

Special Issue

Laser Additive Manufacturing of Steels and Alloys

Message from the Guest Editor

Additive manufacturing (AM), is an emerging net-shape manufacturing technology that can produce complex 3D solid and which has recently gained attention as a potential replacement for traditional manufacturing techniques. Energy savings, less material waste, faster design-to-build time, design optimization, reduction in manufacturing steps, and product customization are the most important advantages of AM. The main aim of this Special Issue is to collect various recent developments in cutting-edge research for enabling laser AM processes for manufacturing of advanced steels and alloys, focusing on microstructure and mechanical property improvement. Papers presenting investigations of novel steel chemical compositions and laser AM techniques for high energy absorbent steels are welcome. In addition, studies that focus on corrosion resistance and hydrogen-induced cracking of 3D-printed steels are welcome. Researchers who are working on computational materials engineering for multi-scale modeling of laser AM processes are also encouraged to submit papers. Authors are also encouraged to present new measurement and monitoring techniques of laser AM of steels and alloys.

Guest Editor

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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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