Abstract Submitted
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Structural and optical characterization of ZnO nanostructured thin films.[1] J. C. GONZALEZ GONZALEZ, Laboratorio de Fisica de Materiales e Ingenieria de Superficies. Universidad de Ingenieria y Tecnologia (UTEC). Peru, M. URBINA YARUPETAN, UPG de Fisica, Facultad de Ciencias Fisicas, Universidad Nacional Mayor de San Marcos. Peru — Magnetron sputtering is surely the most common technique in the industry for large-scale growth for thin films with low emissivity, where the oxide deposited is usually ZnO. One of the recognized advantages of this technique is that the effects due to ion bombardment contribute to obtain surfaces with very little roughness, in the order of nanometers, and therefore improves the quality of the silver layer deposited at the end in windows with low emissivity. Therefore, a complete characterization of the surface layers of ZnO is required. In this sense, we have analyzed three thin layers of ZnO grown on commercial glass substrates deposited by the magnetron sputtering technique with thicknesses of 20, 50 and 100 nm. We used techniques such as: XRR, XRD, SEM and Raman spectroscopy, to assess roughness, microstructure, ZnO phonons profile and other properties like as density and refraction index. The X'Pert reflectivity program was used to fit the reflectivity data; the intensity of reflections was modeled through homogeneous and uniform layers with a well-defined limit to take into account the glass substrate. Finally, the structural results were correlated with the optical results.

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