Special Issue

Ultrafast Lasers: Fundamentals, Technology, and Applications

Message from the Guest Editors

Ultrafast lasers generate extremely short light pulses, typically in the femtosecond to picosecond range, and have become a key tool in modern photonics. Because these pulses concentrate energy into very short time windows, they enable us to study rapid physical, chemical, and biological processes and support high-precision technologies in manufacturing and medicine. Over the last two decades, ultrafast laser systems have progressed from laboratory demonstrations to increasingly reliable platforms, driven by advances in mode-locking, dispersion management, pulse shaping, high-energy amplification (CPA/OPCPA), and improved diagnostic methods. At the same time, ultrafast lasers continue to advance nonlinear optics, enabling frequency conversion, supercontinuum generation, high-harmonic generation, attosecond pulse generation, micromachining, and many other effects that open new experimental and industrial possibilities. This Special Issue, "Ultrafast Lasers: Fundamentals, Technology, and Applications," aims to publish selected contributions that connect core ultrafast-laser physics with practical system development and real-world use.

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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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