

عنوان مقاله:

Thermodynamic Evaluation of Adsorption of Zinc Complex and ZnO Nano-Layer Prepared by TSCD Method Based on Langmuir Adsorption Model

محل انتشار:

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خلاصه مقاله:

Zinc oxide thin films were deposited on soda-lime glass substrates from an aqueous zincontaining complex by two-stage chemical deposition (TSCD) method. Longmuir adsorption model showed that the adsorption of atoms on the surface of the substrate was typically physical. The relation between the fractional coverage, θ , with the equilibrium constant of the adsorption reaction was nonlinear indicating that the adsorption was non-ideal. The percentage of porosity, $1-\theta$, of the thin layer was determined as a function of Zn^{2+} concentration of the solution. By application of XRD technique, it was shown that pure crystalline ZnO of controllable thickness could be deposited by TSCD method on the surface of the substrate. The procedure consisted of immersion into (a) cold Zn^{2+} complex containing solution and (b) hot water at 90, 95 and 98°C.

کلمات کلیدی:

Zinc oxide, Langmuir Adsorption, physisorption, Immersion, TSCD

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