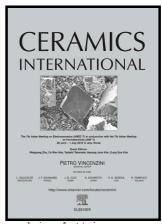
### Author's Accepted Manuscript

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www.elsevier.com/locate/ceri

PII: S0272-8842(18)30927-1

DOI: https://doi.org/10.1016/j.ceramint.2018.04.064

Reference: CERI17981

To appear in: Ceramics International

Received date: 2 February 2018 Revised date: 22 March 2018 Accepted date: 8 April 2018

Cite this article as: Minghao Zhao, Shuaijie Ma, Chunsheng Lu, Cuiying Fan and Guoshuai Qin, Influence of polarization on the electromechanical properties of GaN piezoelectric semiconductive ceramics, *Ceramics International*, https://doi.org/10.1016/j.ceramint.2018.04.064

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#### **ACCEPTED MANUSCRIPT**

# Influence of polarization on the electromechanical properties of GaN piezoelectric semiconductive ceramics

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#### **ABSTRACT**

By using three-point bending tests and numerical simulation, influence of polarization on the electromechanical properties of GaN piezoelectric semiconductive ceramics (PSCs) were investigated in this paper. The results show that the piezoelectricity of GaN PSCs can be attained through a special polarization treatment. For polarized samples under loading, because piezoelectric polarization charges and the electric field are concentrated at high-strain positions, their bending strength increases by 7%. Polarization results in a nearly 55% improvement of the electrical current transport capacity. Due to piezoelectricity, the electric displacement of polarized samples is also largely changed. It is shown that there is a strong correlation

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