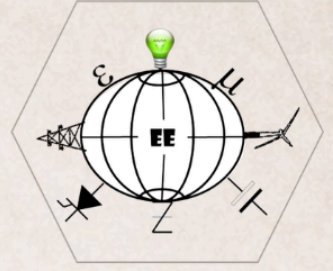




SPARK



A Bi-yearly in-House Newsletter of Department of Electrical Engineering

B.P. Poddar Institute of Management & Technology

Vision of the Institute

To emerge as a progressive and premier Institute for Engineering and Technology education with ethical values for creative engineering solutions commensurate with global changes.

Mission of the Institute

- Offer quality education through modern accessible, comprehensive and research oriented teaching – learning process.
- Create opportunities for students and faculty members in acquiring knowledge through research and development.
- Providing effective interface with industry by strengthening Industry-Institute interaction and developing entrepreneurial skills.
- Meet ever-changing needs for the nation through rational evolution towards sustainable and environment friendly technologies.

Vision of the Department

To emerge as a knowledge hub for higher learning and research in Electrical Engineering.

Mission of the Department

- To create a conducive quality teaching –learning environment to make the student assimilate thorough knowledge in Electrical Engineering. To create a platform for building confidence among faculties and students by exchanging their views through research, interactive sessions with industry and by the use of modern tools.
- To adopt a goal driven teaching learning method to foster innovative entrepreneurship skills in student community with expertise in different engineering domain.
- To enable students to become authorities in the field of electrical engineering along with sustainable and environment friendly technologies to meet the societal needs.

Program Educational Objectives

The graduates of Electrical Engineering shall:

- Acquire adequate physical, analytical and technical knowledge of Electrical Engineering and allied fields to curate solutions, which effectively address the challenges posed by dynamic work environments.
- Inculcate self- assurance, collaborative spirit, critical thinking and acumen for innovation towards gaining a competitive edge in research and development as well as in entrepreneurial ventures.
- Imbibe professional ethics and the attitude to bank on sustainable and eco-friendly practices only, for the wellbeing of society at large.

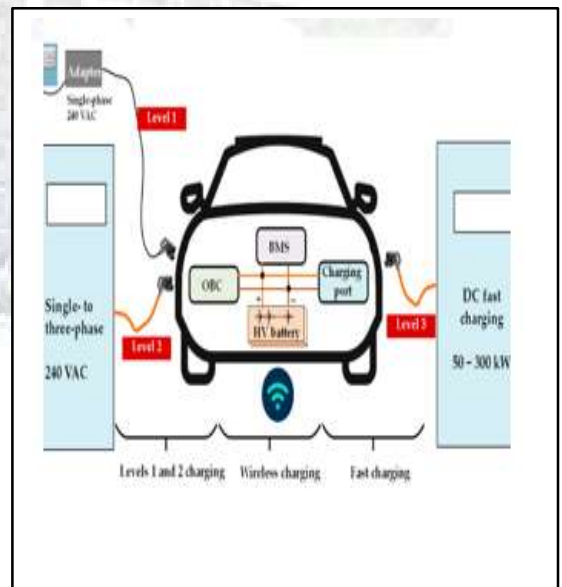
Remembering Satyendra Nath Bose: Indian physicist and polymath



Satyendra Nath Bose was a visionary Indian polymath whose 1924 breakthrough in quantum statistics fundamentally reshaped our understanding of the subatomic world, bridging the gap between classical and modern physics. While serving as a Reader at the University of Dhaka, Bose developed a revolutionary mathematical method for counting the states of light particles (photons) as indistinguishable entities—a concept that defied the classical "Maxwell-Boltzmann" logic of the time. Recognizing the profound weight of his discovery, he sent his manuscript directly to Albert Einstein, who immediately grasped its brilliance, translated it into German, and facilitated its publication in the prestigious *Zeitschrift für Physik*. This intellectual collaboration birthed the **Bose-Einstein Statistics**, providing the necessary framework for understanding the behavior of particles with integer spin and leading to the prediction of the **Bose-Einstein Condensate (BEC)**, a "fifth state of matter" where atoms merge at ultra-low temperatures to act as a single quantum unit.

Driving the Future: Electric Vehicles and the Role of Electrical Engineers

The evolution of electric vehicles is not merely a shift in fuel sources but a fundamental redesign of automotive architecture. At the heart of this transition lies the **powertrain**, where high-efficiency permanent magnet synchronous motors (PMSM) or induction motors are replacing internal combustion engines. For engineers, the challenge shifts toward optimizing **Wide Bandgap (WBG)** semiconductors, such as Silicon Carbide (SiC) and Gallium Nitride (GaN). These materials allow for faster switching speeds, higher thermal conductivity, and reduced power losses in traction inverters, directly extending the driving range and reducing the weight of the vehicle. Ultimately, the success of the electric vehicle movement hinges on the seamless integration of the transport and energy sectors. As EVs transition from isolated machines into interconnected nodes on a **smart grid**, they will serve a dual purpose: providing zero-emission mobility and acting as distributed energy resources.



