

CALL FOR PAPERS

Special Session on “**Modelling, Control and Protection of Power Electronic Converters used to Interface Renewable Energy Sources to Microgrid**”

2022 14th IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC2022)

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SPECIAL SESSION DESCRIPTION

Power electronics converters play a key role for interfacing the renewable energy sources like solar photovoltaic, wind turbine, Fuel Cells etc. in microgrids. To ensure stable operation of microgrid, the power electronic converters are controlled to minimize mismatch between the powers supplied by the sources and demanded by loads. These power electronics converters are essential part of active distribution network and possess low inertia. The stabilized operation of microgrid can be realized by devising energy efficient converters and control techniques suitable for microgrid applications. The penetration of constant power loads lead to stability issues in microgrid specially in islanded mode of operation. Communication among source converter is an essential element of microgrid to implement hierarchical control. The resiliency of microgrid against communication failure is also an important issue. To reduce the data congestion, consensus control of microgrid becomes an important choice. The protection of converters against short circuit fault is challenging in case of dc microgrid as compared to ac microgrid. Therefore, the objective of this special session is to address the above-mentioned issues which are associated with microgrid and networked microgrids. Power quality (PQ) problems caused by the uncertainties associated with renewable energy sources (RES) need to be minimized appropriately.

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The solutions could be integration of RES, mathematical formulation of PQ problems, using of artificial intelligence (AI)-based controllers. The feature providing an AC voltage of arbitrary amplitude and phase of the most inverters, allows to produce power at any power factor. Thus, power electronic interfaces can be used in order to control the reactive power.

TOPICS COVERED

- Smart Power Electronics converters, modulation and control issues for Renewable energy applications
- Coordination control strategies and hierarchical control of power electronics converters for microgrids (AC, DC, AC/DC)
- Non-linear control of power electronics converters used in microgrids
- Inertia enhancement of active distribution networks
- Protection issues in Power Electronic Converters for microgrids

Schedule (for Authors planning to submit paper to special session):

Deadline for submission of the paper (s) to the conference submission portal by selecting the desired special session – June 01, 2022

Notification of acceptance – September 01, 2022

Deadline for submission of final manuscripts through conference portal- October 01, 2022

Technical Co-sponsors:

