Ceramic structures made by additive manufacturing

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Additive manufacturing has been widely used in fabrication of structural and functional devices. Additive manufacturing has a great potential in producing novel products with geometry and functionality which cannot be or very difficultly obtained using conventional manufacturing techniques. Polymeric materials have been widely used in additive manufacturing because of their low melting temperatures. Some metals have been used in additive manufacturing after the successful development of novel technologies such as selective laser melting. High-quality ceramic structures are still challenging because of high melting temperature and brittleness. We have paid a great attention on additive manufacturing of ceramic structures. In our recent research, we have used extrusion free-forming in fabrication of high-quality ceramic structures including YBCO high-Tc superconductor, hard and soft magnetic ferrites and ZrO2. In addition, digital light projection has been used in fabrication of ceramic structures.

Biography

Jun Ding is Professor at Department of Materials Science & Engineering, National University of Singapore. He has been working on Functional Materials (particularly Magnetic Materials) over 25 years. His current research is focusing on Additive Manufacturing (3D Printing) with the emphasis of advanced functional and multi-functional devices.

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