Organized by
Electronics & ICT Academy

MNIT Jaipur
http://www.mnit.ac.in/eict

Online Programme
on
Modelling and Control of Power Electronic Converters for Green Energy Applications

23rd June – 04th July 2025

Faculty Development Programme
Electronics & ICT Academy under aegis of

Ministry of Electronics and Information Technology
Government of India

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Objective (Electronics & ICT Academy-Phase II)
1)To conduct specialized FDPs for faculty/mentor training in line with the vision of MeitY by promoting emerging areas of technology and other high-priority areas that are pillars of both the "Make in India" and the "Digital India" programs.
2) To promote synergy and collaboration with industry, academia, universities and other institutions of learning, especially in emerging technology areas.
3) To support the National Policy on Electronics 2019 (NPE 2019) which envisions positioning India as a global hub for ESDM sector, including MeitY Schemes/policies such as Programme for Semiconductors and Display Fab Ecosystem; India AI; National Programme on AI, Production Linked Incentive Scheme for IT Hardware & Large-Scale Electronics Manufacturing; EMC; SPECS; Chips to System (C2S); etc.
4) To promote standardization of FDPs through Joint Faculty Development Programmes.
5) To support the vision of the National Education Policy (NEP 2020), which mandates that Indian educators go through at least 50 hours in professional development programmes per year.
6) To design, develop & deliver specialised FDPs on emerging technologies/ niche areas/ specialised modules for specific research areas for Faculty in Higher Education Institutions (HEI), besides FDPs on multi-disciplinary areas connected with ICT tools and technologies and other digital hybrid domains, covering a wide spectrum of engineering and non-engineering colleges, polytechnics, ITIs, and PGT educators.

An intensive 40 Hours Training Programme in online mode is being organized for faculty and doctoral students of engineering and technological institutions. It is also open to working professionals from industry/organizations. The main theme of training program will be oriented around exploring the fundamentals and advanced methods for the design, modelling, and control of power electronic converters for green energy applications.

Experts/Speakers-

1. Prof. Bidyadhar Subudhi, Director, NIT Warangal
2. Prof. Mukesh Kumar Pathak, IIT Roorkee
3. Prof. Yogesh Vijay Hote, IIT Roorkee
4. Prof. Santanu Kumar Mishra, IIT Delhi
5. Prof. Bharat Singh Rajpurohit, IIT Jodhpur
6. Prof. Deepak Fulwani, IIT Jodhpur
7. Prof. Amod C. Umarikar, IIT Indore
8. Prof. BL Narasimharaju, NIT Warangal
9. Dr. Ranjan Kumar Behera, IIT Patna
10. Dr. Suvendu Samanta, IIT Kanpur
11. Dr. Shailendra Kumar, IIT Bhilai
12. Dr. Ravi Prakash Reddy, IIT Bombay

Few more eminent speakers from IISc Bengaluru, IITs, and NITs are also expected to join the expert's panel.

Programme Modules:

Module 1: Fundamentals and design aspects of power converters , Operating principles, Inductor and capacitor design, Selection of devices (MOSFET, IGBT, SiC, GaN), Gate drivers, Thermal management
Module 2: Basic and advanced DC-DC converter and inverter topologies for various applications, Mathematical modelling techniques including state-space averaging, averaged switched modelling, etc.
Module 3: Control design methods including PI/PID controllers, Sliding mode control, Model predictive control (MPC), Digital control, Model order reduction methods
Module 4: Advanced MPPT algorithms for solar PV, Battery management systems (BMS) with DC-DC interfaces, Bidirectional converters, EV chargers, DC microgrid
Module 5: Hands-on sessions on simulation of power electronic converters and its application using MATLAB/PLECS. Demonstration of current sensor, voltage sensor, driver circuit and hardware-in-loop (HIL) for dc-dc converters

Principal Coordinator:

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Registration:
Registration is open to faculty, working professionals, industry persons, doctoral, postgraduate and graduate students.
Register online at–http://online.mnit.ac.in/eict/

Certification Fee: Academia (faculty/Students): Rs. 500/-
Working professionals, Industry, research/technical staff & Others: Rs.1500/-

(A) Fee once paid will not be refunded back.
(B) The fee covers online participation in the programme, tutorial notes and examination, certification charges.
(C) The organizers should receive the registration amount through online mode-NEFT/UPI, provided at the registration portal.
(D) Detailed schedule will be shared after receiving registration form.
→ For any other query, **email us at** fdp.academy@mnit.ac.in

MNIT Jaipur one of the oldest NITs, the institute has a rich heritage of sixty years producing world class engineers, managers, architects and scientists. Ranked 43rd nationally in the NIRF ranking-2024 (Engineering), the institute offers learning opportunities for undergraduate, postgraduate students, and researchers in various domains. Having a lush green campus of over 317 acres within the heart of the pink city, close to Jaipur International Airport, the campus offers a safe and lively environment. A world class teaching infrastructure, state-of-art laboratories welcome you at the campus. The institute has a vision to impart education of international standards and conduct research at the cutting edge of technology.