

## Special Issue

# Adaptive Control and Optimization in Power Grids

### Message from the Guest Editors

This Special Issue, titled “Adaptive Control and Optimization in Power Grids,” aims to highlight novel advances in methodologies, algorithms, and applications that enhance the resilience, sustainability, and intelligence of power systems. We welcome contributions that address theoretical developments, computational techniques, simulation studies, and real-world implementations. Topics of interest include, but are not limited to:

- Adaptive and predictive control (e.g., Model Predictive Control) for frequency and voltage regulation;
- Robust and stochastic optimization methods for power system operations;
- Data-driven and machine learning approaches for adaptive grid control;
- Short-term and probabilistic forecasting of load and renewable generation for control applications;
- Coordination and optimization of demand response, energy storage, and distributed energy resources (DERs);
- Digital twin frameworks, hardware-in-the-loop (HIL), and cyber-physical testbeds for validation;
- Cybersecurity and resilience strategies for adaptive control and optimization in smart grids.

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### Guest Editors

Dr. Xiaoping Xiong

Dr. Fanrong Wei

Dr. Lingling Xie

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### Deadline for manuscript submissions

30 June 2026



## Processes

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### Message from the Editor-in-Chief

You are invited to contribute either a research article or a comprehensive review for consideration and publication in *Processes* (ISSN 2227-9717). *Processes* is published in open access format – research articles, reviews, and other content are released on the internet immediately after acceptance. The scientific community and the general public have unlimited, free access to the content. As an open access journal, *Processes* is supported by the authors and their institutes through the payment of article processing charges (APCs) for accepted papers. We would be pleased to welcome you as one of our authors.

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