainable practices, and technological advancements. The President's address underscored the institution's dedication to promoting impactful research and sustainable solutions.

The session concluded with a formal vote of thanks, acknowledging the contributions of organizers, speakers, and participants. A group photograph captured the collective spirit of the occasion, and the ceremony closed with high tea, offering an opportunity for informal networking and interaction among attendees.

Session Commencement

Following the successful inaugural ceremony of the International Conference on WASTE Management-2025 at Manipal University Jaipur, the academic sessions of the conference formally commenced with great enthusiasm. The opening session set the tone for two days of intensive deliberations, bringing together distinguished speakers, researchers, and participants from diverse disciplines.

The first technical session began with keynote addresses that provided a comprehensive overview of the conference theme, Waste Assessment, Sustainability & Technological Empowerment for Solid and Liquid Waste Management. Eminent experts highlighted the global challenges of waste generation and management, while emphasizing the need for innovative technologies, sustainable practices, and collaborative frameworks to address these issues.

Scholars and practitioners presented their research findings, case studies, and technological advancements, covering topics such as waste-to-energy conversion, bioremediation, recycling strategies, and circular economy models. The discussions encouraged active participation from the audience, fostering an environment of knowledge exchange and critical reflection.

The commencement of the sessions marked a significant step in advancing the dialogue on sustainable waste management. By integrating academic insights with practical approaches, the conference created a platform for meaningful collaboration between academia, industry, and policymakers, ensuring that the momentum generated during the inauguration carried forward into impactful discussions and outcomes.


ICWM-2025
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ICWM - 2025

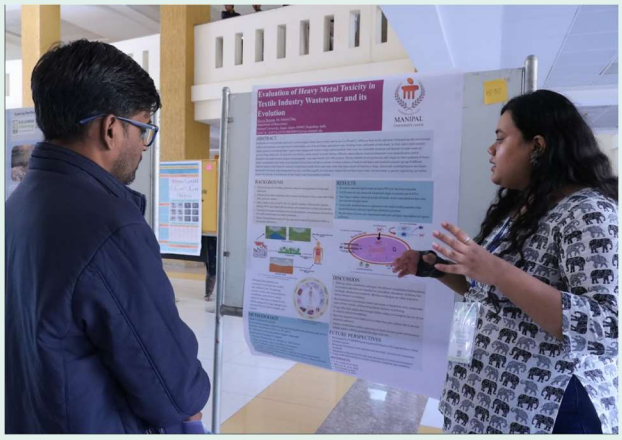

Pretreatment of Sludge: A Sustainable

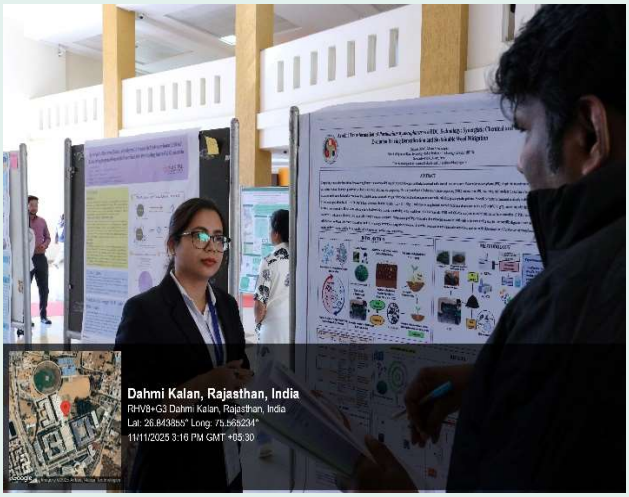
Poster Presentation

The International Conference on WASTE Management-2025 at Manipal University Jaipur featured a vibrant Poster Session, which provided an engaging platform for students, researchers, and young scholars to showcase their innovative ideas and research findings. The session highlighted diverse themes related to solid and liquid waste management, including waste-to-energy technologies, bioremediation approaches, recycling innovations, and sustainable practices within the framework of the circular economy.

Participants presented visually compelling posters that summarized their work, encouraging interactive discussions with delegates, faculty members, and industry experts. The session fostered an atmosphere of collaboration and knowledge exchange, allowing presenters to receive constructive feedback and explore potential applications of their research.

The Poster Session not only celebrated academic creativity but also emphasized the importance of practical solutions to pressing environmental challenges. By bridging theoretical insights with real-world applications, the session contributed significantly to the overall objectives of the conference, inspiring participants to pursue impactful research and sustainable innovations in waste management.





Cultural evening

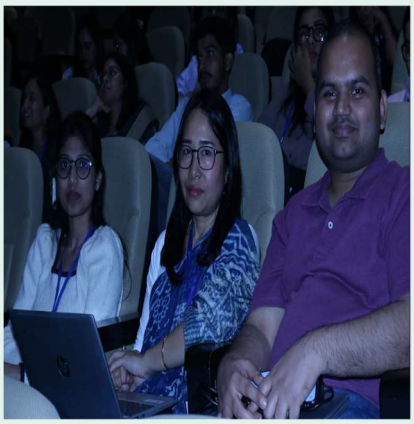
A vibrant Cultural Evening was organized to celebrate India's rich heritage and provide participants with a glimpse of Rajasthan's artistic traditions. The program commenced with a soulful Saraswati Vandana, invoking blessings of the Goddess of Knowledge and setting a serene and auspicious tone for the evening.

This was followed by captivating performances of Rajasthani folk dance and songs, which enthralled the audience with their colorful costumes, rhythmic movements, and melodious tunes. The folk presentations reflected the cultural vibrancy of Rajasthan, showcasing its traditions of storytelling, music, and dance. Delegates and guests from across India and abroad experienced the warmth of local culture, which added a unique dimension to the gathering.

The cultural evening not only offered entertainment but also strengthened the spirit of community and cultural exchange among participants. By blending spirituality with regional artistry, the event created memorable moments and highlighted the importance of cultural heritage in enriching academic and social interactions.

Day 2: Presentation, Interactive Session, and Felicitations

*Day two of the conference commenced with a series of **oral presentations** that highlighted innovative research and practical approaches in solid and liquid waste management. Scholars and professionals presented their findings on topics such as **waste-to-energy technologies, bioremediation methods, recycling strategies, and sustainable urban practices**. The sessions encouraged **active dialogue between presenters and participants**, fostering critical discussions on challenges and opportunities in the field. Several case studies showcased **successful community-driven initiatives and industry collaborations**, underlining the importance of interdisciplinary efforts. The oral sessions provided a platform for **young researchers to share their work**, receiving valuable feedback from experts. Overall, the day's proceedings enriched the conference by combining **academic insights with real-world applications**, paving the way for impactful solutions in sustainability.*



Panel Discussion

A dedicated Panel Discussion on Waste Management was organized to address the pressing challenges faced in handling solid and liquid waste. The session brought together experts from academia, government, and industry, who shared their perspectives on practical solutions and innovative approaches.

