Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Measurement of the Spectral Distribution of Low Energy Electrons Emitted as a Result of M_3VV Auger Transitions in Cu(100)[1] SUMAN SATYAL, PRASAD JOGLEKAR, KARTHIK SASHTRY, ALEXANDER WEISS, University of Texas at Arlington, STEVEN HULBERT, Brookhaven National Lab, STEVEN HULBERT, BROOKHAVEN NATIONAL LAB COLLABORATION — Auger Photoelectron Coincidence Spectroscopy (APECS) was used to investigate the physics of the Low Energy Tail (LET) region of the Auger spectrum of a Cu(100) sample. A beam of 200eV photons was used to probe the sample. Two Cylindrical Mirror Analyzers (CMAs) were used to select the energy of electrons emitted from the sample. An APECS technique was used to obtain an Auger spectrum with one of the CMAs fixed at the core photoemission peak. The spectrum contains the extrinsic contributions from electrons excited by the M_3VV Auger transition plus a background due to true coincidence between photo-emitted valence band electrons that undergo inelastic scattering and other valence electrons. To remove the extrinsic contribution to the LET of the Auger Spectrum, Coincidence measurements were made with the fixed analyzer set at various energies (150eV, 165eV, 180eV, 190eV and 197eV) between the core and the valence band and obtain an estimate of the background due to the inelastic scattering of the valence band electrons. The extrinsic contribution to the LET was then subtracted to get the final spectrum consisting of the secondary electrons that are intrinsic to the M_3VV Auger transition only.

Suman Satyal
University of Texas at Arlington

[1]Welch Foundation Y-1100, NSF DMR 9812682

Date submitted: 22 Nov 2011 Electronic form version 1.4