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**Simultaneous COLTRIMS and X-ray spectroscopic studies of single-electron capture in 100-keV Ne<sup>10+</sup> on He, Ne, and Ar collisions**<sup>1</sup> R. ALI, C.L. HARRIS, P.A. NEILL, University of Nevada, Reno, P. BEIERSDORFER, Lawrence Livermore National Laboratory, D.R. SCHULTZ, M.J. RAKOVIĆ, Oak Ridge National Laboratory, J.G. WANG, P.C. STANCIL, University of Georgia — We have carried out triple-coincidence measurements of X-rays, scattered projectile, and recoil ions following charge transfer collisions of Ne<sup>10+</sup> with He, Ne, and Ar atoms. In addition to the X-ray energy and the final projectile and recoil ions' charge states, the measurements provide the collision  $Q$ -value through the COLTRIMS technique. For single-electron capture, the measurements provide X-ray spectra associated with the population of specific projectile energy levels  $n$ . These spectra provide stringent tests for the theoretical predictions of the  $n, l$  distributions. The experimental results will be compared with a number of theoretical calculations.

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