

## STUDY OF OPTICAL PROPERTIES OF ZnS THIN FILM USING SIMULATION SOFTWARE

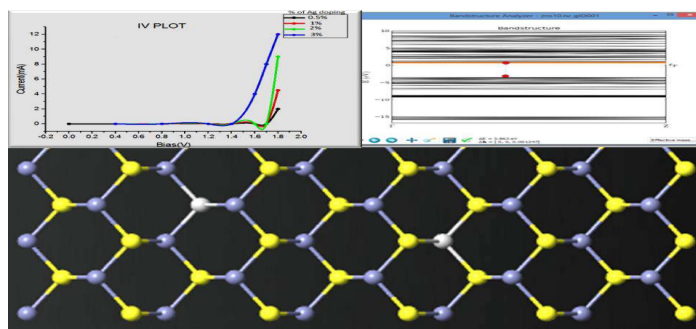
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### ABSTRACT

Semiconductor nonmaterials have been receiving great attentions. Among these various semiconductors nonmaterial's zinc sulfide is a versatile material because of its physical, chemical and optical properties. ZnS has a wide band gap (3.5-3.9 eV) when in bulk but band gap increases when it is in nano form. It is used in various applications electronic devices, biomedical field, variety of sensors and many more. In the present study, thin layer of ZnS was formed using VNL-ATK software and results were compared with the nano particle synthesized via chemical route. The ZnS was doped with nickel, cobalt and silver and the effect of doping with different materials was studied. Optical properties were studied using UV-VIS spectroscopy, Simulation was done using VNL-ATK software and the experimental results were compared and found to be similar within error limits.

### Graphical Abstract



**KEYWORDS:** Band Gap, Nano Particle, Sol-Gel Method, VNL-ATK Software, Zinc Sulphide