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Oxygen adsorption on Cu/ZnO (0001) –Zn. PATRICIO HÄBERLE, UTFSM, Valparaiso, MATTHIAS BATZILL, Univ. of South Florida, ULRIKE DIEBOLD, Tulane Univ. , PAOLA LAZCANO, UTFSM, Valparaiso — By using plasma assisted deposition we have adsorbed oxygen onto the Cu/ZnO(0001)-Zn surface. Cu was deposited on the sputtered-annealed ZnO substrate at room temperature, which was later exposed to oxygen. Using X-ray photoelectron spectroscopy (XPS) we verified the effect of the oxidation procedures on the electronic structure of the interface. Our results are consistent with a partially oxidized Cu layer, in which CuO is mainly located at the interface between ZnO and the adsorbed Cu islands. Further Cu deposition induces the formation Cu_2O. Annealing the sample in UHV induces further oxide reduction. The oxidation is reversible and metallic Cu is recovered on the top layer.

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