International Journal of ChemTech Research
CODEN(USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555
Vol.9, No.11 pp 331-336,2016

# Optoelectronic properties of detector (p-$Cd_{1-x}Zn_xS$ /n-Si) preparing by Spray Pyrolysis Technique

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**Abstract:**A thin films (160±3 nm) of $Cd_{1-x}Zn_xS$ were deposited on the wafer silicon, with high purity (99.999%).This heterojunction (p-$Cd_{1-x}Zn_xS$ /n-Si) prepared by Spray Pyrolysis technique. The spectrum responsivity of this detector was measured, and calculation each of the quantum efficiency, noise equivalent power, detectivity and specific detectivity. From the characteristic above, the heterojunction (p-$Cd_{1-x}Zn_xS$ /n-Si)was determined as a detector of visible at (650 nm) and the near infrared light at (950nm) within spectrum(400-1100 nm).

**RusulA.Ghazi *et al*/**International Journal of ChemTech Research, 2016,9(11),pp 331-336.

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