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Investigation of preparation method on vanadium oxide thin filmsthermochromic tendency under high annealing temperature

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Abstract: The effect of investigation method on the vanadium oxide thin film transition temperature have been investigated. Three coating solutions were adopted; first starting from vanadium (V) oxytripropoxide precursors mixed with anhydrous isopropanol with and without tungsten chloride. While the other two solution starts from vanadium metal or vanadium pentoxidemixed with hydrogen peroxide. Spin coating technique was used to prepare the tested films,at spinning speed of 2800 rpm, using (1×1 cm) quartz substrate. The effect of annealing temperature on the films structure were investigated too. The resulting films were characterized through UV-VIS-NIR, SEM, XRD and FTIR. The doping concentration effect on films thermochromicproperties was investigated.

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