

CHARACTERIZATION OF Cu_2O THIN FILMS USED IN SOLAR CELLS BY FLUORESCENCE AND FTIR SPECTROSCOPY

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Abstract: *In this work Cu_2O thin films from a $\text{ZnO}/\text{Cu}_2\text{O}$ solar cell, were prepared by magnetron sputtering and characterized by Fourier-transform infrared spectroscopy (FTIR) and spectrofluorometry analysis. FTIR spectrum shows peaks of CuO at the interface of the quartz substrate from oxidation. Fluorescence spectroscopy of the sample annealed at 900°C showed one narrow peak at 380 nm in the emission band. OPAL2 software was used to model the optical characteristics of the Cu_2O films and the $\text{ZnO}/\text{Cu}_2\text{O}$ heterojunction, respectively optical band gap, reflectance, transmittance and absorptance.*