

Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Optimization of the high frequency magneto-impedance effect in Co-based amorphous ribbons¹ V ORTIZ, Univ. of Puerto Rico at Mayagez, T EGGERS, M.H. PHAN, Univ. of South Florida — The magnetic field dependence of the impedance, known as magneto-impedance (MI), was measured as a function of excitation frequency in Co-based amorphous ribbons. An optimization of the MI profile on the high frequency regime (100 MHz – 1000 MHz) was attempted through annealing techniques. Current annealing was performed with different annealing amplitudes ranging from 200 mA up to 1 A. Field annealing was also performed by raising the temperature of the sample through Joule heating and applying an external magnetic field of 55 Oe transversal to the ribbon. It was found that annealing at low current improved the MI response at lower frequencies, between 100 MHz and 300 MHz. On the other hand annealing at higher amplitude, past the Curie temperature (T_c) favored higher frequencies. These findings provide good guidance toward the optimization of the MI response of Co-based amorphous ribbons for high-frequency sensor applications.

¹This project is supported by the NSF REU grant DMR 1263066: REU Site in Applied Physics at USF

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Date submitted: 05 Nov 2015

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