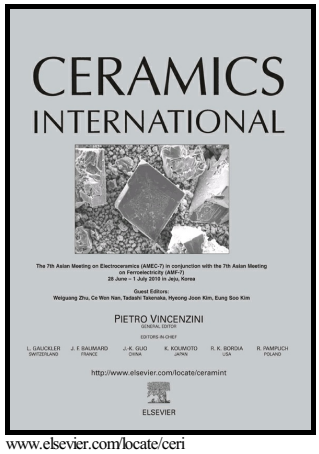


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PII: S0272-8842(18)31768-1
DOI: https://doi.org/10.1016/j.ceramint.2018.07.042
Reference: CERI18764

To appear in: *Ceramics International*

Received date: 21 June 2018
Revised date: 23 June 2018
Accepted date: 4 July 2018

Cite this article as: K.P. Andryushin, I.N. Andryushina, L.A. Shilkina, A.V. Nagaenko, S.I. Dudkina, A.A. Pavelko, I.A. Verbenko and L.A. Reznichenko, FEATURES OF THE STRUCTURE AND MACRO RESPONSES IN HARD FERRO PIEZOCERAMICS BASED ON THE PZT SYSTEM, *Ceramics International,* https://doi.org/10.1016/j.ceramint.2018.07.042

# FEATURES OF THE STRUCTURE AND MACRO RESPONSES IN HARD FERRO PIEZOCERAMICS BASED ON THE PZT SYSTEM

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**Abstract**

The structure, microstructure, dielectric and piezoelectric properties of two ferroelectric materials based on the modified $PbTiO_3$-$PbZrO_3$ (PZT) system, prepared using the conventional ceramic technology and hot pressing method have been studied, and correlations among their elemental composition, phase constitution, grain structure and macro responses have been investigated. Specific features of ferroelectric-paraelectric phase transitions during the variation of the frequency of an alternating electric field (in the interval of 25 Hz ÷ 2 MHz) have been singled out. It was shown that the properties of samples produced without an externally applied pressure are not lower than those of the hot pressed samples thus allowing their perspective use in frequency-selective devices such as variable bandwidth filters.

**Keywords:** PZT, Ferroelectric properties, Spectroscopy, Functional applications