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 (He$_\alpha$ at 4.7 keV), copper (He$_\alpha$ at 8.3 keV) and germanium (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)