



Ultrafast Laser Micro- and Nanoprocessing

Guest Editor:

Dr. Xin Zhao

Department of Mechanical
Engineering, Clemson University,
Clemson, SC 29634-0921, USA

Deadline for manuscript
submissions:

closed (31 October 2023)

Message from the Guest Editor

Ultrafast laser-based manufacturing and materials processing has attracted substantial interest in recent decades. The ultrashort duration and extremely high peak laser intensity of ultrafast laser pulses allow for localized laser heating/ablation and a reduced heat-affected zone, making it a promising tool for high precision micro- and nanoscale materials processing. In addition, the unique characteristics of ultrafast laser pulses result in novel laser–matter interaction processes, heralding a new era of fundamental study into the underlying mechanisms. Compared to longer laser pulses, the mechanisms of laser absorption, carrier dynamics, heat transfer, phase shift, and material removal are fundamentally unique yet poorly understood. Therefore, we are announcing this Special Issue to provide a platform to showcase research papers, communications, and review articles focused on nano- and microscale ultrafast laser materials processing.

Keywords:

- ultrafast lasers, materials processing
- nano- and microscale
- laser–matter interaction, laser ablation/machining
- surface texturing, beam/pulse shaping
- two/multi-photon polymerization/reduction
- numerical modeling





Editor-in-Chief

Message from the Editor-in-Chief

You are invited to contribute research articles or comprehensive reviews for consideration and publication in *Micromachines* (ISSN 2072-666X). *Micromachines* is published in the open access format. Research articles, reviews and other contents are released on the internet immediately after acceptance. The scientific community and the general public have unlimited free access to the content as soon as it is published. As an open access journal, *Micromachines* is supported by the authors or their institutes by payment of article processing charges (APC) for accepted papers. We are pleased to welcome you as our authors.

Author Benefits

Open Access: free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility: indexed within Scopus, SCIE (Web of Science), PubMed, PMC, Ei Compendex, dblp, and other databases.

Journal Rank: JCR - Q2 (*Chemistry, Analytical*) / CiteScore - Q2 (*Mechanical Engineering*)

Contact Us

Micromachines Editorial Office
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/micromachines
micromachines@mdpi.com
[X@micromach_mdpi](https://x.com/micromach_mdpi)