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Symmetry and Its Application in Nanoscience and Nanotechnology

Guest Editor:

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Message from the Guest Editor

Dear Colleagues,

Symmetry has always played a pivotal role in chemistry and physics. Monumental discoveries in the 19th century, such as in Pasteur's work on chiral crystals or Faraday's discoveries of magnetooptical phenomena that break time-reversal symmetry, brought into light key symmetry principles that are currently being considered in many modern fields. The scientific community has also been continuously fascinated by how symmetry transfers between different size hierarchies of matter. The emergence of nanoscience and nanotechnology has really brought into attention some of these considerations and their unique aspects in this size range. For instance, researchers working on either nanoscale biological and organic systems or inorganic ones constantly search for relations between the symmetries these systems exhibit at different length scales. Alongside this, symmetry considerations are crucial for the understanding of many topics such as plasmonic and excitonic responses of nanoparticles, structure–function relations of biological nanomachines, topological phases in condensed matter, and other very relevant subjects currently being pursued...

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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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