



## Non-linear optical and electrical properties of ZnO doped Ni Thin Films obtained using spray ultrasonic technique

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Résumé en anglais	<p>In the present study zinc oxide doped Nickel thin films (ZnO:Ni) were deposited on glass substrates using a chemical spray ultrasonic technique. The effect of Ni concentration on the structural, electrical, optical, and non-linear optical (NLO) properties of the ZnO:Ni thin films was investigated. The films were analyzed using X-ray diffraction (XRD), profilometry and optical transmittance. A polycrystalline structure with a preferential growth along the ZnO (002) plane was found, the optical transmittance was found to be higher than 80% and the band gap (<math>E(g)</math>) varied from 3.19 to 3.27 eV. The value of the electrical conductivity was found. Moreover, the effective non-linear quadratic and cubic electronic susceptibilities of thin film samples were determined by the SHG and THG techniques, working at 1064 nm. (C) 2011 Elsevier B.V. All rights reserved.</p>
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