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Study on Chemical Heat Storage Materials and Heat Storage System

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Deadline for manuscript submissions:
closed (20 January 2024)

Message from the Guest Editors

Thermal storage with molten salts has been used in solar thermal power for decades. Recently, chemical-heat storage (CHS) has attracted increasing attention. This significant interest can be attributed to the enormous demand for renewable energy and the specific advantages of this technology, which include long-term storage with negligible losses, upgrading thermal energy, and a high density of energy.

CHS conducts heat storage and release via a reversible thermochemical reaction. This concerns materials (chemicals) and thermodynamics and kinetics of the reaction. The low kinetics of this process is one of the main obstacles for practical CHS. To enhance CHS efficiency, investigations include materials, reactors, catalysis, chemical process, and heat exchangers.

The main goal of the Special Issue is to highlight original research articles and review papers concerning CHS materials, CHS system, and thermal-energy managements. Submissions focuse on CHS in the following subjects:

Chemical-heat storage materials;
Chemical-heat storage processes;
Hybrid chemical-heat storage;
Thermal storage management;
Solar chemical-heat storage;
Catalysis;
Reactors.

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Message from the Editor-in-Chief

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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