Special Issue

Photonic Integrated Circuits: Recent Advances and Future Perspectives

Message from the Guest Editors

Photonic integrated circuits combine multiple photonic components with diverse functionalities into a single chip, enabling efficient light-based computing, signal processing, and communications. By harnessing the unique and fundamental properties of light, photonic integrated circuits offer key benefits such as low power consumption, ultra-high bandwidth, and inherent parallelism. With the accelerating growth of fields such as artificial intelligence, cloud computing, and real-time sensing, the demand for faster data processing, improved energy efficiency, and greater system scalability is also gaining momentum. Advances in materials science, fabrication methods, and integration technology are not only enhancing individual device performance but also enabling innovative architectures that support increasingly complex and powerful photonic integrated circuits for practical, real-world applications.

This Special Issue highlights recent progress that has been made in photonic integrated circuits.We are happy to invite contributions spanning theory, fabrication, system demonstrations, and application case studies.

Guest Editors

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Deadline for manuscript submissions

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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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