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Arc-based Additive Manufacturing

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Message from the Guest Editor

Over the past few years, additive manufacturing has gained enormous attention in terms of research, and also from industry. Metallic structures, especially beam-based processes, have been extensively investigated and validated, machinery has been developed, and in many cases implemented in industrial production.

On the other hand, a large variety of arc-based processes has been used for decades to join and generate structures of various metals. Under the rise of additive manufacturing, several newly-named processes, based on arc welding such as Wire+Arc Additive Manufacturing (WAAM) or 3D Plasma-Metal-Deposition (3DPMD), have been introduced.

This Special Issue of *Metals* is devoted to the science of all arc-based additive manufacturing processes and their generated structures. These shall include wire-, strip- and powder-based variants and include topics such as design strategies, manufacturing-related issues, metallurgical details, tailored microstructures, functionally-graded structures or the investigation of properties of AM structures.

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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.

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