

# Preparation, structural and luminescent properties of nanocrystalline ZnO films doped Ag by close space sublimation method

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A simple way for silver doping of ZnO films is presented. Ag doping is carried out by sublimation of the Ag source located at a close space at atmospheric pressure in air. The effect of substrate temperature, substrate type, Ag doping and post-growth annealing of the films was studied by PL spectroscopy, XRD, AFM methods. The effect of Ag doping was obvious and identical for all the films (Fig. 1). The intensity of ultraviolet band increased 15 times as compared to their reference films on the sapphire substrate. The full width at half maximum (FWHM) for 380 nm band was 14 nm, which is comparable with that of epitaxial ZnO. Possible mechanisms to enhance UV emission are discussed.

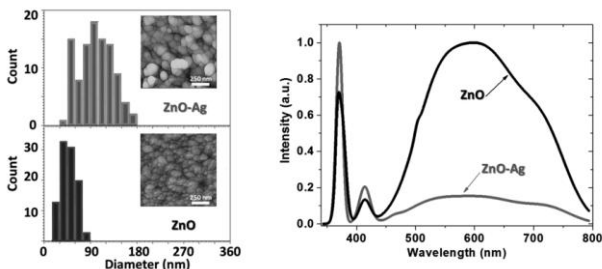


Figure 1. Grain diameter distributions and PL spectra of the reference ZnO and ZnO-Ag films.