

Abstract: Poly(ethylene naphthalene-2, 6-dicarboxylate) (PEN) is a aromatic polyester with molecular structure similar to that of poly(ethylene terephthalate)(PET). In this paper, the electret properties of corona charged PEN were studied by measurement of surface potential decay under different storage conditions including different temperatures and relative humidities, analyses of open circuit thermally stimulated discharge (TSD) current spectra and charge TSD curves. The comparison between the electret properties of PEN and PET was carried out. The results point out that the charge stability of PEN is markedly better than that of PET under different environmental storage conditions, and the charge stability of PEN can be improved by corona charging at elevated temperature. Further, the dynamics of charge transport of PEN was investigated.