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**Special Session on**  
**“Wide Band Gap Devices in Electric Vehicles”**

**Organized by**

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**Call for Papers**

In automotive applications especially in electric vehicles (EVs), efficiency, power density, operating temperature, switching frequency, and cost of power electronic modules are all important factors. On the other hand, wide band gap (WBG) devices such as SiC and GaN with their ability of low power loss high frequency high temperature operation are the best candidates to replace Si power MOSFETs and Si IGBTs in the near future where the best market for these devices are EV application. However, these devices are not still well established in EVs and there are issues and needs to be discussed such as low current/voltage rating, particular gate driver design, low parasitics layout design, particular EMC design, etc. In this way, the special session provides a platform to improve the addressed problems and accelerate the penetration of WBG devices in EVs.

**Topics of interest include, but are not limited to:**

- 1) Integration and packaging of WBG devices
- 2) Power stage design and new topologies of SiC- GaN-based power converters
- 3) Gate driver design of WBG devices
- 4) Layout design of WBG devices
- 5) Power scaling of SiC- GaN-based switching converters
- 6) Hard/soft switching in high frequency SiC- GaN-based power converters
- 7) EMC design in SiC- GaN-based power converters
- 8) Battery charging, power management, and traction inverter drive in SiC- GaN-based power converters
- 9) Modelling, control, optimization, and modulation of SiC- GaN-based power converters
- 10) Thermal design of SiC- GaN-based power converters