

## Direct Write and 3D Printing of Ceramic Polymers: Materials, Approaches and Applications

The evolution of additive manufacturing in ceramics has led to an increasingly diverse and flexible means of printed ceramics. Given the relatively recent advances in printers, materials and tooling the opportunities are vast for the exploration of printed ceramics. To that end, we at Sandia National Labs are invested in exploring innovative approaches and materials to gain a unique understanding in the printing of highly loaded ceramic polymer based pastes and resins. Here, we will present ongoing work investigating stereolithographic (SLA) and direct write extrusion printing of highly loaded alumina polymers, post processing and the incorporation of printed parts into components.

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