



Mechanical Behaviors and Interfacial Segregation Phenomena in Metallic Materials: Simulation, Theory, and Characterization

Guest Editors:

Dr. Chongze Hu

Department of Aerospace
Engineering and Mechanics, The
University of Alabama,
Tuscaloosa, AL 35406, USA

Dr. Xin Wang

Department of Metallurgical and
Materials Engineering, The
University of Alabama,
Tuscaloosa, AL 35406, USA

Deadline for manuscript
submissions:

closed (30 November 2024)

Message from the Guest Editors

Given the polycrystalline nature of most technically relevant metallic materials, the segregation of impurity or solute elements at both intragranular and intergranular interfaces can significantly change their mechanical behaviors, thereby alternating the overall mechanical performance of these materials. Understanding the relationship between interfacial segregation and mechanical behavior at various length scales is not only important for enriching our fundamental knowledge of interface science, but also sheds lights on the design of novel metallic materials with improved properties via interfacial segregation engineering. In this Special Issue, we welcome articles dealing with the use of simulation, theoretical, and experimental tools to investigate the relationships between mechanical behaviors and interfacial segregation phenomena in metallic materials. Studies on the effects of interfacial segregation on mechanical behaviors in such materials using data-driven and physics-informed modeling are highly encouraged.





an Open Access Journal by MDPI

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

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.

Author Benefits

Open Access: free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility: indexed within Scopus, SCIE (Web of Science), Inspec, Ei Compindex, CAPlus / SciFinder, and other databases.

Journal Rank: JCR - Q2 (Metallurgy and Metallurgical Engineering) / CiteScore - Q1 (Metals and Alloys)

Contact Us

Metals Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/metals
metals@mdpi.com
[X@Metals_MDPI](#)