Advancements in Science & Technology

- ❖ AI was used to customize gene editing for rare diseases which is the first patient-specific treatment that showed success in **February, 2025**.
- ❖ German's Wendelstein 7-X and France's WEST tokamak set plasma confinement records, thus bringing the world closer to clean, unlimited energy (**April–May 2025**).
- ❖ Models like LLaMA 3, DeepSeek, BharatGPT were released during **April 2024 - May 2025**. These models promote accessible, multilingual AI development.
- ❖ In **February 2025**, quantum computing made a significant leap as IBM deployed its Quantum System Two in Japan, while India introduced its first homegrown quantum system, QpiAI-Indus, signaling the beginning of real-world applications in science and industry.

National Seminar on “Sustainability, Climate Change and Automation: Technology Evolution Towards a Clean Energy Horizon”

Report of the 5 Day National Seminar on “Sustainability, Climate Change and Automation: Technology Evolution Towards a Clean Energy Horizon”

A five-day National Seminar on “Sustainability, Climate Change and Automation: Technology Evolution Towards a Clean Energy Horizon” was successfully organized by the Department of Electrical Engineering of B. P. Poddar Institute of Management & Technology (BPPIMT), in collaboration with the Sustainable Development Cell and Institution’s Innovation Council & Entrepreneurship Development Cell from 14th to 18th June, 2025. The event aimed to explore the intersection of sustainability, climate changes and technological advancements in automation that pave the way for a cleaner, energy-efficient future. The first day was conducted in hybrid mode, featuring both in-person and online participation—while the subsequent four days were hosted fully online.

Gracing the occasion were the Prof. Dr. Sutapa Mukherjee, Principal of BPPIMT, Dr. Subhasish Pradhan, Registrar, and Prof. Dr. Nandita Sanyal, Program Chair of the Seminar, whose presence added great value to the opening ceremony. The event was further honoured by the presence of the Chief Guest, Dr. S.P. Gon Chaudhuri, Ex Director of WBREDA, Guests of Honor, Mr. Rabi Choudhury, Ex MD, Haldia Energy Ltd. and Mr. Anirban Mondal, Superintending Engineer, WBSEDCL, who highlighted the need of global cooperation and innovation to combat climate change and promote clean energy solutions.

Throughout the seminar, various technical sessions and panel discussions were conducted by our eminent speakers: Mr. Joy Chakraborty, Divisional Engineer, WBREDA; Mr. Ajeya Bandopadhyay, Asia Lead I Climate Change, International Finance Corporation; Mr. Rajib Das, Consultant E mobility; Dr. Arindam Kumar Sil, Associate Professor, Jadavpur University; Mr. Subhadip Sarkar, GM, Instrumentation & Automation Department Steel Authority of India Limited and Dr. Biswajit Debnath, Assistant Professor, Namtech, IIT Gandhinagar Campus.

Research scholars, academicians and students actively attended the Seminar and participated in the collaborative discussion during the sessions. On the final day an evaluation exam was conducted for understanding the seminar content, followed by the collection of feedback to gauge the effectiveness of the event. The Seminar was concluded with a valedictory session on 18th June and the organizing committee was commended for successfully coordinating the event.



Industrial Visit at Haldia Energy Limited (HEL) – A Great Learning Experience

On 29th March 2025, the Young Professional Section of IET Kolkata Network organized an insightful Industrial Visit to Haldia Energy Limited (HEL), which brought together students from five prominent colleges – Institution of Engineering and Management, Jadavpur University, MCKV College of Engineering, B.P. Poddar Institute of Management and Technology, and Techno Main Saltlake. We had a fantastic group of six IET Student Members and students from the Department of Electrical Engineering, B.P. Poddar Institute of Management and Technology, including: Tanuska Joshi, Sabuj Bhattacharya, Debjcet Kumar Patoa, Satadru Jana, Sougata Roy Chowdhury, Mayukh Mitra. This visit provided hands-on exposure to the operational aspects of power generation and energy distribution, enriching the students' understanding of real-world industry practices. A big thank you to Mr. Aritra Ghosh, the YP Secretary of IET Kolkata Local Network, for coordinating this enriching experience! Such events are vital for Electrical Engineering students, as they bridge the gap between theoretical knowledge and industry practices. The insights gained at HEL will undoubtedly help our students in their future careers.



