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Field dependent hole transport mobility studies on a select group of conjugated polymers N. C. HESTON, B. WILSON, E. M. GALAND, D. B. TANNER, J. R. REYNOLDS, University of Florida — The thin film hole transport properties of a set of cyanovinylene-linked 3,4-propylenedioxythiophene (ProDOT)/dialkoxyphenylene polymers, and regioregular poly(3-hexyl-thiophene), were measured by fabricating hole dominated devices and measuring the room-temperature I-V characteristics. The data were fitted to a model of field-dependent space-charge-limited current. By carrying out both the fabrication and the measurements inside an inert atmosphere we attained significant improvements to the reproducibility of our results. We also found that exposing the devices to heating increased the field dependent hole mobilities of the polymers with values ranging from 5.2×10^{-7} (cm^2/Vs) to 3.1×10^{-6} (cm^2/Vs).

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