Physical characteristics of al/n-cds thin-film schottky diode at high temperatures

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Abstrak

Cadmium sulphide (CdS), a member of group II-VI semiconductors, is a promising material based on its applications. The present investigations describe the preparation and electrical characterization of CdS thin films. CdS thin films with thickness of 1000 nm were deposited by vacuum evaporation at room temperature. Characteristic parameters of Schottky junctions formed by a thermal vapor deposition of 500 nm of Al films on pre-coated CdS glass substrates were obtained experimentally from the I-V characteristics in the temperature range of 303–393 K. Diode parameters, such as the zero-bias barrier height ?b0, flat band barrier height ?bf, ideality factor ?, and series resistance RS were investigated using the thermionic emission method.