

عنوان مقاله:

Influence of sol concentration on properties of ZnO thin films synthesized by dip-coating method

محل انتشار:

دهمین کنگره سرامیک ایران (سال: 1394)

تعداد صفحات اصل مقاله: 7

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خلاصه مقاله:

There are many parameters which can affect sol-gel dip coated thin film properties. ZnO thinfilms were deposited on glass substrates by using a sol-gel dip coating technique with varying precursor concentrations. The sol was prepared by using zinc acetate dihydrate (ZAD) as precursor, triethylamine as additive, and ۱-propanol as solvent. X-ray diffraction (XRD), field emission scanning electron microscopy (FESEM), and UV-Vis spectroscopy were used to investigate the effect of sol concentrations on the crystallinity, surface morphology, and optical properties of the films. XRD spectra show that the films are polycrystalline with a wurtzite crystal structure and exhibit highly c-axis preferred orientation along (۰۰۲) plane. FESEM images show that the mean grain size and porosity of ZnO film increase by the ZAD concentration. However, the transmittance and optical band gap of ZnO films remain unchanged with sol concentration

کلمات کلیدی:

ZnO thin film, Sol-gel dip coating, Sol concentration, Preferred orientation

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