Abstract Submitted
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Extreme Ultraviolet Spectroscopy of Highly Charged Tungsten for Magnetic Fusion Plasma Diagnostics[1] JOHN GILLASPY, ILIJA DRAGANIC, YURI RALCHENKO, JOSEPH TAN, JOSHUA POMEROY, SAM BREWER, JOSEPH READER, NIST, Gaithersburg, MD 20899 — The NIST electron beam ion trap has been used to provide accurate transition wavelengths in the 2-20 nm spectral range for highly charged elements near Z=74 (tungsten). Spectra were recorded over a wide range of monoenergetic electron impact energies (2-27 keV), to produce charge states in the range of Q=37-65, corresponding to those expected in thermal plasmas with temperatures up to about 100,000,000 K (such as ITER). In addition to W, we also studied several elements with similar mass (Hf, Ta, and Au) in order to reveal isoelectronic trends. We have compared the measured spectral distribution of light to synthetic spectra computed using the NOMAD collisional-radiative code using atomic data generated by the FAC code.

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