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Iron Opacity Platform Performance Characterization at the National Ignition Facility Y.P. OPACHICH, P.W. ROSS, National Security Technologies, LLC, R. F. HEETER, M. A. BARRIOS, D. A. LIEDAHL, M.J. MAY, M.B. SCHNEIDER, Lawrence Livermore National Lab, R.S. CRAXTON, E.M. GARCIA, P.W. MCKENTY, R. ZHANG, University of Rochester Laboratory for Laser Energetics, J.L. WEAVER, Naval Research Laboratory, K.A. FLIPPO, J.L. KLINE, T.S. PERRY, Los Alamos National Lab, LOS ALAMOS NATIONAL LABORATORY COLLABORATION, NAVAL RESEARCH LABORATORY COLLABORATION, UNIVERSITY OF ROCHESTER LABORATORY FOR LASER ENERGETICS COLLABORATION, LAWRENCE LIVERMORE NATIONAL LAB COLLABORATION, NATIONAL SECURITY TECHNOLOGIES, LLC COLLABORATION — A high temperature opacity platform has been fielded at the National Ignition Facility (NIF). The platform will be used to study opacity in iron at a temperature of ˜160 eV. The platform uses a ˜6 mm diameter hohlraum driven by 128 laser beams with 530 kJ of energy in a ˜3 ns pulse to heat an iron sample. Absorption spectra of the heated sample are generated with a broadband pulsed X-ray backlighter produced by imploding a vacuum-filled CH shell. The shell is 2 mm in diameter and ˜20 microns thick, driven by 64 beams with 250 kJ in a 2.5 ns pulse. The hohlraum and backlighter performance have both been investigated recently and will be discussed in this presentation. * This work was performed by National Security Technologies, LLC, under Contract No. DE-AC52-06NA25946 with the U.S. Department of Energy. DOE/NV/25946–2892.

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