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Spatial and Morphology Controlled Magnetic Patterns on Organic Monolayers SHAHID AHMAD, SALEEM RAO, DONNY MAGANA, GEOFFREY STROUSE, SHAHID SHAHEEN, Florida State University — We report on the effect of polarity of self-assembled monolayers on magnetic properties and morphology of a deposited magnetic material. Sputtering of Permalloy (Ni79Fe21) on a patterned self-assembled monolayer (SAM) structure results in formation of ferromagnetic film on polar regions and superparamagnetic clusters on non-polar regions of the SAM. The existence of two distinct morphologies of the deposited magnetic material can be attributed to the difference in wettability of the SAM surface. These results demonstrate new opportunities for integration of controlled regions with different magnetic behavior without using conventional lithography.

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