

ICPE 2019 – ECCE ASIA  
Organized Session on:

## High-Performance Grid-Friendly Photovoltaic Power Conversion Systems

Various challenges are acknowledged in practical cases with a high penetration level of solar photovoltaic (PV) systems, leading to the continuous update of grid-connection requirements. For instance, the recently published IEEE 1547-2018 has imposed various requirements on grid-connected PV systems. As the intermediate stage, the power electronic converters will again play an important role in advancing the grid-integration of PV energy. Power electronic converter systems are becoming more active in grid regulations. Additionally, with the declining price of energy storages, the grid-connected PV systems are enhanced with more and more energy storage systems. All the above require and drive the PV systems to be grid-friendly. Hence, the design, operation, and control of grid-friendly PV power converters are becoming ever imperative. Many attempts should be made toward reducing the cost of energy by addressing the efficiency, reliability, and stability issues. In light of the above, this Invited Section is dedicated to collect recent advancements of high-performance grid-friendly PV systems in such a way to tackle the technological challenges in future ultracomplex power systems with more power electronic-based PV systems.

Prospective authors are invited to submit their recent advances in the fields with the following topics (but not limited to):

- ✓ Power converter topologies for PV applications
- ✓ Design for efficiency and reliability
- ✓ Control for grid-friendliness of PV systems
- ✓ Flexible active power control of PV power systems
- ✓ Coordinated control and operation of hybrid energy systems
- ✓ Ancillary services from PV systems
- ✓ Modeling and analysis with a wide-scale adoption of PV systems

Session Chair:  
Yongheng Yang  
Associate Professor  
Aalborg University, Denmark  
[yoy@et.aau.dk](mailto:yoy@et.aau.dk)