ATTAINMENT OF BARIUM HEXAFERRITE NANOPARTICLES BY A PECHINI METHOD

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The barium hexaferrites ($BaFe_{12}O_{19}$) are used as a compound of materials applied in electronic devices, as medical devices, satellites, dada servers systems, wireless systems and others. The general properties are strongly related to the microstructure and morphology, and the particles size decrease results in advantages to the majority applications, mainly the high-tech thumbnail devices. These magnetic ceramic materials, with perovskite structure, are traditionally prepared my conventional oxide mixture synthesis. In this work was studied the nanoparticle synthesis of $BaFe_{12}O_{19}$ by the precursors polymeric method (Pechini), using as precursors the barium carbonate and the iron nitrate, under different thermal treatment conditions. The samples were characterized by XRD, Raman spectroscopy, SEM, BET, DTA and TGA. The results presented the attainment of a monophasic powder with particles size around 100 nm.
Key-word: hexaferrite, barium, nanoparticles.