

Special Issue

Mechanical Testing of Nuclear Materials in Small Length Scales

Message from the Guest Editors

In recent years, small-scale mechanical testing techniques, such as nanoindentation, micro compression testing, micro-tensile testing and others have become increasingly popular in the nuclear materials community for several reasons. Firstly, ion irradiation is being increasingly used as an alternative method of simulating radiation damage in materials, reducing the duration of the radiation experiments by many orders of magnitude. Small-scale testing allows one to assess the mechanical properties of ion-irradiated materials which otherwise would not be accessible due to limited beam penetration. Secondly, in the case of neutron irradiation, it reduces the amount of active material that one must handle due to reduced sample size. Thirdly, it allows one to target specific microstructural regions of interest, be they individual grain boundaries, oxide layers or phases and orientations. The editors solicit papers with original research or review papers in these and related topics for publication in this Special Issue on “Mechanical Testing of Nuclear Materials in Small Length Scales”.

Guest Editors

Dr. Dhriti Bhattacharyya

Nuclear Fuel Cycle Research, Australia's Nuclear Science and Technology Organization, New Illawarra Road, Lucas Heights, NSW 2234, Australia

Dr. Peter Hosemann

Department of Nuclear Engineering, University of California, Berkeley, 4169 Etcheverry Hall, Berkeley, CA 94720, USA

Deadline for manuscript submissions

closed (31 January 2023)



Metals

an Open Access Journal
by MDPI

Impact Factor 2.5
CiteScore 5.3



mdpi.com/si/88797

Metals

Editorial Office

MDPI, Grosspeteranlage 5

4052 Basel, Switzerland

Tel: +41 61 683 77 34

metals@mdpi.com

mdpi.com/journal/

metals





Metals

an Open Access Journal
by MDPI

Impact Factor 2.5
CiteScore 5.3



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



About the Journal

Message from the Editorial Board

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

Editors-in-Chief

Prof. Dr. Hugo F. Lopez

Department of Materials Science and Engineering, College of Engineering & Applied Science, University of Wisconsin-Milwaukee, 3200 N. Cramer Street, Milwaukee, WI 53211, USA

Prof. Dr. Yong Zhang

Beijing Advanced Innovation Center of Materials Genome Engineering, State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, 30 Xueyuan Road, Beijing 100083, China

Author Benefits

High Visibility:

indexed within Scopus, SCIE (Web of Science), Inspec, Ei Compendex, CAPlus / SciFinder, and other databases.

Journal Rank:

JCR - Q2 (Metallurgy and Metallurgical Engineering) /
CiteScore - Q1 (Metals and Alloys)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 18 days after submission; acceptance to publication is undertaken in 2.6 days (median values for papers published in this journal in the first half of 2025).