

Abstract Submitted
for the DAMOP12 Meeting of
The American Physical Society

EUV Spectra of Xenon Observed with an Electron Beam Ion Trap¹ JOSEPH READER, DIMITRY OSIN, JOHN GILLASPY, YURI RALCHENKO, National Institute of Standards and Technology — Extreme ultraviolet spectra of highly charged xenon atoms were produced with an electron beam ion trap (EBIT) at the National Institute of Standards and Technology (NIST) and recorded with a flat-field grazing-incidence spectrometer. The wavelength range was 4.6 nm-16.4 nm. The beam energy varied from 1.5 to 6.5 keV to selectively enhance spectra of different ionization stages. Wavelength calibration was provided by spectra of highly-charged neon, argon, and iron. Identifications of strong $n=4$ - $n=4$ and $n=3$ - $n=3$ transitions from Zn-like xenon (24+) to Na-like xenon (43+) were determined with the aid of collisional-radiative modeling of the EBIT plasma. Good quantitative agreement between simulated and measured spectra was achieved. Some 56 lines were identified, 48 of which are new. Seven of these lines represent magnetic dipole transitions within the $3s^23p^n$ ground configurations of these ions; one is an electric quadrupole transition within the $3s^23p^2$ ground configuration of the Si-like ion.

¹Supported in part by the Office of Fusion Energy Sciences of the U.S. Department of Energy

Joseph Reader
National Institute of Standards and Technology

Date submitted: 31 Jan 2012

Electronic form version 1.4