Special Issue

Hybrid Additive Manufacturing and Welding for Metal Alloys: Advances and Applications

Message from the Guest Editors

This Special Issue aims to explore interdisciplinary advancements at the intersection of AM and welding. We invite researchers and industry professionals from materials science, mechanical engineering, metallurgy, and manufacturing to contribute original research articles and reviews that address topics including the following:

Innovative welding-based AM techniques for metal alloys, including WAAM, DED, and FSAM;

Microstructural and mechanical properties of additively manufactured and welded metal alloys;

Process optimization and parameter control in hybrid AM–welding systems;

Integration of AM and welding for large-scale or multi-material metal alloy components;

Advanced characterization techniques for welded and AM structures;

Modeling and simulation of AM in metal alloy fabrication;

Applications of hybrid AM–welding technologies in industry;

Challenges and solutions in residual stress, distortion, and defect management;

Sustainability and cost-effectiveness of combined AM and welding processes;

Qualification and standardization frameworks for hybrid manufacturing processes;

Post-processing techniques for hybrid AM–welded components.

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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

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