

Abstract Submitted
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Measurement of the background in Auger-Photoemission Spectra (APECS) associated with multi-electron and inelastic valence band photoemission processes¹ PRASAD JOGLEKAR, KARTHIK SHASTRY, University of Texas at Arlington, STEVEN HULBERT, Brookhaven National Lab, ALEX WEISS, University of Texas at Arlington — Auger Photoelectron Coincidence Spectroscopy (APECS), in which the Auger spectra is measured in coincidence with the core level photoelectron, is capable of pulling difficult to observe low energy Auger peaks out of a large background due mostly to inelastically scattered valence band photoelectrons. However the APECS method alone cannot eliminate the background due to valence band VB photoemission processes in which the initial photon energy is shared by 2 or more electrons and one of the electrons is in the energy range of the core level photoemission peak. Here we describe an experimental method for estimating the contributions from these background processes in the case of an Ag N23VV Auger spectra obtained in coincidence with the 4p photoemission peak. A beam of 180eV photons was incident on a Ag sample and a series of coincidence measurements were made with one cylindrical mirror analyzer (CMA) set at a fixed energies between the core and the valence band and the other CMA scanned over a range corresponding to electrons leaving the surface between 0eV and the 70eV. The spectra obtained were then used to obtain an estimate of the background in the APECS spectra due to multi-electron and inelastic VB photoemission processes.

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