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Graphene Nanoplatelet Biodegradable Nanocomposites: A Comparative Study

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With excellent characteristics such as high mechanical properties and electrical conductivity, graphene nanoplatelets (GNPs) can be used for reinforcing polymers and developing novel materials. In the current study, different concentrations of GNPs (0-15 wt%) were embedded into poly lactide and poly (butylene adipate-co-terephthalate) which are among the leading biodegradable polymers. Morphology of the nanocomposites was studied via scanning electron microscopy and X-Ray diffraction. Effect of GNP loading on electrical conductivity and thermal stability of the two matrices were determined. Results showed significant enhancement in both conductivity and thermal stability of polymers with addition of GNPs.

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