

ICIEA 2022 Special Session

Title of session	Recent Developments in Power Conversion Topologies and Control Schemes for Energy Tapping in Renewable Energy Systems
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Summary of session	<p>Brief description: The necessity to incorporate the power electronic converters have accelerated in an industrial engineering due to significant contribution of issues related to power quality and renewable energy generation. From a practical standpoint, these converters play a crucial role to transform the renewable power for serving the skyrocketed demand of electricity while concurrently acquiring various ancillary services. Though these power converters are capable of serving various control objectives in industrial applications, its effective utilization requires a considerable change in terms of technological findings, modelling, topologies, and control strategies. Besides, it has always been a challenge to examine the practicability and feasibility of the newly developed converter configurations for real-time applications.</p> <p>In this context, the organizers of this special session are intended to address the challenges associated with modelling, simulation, and experimental validation of power electronic converters for power industry applications.</p> <p>Related topics:</p> <ol style="list-style-type: none"> 1. Power electronic converters for renewable energy integration 2. Harmonic mitigation techniques for power quality improvement 3. Potential assessment of the power electronic converters through modeling, simulation, and experimental validation 4. Ancillary services from grid connected renewable energy systems 5. Design consideration for electronic converters in distributed generation 6. Advanced topologies for electronically coupled energy generation sources 7. Integration of electric vehicle and other renewable sources with smart grid 8. System identification algorithms for power electronic converters 9. Application of artificial intelligence based techniques for converter control 10. Emerging robust control techniques