MANIPAL UNIVERSITY JAIPUR

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NEWSLETTER

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

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Editorial Board

Inside The Issues

The HoD's Message
Dr. Prabhat Ranjan

It gives me great pleasure to add a few sentences to the department bulletin. Because the world of modern technology is evolving so quickly, staying up to date with the latest developments is essential. In order to inform students about current and upcoming technological advancements, the department hosts conferences, webinars, seminars, faculty development programs, and other events in addition to extracurricular and co-curricular activities. The variety of activities that the department's lecturers and students participate in has also received praise. For the department's general growth, I want to see more occasions 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 ny nuturing inter- disciplinary knowledge for enhancing academic and professional excellence.

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

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

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

FACULTY MEMBERS

RoboRush was a hands-on robotics workshop conducted as part of Innovana. The workshop aimed to provide participants with practical exposure to robotics, focusing on the design and optimization of Line Following Robots (LFRs).

Dr. Ashok Kumar Kumawat from Department of Mechatronics Engineering, Manipal University Jaipur visited at Gati Shakti Vishwavidyalaya, Vadodara, Gujarat 390004. He interacted with Dr. Pramila Jhakar to start research collaboration and student exchange.

Robotics Premiere League (RPL) was a flagship robotics event conducted under Innovana. The event focused on strategic thinking, creativity, and innovation, rather than conventional hardware competitions. It provided participants with a unique platform to apply engineering concepts through decision-making and ideation.

Journal Publications

S. No	TITLE
1	Rohlan, V., Nanda, P., Tukur, B., Ranjan, P., & Chakraborty, T. (2025). Theoretical analysis of the Lewis acidity of transition metal-based complexes:[Cu (OTeF5) 3],[Ag (OTeF5) 3] and [Au (OTeF5) 3]. Molecular Physics, e2532695.
2	Agrawal, A., Siddiqui, S. A., Soni, A., & Sharma, G. D. (2025). Synthesis and analysis of capsule shape Ag-decorated ZnO for semi-transparent dye sensitized solar cell. Discover Applied Sciences, 7(9), 951.
3	Saloni, S., Ranjan, P., & Chakraborty, T. (2025). Insight into the optoelectronic and thermochemical properties of LiXY2 (X= Ga, Ti; Y= S, Se, Te): a DFT study. The European Physical Journal B, 98(8), 173.
4	Misra, M., Sreedhar, A., & Noh, J. S. (2025). Advancements in 2D Ti3C2 MXene interfaced various metal oxide semiconductors for photoelectrochemical water splitting: a review. Microchemical Journal, 114632.
5	Badoni, P., & Siddiqui, S. A. (2025). Metamorphosis of mushroom production from tradition to automation. Discover Applied Sciences, 7(9), 974.
6	Aruna, Ranjan, P., Agarwala, A., Verma, V. P., & Shrivastava, R. (2025). Synthesis and evaluation of fluorescein coumarin hybrid sensor for copper and fluoride ion sensing. Analytical Chemistry Letters, 15(5), 905-914.
7	Rout, R., & Kumawat, A. K. (2025). Reinforcement Learning Based Position Tracking Control for Proportional Directional Control Valve Based Electro-Hydraulic System. IEEE Access.
8	Ranjan, P., Nanda, P., & Chakraborty, T. (2025, August). Theoretical Study of Ptn (n= 2–7) Nanoclusters: A DFT Approach. In Macromolecular Symposia (Vol. 414, No. 4, p. e70092).
9	Das, S., Ranjan, P., & Chakraborty, T. (2025). Structure, electronic and optical properties of gold based chalcogenide materials Au2Y (Y= S, Se, Te): a DFT study. Indian Journal of Physics, 1-9.
10	Rai, S. K., Goyat, V., Gupta, M. K., Ghangas, G., Bhatt, D., Uniyal, A., ... & Shrivas, N. V. (2025). Numerical and experimental heat transfer analysis of two-phase flow through microchannel for development of heat dissipation correlation. Journal of Non-Equilibrium Thermodynamics, 50(4), 585-602.
11	Pallavolu, M. R., Prabu, S., Banerjee, A. N., Misra, M., & Joo, S. W. (2025). Reduction-mediated ultrathin amorphous nickel-cobalt oxysulfide nanosheets for high-performance hybrid supercapattery devices. Electrochimica Acta, 147184.

Conference Publications

S. No	TITLE	Faculty Member
1	BIOMOLECULAR STRUCTURAL REARRANGEMENT ANALYSIS OF FGFS US ING MOLECULAR DYNAMICS SIMULATIONS	Dr Krishna Kant Pandey
2	QUANTUM MACHINE LEARNING: ENHANCING ALGORITHMS THROUGH QUANTUM NEURAL NETWORKS AND DATA ANALYSIS	Dr. Princy Randhawa
3	SECURE AND REVERSIBLE DATA HIDING IN ECG SIGNALS FOR ENHANCED PATIENT PRIVACY IN TELECARDIOLOGY	Dr. Princy Randhawa
4	ABNORMAL HUMAN ACTION RECOGNITION USING MOBILENETV2 WITH ADVANCED DATA AUGMENTATION AND FINETUNING TECHNIQUES	Dr. Nikhil Vivek Shrivas
5	IMPACT OF TRANSIENT EMG SIGNALS ON THE PERFORMANCE OF A GESTURE RECOGNITION SYSTEM	Dr. Nikhil Vivek Shrivas
6	ADVANCEMENT OF CLEAN ENERGY AND INDUSTRIAL INFRASTRUCTURE THROUGH REALTIME PERFORMANCE EVALUATION OF MPPT TECHNIQUES	Dr Shahbaz Ahmed Siddiqui
7	A CASE STUDY ON AIDRIVEN MECHATRONIC SYSTEMS FOR AUTOMATEDCRIME DETECTION AND EVIDENCE ANALYSIS	Mr Hemant Kumar

Faculty with Additional Responsibility at MUJ level

Dr. Ajay Kumar
Professor & Dean
(Graduate Outcome)

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