INDUSTRIAL ELECTRONICS FOR SUSTAINABLE ENERGY SYSTEMS

Guimaraes, Portugal, **21-23 July 2027**

Special Session on

EMERGING TECHNOLOGIES, PROCESSES, AND ENERGY SYSTEMS FOR LOW-CARBON INDUSTRIES

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TECHNICAL OUTLINE OF THE SESSION AND TOPICS

This special session welcomes contributions from diverse scientific and engineering disciplines to explore emerging technologies, innovative processes, and advanced energy systems supporting sustainable and low-carbon industrial development. The session encourages interdisciplinary research addressing industrial process optimization, energy and resource efficiency, renewable energy integration, reduction of losses, monitoring systems, circular economy, recyclability, and decarbonization. Particular attention is given to applications across various sectors, including agrifood, bio-based, energy-intensive, and manufacturing industries. Contributions ranging from conceptual research to experimental validation, technological developments, and real-world industrial applications are encouraged.

TOPICS OF INTEREST INCLUDE, BUT ARE NOT LIMITED TO:

- Renewable Energy Integration and Advanced Energy Storage Systems
- Industrial Electrification, Energy Efficiency, Management, Monitoring, and Control
- Alternative Fuels, Bioenergy, and Bio-Based Technologies
- Emerging Technologies and Processes for the Agrifood Sector
- Thermal Technologies, Heating, Cooling, and Waste Heat recovery
- Resource Efficiency, Waste Valorization, Recycling, and Circular Economy Solutions
- Digitalization, Automation, and AI-Driven Industrial Process Optimization
- Environmental and Techno-Economic Assessment of Industrial Technologies and Processes

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