

Preparation, cracteractise thin film of nano particle Lanthanum yttrate at varieties temperatures

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ABSTRACT

We prepare experimentally thin film (for the first) LaYO3. We also analyze the structure of these materials with various methods, decompose findings nanocrystalline materials compared to bulk materials and modification of radiative lifetime. The sol-gel synthesis of metal oxides offers new possibilities in the field of solid state ionic's. The chemical design of molecular precursors allows a better control of the polymerization process so that Taylor-made materials could be obtained. New hybrid organic-inorganic compounds exhibit high ionic conductivities and could be used as electrolytes

Keywords: sol-gel, thin film, Lanthanum yttrate

1. INTRODUCTION

We prepare experimentally thin film (for the first) LaYO3. We also analyze the structure of these materials with various methods, decompose findings nanocrystalline materials compared to bulk materials and modification of radiative lifetime. The sol-gel synthesis of metal oxides offers new possibilities in the field of solid state ionic's. The chemical design of molecular precursors allows a better control of the polymerization process so that Taylor-made materials could be obtained. New hybrid organic-inorganic compounds exhibit high ionic conductivities and could be used as electrolytes. Oxide gels are actually particle hydrates. Water adsorption and dissociation at the oxide-water interface are responsible for their properties as ion exchangers or fast proton conductors [3]. Some aspects of the simultaneous optimization of material properties of proton conductors which are relevant for their use in electrochemical cells such as fuel cells, electrochemical reactors and sensors are discussed [1]. Suggestions are made for the further development of proton conducting perovskite type oxides, proton conducting polymer membranes and medium temperature proton conducting materials. Conductivity measurements show that doped-LaYO3 is a p-type semiconductor at high oxygen partial pressures, but becomes a pure oxide-ion conductor at low oxygen partial pressures. EMF measurements of oxygen concentrations cells confirm that both doped LaAlO3 and doped LaYO3 are pure oxide-ion conductors at low oxygen pressures [5].

1.1 Subtitle 1: In this work the characterization of lanthanum yttrium thin films prepared by sol-gel at variation temperatures is reported. The thin films were prepared from lanthanum nitrates and yttrium nitrates over a corning glass substrate (at 298K and 320K).

1.1.1 Subtitle 2

The thin films structure was analyzed by FT-IR, Scanning Electron Microscopy (SEM), and Atomic Force Microscope (AFM). The 2 peaks FT-IR spectrum shows at (3033/8333-8033/1333-1033/1133-253/033-033 cm⁻¹). Corresponding to vibrations intermolecular. Intensity peaks is variation. The particle size of thin films was