Panelists emphasized the importance of community participation, awareness programs, and decentralized waste management systems to ensure effective implementation. Discussions highlighted strategies such as segregation at source, composting, recycling initiatives, and waste-to-energy projects, which can be adapted to diverse contexts.

The dialogue also focused on the role of policy frameworks, municipal bodies, and technological interventions in strengthening waste management practices. Case studies were shared, showcasing successful models of collaboration between citizens and institutions.

The session concluded with a consensus that sustainable waste management requires a multi-stakeholder approach, combining education, policy support, and technological empowerment to create cleaner and healthier environments.

Valedictory Function

The Valedictory Function marked the formal conclusion of the two-day proceedings. The session began with a warm welcome to the dignitaries, participants, and organizing committee members, acknowledging their contributions to the success of the event. Distinguished guests shared their reflections on the conference, appreciating the quality of discussions, presentations, and collaborative spirit that had been fostered throughout.

Key speakers highlighted the importance of continuing research and innovation in waste management and sustainability, encouraging participants to translate the knowledge gained into practical solutions. Certificates and mementos were distributed to presenters and contributors, recognizing their efforts and achievements.

The function also included expressions of gratitude to the organizing team, volunteers, and supporting institutions whose dedication ensured the smooth conduct of the event. The Vote of Thanks formally acknowledged the collective effort, while the closing remarks emphasized the need to carry forward the momentum generated during the sessions.

The Valedictory Function concluded on a positive and inspiring note, leaving participants with renewed commitment to advancing sustainable practices and fostering interdisciplinary collaboration in the future

Vote of Thanks

The conference sessions commenced with insightful presentations and discussions on sustainable waste management practices. Experts and researchers shared innovative approaches, including recycling strategies, bioremediation, and waste-to-energy solutions. Active participation from delegates fostered knowledge exchange and interdisciplinary collaboration throughout the sessions. The proceedings reinforced the importance of integrating science, technology, and community engagement for effective waste management.

Active Participations

Prof. Mousumi Debnath *delivered an invited talk at the* ***4th International Conference on Nanomaterials in Biology (ICNB 2025)****, held at the University of Rajasthan, Jaipur in association with* ***SMRS Jaipur*** *and* ***IKCRI New Delhi****.*

Her presentation, ***"Mimicking Nature's Designs: Lignocellulosic Waste and Biosurfactant-Producing Microorganisms for Synergistic Production of Sustainable Biomaterials,"*** *highlighted innovative approaches for developing eco-friendly biomaterials by integrating waste utilization with microbial processes.*

This talk reflects the department's active role in advancing sustainability and nanobiotechnology research.

The Department of Biosciences is proud to share that ***Dr. Anurag Sharma*** *participated in the prestigious international conference* ***"Emerging Approaches in Risk Assessment and Translational Aspects of Health (EARTH-2025)"****, held at the* ***CSIR–Indian Institute of Toxicology Research, Lucknow****, from* ***November 12–15, 2025****.*

Dr. Sharma delivered a talk titled: ***"Multigenerational Immunotoxicity from Developmental Exposure to Triclosan: Insights from Drosophila melanogaster."***

His presentation highlighted critical findings on the long-term immunotoxic effects of triclosan exposure across generations, using Drosophila melanogaster as a model organism. The research provided valuable insights into developmental toxicology and its implications for human health risk assessment.

This participation underscores the department's active engagement in cutting-edge research and its commitment to contributing to global discussions on toxicology, public health, and translational science

The **International Conference on Empowering Women in Science, Technology, Engineering, Arts and Management (ICEWSTEAM 2025)** was organized by the **School of Physical and Biological Sciences, Faculty of Science, Technology and Architecture (FoSTA)** in collaboration with the **World Forum for Women in Science (WFWS)** and **Indira Gandhi Delhi Technical University for Women (IGDTUW)**.

The conference provided a vibrant platform to highlight the role of women in advancing multidisciplinary research and leadership, fostering dialogue on opportunities, challenges, and future directions for gender equity in academia and industry.

Dr. Shatrunjai Giri served as Co-convenor of the conference, while **Prof. Mousumi Debnath** contributed as session chair and poster session judge, ensuring the successful organization and execution of this significant event. Their active involvement underscored the department's commitment to promoting women's empowerment, encouraging participation in STEM and allied fields, and strengthening collaborative networks that inspire innovation and inclusivity.

The **5th International Conference on Recent Advances in Material Science and Computational Techniques (RAMSACT 2025)** was held from **December 18–20, 2025** at **Manipal University Jaipur**, organized by the **Faculty of Science, Technology, and Architecture** in collaboration with international institutions including the **University of Southern Denmark** and **Sunway University, Malaysia**.

The conference provided a global platform for researchers, academicians, and industry professionals to share innovations through keynote lectures, oral and poster sessions, and networking opportunities. Faculty members from the **Department of Biosciences** actively contributed to its organization: **Prof. Sandeep Kumar Srivastava** (Steering Committee), **Dr. Shatrunjai Giri** (Organizing Secretary), **Dr. Pankaj Chandley** (Abstract Book Design), **Dr. Indresh Maurya** (Poster Session), **Dr. Priya Shukla** (Registration Committee), and **Dr. Anurag Sharma & Dr. Bijaya Haobam** (Technical Committee for Oral Presentations).

Their participation highlighted the department's strong involvement in advancing interdisciplinary research and fostering collaboration in material science and computational techniques. The event not only showcased cutting-edge developments but also strengthened MUJ's reputation as a hub for international academic exchange, encouraging cross-disciplinary dialogue and paving the way for future collaborations that integrate biosciences with material science and computational approaches.

*At the **RAMSACT 2025 International Conference**, held at **Manipal University Jaipur** from **18–20 December 2025**, **Dr. Atar Singh Kushwah** delivered an invited research talk titled "Microbial Drivers of Cervical Epithelial Injury: Mechanistic Insights into Gardnerella-Induced Inflammation and Chromatin Remodeling."*

*In his presentation, Dr. Kushwah discussed recent research on how **cervicovaginal dysbiosis**, particularly Gardnerella vaginalis, actively influences cervical epithelial biology. Using RNA sequencing, epigenetic assays, inflammasome validation, biofilm analysis, and epithelial barrier models, the study demonstrated that dysbiosis is not a passive imbalance but an active driver of **innate immune activation, chromatin remodeling, and barrier disruption**.*

*A key highlight was the **biofilm co-culture data**, showing epithelial-context dependent accumulation, with endocervical cells being more permissive than ectocervical and primary cervical epithelial cells. The talk also presented evidence that Lactobacillus crispatus–derived metabolites and epigenetic modulators can counteract dysbiosis-induced inflammatory, epigenomic, and barrier defects, offering potential translational biomarkers and intervention strategies.*

