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Laser Melting of Metals and Metal Matrix Composites

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Message from the Guest Editor

With the rapid development of various laser-melting processing technologies, one of the primary research interests is the metallic components made of metals, alloys or metal matrix composites that have far-reaching application potential in the fields of aerospace, marine, automobile, biomedicine, etc. Laser-melting processing technologies include but are not limited to laser additive manufacturing, laser welding and laser cladding. Microstructure and mechanical properties are the key performance indicators for structural metal materials and metal matrix composites. Different laser melting processes or different metallic material compositions may lead to various performance characteristics in application. As a result, the regulation of microstructure and the improvement of mechanical properties are particularly important. For some functional metals or metal matrix composites, the optimal implementation of the desired function is the core goal. Moreover, numerical simulation methods are also welcome because they are helpful to deeply study the thermal, mechanical, flow and phase fields of laser-melting processes.



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Special Issue



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