MANIPAL UNIVERSITY JAIPUR

SPARK

• Volume 2 Issue 2

• (April-June 2025)

Newsletter of

Department of Electrical Engineering

Manipal University Jaipur

Faculty Editor

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About Newsletter

In this exciting second issue of Volume 2, SPARK in year 2025 continues to showcase the vibrant academic and extracurricular achievements of the Electrical Engineering Department at Manipal University Jaipur. This edition highlights major research breakthroughs with publications in reputed journals and conferences, reflecting the faculty's dedication to advancing knowledge and innovation.Our faculty members remain actively engaged in professional development through the conduction and participation in various Faculty Development Programs (FDPs). Several have also taken on prestigious editorial roles in renowned scientific journals, underscoring their expertise and leadership in their fields.

The newsletter proudly celebrates the numerous prizes and accolades won by our students in extracurricular and co-curricular events, demonstrating their all-around excellence. Additionally, we spotlight the successful completion of Problem-Based Learning (PBL) initiatives and minor projects, which continue to strengthen hands-on learning and practical skills.Stay tuned as SPARK brings you the latest updates and stories fueling the growth and success of our department!

Peeyush Garg, Faculty Editor- SPARK

Messages

From HoD Desk

It is a great honor to witness the ongoing achievements and growth of our department newsletter, “SPARK.” The first issue received an exceptional response, showcasing the vibrant spirit of our community. This newsletter goes beyond mere updates; it embodies the dedication, creativity, and excellence that characterize our department.

As we present this second issue, I urge all students and faculty to actively contribute and engage. Together, let’s continue to innovate, challenge limits, and advance the field of electrical engineering. I extend my sincere thanks to the editorial team for their hard work and enthusiasm, and I eagerly anticipate the insightful and inspiring content in this edition.

Dr. Neeraj Kanwar, Head,

Electrical Engineering Department,

Manipal University Jaipur

About Department

Skill Enhancements:

Participation in Faculty Development Programme (FDP)

Faculty Name	Organizing institution	Name of Event
Dr. Neeraj Kanwar	UGC- MMTTC, JNV University, Jodhpur	**NEP-2020: Orientation & Sensitization** during 15- 23 May 2025.
Dr. Amit Saraswat	UGC- MMTTC, JNV University, Jodhpur	**NEP-2020: Orientation & Sensitization** during 15- 23 May 2025.
Mr. Peeyush Garg	UGC- MMTTC, JNV University, Jodhpur	**NEP-2020: Orientation & Sensitization** during 15- 23 May 2025.
Mr. Samarendra Pratap Singh	UGC- MMTTC, JNV University, Jodhpur	**NEP-2020: Orientation & Sensitization** during 15- 23 May 2025.
Mr. Satyanarayan Agrawal	UGC- MMTTC, JNV University, Jodhpur	**NEP-2020: Orientation & Sensitization** during 15- 23 May 2025.
Mr. Vikash Kumar Boradak	UGC- MMTTC, JNV University, Jodhpur	**NEP-2020: Orientation & Sensitization** during 15- 23 May 2025.
Dr. Vinay Gupta	UGC- MMTTC, Shri Ram College of Commerce, Delhi	**NEP-2020: Orientation & Sensitization during** 21-29 April 2025.

Research Outcomes

Journal Articles Published:

