Abstract Submitted
for the DPP20 Meeting of
The American Physical Society

Image Processing for the Analysis and Optimization of 2PP Additive Manufactured Microstructures[1] YINGYI HUANG, Pasadena City College, ZAC GAVIN, General Atomics — General Atomics' Inertial Fusion Technologies (IFT) division employs a specific AM method known as two-photon-polymerization (2PP), among other techniques, in its target manufacturing activities. In 2PP, focused, ultrashort laser pulses are directed into a volume of photosensitive material or photoresist. Currently, the 2PP additive manufacturing process provides unique opportunities to create geometries that are unavailable to alternative fabrication techniques. However, further development of modeling and metrology techniques is needed for full utilization of the extensive capabilities that the 2PP print process allows. The goal of this work is to develop part measuring and model scaling techniques in order to achieve higher geometric tolerances as well as develop modeling and metrology techniques to fabricate and characterize parts with internal density gradients.

[1]Work supported in part by US Department of Energy under the Community College Internship (CCI) program and ICF Target Fabrication contract number 89233119CNA000063.

Yingyi Huang
Pasadena City College

Date submitted: 10 Jul 2020 Electronic form version 1.4