*The session provided an excellent platform for sharing research outcomes, receiving constructive feedback, and engaging in discussions on the intersections of **microbiome, epigenetics, and women's health**.*

हरिभूमि

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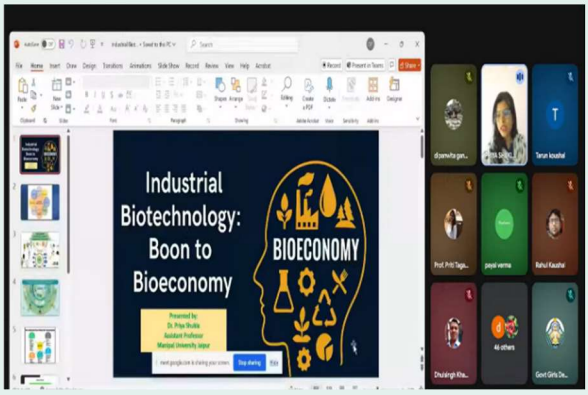
महाविद्यालय में ऑनलाइन विशेषज्ञ व्याख्यान संपन्न

हरिभूमि न्यूज ▶▶ अशोकनगर

प्रधानमंत्री कॉलेज ऑफ़ एक्सीलेंस, शासकीय नेहरू स्नातकोत्तर महाविद्यालय, अशोकनगर (म.प्र.) के प्राणीशास्त्र विभाग द्वारा आईक्यूएसी की अकादमिक उत्कृष्टता गतिविधियों के अंतर्गत ऑनलाइन विशेषज्ञ व्याख्यान का आयोजन किया गया। व्याख्यान के मुख्य वक्ता के रूप में जयपुर राजस्थान के मणिपाल विश्वविद्यालय के बायोसाइंसेज विभाग में कार्यरत सहायक प्राध्यापक डॉ. शत्रुंजय गिरि को आमंत्रित किया गया।

डॉ गिरी ने अपना शोध कार्य दिल्ली की जवाहरलाल नेहरू यूनिवर्सिटी से किया है तथा वे ऑल इण्डिया इंस्टिट्युट ऑफ मेडिकल साइंसेज दिल्ली में भी रिसर्च एसोसिएट के पद पर कार्य कर चुके है। डॉ. गिरि ने अपने व्याख्यान में कार्प संवर्धन विषय पर विस्तृत चर्चा की। उन्होंने कार्प मछलियों को खाद्य उत्पादन के लिए अत्यंत महत्वपूर्ण बताया तथा विभिन्न कार्पप्रजातियों की बहुपोषणीय प्रणाली में उपयुक्तता पर प्रकाश डाला। इसके साथ ही उन्होंने विद्यार्थियों को एम. एस.सी एवं पी.एच.डी. कार्यक्रमों, अनुसंधान फेलोशिप तथा करियर निर्माण से संबंधित महत्वपूर्ण जानकारी और मार्गदर्शन प्रदान किया।

महाविद्यालय की प्राचार्य डॉ रेनू राजेश के अनुसार यह गतिविधि विद्यार्थी एक्सचेंज की दृष्टि से भी अत्यंत उपयोगी सिद्ध हुई, क्योंकि इसमें लीड कॉलेज शासकीय नेहरू महाविद्यालय, अशोकनगर के साथ- शासकीय गणेश शंकर विद्यार्थी महाविद्यालय, मुंगावली के छात्र-छात्राओं ने भी सहभागिता की। कार्यक्रम में शासकीय महाविद्यालय मुंगावली के प्राणीशास्त्र विषय के सहायक प्राध्यापक डॉ. करण सिंह राजपूत एवं डॉ. गब्बर सिंह लोधी सहित मोनिका नामदेव उपस्थित रहीं। विद्यार्थियों में चांदनी शाक्य, खुशबू कुशवाहा तथा नैना नमदेव ने अपनी जिज्ञासाओं के माध्यम से सक्रिय भागीदारी दी। सत्र का आयोजन एवं संचालन विभागाध्यक्ष डॉ. दीक्षा भट्ट द्वारा किया गया जिसमें लगभग 60 विदयार्थी उपस्थित रहे।

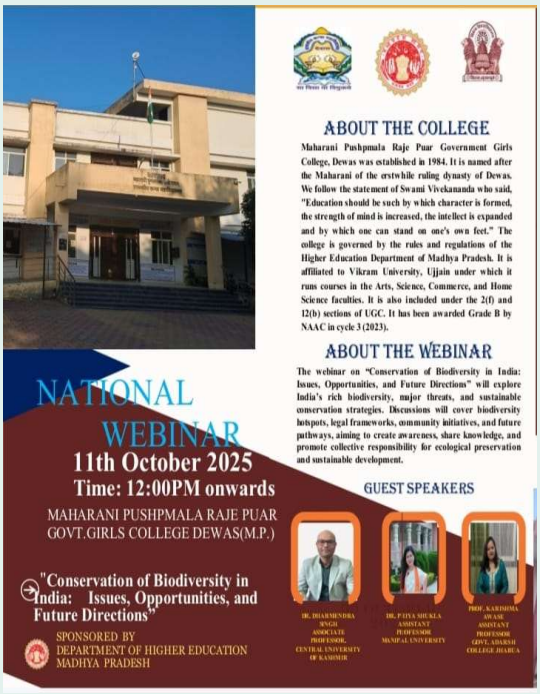


***Dr. Shatrunjai Giri**, Department of Biosciences, Manipal University Jaipur, delivered an invited lecture in the **Expert Lecture Series** organized by **PMCOE, Government Nehru PG College, Ashoknagar, Madhya Pradesh**, under the aegis of **IQAC and the Department of Zoology**.*

His talk on "Carp Culture" provided valuable insights into aquaculture practices, emphasizing sustainable fish farming techniques and their relevance to food security and rural livelihoods. The lecture enriched participants' understanding of applied zoology and highlighted practical approaches for enhancing productivity in aquaculture systems.

*A **National Seminar on Environmental Sustainability and Climate Change** was organized at **Government College Bhainsdehi, District Betul (M.P.)**. The seminar brought together academicians, researchers, and students to deliberate on pressing environmental challenges and sustainable solutions.*

***Dr. Priya Shukla** from Manipal University Jaipur chaired one of the technical sessions, facilitating discussions on climate resilience, sustainable practices, and innovative approaches to environmental conservation. The session encouraged active participation and highlighted the importance of interdisciplinary collaboration in addressing global environmental issues.*



Dr. Priya Shukla, *Department of Biosciences, Manipal University Jaipur, was invited as a* ***Guest Speaker*** *at the* ***National Webinar on "Conservation of Biodiversity in India: Issues, Opportunities and Future Directions"*** *organized by Maharani Pushpmala Raje Puar Government Girls College, Dewas (M.P.).*

She delivered a talk on the topic ***"Circular Bioeconomy",*** *highlighting sustainable approaches to biodiversity conservation, resource efficiency, and innovative strategies for integrating bio-based solutions into environmental management.*

The session emphasized the role of circular bioeconomy in addressing ecological challenges while creating opportunities for sustainable development.

