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Additive Manufacturing of Metals with Lasers II

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Deadline for manuscript submissions:
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Message from the Guest Editor

As you know, an exponentially growing interest in both the industrial and academic communities regarding additive manufacturing (AM) has arisen in the last 5 years following more than a decade of technical proofs of concept and improvements in laser-based AM techniques. Since then, many scientific fields have been addressed in detail in the literature, including (1) the physics of laser–powder (or wire)–melt pool interaction, (2) the optimization of process parameters to ensure optimum densification of parts, (3) the microstructures of as-built or thermally treated AM materials and, of course, (4) the mechanical or corrosion properties of manufactured parts. Experimental, analytical, or numerical means have been used to fulfill the requirements of AM developments. However, on all of these topics, a tremendous amount of work is still required to improve our global understanding of existing processes (direct energy deposition, powder bed laser fusion, metal binder jetting, etc.), develop novel processes, address modified or complex alloys (e.g., hot cracking sensitivity) or provide a more precise analysis of AM microstructures and their resulting properties.

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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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