Special Issue

Mechanical Behavior and Reliability of Micro-/Nanoscale Materials

Message from the Guest Editors

This Special Issue focuses on the unique mechanical properties and reliability challenges of materials at the micro- and nanoscale. The Special Issue will cover, but is not limited to, the following key topics:

- Size-Dependent Mechanical Properties: at micro- and nanoscale dimensions, materials often display enhanced strength and toughness but also show considerable size-dependent effects. Understanding these phenomena is crucial for reliable material design and applications;
- Advanced Characterization Techniques: techniques such as Depth-Sensing Indentation (DSI) and atomic force microscopy (AFM) have been developed to evaluate properties like hardness, elastic modulus, and fracture strength at the nanoscale;
- Computational Modelling: advanced computational methods are useful to predict the mechanical behaviour of micro- and nanoscale materials and to understand complex phenomena such as stress distribution, deformation mechanisms, and failure modes;
- Reliability and Performance: studies in this area focus on enhancing the durability and performance of materials for novel applications in nanoelectronics and strain engineering.

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Deadline for manuscript submissions

20 February 2026

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/244929

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Message from the Editor-in-Chief

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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