Special Issue

Intelligent Control and Energy Management in Smart Grids for the Energy Transition

Message from the Guest Editor

The global energy transition, driven by the need to cut CO_2 emissions and ensure sustainability, is transforming traditional power systems into smart grids integrating renewables, energy storage, and EVs, which increase complexity and operational uncertainty. Intelligent control and advanced energy management systems—leveraging AI, machine learning, multi-agent systems, IoT, big data, and real-time analytics—are vital to optimize energy flows, enhance grid stability, and enable demand-side flexibility. This Special Issue welcomes interdisciplinary contributions on the integration of renewable and distributed resources, demand response, predictive analytics, and advanced optimization methods. Emphasis is placed on AI-driven control, predictive and optimal strategies, and real-time management approaches that improve grid reliability, flexibility, and sustainability for a clean and decentralized energy future.

Guest Editor

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Message from the Editor-in-Chief

Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

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