

## The Effect of Fuel Type on Synthesis of CeO<sub>2</sub>-MgO Nano-Powder by Combustion Method

**Authors :** F. Ghafoori-Najafabadi, R. Sarraf-Mamoory, N. Riahi-Noori

**Abstract :** In this study, nanocrystalline CeO<sub>2</sub>-MgO powders were synthesized by combustion reactions using citric acid, ethylene glycol, and glycine as different fuels and nitrate as an oxidant. The powders obtained with different kinds of fuels are characterized by scanning electron microscopy (SEM) and X-ray diffraction (XRD). The size and morphology of the particles and the extent of agglomeration in the powders were studied using SEM analysis. It is observed that the variation of fuel has an intense influence on the particle size and morphology of the resulting powder. X-ray diffraction revealed that any combined phases were observed, and that MgO and CeO<sub>2</sub> phases were formed, separately.

**Keywords :** nanoparticle, combustion synthesis, CeO<sub>2</sub>-MgO, nano-powder

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