



# GEMS POLYTECHNIC COLLEGE



# ELECTROGENIC

*ELECTRICAL ENGINEERING DEPARTMENT*

VOLUME 7 | ISSUE 2

JUL - DEC 2025



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## PROGRAM EDUCATIONAL OBJECTIVES:

The department of Electrical Engineering is committed,

PEO1: To generate an attitude of curiosity in young graduates in learning leading edge applied sciences like robotics and automation.

PEO2: To raise a generation who are fully equipped in handling interdisciplinary projects which contribute to design and problem solving.

PEO3: To habituate practices of profession with solid ethical values, and also raising socially responsible ownership in their endeavors.

## MESSAGE FROM HOD'S DESK

Dear Students,

I am extremely happy to speak to you through our department Newsletter "Electrogenic". Facilitating you all to become competent, disciplined and globally accepted electrical engineers is the ultimate goal that our department works for. Providing you with golden learning opportunities through various Workshops, Events & Seminars. We believe that every interaction, workshop, and seminar is a stepping stone towards your success.



**MR. JABAS EDWIN RAJ**  
**HOD / EE**

## VISION OF THE DEPARTMENT

To generate Competent Electrical Engineers by imparting quality education with skills and creativity, inculcating moral values to contribute to the society.

## MISSION OF THE DEPARTMENT

The department of Electrical Engineering is committed,

M1: To provide a strong foundation in Electrical Engineering for understanding and solving the problems and to promote long term learning.

M2: To equip the young generation in cutting edge tools and technology to develop solutions to meet industry-specific needs.

M3: To create valuable human resources by implanting ethical values among faculty and students.

## PROGRAM SPECIFIC OUTCOMES:

The department of Electrical Engineering is committed,

PSO1: To employ the basic concept of applied science in developing electrical machines for discrete applications and services.

PSO2: To understand the concept of generation, transmission, distribution, utilization of electrical energy and solar systems to solve technical problems of the society.

PSO3: To design and estimate the electrical cost and material requirements for services like residential building, workshop, laboratory in such wise.

**ANUGRAH ASHISH KUMAR, LECTURER, EE**

I am happy to present this edition of Electrogenic, showcasing the key events, achievements, and activities of our department. It is a pleasure to bring together the efforts of our students and faculty in one place. Wishing everyone an energizing and inspiring read!

— **ANUGRAH ASHISH KUMAR**  
*Chief Editor, Electrogenic*

**GANESHBABU M, LECTURER, EE**

I am pleased to contribute to this edition of Electrogenic, reflecting the enthusiasm and progress of our department. It has been a rewarding experience working with the team to bring impactful updates. Hope you enjoy reading this edition as much as we enjoyed creating it.

— **GANESHBABU M**  
*Associate Editor, Electrogenic*

**KUMAR ANKUR, 2nd Year, EE**

I am glad to be part of the editorial team for this edition of Electrogenic. Working on this newsletter helped me learn how to organize technical content of our department. I hope readers enjoy this collection of events and achievements.

— **KUMAR ANKUR**  
*Content Editor, Electrogenic*

**INDRAMOHIT SHARMA, 1st Year, EE**

It is an honor to contribute to Electrogenic as a Content Editor. This experience motivated me to actively participate in departmental activities and improve my writing and communication skills. I hope this newsletter inspires fellow students.

— **INDRAMOHIT SHARMA**  
*Content Editor, Electrogenic*





The Department of Electrical Engineering organized an **"E-Waste Awareness Program"** on **15 September 2025**, aimed at promoting responsible disposal and creative reuse of electronic waste. All first-year students enthusiastically participated and transformed discarded electronic components into meaningful art pieces, showcasing creativity and environmental awareness.

