Special Issue

Microstructure and Mechanical Properties of Metallic Alloys Produced by Additive Manufacturing

Message from the Guest Editor

Additive manufacturing (AM) of metals is revolutionizing the way of conceiving parts and structures. It enables a high degree of design freedom, allowing the production of objects with optimized shapes for specific applications. Several processes have been developed in the last few decades, belonging the group of Additive Layer Manufacturing (e.g., selective laser melting, electron beam melting) and to that of Direct Metal Deposition. From the material perspective, the peculiar solidification conditions induced by AM processes allow to generate specific microstructures and properties that still need to be investigated deeply. In addition, large opportunities are available for the design of new dedicated alloys showing an improved ability to be processed, as well as higher performances.

Guest Editor

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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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