

THE 28TH IEEE INTERNATIONAL SYMPOSIUM ON INDUSTRIAL ELECTRONICS

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Special Session on

Modeling, Design and implementation of Power Electronic Components and Systems for enhanced reliability

Organized by

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Call for Papers

Power electronics has become complex and multidisciplinary, having been characterized by impressive technology advancement over the last two decades. Performance improvement at several levels, i.e. Performance improvement demands in terms of both efficiency and flexibility are pushing for significant efforts at component- as well as systems level, while raising new challenges in reliability. While new wide-bandgap semiconductor devices are now establishing new efficiency and switching speed standards in the market, silicon power devices keep improving in terms of manufacturing technology, package materials and design. Both call for new modeling methods and design efforts at device, component, and system levels, in order to predict accurately device characteristics, losses, thermal management, EMI, etc., allowing design of power conversion systems with required margins. Furthermore, there is a lack of understanding of new phenomena or failure mechanisms associated with the new component technologies.

Topics of interest include, but are not limited to:

- Circuit-level modeling of power semiconductor devices (WBG and silicon devices)
- Physics-based FEM simulation of power electronic components and systems
- Modeling and simulation of passives components (capacitors, batteries, supercapacitors, inductors, transformers, fuses)
- Modeling and analysis of device/component failure mechanisms
- Multi-physics modeling of power components (thermal, parasitics, multi-domain simulations, etc.)
- Lifetime prediction and reliability modeling and assessment of power electronic components and systems
- Advanced driving/modulation/modeling methods for emerging power devices and corresponding applications

Important Dates:

Full paper submission: Jan. 15, 2019

Notification of acceptance: Mar. 15, 2019

Further Information:

<http://www.ieee-isie2019.org/index.html>