

## Special Issue

# The Latest Applications and Developments of Photonic Crystal Materials

### Message from the Guest Editor

In 1987, Yablonovitch and John proposed artificial dielectric structures known as photonic crystals (PhCs), where periodic variations in the refractive index enable precise control over the propagation of light. Today, PhCs play a pivotal role in integrated photonic circuits, high-sensitivity sensors, advanced imaging systems, optical communications, and emerging quantum devices. By tailoring photonic bandgaps and leveraging engineered light-matter interactions, researchers continue to uncover novel functionalities and performance enhancements. This Special Issue invites contributions that present new theoretical insights, experimental breakthroughs, and comprehensive reviews related to the design, fabrication, characterization, and application of photonic crystal materials. Relevant topics include, but are not limited to, the following:

- Novel photonic crystal architectures and fabrication methods;
- Enhanced light-matter interactions and nonlinear photonic phenomena;
- Integrated photonics and on-chip communication systems;
- Biosensing, lab-on-a-chip devices, and environmental sensing;
- Quantum information processing and single-photon generation;
- Energy harvesting and advanced optical imaging.

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### Guest Editor

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### Deadline for manuscript submissions

30 September 2026



## Photonics

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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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### Editor-in-Chief

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