Special Issue

Fatigue Life Calculation Approaches for Metallic Materials

Message from the Guest Editors

The fatigue life of metallic materials and their components is limited under exposure to repeated mechanical loads. Thus, an understanding of their damage evolution as well as estimation of the related (remaining) fatigue life is of major importance for their technical application in various fields. In order to achieve the goal of a (remaining) fatigue life calculation, it is necessary to determine and provide comprehensive material information describing the microstructures and associated material mechanisms of metallic materials. In addition to external and internal loads, the material's chemical composition, condition, geometry, and surface topography strongly influence the lifetime of its components or structure. This Special Issue intends to present a collection of the latest developments in the field from well-known researchers. Areas of interest include the simulation and modeling of fatigue processes and material mechanisms, numerical analysis of fatigue data, comparison of empirical results, and the physical principles related to the development of approaches for the fatigue life calculation of materials exposed to cyclic loads.

Guest Editors

Prof. Dr. Peter Starke

Department of Materials Science and Materials Testing, University of Applied Sciences Kaiserslautern, 67659 Kaiserslautern, Germany

Prof. Dr. Frank Walther

Chair of Materials Test Engineering (WPT), TU Dortmund University, 44227 Dortmund, Germany

Deadline for manuscript submissions

closed (31 August 2021)

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.3

mdpi.com/si/33192

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 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).

MDPI