

MORPHOLOGY OF ULTRAFINE LITHIUM MANGANATE

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The formation of metallic nanooxides via detonation reaction was investigated with respect to the presence of an energetic precursor, such as the metallic nitrate and the degree of confinement of the explosive charge. The detonation products were characterized by scanning electron microscopy. The thermal stability of the nanostructures has been examined by heating-treatment at different temperatures. Powder X-ray diffraction, transmission electron microscopy, scanning electron microscopy, thermogravimetric analysis and BET were used to observe the products. Nano-metallic oxides with diameters from 20 to 40 nm and a variety of morphologies were found. The oxides produced by this cheap method affirmed the validity of detonation synthesis of nano-size powders.

Keywords: Electrode material; nano crystals; Chemical synthesis; Electron microscopy; Thermogravimetric analysis (TGA)