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Enhanced resonant magnetoelectric coupling in frequency-tunable composite multiferroic bimorph structures PETER FINKEL, NUWC, SAM LOFLAND, Rowan University, DWIGHT VIEHLAND, Virginia Tech — We report on the enhanced resonant magnetoelectric (ME) coupling in composite multiferroic magnetostrictive/piezoelectric composites bimorph structures. The approach was shown to provide more than ten-fold gain in ME coefficient and broadband range magnetic and electric field assisted stress-configurable resonance frequency tuning up to 100% in these ME structures. The ME structures were investigated using optical spectroscopy. It was shown that this principle of continuously tuned resonance could be used to improve selectivity, signal to noise ratio and universality and sensitivity of ME magnetic sensors.

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