عنوان مقاله:

Preparation and characterization of Y-doped Barium Cerate powders by new precursors

محل انتشار:

چهارمین کنفرانس هیدروژن و پیل سوختی (سال: 1396)

تعداد صفحات اصل مقاله: 16

نویسندگان:

s ghamari - *Department of Chemical Technologies, Iranian Research Organization for Science and Technology (IROST), P.O.*

m Ranjbar - *Department of Chemical Technologies, Iranian Research Organization for Science and Technology (IROST), P.O.*

خلاصه مقاله:

Proton ion conducting nano crystalline yttrium doped barium cerate (YBCO) is synthesized by ethylene glycol and citric acid assisted sol–gel method. In this paper two different kinds of BaCe 0.9Y0.1O 3-a nano composites were prepared. YBCO (I) have been synthesized by [(Ce2(pydc)4(H2O)4].pyda.H]2.2H2O, {[Ba1.5 (pydc.H) (pydc) (H2O)]. H2O. 0.5 (pydc.H2)}n, [(Y2 (pydc)4 (H2O)4].pyda.H]2.2H2O]], [pydc (2,6-Pyridinedicarboxylic acid), pyda (2,6-diaminopyridine)] and YBCO (II) was synthesized by (Y(NO3)2.6H2O, Ba(NO3)2, Ce(NO3).6H2O). The powders of (I) and (II) was calcined for a period of 8 hours at 900 °C to get the fine yttrium doped barium cerate powders and the specifications were compared. Various analytical techniques have been used for characterization of the samples, such as scanning electron microscope (SEM), Energy-Dispersive X-ray Spectroscopy (EDS), thermal analysis TG/DTA and X-ray powder diffraction (XRD) used. The results showed that the powders synthesized by metal complexes containing LH2 ligand as precursors, were denser, more homogeneous with smaller particle sizes.

کلمات کلیدی:

Solid oxide fuel cell, Proton conducting membrane, Yttrium doped barium cerate, Soft chemistry method