



## Symmetric/Asymmetric Study in Optics: Topics, Advances and Applications

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### Message from the Guest Editors

Dear Colleagues,

The symmetry of beams' propagation is a fascinating research topic that is accompanied by exciting new developments in laser beam machining, quantum optics, microscopy, quantum informatics, and optical communication. The symmetry of symmetric beam propagation includes several beam properties due to optical diffraction and can be applied in optical imaging and optical measurement. Optical diffraction, optical imaging, and optical measurement are central topics in many modern and scientific fields, which are closely related and have a wide range of applications, such as microscope, telescope, sensor, military, biological sciences, etc. Optical diffraction is a basic spatial coherence phenomenon that allows us to determine how rapidly a coherent beam spreads with distance, how fast a pulse spreads in time, and how sharply the beam can be focused, all critical in military systems. Usually, Fourier analysis and synthesis techniques are a unifying theme through this subject. Optical imaging uses light and special properties of photons to obtain detailed images of organs, tissues, cells, and even molecules...

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*Guest Editors*





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## Editor-in-Chief

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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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