

Abstract Submitted
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Additive Manufacturing and Richtmyer-Meshkov Initial Condition Studies TIFFANY DESJARDINS, ADAM MARTINEZ, JOHN CHARONKO, KATHY PRESTRIDGE, Los Alamos National Laboratory — With the advances in materials and additive manufacturing we have begun to re-explore the application of membranes in RMI experiments. At the Vertical Shock Tube facility, we are using AM techniques to develop shaped membranes for studies of different types of initial interfaces, motivated by the need to explore non-diffuse initial conditions with specific geometrical configurations. The need for understanding of features in applications such as inertial confinement fusion (ICF) drives this work. The goal is the development of a barrier at the initial interface that repeatedly breaks, minimally influences the growth of the instability, and can be shaped to look at desired interface configurations. We have found a material fragile enough that when hit with an $M = 1.2$ shock, it is returned to a near complete dust state. The particles are heavy enough to lag behind the interface region and preliminary experiments studying single modes will be presented.

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