

Abstract Submitted
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A new work function measurement technique allowing simultaneous material deposition, and reflectivity measurements.¹ B. J. HINCH, A.V. ERMAKOV, E. Z. CIFTLIKLI, S. E. SYSOEV, I. G. SHUTTLEWORTH, Dept. of Chemistry and Chemical Biology, Rutgers University, Piscataway, NJ 08854. — We report on the application of a novel technique for relative work function measurements, of single crystal surfaces, employing grazing incidence electron reflection. This technique cannot suffer from photo or e- beam induced surface damage effects, and yet does enable free access to the surfaces for simultaneous deposition/evaporation, and/or application of other surface characterization methods. We discuss the optimization of experimental parameters in this method, and demonstrate its application in concurrent measurements of helium atom reflectivity and work function changes, taking place during oxygen exposure of a Cu(001) surface. Observed work function changes reproduce well the trends seen in earlier polycrystalline film measurements. In addition, the work function changes indicate structural changes that are not apparent in helium atom scattering at oxygen exposures in excess of $\sim 50L$.

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