

Abstract Submitted
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Magnetic multilayers and Nanomagnetic Patterns P. PANYAJIRAWUT, M.S. RZCHOWSKI, University of Wisconsin-Madison — We have grown Ni/Co magnetic multilayers by sputtering, finding that the multilayers have in-plane uniaxial magnetic anisotropy. This is induced during growth by the sputtering geometry, and by the interaction between layers. We pattern the multilayers into sub-micron dots and networks using the nanosphere lithography technique, forming well-ordered two dimension arrays of magnetic nanoparticles. We use an oxygen plasma etch to adjust the size of the polystyrene spheres after spin coating. Using self-assembled close-packed monolayer of polystyrene spheres as deposition mask, the magnetic material is deposited through the interstitial areas to form networks. We also form isolated nanoparticles using the polystyrene spheres as a etch mask. We discuss the magnetic behavior of patterned multilayers.

Pongladda Panyajirawut
University of Wisconsin-Madison

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