

Structural, optical and dielectric characterization of CdS Pellet.

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Abstract:

The present work deals with the synthesis and characterization of CdS pellets. A pellet of CdS (Cadmium Sulfide) has been prepared by using compression technique with pelletizer. The CdS pellets were characterized by several techniques such as scanning electron microscopy (SEM) along with energy-dispersive X-ray spectroscopy (EDAX), X-ray diffraction (XRD), UV-vis spectroscopy, TGA/DTA and dielectric spectroscopy. The X-ray diffraction (XRD) study and relevant analysis confirmed the structure of CdS pellets. The optical band gap energy of the CdS pellet was found to be 2.4 eV. The dielectric properties as a function of frequency have been investigated by LCR meter in the range of 20 Hz to 2 MHz. A preliminary obtained data like dielectric constant (ϵ'), dielectric loss (ϵ'') and extensive quantities, i.e. conductivity (σ), electric modulus (M), complex impedance (Z) have been calculated. All these properties are used to explore various processes contributed in the dielectric spectroscopy investigation.



Biography:

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Publication of speakers:

- Investigation of dielectric spectroscopy of Sn doped CdS pellets
- Dielectric spectroscopy of binary mixture of ADP and pure water in the frequency range 200MHz to 20GHz at room temperature.
- Study of dielectric characteristics of bulk cadmium selenide (CdSe) pellet

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