

Extraction and Preconcentration of Bisphenol A (BPA) in Seawater Samples Using Micro-Funnel Supported Liquid- Phase Microextraction

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The porous alloy membranes were prepared on the basis of polyethylene oxide (PEO) and polyacrylonitrile (PAN) with graphene oxide (GO) and titanium dioxide (TiO₂) nanoparticles at different weight ratios. The crude was produced and then used. The FTIR and XRD results showed effective modification of the graphene surface and the presence of oxygen groups. Electrospinning was used to make nanocomposite membranes and uniform, spherical fibers with an average diameter of 650 to 817 nm were produced. The influence of GO and TiO₂ dispersion on the morphology, structure, thermal properties and electrical conductivity of PEO / PAN nanofibers was investigated. The resulting porous membranes are good adsorbents for the liquid electrolyte and exhibit favorable electrical conductivity. The addition of graphene nanofibers (0.5 wt.%) To the PEO / PAN blend effectively increased the electrical conductivity of the polymer matrix. The results of X-ray diffraction test showed a uniform distribution of GO nanoparticles in PEO / PAN which resulted in improved porosity and electrolyte absorption compared to pure PEO / PAN sample. Differential scanning calorimetry analysis proves that the presence of TiO₂ and graphene oxide prevented the crystallization of PEO. The marked increase in electrolyte uptake and electrical conductivity of the nanocomposites produced is a promising feature for their application as electrolyte.

Keywords : polyethylene oxide, polyacrylonitrile, nano particles, nano graphene oxide, titanium dioxide.

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