Abstract Submitted
for the DPP15 Meeting of
The American Physical Society

Generation of thin, near critical density gas targets for laser plasma interaction experiments[1] FATHOLAH SALEHI, ANDY GOERS, GEORGE HINE, LINUS FEDER, BO MIAO, HOWARD MILCHBERG, University of Maryland College Park — We present the design and characterization of a thin (200m FWHM), high density pulsed gas jet which we use to study near critical and overcritical laser plasma interactions. We show that cryogenic cooling of the pulsed jet provides the necessary density enhancement for reaching overcritical plasma densities at 800 nm (¿1.7*?10?^{2}1?cm?$^{(}$ − 3))$with pure hydrogen gas at plenum pressures below 1000 psi. Further, we present 2D and 3D PIC simulations$

[1]This work supported by DTRA and the US Department of Energy.

Fatholah Salehi
University of Maryland College Park

Date submitted: 29 Sep 2015 Electronic form version 1.4