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Influence of the Additives and The pH On the Cobalt-Molybdenum (Co-Mo) Alloy Electrodeposited On n-TypeSilicon

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Abstract :

In this work, thin films of metal alloys (Co-Mo) have been electrodeposited onto silicon (Si) surface. The effects of two different additives (H3BO3 and Na2CO3) and the pH of the solution on the electrochemically deposited films (morphology, stochiometry…) have been investigated. The properties of the deposits were characterized by using X-Rays Diffraction (XRD), Scanning Electron Microscopy (SEM) and Energy Dispersive X-ray Spectroscopy (EDS). The results show that the morphology and the film composition depend on both the pH of the solution and the additives. The presence of boric acid favors the Mo deposition. Crack-free homogeneous deposits with a low percentage of molybdenum can be easily obtained from high pH bath. The deposits were shown to exhibits a good crystalline structure.

Keywords : Electrodeposition; Mmetal alloys; X-rays diffraction; pH solution.

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