

## Enhanced Performance of Alkylated Graphene Reinforced Polybutylene Succinate Nanocomposite

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### ABSTRACT

Polybutylene succinate (PBS) was being grafted with octadecylamine-functionalized graphene oxide (GO-ODA) to produce novel PBS/GO-ODA nanocomposites by solution blending technique. Alkylated graphene oxide has superhydrophobic surface thus improved the affinity of the filler with low polar polymer such as PBS. The structure and compatibility of the filler and nanocomposites were being characterized using Fourier transform infrared spectroscopy (FTIR), Universal tensile machine (UTM) and thermogravimetric analysis (TGA). Enhancement of tensile strength and Young's modulus by 30% and 165% respectively was achieved with cooperation of 0.5% GO-ODA loading. The functionalization of GO-ODA in PBS matrix leads to the improvement in the nanocomposites properties.

**KEYWORDS:** Nanocomposites; Graphene; Thermogravimetric analysis

**DOI:** [10.1063/1.4958766](https://doi.org/10.1063/1.4958766)