



भारतीय प्रौद्योगिकी संस्थान भुवनेश्वर
Indian Institute of Technology Bhubaneswar

Press Release

PECTEA 2025 Conference at IIT Bhubaneswar Drives Breakthroughs in Power Electronics for Sustainable Energy and Transportation Systems

Bhubaneswar, 23rd June 2025: The International Conference on Power Electronics Converters for Transportation and Energy Applications (PECTEA 2025), hosted by the School of Electrical and Computer Sciences, IIT Bhubaneswar, successfully concluded on 21st June 2025. Spanning four days, the conference served as a vibrant forum for academicians, researchers, and industry leaders to deliberate on the future of power electronics in transportation and energy systems.

The conference was inaugurated on 19th June 2025 by Prof. Sukumar Mishra, Director, IIT (ISM) Dhanbad, who underscored the importance of integrated, outcome-driven research. He noted that the event bridges power electronics, electrical engineering, and computing—disciplines with increasingly thin boundaries—and highlighted the role of Technology Readiness Levels (TRLs) in translating innovations into real-world applications. He commended the organizers for fostering interdisciplinary dialogue and promoting research with national relevance.

In his address, Prof. Shreepad Karmalkar, Director of IIT Bhubaneswar, reflected on the evolving role of power electronics and the institute's vision. He remarked, "Power electronics is increasingly central to addressing global challenges in energy and transportation. As disciplinary boundaries dissolve, it is crucial to engage students early and expose them to the societal value of engineering. Conferences like PECTEA not only spark critical dialogue but also inspire the next generation of engineers to pursue meaningful, impact-driven research."

Prof. C.N. Bhende, Dean (Continuing Education) In-Charge highlighted the role of the Continuing Education section of the Institute in imparting lifelong learning. Dr. Dipankar De, Organizing Chair of the Conference, delivered the welcome address and Dr. Chandrasekhar Perumalla, Organizing Co-Chair proposed a vote of thanks in the inaugural session.

The conference commenced with a day of high-level tutorials by distinguished faculty and industry professionals, followed by keynote addresses from global thought leaders, including Prof. Sanjib Kumar Panda (National University of Singapore), Prof. Rajeev Kumar Singh (IIT BHU), Prof. Pat Wheeler (University of Nottingham, UK) and Prof. John Hayes (UCC Ireland).

The Women in Engineering (WIE) event held on IEEE PELS Day, held on 20th June highlighted IEEE PELS initiatives promoting diversity and inclusion. Experts discussed trends and challenges in women's participation in engineering education and the workforce, focusing on actionable strategies to boost representation. Over three days of technical sessions, authors from leading institutions and industries presented their research through interactive sessions, fostering academic exchange and

collaboration. Selected students received financial travel support from the conference organizing committee.

During PECTEA-2025, IIT Bhubaneswar hosted a live demonstration of the KAMMA Gear Flywheel Technology. This green, pollution-free solution acts as a mechanical battery and synchronous condenser, enhancing grid stability through high-inertia energy storage. The system combines input from a prime mover with optimized flywheel mass via gravity, aligning with energy conservation principles. Scalable for large applications, the technology was fully demonstrated on campus through appropriate measurements.

It may be noted that a national level steering committee will be formed to make this conference a biennial event with its 2nd version in 2027 at IIT Bhubaneswar.