

Electrochemical Synthesis and Morphostructural Study of the Cuprite Thin Film

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Abstract : The cathodic electro deposition of the cuprite Cu_2O by chrono potentiometry is performed on two types of electrodes "titanium and stainless steel", in a basic medium containing the precursor of copper. The plot produced vs SCE, shows the formation of a brown layer on the electrode surface. The chrono potentiometric recording made between - 0.2 and - 1 mA/cm², has allowed us to have a deposit having different morphologies and structural orientation obtained as a function of the variation of many parameters. The morphology, the size of crystals, and the phase of the deposits produced were studied by conventional techniques of analysis of the solid, particularly the X-ray diffraction (XRD), scanning electron microscopy analysis (SEM) and quantitative chemical analysis (EDS). The results will be presented and discussed, they show that the majority of deposits are pure and uniform.

Keywords : cathodic electrodeposition, cuprite Cu_2O , XRD, SEM, EDS analysis

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