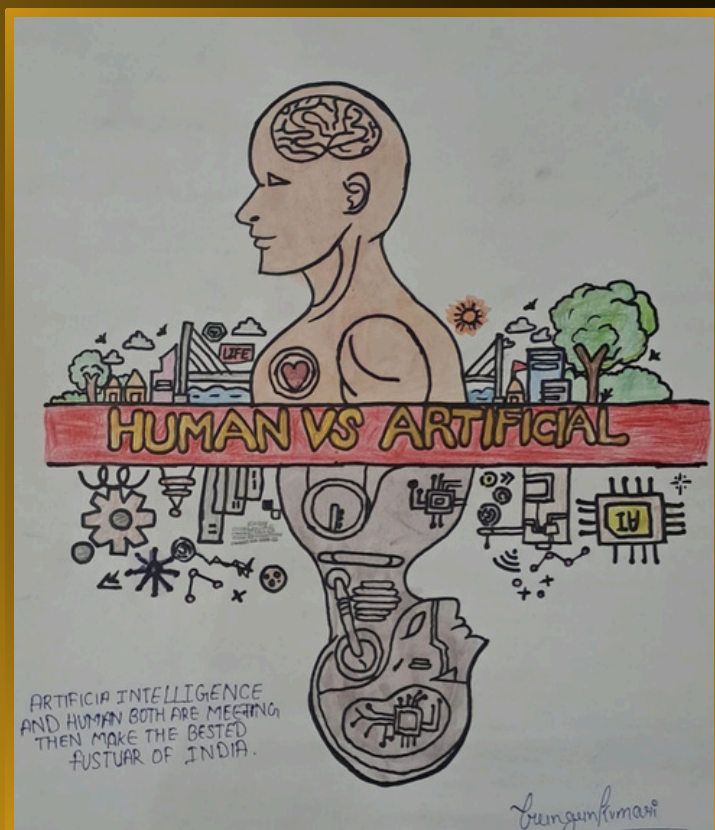
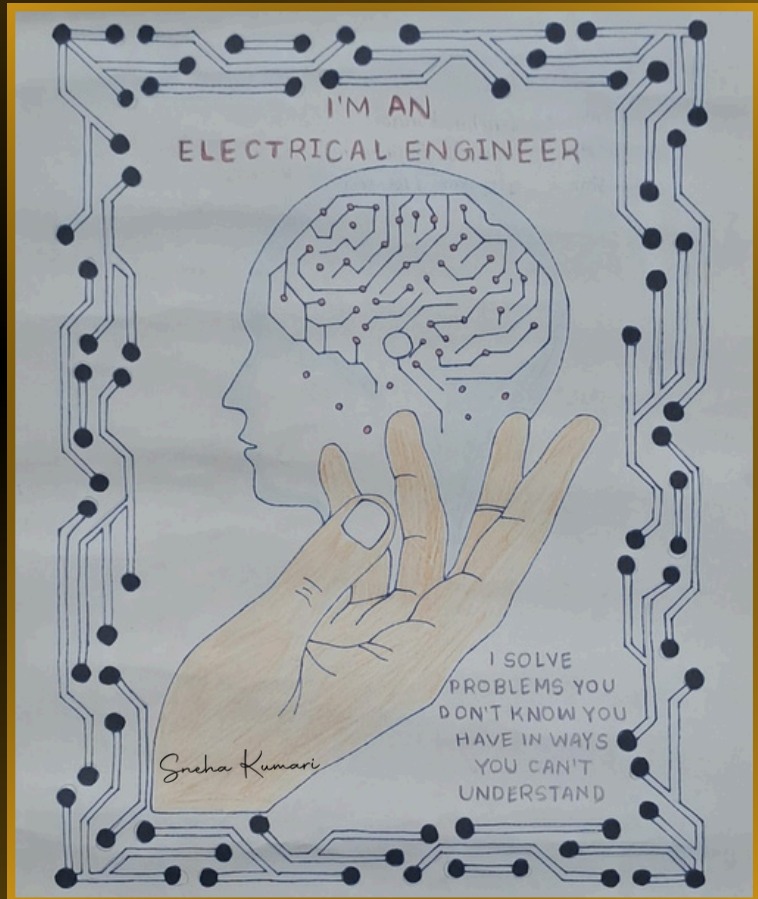
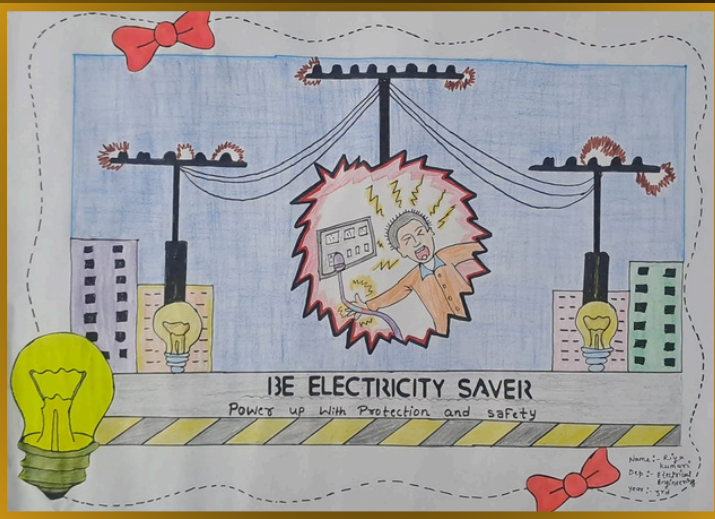
