

Carbon Nanofibers of Polyacrylonitriles

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Synthesized co-polymers of acrylonitrile (AN) were used to obtain corresponding electrospun nanofibers [1]. Thermal(DSC,TGA) and electrochemical(EIS) behaviour of Carbon nanofiber of PAN and PAN co-polymers were examined. Inclusion of comonomers to PAN reduced the Tg value of homopolymer PAN compared to P(AN-co-AA), providing improvement to the cyclization and the formation of a thermally stable aromatic ladder polymer chain formation. Nanofibers of graphene oxide(GO) containing nanofibers were also produced by electrospinning using PAN(10 wt/v %) in DMF, where GO solution were mixed with PAN (1,25; 2,5; 5 wt/v %) as blend. Prepared nanofibers were characterized by FTIR-ATR spectroscopy and electrochemical impedance spectroscopy (EIS)[2]. Fitting with equivalent Circuit Modelling exhibited a good correlation between the calculated and experimental values. Morphological properties of products are also investigated by Scanning Electron Microscopy (SEM).

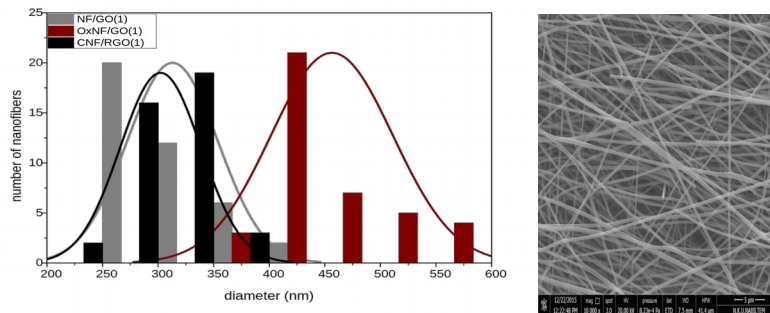


Figure 1: *Nanofiber diameters of PAN/GO and SEM of Carbon Nanofiber*

High degree of homogeneity and surface induced by electrospinning improve the electrical transport properties and stability of CNFs, which are critical for high-performance organic electronics and supercapacitors

References

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