

عنوان مقاله:

Enhancement of E-glass fiber/epoxy composite bending performance via graphene addition

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خلاصه مقاله:

This paper presents an experimental investigation using graphene nanoplatelets (GnPs) to enhance the bending performance of E-glass fiber/epoxy composites. Each specimen was prepared with two layers of E-glass chopped strand mat via the hand lay-up technique and using various contents of GnPs in the matrix (0.1, 0.1, 0.1, 0.1, 0.1, 0.1, 0.1) wt%). Mechanical and ultrasonic stirring methods were employed to disperse the GnPs in the matrix. The obtained results demonstrated that the highest increases of YT% and Y5% in the flexural strength and modulus, respectively, were observed for the composite containing o.F wt% GnPs. With the incorporation of o.1 wt% GnPs, the flexural failure strain of the composite was enhanced by 15% compared to the control composite. The evaluation of the fractured surfaces clearly demonstrated that the interface between the glass fiber and polymeric matrix was improved when .GnPs were added into the matrix

كلمات كليدى: Fiber-reinforced composite, Graphene nanoplatelets, Bending performance, fracture surface

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