

Properties of ZnO:Fe nanostructured films grown by successive chemical synthesis

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Abstract

Rapid progress of nanotechnology in recent years and continuous minimization of portable devices created the necessity of multifunctional devices elaboration. In this work, the morphological, structural and sensing properties of ZnO : Fe nanostructured films are presented, namely ultraviolet and ethanol gas sensing properties, demonstrating multifunctionality of the fabricated device structures. The Fe-doped ZnO nanostructured films were synthesized by a simple and cost-efficient method from aqueous solutions at relatively low temperatures (< 90 °C), which allows Fe-doping of ZnO nanostructures directly in a synthesis process. Presented results demonstrate the perspectives to integrate the ZnO : Fe nanostructured films into multifunctional devices.

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