International Journal of ChemTech Research
CODEN (USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.12 No.04, pp 219-225, 2019

# Influence of Concentration and Annealing on the Properties of Chemical Bath Deposited Zns Thin Films

**V. Sathana[1]*, K. Venkatesan[2]**

**[1]Department of Physics, St. Joseph's college of Arts & Science, Cuddalore-607 001, India**
**[2]Department of Physics, Dr.M.G.R Educational and Research Institute, chennai - 600 095, India**

**Abstract :** The Nanosized ZnS thin films were prepared by chemical bath deposition technique. Zinc Sulfide (ZnS) was an important semiconductor material with large band gap (Approx. 3.5eV), high refractive index (2.35 at 632nm), high effective dielectric constant (9 at 1MHz) and wide wavelength pass band (0.4-13 Micrometer). The XRD pattern was showed that the deposited ZnS thin films in cubic structure. The SEM micrographs reveals that substrates were well covered and with appreciable grain size. Comparing both high and low concentration thin film, the band gap decreases and the absorption increases for high concentration also the annealing temperature. While increasing the annealing temperature the optical property of transmission was increased due to the growth of the ZnS particles. The concentration of 0.3M transmission is 73% in the visible region which are suitable for thermal imaging systems.
**Key words :** Zinc sulfide (ZnS), CBD, Concentration, Heat-treatment.

**V. Sathana *et al* /International Journal of ChemTech Research, 2019,12(4): 219-225.**

**DOI= http://dx.doi.org/10.20902/IJCTR.2019.120427**

*****