- **Gaurav Gangil (Student Author), Amit Saraswat, and Sunil Kumar Goyal** published a research paper titled as "An Uncertainty Aware Optimal Energy Management Model for Smart Distribution Networks Contemplating Reactive Support From VRE and Energy Storage Systems," in IEEE Access, vol. 13 (2025). **(SCIE-Q1)**
- **Smriti Jain (Student Author) and Neeraj Kanwar**, "Optimized unit commitment for peak load management with solar PV and storage under load uncertainty," in Scientific Reports, vol. 15, no. 1, (2025). **(SCIE – Q1)**
- **Divya Mathur (Student Author), Neeraj Kanwar, and Sunil Kumar Goyal** published a research paper titled as "Strategic Electric Vehicle Charging in Community Microgrids: Enhancing Grid Stability, Reducing Emissions, and Optimizing Costs," in IEEE Access, vol. 13 (2025). **(SCIE-Q1)**
- **Divya Rishi Shrivastava and Shahbaz Ahmed Siddiqui** published a research paper titled as "A unified strategy for real-time event detection for enhanced power system protection through robust situational awareness," in Measurement, vol. 253, Part B, 2025, Article 117590. (SCIE-Q1)
- **Bishwajit Dey,** S. Misra, G. Sharma, and P. N. Bokoro published a research paper titled as "Cost-effective optimal scheduling of PHEV integrated microgrid with load curve restructuring strategies" in Discover Computing, (2025). **(SCIE-Q2)**
- **Bishwajit Dey**, L. K. Chanu, G. Sharma, and P. N. Bokoro published a research paper titled as "A comprehensive techno-economic analysis for a PHEV-integrated microgrid system involving wind uncertainty and diverse demand side management policies" in Results in Engineering (2025). **(Scopus – Q1)**
- **Bishwajit Dey**, S. Dutta, A. Pal, G. Sharma, and P. N. Bokoro published a research paper titled as "Clean and economic operation of a PHEV-integrated microgrid system implementing a novel load shifting cum-curtailing strategy" in International Journal of Modelling and Simulation (2025). **(SCIE– Q3)**
- **Bishwajit Dey**, S. Misra, A. Pal, and F. P. G. Marquez published a research paper titled as “An amalgamated load shifting cum curtailing policy with smart charging of PHEV for economic operation of microgrid system” in reputed journal Scientific Reports (2025). **(SCIE – Q1)**

Journal Articles Publishes (Cont..)

- Anupam Agrawal, SA Siddiqui, **Amit Soni**, and GD Sharma published a research paper titled as "Fabrication strategies, developments and challenges in perovskite solar cells," in Physica Scripta, vol. 100, no. 6, pp. 062001, May, 2025. **(SCIE-Q1)**
- Kishor Kumar, **Amit Soni,** and Jagrati Sahariya published a research paper titled as "Intermediate band formation, band gap tuning and optical response of transition metal doped CuGaS2 chalcopyrite: A first-principles strategy," in Physica B: Condensed Matter, vol. 417320, 2025. **(SCIE-Q1)**
- Kanchan Rawat, **Amit Soni**, and Jagrati Sahariya published a research paper titled "First-principles insights into the wide band gap alkaline-earth hafnates for photocatalytic and optoelectronic applications," in Materials Science and Engineering: B, vol. 321, 2025, Article ID 118486. (**SCIE – Q1)**

Faculty Development Program Organised

Conference Papers Published:

- **Nidhi Choudhary (student Author), Amit Soni,** Jagrati Sahariya, and Kishor Kumar. "Optoelectronic study of Rb_2NaInI_6 for solar cell efficiency." In 2025 Fourth International Conference on Power, Control and Computing Technologies (ICPC2T), IEEE, April 2025.
- **Hansraj Karwasara (student Author), Nidhi Choudhary (student Author),** Kishor Kumar, **Amit Soni**, and Jagrati Sahariya. "Investigation of Optoelectronic Properties of Na 2 AgBiBr 6: A Solar Cell Material." In 2025 Fifth International Conference on Advances in Electrical, Computing, Communication and Sustainable Technologies (ICAECT), IEEE, April 2025.
- **Rudra Sankar Bishnu (Student Author) and Peeyush Garg** published a conference paper titled as "Computer vision based efficient real-time lighting control with Haar-cascade classifier," in 2025 International Conference on Data Science, Agents & Artificial Intelligence (ICDSAAI), IEEE (May 2025)
- Doğan Çelik, and **Sunil Kumar Goyal** published a conference paper titled as "Strategic Deployment of Hydrogen with Nuclear-Renewable Synergy: Pathways to Carbon Neutrality and Sustainable Development Goals," in 2025 3rd International Conference on Self Sustainable Artificial Intelligence Systems (ICSSAS), IEEE (June 2025).
- Eshita Gupta, and **Vinay Gupta** published a conference paper titled as "A Comparative Analysis of ESP32 and ESP8266 for AI-Powered Applications," in *2025 International Conference on Next Generation Communication & Information Processing (INCIP)*, Bangalore, India, IEEE (June 2025).
- Medhavee Moon, Drashti Charpot, Mahesh Kumar, **Satya Narayan Agarwal** published a conference paper titled as "Modeling and Analysis of a Microfluidic Biosensor for Selective Cell Control in Lab-on-Chip Applications," *2025 3rd International Conference on Device Intelligence, Computing and Communication Technologies (DICCT)*, Dehradun, India, IEEE (May 2025).

