

## **Structural and morphological characterization of chemical bath deposition of FeS thin films in the presence of sodium tartrate as a complexing agent.**

### **ABSTRACT**

In this paper, we presented the results of X-ray diffraction and scanning electron microscopy of the iron sulphide thin films prepared using a simple and cost effective chemical bath deposition method. The effects of solution concentration and pH on the structural and morphological properties of thin films were studied in the presence of sodium tartrate as a complexing agent. The thin films deposited using higher solution concentration showed higher number of FeS peaks and larger grain size according to X-ray diffraction and scanning electron microscopy results, respectively as compared with other solution concentrations. On the other hand, when the thin films were deposited at higher pH, the number of FeS peaks reduced to two peaks and the films showed incomplete coverage of material over the surface of the substrate with the smaller grain size.

**Keyword:** Complexing agent; Chemical bath deposition; Iron sulphide; Scanning electron microscopy; Thin films.