

Special Issue

Development of Novel Alloys through Additive Manufacturing for Next-Generation Applications

Message from the Guest Editors

In present modern society, engineering materials play a major role in every sector. The biggest challenge of developing novel alloys is the need to control their desirable phases, microstructure, chemical composition, corrosion resistance, and wear resistance, along with the expectation of having advantageous room/high-temperature mechanical properties to overcome obstacle requirements. For the future development of novel alloys, additive manufacturing (AM) is a promising technique of immense engineering and scientific significance. AM processing routes offer several advantages, such as near-net fabrication with minimal wastage, minimized postprocessing, complexity for free fabrication, short lead time, etc. However, there exist some imperfections in the field of AM alloy development, including the precipitate failure of materials, process parameter optimization, structure-property correlations, and numerical simulations.

This Special Issue aims to highlight the most significant research trends in the development of novel alloys through the AM processing routes. Manuscripts are welcome from academia, national research labs, and industry.

Guest Editors

Dr. Dharmalingam Ganesan

Dr. Sachin Salunkhe

Dr. Hakan Gürün

Prof. Dr. Joao Paulo Davim

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Metals
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
metals@mdpi.com

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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

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