Curriculum-based Industry Expert Talk

Mr. Piyush Jain, DGM(O&M-CO) GAIL, Nodia, India, delivered an Industry Expert Talk for Sensor & Sensor Circuits course for B.Tech students on topic "**Cathodic Protection System for Underground Pipelines**" on 24-04-2025 to bridge the gap between theoretical learning and industrial applications.

MANIPAL UNIVERSITY JAIPUR

A Warm Welcome to Our New Faculty

We are delighted to welcome **Dr. Bishwajit Dey** to the Department of Electrical Engineering, Manipal University Jaipur, as an Assistant Professor (Research Track). Dr. Dey holds a Ph.D. from IIT (ISM) Dhanbad, an M.Tech from NIT Agartala, and a B.E. from Assam Engineering College. His research interests include microgrid energy management, demand-side management, electricity markets, distributed energy resources, and electric vehicles. He brings with him a strong academic and research background and was recently awarded a Post-Doctoral Research Fellowship by the University of Johannesburg (2023–24). We look forward to his valuable contributions in teaching, research, and collaborative initiatives within the department.

Faculty Accomplishments

Congratulations to Dr. Amit Saraswat, esteemed faculty member of EE department, on his appointment as **Associate Editor for Journal e-Prime - Advances in Electrical Engineering, Electronics and Energy**! This recognition reflects his exceptional expertise and valuable contributions to the field.

Congratulations to Dr. Neeraj Kanwar, Head of the department, on her appointment as **Associate Editor for Scientific Reports**! This recognition reflects his exceptional expertise and valuable contributions to the field.

Congratulations to Dr. Bishwajit Dey, Esteemed faculty member department, on her appointment as **Associate Editor for Scientific Reports**! This recognition reflects his exceptional expertise and valuable contributions to the field.

Seed Funding Boosts Energy Research

We are proud to announce that **Dr. Bishwajit Dey** has received **₹2.00 lakhs in seed funding from Manipal University Jaipur** to support his innovative project on "Cost Effective and Sustainable Microgrid Energy Management with Demand Side Management and Smart Charging of Electric Vehicles." This research addresses critical challenges in clean and affordable energy solutions, directly contributing to Sustainable Development Goals (SDG) 7 and SDG 11.

Students Industrial Visit: 132 kV GSS, Bagru

Students of our department embarked on an insightful industrial visit to the 132 kV Grid Substation (GSS), Bagru on 24 April 2025. The visit provided hands-on exposure to high-voltage equipment, substation operations, and power distribution systems, enriching their practical understanding of electrical infrastructure.

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In-house Minor Projects Development

