

Abstract Submitted  
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**Exchange Interaction Contribution to Magnetoelectric Effect in Ferrite-Piezoelectric Bilayer at Magnetoacoustic Resonance** M.I. BICHURIN, O.V. RJABKOV, S.V. AVERKIN, Novgorod State University, Russia, V.M. PETROV, G. SRINIVASAN, Oakland University, Rochester, MI — The report is on the effects of exchange interactions on magnetoelectric coupling at the coincidence of electromechanical resonance and ferromagnetic resonance in a bilayer of ferrite and piezoelectric thin film. A tangentially magnetized ferrite film is considered. Giant magnetoelectric voltage coefficient on the order of 75 – 100 V/cm Oe is predicted for yttrium-iron garnet – lead zirconate-titanate bilayers at 5 GHz. The influence of exchange interactions is stronger with frequency and manifests as increase in the peak value of magnetoelectric coefficient. The phenomenon is of importance for the synthesis of novel bilayers for multifunctional microwave devices (sensors, transducers) based on magnetoelectric effect. The research was supported by grants from the NSF (DMR-0606153; NIRT-0609377; ECCS-0621907).

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