

عنوان مقاله:

SYNTHESIS AND CHARACTERIZATION OF SCANDIA, YTTRIA STABILIZED ZIRCONIA (SYSZ) NANOPOWDERS
BY NEW APPROACH

محل انتشار:

سومین کنفرانس بین المللی مواد فوق ریزدانه و نانوساختار (سال: 1390)

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خلاصه مقاله:

SYSZ nanopowders have been synthesized by new approach to Pechini's method. In this approach, zirconium oxynitrate, scandium and yttrium nitrate, citric acid and ethylene glycol monobutyl ether were used as the source of Zr, Sc, Y, the chelating and solvent agent respectively. The microstructure of the SYSZ nanopowders calcined at different temperatures was characterized by X-ray diffractometry (XRD) and scanning electron microscopy (SEM), thermogravimetric analysis (TGA), and inductively coupled plasma emission spectroscopy (ICP). The samples calcined at 700 °C contain semispherical shapes of the particles and the medium particles sizes are between 20-30 nm. Optical properties of the samples in different calcination temperatures were also investigated by UV-vis diffuse reflectance spectrum (DRS).

کلمات کلیدی:

Nanostructured (nanoparticle, nanocrystalline) materials; Gel combustion, Pechini's (polymeric complex) method, Sol-gel process; Scandia, Yttria Stabilized Zirconia (SYSZ)

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