



# AUTOMATA

## NEWSLETTER

Department of Mechatronics Engineering,  
School of Engineering  
Faculty of Science Technology and Architecture

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### Editorial Board

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The HoD's Message  
Dr. Prabhat Ranjan



I'm thrilled to have added a couple phrases to the department bulletin. Since modern technology is evolving so quickly, it is essential that we keep abreast of the most recent developments. To inform students on recent and upcoming technological advancements, the department hosts a range of events, such as conferences, webinars, seminars, faculty development programs, and other extracurricular and co-curricular activities. Recognition has also been given to the variety of activities that the department's teachers and students partake in. For the department's general growth, I want to see more events like this in the future.

Dr. Prabhat Ranjan

### Vision

Global excellence in Mechatronics domain to provide comprehensive solution for industrial advancements and societal challenges.

### Mission

M1: Impart value-based education to fulfil industrial needs by nurturing inter-disciplinary knowledge for enhancing academic and professional excellence.

M2: Provide with state-of-art academic and research facilities, fostering humanistic values and peer teaching-learning approach for enhancing employability and entrepreneurship skills.

M3: Encourage inter-disciplinary approach to foster research and innovative ideas for smart Mechatronics system by experiential learning.

M4: Provide opportunity to exhibit and enhance life long learning skills with ethical values and social relevance.



**FACULTY MEMBERS**



The Fusion 360 Workshop and Competition 2025, organized by the Autonomous Initiative Club, aimed to provide participants with hands-on experience in 3D modeling and mechanical design. This two-part event featured a comprehensive workshop followed by an engaging design competition, fostering innovation and practical skills among students.

The Fusion 360 Workshop and Competition 2025 was a resounding success, sparking creativity and enthusiasm among participants. It provided a platform for students to learn, innovate, and challenge themselves in a supportive and engaging environment.



Department of Mechatronics Engineering, Manipal University Jaipur in association with MathWorks, India organized Hands on workshop on “UAV Development and AI using MATLAB/Simulink” from Feb 27-28, 2025. This workshop acquainted research scholars, and faculty members with hands-on experience on Robotics, UAV and AI using MATLAB/Simulink for enhancing teaching-learning and research outcomes.





TechQuest 2025 was a successful event, bringing together students passionate about robotics and technology. The event provided a platform for students to showcase their technical abilities, strategize, and collaborate. We extend our sincere gratitude to all participants, organizers, and faculty coordinators for their dedication and effort in making this event a success. We look forward to organizing more such innovative and exciting events in the future.



The industrial visit to Triveni Pumpcast & Triveni Pumps PVT Ltd is designed to provide participants with a comprehensive understanding of the manufacturing processes and operations in a real-world industrial setting. During the visit, attendees will have the opportunity to tour the facility, observe various stages of production, and learn about the cutting-edge technologies and systems in use.



Maze Runner, a high-tech robotics competition hosted by the IEI Mechatronics Club at Manipal University Jaipur. In this event, participants will design autonomous robots equipped with sensors and algorithms to navigate through a specially designed maze. The challenge lies in how efficiently and quickly the robot can make decisions and find its way to the finish line—without any manual control

## Journal Publications

S. No	TITLE
1	Princy, R., Adusumilli, S. B. K., Poddutoori, J. R., Podduturi, M., Dighe, A. A., & Devesh, S. (2025). Artificial Intelligence based Smart Pneumatic Tools for Industrial Applications. Engineered Science, 35, 1368.
2	Princy, R., Naik, N., Noonia, A., Maddodi, B. S., Hiremath, P., & Guo, Z. (2025). Multifaceted Improvements in Soil Characteristics and Molecular Dynamics through Inorganic and Bio-Based Nano Additives. ES Food & Agroforestry, 19, 1378.
3	Jinnuo, Z., Goyal, S. B., Rajawat, A. S., Waked, H. N., Ahmad, S., Randhawa, P., ... & Naik, N. (2025). Analysis of existing techniques in human emotion and behavioral analysis using deep learning and machine learning models. Engineering Research Express, 7(1), 012201.
4	Pallavolu, M. R., Kumar, V., Ranjan, R., Kumar, S., Sreedhar, A., & Misra, M. (2025). Advanced environmental remediation using enhanced performance of Hollow ZnO@ SnIn <sub>4</sub> S <sub>8</sub> core-shell Nanorod arrays for hazardous ion and organic pollutant removal. Journal of Environmental Management, 374, 124109.
5	Bajwa, A., Kaur, H., Kumar, S., Dalal, J., Misra, M., Selvaraj, M., ... & Singh, G. (2025). Mangifera indica-driven CuO nanoparticles: properties for sensing and optoelectronics. Surface Innovations, 13(2), 95-108



## Book Chapter Publications

February 2025	IOT BASED SMART HOME SYSTEMS	Dr. Princy Randhawa <i>/Mechatronics Engineering</i>
March 2025	COMPUTATIONAL ANALYSIS OF PEROVSKITE MATERIALS ALXY3 (XCU, MN; Y BR, CL, F) INVOKING THE DFT METHOD	Dr Prabhat Ranjan <i>/Mechatronics Engineering</i>

## Faculty with Additional Responsibility at MUJ level



Dr. Ajay Kumar  
Professor & Dean  
(Graduate Outcome)

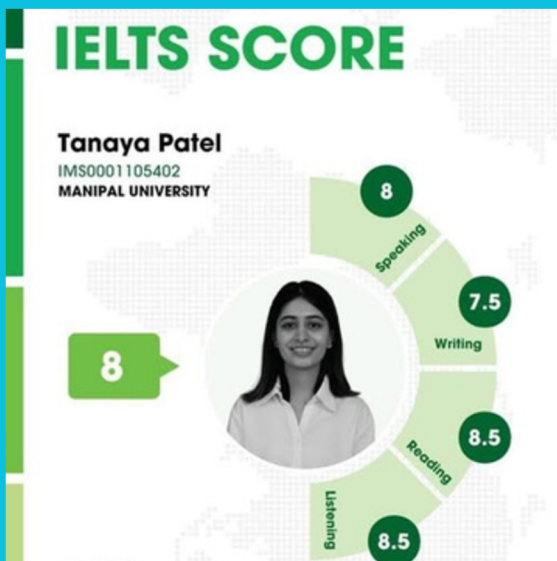


Dr. Shahbaz Ahmad Siddiqui  
Professor & Deputy Director  
(Directorate of Research)



Dr Manish Rawat  
Deputy Director

## Department Achievements



TCircuit Clash, an electrifying RC car racing event hosted by the IEI Mechatronics Student Chapter at Manipal University Jaipur. This event promises thrilling races, intense competition, and friendly rivalries on a high-speed racecourse that will test your driving skills and control. Participants will compete for a grand prize of ₹6000, showcasing their abilities in manoeuvring powerful remote-controlled cars around a challenging track.