



Comparison of ITO/metal/ITO and ZnO/metal/ZnO characteristics as transparent electrodes for third generation solar cells

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| Résumé en anglais | <p>In this paper we present the physical properties of two types of multilayer structures: ITO/metal/ITO and ZnO/metal/ZnO obtained by successive sputtering depositions of metallic targets (In:Sn, Zn, Ag, Au) in reactive atmosphere (for oxide films) and under inert atmosphere (for metallic interlayer films). Very good quality transparent conducting thin films structures ($\rho=2\times 10^{-5} \Omega \text{ cm}$, $T\sim 90\%$) were obtained. The morphological, optical and electrical properties were analyzed and compared for the multilayer films deposited in identical conditions on glass and PET substrates. The influence of substrate nature on the morphological properties is more pronounced in the case of zinc oxide films. The Haake figures of merit at $\lambda=550 \text{ nm}$ are comprised between $4\times 10^{-3} \Omega^{-1}$ and $29\times 10^{-3} \Omega^{-1}$ in function of the nature of the metallic interlayer. The stability of electrical properties with the temperature of the oxide/metal/oxide films is remarkable in comparison with the usual behavior of single oxide films.</p> |
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[1] <http://okina.univ-angers.fr/mihaela.girtan/publications>

[2] [http://okina.univ-angers.fr/publications?f\[keyword\]=4786](http://okina.univ-angers.fr/publications?f[keyword]=4786)

[3] [http://okina.univ-angers.fr/publications?f\[keyword\]=9582](http://okina.univ-angers.fr/publications?f[keyword]=9582)

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