



## Influence of Mechanical Treatment on Casting Alloys and Components

Guest Editor:

**Prof. Dr. Anders E. W. Jarfors**

Department of Materials and  
Manufacturing, School of  
Engineering, Jönköping  
University, 55111 Jönköping,  
Sweden

Deadline for manuscript  
submissions:

**closed (30 December 2019)**

### Message from the Guest Editor

Wrought materials have dominated the arena for applications subjected to fatigue and for applications where ductility is a critical feature. New requirements arising from new demands will ask more of components in terms of both design freedom and part performance, particularly improved strength, ductility and fatigue performance combined with significant weight reduction and component function integration.

The only process capable of enough design freedom and cost-effectiveness is casting but its fatigue performance is limited. The combination of hybrid processing including a casting process with subsequent deformation of the part either on the surface alone or a heavier deformation targeting pore closure and deformation.

The current Special Issue targets the relationship between process-microstructure and workability as well as the end result with an understanding of how the material final properties depend on the post-casting deformation process. This includes full forging of castings, local upsetting with cross-section deformation as well as more gentle deformation not resulting in deformation of a cross section. This latter also includes deep tolling and peening processes.





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)