



## Crystal Plastic Deformation Mechanism of Metallic Materials

Guest Editors:

**Prof. Dr. Mao Liu**

**Dr. Pengfei Wang**

**Prof. Dr. Jhe-Yu Lin**

**Dr. Liang Zhang**

Deadline for manuscript  
submissions:

**closed (30 September 2022)**

### Message from the Guest Editors

Crystal plasticity is an inherently multiscale process starting at the atomic scale where dislocation cores, the regions in the immediate vicinity of dislocation lines, control a number of local properties, including the selection of glide planes and corresponding dislocation mobility, cross-slip, and nucleation processes. Crystal plasticity, in contrast to classical macroscopic plasticity, has a clear physical basis and always includes explicit microscopic information of the material. Crystal plasticity theory has long been adopted to study deformation behaviors of metallic materials subjected to both quasi-static and dynamic plastic deformation.

Our Special Issue aims to provide a timely review of research in the rapidly developing subject area of crystal plasticity. We would like to invite you to submit either research articles or review papers to the Special Issue. Specific topics of interests include (but are not limited to): microstructure and texture evolutions, design and processing of metallic materials, phase transformations and mechanical properties, deformation mechanism, dynamic mechanics, numerical modeling, dynamic recrystallizations, and 3D printing and corrosion.





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 & Metallurgical Engineering*) / CiteScore - Q1 (*Metals and Alloys*)

## Contact Us

Metals Editorial Office  
MDPI, St. Alban-Anlage 26  
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/X@Metals_MDPI)