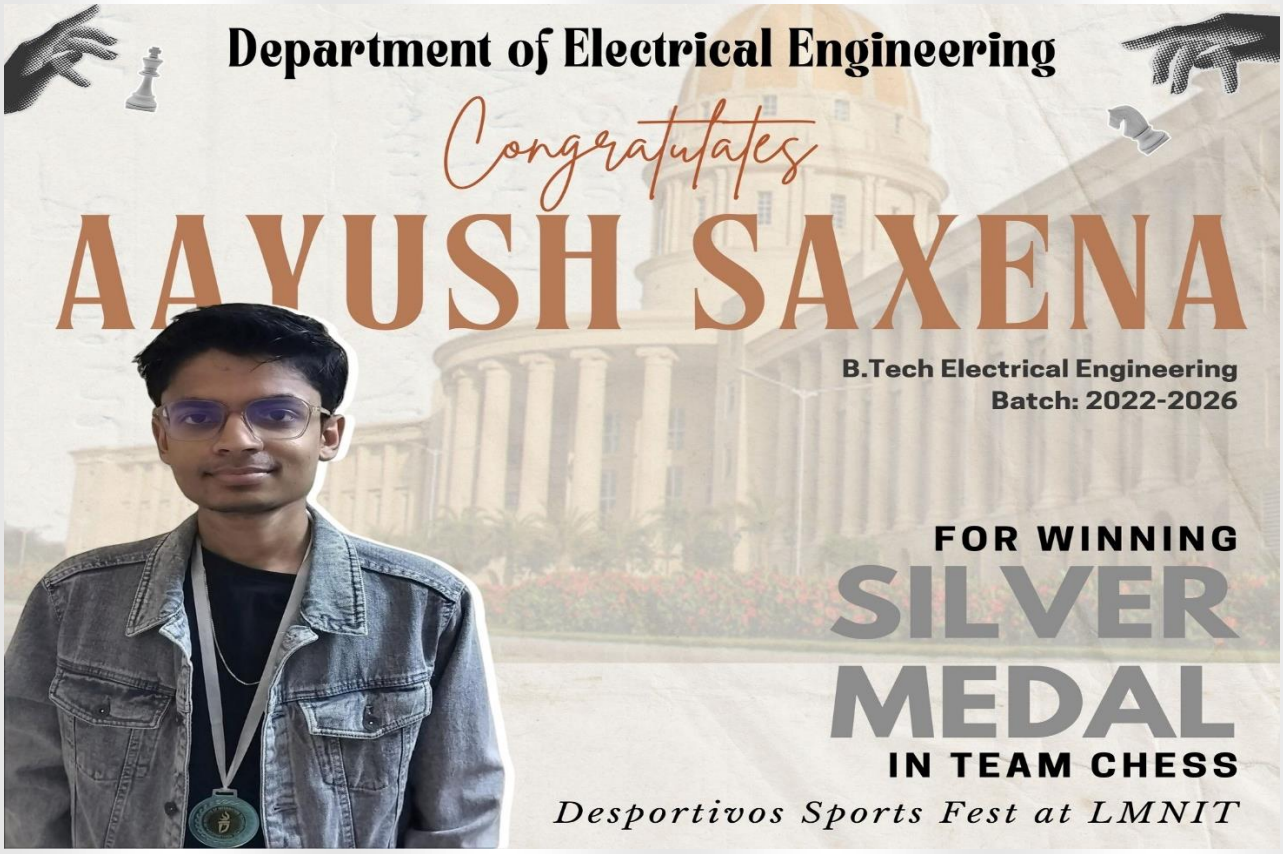
Students Details	Name of Minor Project
Aayush Saxena, VI Sem, B.Tech. (EEE)	Deep Space Optical Communication System
Arup Jyoti Das, VI Sem, B.Tech. (EEE)	Water level Indicator For overhead Tank with Buzzer
Manishka Vyas, VI Sem, B.Tech. (EEE)	A Comparative Study of Learning Strategies Using a Dynamic Spaced Repetition Model
Ayush Saxena, VI Sem, B.Tech. (EEE)	Thermoelectric Cooling for Enhanced PV Efficiency: A MATLAB/SIMULINK
Rudra Sankar Vishu, VI Sem, B.Tech. (EEE)	Cleaning system for Solar photovoltaic System using ESP32 Cam Module
Arjavi Arya & Raghav Bhatia, VI Sem, B.Tech. (ELC)	Smart Dual-Connectivity Data Monitoring system for Electric Vehicle
Akash Mukherjee, VI Sem, B.Tech. (ELC)	Automatic Seat Belt Unlocking System During Vehicle Collision
Tia Jain & Ansh Jast, VI Sem, B.Tech. (ELC)	Smart Shopping App
Sanya Bakshi & Nishit P. Dongre, VI Sem, B.Tech. (ELC)	Zen Mind: A chatbot for Scalable Mental Health Support
Jaskaran A Singh Rustam & Mohd Ateek Khan, VI Sem, B.Tech. (ELC)	IoT- based Smart Building Protection System with Dual Connectivity (Wi-Fi & GSM)
Mohit Sharma & Abhinav Kothari, VI Sem, B.Tech. (ELC)	Tyres pressure monitoring System
Aryan Bhati & Naman Bhasin, VI Sem, B.Tech. (ELC)	Next- Gen sensor less Real-Time Weather Monitoring System
Vivek Sharma, VI Sem, B.Tech. (ELC)	IoT-Based Smart Helmet for Industrial Safety and Accident Detection
Muhammad Nasir Niyargar, VI Sem, B.Tech. (ELC)	Design and Implementation of an IoT-Based Smart Home Security System
Parth Tiwari & Yashaaditya, VI Sem, B.Tech. (ELC)	Voice Controlled Home Automation System
Hardika Sharma, VI Sem, B.Tech. (ELC)	Face Recognition Attendance System using ESP32 and IOT
Vikas Choudhary, VI Sem, B.Tech. (ELC)	Smart Dual-Connectivity Data acquisition system for Agriculture application
Samiksha Sharma, VI Sem, B.Tech. (ELC)	AI-Enabled Smart Traffic Management System Using ESP32 and IOT
Khushal Kedawat & Ayushi Mittal, VI Sem, B.Tech. (ELC)	Smart AI Application: Integrating Raspberry Pi 3 with NLP for Edge Computing
Diwanshu & Anurag Sharma, VI Sem, B.Tech. (ELC)	IOT BASED Thermal Management System for EVs Using Immersion Cooling and Thermoelectric Cooling
Sanskar Bansal, VI Sem, B.Tech. (ELC)	Evaluating Handwritten Answers Using DeepSeek: A Comparative Analysis of DL- Based Assessment
Vishesh Gupta, VI Sem, B.Tech. (ELC)	Skin type Detection & Personalized Skincare Recommendation System using Vision Transformers and Gemini
Saksham Agarwal & Mimansha Bhandari, VI Sem, B.Tech. (ELC)	Research & Practice Med-AI: The Biomedical Education Cultivation

