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Diffractive Optics and Its Emerging Applications

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Deadline for manuscript submissions:
15 January 2026

Message from the Guest Editors

Diffraction is a type of fundamental interaction between light and matter. Diffractive optical elements are known to bend and shape light waves in most exotic and unconventional ways by imposing spatial modulation of wave fronts. However, only spatial features with wavelength or sub-wavelength sizes can induce observable diffraction effects, posing potential challenges in the simulation and fabrication of diffractive components.

This Special Issue aims to cover recent progress in diffractive optics technology. Topics of interest include, but are not limited to the following areas:

1. Theory and modeling of diffractive optics;
2. Optimization algorithms;
3. Diffractive + refractive hybrid systems;
4. New capabilities and performance enhancements;
5. Metasurfaces and metalenses;
6. Diffractive optical elements for imaging, sensing, and spectroscopy;
7. Applications in AR/VR, LiDAR, machine vision, intraocular lenses, computational imaging, etc.;
8. Diffractive neural networks and free-space optical computing;
9. Novel fabrication and replication techniques;
10. Reconfigurable and programmable photonic devices.

I look forward to receiving your contributions.

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Message from the Editor-in-Chief

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