

Improving the stability of conductive polymer coated onto PET surface by using plasma treatment

부반티엔, 최호석*
충남대학교
(hchoi@cnu.ac.kr*)

PET was treated by one atmospheric pressure plasma using 13.56 MHz RF source in order to improve the stability of conductive polymer film coated onto PET surface as a transparent electrode. The parameters of plasma treatment were systematically investigated to get the optimum conditions for coating the conductive polymers and avoiding surface damages from plasma. After Ar and Ar/O₂ plasma treatment of PET film, the surface free energies of treated samples were determined through Owens–Wendt method by measuring contact angles of both polar and non-polar solvents. The chemical compositions and surface morphology of samples before and after treatment were characterized through XPS analysis, AFM, SEM and ATR-FTIR spectra. The PEDOT:PSS conductive polymer films coated onto pristine and treated PET surface were characterized through measuring optical and electrical properties, thickness and surface morphology well as adhesion strength between PEDOT:PSS and PET surface.