

# THE 8TH IEEE CONFERENCE ON ENERGY INTERNET AND ENERGY SYSTEM INTEGRATION

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## Special Session 18

### Distributed Optimization and Machine Learning for Energy Internet

#### INTRODUCTION AND TOPICS

The energy sector is currently experiencing a profound shift, driven by the integration of renewable energy, the rise of AI technologies, and the growing focus on sustainability. As energy systems increasingly incorporate distributed resources, which are becoming more decentralized and complex, the need for robust and intelligent solutions is paramount. Distributed optimization and machine learning have emerged as critical tools that can significantly influence the development of energy internet. These approaches allow for the creation of adaptive, resilient, and sustainable systems that can efficiently respond to changing conditions.

The intricate nature of modern energy systems presents a diverse array of challenges that require thorough investigation and innovative approaches. These challenges span numerous aspects, including system architecture, strategic planning, fault detection, optimization, and control, etc. This Special Session is dedicated to exploring and sharing the latest research and advancements in the design and development of resilient energy systems, with a strong emphasis on the application of distributed optimization and machine learning techniques.

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

- New reference architectures of energy internet
- Distributed energy management for energy internet
- Design of distributed optimization algorithms and applications in energy internet
- Applications of machine learning in energy monitoring, diagnosis, prediction, planning, and control
- Digital twins of energy internet and their applications
- Design of digital platforms and testbeds for energy internet

#### SPECIAL SESSION CHAIRS



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#### PUBLICATION & SUBMISSION

Submissions will be reviewed by the conference technical committees, and accepted papers will be published in IEEE EI² 2024 International Conference Proceedings, which will be submitted for inclusion in the **IEEE Xplore Digital Library**, and submitted for indexing by **El compendex** and **Scopus**.



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Submission Deadline: 15 October, 2024

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