Special Issue

Avalanche Photodiodes

Message from the Guest Editors

Avalanche photodiodes (APDs) operate by creating electron–hole pairs when photons are absorbed in the depletion region. These charge carriers are then multiplied through impact ionization as they travel through a high electric field, resulting in a significant amplification of the photocurrent. APDs play a crucial role in advanced photonic systems due to their exceptional ability to detect low-intensity light signals with high sensitivity and fast response times. Given the rapid development in photonics, research on APDs has gained significant attention, contributing to innovations in photon detection and enhancing device performance. In this Special Issue, research areas may include (but are not limited to) the following:

- APDs used in optical communication systems
- APDs used in passive optical network
- Research on APDs made from different materials (eg. Si-Ge, Si, ⍰-⍰)
- Infrared and high-speed APDs
- APD-based LiDAR and 3D imaging systems
- Other active or passive optics devices related to APD
- Noise reduction techniques in APDs
- Single-photon detection and photon counting
- Geiger-mode APDs and applications
- APDs in quantum communication and cryptography

Guest Editors

Prof. Dr. Binhao Wang

Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences, Xi'an 710119, China

Dr. Xinyu Li

Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences, Xi'an 710119, China

Deadline for manuscript submissions

closed (31 May 2025)

hv

Photonics

an Open Access Journal by MDPI

Impact Factor 1.9
CiteScore 3.5

mdpi.com/si/220589

Photonics
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
photonics@mdpi.com

mdpi.com/journal/photonics

MDPI

Photonics

an Open Access Journal by MDPI

Impact Factor 1.9
CiteScore 3.5

mdpi.com/journal/photonics

MDPI

About the Journal

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.

Editor-in-Chief

Prof. Dr. Nelson Tansu
School of Electrical and Electronic Engineering (EEE), The University of Adelaide, Adelaide, SA 5005, Australia

Author Benefits

High Visibility:

indexed within Scopus, SCIE (Web of Science), Inspec, Ei Compendex, CAPlus / SciFinder, and other databases.

Journal Rank:

CiteScore - Q2 (Instrumentation)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 14.8 days after submission; acceptance to publication is undertaken in 1.9 days (median values for papers published in this journal in the first half of 2025).