*Our EE department recently headed to **Haldia Energy Limited** for a deep dive into the world of power generation. Great vibes, even better learning, and a fantastic networking opportunity with students from across Kolkata!*

Industrial Visit at Kolaghat Thermal Power Station (KTPS)

On 8th April 2025, the Department of Electrical Engineering, in collaboration with the Institution's Innovation Council of B.P. Poddar Institute of Management and Technology, organized an impactful one-day industrial visit to the Kolaghat Thermal Power Station (KTPS). Under the guidance of six faculty members, 32 students from the 2nd and 3rd year EE departments gained hands-on exposure to large-scale power generation, bridging the gap between classroom theory and industrial reality. The visit offered a deep dive into the mechanical and electrical complexities of the station, from the pulverized coal-fired boilers and steam turbine cycles to the sophisticated control rooms and high-voltage switchyards. By observing the plant's automation, protection systems, and environmental mitigation strategies like electrostatic precipitators, the budding engineers gained invaluable insight into the operational challenges and innovative maintenance practices required to sustain the West Bengal power grid.



Bridging the gap between textbooks and turbines. Our EE students getting a first-hand look at the complexities of industrial power generation at Kolaghat Thermal Power Station.

PLACEMENT CORNER

The Department is pleased to highlight the recent placement achievements of the students, reflecting their technical competence and industry readiness.

Accenture Solutions Pvt Ltd: Prithika Mondal

Lumino Industries Ltd: Rahul Roy, Sayan Patra, Pallab Roy, Subhajit Sarkar, Bappa Patra, Bitan Bhattacharya, Arka Parial

ACHIEVEMENT CORNER



An innovative project model, "Energy Generator of Urban Roads," conceptualised and fabricated by Mr. Bishal Tarafdar and Ms. Krishnakali Sarkar under the mentorship of Mr. Aritra Ghosh earned the 2nd Runner-Up position in the prestigious TechXcelerate 2025, organized by the University of Engineering and Management (UEM) on 22nd February 2025.

Team Alpha Smashers, comprising Tanushka Joshi, Sougata Roy Chowdhury, Sabuj Bhattacharya, and Mookul Paul, student members of IET On Campus BPPIMT from the Department of Electrical Engineering, under the guidance of Mr. Subhasish Das secured 3rd position in the Innovative Model Competition at Pragati 2025, the annual tech fest of MCKV Institute of Engineering, held on 4th February 2025.



Debmalya Banerjee, received National Award for his contribution to Indian industry. He is the Regional Director (North, South India and Africa) of Indian Chamber of Commerce, based in New Delhi.

Tanushka Joshi, along with her teammates Madhurima Roy, Sougata Roy Chowdhury and Sabuj Bhattacharya secured a winning position at International Women's Day 2025, an event themed around encouraging creativity, innovation, and entrepreneurship among female students. Her startup, "Crafted Tales," focused on handcrafted and personalized items such as fridge magnets, wall decor, stickers and hangings, reflecting creativity and market-oriented thinking.



Team Catalyst secured the winner position at Technomania 2.25 with their project "Drive IQ: Intelligent Safety Monitoring for Drivers Using Machine Learning and IoT Sensors." Developed by Tanushka Joshi, Sougata Roy Chowdhury, Archita Ghosh, and MD Danish under the supervision of Professor Subhasish Das, the project stood out for its real-world impact, clear presentation, and strong teamwork.

GAMES CORNER



THE COLLEGE REBUS CHALLENGE

Decode the hidden phrases in each box!

DEAL	TRAVEL	MCE MCE MCE
1. _____	2. _____	3. _____
HISTORY HISTORY HISTORY	1. PERSON 2. PERSON	KNEE LIGHTS
4. _____	5. _____	6. _____
READING	WOLF	HEAD OVER HEELS
7. _____	8. _____	9. _____
ii OOOO	L =VEL	SYMPHO
10. _____	11. _____	12. _____

Answers: 1. Deal Deal 2. Travel Travels 3. Mice Mice Mice 4. History People 5. One & Second Person 6. Knee Lights
7. Reading Book 8. Lone Wolf 9. Head-Over-Heels 10. Cowardly Lion King 11. Spell Level 12. Unfinished Symphony

1	2					3		
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	7		5	1			3	
			9		2		4	7
7	8	5	2		3	1	6	
2	9		6	5	4	3	7	
		4				9	5	

DID YOU KNOW

The "sixth sick sheik's sixth sheep's sick" is believed to be the toughest tongue twister in the English language.

Stay tuned for more fun facts.

Call for Contribution: Students, staff and faculty members of Department of Electrical Engineering are requested to send their contribution for newsletter electronically to the [email:spark.ee18@gmail.com](mailto:spark.ee18@gmail.com).