Special Issue

Advances in 3D Printing of Polymer-Derived Ceramics

Message from the Guest Editor

With the demand for advanced ceramics applied under harsh conditions, reliable ceramic parts with customized and complex geometries are needed. Additive manufacturing (AM), also known as 3D printing, can precisely and rapidly produce specific near-net-shape components from macro- to micro-scale. Conventional ceramic raw materials can hardly meet the requirements of specific 3D printing technologies, unlike preceramic polymers that are suitable for AM, as they can be manipulated in polymeric phases. Thus, PDCs have greatly emerged as a powerful and versatile technology. A large variety of AM techniques can be used to shape preceramic polymers, including photopolymerization, direct ink writing, etc. Therefore, the 3D printing of functional PDCs has a promising future in this field. This SI aims to highlight recent advances in the AM of ceramics in general and of PDCs in particular. In addition, studies related to multi-material 3D printing such as ceramic–metal composites, ceramic–matrix composites, new designs of functional 3D-printed ceramics and their applications are welcome. Research articles, reviews, and short communications are accepted.

Guest Editor

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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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