


**CALL FOR PAPERS**

**SPECIAL SESSION ON**

**Resilient and Cyber-Secure Power Electronics for the Energy Transition**

**for ICCAD 2027**

**July 6-8, 2027, Paris, France**

**Session Co-Chairs:**

- Prof. Lotfi Saidi, Electronics and Computer Engineering Department, Higher School of Sciences and Technology of Hammam Sousse, University of Sousse, Tunisia, lotfi.saidi@esstt.rnu.tn
- Prof. Ersan Kabalci, Electrical and Electronics Engineering Department, Faculty of Engineering and Architecture, Nevsehir Haci Bektas Veli University, Turkey, kabalci@nevsehir.edu.tr
- Dr. Eric Bechhoefer, green Power Monitoring Systems (GPMS) International Inc, Vermont - USA, eric@gpms-vt.com

**Session description:**

The energy transition is turning industrial power electronics from passive energy converters into networked, software-defined assets that must stabilize grids, protect critical processes and remain safe under faults and attacks. Massive electrification, high shares of renewable generation and converter-dominated microgrids increase exposure to disturbances, component ageing and cyber-physical threats, while the intelligent digital transition adds data-driven control, remote updates and cloud connectivity to the converter layer. This Special Session addresses the resulting need for converters, drives and energy systems that are resilient by design and secure by default. It brings together contributions on fault-tolerant topologies and control, grid-forming and grid-supporting functions, condition monitoring and prognostics, trustworthy industrial AI at the edge, and the detection and mitigation of cyberattacks on converter firmware, communication links and energy-management layers. Contributions that connect device-level reliability, system-level resilience and standards-based security engineering are especially welcome.

The topics of interest include, but are not limited to:

- Fault-tolerant and reconfigurable converter topologies and control
- Cyber-secure converter firmware, communications and energy management systems
- Detection and mitigation of cyberattacks and anomalies in power electronic systems
- Edge AI and trustworthy, explainable data-driven control for power electronics
- Condition monitoring, prognostics and health management of converters and drives
- Digital twins and hardware-in-the-loop validation of resilient energy systems
- Resilient microgrids, storage and electrified infrastructures (e.g. EV charging, industrial plants)

**SUBMISSION**

Papers must be submitted electronically for peer review by**: January 31, 2027**

https://www.iccad-conf.com/submission/

All papers must be written in English and should describe original work. The length of the paper is limited to a maximum of 6 pages (in the standard IEEE conference double column format).