

Abstract Submitted  
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**Line Emission and X-ray Line Polarization of Multiply Ionized Mo Ions**<sup>1</sup> E.E. PETKOV, A.S. SAFRONOVA, V.L. KANTSYREV, V.V. SHLYAPTSEVA, A. STAFFORD, U.I. SAFRONOVA, I.K. SHRESTHA, K.A. SCHULTZ, R. CHILDERS, M.C. COOPER, University of Nevada, Reno, P. BEIERSDORFER, N. HELL, G.V. BROWN, Lawrence Livermore National Laboratory — We present a comprehensive experimental and theoretical study of the line emission from multiply ionized Mo ions produced by two different sets of experiments: at LLNL EBIT and the pulsed power generator Zebra at UNR. Mo line emission and polarization measurements were accomplished at EBIT for the first time. In particular, benchmarking experiments at the LLNL EBIT with Mo ions produced at electron beam energies from 2.75 keV up to 15 keV allowed us to break down these very complicated spectra into spectra with only few ionization stages and to select processes that influence them as well as to measure line polarization. The EBIT data were recorded using the EBIT Calorimeter Spectrometer and a crystal spectrometer with a Ge crystal. X-ray Mo spectra and pinhole images were collected from Z-pinch plasmas produced from various wire loads. Non-LTE modeling, high-precision relativistic atomic and polarization data were used to analyze L-shell Mo spectra. The influence of different plasma processes including electron beams on Mo line radiation is summarized.

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