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Micro/Nanomaterials for Phase Change Heat Transfer and Thermal Energy Storage

Guest Editor:

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Deadline for manuscript submissions:

closed (30 April 2024)

Message from the Guest Editor

Solid, liquid and gas are the three phases of matter. Different phases have significantly different distance between molecules. The transition from one phase to another is referred to as phase change, which is accompanied by energy supplement or release that changes the distance between molecules. Thus, phase change is an effective way for heat transfer and thermal energy storage. To improve the performance of phase change heat transfer and thermal energy storage, research on different micro/nanomaterials have garnered widespread attention in recent times.

This Special Issue aims to cover investigations of heat transfer and heat storage with functional micro/nanomaterials. We cordially invite researchers to submit their original research papers, communications, and critical reviews related to the following topics:

- Boiling, condensation and freezing on micro/nanostructured surfaces;
- Evaporation and boiling of nanofluids;
- MOF material and micro/nanoparticles for thermal energy storage;
- Heat pipe with porous materials;
- Electronics cooling with microchannel;
- solar-driven desalination with micro/ nanomaterial.



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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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