Harshita Dua, VI Sem, B.Tech. (ELC)	Sensorless Weather Monitoring System with a Hybrid IoT Model: Dual connectivity Using GSM & Wi-Fi
Tarunsh Gupta & Rishabh Bachani, VI Sem, B.Tech. (ELC)	Live GPS vehicle Tracking System with SOS Feature

Project based learning outcomes

Students Details	Name of PBL Project
Abhay Chandel, IV Sem, B.Tech (ELC)	Attendance monitoring system using CAMERA
Anvi Singh Chhetri, IV Sem, B.Tech (ELC)	Credit Card Fraud detection system
Anshika Verma, IV Sem, B.Tech (ELC)	Role of AI in Battery management system
Sanvi Gajbhiye, IV Sem, B.Tech (ELC)	Credit Card Fraud detection system
Kanav Vats, IV Sem, B.Tech (ELC)	Attendance monitoring system using CAMERA
Rachit Jaiswal, IV Sem, B.Tech (ELC)	Healthcare management system for patients
Himanshu Patel, IV Sem, B.Tech (ELC)	Developmenet of Hexapod Robot
Devansh Goel, IV Sem, B.Tech (ELC)	Linked list based ATM system
Somay Dadhich, IV Sem, B.Tech (ELC)	Real time voice call language translation system
Mudigonda Vayu, IV Sem, B.Tech (ELC)	Music Generation using RNN
Prajjwal Singh, IV Sem, B.Tech (ELC)	Healthcare management system for patients
Mihir Singh, IV Sem, B.Tech (ELC)	Login Brutforce attack system
Nimit Luhadia, IV Sem, B.Tech (ELC)	Implementation of low voltage wireless charging system
Raja Dhakad, IV Sem, B.Tech (ELC)	Real time voice call language translation system
Chinmay Kumar Jeph, IV Sem, B.Tech (ELC)	Implementation of low voltage wireless charging system
Mohammed Jazim K, IV Sem, B.Tech (EEE)	Fall Detections using IoT
Shreyansh Saxena, IV Sem, B.Tech (EEE)	Low power VLSI clock using FPGA
Agrim Jain, IV Sem, B.Tech (EEE)	P2P Engergy Trading simulator
Akash Pravin Bolangady, IV Sem, B.Tech (EEE)	Energy efficient motion detection system using PIR
Aman Jha, IV Sem, B.Tech (EEE)	Facial recognition-based attendance system

Students Achievements



MANIPAL UNIVERSITY JAIPUR

• Alumni Testimonial

Mr. Rajbhushan Singh

Revenue Officer , Govt of Bihar

B.Tech. (EEE), Batch 2015-2019

Manipal University Jaipur has been a place where you have the potential to find your skills, aspire to be a leader, and experience challenges in the form of fests, activities, and curriculum.

