Special Issue

Symmetry in Nano-optics and Nanophotonics

Message from the Guest Editor

The strong competition for compact and efficient optical elements and photonic devices has encouraged researchers to explore numerous approaches to develop structure designs and make use of the effects enabled by symmetry. Optical metamaterials and metasurfaces are engineered structures with rationally-designed building blocks that exhibit exceptional abilities in controlling light, the anomalously large photonic density of states, and imaging with subwavelength resolution. In the optical nanostructure, symmetry facilitates new physics that are distinctly different from those observed without structural symmetry and enables devices with enhanced functionality. Recently, topological photonics has emerged as a new paradigm for optical engineering, and the use of carefully designed topologies allows the creation of structures that support states of light with interesting and unique properties. In this Special Issue, we highlight the optical and photonic effects produced by symmetry, periodicity, and/or the reduced dimensionality of nanostructures and their applications in emerging photonics technologies.

Guest Editor

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About the Journal

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.

Editor-in-Chief

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