

Abstract Submitted
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From Whence Come the Electrons JONATHAN ABBOTT, J.R. DENNISON, JASON KITE, R.C. HOFFMANN, Physics Dept, Utah State University, ROB DAVIES, Physics Dept, Oxford University — Measuring the electron emission energy spectrum from a material yields a similar curve regardless of the incident energy source, whether it is electrons, ions, photons (photoemission), or even thermal energy (thermionic emission). When measuring the spectrum for electron induced electron emission, there is a question of whether it is possible to distinguish the electrons originating from the beam from those originating inside the material. We discuss the limits of the conventional boundary of 50 eV between the electrons originating from the material (secondary electrons) and those originating from the primary beam (backscattered electrons). We present experimental results suggesting a more realistic boundary at the observed minimum in the emission spectrum. We also show that simple analysis of emission spectra of biased conducting samples (and charged insulating samples) can distinguish between these two populations.

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