



# ANNUAL CONFERENCE OF THE IEEE INDUSTRIAL ELECTRONICS SOCIETY

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## Special Session on

### The design, sizing, and energy management of microgrids

#### Organized and co-chaired by:

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## Call for Papers

### Technical Outline of the Session and Topics:

The increasing environmental concerns and rising power demands have propelled the development of Microgrid (MG) technology, a pivotal solution integrating various renewable energy resources, energy storage systems, and load demands. Notably, microgrids have received many applications such as logistics terminals, electric vehicle charging stations, mines, airports, harbors, smart buildings, universities, and data centers. A primary challenge in implementing microgrids involves the complexity of their design and operation, which involves analyzing distinct load demands, choosing renewable sources and energy storage sources, deciding grid architecture (DC, AC, or hybrid AC/DC), and connection modes (grid-connected or standalone), energy dispatching and scheduling, component modeling and sizing, problems solving optimization, energy management validation and other aspects. This decision-making process takes into account technical, economic, social, legal, and regulatory considerations. Furthermore, the electrification of transportation is recognized as a key strategy in the sustainable energy transition, facilitated by the substantial deployment of electric vehicles. Exploring the interplay and mutual impact of power systems, microgrids, and electrified transportation stands out as a crucial research area in understanding their collective dynamics.

The special issue will showcase the latest advancements and cutting-edge research in the design, sizing, and energy management of microgrids, especially in conjunction with electrified transportation and power systems.

### Topics of the Session include, but are not limited to:

- Microgrid design and planning from technical, economic, social, legal, and regulatory aspects
- Intelligent sizing strategies for microgrids.
- Advanced energy management strategies concerning energy dispatching and scheduling.
- Decentralized management in smart neighborhoods with renewables and energy storage.
- Enhancing self-consumption through peer-to-peer energy trading platforms.
- Participating in electricity markets and supplying electricity services.
- Vehicle-to-X applications for valorizing clean energy utilization.
- The mutual impact of power systems, microgrids, and electrified transportation.

### Author's schedule:

Deadline for submission of special session papers	April 15, 2024
Notification of acceptance	June 10, 2024
Deadline for submission of final manuscript	July 01, 2024
Early submission is highly encouraged for early decision notifications!	

All the instructions for paper submission are included in the conference website:

[www.iecon-2024.org](http://www.iecon-2024.org)



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