Special Issue

Metal Powder-Based Additive Manufacturing: Powder, Properties, and Performance

Message from the Guest Editors

The use of metal powder-based additive manufacturing (AM) has expanded greatly in recent years due to process flexibility and the capacity to create parts of complex geometries with reduced waste when compared to traditional manufacturing methods. These methods include both fusion-based and solid-state AM, such as powder bed fusion, the directed deposition of powders, cold spray AM, additive fraction stir, etc. These techniques are applied in a wide scope of applications given their ability to accommodate many feedstock powders with differing compositions, sizes, and morphologies. The goal of this Special Issue is to highlight research regarding the characterization and evaluation of the microstructure and mechanical properties of additively manufactured parts and their feedstock powders. This evaluation will guide the understanding of the relationships between feedstock powder and the properties of additively manufactured parts. Publication topics may incorporate powder characterization, powder pre-processing, heat treatments, new alloy compositions, microstructural evolution, mechanical properties, and process modeling and optimization.

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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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