

NATIONAL INSTITUTE OF TECHNOLOGY RAIPUR

(An Institute of National Importance)
G.E. Road, Raipur, C.G. – 492010, India



ONE WEEK SELF-FINANCED ONLINE SHORT-TERM TRAINING PROGRAMME ADVANCED POWER ELECTRONICS FOR ELECTRIC VEHICLES AND SMART CHARGING INFRASTRUCTURE: TECHNOLOGIES, CONTROL, AND GRID INTEGRATION

Date: 12-16 October 2026

CHIEF PATRON	PATRON	CHAIRMAN, CEC
Prof. N.V. Ramana Rao Director, NIT Raipur	Dr. Guru Prasad Subas Chandra Mishra Dean (R&C), NIT Raipur	Dr. Subhojit Ghosh Professor In-Charge, CEC, NIT Raipur
CO-PATRON		
Dr. Sachin Jain, HOD, Department of Electrical Engineering, NIT Raipur		

ABOUT THE PROGRAMME

This one-week self-financed short-term training programme is designed to provide an advanced, application-oriented understanding of power electronics for electric vehicles and smart charging infrastructure. The programme brings together converter technologies, power semiconductor devices, electric motor drives, advanced control, battery systems, charging technologies, bidirectional power flow, smart charging, renewable energy integration and grid-support functions. It is intended to strengthen teaching, research and industrial competence in rapidly evolving EV and power-electronics technologies.

PROGRAMME COORDINATION & RESOURCE PERSONS

COORDINATORS	RESOURCE PERSONS
Dr. D. Suresh, Assistant Professor, Dept. of EE, NIT Raipur Dr. Rajan Kumar, Assistant Professor, Dept. of EE, NIT Raipur Dr. Surajit Sannigrahi, Assistant Professor, Dept. of EE, NIT Raipur	Sessions will be delivered by distinguished resource persons from IITs, NITs and leading industry organizations across the globe.

ABOUT NIT RAIPUR

National Institute of Technology Raipur situated in the capital of Chhattisgarh, Raipur, has proven to be 'avant-garde' in the field of science and technology over past few decades in this region. With sweet memory of foundation ceremony by our president Hon'ble Dr. Rajendra Prasad on 14th September 1956, the institute started with two departments namely Metallurgical and Mining Engineering. Later the inauguration of the Institute building was done by our Prime Minister Hon'ble Pt. Jawahar Lal Nehru on 14th March 1963. From 1st December 2005, the institute has become the National Institute of Technology. It is well connected with Mumbai, Delhi and all metro cities by regular flights and is on the main Howrah-Mumbai railway route. The institute is 5 km from the Raipur railways station and 18 km from airport on NH-6, the Great Eastern Road.

ABOUT THE DEPARTMENT OF ELECTRICAL ENGINEERING

Electrical Engineering one of the significant Engineering branch of NIT Raipur and, has been contribute to the institute since the time of inception in 1958. The Department aims at imparting the state of the art know ledge and skills to the students, thus, developing them into excellent Electrical Engineers, Entrepreneurs, Scientists, and Academicians.

OBJECTIVES

- To provide a comprehensive understanding of advanced power electronics technologies and power semiconductor devices for Electric Vehicle (EV) applications, with emphasis on efficiency, performance and reliability.
- To develop knowledge of advanced converters, traction inverters, PWM/modulation and control techniques for high-performance EV propulsion and electric drives.
- To familiarize participants with BLDC/PMSM drives, EV batteries, Battery Management Systems (BMS), charging technologies, fast charging and wireless power transfer.
- To explore smart charging, intelligent energy management and bidirectional power-flow technologies, including Vehicle-to-Grid (V2G), Vehicle-to-Home (V2H) and Vehicle-to-Building (V2B).
- To analyze grid integration, power quality and renewable-energy-integrated EV charging infrastructure while promoting research, innovation and industry-oriented problem solving.

DETAILED TECHNICAL TOPICS

- EV Powertrain Architectures and Power Electronics
- Advanced Power Semiconductor Devices for EVs
- DC–DC Converter Topologies for Electric Vehicles
- Bidirectional DC–DC Converters and Energy Management
- Advanced Traction Inverters for EV Applications
- Advanced PWM and Modulation Techniques
- Advanced Control Strategies for EV Motor Drives
- BLDC and PMSM Drives for Electric Vehicles
- EV Batteries and Battery Management Systems
- On-Board and Off-Board EV Charging Technologies
- Wireless Power Transfer for EV Charging
- Smart Charging and Intelligent Energy Management
- V2G, V2H and V2B Technologies
- Grid Integration and Power Quality in EV Charging
- Renewable Energy Integrated EV Charging Infrastructure

TARGETED PARTICIPANTS

- Industry Professionals & Corporate Delegates
- Faculty Members and Technical Staff
- Research Scholars
- UG & PG Students

REGISTRATION FEE (INCLUDING GST @ 18%)

Participants	Amount (Rs.)
NITRR Students	590/-
External Students / NITRR Staff	885/-
Industry / Faculty	1770/-

The registration fee is non-refundable. Application must be submitted in the prescribed format. Payment may be made using the QR code or the account details provided.

REGISTRATION & PAYMENT DETAILS

Net banking Bank: State Bank of India Branch: NIT Branch IFSC: SBIN0002852 Account No.: 38027633250 QR Code 	REGISTRATION LINK https://forms.gle/fXeFeQWGS�3wyZ118 Last date for submission: 8 October 2026 
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