

Special Issue

Advanced Technologies and Materials for Thermal Energy Storage

Message from the Guest Editors

This Special Issue invites comprehensive studies that explore advancements in TES materials, such as phase-change materials (PCMs), thermochemical storage materials, and advanced composites designed to improve storage density, thermal conductivity, and operational lifespan. We are especially interested in studies that delve into novel approaches to material synthesis, characterization, and application to enhance TES performance under a variety of operating conditions. Additionally, this issue encourages research focused on TES integration into real-world applications, such as renewable energy systems, waste heat recovery, and smart building management, which are critical for supporting low-carbon energy systems. Articles may also explore innovative TES configurations, including hybrid systems and multi-functional materials that expand the flexibility and functionality of TES technologies. Papers covering optimization techniques, lifecycle assessments, and techno-economic analyses are particularly welcome, as they provide insights into the practicality, sustainability, and cost-effectiveness of TES systems for broad implementation.

Guest Editors

Dr. Zhixiong Ding

Dr. Yuekuan Zhou

Dr. Chong Zhai

Dr. Zengguang Sui

Deadline for manuscript submissions

15 October 2025



Energies

an Open Access Journal
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Impact Factor 3.2
CiteScore 7.3



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

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Message from the Editor-in-Chief

Energies is an international, open access journal in energy engineering and research. The journal publishes original papers, review articles, technical notes, and letters. Authors are encouraged to submit manuscripts which bridge the gaps between research, development and implementation. The journal provides a forum for information on research, innovation, and demonstration in the areas of energy conversion and conservation, the optimal use of energy resources, optimization of energy processes, mitigation of environmental pollutants, and sustainable energy systems.

Editor-in-Chief

Prof. Dr. Enrico Sciubba

Department of Mechanical and Industrial Engineering, University
Niccolò Cusano, 00166 Roma, Italy

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