

Abstract Submitted
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XPS and AFM Investigation of Ti-CuO Interface DARIUS DURANT, RITESH BHAKTA, A. R. CHOURASIA, Texas AM University-Commerce — The techniques of x-ray photoelectron spectroscopy and atomic force microscopy have been employed to study the Ti/CuO interface. Thin films of titanium were deposited on CuO at room temperature by e-beam method. The thickness of the titanium film was varied between 3 Å and 10 Å. The titanium 2p, oxygen 1s and copper 2p regions were investigated by XPS. The spectral data show the reduction of CuO to elemental copper. Titanium is observed to get oxidized to TiO₂. The thickness of TiO₂ depended upon the initial thickness of the titanium overlayer. The reaction is observed to continue until the titanium overlayer is 7 Å thick. Beyond this thickness unreacted titanium is observed. The AFM study shows nonuniformity of the TiO₂ film on copper. The study provides a means of preparing TiO₂ of nano-dimensions.

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