

عنوان مقاله:

Sonochemical synthesis and characterization of nano-structured lanthanum(III)supramolecule: new precursor for the preparation of lanthanum oxide nanoparticles via thermal decomposition

محل انتشار:

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نویسندگان:

Maryam Ranjbar - *Department of Chemical Technologies, Iranian Research Organization for Science and Technology (IROST), Tehran, P.O. Box ۳۳۵۳۵-۱۱۱, Iran*

Mostafa Yousefi - *marandjbar@irost.org*

خلاصه مقاله:

In this investigation, a nano-sized La(III) supramolecular compound, [pyda.H]₂[La₂(pydc)₄(H₂O)₄].2H₂O (1), has been synthesized by sonochemical method and characterized by field emission scanning electron microscope (FESEM), X-ray powder diffraction (XRD) and elemental analyses. This method comparing to the other methods is very fast and it does not need high temperatures during the reactions. Lanthanum oxide nanoparticles have been prepared by direct thermaldecomposition of compound 1 nanostructure at 800°C under air atmosphere. The structural characterization by XRD, and morphological observations via FESEM revealed that quasi-spherical La₂O₃ nanoparticles obtained is well crystallized and are uniform in both morphology and particle size. This study demonstrates that the supramolecular compounds may be suitable precursors for the simple one-pot preparation of .nanoscale metal oxide materials with different and interesting morphologies

کلمات کلیدی:

Nano-structured materials; Lanthanum oxide; Supramolecular; Sonochemical

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