

The influence of measurement temperature on electrical parameters of CZTS thin film based hetero-junction in the dark.

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Abstract

The objective of this work is to study the influence of measurement temperature on the electrical parameters of CZTS/ZnS hetero-junction in the dark. The device were fabricated using pneumatic spray pyrolysis technique, the dark I-V characterization of the hetero-junction shows a rectification behavior with a rectification ration varied between 8.37 and 13.6 as the temperature increased from 25 to 100 °C. The fabricated device was characterized by a high ideality factor (greater than unity), this greater than unity value of n can be explained by the high value of series resistance (in the order of K Ω), and the presence of interfacial defect.

Keywords : pneumatic spray; CZTS; hetero-junction.