The webinar provided a valuable platform for knowledge exchange and inspired participants to adopt interdisciplinary approaches toward biodiversity conservation and climate resilience.

The ***International Conference on Sustainable Energy and Environmental Challenges*** *was held at* ***IIT Jodhpur****, bringing together experts, researchers, and academicians to discuss innovative solutions for global environmental issues.* ***Dr. Izharul Haq*** *delivered an insightful talk on "Circular Economy through Sludge Valorization", emphasizing the transformation of waste into valuable resources and showcasing sustainable approaches to sludge management.*


X International Conference
on
Sustainable Energy and Environmental Challenges
(X SEEC)

CERTIFICATE OF PARTICIPATION

This is to certify that

Dr. Izharul Haq

Manipal University Jaipur, Rajasthan

has presented his/her

INVITED TALK

on the title

" *Circular Bioeconomy through Sludge Valorization: A Sustainable Approach to Methane Production with Process Kinetics and Toxicity Profiling* "

in the X International Conference on Sustainable Energy and Environmental Challenges jointly organized by IIT Jodhpur and ISEES from 15th to 18th December 2025.

Dr. Akhilendra Pratap Singh
Organizing Secretary, X SEEC

Dr. Ankur Gupta
Convenor, X SEEC

His presentation highlighted strategies such as bioenergy recovery, resource recycling, and integration into circular economy models, demonstrating how sludge valorization can reduce environmental impact while contributing to renewable energy solutions.

Industry Visit

*Students of the Department of Biosciences visited **Ayushraj Enterprises Pvt. Ltd., Jaipur**, a GMP-certified manufacturer of pharmaceuticals, nutraceuticals, and Ayurvedic formulations. The visit, held at the company's facility, provided valuable exposure to the manufacturing process, quality testing, packaging, and regulatory compliance involved in herbal and nutraceutical product production.*

The objective of the visit was to understand large-scale production of formulations such as DIA Free Juice, observe quality assurance and control standards, and gain hands-on knowledge of analytical testing procedures. Students also explored the use of advanced instruments in extraction, formulation, and QC evaluation.

In the Herbal Extraction Division, processes such as raw material authentication, phytochemical extraction, filtration, and evaporation were demonstrated. The Formulation & Production Unit showcased the preparation of tablets, capsules, syrups, and ointments under hygienic conditions, along with granulation, compression, coating, packaging, and labeling.

The Analytical and Quality Control Laboratory introduced students to physicochemical testing and modern instruments including HPLC, HPTLC, FTIR, spectrophotometers, stability chambers, and microbiology incubators. Techniques such as FTIR for functional group analysis, HPLC for compound purity, and HPTLC for plant extract testing were explained. Microbial load limits for raw materials were also highlighted (Yeast/Mold: 100 cfu; Bacteria: 1000 cfu).

This visit helped students gain practical insights into industrial workflows, microbiological and phytochemical testing, and career opportunities in R&D, production, quality control, and regulatory affairs.

📰 Invited Lectures!!!

The Department of Biosciences, SPBS, in collaboration with the Department of English and MUJ-HR, organized an expert lecture on "Office English Communication Skills" at Manipal University Jaipur on 18th November 2025 under SDG 4: Quality Education.

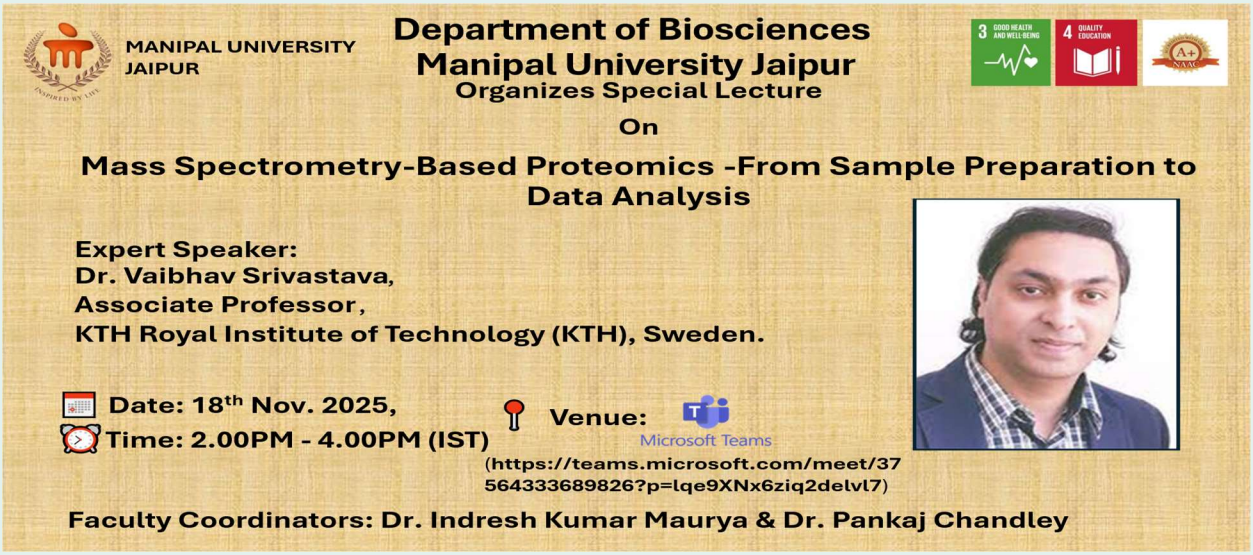
The session aimed to train non-teaching staff, technical personnel, and administrative staff in effective office communication, focusing on practical English usage in daily interactions. Participants gained valuable skills in group engagement, coaching techniques, and workplace communication aligned with organizational objectives.

