

Characteristics of Cadmium Telluride (CdTe) Films Synthesized by an Electrodeposition Method

이형민, 박진호*, 김홍탁
영남대학교
(chpark@ynu.ac.kr*)

CdTe films are one of the most promising materials for low cost photovoltaic devices because CdTe materials have the efficient energy band gap (~ 1.45 eV at room temperature) and the high absorption coefficient ($\sim 5 \times 10^5 \text{ cm}^{-1}$) in the range of sunlight wavelength. In this study, CdTe films are synthesized by an electrochemical method. The CdSO_4 and TeO_2 are used as precursor materials in a deionized water mixed a sulfuric acid solvent and the pH of the solution keep from 1 to 2. The substrate, which is composed of CdS/ITO/glass, is located on the electrode and Pt is used as the anodic material. To improve grain size and stoichiometry, the CdTe films were annealed in a tube furnace at 400°C for 2 h under flowing nitrogen. The morphological, structural and composition results of CdTe thin films obtained by Scanning Electron microscopy, X-ray diffraction will be presented.

The researchers involved in this work were supported by the 2nd phase of the BK21 program.