

Special Issue

Ultrafast Dynamics Probed by Photonics and Electron-Based Techniques

Message from the Guest Editor

Ultrafast dynamics focuses on processes from attosecond to picosecond timescales. Using ultrafast electron/X-ray diffraction and spectroscopy, researchers resolve structural and electronic dynamics in real time. These breakthroughs reveal mechanisms of phase transitions and chemical reactions at atomic levels. This field bridges physics, chemistry, and materials science, guiding design of new materials and quantum devices. This Special Issue on "Ultrafast Dynamics Probed by Photonics and Electron-Based Techniques" welcomes contributions worldwide. We seek original research and reviews advancing fundamental understanding and methods. Topics include:

- Development and refinement of ultrafast electron, X-ray, and optical probing techniques;
- Theoretical and computational modeling of nonequilibrium structural and electronic dynamics;
- Real-time investigations of chemical reactions, phase transitions, and defect dynamics;
- Multimodal and multiscale approaches for capturing ultrafast processes across time and length scales;
- Ultrafast photophysics and emergent quantum phenomena in novel materials, heterostructures, and quantum systems et al.

Guest Editor

Dr. Duan Luo

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

Deadline for manuscript submissions

31 May 2026



Photonics

an Open Access Journal
by MDPI

Impact Factor 1.9
CiteScore 3.5



mdpi.com/si/253566

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

[mdpi.com/journal/
photonics](https://mdpi.com/journal/photonics)





Photonics

an Open Access Journal
by MDPI

Impact Factor 1.9
CiteScore 3.5



[mdpi.com/journal/
photonics](https://mdpi.com/journal/photonics)



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 15 days after submission; acceptance to publication is undertaken in 1.9 days (median values for papers published in this journal in the second half of 2025).