

Special Issue

Recent Advances in Study of Solid-Liquid Interfaces and Solidification of Metals

Message from the Guest Editor

Solidification occurs in several material processing methods, such as in casting, welding, and laser additive manufacturing of metals, and it controls the nano- and microstructures and the overall properties. Recent advances in experimental and computational modeling techniques have made it possible to more effectively study atomistic and microscale mechanisms that control the solidification structures and formation and evolution of solidification defects. This Special Issue solicits articles demonstrating recent advancements in the following areas:

- Experimental studies of solid-liquid interfaces and solidification nano- and microstructures.
- Computational modeling at different length scales, including atomistic simulations (e.g., molecular dynamics) and mesoscale modeling (e.g., phase-field modeling) of solid-liquid interfaces and solidification structures (e.g., dendritic structures).
- Experimental and/or modeling studies of solidification defects and their effects on mechanical and physical properties of solidified materials.

Mohsen Asle Zaeem

Guest Editor

Dr. Mohsen Asle Zaeem

Department of Materials Science and Engineering, Missouri University of Science and Technology, Rolla, Missouri 65409, USA

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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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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,
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