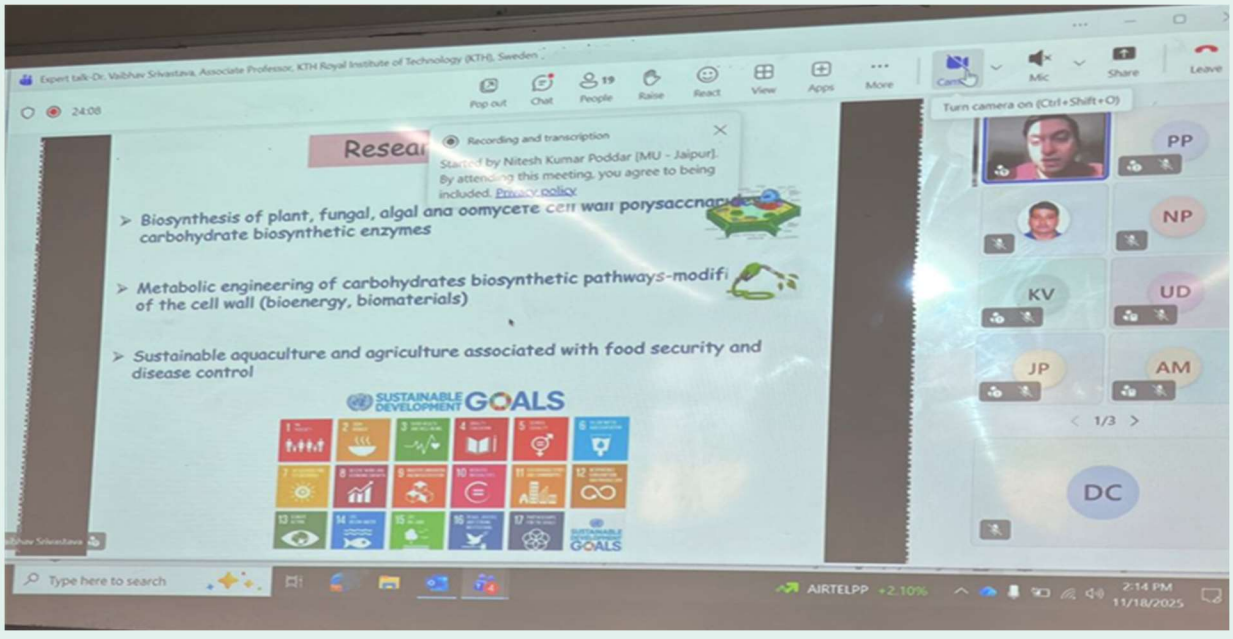
This initiative enhanced professional competence and reinforced MUJ's commitment to quality education and capacity building.

Expert Lecture!!!

The Department of Biosciences, SPBS, Manipal University Jaipur organized an online international expert lecture on "Mass Spectrometry-Based Proteomics – From Sample Preparation to Data Analysis" on 18th November 2025, under SDG 3: Good Health and Well-Being and SDG 4: Quality Education.

The lecture aimed to train faculty members, scientists, research scholars, and technical staff in advanced proteomics techniques, while also highlighting career opportunities for students in Biotechnology and Microbiology. Participants gained insights into sample preparation, data analysis, and modern applications of mass spectrometry, along with skills in effective facilitation, coaching, and performance enhancement.



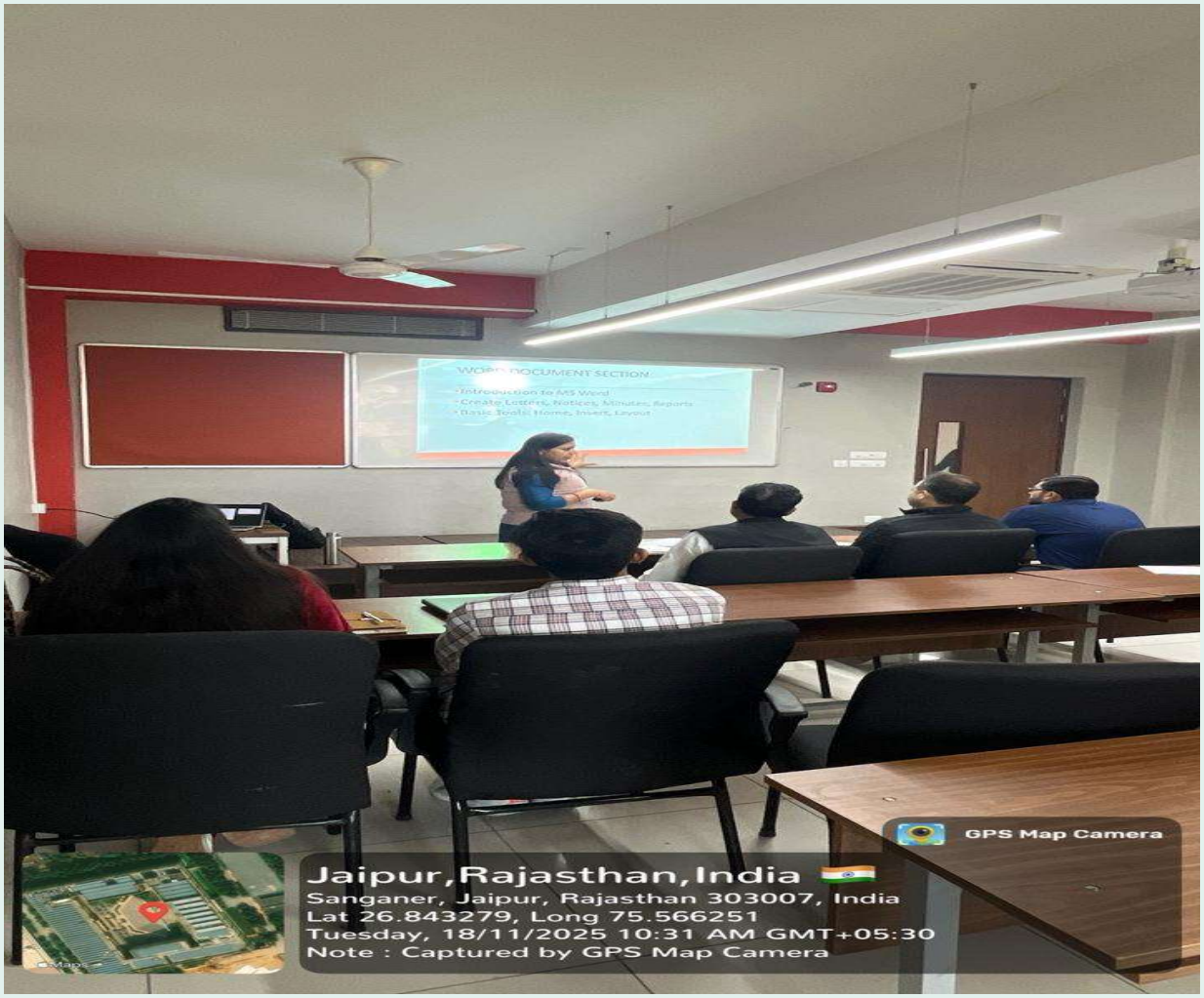


Expert Lecture

The Department of Biosciences, SPBS, in collaboration with MUJ-HR, organized an expert lecture on "Office Computer Skills" at Manipal University Jaipur on 18th November 2025, under SDG 4: Quality Education.

The session aimed to train non-teaching staff, technical personnel, and administrative staff in fundamental computer skills for daily office interactions. Participants gained practical knowledge in using basic office applications, enhancing efficiency, and improving workplace communication.

The workshop benefitted scientific staff and office personnel across MUJ, equipping them with skills for effective participation, coaching techniques, and performance enhancement aligned with organizational objectives.

