

Abstract Submitted  
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**Iron Opacity at 156 eV as Measured on the National Ignition Facility (NIF)** THEODORE PERRY, HEATHER JOHNS, EVAN DODD, NATALIA VINYARD, KIRK FLIPPO, TANA CARDENAS, CHRIS FONTES, LYNN KOT, TODD URBATSCH, MELISSA DOUGLAS, MANOLO SHERRILL, Los Alamos National Laboratory, ROBERT HEETER, YEKATERINA OPACHICH, RICHARD LONDON, BRIAN WILSON, CARLOS IGLESIAS, MARILYN SCHNEIDER, Lawrence Livermore National Laboratory, JAMES HEINMILLER, Nevada National Security Site, JAMES BAILEY, GREGORY ROCHAU, Sandia National Laboratory — The x-ray opacity of materials is important for regulating the flow of energy in the high energy density regime, but very few experimental measurements exist. To obtain opacity data, an experimental platform has been developed on the NIF. This platform consists of a hohlraum to heat the opacity sample, a source of x-rays to backlight the sample, and a spectrometer to measure the spectrally resolved transmission of the sample. The density and temperature of the sample are also measured. The first measurements on iron at a temperature of  $\sim 156$  eV and electron density of  $\sim 8.4 \times 10^{21}$  per cc have been obtained. These measurements will be compared to theoretical calculations and future improvements to the platform will be discussed. This work was performed under the U.S. Department of Energy LANL contract 89233218CNA000001, LLNL Contract DE-AC52-07NA27344, Sandia Contract DE-AC04-94AL85000, and NNSS Contract DE-AC52-06NA25946.

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