Abstract Submitted
for the DPP06 Meeting of
The American Physical Society

Increased Hot Electron Production with Low-Density Gold Foams for Fast Ignition[1] KAZUO A. TANAKA, A.L. LEI, ILE, Osaka University, R. KODAMA, Grad. School of Eng. & ILE, Osaka Univ., R.G. KUMAR, Tata Inst. Fund. Physics, India, K. NAGAI, T. NORIMATSU, T. YABU-UCHI, K. MIMA, ILE, Osaka Univ. — Foam cone-in-shell target design aiming at optimum hot electron production for the fast ignition is proposed. A thin low-density gold foam is to cover the inner tip of a gold cone inserted in a fuel shell. An intense laser is then focused on the foam to generate hot electrons for the fast ignition. Element experiments demonstrate increased laser energy coupling efficiency into hot electrons without increasing the electron temperature and beam divergence with foam coated targets in comparison with solid targets. This may enhance the laser energy deposition in the compressed fuel plasma.

[1]ALL & RGK acknowledge support from JSPS & J-C Core Univ. Program.

Kazuo A. Tanaka

Date submitted: 17 Jul 2006 Electronic form version 1.4