Special Issue

Advanced High-Performance Steels: From Fundamental to Applications

Message from the Guest Editors

This Special Issue highlights recent advancements in automotive steels, focusing on Advanced High-Strength Steels (AHSSs) and electrical steels for new energy vehicles (NEVs). AHSSs enable the manufacturing of lightweight, cost-effective components with enhanced safety and environmental performance, and their mechanical properties are governed by their phase composition, microstructure distribution, and metastable phase stability. Additionally, we emphasize critical developments in electrical steels for NEV applications, including high-efficiency non-oriented grades with optimized core loss, thin-gauge silicon steels for high-frequency motor operation, and novel processing techniques for enhancing magnetic properties while maintaining mechanical strength. This Special Issue also serves as a forum for researchers to interact with one another. We invite authors to submit original research articles as well as review articles focusing on novel developments in steel design and on new insights regarding processing–microstructure–property relationships in steels.

Guest Editors

Dr. Zhengzhi Zhao

Collaborative Innovation Center of Steel Technology, University of Science and Technology Beijing, Beijing 100083, China

Prof. Dr. Zhigang Wang

School of Materials Science and Engineering, Faculty of Materials Metallurgy and Chemistry, Jiangxi University of Science and Technology, Ganzhou 341000, China

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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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