

ABOUT THE FDP

The rapid transformation of the global energy landscape has led to an increasing demand for efficient, sustainable, and intelligent energy systems. Advances in smart grid technologies, renewable energy integration, intelligent control strategies, and modern electric drives are reshaping conventional power systems into more resilient, flexible, and environmentally friendly infrastructures. The convergence of power electronics, digital control, communication technologies, and data analytics is enabling the development of next-generation energy solutions that can address challenges such as energy security, grid stability, and decarbonization. In this context, there is a growing need for academicians and researchers to stay updated with emerging trends and technological advancements. This Faculty Development Program (FDP) on “Advances in Smart Energy Technologies, Intelligent Control, and Drives” aims to provide a comprehensive platform for knowledge sharing, skill enhancement, and research orientation in the domains of smart grid, power systems, and renewable energy-based power electronics.

KEY FOCUS AREAS

- Modern power system challenges, grid modernization, resilience, and cybersecurity.
- Renewable energy systems and grid integration of solar, wind, and distributed energy resources.
- Microgrids, energy storage systems, distributed generation.
- Power electronic converters for renewable energy applications, including converter selection, modeling, design, and control.
- Intelligent control techniques for power converters, grid-connected systems, and smart energy management.

- Advanced electrical drives, motor control strategies, and their applications in industrial systems and electric mobility.
- Emerging trends such as AI-assisted control, Digital Twin, data-driven sustainable energy technologies

OBJECTIVES

The objectives of the FDP are:

- To enhance the knowledge of participants in emerging smart energy technologies and modern power systems.
- To provide insights into the design, operation, and control of smart grids and renewable energy systems.
- To familiarize participants with recent developments in power electronics and intelligent control techniques.
- To explore advanced electric drives and their applications in energy-efficient systems.
- To bridge the gap between academic research and industrial practices in the energy sector.

WHO CAN ATTEND?

The faculty members, research scholars & interested PG students of the recognized institutions and industry personnel are eligible to attend this programme.

REGISTRATION

There is **no registration fee**. Candidates have to register through the given link on or before 02.05.2026.

<https://forms.gle/tPKeb7SxZz8WdeoDA>



ONE-WEEK HYBRID Faculty Development Program (FDP)

ON

**“Advances in Smart Energy
Technologies, Intelligent Control,
and Drives”**

4th May 2026 – 8th May 2026



Organized by
**Department of Electrical & Electronics
Engineering,**
Birla Institute of Technology, Mesra, Ranchi,
Jharkhand, India – 835215
www.bitmesra.ac.in



ABOUT THE INSTITUTE

Birla Institute of Technology, Mesra, Ranchi was founded by the philanthropist industrialist, the late Sri B. M. Birla, as a part of his lifelong commitment towards building a technologically advanced and industrially strong India. It was established in 1955, by the Hindustan Charity Trust, Calcutta, as a pioneering all India institution for imparting technical education and conducting research. It was granted Deemed University status in the year 1986 under u/s 3 of UGC Act, 1956.

The institute is located at the confluence of rivers Jumar and Swarnrekha, 16 kilometers away from the city of Ranchi in a peaceful and green environment. Ranchi, the capital of Jharkhand state, is connected to all major cities of India by road, rail and air. It is entirely residential spread over a large area providing accommodation for faculty and staffs with all basic facilities like hospital, bank, post office, railway reservation counter, internet, grocery stores etc. and also facilities for sports, cultural and recreational activities.

ABOUT THE DEPARTMENT

The Department of Electrical & Electronics Engineering focuses on industry-oriented education and research, supported by ₹2.7 crore funding from UGC, DST, AICTE, CDAC, and TEQIP. Key areas include Smart Grid and energy-efficient drives, with MoUs with the University of Padova and industries. It offers M.Tech programmes in Power Electronics, Power Systems, and Control Systems, along with Ph.D. research. The department is equipped with advanced laboratories including Power Electronics & Drives, Machines, Power Systems, Smart Grid, Control and Robotics. Additionally, modern computational tools such as MATLAB, PSIM, PowerSIM, and dSPACE support research in emerging areas of electrical engineering.

ORGANIZING COMMITTEE

Chief Patron
Prof. Indranil Manna,
Vice Chancellor,
BIT Mesra, Ranchi

Patron
Prof. T. Ghose
Professor, Dept. of EEE,
BIT Mesra, Ranchi

Convenor (s)
Dr. S.K. Mishra
HoD & Associate Professor,
Dept. of EEE, BIT Mesra, Ranchi
Dr. C.L. Dewangan
Assistant Professor,
Dept. of EEE, BIT Mesra, Ranchi

Coordinator (s)
Dr. Prateem Pan
Assistant Professor, Dept. of EEE
Email: prateempan@bitmesra.ac.in
Mobile: 8961743959

Dr. Sanjeev Kumar
Assistant Professor, Dept. of EEE
Email: sanjeev.kumar@bitmesra.ac.in
Mobile: 7277572282

Dr. Sourabh Paitandi
Assistant Professor, Dept. of EEE
Email: sourabh_paitandi@bitmesra.ac.in
Mobile: 7001132557

CONFIRMATION OF PARTICIPATION AND CERTIFICATES

Upon the registration, confirmation will be sent to the selected participants through email on 3.05.2026. Please note that accommodation for offline participants shall not be provided by the institute.

The detailed schedule will be shared only to the confirmed participants through email and/or WhatsApp.

Certificates will be issued to participants who maintain attendance of more than 75%.

RESOURCE PERSONS

Faculty from reputed technical Institutions (IITs/NITs) and experienced engineers from industry are the resource persons for the program and will deliver the lectures.