The university has a great atmosphere for everything, whether R&D, business conclaves, and the dynamics provide you with great placement opportunities. I was placed in Secure Meters Limited, Paytm, and Byju's, which gave me exposure to the outside world as well. It is one of those places that will help you find your skill set and make you aware of your goals.

Website:
https://jaipur.manipal.edu/foe/department-of-electrical-engineering.php

Facebook:

https://www.facebook.com/eemuj/

LinkedIn:

https://www.linkedin.com/in/department-of-electrical-engineering-manipal-university-jaipur-564398271/

Instagram:

https://www.instagram.com/eeemuj/

MANIPAL UNIVERSITY
JAIPUR
(University under Section 2(f) of the UGC Act)

A+ NAAC

THE WEEK
HANSA UNIVERSITY RANKING SURVEY 2025
INDIA'S BEST UNIVERSITIES

The Week

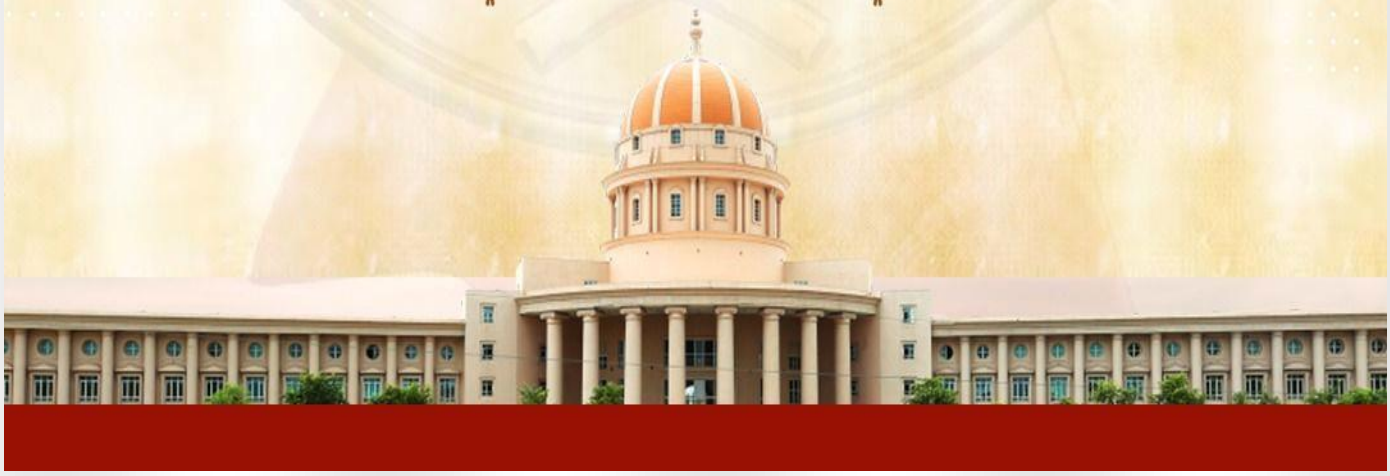
02 Multidisciplnary **Emerging** University — **ALL INDIA**