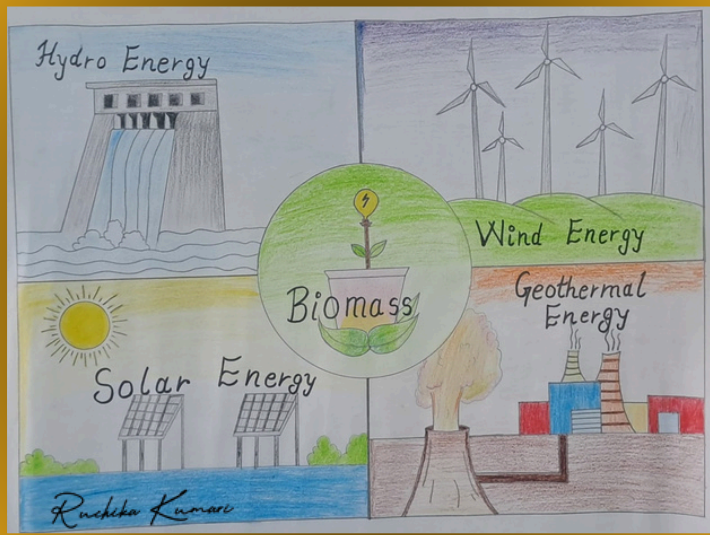
The event was coordinated by **Mrs. Abigail Olive**, making the activity engaging and impactful.

