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A Comparison of Different Silver Inks for Printing of Conductive Tracks on Paper Substrates for Rapid Prototyping of Electronic Circuits

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Abstract

This study compares the performance between two commercially-available electrically conductive silver inks, Harima NPS-J nanopaste and the NBSIJ-FD02 Mitsubishi conductive ink, used in rapid prototyping of electronic circuits. The comparative parameters include resistivity relative to bulk silver, conductivity, geometry relative to design parameters and frequency characteristics. These parameters are useful in the development of electronics on paper, and provide a clearer understanding of the selection process of different conductive inks for printing onto paper substrates. These results can be utilized in the development process for fully printable rapidly prototyped electronic systems, which can range from environmental sensing solutions, to wearable devices and low-cost medical diagnostics.