BIOCHEMIE

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MANIPAL UNIVERSITY
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NEWSLETTER

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EDITORIAL

It is with great excitement and anticipation that we present the fourth edition of our department's newsletter, BIOCHEMIE.
This issue marks another chapter of initiatives, achievements, and collaborations that highlight the ongoing efforts within our department and beyond. It showcases key accomplishments, research activities, and events from the fourth quarter of 2025.

We envision BIOCHEMIE as a platform for sharing ideas, celebrating milestones, and amplifying the voices that make our department unique. Together, let's continue to nurture a culture of curiosity, excellence, and inclusivity.

Dr. Esha Bala
Chief Editor

ABOUT THE UNIVERSITY

The Manipal Education and Medical Group is an established research and healthcare leader. In over seven decades, it has transformed the lives of more than 300,000 students from over 59 countries. The group includes five universities: Manipal Academy of Higher Education (MAHE, Karnataka), Sikkim Manipal University (Sikkim), American University of Antigua (Caribbean Islands), Manipal International University (Malaysia), and Manipal University Jaipur (Jaipur).

Manipal University Jaipur (MUJ) was launched in 2011 at the Rajasthan government's invitation as a self-financed state private university. MUJ has redefined academic excellence in the region with the Manipal way of learning, which inspires students of all disciplines to learn and innovate through hands-on practical experience.

The multidisciplinary university offers career-orientated courses at all levels, i.e., UG, PG, and doctoral, and across diverse streams, including engineering, architecture and planning, fashion design, interior design, fine arts, hospitality, humanities, journalism and mass communication, basic sciences, law, commerce, computer applications, management, etc. Some PG programmes are also available in the research mode.
MUJ boasts best-in-class infrastructure, including state-of-the-art research facilities and a modern, digital library. In line with Manipal University's legacy of providing quality education to its students, the campus uses the latest technology to impart education.

ABOUT THE DEPARTMENT

The Department of Biotechnology and Chemical Engineering at Manipal University Jaipur (MUJ) fosters innovation and interdisciplinary learning. Established in 2014 as the Department of Chemical Engineering, it expanded in 2023 to include 2 new programs in Biotechnology and Computer Science and Biosciences, reflecting the growing demand for biotechnological and computational solutions.
The department has experienced faculty from reputed national and international institutions who are actively engaged in research. The department has several externally funded projects from government and industries, including the prestigious INR 10-crore DST PURSE grant. The funding strengthens infrastructure and promotes interdisciplinary collaboration.

The industry-oriented curriculum emphasizes biotechnology, computational biology, bioinformatics, chemical engineering, sustainable materials, renewable energy, environmental engineering, and process design. The labs are well-equipped to provide hands-on training and encourage research among students. Our graduates pursue careers as technical consultants, production and process engineers, research scientists, and quality analysts. Committed to professional and ethical education, the department aims to address industrial and societal challenges while contributing to a more sustainable and healthy future.

NEW FACULTY MEMBER

Dr. Asaithambi. P
Associate Professor (Research)

The Department of Biotechnology and Chemical Engineering is delighted to welcome Dr. Asaithambi to our academic family. Dr. Asaithambi brings a wealth of knowledge and research expertise, having completed his Postdoctoral Research at the University of Malaya, Malaysia, earned his Ph.D. from the National Institute of Technology, Tiruchirappalli, and holds a M.Tech from Anna University, Coimbatore and B.Tech from Anna University, Chennai.

Dr. Asaithambi's research interests lie in Environmental Engineering, Water Treatment, and Modeling & Optimization using ML-RSM approaches. Recognized as one of the World's Top 2% Scientists, he has contributed significantly to both academia and applied research.

