

Abstract Submitted  
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**Experimental Validation of Plasma Metasurfaces as Tunable THz Reflectors**<sup>1</sup> ROBERTO COLON QUINONES, THOMAS UNDERWOOD, MARK CAPPELLI, Stanford University — Measurements are presented which validate the use of plasma metasurfaces (PMs) as potential tunable THz reflectors. The PM considered here is an  $n \times n$  array of laser produced plasma kernels generated by focusing the fundamental output from a 2 J/p Q-switched Nd:YAG laser through a multi-lens array (MLA) and into a gas of varying pressure. An M Squared Firefly-THz laser is used to generate a collimated pulse of THz light, which is then directed to the PM at varying angles of incidence. The reflected energy is measured using a Gentec-EO SDX-1187 joulemeter probe to characterize the surface impedance or reflectivity. In this presentation, we will compare the measured reflectance to values obtained from theoretical predictions and 3D finite-difference time-domain (FDTD) simulations.

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