Special Issue

High Performance Bearing Steel

Message from the Guest Editors

Dear colleagues, High-performance bearing steels are specifically designed to provide superior wear resistance, toughness, corrosion resistance, and fatigue properties. Their properties are largely dependent on their microstructure. This edition welcomes papers on but not limited to the following aspects on bearing steels science and engineering to achieve high performance: 1) Casting, refining, steel chemical composition, inclusion control, and cleanliness;
2) Microstructure design and control through thermomechanical and thermochemical processing;
3) Microstructural and defect characterization, such as inclusions and porosity and their relations to properties;
4) Surface integrity processing, including roughness, residual stress, and coating;
5) Wear, rotatory bending fatigue, rolling contact fatigue, white structure flaking failures, and corrosion-resistant properties;
6) Special purpose bearing steels, such as those for aerospace applications;
7) Powder metallurgical processing routes and additive manufacturing methods;
8) Modeling on fatigue processes, residual stress effect, fatigue life, and wear.

Guest Editors

Dr. Xiaodan Zhang
Department of Civil and Mechanical Engineering, Technical University of Denmark, 2800 Kgs. Lyngby, Denmark.

Dr. Wenquan Cao
China Iron and Steel Research Institute Group, Beijing, China

Deadline for manuscript submissions

closed (31 January 2024)

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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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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).

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