

Abstract Submitted
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Enhanced resonant magnetoelectric coupling in frequency-tunable composite multiferroic bimorph structures PETER FINKEL, NUWC, SAM LOFLAND, Rowan Unoversity, ED GARRITY, ACR Scientific Inc, DWIGHT VIEHLAND, Virginia Tech — We report on a giant tunable enhanced resonant magnetoelectric (ME) coupling in multiferroic magnetostrictive/piezoelectric composite based on Fe-Ni/PVDF and Metglas/PZT-fiber bimorph structures. The approach was shown to provide more than a tenfold gain in the ME coefficient, and a magnetic/electric field assisted stress-reconfigurable resonance frequency tuning, up to 100%. The studies were performed by laser Doppler spectroscopy. We also show that this principle of a continuously tuned resonance that might be used to enhance sensitivity and to reject noise for ME magnetic sensors.

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