

Abstract Submitted
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Magnetic Behavior of Ni-Fe Core-Shell and Alloy Nanowires JAGNYASENI TRIPATHY¹, Dept. of Chemistry, University of New Orleans, JOSE VARGAS², LEONARD SPINU³, Dept. of Physics, University of New Orleans, JOHN WILEY⁴, Dept. of Chemistry, University of New Orleans — Template assisted synthesis was used to fabricate a series of Ni-Fe core-shell and alloy nanowires. By controlling reaction conditions as well as pore structure, both systems could be targeted and magnetic properties followed as a function of architectures. In the core-shell structure coercivity increases with decrease in shell thickness while for the alloys, coercivity squareness improve with increase pore diameter. Details on the systematic studies of these materials will be presented in terms of hysteretic measurements, including first order reversal curves (FORC), and FMR data. Magnetic variation as a function of structure and nanowire aspect ratios will be presented and the origins of these behaviors discussed.

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