Poster

PREPARATION AND CHARACTERIZATION OF RF MAGNETRON SPUTTERED VOx THIN FILMS

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Abstract

Vanadium oxides are a class of materials with exceptional physical and chemical properties find a wide field of technological applications due to their. The applications include optical and electrical switching devices, light detectors, temperature sensors, microbatteries, etc.

In this work we report the processing conditions in which the films have been prepared and discuss the resulting characteristics. The effect of substrate type and temperature, $O_2/Ar+O_2$ flow ratio, and RF power on phase formation has been studied.

Structural analysis and phase determination have been carried out by X-ray diffractometry (XRD), surface morphologies of the different films have been examined by scanning electron microscopy (SEM) and atomic force microscopy (AFM). The surface chemistry has been studied by X-ray photoelectron spectroscopy (XPS) in order to establish a link between the obtained patterns and the corresponding phases.