**Electrodeposition of Li- doped ZnO nanowire arrays for solar cell**

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Undoped and lithium doped zinc oxide thin films were deposited by electrodeposition technique from aqueous solution onto ITO substrates at optimum conditions. The variations of the structural, electrical and optical properties with the doping concentration were investigated. XRD analysis showed typical patterns of the hexagonal ZnO structure for both doped and undoped films. The films were polycrystalline with the (002) preferred orientation. No diffraction peaks of any other structure were found. The grain size and optical band gap were evaluated for different doping concentrations. The films with 5.10-6 M Lithium had a high crystallographic quality and a resistivity of 3,9.10-4 Ω.cm with an energy band gap of 3,3 eV.

It is very obvious that ZnO-Li films fabricated by sol-gel at optimum conditions are suitable for electronic applications, especially those requiring transparent electrodes.