The best entries were awarded to:

1. **Ajit Kumar & Vicky Kumar Sharma - 1<sup>st</sup> Yr. EE**
2. **Ayush Pandey & Manish Kumar - 1<sup>st</sup> Yr. EE**
3. **Reeya Kumari & Raunak Kaushar - 1<sup>st</sup> Yr. EE**

**"A CLEANER FUTURE BEGINS WHEN WE RETHINK, REDUCE, AND REUSE OUR E-WASTE."**  
- ELECTRICAL ENGINEERING DEPARTMENT, GEMS POLYTECHNIC COLLEGE





The Electrical Engineering Department conducted a **Poster Presentation Competition on 15 September 2025**, where EE students showcased their creativity and technical concepts through innovative posters. The event was coordinated by **Mrs. Abigail Olive**.

The best three posters were awarded to:

- **Riya Kumari - 3<sup>rd</sup> Yr. EE**
- **Ruchika Kumari - 2<sup>nd</sup> Yr. EE**
- **Gungun Kumari EE - 1<sup>st</sup> Yr. EE**

### Technical Paper Presentation - Top 3

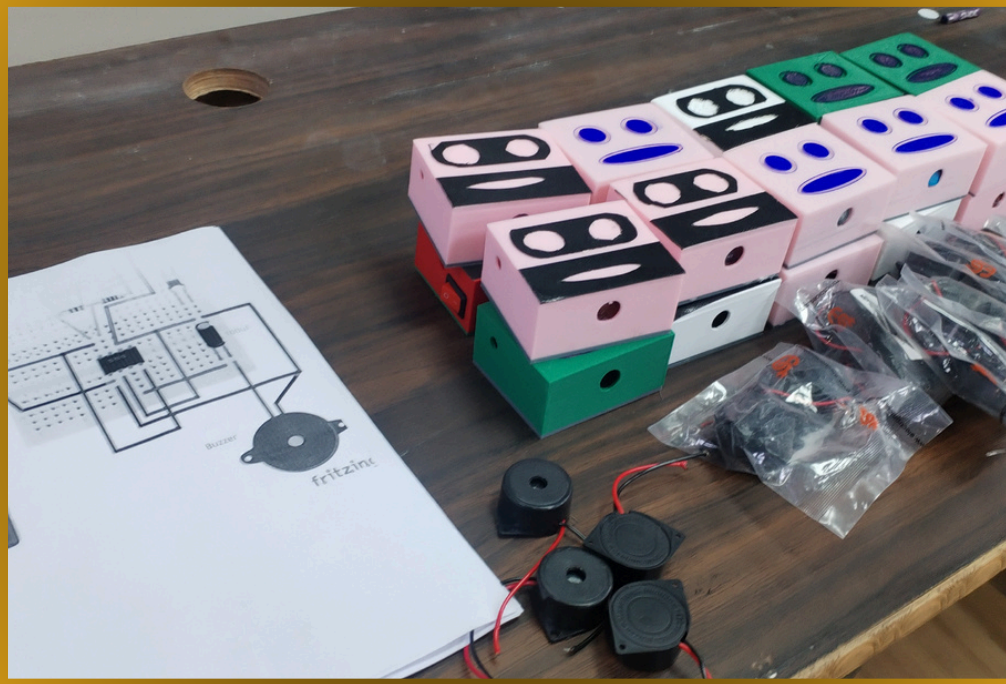
Students showcased innovative ideas and emerging technologies in the electrical domain. EE students presented innovative technical papers. The best three selected were:

- **Divyanshu Raj - 1<sup>st</sup> Yr.EE**  
Smart Grid & Solid State Transformer
- **Indramohit Sharma - 1<sup>st</sup> Yr.EE**  
Emerging Trends in EVs
- **Suraj Kumar - 3rd Yr. EE**  
Piezoelectric Roads



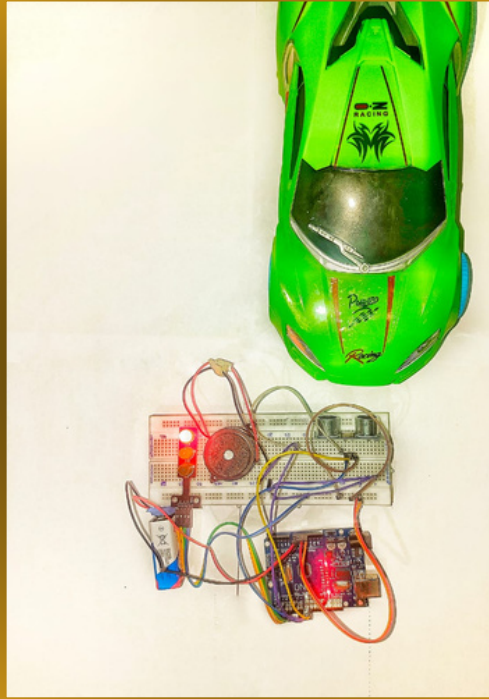
The Department of Electrical Engineering successfully conducted "**Elektrafest 2025**" on **26 September 2025**, bringing together creativity, knowledge, and excitement under one vibrant platform. The event featured a perfect blend of technical competitions and fun activities, including Paper Presentation, Connection Game, and other engaging contests designed to boost confidence and teamwork among students. Students from all years actively participated and showcased their talents, making the event both competitive and enjoyable. The fest was beautifully coordinated by **Ms. Nutan Topno**, whose efforts ensured smooth execution and enthusiastic involvement from everyone.





