

Abstract Submitted
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**Grain Boundary Exploration of Excitonic States in
Organic Crystalline Thin Films**

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The electronic states of Metal-Phthalocyanine (MPc) crystalline thin films are investigated. These samples are fabricated by solution processed pen-writing deposition technique.¹ Specifically, a linear dichroism mapping is performed, and excitonic emission is studied both close to and far from the large grain boundaries found in these phthalocyanine thin films. Multiple M-Pc samples are examined, including nickel, zinc and cobalt. In phthalocyanine crystalline films, it is believed that a monomer-like emission feature exclusively associated with a grain boundary is observed. The presence of this feature and its intensity are correlated with the relative orientation of neighboring grains at the boundary. The experiments are performed using a combined Linear Dichroism/Photoluminescence Microscopy experiment developed at the University of Vermont.

¹R. Headrick et al, APL, 92, 063302 (2008)

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