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Formation of Cobalt Oxide at Co/CuO Interface[1] A.R. CHOURASIA, JUSTIN MERRITT, MIKEL MORGAN, Texas A&M Univ.-Commerce — The chemical interaction at the cobalt/copper oxide interface has been investigated by the technique of x-ray photoelectron spectroscopy. Thin films of copper were deposited on titanium substrates. The film was oxidized in an atmosphere of oxygen in a quartz tube furnace. Following the oxidation, the sample was loaded in the deposition chamber for further processing. A thin film of cobalt with thickness 0.5 nm was deposited on the copper oxide. The interface was characterized in situ. The cobalt 2p region, the copper 2p region, and oxygen 1s region has been investigated. The results show the formation of cobalt oxide with the reduction of copper oxide to copper. A 0.3 nm of cobalt was further deposited on the sample to check for the uniform coverage. The second deposition showed the presence of elemental cobalt on the sample. The study shows chemical reactivity at the interface and that the subsequent layer of cobalt does not get oxidized.

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