

## Special Issue

# Joining of Advanced High Strength Steels for the Automotive Industry

### Message from the Guest Editor

Advanced High Strength Steels (AHSSs) are increasingly used for the fabrication of more lightweight, mechanical and impact resistant components. However, even though fusion and solid-state technologies offer a notable flexibility in designing tailored multi-material parts for specific purposes, joining of AHSSs usually needs a different approach than traditional steels. In this regard, fusion weldments of AHSSs normally exhibit a much lower mechanical strength and toughness as compared to the base materials. In addition, crack formation, shrinkage porosity, corrosion phenomena are more critical in AHSSs. To limit or overcome these issues, different promising solutions have been proposed. However, they are often unreliable enough to allow an effective integration on a broad scale and some issues still remain unsolved. This special issue aims at collecting the most recent developments in joining covering several aspects such as fusion welding, solid-state and mechanical joining, microstructure-property relationships of joints, welding and forming of tailor welded blanks, welding control and automation, joining modeling and FEM simulation, welding metallurgy.

---

### Guest Editor

Dr. Pasquale Russo Spena  
Faculty of Science and Technology, Free University of Bozen-Bolzano,  
Piazza Università 5, 39100 Bolzano, Italy

---

### Deadline for manuscript submissions

closed (31 December 2019)



## Metals

---

an Open Access Journal  
by MDPI

---

Impact Factor 2.5  
CiteScore 5.3



[mdpi.com/si/17365](https://mdpi.com/si/17365)

*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/  
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 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,  
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 18.7 days after  
submission; acceptance to publication is undertaken in 2.7  
days (median values for papers published in this journal in  
the second half of 2025).