Special Issue

Advanced Energy Solutions to Enhance Building Energy Efficiency and Flexibility

Message from the Guest Editors

The buildings sector is one of the largest contributors to global energy consumption and greenhouse gas emissions, making it both a pressing challenge and a powerful lever for achieving sustainable development goals. As the demand for decarbonization, energy cost reduction, and occupant comfort grows, the integration of advanced energy solutions (e.g., renewable energy, energy storage, advanced controls, demand flexibility strategies, etc.) has emerged as a critical pathway for enhancing building energy efficiency and flexibility and reducing building's carbon footprint. In this context, we are pleased to invite you to share your latest research in this evolving field by contributing to our Special Issue. This collection seeks to showcase cutting-edge scientific and technological developments that improve the energy performance and adaptability of buildings. For further reading, please follow the link to the Special Issue Website at:
https://www.mdpi.com/journal/buildings/special_issues/TT03296134

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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.

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