

Special Issue

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

Message from the Guest Editors

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

Dr. Zohir Younsi

Dr. Naoual Belouaggadia

Dr. Nassim Sebaibi

Dr. Salwa Bouadila

Dr. Nicolas Youssef

Dr. Mohamed Lachheb

Deadline for manuscript submissions

30 June 2026



Buildings

an Open Access Journal
by MDPI

Impact Factor 3.1
CiteScore 4.4



mdpi.com/si/198611

Buildings
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
buildings@mdpi.com

[mdpi.com/journal/
buildings](https://mdpi.com/journal/buildings)





Buildings

an Open Access Journal
by MDPI

Impact Factor 3.1
CiteScore 4.4



[mdpi.com/journal/
buildings](https://mdpi.com/journal/buildings)



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

Prof. Dr. David Arditi

Construction Engineering and Management Program, Department of Civil, Architectural, and Environmental Engineering, Illinois Institute of Technology, 3201 South Dearborn Street, Chicago, IL 60616, USA

Author Benefits

High Visibility:

indexed within SCIE (Web of Science), Scopus, Ei Compendex, Inspec, and other databases.

Journal Rank:

JCR - Q2 (Construction and Building Technology) /
CiteScore - Q1 (Architecture)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 15.1 days after submission; acceptance to publication is undertaken in 2.9 days (median values for papers published in this journal in the second half of 2025).