

Special Issue

Innovative Processes and Theoretical Advances in Ultra-Precision Machining

Message from the Guest Editors

Research areas may include (but are not limited to) the following:

- Advanced UPM processes: ultra-precision cutting/turning/milling/grinding/polishing/hybrid approaches.
- Micro-/nano-machining: mechanical, energy-beam, and electrochemical processes.
- Field-assisted techniques: magnetic/electric/laser/vibration/thermal/hybrid-field-enhanced machining.
- Surface engineering: surface modifications (e.g., ion implantation) and surface effects (e.g., mechanochemical effect) for ultra-precision machining.
- Material design: microstructure and mechanical property regulation for ultra-precision machining.
- Theoretical advances: multi-scale modeling (e.g., MD/CPFEM/FEM/Analytical model), and micro-/nano-scale material removal mechanisms.
- Characterization innovations: in situ/ex situ analysis of machined surface/subsurface integrity, and micro-/nano-mechanical testing.
- Post-processing for additive manufacturing: ultra-precision machining for finishing of additively manufactured components.
- Difficult-to-machine materials: metals/alloys, ceramics, and composites.

Guest Editors

Dr. Yunfa Guo
Dr. Jiaming Zhan
Dr. Yuchao Bai

Deadline for manuscript submissions

closed (30 April 2026)



Machines

an Open Access Journal
by MDPI

Impact Factor 2.5
CiteScore 4.7



mdpi.com/si/252483

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

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





Machines

an Open Access Journal
by MDPI

Impact Factor 2.5
CiteScore 4.7



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



About the Journal

Message from the Editor-in-Chief

Machines is an international, peer reviewed journal on machinery and engineering. It publishes research articles, reviews and communications.

Our aim is to encourage scientists to publish their experimental and theoretical results in as much detail as possible. There is no restriction on the length of the papers. Full experimental and/or methodical details must be provided.

There are, in addition, unique features of this journal: Manuscripts regarding research proposals and research ideas will be particularly welcomed; Electronic files or software regarding the full details of the calculation and experimental procedure - if unable to be published in a normal way can be deposited as supplementary material.

Editor-in-Chief

Prof. Dr. Antonio J. Marques Cardoso
CISE–Electromechatronic Systems Research Centre, University of Beira Interior, Calçada Fonte do Lameiro, P-6201-001 Covilhã, Portugal

Author Benefits

High Visibility:

indexed within Scopus, SCIE (Web of Science), Inspec, and other databases.

Journal Rank:

JCR - Q2 (Engineering, Mechanical) / CiteScore - Q1 (Control and Optimization)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 17.6 days after submission; acceptance to publication is undertaken in 2.7 days (median values for papers published in this journal in the second half of 2025).