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**Tuning the Coercivity in Low-Dimensional Magnetic Thin Films**<sup>1</sup> ISAAC BONYUET, BRIAN CACHA, MATTHEW BYRNE, JACOB KALMANIR, THOMAS GREDIG, California State University, Long Beach, DEPARTMENT OF PHYSICS & ASTRONOMY TEAM — Low-dimensional magnetism has played an important role in theoretical physics; however, experimentally it is more challenging because of difficulty in achieving statistically significant sample sizes. Recently, iron stripes have been prepared on terraced substrates with line separations of about 10nm. In order to reduce the iron chain separation to under 2nm, we prepared thin films of self-assembling organic molecules. Results of low-temperature ferromagnetic response from iron phthalocyanine thin films that form quasi one-dimensional chains are presented. The magnetic hysteresis loops indicate long-range ferromagnetic interaction below 4.5 K and exhibit a memory state. The coercivity could be correlated with the grain size of the iron phthalocyanine thin film. The larger coercivity is attributed to longer chains that are formed in larger grains.

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