عنوان مقاله:

Cellulose Nanofiber/Reduced Graphene Oxide Hybrids as a Novel High-Performance and Biodegradable Reinforcement- Part 2: Characterization

محل انتشار:

دوازدهمین سمینار بین المللی علوم و تکنولوژی پلیمر (سال: 1395)

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خلاصه مقاله:

In this study, a hybrid of cellulose nanofiber (CNF) and reduced graphene oxide (RGO) were prepared via layer by layer assembly method. This hybrid as a new type of reinforcing agent for polymer composites evaluated by means of mechanical and thermal properties. The average tensile strength and modulus of elasticity of RGO-CNF hybrids are higher than the CNF. Also RGO-CNF hybrids show improved thermal stability in compare with pure CNF. The AFM images show that the Rrms (surface root-mean-square roughness) of RGO-CNF hybrids increased, indicating that the new hybrids in compare with pure CNF, can provide better mechanical interlocking, when incorporate with polymer matrix. Therefore, hybridizing of RGO nanosheets and cellulose nanofibrils is a promising feat, which led to noticeable enhancement in mechanical and thermal properties

کلمات کلیدی:

Cellulose nanofiber- Graphene oxide- Layer by layer assembly- Mechanical properties-Thermal properties

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