

Special Issue

Fatigue and Fracture Behavior of Metallic Components and Structures Under Various Loading Conditions

Message from the Guest Editors

Metallic structures and components can experience various types of fatigue loading, including constant amplitude, variable amplitude, and random loadings encountered during service. The evaluation of the fatigue and fracture behavior of components can be addressed by theoretical and numerical methods—often validated by experimental data—that prove to be the most suitable for the specific loading condition. The objective may range from basic material characterization to the development of a broader framework for structural integrity assessment. For instance, theoretical methods can be seamlessly integrated into a finite element model and later validated using laboratory test data from small-to-medium-scale specimens or large structural components. This Special Issue aims to gather contributions that provide an updated perspective on fatigue and fracture behavior, and on the structural integrity of metallic components subjected to various loading conditions. Theoretical, numerical, and experimental studies—as well as engineering case studies and practical applications—are welcome.

Guest Editors

Prof. Dr. Denis Benasciutti

Polytechnic Department of Engineering and Architecture (DPIA),
University of Udine, via delle Scienze 206, 33100 Udine, Italy

Prof. Dr. Adam Niesłony

Department of Mechanics and Machine Design, Opole University of
Technology, Prószkowska 76 Street, 45-758 Opole, Poland

Deadline for manuscript submissions

31 December 2025



Metals

an Open Access Journal
by MDPI

Impact Factor 2.5
CiteScore 5.3



mdpi.com/si/242889

Metals

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

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