

Abstract Submitted  
for the DPP13 Meeting of  
The American Physical Society

**Fast Electron Transport and Spatial Energy Deposition into Imploded High Density Plasmas using Cu-Doped CD Shell Targets<sup>1</sup>** L.C. JARROTT, UCSD, M.S. WEI, GA, A.A. SOLODOV, B. QIAO, C. MCGUFFEY, UCSD, W. THEOBALD, LLE, R.B. STEPHENS, None, C. STOECKL, C. MILEHAM, F.J. MARSHALL, J. DELETTREZ, R. BETTI, LLE, P.K. PATEL, H.S. MCLEAN, C.D. CHEN, M.H. KEY, LLNL, H. SAWADA, UNR, T. YABUUCHI, T. IWAWAKI, H. HABARA, U Osaka, J.J. SANTOS, D. BATANI, U Bordeaux, F.N. BEG, UCSD — Fast electron spatial energy deposition is investigated in integrated cone-guided FI experiments by measuring fast electron induced Cu K-shell fluorescence emission using Cu doped CD shells attached to the Au cone. This work used the OMEGA laser ( $3\omega$ , 18 kJ) for fuel assembly, and a high intensity OMEGA EP beam ( $1\omega$ , 10 ps, 0.5 - 1.5 kJ,  $I_p > 1e19$  W/cm<sup>2</sup>) focused onto the inner cone tip to produce fast electrons similar to previous FI heating experiments. Results showed an enhancement of 60% in the total  $K\alpha$  yield from the joint shots compared to driver only shots. Comparison of high and low contrast OMEGA-EP shots show enhancement in energy coupling with higher contrast. Experiments are modeled using LSP for fast electron generation and transport with DRACO predicted fuel assembly.

<sup>1</sup>This work was performed under the auspices of U.S. DOE under contracts DE-FC02-04ER54789 (FSC), DE-FG02-05ER54834 (ACE) and DE-NA0000854 (NLUF).

Leonard Jarrott  
UCSD

Date submitted: 11 Jul 2013

Electronic form version 1.4