

Study on the improvement of electrical conductivity of conductive paper made of double layer of conductive polymer and graphene

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In this study, electrical properties, spectroscopic properties, and mechanical properties of conductive paper consisting of a double layer of secondarily-doped polyaniline (PANI) and graphene were investigated. The graphene sheets coated on a cellulose substrate greatly reinforce both electrical and mechanical properties. In addition, the secondarily-doped PANI thin film was expected to dramatically improve the electrical properties of graphene paper due to its high electrical conductivity reaching 10^2 - 10^3 S/cm. The conductive composite paper electrode obtained through this study was able to realize excellent electrical properties, chemical resistance, flexibility and mechanical properties at the same time.