

Abstract Submitted
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Chemical Electrode Modification for Charge Injection in Organic Thin Film Transistors¹ ELBA GOMAR-NADAL, DANIEL HINES, ANDREW TUNNELL, Department of Physics, University of Maryland, College Park, MD 20742, WINSTON YAN, T. Jefferson High School, ELLEN WILLIAMS, Department of Physics, University of Maryland, College Park, MD 20742 — The nature of the interface between an organic material and an inorganic electrode (metal or semiconductor) is critical to the performance of organic electronic and optoelectronic devices. To improve the electrical contact between gold electrodes and pentacene thin film transistors prepared by nanotransfer printing [1], the effect of coating the gold electrodes with self-assembled monolayers (SAMs) of organic molecules with electro-withdrawing groups is being explored. The first experiments have been done with commercially-available molecules and oligo(phenylene ethylene) derivatives have been synthesized for further investigation. The transport and noise characteristics of pentacene TFTs fabricated using the different coating groups will be presented. [1] D.R. Hines et al, Appl. Phys. Lett. 86, 163101 (2005).

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