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Investigation Of The Catalyst's Effect On Nickel Sulfide Thin Films

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Abstract : In this study, the nanostructured stable phase identification elaborated by nickel nitrate hyxahydrate and thiourea compounds. After the preparation of the solution (Stirred mixture with methanol as solvent), a deposition of eight layers of this solution on a glass substrate and annealed at 300 °C for energy applications. The annealed sample was analyzed by X-ray Grazing incidence diffraction (GID) with a Bruker D8 Advance diffractometer using Cu Kα1 radiation at 40 kV and 40 mA (1600 W) and Scanning electron microscopy (Thermo Fisher environmental SEM). The results of XRD-GID analysis for the prepared sample showed the formation of an identified stable phase NiS2 and the XRD-GID pattern of the elaborated sample with eight layers prepared solution and annealed show wide and characteristic peaks of the NiS2 with cubic structure (ICDD card no. PDF 01-078-4702). The morphology of the NiS2 thin films confirmed by XRD-GID analysis was investigated by ESEM showed a surface with a uniform and homogeneous distribution nanostructure.

Keywords : nickel sulfide, thin films, XRD, ESEM
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