



Special Session on

Microgrids Design, Optimization, Control, and Energy Management

Microgrids facilitate massive integration of renewable power sources and/or energy storage systems in decentralized energy production systems or in electrified transport applications. They present a great potential to create more flexibility in a power grid (stationary, mobile, or embedded), especially due to the design optimization, the optimal control with energy management and allow power quality improvement for the power grid as well as for the loads. Energy storage systems (ESS), including plug-in hybrid electric vehicles (PHEV) or electric vehicles (EV), which are connected to the common bus, improve performance, power reliability and efficiency of the multi-sources systems. Whether microgrids are isolated, such as in transport applications, or integrated into the distribution power grid or the transmission power grid, which can be AC or DC, HV or LV, high power or small power, they play an important role in power generation management, in order to obtain a good balance between the offer and the demand.

This special session is focused on the recent developments and new trends in microgrids design, sizing, optimization, resolving issues of smart integration, implementation, control and energy management with ESS or hybrid ESS (HESS).

Topics of interest include, but are not limited to, the following aspects of microgrids:

- Strategies for power control (flatness-based control, predictive control, etc.), stability, and protection
- Energy and power quality improvement
- Reliability and resiliency
- Optimization and performance analysis
- Modelling, simulation, and experimental validation
- Static power converters (topologies, efficiency, performance, etc.)
- Energy storage systems (ultracapacitors, batteries, flywheel, etc.)
- Energy management (economic dispatching, uncertainties consideration, load shedding, etc.)
- Information and communication technologies for real-time monitoring and control
- Novel renewable technologies for microgrid applications
- Microgrids for residential, commercial, and industrial spaces
- Microgrids for transportation electrification
- Interconnections of PHEV/EV with microgrids
- Case studies and demonstrators of on-grid and off-grid microgrids
- Power Hardware In the Loop (PHIL) simulation
- Real time energy management

Organized by:

Chairman: Prof. Dr. Mamadou Bailo CAMARA, GREA-Laboratory, University of Le Havre Normandie, France

Co-chair: Prof. Dr. Shubhransu SEKHAR DASH, Department of Electrical & Electronics Engineering, SRM Engineering College, SRM University, Chennai, India

Co-chair: Prof. Dr. Manuela SECHILARIU, AVENUES Research unit, Université de Technologie de Compiègne, France

Important dates of the special session:

Full paper submission deadline: June 30, 2018

Notification of acceptance: August 15, 2018

Final Paper submission: September 15, 2018

Conference Date: October 14-17, 2018

Conference site: www.icrera.org

Paper submission site: <https://cmt3.research.microsoft.com/ICRERA2018>

Template for full paper: <https://www.icrera.org/index.php?id=templ1>