SYNTHESIS AND CHARACTERIZATION OF ZINC OXIDE NANORODS AT DIFFERENT ANNEALING TEMPERATURES

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ABSTRACT

SYNTHESIS AND CHARACTERIZATION OF ZINC OXIDE NANORODS AT DIFFERENT ANNEALING TEMPERATURES

Zinc oxide (ZnO) nanorods were prepared by sol-gel method on silicon wafer substrates using immerse technique. The silicon wafers were previously sputter coated with 6nm of gold (Au). Neutral solutions of zinc nitrate hexahydrate ($ZnNO_3.6H_2O$) as the precursor of Zn^{2+} added with stabilizer hexamethylenetetraamine (HMTA) at 1:1 ratio were successfully used to produce rod-like ZnO nanostructures that grow almost laterally during subsequent thermal annealing. The morphology and optical characteristic were studied by scanning electron microscope (SEM) and Photoluminescence (PL) spectrometer. The effects of different annealing temperature to the structural and optical property of ZnO nanorods were subsequently discussed in the paper.