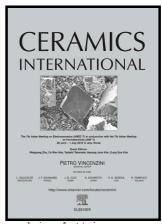
Author's Accepted Manuscript

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

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www.elsevier.com/locate/ceri

PII: S0272-8842(18)31768-1

https://doi.org/10.1016/j.ceramint.2018.07.042 DOI:

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

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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 PbTiO₃-PbZrO₃ (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

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