

# Polymeric Materials for Printed Electronics and Their Interactions with Paper Substrates

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## Abstract

*The primary goal of printing electronics is to create structures and devices that are functionally similar to conventional electronics, but at greater speed, lower cost and less production complexity. The applications that will be affected by lower cost of electronics include RFID tags, solar cells, displays, chemical sensors, etc. In this work, effects of paper properties and their effect on sheet resistivity of gravure printed PEDOT:PSS layers were evaluated. Among paper properties, it was observed that absorptivity and ink penetration had negative effect on conductivity. The higher the ink penetration into the substrate surface the lower the conductivity. Moreover, surface energy of the substrates needs to be in balance with surface tension of the conductive inks.*