

ELECTRONIC STATES OF ULTRATHIN CO LAYERS ON CU

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TÓM TẮT:

We studied ultrathin Co overlayers on top of vicinal Cu(100) and Cu(111) surface using high resolution photoemission spectroscopy to clarify the phenomena of surface alloying at low coverage. The valence band spectrum of Co/Cu(100) clearly shows the change in its electronic structure. A peak at the binding energy of 0.3 eV represents the mixing of Co and Cu at the surface, as has been reported by STM. This state becomes more enhanced upon annealing. Mixing the Co overlayer with Cu atoms on top of Cu (111) surface is relatively small at room temperature. Instead, wetting along the step edge has been found for low coverage. Interesting state responsive to the electric field of the incident photon has been found and a possible origin has been discussed.