The **Skill Development Center, GEMS Polytechnic College**, organized an engaging **“Build Your Own Robot”** workshop for 1st Year Electrical Engineering students, on **21 Nov 2025** led by **Mrs. Catharine K. Head SDC, GPC** where **38 students** from **1st Yr. EE** actively participated and gained practical exposure to soldering techniques, along with learning the fundamental concepts of Electrical Engineering and Physics involved in basic robot building. The session boosted their creativity, technical skills, and confidence in handling electronic components. The workshop was highly appreciated by students and proved to be a valuable foundation for their future technical learning.

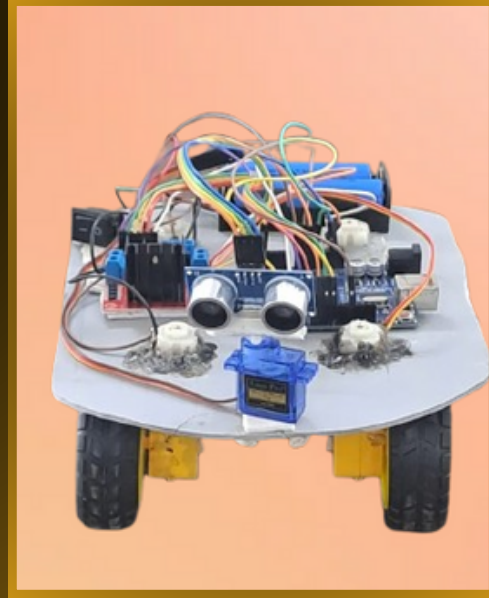
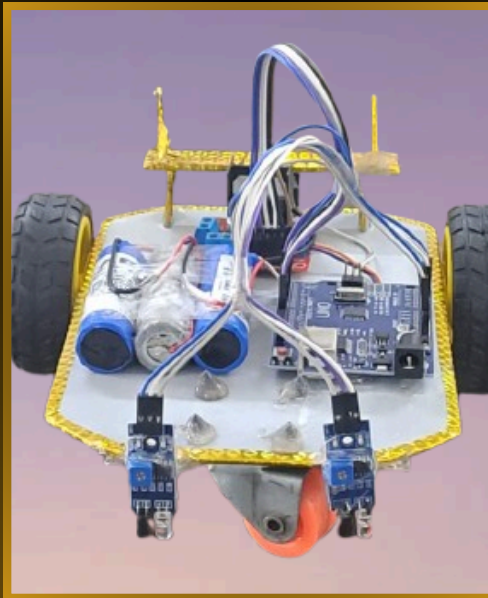




**Arduino - Based Car Parking Assistance System**  
Vivek Kumar & Team

**Solar-Based Multi-Device Charging System**  
Chandan Kumar & Team

**Rain Detection System Using Arduino**  
Rajababu Kumar & Team



**Hydro Power Generation Using Water Wheel**  
Irfan Khan & Team

**Line Follower Robot Using Arduino**  
Manish Kumar & Team

**RC Car With Brakes**  
Lavkush Kumar & Team

As part of the curriculum, all **5th semester (3rd Yr.) students** completed their **Minor Project** by working in teams and developing innovative project models. The activity was smoothly coordinated & guided by **Mr. Ganeshbabu M**, ensuring proper guidance and support throughout the process.



## Electric Vehicles: A Growing Trend in Electrical Engineering

— Omprakash Singh 3<sup>rd</sup> Yr.EE

Electric Vehicles (EVs) are becoming an important topic in Electrical Engineering due to technological advancements and growing environmental concerns. Although developed earlier, EVs are now gaining popularity as a clean and efficient mode of transport.

From an electrical engineering perspective, EVs use key systems such as electric motors, power electronic converters, batteries, and control units. The battery supplies electrical energy, which is converted into mechanical energy by the motor, making EVs more energy-efficient than conventional vehicles.