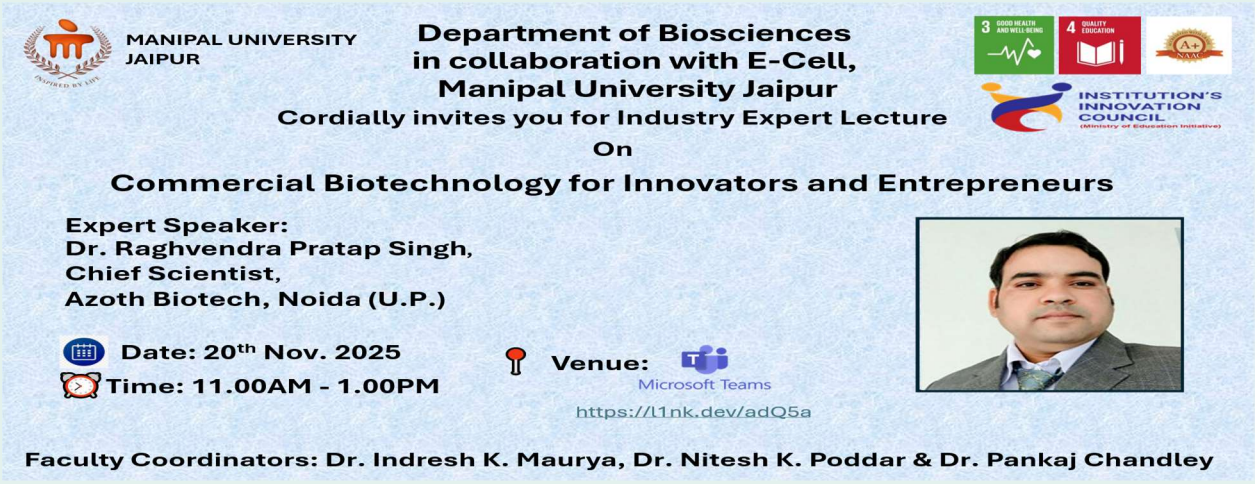


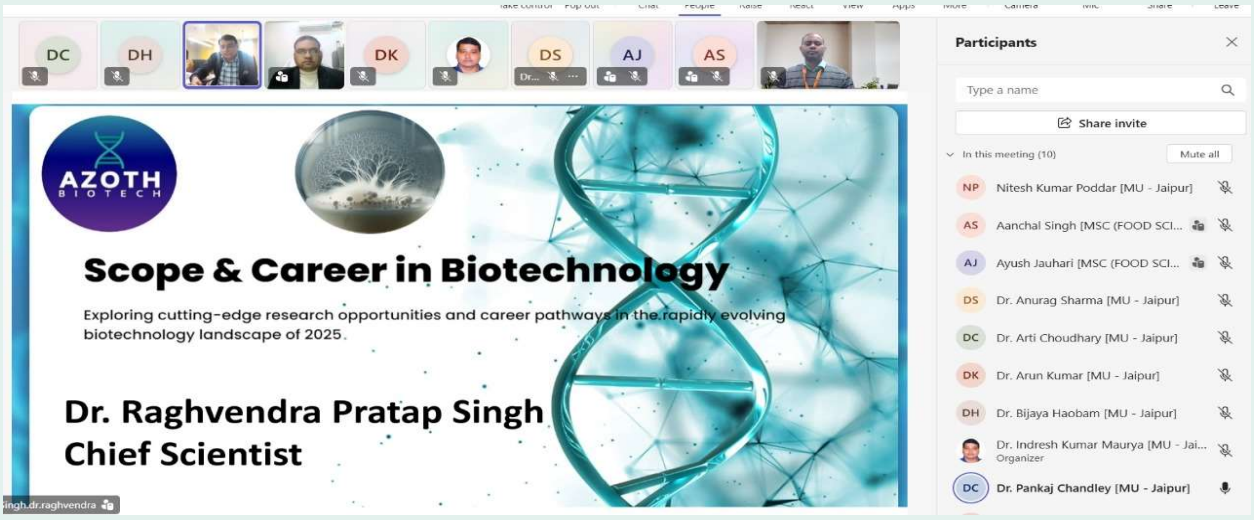
Invited Lecture!!

The Department of Biosciences, SPBS, in collaboration with MUJ-EM Cell, organized an online industry-expert lecture on "Commercial Biotechnology for Innovators and Entrepreneurs" on 20th November 2025 at Manipal University Jaipur. The event was aligned with SDG 3: Good Health and Well-Being and SDG 4: Quality Education.

The lecture aimed to train faculty members, scientists, research scholars, and technical staff in industrial biotechnology, while also highlighting career opportunities for B.Sc., M.Sc., and Ph.D. students. Participants gained insights into impactful training methods, facilitation skills, and coaching techniques to enhance performance and align with organizational objectives.

The workshop benefitted faculty, scientific staff, and students across MUJ, strengthening their knowledge base and fostering innovation and entrepreneurship in biotechnology.





International WASH Workshop!!!

Prof Monika Sogani, *Department of Biosciences, Manipal University Jaipur organized an* ***International Workshop on "Building a Regional Platform for Assessing WASH Technologies for Market Readiness and Scalable Implementation in India and Nepal"*** *on* ***2 December 2025****. The workshop brought together experts from academia, industry, government, and international organizations to deliberate on scalable, affordable, and inclusive Water, Sanitation, and Hygiene (WASH) solutions.*

The sessions included inaugural addresses, invited talks, and live technology demonstrations covering wastewater treatment, water diagnostics, desludging technologies, and integrated community-based models. Collaborative discussions emphasized India–Nepal cooperation, pilot site identification, and joint proposal development, with funding opportunities highlighted from agencies such as ADB, USAID, BMGF, UNICEF, BIRAC, and DST.

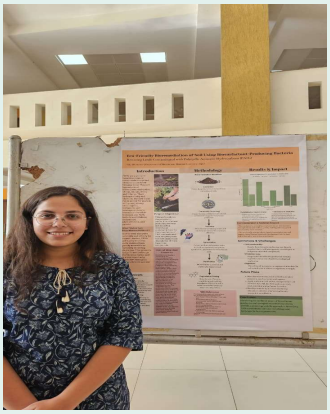
Key outcomes *included the initiation of a regional WASH technology assessment platform, formation of thematic working groups, strengthening of research networks, and roadmap development for collaborative projects. The workshop laid a strong foundation for advancing market-ready WASH solutions in South Asia*

Students Achievements!!!

