Special Issue

Advanced Photodetectors for Photonic and Hybrid Photonic–Electronic Systems and Applications

Message from the Guest Editors

The advancement of photodetector technologies lies at the heart of the progress made in modern photonic and hybrid photonic–electronic systems, which underpin a wide spectrum of pioneering applications, including ultra-high-speed communication, precision sensing, advanced imaging, optical computing, and emerging quantum technologies. This Special Issue seeks to showcase cutting-edge developments in photodetector research, spanning the full spectrum from fundamental theory to practical implementation. Areas of focus include theoretical modeling, device architecture design, equivalent circuit optimization, numerical simulation, epitaxial growth, fabrication techniques, performance characterization, system-level integration, and applications.

We are pleased to invite you to contribute to this Special Issue focused on novel photodetectors and their wide-ranging applications. We welcome the submission of original research articles, short communications, and comprehensive reviews that advance the design, simulation, fabrication, and integration of photodetectors and optoelectronic systems across materials, device architectures, and application domains.

Guest Editors

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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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