Lithium-ion batteries with a Battery Management System (BMS) are commonly used to monitor voltage, temperature, and current, ensuring safety and longer battery life. EV charging systems, including fast and smart charging, are being developed to reduce charging time and manage power grid load. Renewable energy sources like solar power are also being integrated with charging stations.

Government support through subsidies and policies has increased EV adoption, creating career opportunities for electrical engineers in electric drives, power electronics, batteries, and smart grids. In conclusion, EVs play a key role in reducing pollution and promoting sustainable transportation.



## Renewable Energy and Smart Grids in Electrical Engineering

— Kumar Ankur 2<sup>nd</sup> Yr. EE

Renewable energy is one of the most important and fast-growing areas in Electrical Engineering. Due to increasing energy demand and environmental concerns, sources such as solar, wind, and hydro power are being widely adopted across the world.

From an electrical engineering point of view, renewable energy systems involve power generation, power electronics, energy storage, and grid integration. Solar panels and wind turbines generate electricity, which is converted and controlled using inverters and converters before being supplied to the grid. This ensures efficient and reliable power flow.

Smart grids play a key role in managing renewable energy. They use sensors, communication systems, and control techniques to monitor power generation and consumption in real time. Smart grids help in reducing power losses, improving reliability, and balancing supply and demand.

Energy storage systems such as batteries are also important for renewable energy integration. They store excess energy and supply power when generation is low.

In conclusion, renewable energy systems contribute to sustainable development and reduced environmental impact.





**Omprakash Singh - 3<sup>rd</sup> Yr EE  
Marks Obtained - 638**



**Kajal Kumari - 3<sup>rd</sup> Yr EE  
Marks Obtained - 632**



**Anshika Kumari - 3<sup>rd</sup> Yr EE  
Marks Obtained - 626**



**Vishal Kumar - 2<sup>nd</sup> Yr EE  
Marks Obtained - 836**



**Abhsihek Kumar - 2<sup>nd</sup> Yr EE  
Marks Obtained - 771**



**Vivekanand Kumar - 2<sup>nd</sup> Yr EE  
Marks Obtained - 767**



**Divyanshu Kumar - 1<sup>st</sup> Yr. EE**

Participating in technical events has been an awesome learning experience. Starting from the 1st semester, these events helped me improve my presentation skills, confidence, and technical understanding.

I encourages all my fellow students to actively take part in such activities to learn beyond the classroom.



## Sumit Kumar - Batch 2022 - 2025

"The concepts I learned during my diploma, especially in subjects like FEEE and FEED, are now directly helping me in my industry work. I am currently working on **CNC and VMC panel projects** at **Havells India Ltd., Neemrana, Rajasthan** where practical knowledge of MCBs, contactors, relays, switchgear, and electric traction is applied daily. The strong fundamentals taught in college are proving extremely valuable in my professional career."



## Satakshi Rathore - Batch 2017 - 2020

"The strong academic foundation and problem-solving approach I developed during my diploma played a crucial role in shaping my career in the software industry. The logical thinking, programming basics, and analytical skills taught during my college years are helping me handle real-time development challenges efficiently. Currently working as a **Software Developer** at **IntelliPaat Software Solutions Pvt. Ltd., New Delhi** I find that the discipline, fundamentals, and learning mindset instilled by my faculty continue to support my professional growth and adaptability in a fast-evolving tech environment."



## Chandradeep Kumar - Batch 2015 - 2018

"The practical-oriented training and strong technical fundamentals I gained during my diploma have been instrumental in my career growth. Concepts and hands-on workshop exposure prepared me well for real-site challenges. Currently working as a **Skilled Technician** at **QCON (Qatar Engineering & Construction Company), Qatar**, I regularly apply the knowledge of electrical installations, maintenance procedures, and industry standards learned during my college days. The foundation built during my diploma continues to support my efficiency and confidence in a demanding international work environment."

