

Abstract Submitted
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Measurement of Fe Temperature under Dynamic Compression¹

MINTA AKIN, RICKY CHAU, Lawrence Livermore National Laboratory — We report on progress toward measuring the temperature of Fe at 2 Mbar, near the melting point on the Hugoniot, as part of an effort to obtain a complete equation of state for Fe. Fe was directly coated on a LiF tamping window and shock compressed using a two stage light gas gun. Radiance and reflectance were simultaneously measured from 350-750 nm using four streak spectrometers. Comparison of reflected and emitted light allows us to calculate emissivity as a function of wavelength to correct graybody emission to determine T, predicted to be around 5000K, and compare measured reflectance with band structure calculations.

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