

# Fast laser processing and densification of silicon carbide ceramic materials

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SiC-based Ceramic composites are promising for usages as various large-scale and complex-shaped components. However, the intrinsic brittle nature of SiC ceramics inhibited their wide application. Incorporation of chopped carbon fiber as a reinforcing phase could enhance its reliability. During recent years, efforts have been devoted to fast forming techniques to reduce excess carbon reduction. Additive manufacturing of SiC-based ceramics by adopting various techniques, including digital light processing, direct ink writing, selective laser sintering, and et al were emerged.

In previous study, our group conducted investigation on direct ink writing of C/SiC ceramic composites. The critical point was the preparation of homogenous C/SiC green bodies. In recent study, we combined selective sintering and liquid silicon infiltration for a higher-efficiency and higher-performance-component fabrication. We prepared complex-structured composites therefrom. The relationship between microstructure tailoring and mechanical performance was investigated.

## Professional Status of the Speaker

Senior Scientist

## Interest in submitting a paper in a special issue of

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## Invitation letter for visa

Yes

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