Special Issue

Technological Aspects in Fatigue Design of Metallic Structures

Message from the Guest Editor

Traditional manufacturing processes like casting and welding and modern techniques like additive manufacturing can significantly affect the local material properties of metallic materials. To ensure a safe and reliable operation of engineering components and structures, the knowledge of manufacturing effects on the fatigue performance is of utmost importance. Hence, this Special Issue focuses on the fatigue design of metallic structures considering the influence of technological aspects. Approaches based on local stress or strain as well as fracture-mechanics-based concepts are applicable, considering local manufacturing-process-dependent characteristics such as microstructure, hardness, porosity/defects, surface topography, or residual stress state. Furthermore, advanced methods utilizing the notch stress intensity factor (NSIF) or strain energy density as well as probabilistic approaches are feasible to properly assess the local fatigue strength or life. Research articles and reviews emphasizing technological aspects in the fatigue design of metallic structures incorporating experimental and/or numerical investigations are welcome.

Guest Editor

Prof. Dr. Martin Leitner

Institute of Structural Durability and Railway Technology, Graz University of Technology, 8010 Graz, Austria

Deadline for manuscript submissions

closed (31 December 2021)

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.3

mdpi.com/si/44515

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

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

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).

MDPI