Special Issue

AI-Driven Solutions for Operation and Control of Future Smart Grids

Message from the Guest Editors

The strong uncertainty, nonlinearity, and intermittency of renewable generation are imposing grand challenges for the secure and economic planning and operation of smart grids. Traditional methods' performance can be limited without considering such growing uncertainties. Together with high-fidelity high-performance simulation techniques and big data analytics, the fast development of artificial intelligence (AI) technology, especially reinforcement learning (RL), provides a promising way of tackling these critical issues by providing effective and prompt control for power grid operation and control. This Special Issue aims at presenting recent developments and advancements in AI-driven solutions for the operation and control of future smart grids with high penetration of renewable generation and power electronics-based devices for achieving the goals of the full absorption of renewable energy, the optimized allocation of large-scale energy resources, and the reliable supply of electricity. Keywords

- artificial intelligence
- smart grid
- renewable energy

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Electronics is a multidisciplinary journal designed to appeal to a diverse audience of research scientists, practitioners, and developers in academia and industry. The journal is devoted to fast publication of latest technological breakthroughs, cutting-edge developments, and timely reviews of current and emerging technologies related to the broad field of electronics. Experimental and theoretical results are published as regular peer-reviewed articles or as articles within Special Issues guest-edited by leading experts in selected topics of interest.

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