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Special Session on

**“Advanced Power Electronics for Resilient Active Networks
and Microgrids”**

Organized by

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Call for Papers

Today’s environmental policies and carbon emission reduction targets, stimulus funding for economy recovery and end-use energy efficiency as well as objectives for higher reliability, power quality, and resilience to disruptions, are a few of the reasons driving the integration of advanced control and communication technologies, together with emerging distribution network technologies. Power electronics (PE) technology as a key enabler provides suitable interfaces and the bundling of micro-generations and loads into so-called active distribution networks (ADNs) and microgrids. However, the interconnection of large amounts of unconventional and renewable energy-based sources may cause the PE-based power system to operate in an undesirable and unpredictable fashion. Thereby, it calls for advanced PE techniques in order to ensure ADNs and microgrids integrity and accelerate their deployment in future grid applications.

Topics of interest include, but are not limited to:

- PE topologies and front-ends for resilient ADNs and microgrids
- Reliability techniques and their applications to distribution grids
- Resilience-oriented distribution network planning, operation and control
- Wide bandgap (WBG) semiconductor applications in resilient ADNs and microgrids
- PE Technologies for applying energy storage in resilience applications
- Standards and codes for PE-based resilient ADNs and microgrids
- Operation and dispatching of resilient distribution systems with interconnected distributed energy resources
- Off-line, real-time and hardware-in-the-loop simulations of PE-interfaced ADNs and microgrids
- Technologies and methodologies addressing grid integration of distributed generation