

School of Electrical Sciences  
Indian Institute of Technology  
Bhubaneswar



# CALL FOR PAPERS

Call for Papers for The 1st IEEE  
International Conference on  
Power Electronics Converters for  
Transportation and Energy  
Applications  
Conference on  
Power Electronics Converters for  
Transportation and Energy  
Applications  
**PECTEA 2025**



## SUB-THEMES

- ✔ **Power Converter Topologies, Components and Devices**
  - Power Devices, Components and Magnetic Materials
  - Modelling, Simulation, Control and Stability of Power Converters
  - Gate Drivers, EMI, EMC and Protection
  - Advanced Topology
  - Efficiency and reliability
  - Fault tolerant converter
  - Soft switching Converters
  - Bidirectional Power Converters
  - Solid state transformer based Power Converters
  - Thermal Management, Packaging, and Optimization
- ✔ **Power Electronics for Renewable Energy and Storage Systems**
  - Wind and Solar PV systems, Fuel Cells
  - Grid Integration and Policy issues
  - Microgrids and Hybrid grids
  - Converter Topologies for Renewable Energy Integration
  - Integration of storage with Solar/Wind Energy Systems
  - Battery, Supercapacitors, Fly wheel, Biomass, Hydrogen based Sources
  - Smart Grid and its applications
  - Control and energy management system in Microgrids
  - DC-powered active and passive smart solar houses
  - DC and Off-grid Microgrids
  - Microgrid energy management
  - Protection of conventional and renewable generation and grid interconnection
- ✔ **Electric Mobility and Transportation**
  - Electric Power-trains for Passenger and Light Duty Vehicles
  - Electric Power-trains for Heavy Duty Vehicles and Buses
  - Electric Power-trains for Rail Vehicles
  - Electric Power-trains for Aerospace Applications (Aircrafts, Drones)
  - Electric Power-trains for Marine Applications (Offshore, Subsea and Ships)
  - On-Board Chargers (wired)
  - Wireless Power Transfer Systems
  - On-Board DC-Voltage Networks
  - Smart Charging and Vehicle to X (Home, Load) Interaction
  - Batteries: Management Systems (BMS), Monitoring and Lifetime Prediction (SOC, SOH)
  - Fuel Cells: Converters, Control, Diagnostics and System Integration
  - Power Electronics for Vehicle-Integrated PV (VIPV)
  - Communication Systems for EV/HEV
  - Thermal management in EV/HEV
- ✔ **Electric Drives and Control**
  - Advanced Control of Drives
  - Design, Optimization and Condition Monitoring of Electrical Machine
  - AC, DC, BLDC Drives, Reluctance Machine Drives
  - Advanced PWM Techniques for Electric Drives Systems
  - Design Automation for Power Converters
  - Machine Learning Applications in Power Converters and Drives
  - Sensor-less operation and Estimation Techniques
  - Control High Power Drives

## ✓ Power Flow Control and Power Quality

- Modeling and Control
- Reactive Power Management
- Distributed Generation and Grid Interconnection
- FACTS devices
- Power Quality conditioners, HVDC Converters & Control

- Control of shunt, series and hybrid active filters
- Power quality event detection, classification and mitigation with signal processing techniques
- IEEE standard compatible passive/active filter and compensation design

## ✓ Power System Protection

- Protection of Transformer, Transmission line and synchronous generators
- Digital and adaptive relaying
- Protective devices, systems, and technologies
- Disturbance-monitoring
- DC/AC Micro-grids and islanded networks protection
- Grid codes and policy/legislative issues that may impact protection

- Protection of energy storage and novel loads
- Protection against network instability and low inertia
- New protection algorithms and software solutions
- Design and application of substation communications and integrated systems
- Advanced signal processing techniques and Multi-agent-based protection systems
- Wide-area protection systems and Cyber security

## ✓ High Voltage Applications

- Power Electronics applications in High Voltage Engineering
- High Voltage Design, Devices, Testing, Monitoring and Diagnostics
- Opening, Closing, and Solid-State Switches for high voltage

- Application of compact HV power supplies
- Control of shunt, series and hybrid active filters
- Power quality event detection, classification and mitigation with signal processing techniques

## REGISTRATION FEES

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## IMPORTANT DATE

<b>15TH JANUARY, 2025</b>	<b>1ST MARCH, 2025</b>	<b>1-30 APRIL, 2025</b>	<b>1-30 MAY, 2025</b>	<b>18-21 JUNE, 2025</b>
Paper submission deadline	Acceptance notification	Early bird registration and paper submission	Regular registration and paper submission	Conference date

### In collaboration with:



### ORGANIZING CHAIR

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### ORGANIZING CO-CHAIRS

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<https://conference.iitbbs.ac.in/pectea2025/>

