

SYNTHESIS OF ZnO NANOROD ARRAYS ON ZnO NANOPARTICLES COATED ITO SUBSTRATE

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ABSTRACT

ZnO nanorod arrays have been grown on ITO glass substrates which were pre-coated with ZnO nanoparticles by using a low cost and low temperature chemical solution method. The structural and optical properties of ZnO nanorod arrays were investigated using scanning electron microscopy (SEM) and photoluminescence (PL) techniques. It was demonstrated that the introduction of annealed ZnO nanoparticles seed layer is required for the formation of well-aligned ZnO nanorods. The ZnO nanorod arrays with a diameter of 40-70 nm and a length of 200-300 nm were obtained. Besides, a strong UV emission peaked at 386 nm in the PL spectrum revealed the good crystal quality of ZnO nanorods.

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