

Abstract Submitted  
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**Magnetoelectric interactions in single crystal ferrite-piezoelectric bilayers** G. SRINIVASAN, C. P. DEVREUGD, C. S. FLATTERY, Oakland University, Rochester, MI, V. M. PETROV, M. I. BICHURIN, A. A. IVANOV, Novgorod State University, Russia, J. ZHAI, S. DONG, D. VIEHLAND, Virginia Polytechnic and State University, Blacksburg, VA — The nature of low-frequency ( $10^{-2}$  -  $10^4$  Hz) magnetoelectric (ME) coupling has been investigated in bilayers of single crystal Ni-Zn ferrites and polycrystalline lead zirconate titanate or single crystal lead magnesium niobate-lead titanate. Important observations are as follows. (i) The ME coupling in the bilayers is found to be stronger than in polycrystalline multilayers [1]. (ii) Zn substitution in ferrite is found to enhance the strength of ME interactions. (iii) ME voltage coefficients show significant variation with the orientation of the bias magnetic field. (iv) Data analysis using our model reveals that superior magneto-mechanical coupling in the ferrites is the cause of strong ME interactions [2]. 1. G. Srinivasan, E. T. Rasmussen, and R. Hayes *Phys. Rev. B.* **67**, 014418 (2003). 2. M. I. Bichurin, V. M. Petrov and G. Srinivasan. *Phys. Rev. B.* **68**, 054402 (2003). - supported by grants from the the National Science Foundation (DMR-0302254), Russian Ministry of Education (02-3.4-278), and the Universities of Russia Foundation (UNR 01.01.026).

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