

The Characteristics of CuInS₂ nano-particles synthesized by a colloidal annealing route

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In this study, CuInS₂ nano-particles have been synthesized by a colloidal annealing route. Copper(I) Chloride (CuCl), Indium trichloride (InCl₃) and elemental sulfur are used as precursor materials. Ethyl alcohol, propyl alcohol and ethylene diamine are used as a solvent materials for CuCl, InCl₃ and S, respectively. Prepared CuInS₂ materials are treated at different annealing temperatures under N₂ atmosphere and the investigated by a X-ray diffractometer (XRD) and the band gap of the particles is determined by a photoluminescence (PL) spectroscopic method. The morphology of the particles are studies by a scanning electron microscope (SEM) and transmission electron microscope (TEM). The elemental compositions of CuInS₂ particles are analyzed by an energy dispersive X-ray spectrometer (EDX).

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