Special Issue

State-of-the-Art Models for Describing Microstructure Evolution and Fatigue Prediction in Multicomponent Metallic Alloys

Message from the Guest Editor

Metallic alloys are predominantly utilized in the industrial sectors. IThe microstructural evolution of alloys during processing and service has a significant role on determining the overall performance of the materials. As metallic materials in practical applications are subjected to cyclic loading, their fatigue resistance is a highlighted topic. Statistical data and multiscale models can make it easier to predict the fatigue behavior of metallic alloys when subjected to periodic loads. The numerical quantification of fatigue-based damage accumulation, failures, and crack growth will enable the design of highly reliable devices. This Special Issue is aimed at recent advances in experimental data, computational models, and statistical models that are utilized to describe the microstructural evolution and fatigue behavior of multicomponent metallic alloys. Of particular interest are the insights into microstructure-based fatigue life models for multicomponent metallic alloys.

Guest Editor

Dr. Anil Kunwar
Faculty of Mechanical Engineering, Silesian University of Technology, Konarskiego 18A, 44-100 Gliwice, Poland

Deadline for manuscript submissions

closed (30 September 2024)

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.3

mdpi.com/si/136310

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

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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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