Special Issue

Metal Additive Manufacturing, Microstructures and Properties

Message from the Guest Editors

Metal additive manufacturing (MAM) is now a key component of Industry 4.0-based smart factories. This issue precisely discusses the various materials used for the MAM process, in correlation with past, present and future trends, and along with their application potential. It has been recognized that the microstructure and mechanical properties of MAM materials are highly influenced by the process parameters, path orientations, thermal gradients and deposition atmosphere. Therefore, the details of metallurgical and mechanical influence with respect to changing various input criteria will also be covered in this issue. In addition, this Special Issue also includes different aspects of the MAM processes in line with the modeling and optimization of mechanical and functional properties and their respective microstructural representations. The application of multi-scale modeling techniques, including integrated computational materials engineering (ICME), and applications of artificial intelligence and machine learning tools in the domain of MAM, will also be covered in this issue.

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Message from the Editor-in-Chief

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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