

Abstract Submitted
for the DPP17 Meeting of
The American Physical Society

The Effect of Background Pressure on Electron Acceleration from Ultra-Intense Laser-Matter Interactions¹ MANH LE, Ohio State Univ - Columbus and University of Dayton Research Institute, GREGORY NGIRMANG, Ohio State Univ - Columbus and Innovative Scientific Solutions, Inc., CHRIS ORBAN, Ohio State Univ - Columbus, JOHN MORRISON, Innovative Scientific Solutions, Inc., ENAM CHOWDHURY, Ohio State Univ - Columbus and Intense Energy Solutions, LLC., WILLIAM ROQUEMORE, Air Force Rsch Lab - WPAFB, WPAFB — We present two-dimensional particle-in-cell (PIC) simulations that investigate the role of background pressure on the acceleration of electrons from ultra intense laser interaction at normal incidence with liquid density ethylene glycol targets. The interaction was simulated at ten different pressures varying from 7.8 mTorr to 26 Torr. We calculated conversion efficiencies from the simulation results and plotted the efficiencies with respect to the background pressure. The results revealed that the laser to \sim 100 keV electron conversion efficiency remained flat around 0.35

¹This research is supported by the Air Force Office of Scientific Research under LRIR Project 17RQCOR504 under the management of Dr. Riq Parra and Dr. Jean-Luc Cambier. Support was also provided by the DOD HPCMP Internship Program.

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Date submitted: 14 Jul 2017

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