Structural Proprieties of CdxZn1-xS Thin Films Deposited by Chemical Bath Deposition

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Abstract : The Group II-IV semiconductors are widely used in solar cells based on thin films, among these semiconductors the ternary CdZnS. In this work, we have deposited the CdxZn1-xS thin films on glass substrates by using chemical bath deposition. The synthesized CdZnS thin films were deposited by the chemical bath (CBD). The optical properties and chemical composition of the CdZnS thin films are investigated by EDX and spectrophotometer. The transmittance is 80% in the visible region from 300 nm to 800 nm. The transmittance and the shape change with the concentration of zinc in the solution and from its transmission spectrum, the value of gap energy is between 2.4 eV, the chemical analysis with EDX gives information on the presence of Cd, Zn and S elements and studies stoichiometric. This result favors the application of its films in the solar cells.

Keywords : CdZnS; Group II-IV semiconductor; chemical bath; transmittance stoichiometry.