*Research Scholars from the Department of Biosciences, Manipal University Jaipur, achieved notable recognition at prestigious international conferences in 2025 under the supervision of **Prof. Monika Sogani**.*

- ***Samiksha Verma** (Reg. No. 23FS30SBS00059) was awarded the **Best Poster Award** at SCOPE 2025, IIT Kanpur (22–24 November 2025) for her poster titled "Microbial-Chitosan Composites for Sustainable Water Treatment."*
- ***Samiksha Verma** (Reg. No. 23FS30SBS00059) was awarded **Appreciation Award** for Poster Presentation at the International Conference on Water Management (ICWM 2025) held at Manipal University Jaipur, India, on 7-8 November 2025, for the poster presentation titled "Microbial-Polymer Hybrid Systems as Eco-Innovative Biosorbents for Heavy Metal Removal from Aqueous Solutions".*
- ***Himanshi Sen** (Reg. No. 231051004) received the **Best Oral Presentation Award** at IC-STEEH 2025, VIT Vellore (17–19 September 2025) for her presentation on "Ecosafe Groundwater Ion Remediation with Biochar-Microbial Composites."*

***Isha Dhanawat** (Reg. No. 23FS10BIO00071), Research Scholar under the supervision of **Prof. Mousumi Debnath**, Department of Biosciences, Manipal University Jaipur, was awarded the **Best Poster Award** at ICEWSTEAM 2025 (06–07 October 2025) for her poster titled "Eco-friendly bioremediation of soil using biosurfactant-producing bacteria: Restoring lands contaminated with polycyclic aromatic hydrocarbons (PAHs)."*



Alumni Talk-a-Thon

*The **Department of Biosciences,** Manipal University Jaipur, in association with the **Directorate of Alumni Relations, Manipal University Jaipur Alumni Association (MUJAA)**, and the **Biotech Club**, MUJ, organized an Alumni Talk-a-Thon to strengthen alumni–student engagement and foster academic–professional networking. The event was coordinated by **Prof. Mousumi Debnath.***

The program featured distinguished alumni who shared their career journeys, research experiences, and industry insights, providing valuable guidance to current students. Sessions highlighted diverse opportunities in biosciences, ranging from higher education and research to careers in healthcare, biotechnology, and environmental sciences. Alumni emphasized skill development, interdisciplinary learning, and adaptability as key factors for success.

The interactive format allowed students to ask questions, gain mentorship, and build connections with alumni, reinforcing the department's commitment to nurturing a vibrant academic community and preparing students for global opportunities.

Guest Talk

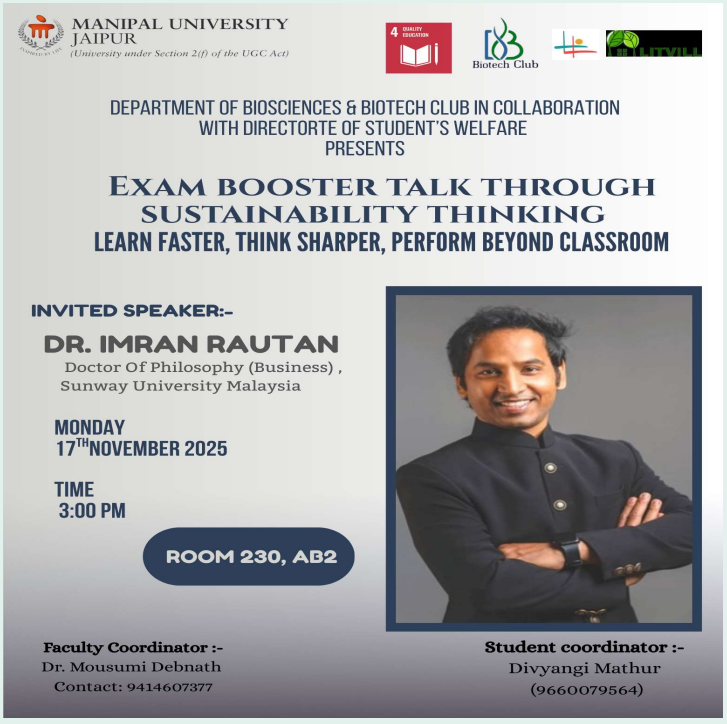
EXAM BOOSTER TALK THROUGH SUSTAINABILITY THINKING

"Learn Faster, Think Sharper, Perform Beyond Classroom"

*On **17th November 2025**, the **Department of Biosciences** and **Biotech Club**, in collaboration with the **Directorate of Student Welfare (DSW), Manipal University Jaipur**, organized an academic guest talk titled "Exam Booster Talk Through Sustainability Thinking: Learn Faster, Think Sharper, Perform Beyond Classroom."*

*The invited speaker, **Dr. Imran Rautan** (PhD, Sunway University, Malaysia), delivered an inspiring lecture on sustainability-oriented learning strategies, cognitive development, and performance optimization beyond traditional classroom methods. The session introduced students to smart study techniques, critical thinking, and lifelong learning approaches, while also motivating them to view exams as tools for building skills rather than final goals.*

*The event, coordinated by **Prof. Mousumi Debnath** (Faculty Coordinator) and **Divyangi Mathur** (Student Coordinator), included an interactive Q&A session and was well-received by students and faculty. It significantly contributed to academic enrichment and holistic student development at MUJ.*



📰Farewell

*The **Department of Biosciences, Manipal University Jaipur**, organized a heartfelt **Farewell Ceremony** for the outgoing batch of **M.Sc. Biotechnology students**. The event was marked by warmth, gratitude, and celebration, as faculty members and juniors came together to bid farewell to the graduating students.*

The program included welcome addresses, sharing of memories, cultural performances, and expressions of appreciation for the contributions of the outgoing batch. Faculty members acknowledged the academic achievements and personal growth of the students, encouraging them to carry forward the values of integrity, innovation, and excellence into their future endeavors.

Students expressed their gratitude to the department for its guidance and support, while juniors extended best wishes through creative performances and tokens of remembrance.

The farewell concluded with an atmosphere of joy and nostalgia, reinforcing the strong bond between students and faculty in the Department of Biosciences.

NEWSLETTER

DEPARTMENT OF BIOSCIENCES

RESEARCH AND PUBLICATIONS

- *Dadhich A,* ***Sharma MM.*** *Remediation of cadmium-contaminated soil using Bacopa monnieri (L.) Wettst. Synergistic role of salicylic and jasmonic acids in Phytostabilisation and neuroprotective bacoside A biosynthesis. Current Research in Biotechnology. 2025 Oct 22:100347.*

- *Giri R,* ***Singh A****, Sharma RK. In silico analysis of neuroactive compound biosynthesis in probiotic Lactobacillus spp. via protein association networks. Discover Life. 2025 Dec;55(1):39.*

- *Yadav S, Kajala R, Rajpurohit D, Upadhyay SK, Kumar P,* ***Singh A****, Jain D. Role of newly isolated plant growth-promoting lead-tolerant bacteria in lead bio-remediation and plant growth performance under lead stress. Annals of Microbiology. 2025 Oct 1;75(1):27.*

- *Chauhan M, Mahendru A, Uppal K, Rao RS,* ***Suravajhala P,*** *Polipalli SK. CRISPR/Cas systems in therapeutics: Transforming gene editing into medical solutions. Indian Journal of Biochemistry and Biophysics (IJBB). 2025 Jul 28;62(8):813-26.*

