

## Special Issue

# Mechanical Properties and Simulation during Metal Milling Processing

### Message from the Guest Editor

Over the years, the simulation of machining processes has evolved from simple analytical laws, to complex multiphysics coupled models. The methods for engineers for highly competitive domains need to optimize the production costs and reliable simulations models. The aim of this Special Issue is to collect state of the art research around various domains of expertise, such as mechanical engineering, material sciences, mathematics, regarding its simulations and its experimental validation. Aspects such as the prediction of cutting forces, prediction of surface integrity, evaluation of the mechanical properties of machined material, will be welcome. Topics of interest include:

- Modelling of cutting forces in milling operations by means of microscopic, mesoscopic, or macroscopic models;
- Determination of material properties relevant to the simulation of milling operations;
- Prediction of the quality of milled parts regarding dimensional tolerances, roughness, surface integrity, or residual stresses;
- Stability of operations against vibrations such as chatter;
- Advanced techniques (robotic milling, laser-assisted milling, cryogenic milling, hybrid milling, etc.).

### Guest Editor

Prof. Dr. Edouard Rivière-Lorphèvre

UMONS Research Institute for Materials Science and Engineering,  
University of Mons, 7000 Mons, Belgium

### Deadline for manuscript submissions

closed (31 December 2020)



## Metals

an Open Access Journal  
by MDPI

Impact Factor 2.5  
CiteScore 5.3



[mdpi.com/si/29529](https://mdpi.com/si/29529)

### *Metals*

Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[metals@mdpi.com](mailto:metals@mdpi.com)

[mdpi.com/journal/](https://mdpi.com/journal/)

[metals](https://mdpi.com/journal/metals)





# Metals

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.5  
CiteScore 5.3



[mdpi.com/journal/  
metals](https://mdpi.com/journal/metals)



## About the Journal

### 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.

---

### 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

---

### Author Benefits

#### High Visibility:

indexed within Scopus, SCIE (Web of Science), Inspec, Ei Compendex, CAPlus / SciFinder, and other databases.

#### Journal Rank:

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

#### Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 18 days after submission; acceptance to publication is undertaken in 2.6 days (median values for papers published in this journal in the first half of 2025).