

Abstract Submitted  
for the MAR17 Meeting of  
The American Physical Society

**Spin transport in heavily doped PEDOT:PSS with tunable electrical conductivity**<sup>1</sup> DALI SUN, YAXIN ZHAI, MATTHEW GROESBECK, CHUANG ZHANG, KIPP J. VAN SCHOOTEN, Department of Physics and Astronomy, University of Utah, Salt Lake City, Utah 84112, USA, OANA JURCHESCU, Department of Physics, Wake Forest University, Winston-Salem, North Carolina 27109, USA, REGHU MENON, Department of Physics, Indian Institute of Science, Bangalore 560012, India, CHRISTOPH BOEHME, Z. VALY VARDENY, Department of Physics and Astronomy, University of Utah, Salt Lake City, Utah 84112, USA — Among pi-conjugated conducting polymers, doped poly(3,4-ethylenedioxythiophene):polystyrene sulfonate, or PEDOT:PSS, has been widely used in optoelectronic devices. Interestingly the PEDOT:PSS electrical conductivity can vary substantially between 10-3 S/cm to 10<sup>3</sup> S/cm depending on the doping concentration determined by the solvents and additives used. We report a comparative studies of the spin diffuse lengths, spin relaxation times and charge motilities in different PEDOT:PSS compounds with various conductivities using the techniques of spin-pumping, electron spin resonance and field effect transistor, respectively. In particular we contrast the charge transport and spin transport in these materials.

<sup>1</sup>Research sponsored by the NSF (DMR-1404634) and NSF-MRSEC (DMR-1121252)

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Date submitted: 09 Nov 2016

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