Special Issue

The Effects of Process Parameters and Geometrical Features on the Mechanical Performance of AM Components

Message from the Guest Editors

The advent of additive manufacturing (AM) represents a breakthrough in product design and development. AM, gives unprecedented geometrical design freedom, which can result in significant reductions in component weight. However, the mechanical behavior of AM components, particularly the fatigue and fracture behavior, are uncertain, thus limiting the potential extraordinary impact of AM. The uncertainties in mechanical behavior are mainly due to the fact that the material properties evolve during the fabrication process. Every change in the building routine affects the toolpath and, ultimately, the properties of the resulting component—even a small change in the toolpath can lead to big variations in the mechanical behavior of the component. This Special Issue aims at bringing together papers investigating the effect of process parameters, building routines, and geometrical features on the mechanical behavior of AM components for applications that vary from biomedical engineering to aerospace components. Particularly, it focuses on fatigue and fracture behavior. The submission of papers on numerical simulation or reporting experimental work, or both, is welcome.

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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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