

Special Session on

**“Emerging techniques for hybrid AC/DC distribution grids with high-
penetration of distributed energy resources”**

Organized by

- **Yan Xu,**
Nanyang Technological University, Singapore
email: xuyan@ntu.edu.sg
- **Miao ZHU,**
Shanghai Jiao Tong University, China
email: miaozhu@sjtu.edu.cn
- **Yongning CHI,**
China Electric Power Research Institute (CEPRI), China
email: chiyn@epri.ac.cn

Call for Papers

Modern power distribution grids are integrating a growing level of distributed energy resources (DERs) including distributed generators, energy storage systems, electric vehicles, as well as flexible loads. While these new resources have various advantages, they also introduce significant challenges to the grids due to their intermittency nature and power-electronic converter interface. The hybrid AC/DC distribution systems are becoming future trends to better integrate these DERs.

This special session aims to present the emerging techniques for the design, operation, and control of the hybrid AC/DC distribution systems.

Topics of the Session:

Topics of presentations and research papers include but are not limited to:

- Multi-timescale modeling of distributed energy resources
- Architecture design and typical engineering implementation of hybrid AC/DC distribution systems
- Optimal sizing and siting of distributed energy resources in hybrid AC/DC
- Energy management and economic operation of hybrid AC/DC distribution systems
- Hardware-in-the-loop simulation testing for hybrid AC/DC distribution systems
- Coordinated control and protection issues of hybrid AC/DC, distribution systems
- Power electronic converters for hybrid AC/DC distribution systems
- Advanced controller design for hybrid AC/DC distribution systems
- Optimization algorithms development for energy dispatch of hybrid AC/DC distribution systems
- Grid code and international standards for distributed energy resources integration into power systems



**The 46th Annual Conference of the
IEEE Industrial Electronics Society**
October 18-21, 2020, Marina Bay Sands Expo and Convention Centre
Singapore

