



Advances in Optical Technology and Symmetry

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Deadline for manuscript
submissions:

closed (31 March 2024)

Message from the Guest Editors

Dear Colleagues,

Symmetry is inextricably linked with the development of optical technology. The most obvious connection may be reflected in the evolution of optical surface shapes. Traditional optical surface shapes, including spherical, conical, aspherical and cylindrical surfaces, are either rotationally or translationally symmetric. Freeform optical surface shapes with non-symmetric features are gaining popularity in both academia and industry, and have played important roles in lighting, laser beam shaping, progressive glasses, imaging, augmented reality/virtual reality (AR/VR), etc. Symmetry evolution also exists in diffractive optical elements (DOEs), including diffraction gratings, binary optics and metasurfaces.

Unsymmetrical optical systems can provide many advantages over symmetric ones, including better optical performances and compact sizes. However, the design, fabrication, testing and alignment of unsymmetrical optical systems are still considered as difficult tasks that need to be solved or improved. In imaging applications, the computational imaging approach provides an alternative way to produce high imaging performance using symmetric optical elements...





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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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