



**1<sup>st</sup> international Conference on Power  
Electronics Converters for Transportation  
and Energy Applications (PECTEA-2025)**  
18<sup>th</sup> – 21<sup>st</sup> June 2025, IIT Bhubaneswar, India



**Special Session-3 (SS-3)**

**Title of the Proposal:**

**Sustainable Development in EV Power Processing and Renewable Energy Integration**

**Technical Outline of the Session (100 words):**

With the rapid advancement of EVs and the growing popularity of renewable energy enables a seamless integration of renewable energy sources (such as wind and solar) and electric vehicles (EVs) for the betterment of societal growth. The EV power processing through various power conversion stages and its integration with renewable energy sources manages the flow of electricity efficiently by converting the power between various form like DC to AC and vice versa—while maintaining the grid stability and burden free. This session aims to explore the cutting-edged advancement in EV charging propulsion systems, bidirectional energy flow in EVs and renewable energy integration with EV charging stations for efficient, and sustainable energy infrastructure.

**Topics of Session (maximum 5):**

- Control and Design of Power Converter for E-Mobility
- Renewable energy integrated EV charging stations
- Various EV connections (V2G, V2V, V2H)
- Micro-grid with EVs and renewable energy
- Artificial Intelligence (AI) applications for EV charging and energy management

**Organizers**

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