

用磁控溅射法制备的CdS薄膜的光电特性

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摘要:

摘要: 本文研究了采用磁控溅射方法制备的CdS薄膜的工艺及光电性质, 在200℃、300℃、400℃、500℃下分别进行50min的退火处理, SEM扫描发现退火处理后的CdS薄膜成膜质量更好。通过SEM测得CdS薄膜厚度为10μm, 计算出CdS薄膜的溅射速率为7.5μm/h。通过探针I-V测试表明, 400℃退火处理下, CdS薄膜的光电特性最为优异, 光电流与暗电流之比可达2134.8。

关键词: 关键词: CdS膜; 磁控溅射; 退火; 光电特性

Optical and electrical properties of CdS films prepared by R.F. Magnetron Sputtering

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Abstract:

Abstract: The optical and electrical properties of CdS films prepared by R.F. Magnetron Sputtering are analyzed in this paper. The sputtered film was annealed at 200℃, 300℃, 400℃ and 500℃, respectively. SEM photos revealed that the annealed CdS thin film has improved quality than un-annealed film. By measurement from SEM, the thickness of CdS thin film was 10 micron, which means the sputtering rate of the CdS thin film is 7.5 μm/h. I-V test has showed that after annealing at 400℃, the photoconductivity of the film is most outstanding and the ratio of the photo current and dark current can be up to 2134.8.

Keywords: key words: CdS; R.F. Magnetron Sputtering; Anneal; Optical and electrical properties

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