RESEARCH PUBLICATIONS

- Singh, S., Uttam, V., Haque, S., Tuli, H. S., **Mishra, P.**, & Jain, A. (2025). Comprehensive Review on Outcomes from Phase 3 Clinical Trials of Drugs in Multiple Myeloma. *Cancer Treatment and Research Communications*, 101041. https://doi.org/10.1016/j.ctarc.2025.101041.
- Mouli, K. V. C., Mani, D., Ramachandran, T., Kumar, Y. A., Ghosh, A., **Somu, P.**, & Mangiri, R. (2025). A new era in energy storage: in situ and operando characterization of 2D materials-based devices. *Materials Chemistry and Physics*, 131660. https://doi.org/10.1016/j.matchemphys.2025.131660.
- Goel, A., Saurabh, P., Bisen, D., Dubey, R., & **Somu, P.** (2025). Exploring automated machine learning to develop facial expression recognition systems. *Discover Applied Sciences*, *7*(10), 1165. https://doi.org/10.1007/s42452-025-07728-1.
- Mohandoss, S., Roy, P., Ahmad, N., Gomez, P. L. A. M., Velu, K. S., **Somu, P.**, & Kim, S. C. (2025). A comprehensive review of multifunctional carbon quantum dots (CQDs): heteroatom, metal, and lanthanide doping for advanced sensing applications. *Inorganic Chemistry Communications*, 115698. https://doi.org/10.1016/j.inoche.2025.115698.
- Chauhan, D., Nagar, P. K., Pandey, K., & **Pandey, H.** (2025). Optimizing the antifouling performance of mixed patterned membranes: a computational study for water treatment. *Applied Water Science*, *15*(11), 270. https://doi.org/10.1007/s13201-025-02616-w.
- Gunasekaran, M., Perumal, V., **Somu, P.**, & Kumar R. M, S. (2025). Phytocompounds as sustainable therapeutics for breast cancer treatment: a comprehensive review on isolation and delivery strategies. *Discover Applied Sciences*, *7*(11), 1337. https://doi.org/10.1007/s42452-025-07745-0.
- Sharma, A., Saini, N., Chauhan, D., Awasthi, K., **Pandey, H.**, & Pandey, K. (2025). Enhancing hydrogen separation performance through ZIF-8-incorporated PMMA–PC blend-based mixed matrix membranes. *Nanoscale*, *17*(47), 27423-27437. https://doi.org/10.1039/D5NR03607K.
- Mohandoss, S., Roy, P., Ahmad, N., Gomez, L. A. M., Velu, K. S., **Somu, P.**, & Haldar, D. (2025). A Comprehensive Review of Cyclodextrin-Modified Electrospun Nanofibers for Drug Delivery and Food Packaging Applications. *Journal of Natural Fibers*, *22*(1), 2583850. https://doi.org/10.1080/15440478.2025.2583850.
- Sengupta, N., Sogani, M., **Khan, A. A. Y.**, Balakrishna, K., Syed, Z., Maheshwari, K., Rajvanshi, J., Gupta, D., Sen, H., & Verma, S. (2025). Arsenic crisis: unravelling toxicity, microbial solutions, and green bioremediation. *Environmental Geochemistry and Health*, *47*(12), 1-18. https://doi.org/10.1007/s10653-025-02881-3.

DEPARTMENTAL EVENTS

INDUSTRIAL VISIT
AT
JAIPUR DAIRY, RAJASTHAN, ON NOVEMBER 10, 2025

The Department of Biotechnology and Chemical Engineering, MUJ, organized an industry visit to Jaipur Dairy, Rajasthan, on November 10, 2025, for students of UG programs. The visit aimed to provide practical exposure to dairy processing, pasteurization, packaging technologies, and quality control practices in the food industry. Students toured milk reception, processing, packaging units, and the quality control laboratory, gaining valuable insights into industrial hygiene, safety protocols, and real-time operations. The visit effectively bridged theory and practice, enhanced industrial awareness, and offered meaningful interaction with industry professionals.

The students expressed great enthusiasm and actively participated in discussions during the visit. The faculty in-charge (Mr. Rahul and Dr. Jaspinder Kaur) appreciated the support of Jaipur Dairy officials for facilitating an enriching learning experience.

