

ABS(Acrylonitrile Butadiene Styrene) – functionalized graphene oxide nanocomposite by solution blending method

오미애, Viet Hung Pham, 허승현, 정진석*
울산대학교
(jschung@mail.ulsan.ac.kr*)

Graphene has attracted a great deal of scientific interest due to its excellent electronic, mechanical and thermal properties and high surface area. One of the most promising applications of this material is in polymer nanocomposites, polymer matrix composites which incorporate nanoscale filler materials. Polymer nanocomposites show substantial property enhancements at lower loadings than polymer composites with conventional micron-scale fillers. Herein, we present a survey of the literature on polymer nanocomposites with different types of reduced graphene oxides based fillers. We also report the electrical, mechanical and thermal properties of these composites, and how each of these composite properties is dependent upon the intrinsic properties of graphene-based materials and their state of dispersion in the polymer matrix. Acrylonitrile-butadiene-styrene (ABS) is a widely used engineering thermoplastic owing to its desirable properties which include good mechanical properties, chemical resistance and easy processing characteristics. ABS-functionalized graphene nanocomposites were synthesized using the solution-blending method in N,N-dimethylformamide (DMF).