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Nano-Enhanced Phase Change Materials

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Message from the Guest Editors

Latent thermal energy storage using Phase Change Materials (PCM) has been known mainly as one of the best remedies to renewable energy intermittency. During the last decade, these promising PCM materials have attracted the attention of many researchers from different areas of interests. Nevertheless, the main limitation of the use of PCMs in thermal systems is their low conductivity, which causes slow charging and discharging rate. To overcome this challenge, researchers have found that the dispersion of nanoparticles in PCMs, widely known as Nano-Enhanced-PCM (NEPCM), is an innovative solution allowing the enhancement of the PCMs thermophysical properties.

In this context, the present Special Issue will be dedicated to the latest advances in all the aspects related to the use of NEPCM. The SI includes (but is not limited to) the following topics:

- Renewable energy systems: Solar collectors, PV, PVT...
- NEPCM Synthesis and Characterization
- Energy storage
- Theoretical, numerical, and experimental studies dealing with NEPCM
- Thermoelectric cooling
- Heat exchangers using PCM
- Energy saving processes
- Building envelopes and HVAC
- Refrigeration systems using NEPCM



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Special Issue



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Message from the Editor-in-Chief

Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal-organic frameworks, membranes, nano-alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access.

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