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Advancements in Energy Efficiency and Life-Cycle Assessment of Phase Change Materials for Thermal Energy Storage Applications

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Deadline for manuscript submissions:
31 December 2024

Message from the Guest Editors

Dear Colleagues,

Incorporating phase change materials (PCMs) into building applications offers a promising solution to reduce energy consumption and improve thermal conditions for building occupants.

Hence, this Special Issue focuses on advancements in thermal and energy modeling of PCMs integrated into building applications. It also investigates the impact of PCM integration on energy performance and environmental sustainability, while suggesting ways forward for sustainable building design.

The scope of this Special Issue covers a wide range of related topics, including but not limited to the following: the modeling of phase change materials, life-cycle assessment (LCA) of phase change materials, heat and mass transfer in buildings, simulation for energy storage systems, life-cycle assessment, building materials and products for energy efficiency, and simulation and experiments on PCM-incorporated building envelopes for energy efficiency.

We kindly invite researchers to contribute to this Special Issue titled "Advancements in Energy Efficiency and Life-Cycle Assessment of Phase Change Materials for Thermal Energy Storage Applications".

Guest Editors

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Editor-in-Chief

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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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