Special Issue

Ultrashort Pulse Lasers for Sensing, Environmental Monitoring, and Biomedical Applications

Message from the Guest Editor

Ultrashort pulse lasers have revolutionized modern science and technology, offering unprecedented temporal resolutions, high peak intensities, and broadband spectral coverage. These characteristics enable the precise control of light–matter interactions, enhancing the applicability of ultrafast lasers in sensing, quantum technologies, environmental monitoring, and biomedical applications. Their ability to generate coherent, highly tunable pulses from the ultraviolet to the mid-infrared range could advances the fields of molecular spectroscopy, real-time diagnostics, and nonlinear imaging. This Special Issue aims to combine recent theoretical, experimental, and applied research, highlighting fundamental advances in ultrafast laser science. The scope of this Special Issue includes, but is not limited to, the following topics:

- **Fundamental Developments in Ultrashort Pulse Lasers**
- **Ultrashort Pulse Lasers in Sensing and Quantum Technologies**
- **Environmental and Atmospheric Applications**
- **Biomedical and Life Science Applications**
- **Industrial and Technological Innovations**

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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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