WORKSHOP AND INTERNATIONAL CONFERENCE

The Department of Biotechnology & Chemical Engineering successfully conducted **Workshop and International Conference on Biotechnology in Health Science and Therapeutics (ICBHST 2025)**, organized in collaboration with Manipal University Jaipur and IIT Bombay at MUJ. The conference brought together eminent researchers, academicians, industry experts, and young scholars from India and abroad, creating a vibrant platform for sharing cutting-edge research and innovative ideas in biotechnology-driven healthcare.

The workshop "From Gene to Drug" (28 December 2025) and the conference (29–31 December 2025) received overwhelming participation. The scientific sessions, keynote lectures, and poster presentations were highly appreciated for their academic depth and interdisciplinary focus.

The university extends sincere thanks to all speakers, participants, organizing committee members, and volunteers for their invaluable contributions in making ICBHST 2025 a grand success.

Inauguration Ceremony – Official Launch of the Event

Release of the Abstract Book – Showcasing Research Contributions

Successful Completion of Workshop and Conference – Certificates Awarded to Participants

STUDENTS ACHIEVEMENTS

The Department of Biotechnology and Chemical Engineering at Manipal University Jaipur is pleased to share and celebrate the notable achievements of its students. Our students have demonstrated excellence across academics, research, innovation, competitions, and professional engagements, bringing pride to the department and the university. These accomplishments reflect their dedication, perseverance, and the supportive academic ecosystem at Manipal University Jaipur, and we commend them for their continued pursuit of excellence.

ACADEMIC ACHIEVMENTS

DEAN'S LIST AWARD

The Department of Biotechnology and Chemical Engineering proudly congratulates its outstanding students for their exceptional academic performance. By achieving a GPA of 9.0 and above, these high achievers have earned a prestigious place on the Dean's List. This recognition reflects not only their intellectual capability but also their dedication, perseverance, and consistent commitment to academic excellence. Their accomplishment sets a benchmark of inspiration for their peers and strengthens the department's culture of scholarly distinction.

Dean's List Awardees:

1. Krithika Gupta
2. Sneha Khurana
3. Harshita Singh
4. Aarushi Saxena
5. Prakriti Mathur
6. Parth Jain

We extend our heartfelt congratulations to all the awardees and wish them continued success in their future academic and professional endeavors.

BEYOND ACADEMICS: ACHIEVEMENTS AND EXCELLENCE

STUDENT ACHIEVEMENTS AND PARTICIPATION HIGHLIGHTS

Students from the Department of Biotechnology and Chemical Engineering made remarkable strides this session through active participation in a wide range of courses, conferences, and professional events. These opportunities strengthened their technical expertise, hands-on skills, and interdisciplinary understanding. The department proudly supports and motivates such involvement as it nurtures innovation, research culture, and overall professional growth. Highlights of the courses attended, events participated in, and awards achieved by our students are featured below:

- **Krithika Gupta** earned the **Best Oral Presentation Award** at the International Conference on Biotechnology in Health Science and Therapeutics (ICBHST 2025) and also **participated** in the program "Molecular Docking Series: From Fundamentals to Application, Automation, and Visualizations" organized by Discovery Boulevard.
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- **Abhishay Santram** secured the **3rd position** in Antaragni, the annual flagship event of IIT Kanpur, and **his team** was awarded the **1st position** in Oasis, the flagship event of BITS Pilani.
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- **Kartikay Mathur, Abhishay Santram, Tathagat Dhirendra Trivedi,** and **Prakriti Mathur** successfully registered their Utility Model titled "Bionic Prosthesis System Reinforced with Natural Fibres" with the German Patent and Trademark Office (DPMA), and the invention has also been published in the Official Journal of the Indian Patent Office.
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- **Bithika Bibhabari** successfully completed the online non-credit course "Introduction to Genomic Technologies" offered by Johns Hopkins University on Coursera, as well as "Databases and SQL for Data Science" on Coursera, earning course completion certificates for both.


Best
Wishes