

## Structure Analysis of CdTe thin film prepared by Solution Deposition Methods

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Cadmium Telluride (CdTe) thin film and powder has been synthesized by various solution-based deposition processes in this study. Deposition processes used to formulate the CdTe thin film were CBD (Chemical Bath Deposition), CFR (Continuous Flow Reaction), modified spray CFR. The formulated materials were characterized with the aids of X-ray Diffraction (XRD), X-ray Photoelectron Spectroscopy (XPS), Scanning Electron Microscope (SEM), Energy Dispersive Spectroscopy (EDS) and the process conditions for the film formation were optimized in the basis of those analyses. Experimental results showed that either cubic or hexagonal structural phases were obtained depending upon the precursors used for Te. In this work, Cadmium Tellurate (CdTeO<sub>3</sub>) was also observed in EDS and XPS analyses. It is believed that oxygen contained in hydrogen hydrate, which was used for a solvent to dissolve the CdTe powder produced in our processes, would be involved in the formation of CdTe thin film.