عنوان مقاله:

Effect of Annealing Temperature on Bismuth Ferrite Nanoparticles

محل انتشار:

دومین همایش بین المللی و هفتمین همایش مشترک انجمن مهندسی متالورژی ایران و انجمن علمی ریخته‌گری ایران (سال: 1392)

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خلاصه مقاله:

Multiferroic materials possess electric and magnetic orderings simultaneously. Such materials have been proposed for use in a wide array of devices because of the possibility of magnetoelectric coupling in these materials. In this investigation bismuth ferrite nanoparticles were successfully synthesized by a polymeric precursor method. Effect of different calcination temperatures on the phase transformation and microstructure were characterized by X-ray Diffraction and scanning electron microscopy. Results showed that the single phase bismuth ferrite was achieved after calcination at 350˚C with crystallite size of 43nm. However, the impurity phase appeared by increasing the calcination temperature to 550 ˚C. The bands at 400-600 cm-1 in Fourier transform infrared spectroscopy are attributed to the Fe-O stretching and bending vibrations of octahedral FeO6 groups in perovskite compounds

کلمات کلیدی:

Multiferroic materials; Nanoparticles; Bismuth ferrite