In this work, we present the influence of single walled carbon nanotubes (SWCNTs) deposited by drop-casting method on ZnO nanowires. ZnO nanowires were previously grown on PET substrates using a two-step process. First, preparation of the seed layer on PET by spin coating, solution of zinc acetate dehydrate and 1-propanol. Second, growth of the ZnO nanowires by dipping the substrate in an equimolar solution of zinc nitrate hexahydrate and hexamethylenetetramine. Films were thermally treated with a commercial microwave oven at 350 W for 20 min and 35 min. A solution of SWCNTs (1 mg) and N,N-dimethylformamide (DMF, 10 ml) was prepared and subjected to ultrasound for 4 h. This solution was deposited by drop-casting on a thin film of ZnO nanowires. Subsequently, these samples were subjected to a heat treatment at 100 °C to evaporate the solvent DMF. The samples were characterized electrically, morphologically and structurally using four-point method, AFM and XRD, respectively. A preferential orientation along c-axis directions of the nanowires was observed. A decrease on the resistivity (Ω/□) in both samples with SWCNTs was observed in comparison with the same samples previous to the deposition.

**Keywords:** ZnO nanowires, SWCNTs, XRD

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