



## Symmetry of Nanofluids and Their Applications in Engineering

Guest Editor:

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### Message from the Guest Editor

Dear Colleagues,

The thermophysical properties of simple fluids in the pure state mostly lack conductivity. However, a mixture of common liquids such as water and oil with refined nanoparticles (1-100nm) of suitable metals categorically shows a decline in this deficiency of conductivity and, consequently, the performance of the so-formulated nanofluid increases drastically. Hybrid nanofluids are a new class of nanofluids that have been reported to show better thermophysical and optical properties. Hybrid nanofluids are prepared by the dispersion of two or more nanoparticles in a conventional heat transfer fluid. These hybrid nanofluids can be used in direct absorption solar thermal systems as a working fluid. Hybrid nanofluids may possess better thermal network and rheological properties due to synergistic effect. Suitable topics include, but are not limited to, the following:

- Nanofluids flow
- Numerical models
- Numerical techniques
- Experimental techniques in fluid mechanics
- Porous medium
- Entropy generation
- Irreversibility analysis for the Nanofluids flow
- Heat exchangers and renewable energy
- MHD flows and entropy optimization





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## Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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