Abstract Submitted
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Ongoing Atomic Physics Research at the NIST EBIT in the EUV and X-ray Regimes[1] YURI PODPALY, JOHN GILLASPY, JOSEPH READER, YURI RALCHENKO, NIST - Natl Inst of Stds & Tech — We present an overview of recent work performed at the NIST electron beam ion trap, EBIT, facility. The EBIT uses an electromagnetic trap and a precise electron beam, which can be tuned to maximize the production of a desired ionization stage, to confine and study highly charged ions. Recent interest in extreme ultraviolet (EUV) lithography light sources has led to more research into radiation from highly charged rare-earth elements. In this work, we extend that research to Rb-like to Ni-like erbium and Kr-like to Ni-like samarium n=4-n=4 transitions in the 3-20 nm range. Overall, 61 lines (55 new) of samarium and 56 lines (51 new) of erbium were identified with individual uncertainties determined for each line (most in the 0.001 nm range). Large-scale collisional radiative modeling was used for line identifications. Ongoing work in the x-ray regime for diagnostics of fusion-type plasmas will also be shown.

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