

Growth of Bi₂O₃ doped ZnO nanostructures fabricated by thermal evaporation method

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Abstract : Bi₂O₃ doped ZnO nanostructures structure were successfully synthesized by a thermal evaporatiion process and their structural characteristics were investigated. It is demonstrated that the growth condition such as the areal density, pretreatment of the substrates and growth temperature have great influence on the morphology and the alignment of the nanorods arrays. The density of Bi₂O₃ doped ZnO nanostructures is controlled by the gold (Au) nanoparticle density deposited on the silicon substrates. Relatively homogenous size and shape were observed by introducing gold(Au) seed-layer as nucleation centers on the substrates prior to the VLS reaction. The samples were characterized by X-ray diffraction, scanning electron microscopy.

Key Words : ZnO Nanorods, Bi₂O₃ doped, Tube Furnace