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Determination of the Secondary Emission Coefficient γ Used in Electron Capture Cross Section Measurements in Low-Energy Collisions of Multiply-Charged Ions with Atoms[1] J.D. THOMAS, T.J. KVALE, University of Toledo, Toledo, OH 43606, D.G. SEELY, Albion College, Albion, MI 49224, C.C. HAVENER, Oak Ridge National Laboratory, Oak Ridge, TN 37831-6372 — Total cross section measurements of electron capture processes are important to the understanding of plasmas. One beamline at the Multicharged Ion Research Facility (MIRF) at Oak Ridge National Laboratory is devoted to the study of electron capture processes in low-energy, ion-atom collisions of the form, A^{q+} + H(D). In these experiments, the projectile and target beams are detected via Faraday cup detectors in which electrical currents are measured. The secondary emission coefficient, γ, is defined to be the number of secondary electrons emitted from the surface of the detector upon impact of an ion or atom. Definitive values of γ are necessary to accurately convert the measured electrical currents to the correct particle beam currents and thus obtain accurate cross section values. In this talk, the methods employed to determine γ and plans for testing its dependence on incident neutral beam energy will be discussed.

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Thomas Kvale
University of Toledo, Toledo, OH 43606

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