# Special Issue

# Applications of Single-Photon Detector

## Message from the Guest Editors

A single-photon detector with ultimate sensitivity is capable of registering photons, emerging with an indispensable role for extensive applications, including optical quantum information and communication, laser ranging, astrophysics, and high-energy physics. The extension of single-photon detection to mid-infrared further facilitates the applications in astronomy, LIDAR, dark matter searches, and the fundamental study of fast molecular dynamics and chemistry. This Special Issue invites manuscripts that introduce the recent advances in "Single-Photon Detectors and Their Applications", covering the wavelength from visible to mid-infrared. All theoretical, numerical, and experimental papers are accepted. Topics include, but are not limited to, the following:

- Solid-state-based single-photon detector: physics, measurement, and applications;
- Superconductor-based single-photon detector: physics, measurement, and applications;
- Spatial multiplexing single-photon detector;
- Hybrid detection system;
- Mid-infrared single-photon detector;
- Single-photon detection in existing and new categories of applications;
- Photon number resolving.

## Guest Editors

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## Deadline for manuscript submissions

closed (30 June 2025)

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# 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

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