



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

Guest Editor:

**Dr. Mohsen Asle Zaeem**

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

Deadline for manuscript  
submissions:

**closed (30 September 2017)**

### 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:

1. Experimental studies of solid-liquid interfaces and solidification nano- and microstructures.
2. 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).
3. Experimental and/or modeling studies of solidification defects and their effects on mechanical and physical properties of solidified materials.

Mohsen Asle Zaeem  
*Guest Editor*





an Open Access Journal by MDPI

## Editors-in-Chief

### Prof. Dr. Hugo F. Lopez

Department of Materials Science and Engineering, College of Engineering & Applied Science, University of Wisconsin-Milwaukee, 3200 N. Cramer Street, Milwaukee, WI 53211, USA

### 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 Editorial Board

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, 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](http://www.mdpi.com)

[mdpi.com/journal/metals](http://mdpi.com/journal/metals)  
[metals@mdpi.com](mailto:metals@mdpi.com)  
[X@Metals\\_MDPI](https://twitter.com/Metals_MDPI)