

MODIFICATION POLYMER MATRIX COMPOSITES BY ADDITION GRAPHENE

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ABSTRACT

The attractive properties of graphene and its composites have led to the study of numerous applications such as transistors, biosensors, energy storage devices, nano-electro-mechanical systems and others; the past decade has witnessed the rapid growth of carbon nanotechnology. More research in the area will help the development of next generation graphene based composites and hybrid materials.

In this study, samples composite materials used for manufacturing by hand layout technique which casted into cylindrical pellets. The matrix materials of these composites are: epoxy resin, reinforced with graphene particles which are added in three percentages (1, 3, and 6) % wt to the matrix. Additionally there are pellet without reinforced with graphene particles, then measured Shore-D hardness, diametrical compressive strength and thermal conductivity for all the samples, its found from the results there is improvement in mechanical properties and thermal conductivity of the samples that reinforced with graphene specially at 6%wt.

KEYWORDS: Modification Polymer Matrix Composites, Transistors, Biosensors, Energy Storage Devices, Nano-electro-mechanical Systems and Others