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Special Session on

"Modeling, Control and Validation of Power Electronic System for Electrified Transportation Application"

Organized by

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Call for Papers

Renewable energy plays a crucial role in developing resource-efficient, cost-effective and affordable technology solutions to decarbonize and makes transportation in a sustainable way. However, the integration of distributed and multiple energy resources demands high-performance power converters. To achieve this, it would be necessary to develop advanced control strategies, energy management methods and powerful simulation/validation tools for the power electronic system. This special session focuses on seeking papers dealing with advanced technologies in power electronic systems to improve the availability, durability and safety of the transportation system. Original research and practical contributions, as well as surveys and state-of-art tutorials, are welcome.

Topics of the Session:

- Modeling and simulation of the power electronic system in more electric transport, such as electric vehicles, electric ships and electric aircrafts
- Topology, control and optimization of the power converters associated with the renewable energy sources
- Advanced drive and control techniques for electric machine
- Energy management strategies for multiple energy resources system
- Driving circuit design for SiC or GaN switching devices
- Modular Multilevel converters for renewable energy, energy storage, MVDC, etc.

- Protection strategies for DC systems in electric ships and electric aircrafts
- Power/Controller Hardware-in-the-loop (PHIL/CHIL) platform for the validation of the power electronic system