Abstract Submitted
for the DPP11 Meeting of
The American Physical Society

Construction of the Plasma Liner Experiment (PLX)[1] C.S. ADAMS, T.J. AWE, J.P. DUNN, S.C. HSU, J.S. DAVIS, D.S. HANNA, J.A. SCHWARTZ, LANL, S. BROCKINGTON, D. VAN DOREN, F.D. WITHERSPOON, HyperV Technologies, E.C. MERRITT, A.G. LYNN, M.A. GILMORE, UNM — The Plasma Liner Experiment (PLX) will investigate the behavior and interaction of spherically convergent plasma jets in forming imploding spherical plasma liners for HED and MIF-relevant studies. Numerous hardware systems have been assembled for the new PLX facility at Los Alamos National Laboratory to prepare for first plasma. A three meter diameter spherical vacuum tank is coupled to an oil-free vacuum pump system reaching sub-10^{-6} torr pressures on the first pump-down. A modular, distributed, and portable 60 kV pulsed-power system has been constructed for initial experiments on single jet propagation and two jet merging, with each plasma gun source having 70 kJ of stored energy. In addition, a capacitor test stand has been constructed in order to test each of the 180 required capacitors to the expected operational voltage. Finally, the experiment will be controlled via FPGA/LabView to interact with numerous custom-built pieces of electronics for interlock, control, triggering, and data acquisition.

[1]Supported by DOE Fusion Energy Sciences.

Scott Hsu
LANL

Date submitted: 20 Jul 2011 Electronic form version 1.4