Special Issue

Integrating AI with Renewable Energy for Sustainable Building Design: Recent Advances

Message from the Guest Editors

Buildings account for a substantial portion of global energy consumption and greenhouse gas emissions. Research on integrating AI and renewable energy for sustainable building design is expected to maximize energy efficiency and reduce carbon emissions, support ESG goal achievement in industry, and contribute to realizing a Net Zero society. The main aim of this Special Issue is to explore the recent challenges and advancements in integrating AI and renewable energy technologies for sustainable building design. We welcome original research, case studies, and comprehensive review papers that align with this aim. Topics include, but are not limited to:

- AI-driven building design
- Renewable energy integration
- Predictive analytics for building energy efficiency
- Intelligent energy management systems
- Energy storage solutions for buildings
- Virtual power plants for sustainable buildings
- Smart grid and building synergy
- Net Zero and green energy building design
- Low-carbon and ESG industries with green buildings
- Sustainable security and business strategies

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About the Journal

Message from the Editor-in-Chief

Current urban environments are home to multi-modal transit systems, extensive energy grids, a building stock, and integrated services. Sprawling neighborhoods are composed of buildings that accommodate living and working quarters. However, it is expected that the cities and communities of the future will face complex and enormous challenges, including maintenance, interconnectivity, resilience, energy efficiency, and sustainability issues, to name but a few. A smart city uses advanced technologies and a digital infrastructure to improve the outcomes in every aspect of a city's operations. A smart building optimizes the experience of occupants, staff, and management by using a modern and connected environment. Innovations in technology that can bring dramatic improvements to design, planning, and policy are critical in developing the cities and buildings of the future.

Editor-in-Chief

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