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**Effects of pH on the characteristics of ZnS thin films grown by using the CBD method<sup>1</sup>** HEEJIN AHN, DONGCHAN LEE, SUJUNG PARK, YOUNGHO UM, Univ of Ulsan — In CIGS-based thin film solar cells, a chemically deposited ZnS buffer layer with high resistivity is generally used between the absorber layer and transparent conducting oxide layer. In this work, we report a chemical process to prepare ZnS films by the CBD technique based on the typical bath deposition. The influences of ammonia ( $\text{NH}_4\text{OH}$ ) and  $\text{Na}_2\text{EDTA}$  ( $\text{Na}_2\text{C}_{10}\text{H}_{16}\text{N}_2\text{O}_8$ ) as complexing agents on structural, morphological, and optical properties of ZnS thin films are investigated ranging pH concentration from 5 to 10. To investigate effects of pH on the characteristics of ZnS thin films, by using UV-visible transmittance, atomic force microscopy, and optical absorption were investigated. With changing the pH range, the ZnS thin films demonstrate high transmittance of 75~80% in the visible region, indicating the films are potentially useful in photovoltaic applications. The results will be presented in detail.

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