Proceedings of the Technical Session of Institute of Physics, Sri Lanka 12 (1996) c1

Grain Size Effects on the Reactivity of Copper Thin Films

C. R. Vithanage, J. K. D. S. Jayanetti and K. T. L. De Silva.
Department of Physics, University of Colombo, Colombo 3.

Copper, thin films were prepared on Ti plates by thermal deposition from thin cu wire. The deposition was carried out by varying distance between the source and the substrate. X-ray diffraction (XRD) and scanning electron microscopy (SEM) were used to study the morphological properties of the samples. A variation of grain sizes as a function of source to substrate distant was observed. Then the films were annealed at several temperature in the range of 200 0C to 700 0C. Effects of annealing in air have been studied using XRD and SEM. Reactivity was not observed during annealing below 2500C. However annealing above this temperature first produced cuprouse oxide and then cupric oxide. The temperature of oxide formation was observed to be decreased function of grain size.