Abstract Submitted
for the 4CF06 Meeting of
The American Physical Society

The Emission Angle and Incident Energy Dependence of the Boundary between Secondary and Backscattered Electrons J.R. DENNISON, JASON KITE, Utah State University — A more realistic boundary to separate the electrons originating from the sample (secondary electrons) and those originating from the primary beam (backscattered electrons) in electron-induced electron emission spectra is the observed minimum in the emission spectrum. We present measurements of the emission spectra of polycrystalline Au over a range of incident energies from 100 eV $< E_b <$ 2500 eV, as a function of emission angle and energy, E_b. The dependence of the position of Emin and its associated yield intensity are investigated in terms of E_b and emission angle. Emin is roughly constant at $\sim$45% of E_b, but does show some more complex dependence on E_b. No significant emission angle dependence of E_{min} is evident. The emission spectral intensity at E_{min}, N(E_{min}), decreases with increasing emission angle, and scales approximately as a Lambert law proportional to the cosine of the emission angle. Finally, we discuss the effect of choosing this more realistic value to separate secondary and backscattered electrons on the secondary and backscattered yield values.

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Date submitted: 21 Sep 2006 Electronic form version 1.4