Special Issue

AI-Driven Cooling, Refrigeration, and Energy Solutions for Built Environments

Message from the Guest Editors

This Special Issue of *Buildings* will provide an overview of new methods of heat transfer enhancement for buildings and environmental systems. In the supply of cold and heat energy in buildings, efficient heat transfer reduces energy consumption and enhances system efficiency. At the final consumer stage of energy, efficient heat transfer ensures the precise delivery of cold and heat energy. For specialized applications such as data centers, efficient heat transfer ensures the system's safe and stable operation. The topics relevant are as follows:

- New methods for energy saving in the performance of buildings;
- Low-carbon methods and heat transfer pathways for the energy supply system in buildings;
- Low-carbon methods and heat transfer pathways for the energy supply system inside buildings;
- Materials with high heat parameters that can be used for buildings;
- Digital methods applied to heat transfer enhancement in buildings;
- Performance evaluation of high-efficiency building systems;
- Heat transfer simulation in buildings;
- High-efficiency heating and cooling in buildings;
- The application of heat transfer equipment in specific buildings.

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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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