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研究论文

基于磁控溅射制备纳米微晶NiOx薄膜的方法

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摘要:

使用一种配套于磁控溅射设备的基片液氮冷却装置制备了小颗粒度纳米微晶NiO_x电致变色薄膜. 当溅射参数完全相同时, 借助于对基片的冷却可有效控制并降低NiO_x薄膜的晶粒尺度. 冷却基片所制备的NiO_x薄膜的电致变色性能明显优于室温时制备的薄膜, 且该薄膜的O/Ni比率也明显高于室温时制备的NiO_x薄膜的O/Ni比率.

关键词: 无机非金属材料 磁控溅射 纳米微晶态 电致变色 NiO_x薄膜

A novel means for preparing nano-microcrystalline NiO_x films by magnetron sputtering

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Abstract:

NiOx electrochromic films with small grain size (<22 nm) have been prepared by using a liquid-nitrogen-cooled apparatus with a magnetron sputtering installation being equipped. When identical deposition parameters have been employed, relying on liquid nitrogen cooling substrates, the grain sizes of films can be controlled and reduced. The results showed that the electrochromic performance and the O/Ni rate of NiOx film prepared with cooling substrate were superior to that of NiOx film deposited without cooling substrate.

Keywords: inorganic non-metallic materials magnetron sputtering nano-microcrystalline state electrochromism NiOx film

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