

Microstructural Study of Mechanically Alloyed Powders and the Thin Films of CuFe Alloys

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Abstract : Polycrystalline CuFe thin film was prepared by thermal evaporation process (Physical vapor deposition), using the nanocrystalline CuFe powder obtained by mechanical alloying After 24 h of milling elemental powders. The microscopic study of nanocrystalline powder and the thin film of Cu₇₀Fe₃₀ binary alloy were examined using transmission electron microscopy (TEM) and scanning electron microscope (SEM). The cross-sectional TEM images showed that the obtained CuFe layer was polycrystalline film of about 20 nm thick and composed of grains of different size ranging from 4 nm to 18 nm.

Keywords : nanomaterials, thin films, TEM, SEM

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