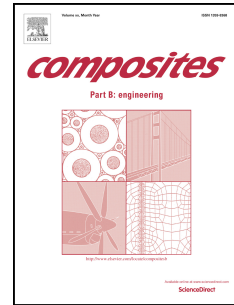


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Impact of vinyl concentration of a silicone rubber on the properties of the graphene oxide filled silicone rubber composites

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Abstract: The silicone rubber (SR)/graphene oxide (GO) composites were prepared in the present study and the properties of the composites were subsequently investigated. The effect of vinyl concentration of the silicone rubber on the mechanical properties of the prepared composites was studied specifically. It was found that the GO sheets could be uniformly dispersed within the SR matrix, increasing both the thermal and mechanical properties of the SR composites at the same time. It was also investigated that when mixing SRs with different vinyl concentrations together, the mechanical properties of the prepared rubber hybrids and their GO filled composites improved more obviously than those of the SR composites with single vinyl concentration. This study provides more application potentials for the GO in the SR industry.

Keywords: A. Nano composites; A. Polymer-matrix composites (PMCs); A. Particle-reinforced composites; Graphene Oxide

1. Introduction

To date, the nanoparticles and nanomaterials have been established as an independent research discipline. When the materials are divided into much smaller size, which is counted in nanometer scale, these nano-scaled materials exhibit dramatic and unimaginative change in their properties compared with the bulk ones. [1-6]. As a representative candidate, the graphene oxide (GO) has received tremendous research

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