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Author Ming-Kun Ou
Author's Email Address No Public.
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Abstract
The application of conductive polyaniline (PANI) on the related electron industry is the domain of rather popular research because of its good environmental stability, easiness and low cost of synthesizes, and high conductivity. Nevertheless, its commercial application was limited due to its poor processibility and insolubility in the common organic solvent. This study can be separated into two sections:
(1)The chemical oxidization method was used to prepare emeraldine salt (ES) type conductive polyaniline doped with hydrochloric acid (PANI －HCl) by interfacial polymerization which employ immiscible interface formed via the water and organic solvent (chloroform), and we discuss the influences of synthetic conditions on the conductivity of PANI－HCl. The experimental results indicate that PANI－HCl have the best conductivity when the concentration ratio of aniline/hydrochloric acid/ammonium peroxodisulfate = 1：5：1, polymerization temperature = 50 ℃, and polymerization time = 2 hours. The morphology of PANI－HCl prepared with interfacial polymerization was nanograde dendritic fiber with an average diameter of 70nm from transmission electron microscopy (TEM) result.
(2)The chemical oxidization method was used to prepare emeraldine salt (ES) type conductive polyaniline co-doped with hydrochloric acid and dodecylbenzene sulfonic acid (DBSA) (PANI－HCl－DBSA) by interfacial polymerization which employ immiscible interface formed via the water and organic solvent (chloroform). Due to the addition of DBSA, PANI－HCl－DBSA can be dissolved in common organic solvents. Ultraviolet(UV) curing coating/PANI－HCl－DBSA chloroform solution blend was prepared via solution blend method. This blend was coated on the Poly (ethylene terephthalate) (PET) film and cured by UV, as using of electrostatic dissipation charge (ESD), anti-static and electromagnetic interference shielding (EMI shielding). Moreover, TEM, surface electronic resistance instrument, Ultraviolet－visible spectrophotometer (UV－VIS), thermogravimetric analyzer (TGA) was used for the morphology of PANI－HCl－DBSA, surface electronic resistance, degree of transparency, thermal stability of PET film coated with various UV curing coating/PANI－HCl－DBSA chloroform solution blend weight ratios, respectively. PANI－HCl－DBSA have the structure of nanograde dendritic fiber with an average diameter of 46nm and sphere with an average diameter of 15nm from TEM result. Surface electronic resistance of PET film

with 0wt% PANI－HCl－DBSA chloroform solution was 1012Ω/sq. However, PET film with 70wt% PANI－HCl－DBSA chloroform solution was reduced to 108Ω/sq. Degree of transparency of PET film with 70wt% PANI－HCl－DBSA chloroform solution was 17%. Thermal stability of PET film with 70wt% PANI－HCl－DBSA chloroform solution (5wt% weight loss temperature = 399℃) was higher than PET film with 0wt% PANI－HCl－DBSA chloroform solution (5wt% weight loss temperature = 391℃).

Advisory Committee

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