

Special Issue

Complex Concentrated Alloys (CCAs) - Current Understanding and Future Opportunities

Message from the Guest Editor

This Special Issue aims to present recent developments and future opportunities related to the topic of complex concentrated and high entropy alloys from fundamental aspects to various applications. Complex concentrated alloys (CCAs) retain the “high entropy” nature of the parent matrix and add complex precipitates containing multiple elements on their respective sub-lattices as strengtheners. The core effects of high configurational entropy, lattice distortion and sluggish diffusion lead to a gamut of attractive properties including high strength-ductility combination, resistance to oxidation, and interesting magnetic properties. Specific topics of interest include (but are not limited to):

- Thermodynamics, kinetics, and phase transformation in CCAs
- Mechanical behavior and deformation mechanisms
- Microstructure evolution as a function of processing
- Tribology, corrosion and oxidation behavior
- Magnetic and magneto-caloric properties; Irradiation effects
- High strain-rate deformation behavior
- Simulation and modeling including DFT, MD, Phase-field, and CALPHAD

Guest Editor

Dr. Sundeep Mukherjee

Department of Materials Science and Engineering, University of North Texas, 3940 N. Elm Street, Denton, TX 76203, USA

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/13166

Metals
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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).