7th African Conference on Non Destructive Testing (ACNDT) & the 5th International Conference on NDT and Materials Industry and Alloys (IC-WNDT-MI)

2016

Copper Oxide Thin Films Deposited by Radiofrequency Magnetron Sputtering: 1Photovoltaic Applications

R. TADJINE, A. HAOUIMI, M.M. ALIM, M. Kechouane

Abstract : An unbalanced radiofrequency magnetron sputtering, at low pressure argon-oxygen gas mixture, was used to elaborate copper oxide films. Analyses of the deposited layers by X-ray diffraction (XRD), spectrometry UV-VIS-NIR and electrical resistivity measurement were carried out to assist and optimize the method. The apparition of CuO and/or CuO phases is affected by the experimental plasma parameters. So it’s important to find the best operating range ensuring the correct stoichiometry and giving the preferred phase. The results showed a changing films color with resistivity ranging from 10 to 570?cmandfilmsthicknessfrom0.24to2.2?m.

Keywords : solar cells, Copper oxide thin films, Magnetron sputtering