

Abstract Submitted
for the DPP13 Meeting of
The American Physical Society

3D Printing Utilized In Target Fabrication¹ SALLEE KLEIN, MICHAEL DEININGER, ELISEO GAMBOA, MARIO MANUEL, University of Michigan, JOE SATCHER, Lawrence Livermore National Laboratory, RACHEL YOUNG, CAROLYN KURANZ, PAUL KEITER, R. PAUL DRAKE, University of Michigan — Targets are used in high-energy-density physics, when, once ablated by lasers, are platforms for experiments that study astrophysical phenomenon, hydrodynamic instabilities and a myriad of other physics. Target fabrication has long suffered from difficulty in the repeatability of features from target to target. At the University of Michigan, micro-machined acrylic structures are often used to mitigate variations in targets for any single campaign. However, there are limitations to what can be conventionally machined. Ever sophisticated target designs are broaching the limitations of our traditional means of creating the acrylic structures that have long been such an integral element to our success in target fabrication. 3D printing has opened up new opportunities to build targets that could never have been machined by conventional means. Here, we present the advantages and limitations of 3D printing when utilized in target fabrication.

¹This work is funded by the NNSA-DS and SC-OFES Joint Program in High-Energy-Density Laboratory Plasmas, grant number DE-NA0001840, and by the National Laser User Facility Program, grant number DE-NA0000850.

Sallee Klein
University of Michigan

Date submitted: 12 Jul 2013

Electronic form version 1.4