

Abstract Submitted  
for the MAR12 Meeting of  
The American Physical Society

**Gigahertz Probing of Poly(3-hexylthiophene) With A Kilohertz Detection Scheme**<sup>1</sup> JEFF WORNE, Department of Electrical and Computer Engineering, Rice University, COREY SLAVONIC, Department of Physics and Astronomy, Rice University, KEVIN KELLY, Department of Electrical and Computer Engineering, Rice University, DOUGLAS NATELSON, Department of Physics and Astronomy, Rice University — Organic semiconducting polymers have been well studied at DC and low-frequencies, giving important information about charge transport and metal-polymer interaction. However, comparatively little is known about the operation of these polymers at radio frequencies ( $> 1$  GHz). RF frequencies can be a useful tool to investigate high-frequency mobility and charge carrier dynamics relevant for the possibility of using these polymers in RF applications. We present a novel technique that probes poly(3-hexylthiophene) (P3HT) response in the RF regime but allows for detection in the kHz regime. We show transport data of P3HT and discuss a theoretical framework for inferring behavior at GHz frequencies.

<sup>1</sup>J.W. and D.N. acknowledge support from the National Science Foundation award ECCS-0901348

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Date submitted: 11 Nov 2011

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