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Characterization of charge motion in Poly(3-hexylthiophene) field effect transistors with Scanning Probe Microscopy JASON P. MOSCATELLO, MORGEN PATTERSON, Mount Holyoke College, ANDREW R. DAVIS, KENNETH R. CARTER, University of Massachusetts Amherst, KATHERINE E. AIDALA, Mount Holyoke College — Poly(3-hexylthiophene) (P3HT) is a promising conductive organic polymer for applications such as organic FETs and photovoltaics. Key to proper utilization of P3HT is the understanding of how charges move and are trapped in the polymer, which directly affects the mobility of the charges as well as device efficiency. Scanning probe techniques, such as Kelvin Probe Force Microscopy, offer the advantage of being able to observe charges and local potentials down to the nano-scale. We present our work using scanning probe techniques to study charge injection and flow through P3HT FETs.

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