

Abstract Submitted
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Quantitative characterization of one-dimensional magnetic chains in organic semiconductors¹ EVAN SILVERSTEIN, BRIAN J. CACHA, JOSHUA MIMS, THOMAS GREDIG, CSU Long Beach — Quasi one-dimensional iron chains are formed in thermally evaporated iron phthalocyanine thin films on silicon substrates. The chain length is modified by the substrate growth temperature and can be controlled within one order of magnitude. The surface morphology of organic thin films (80nm) is studied with atomic force microscopy. The grains are randomly oriented, have odd shapes, and are strongly elongated at high temperatures due to asymmetric shape of the small molecule. A height-height correlation function is applied to the data to extract the correlation length, roughness, and scaling parameter. A correlation between these structural characteristics and magnetic measurements performed in a vibrating sample magnetometer are presented.

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