

Abstract Submitted
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Fabrication of Planar Foam Targets for Rayleigh-Taylor Instability Experiments¹ C.A. FREDERICK, R.R. PAGUIO, J.F. HUND, General Atomics — Cryogenic direct-drive inertial confinement fusion (ICF) experiments at the Omega Laser Facility require 180 mg/cc resorcinol formaldehyde (RF) foam shells overcoated with a full density layer of CH. Surface perturbations on the overcoated shells can amplify Rayleigh-Taylor instabilities during target implosion. To study Rayleigh-Taylor instability, planar foam targets with a full density CH coating were fabricated. In an effort to also better understand the different modes of instability single sine waves with varying wavelengths and amplitudes were laser machined into the full density layer of CH. Fabrication of the planar foam pieces, application of the full density CH layer, and laser patterning will be discussed. Characterization of the laser-machined patterns was done using interferometric and radiographic techniques.

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