

Special Section on:

Advanced Control and Power Electronics Solutions for Hybrid and Meshed Microgrid

Due to various important features such as higher efficiency, reliability, stability and voltage regulation, DC microgrids are attractive options for supplying various DC loads. Moreover, several energy sources can also be directly connected to DC microgrid. However, most of the present loads are AC loads supplied by the existing AC lines. For achieving benefits of both ac and dc microgrids, these two types of microgrids can be interconnected to realize hybrid and meshed microgrids. These have great potentials to improve the performance of electric grid, loads and various energy sources. Due to the presence of dc system, the hybrid and meshed microgrids have higher power handling capacity and better voltage regulation capability as compared to the conventional ac microgrid. The integration of the electric vehicle (EV) charging stations, renewable energy sources (RES) and battery energy storage systems (BESSs) to the microgrid faces multiple challenges in power management and optimized energy transport. Advanced architectural structures for the hybrid and meshed microgrids would further improve the efficiency and reliability of the system. However, the involvement of more number of power electronic converters increases the complexity of network control operations. The hybrid and meshed microgrid enables various power flow paths in the electric grid requiring development of optimal power flow algorithms for continuous and stable operation of overall system. This special issue focuses on the development of architectural configurations and advanced control methods for the power electronic converters for hybrid and meshed microgrids.

This special session invites original manuscripts presenting recent advances in these fields with special reference to the following topics.

- Advanced power converter design in meshed and hybrid microgrid
- Advanced control with multifunctional features in meshed and hybrid microgrid
- Optimal power flow in meshed and hybrid microgrid
- Protection and stability issues in meshed and hybrid microgrid
- Control of power converters during adverse grid conditions in meshed and hybrid microgrid
- Inertia support by power converters in meshed and hybrid microgrid
- PV, wind, BESS, EV Integration issues in meshed and hybrid microgrid
- Power quality issues in meshed and hybrid microgrid
- Islanding and anti-islanding challenges in meshed and hybrid microgrid
- Power converter reliability in meshed and hybrid microgrid

Manuscript Preparation and Submission

Check carefully the style of the journal described in the guidelines “Information for Authors” in the IEEE- IES website: <http://www.ieee-ies.org/pubs/jestie>.

Please submit your manuscript in electronic form through: <https://mc.manuscriptcentral.com/jestie-ieee/>.

On the submitting page, in pop-up menu of manuscript type, select: “**SS on Advanced Control and Power Electronics Solutions for Hybrid and Meshed Microgrid**”, then upload all your manuscript files following the instructions given on the screen.

Corresponding Guest Editor	Guest Editor	Guest Editor
Prof. Marco Liserre Christian-Albrechts-Universität zu Kiel, Kaiserstr Kiel, Germany Email: ml@tf.uni-kiel.de	Dr. Chandan Kumar Electronics and Electrical Engineering Department, IIT Guwahati, India, Email: chandank@iitg.ac.in	Prof. Dr. Saad Mekhilef Department of Electrical Engineering University of Malaya Kuala Lumpur, Malaysia E-mail: saad@um.edu.my

Timetable		
Deadline for manuscript submissions: Aug. 31, 2021	Information about manuscript acceptance: January, 2022	Publication Date: April, 2022