MANIPAL UNIVERSITY JAIPUR

# AUTOMATA
## NEWSLETTER

**Department of Mechatronics Engineering,**

**School of Automobile, Mechanical & Mechatronics Engineering**

*July-September 2024 Issue Vol: 10*

## 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. Since the world of modern technology is evolving quickly, it's critical 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. The department has also received praise for the variety of activities that its students and professors take part in. For the department's general growth, I want to see more events of this nature in the future.**

### Vision

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

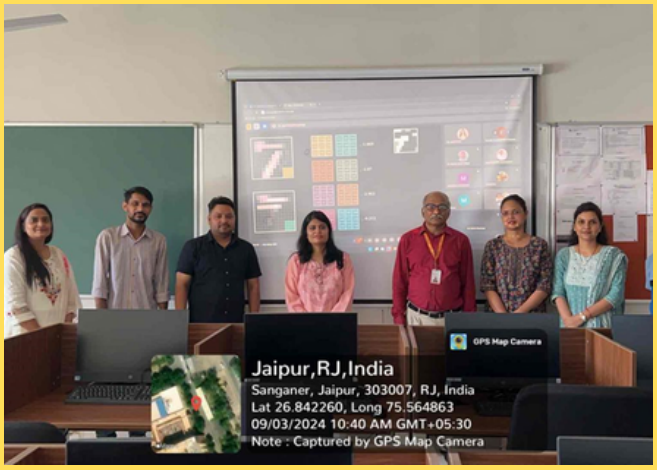
### Mission

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

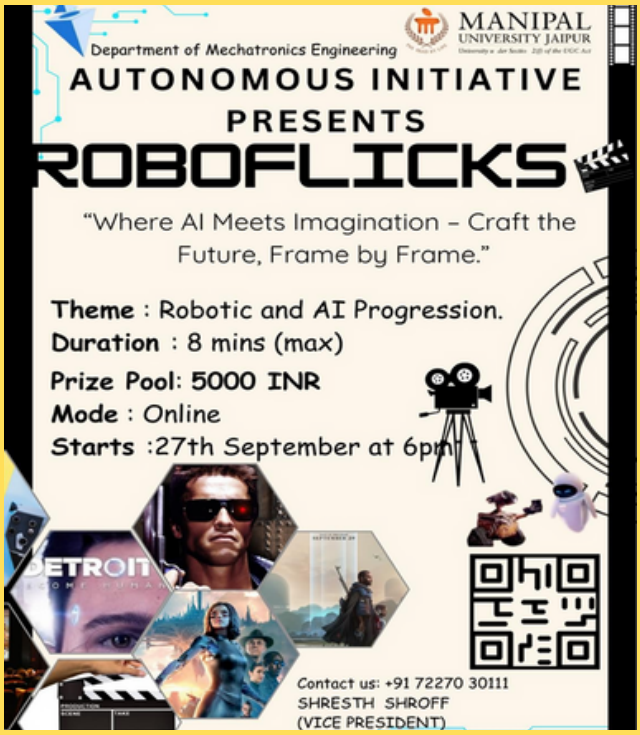
M2: Provide with state-of-art academic and research facalities, fostering humanistic values and peer teaching-learning approach for enhancing employability and entrepreneurship skills.

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.




Online Short-term course on Deep Learning for Engineering Application using ICT as a remote center with MUJ. a) Lectures will be delivered by eminent experts, who have rich teaching and industrial experience in their respective fields of application




The event is being presented to the publicwith the intention of generating awareness of Robotics and its applications

# Journal Publications

| S. No | TITLE |
|---|---|
| 1 | Talyshinskii, A., Naik, N., Hameed, B. Z., Khairley, G., Randhawa, P., & Somani, B. K. (2024). Telemedicine in Endourology for Patient Management and Healthcare Delivery: Current Status and Future Perspectives. Current Urology Reports, 25(11), 299-310. |
| 2 | Gothwal, P., & Kumar, A. (2025). Comparative Analysis of Piezo Energy Harvester Optimization Techniques: A Comprehensive Review. Journal of Advanced Research in Applied Sciences and Engineering Technology, 49(1), 211-226 |

| S. No | TITLE |
|---|---|
| 3 | Kumar, V., Chopada, R., Singh, A., Kumar, N., Misra, M., & Kim, K. H. (2024). The potential of MXene-based materials in fluorescence-based sensing/biosensing of ionic and organic contaminants in environment and food samples: Recent advancements and challenges. Advances in Colloid and Interface Science, 103264. |
| 4 | Truong, T. T., Mondal, S., Doan, V. H. M., Tak, S., Choi, J., Oh, H., ... & Oh, J. (2024). Precision-engineered metal and metal-oxide nanoparticles for biomedical imaging and healthcare applications. Advances in Colloid and Interface Science, 103263. |
| 5 | Ucheniya, R., Saraswat, A., Siddiqui, S. A., Goyal, S. K., Alotaibi, M. A., Malik, H., & Márquez, F. P. G. (2024). A multi-objective stochastic framework for coupled reactive power and energy market settlement for wind energy integrated system. IEEE Access. |
| **6** | A THEORETICAL APPROACH TO STUDY OXIDEBASED PEROVSKITE MATERIALS XTIO3 (X BE, MG, CA, SR AND BA) FOR PHOTOVOLTAIC APPLICATIONS |
| **7** | Sharma, P., Ranjan, P., & Chakraborty, T. (2024). A density-functional-theory-based study of the lead-free perovskite materials CsGeX3 and CsGeX2X′(X, X′= Cl, Br, I) for photovoltaic applications. Journal of Physics D: Applied Physics, 57(50), 505501. |
| **8** | Kaur, A., Kumar, S., Kaur, H., Lotey, G. S., Singh, P. P., Singh, G., ... & Kaushal, S. (2024). Enhanced photocatalytic degradation and antimicrobial activities of biogenic Co 3 O 4 nanoparticles mediated by fenugreek: sustainable strategies. Materials Advances, 5(20), 8111-8131. |

# Conference Publications

| S. No | TITLE |
|---|---|
| 1 | Gaurav, K. (2024, June). Robot's Success in Source Localization, on or after the Chemical Release: A Preliminary Study. In 2024 3rd International Conference on Computational Modelling, Simulation and Optimization (ICCMSO) (pp. 325-330). IEEE. |
| 2 | Ranjan, P., & Chakraborty, T. (2024, June). Computational Study of PtNi n (n= 1-5) Nanoalloy Clusters. In 2024 3rd International Conference on Computational Modelling, Simulation and Optimization (ICCMSO) (pp. 442-446). IEEE. |
| 3 | Nath, B., Tamang, S., Munshi, S., Pandey, K. K., Kumar, S., & Randhawa, P. (2024, June). A Comparative Study of Model Variations: English-Nepali Language Pair. In 2024 OPJU International Technology Conference (OTCON) on Smart Computing for Innovation and Advancement in Industry 4.0 (pp. 1-6). IEEE. |

# Book Chapter Publications

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|---|---|---|
| July 2024 | Ranjan, P., Nanda, P., Carbó-Dorca, R., & Chakraborty, T. (2024). Conceptual Density Functional Theory-Based Study of Pure and TM s-Doped CdX (X= S, Se, Te; TMs= Cu, Ag, and Au) Nano Cluster for Water Splitting and Spintronic Applications. Electron Density: Concepts, Computation and DFT Applications, 265-277. | *Dr Prabhat Ranjan/Mechatronics Engineering* |

# Department Achievements



**Mr. Mohit Jain was conferred upon with Ph. D for the thesis titled “Tooth Bending Performance and Characteristic Analysis of Nylon 6 based Standard Involute and Asymmetric Gears”**

# Faculty with additional Responsibility at MUJ level