



Advancing Technology
for Humanity

CYBER-PHYSICAL SECURITY INITIATIVE

— An IEEE PELS Initiative —

IEEE CyberPELS

IEEE Workshop on Cybersecurity of Power Electronics Systems

Oak Ridge National Laboratory, Knoxville, TN

April 29 - May 1, 2019

The IEEE Workshop of Cybersecurity of Power Electronic Systems (CyberPELS) provides a common forum for industry experts, researchers, and academia to share technology updates, research findings, lessons learned, and best practices in the areas of creating and ensuring cyber-secure power and electronics systems.

The role of power electronics in power delivery and industrial applications is changing from an enabling technology, often resorted to commodity hardware boxes, to more critical infrastructure assets. Hence ensuring cybersecurity of power electronic converters is becoming increasingly important as more systems from power grid, electrified transportation, data centers, and internet-of-things utilize power electronics with embedded sensors, communications, and control mechanisms through various wired and wireless technologies. As a key element of the Cyber-Physical Security Initiative by IEEE PELS, this workshop is organized in cooperation with the Oak Ridge National laboratory.

Topics of Interest

- Firmware compromise detection and integrity verification
- Hardening internal and external power electronics communications
- Cyber-physical attacks and approaches for hardware hardening
- Secure firmware update and patching, including over the air updates (OTAU)
- Secure designs for power electronics devices
- Integration of hardware- and software-based hardening solutions
- Prototypes, testbeds, and demonstrations
- Application specific needs and approaches for secure power electronics hardware (e.g. in distributed energy resources (DER), electric vehicle charging infrastructure, and data centers)
- Device-level and system-level cybersecurity challenges and solutions

Program Highlights:

TUTORIAL I: Cyber for Power Electronics - Leon Tolbert - University of Tennessee - Knoxville

TUTORIAL II: Hardware Cybersecurity - Fareena Saqib - University of North Carolina - Charlotte

Plenary I: Cybersecurity for Grid - Invited Panel: Rich Blum - SEEDS; Clarisse Kim - Argonne National Labs, David Lawrence - Duke University.

Plenary II: Cybersecurity for Transportation: Lee Slezak - US Department of Energy - Invited Panel on Transportation - Jay Johnson - Sandia

National Labs, Barney Carlson - Idaho National Labs
Panel Discussion on Cybersecurity and the Internet of Things.

EXHIBITION & SPONSORSHIPS: A limited number of exhibitor and corporate sponsorship opportunities are available.

ORGANIZING COMMITTEE

General Chair - Stacy Prowell

Technical Program Co-Chair - Madhav Manjrekar

Technical Program Co-Chair - Burak Ozpineci

Treasurer -Regan Zane



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KEY DATES

Two Page Abstract: March 15, 2019

Notification of Acceptance March 21, 2019

Final Paper Submission March 30, 2019

<https://attend.ieee.org/cpsi-2019/>

