Special Issue

Failure of Metals: Fracture and Fatigue of Metallic Materials

Message from the Guest Editors

Fracture and fatigue are two critical failure modes that can significantly affect the integrity and reliability of metallic materials. Studying these modes in such materials is necessary for ensuring safety, enhancing reliability, optimizing design, predicting lifespan, conducting failure analysis, developing materials, and complying with industry regulations. It is a critical area of research and engineering that impacts numerous industries and plays a vital role in the advancement and application of metallic materials. The difficulties faced in the fracture and fatigue of metallic materials are not only due to the complex material behavior but also the multiscale nature, environmental effects, and experimental limitations. Therefore, the development of advanced fracture and fatigue methods, prediction methods, and assessment technologies in industry would result in substantial benefits. The objective of this Special Issue is to provide insights into the underlying mechanisms of fracture and fatigue in such materials, fostering the development of more durable and reliable metal structures.

Guest Editors

Dr. Zhixin Zhan

School of Aeronautic Science and Engineering, Beihang University, Beijing 100191, China

Dr. Chuanqi Liu

State Key Laboratory of Nonlinear Mechanics, Institute of Mechanics, Chinese Academy of Sciences, Beijing 100090, China

Deadline for manuscript submissions

closed (30 April 2025)

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.3

mdpi.com/si/177252

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

mdpi.com/journal/metals

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About the Journal

Message from the Editor-in-Chief

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.

Editor-in-Chief

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

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