SEPOC 2026

Integrated Engineering Approaches and Big Data Driving Grid Transformation

18th SEMINAR ON POWER ELECTRONICS AND CONTROL

November 03-06th, 2026

Federal University of Santa Maria
Santa Maria, Brazil, RS

IMPORTANT DATES:

- Submission Deadline: **July 1st, 2026**
- Notification of Acceptance: **September 1st, 2026**
- Final Paper Submission: **October 4th, 2026**

CALL FOR PAPERS

*The **18th Seminar on Power Electronics and Control, SEPOC 2026,** organized by the **Federal University of Santa Maria, Brazil,** it will happen on **November 06-09th, 2026.***

SEPOC 2026 will feature panel and plenary sessions, as well as technical papers and posters sessions. This year, the conference's special topics will cover:

i) Development of secure and interconnected energy systems through the integration of power electronics, communication networks and advanced control for smart grid operation.

ii) Integration of distributed generation, energy storage, electric vehicles and emerging technologies, enabled by power electronics and intelligent control, to support flexible and low-carbon energy systems.

iii) Use of big data, artificial intelligence and advanced control techniques to enhance the planning, monitoring and operation of modern energy systems.

9 SESSIONS

- **Power Electronics**
- **Control**
- **Distributed Energy Resources**
- **Power Systems**
- **Electrical Machines and Equipment**
- **Telecommunications**
- **Data Processing, Big Data and AI**
- **Intelligent Electronic Systems**
- **Industrial Automation**

PUBLICATION OPPORTUNITIES

Accepted and presented papers written in English may be submitted for inclusion in the IEEE Xplore Digital Library, subject to compliance with IEEE guidelines.

- The top 20% of selected papers will be recommended for submission to IEEE IAS journals.
- Papers and Extended Abstracts written in Portuguese presented at the event will be published in the SEPOC 2026 Virtual Proceedings, hosted on Manancial (UFSM).
- The 10 best papers written in Portuguese will be recommended for publication in the Brazilian Journal of Power Electronics (SOBRAEP).

sepoc.com.br/ sepoc2026 linkedin.com/in/sepoc/

ORGANIZERS:

Universidade Federal de Santa Maria 1960 · CT Centro de Tecnologia - UFSM · IEEE Universidade Federal de Santa Maria IEEE Student Branch · IEEE IAS/IES/PES/PELS Joint Chapter South Brazil Section - R9 · PPGEE Programa de Pós-Graduação em Engenharia Elétrica UFSM · CTISM Colégio Técnico Industrial UFSM

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GENERAL TOPICS

Session 01 ***Power Electronics***

Static power converters | Power semiconductor devices | Magnetic materials | Electromagnetic compatibility | Optimization, design, simulation and prototyping.

Session 02 ***Control***

Control theory and methods | Control applied to energy systems and power electronics | Intelligent and data-driven control | Other control applications.

Session 03 ***Distributed Energy Resources***

Distributed generation and renewable microgeneration | Energy storage systems and batteries | Electric mobility and grid integration | Hydrogen and Power-to-X solutions | Smart grids integrated with distributed energy resources.

Session 04 ***Power Systems***

Modeling, simulation, analysis and operation of power systems | Standards, policies and regulations for grid transformation | Co-simulation models: multiplatform strategies and geographical integration | Interoperability and data standards for energy systems | Digital twins for power systems and energy assets.

Session 05 ***Electrical Machines and Equipment***

Motors and generators | Drives, control and simulation models | Transformers and reactors | Medium -and high- voltage equipment | Numerical simulation, digital twins and digitalization | Testing and failure analysis | Advances in materials, specifications, design and manufacturing.

Session 06 ***Telecommunications***

Evolution towards 6G and terahertz (THz) communications | Non-terrestrial networks (NTN) and LEO satellite constellations | Artificial intelligence applied to telecommunications | Industrial IoT (IIoT) and ultra-reliable low-latency communications (URLLC) | High-capacity optical communications and photonics | Physical-layer security, cybersecurity and quantum cryptography.

Session 07 ***Data Processing, Big Data and AI***

Machine Learning and Deep Learning | Generative models | Computer vision | Natural language processing | Vision-language-action models.

Session 08 ***Intelligent Electronic Systems***

Electronic systems for automation and industrial applications | Intelligent lighting systems | Embedded systems | Electronic systems for energy efficiency | Intelligent electronic systems for transport and mobility.

Session 09 ***Industrial Automation***

Smart Manufacturing and Digital Transformation | Industrial Data Analytics and Artificial Intelligence | Embedded Systems, Connectivity, and Real-Time Applications | Industrial Systems Monitoring, Diagnostics, and Reliability.

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