- *Kumar MS, Krishna MB, Soman KP, Stanley J, Pourmand N,* ***Suravajhala P****, Babu TS. Benchmarking long-read assembly tools and preprocessing strategies for bacterial genomes: A case study on E. coli DH5α. Biotechnology Reports. 2025 Oct 9:e00931.*

- ***Debnath, M.****, Aneja, D. Waste valorization utilizing green nanotechnology: a sustainable approach for pomegranate peel agro wastes in skincare*

formulations. Bioresour. Bioprocess. ***12****, 152 (2025).* *https://doi.org/10.1186/s40643-025-00958-6*

- *Rajgadia N, Joshi S,* ***Debnath M.*** *Biodegradation of polyhydroxyalkanoate film in soil: a sustainable approach for bioplastic management. Preparative Biochemistry & Biotechnology. 2025 Oct 28:1-8.*

- *Joshi, S. and* ***Debnath, M.,*** *2025. Likelihood of polyhydroxyalkanoates production using canola oil cake and specific bacterial isolates for eco-friendly bioplastics. Biomaterials Science, 13(23), pp.6613-6636.*

- *Sonu K,* ***Sogani M****, Syed Z, Rajvanshi J, Sengupta N. Performance evaluation of microbial fuel cell using ceramic anode blended with rice husk ash and mild steel dust. Scientific Reports. 2025 Dec 4.*

- *Sonu K,* ***Sogani M****, Sen H, Maheshwari K, Tiwari MK. Water hyacinth-assisted microbial fuel cells: A review on prospects for bioenergy and wastewater treatment. Environmental Progress & Sustainable Energy.:e70240.*

- *Sonu K, Sen H, Maheshwari K, Tiwari MK,* ***Sogani M****. Enhanced textile dye wastewater treatment and power generation in microbial fuel cells using Bixa orellana fruit shell–derived biochar. Biodegradation. 2025 Dec;36(6):125.*

- *Sengupta N,* ***Sogani M****, Khan AA, Balakrishna K, Syed Z, Maheshwari K, Rajvanshi J, Gupta D, Sen H, Verma S. Arsenic crisis: unravelling toxicity, microbial solutions, and green bioremediation. Environmental Geochemistry and Health. 2025 Dec;47(12):1-8.*

- *Sonu K,* ***Sogani M****, Tiwari MK, Syed Z, Maheshwari K. Performance Assessment of Microbial Fuel Cells Utilizing Reverse Osmosis Concentrate and Sewage Wastewater in*

Conjunction with Palmyra Palm Male Inflorescence Anodes. International Journal of Environmental Research. 2025 Dec;19(6):278.

- *Gupta D,* ***Sogani M****, Anand V, Syed Z, Verma S, John PJ. Exploring the potential of algal-based hollow fibre membrane bioreactors for aquaculture wastewater treatment. Applied Water Science. 2025 Oct;15(10):258.*

- *Sonu K,* ***Sogani M****, Maheshwari K, Syed Z, Rajvanshi J, Sengupta N. Innovative Use of Discarded Clay Cups in Constructed Wetland With Ipomoea carnea for Saline Water Treatment. Water Environment Research. 2025 Sep;97(9):e70182.*

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- Masood S, **Kushwah AS**, Srivastava K, Banerjee M. Association of CDH1 gene variant C> a (rs16260) with expression and treatment outcomes in cervical cancer patients receiving chemoradiotherapy. Gene Reports. 2025 Sep 19:102344.

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- Dadhich, A. and **Sharma, M.M.,** 2025. Remediation of cadmium-contaminated soil using Bacopa monnieri (L.) Wettst. Synergistic role of salicylic and jasmonic acids in Phytostabilisation and neuroprotective bacoside A biosynthesis. Current Research in Biotechnology, p.100347.

- Dadhich, A., Sharma, Y., kumar Verma, A., **Nema, R.** and **Sharma, M.M.,** 2025. Bacoside-A from Bacopa monnieri (L.) Wettst.: Molecular targets, preclinical insights, and therapeutic potential in type 2 diabetes mellitus and neurodegeneration. Biomedicine & Pharmacotherapy, 191, p.118466.

- *Dwivedi, A. and **Giri, S.,** 2025. CYTOTOXICITY OF NANOPARTICLES ON LIVING CELLS. Studies in Science of Science | ISSN: 1003-2053, 43(10), pp.364-380.*

- *Awasthi, S., Chaurasia, T.P., Verma, N., Chaturvedi, S., Kalani, A., Awasthi, S.K., Yadav, P.K., **Singh, A.,** Singh, G. and Mishra, R., 2025. Promoter methylation signature of SLC16A11 gene reavels poor prognosis in head and neck squamous cell carcinoma. Human Gene, p.201525.*

BOOK

- ***Haq I**, Goswami AP, Kalamdhad AS. Editors. Water and Wastewater: Assessment, Treatment and Management Using New Technologies. DOI: https://doi.org/10.1007/978-3-031-94253-2. Publisher: Springer Cham; eBook ISBN: 978-3-031-94253-2; Published: 27 October 2025. Ed: 1, Pages: XIV, 117*

- ***Haq I**, Shah MP, editors. Advanced Treatment Technologies for the Removal of Microplastics in Wastewater. DOI: https://doi.org/10.1201/9781003379386; Publisher: CRC Press. eBookISBN: 9781003379386; 2025 May 27.*

📰 NEWSLETTER

OPPORTUNITIES!!

We are excited to announce several open positions within the department for those eager to advance their academic and research careers. Currently, we are offering opportunities for Research Assistants, Internships, and PhD Programs across various ongoing projects and specialized fields. These positions provide a unique chance to work alongside esteemed faculty members and contribute to cutting-edge research while gaining invaluable hands-on experience.

For inquiries,

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NEWSLETTER

CLOSING REMARKS!!

-by Editors

It gives us immense pleasure to present this edition of our departmental newsletter, which reflects the collective achievements and vibrant spirit of our community. This quarter has been especially significant, marked by the successful conduct of the ***International Conference on WASTE Management-2025 (Waste Assessment, Sustainability & Technological Empowerment for Solid and Liquid Waste Management)****, a landmark event that fostered global dialogue on sustainability and innovation.*

We also celebrated the ***joining of new faculty members****, extended a warm* ***welcome to our freshers****, and bid a heartfelt* ***farewell to the outgoing M.Sc. Biotechnology batch****. Alongside these milestones, the department proudly recorded several* ***noteworthy publications****, underscoring our commitment to impactful research and academic excellence.*

Together, these accomplishments highlight the department's growth, resilience, and dedication to advancing knowledge. We look forward to continuing this journey with the same enthusiasm and sharing more inspiring updates in the editions ahead.

Dr. Priya Shukla
Editor,
Biosciences Patrika