

**MORPHOLOGY, STRUCTURAL AND OPTICAL STUDY OF NANOCRYSTALLINE
ZNS THIN FILMS PREPARED BY CBD AND SILAR METHODS**

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Abstract

The Zinc sulfide belongs to group II-VI compound semiconductor materials. ZnS is a very important semiconductor material with a large optical gap (> 3.5 eV), a large utility in thin-film devices, such as photoluminescent devices. In addition, the ZnS is an important material in the small emitting diodes in wavelength and in solar cells based layers as thin buffer layer heterojunctions. In this work, we became interested in the development of thin layers of a semiconductor type II-VI: Zinc sulphide (ZnS), and the study of optical and structural which were prepared by two techniques the chemical bath CBD (Chemical Bath Deposition) and SILAR (Successive Ionic Layer Adsorption and Reaction). Our goal is to provide a comprehensive study on the effect of deposition time and the number of cycles on the physical properties of thin films of ZnS. In the first part of this work we have developed deposition techniques, the second part, relates to the development of a series of films with different deposition conditions for a process optimization in order to obtain films with good optoelectronic properties to be applied optionally in photovoltaic. We then conducted analyses of samples prepared by different characterization techniques: XRD and optical measurements.

Keywords: ZnS buffer layer, SILAR, CBD.