



**IEEE International
Conference on Power
Electronics and
Energy (ICPEE 2025)**



Special Session 06 (SS 06)

SS 06: Design, Modelling and Control of Renewable Energy based EV Charging Infrastructures

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Call for Papers

Technical Outline of the Session:

The main focus of proposed special issue is to cover the research work carried out by the researchers/academia and practicing engineers working in the area of solar -wind hybrid generation for people living at isolated or remote places. In addition, it also covers the extensive use of power electronics for making such generation system more reliable and practicable. It is also focused to publish the innovative and noble idea for further fostering the new research and development in this sector. The importance of solar wind hybrid power generation system have increased manifold in recent years across the globe. The power quality issues are still a major concern for researchers in this kind of supply systems. The energy storage is required for such systems to make the real power balance across the point of common coupling. The development of various topologies of power converter in both the segments means generation and distribution has made the task profitable for utility as well as consumers. Due to the availability of the custom power devices, the power quality (PQ) issues in solar-wind power generation system are a lesser concern for customers. There are some other relevant power quality issues such as load unbalance and power factor correction at the generation side need to be addressed. Therefore, this issue will create awareness among teachers, research students and industry persons about better utilization of solar-wind hybrid energy system by making it more efficient with the use of power electronics. The performance of power electronics devices are dependent on the effectiveness of control algorithm under dynamical conditions. Therefore, this issue also intended to cover all the traditional as well as advanced control algorithms of power filtering and their control including modeling and simulation work. The adaptive control, model predictive control, artificial intelligence-based control algorithm and optimization techniques application for estimating the error regulator gains are the focus area for estimation of control reference. However, there is no restriction for some innovative applications used in the domain of solar-wind hybrid power generation and its innovative control. The development and analysis of various components used in such kind of system will also be encouraged.

Topic of the Session includes, but are not limited to:

- ❖ Converter topology used in EV charging system
- ❖ Controller design for EV and its applications.
- ❖ Control algorithm for various converter topologies useful in EV Charging
- ❖ Problems associated with battery swapping and

energy storage elements and solutions using converter control.

- ❖ Design and development of classical, adaptive and artificial intelligence.
- ❖ Secure, robust, and intuitive charging solutions for EV

Important Dates:

Special Session Paper Submission Due Date: 15.08.2025

Notification of Paper Acceptance Date: 31.08.2025

Camera Ready Paper Submission Due : 15.10.2025

Author guidelines areas per regular paper submission.

**IEEE Template
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<https://icpee.kiit.ac.in/special-sessions/>

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