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Observations and Identification of Extreme Ultraviolet Spectra from Highly-Charged Neodymium YANG YANG, AMY GALL, SAMUEL SANDERS, Department of Physics and Astronomy, Clemson University, Clemson, SC 29634, US, CHIHIRO SUZUKI, National Institute for Fusion Science, 322-6 Oroshi-cho, Toki 509-5259, Japan, ROSHANI SILWAL, DIPTI GOYAL, JOSEPH TAN, AUNG NAING, SEAN BUECHELE, YURI RALCHENKO, ENDRE TAKACS, National Institute of Standards and Technology, Gaithersburg, MD 20899, USA — We have measured extreme ultraviolet N-, M- and L-shell transitions from highly charged neodymium at the electron beam ion trap facility at the National Institute of Standards and Technology. The electron beam energies were varied between 0.26 keV - 12.02 keV to produce ionization states ranging from Nd^{22+} to Nd^{56+}. The spectra were recorded with a flat-field grazing-incidence spectrometer in the wavelength range of 2.5 nm - 23.3 nm. The spectra were recorded with high count rates, leading to accurate line identification measurements for the wide range of Nd charge states. Calibration was performed by using well known lines of ionized Ne, Xe, Fe, O and Ar produced in the EBIT. Our total uncertainties ranged from 0.0007 nm - 0.003 nm and included contributions from estimated systematic uncertainties, statistical uncertainties, and calibration uncertainties. Detailed collisional-radiative (CR) modeling of the non-Maxwellian EBIT plasma was used to create synthetic spectra and help identify lines. We present the Nd spectra with the associated line identifications, including previously observed features, which agree with the existing experimental values.

Yang Yang
Department of Physics and Astronomy, Clemson University, Clemson

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