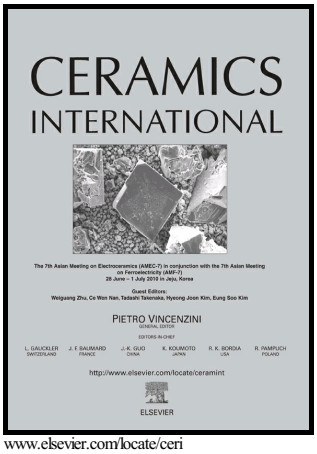

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PII: S0272-8842(17)32169-7
DOI: https://doi.org/10.1016/j.ceramint.2017.09.229
Reference: CERI16400

To appear in: *Ceramics International*

Received date: 15 June 2017
Revised date: 14 September 2017
Accepted date: 28 September 2017

Cite this article as: A.S. Dzunuzovic, M.M. Vijatovic Petrovic, J.D. Bobic, N.I. Ilic, M. Ivanov, R. Grigalaitis, J. Banys and B.D. Stojanovic, Magneto-electric properties of $xNi_{0.7}Zn_{0.3}Fe_2O_4$ – $(1-x)BaTiO_3$ multiferroic composites, *Ceramics International,* https://doi.org/10.1016/j.ceramint.2017.09.229

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Abstract

Di-phase ceramic composites, with general formula $xNi_{0.7}Zn_{0.3}Fe_2O_4 - (1-x)BaTiO_3$(x=0.9,0.7,0.5,0.3,0.1), were prepared by a mixing method. X-ray analysis, for powder and ceramics, indicated the formation of ferrite and barium titanate phases without the presence of the impurities. SEM analysis indicated that the composite morphology contained two types of grains, polygonal and rounded. Homogeneous microstructure and the smallest grain size were obtained in ceramics with 70 % of barium titanate. The electrical properties of these materials were investigated using impedance spectroscopy, dielectric and ferroelectric measurements. The NZF-BT(30-70) composite has shown better electrical properties in comparison to other investigated ceramics, confirmed by dielectric and ferroelectric data analysis. Saturation magnetization and coercive field decreased with the increase of the content of ferroelectric phase.

Keywords: B. Composites, C. Impedance, C. Magnetic properties, Auto-combustion

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