02 Multidisciplnary **Emerging** University — **NORTH ZONE**

06 Private and Deemed **Multidisciplinary** University — **NORTH ZONE**

14 Multidisciplnary University — **NORTH ZONE**

15 Private and Deemed **Multidisciplinary** University — **ALL INDIA**



competition success review

CSR Ranking for the Year 2025

MANIPAL UNIVERSITY
JAIPUR

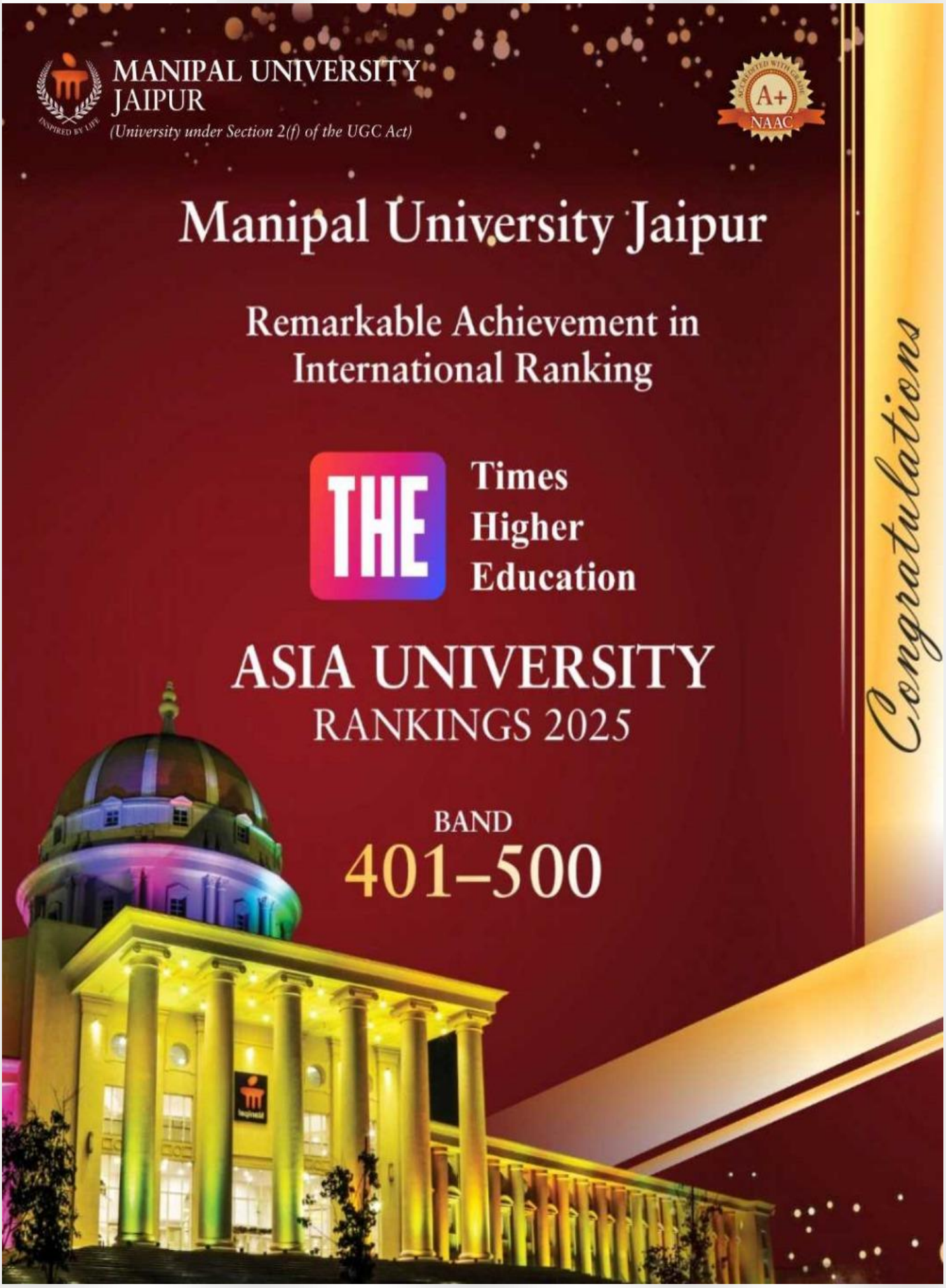
Ranked

1st
Top Engineering Colleges
Ranked by State

5th
Top 20 Engineering Colleges
Ranked by Placements, USP, Social Responsibility,
Networking & Industry Interface

5th
Top Leading Engineering
Colleges of Super Excellence

7th
Top 20 Engineering Colleges
Ranked by Faculty, Research, Consultancy,
EDP & Other Programmes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JAIPUR
(University under Section 2(f) of the UGC Act)
A+
NAAC
Manipal University Jaipur
Remarkable Achievement in
International Ranking
THE
Times
Higher
Education
ASIA UNIVERSITY
RANKINGS 2025
BAND
401–500
Congratulations