

Abstract Submitted  
for the MAR16 Meeting of  
The American Physical Society

**Improved electrospinning processing of PU/PEDOT:PSS for electronic textile applications**<sup>1</sup> ERIN EVKE<sup>2</sup>, Materials Engineering, AARON CLIPPINGER<sup>3</sup>, Biomedical Engineering, CLAYSON SPACKMAN, JOHNSON SAMUEL, Mechanical, Aerospace and Nuclear Engineering, RAHMI OZISIK, Materials Engineering; Rensselaer Polytechnic Institute — Poly(3,4-ethylenedioxythiophene)/poly(4-styrenesulfonate), PEDOT:PSS, is an electrically conductive polymer used in electronic textile (e-textile) applications, such as electrochromic textiles, strain sensors, and resistive heaters. In the current study, PEDOT:PSS is blended with varying concentrations of polyurethane (PU) to investigate the flexibility of PU/PEDOT:PSS fibers that are produced via a modified electrospinning process where the jet is collected close to the tip of the needle, thereby, enabling the collection of straight fibers by a rotating spool. The electrical conductivity and mechanical properties of PU/PEDOT:PSS fibers are characterized to understand the effect of PU concentration and the processing parameters.

<sup>1</sup>This material is based upon work supported by the National Science Foundation under Grant No. CMMI-1538730

<sup>2</sup>Undergraduate Student

<sup>3</sup>Undergraduate Student

Erin Evke  
Rensselaer Polytechnic Institute

Date submitted: 04 Nov 2015

Electronic form version 1.4