

Preparation and characterizations of poly (aniline-co-m-aminobenzoic acid) / polystyrene composite nanofibers and films

ABSTRACT

In this research, a simple method was used to synthesize poly (aniline-co-m-aminobenzoic acid) also known as P(ANI-co-m-ABA) composite polystyrene (PS) nanofibers by using in situ chemical polymerization technique. The copolymer was polymerized on electrospun PS nanofibers mats with varied monomers solution concentration and the polymerization time. P(ANI-co-m-ABA) was also polymerized on PS films were prepared for comparison. The conductivity of the composites was studied and the result showed addition of graphene (GP) into the composites improved the conductivity of the composites. The composites of P(ANI-co-m-ABA)/PS nanofibers and films were characterized by Fourier transform infrared (FTIR), thermogravimetric analysis (TGA) and ultraviolet visible (UV-vis) spectroscopy. Surface morphology of the composite was studied by scanning electron microscopy (SEM).

Keyword: Poly(aniline-co-m-aminobenzoic acid); Nanofibers; Electrospinning