# Special Issue

# Progress in Freeform Optical Design and Future Prospects

### Message from the Guest Editor

Freeform optics, as an essential branch of modern optical technology, plays an increasingly crucial role in imaging systems, lighting engineering, augmented/virtual reality (AR/VR), and cutting-edge scientific research. This Special Issue is dedicated to gathering the latest advancements and future trends in the field of freeform optical design. We welcome submissions related to theoretical research, numerical simulations, and experimental validations. Topics include, but are not limited to, the following:

- Design theories and optimization methods for freeform optical systems;
- Applications of freeform surfaces in imaging, lighting, and AR/VR technologies;
- Error analysis and tolerance design in freeform optical systems;
- Design and implementation of optical systems based on freeform surfaces;
- Integration of freeform optics with computational optics;
- High-precision manufacturing methods for freeform optical components;
- Frontier explorations in freeform design for high-performance optical instruments;
- Measurement technologies for freeform surfaces;
- Applications of freeform optical systems.

### Guest Editor

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### Deadline for manuscript submissions

closed (31 August 2025)

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## Message from the Editor-in-Chief

You are invited to contribute a research article or a comprehensive review for consideration and publication in *Photonics* (ISSN 2304-6732). *Photonics* is an online open access journal covering both the fundamental and applications of optics and photonics. *Photonics* strives to provide an avenue to allow authors to disseminate their scientific findings—both theoretical/ simulations and experimental works—in highly accessible peer-reviewed journal publications. The manuscript in *Photonics* will be handled with quick turnaround production processing time. We welcome authors to submit their manuscripts for publications in *Photonics*. Our goal in *Photonics* is to enable fast dissemination of high impact works to the scientific community.

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