



Mechanical Behaviors and Damage Mechanisms of Metallic Materials

Guest Editors:

Dr. Denis Benasciutti

Department of Engineering,
University of Ferrara, via Saragat
1, 44122 Ferrara, Italy

Dr. Luis Reis

IDMEC, Instituto Superior
Técnico, Universidade de Lisboa,
Av. Rovisco Pais, 1049-001
Lisbon, Portugal

Dr. Julian M. E. Marques

Department of Mechanics,
Biomechanics and Mechatronics,
Faculty of Mechanical
Engineering, Czech Technical
University, Technická 4, 166 36
Prague, Czech Republic

Deadline for manuscript
submissions:

closed (20 May 2024)

Message from the Guest Editors

It is well known that metallic materials are widely used in many traditional and advanced engineering sectors. Considering their possible applications, metals and alloys have to withstand various combinations of loading and environmental conditions, e.g., static or dynamic (fatigue, impact) loadings, at room or high temperature, sometimes in the presence of aggressive or corrosive environments. Each environment/loading combination triggers a specific mechanical response (elastic, plastic, creep, fatigue, ratcheting, wear, fretting, etc.) and makes materials more susceptible to a certain damage mechanism, which in some cases may even lead to catastrophic failure. An in-depth understanding of the different types of mechanical behaviors and damage mechanisms of metals and alloys is of paramount importance to achieve a flawless engineering design.

Based on these insights, this Special Issue aims not only to provide an up-to-date overview on the relevant mechanical behaviors, deformation, and damage mechanisms of metallic materials under various environmental/loading conditions, but also to collect original contributions exemplifying standard or more advanced analysis techniques.





an Open Access Journal by MDPI

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

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.

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)**, **Inspec**, **CAPLUS / SciFinder**, and **other databases**.

Journal Rank: JCR - Q2 (*Metallurgy & Metallurgical Engineering*) / CiteScore - Q1 (*Metals and Alloys*)

Contact Us

Metals Editorial Office
MDPI, St. Alban-Anlage 26
4052 Basel, Switzerland

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

mdpi.com/journal/metals
metals@mdpi.com
[X@Metals_MDPI](https://twitter.com/X@Metals_MDPI)