

## **The effect of annealing temperature on structural and optical properties of ZnO films deposited by rf magnetron sputtering**

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ZnO is a very interesting material for many different applications in both microelectronic and optoelectronic devices. ZnO absorbs UV radiation due to band-to-band transitions, while it can be used as transparent electrode in solar cells and flat panel displays as well as for the fabrication of grating in optoelectronic devices, window in antireflection coatings and optical filters. In this study, Zinc oxide films are prepared on glass substrates by rf magnetron sputtering at room temperature. Then, the as-deposited samples were annealed at different temperatures ranging from 400°C to 700°C respectively. The effects of annealing temperature on structural properties of the thin films were investigated by x-ray diffraction (XRD), field-emission scanning electron microscopy (FE-SEM). And optical properties of ZnO thin films are analyzed by uv-vis-nir spectrometer. The results indicate that the annealing process can promote crystalline and optical properties of the thin films.