

Abstract Submitted  
for the DPP06 Meeting of  
The American Physical Society

**Titanium lined hohlraums as multi-keV x-ray converters** FREDERIC GIRARD, MICHEL PRIMOUT, MICHEL NAUDY, JEAN-PAUL JADAUD, BRUNO VILLETTE, CEA, KEVIN B. FOURNIER, LLNL, LLNL/CEA COLLABORATION — Developments of bright multi-keV K-shell emission sources [1-3] are necessary for ICF studies such as radiography of dense materials. Our recent works with prepulsed foils of titanium ( $\text{He}_\alpha$  at 4.7 keV), copper ( $\text{He}_\alpha$  at 8.3 keV) and germanium ( $\text{He}_\alpha$  at 10.3 keV) showed high multi-keV x-ray conversion efficiencies up to 8.0%, 1.0% and 2.5% (respectively) [1,2]. In comparison with thick foils, the preexploded foils conversion efficiencies are increased by a factor of more than 2. Hohlraums with a titanium liner have been used on the OMEGA laser facility in Rochester to quantify the multi-keV x-ray conversion. For the first time, a laser pulse with a picket prior to the main bulk of laser power has been employed with a Ti-lined hohlraum. X-ray produced with this laser pulse with picket is compared to the case with a square 1 ns pulse shape. X-ray power was measured by the broadband spectrometer DMX (filtered diodes) and the absolutely calibrated crystal spectrometer HENWAY. Multi-keV emission is diagnosed by a full set of diagnostics giving conversion efficiencies, time dependant x-ray power and imaging, time integrated imaging and high resolution spectra of titanium. [1] F. Girard et al., Phys. Plasmas, **12**, 092705 (2005) [2] D. Babonneau et al., submitted in Phys. Rev. Lett. [3] K. B. Fournier et al., Phys. Rev. Lett., **92**, 165005 (2004)

Frederic Girard  
CEA

Date submitted: 23 Jul 2006

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