Special Issue

Advanced and Multifunctional Phase Change Materials

Message from the Guest Editor

Thermal energy is indispensable to the sustainable development of modern societies. Being a key component in various domestic and industrial processes as well as in power generation systems, the storage of thermal energy ensures system reliability, power dispatchability, and economic profitability. Thermal energy storage technologies based on phase-change materials (PCMs) have received tremendous attention in recent years owing to their high thermal storage capacity, operational simplicity, and transformative industrial potential. These materials are capable of reversibly storing large amounts of thermal energy during the isothermal phase transition and have enormous potential for the development of state-of-the-art renewable energy infrastructure. This Special Issue aims to cover the latest developments in advanced and multifunctional PCMs. All aspects related to functional PCMs' composites preparation, structural characterization, molecular dynamics simulation, thermal management, thermal rectification, thermal stealth, and machine learning based on PCMs are considered. Review articles describing the current state of the art are also welcome.

Guest Editor

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Deadline for manuscript submissions

closed (20 December 2023)

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/122813

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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