

Abstract Submitted  
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**Advancing Carbon Fiber Based Dual Extrusion Additive Manufacturing** CATHERINE CRICHTON, Lawrence Livermore National Laboratory; CSU, Chico, ANDREW BROWN, Lawrence Livermore National Laboratory; UC, Irvine, JAMES LEWICKI, WILLIAM S. COMPELL, Lawrence Livermore National Laboratory — Additive manufacturing (AM) is a maturing and expanding technology that is going through rapid development. Researchers working to improve AM processes must be able to quickly adapt to new challenges and technological advancements while performing accurate and reproducible experiments. The work presented here is focused on facilitating this research while improving and streamlining the functionality of direct-ink-write (DIW) carbon additive manufacturing. Spanning both hardware and software, these new mechanisms and improvements will allow for additional print axes, greater reproducibility and ease of dual nozzle extrusion, rheological data collection, and an overall simpler, easier, and faster print setup procedure. These advancements will allow for future research that would not otherwise be possible.

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