

Functionalized graphene oxide/Polystyrene
nanocomposites for
enhanced mechanical properties

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Graphene has attracted considerable attention because of its extraordinary properties. As a precursor for graphene-based material, graphene oxide (GO) is best way for large scale process. However, the surface of GO sheets which has abundant oxygen-containing groups need to be modified for its numerous applications. Functionalization of graphene is usually required to improve their solubility in organic solvents for compatibility with polymers. Alkylamine, one of the functional agents, have used very popular for functionalization of GO (FGO). Long alkylamine allow FGO to prevent aggregation of the nanosheets and disperse in low polar-organic solvents easily such as o-dichloroform, toluene etc. In this study we investigate systematically the effects of alkylamine functionalized graphene oxide on the PS (Polystyrene). FGO/PS nanocomposites were prepared by solution blending. The mechanical properties of FGO/PS nanocomposites were reinforced with increased FGO loading.