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Abstract

It is shown that approximately 2 wt% of graphene in the matrix of a unidirectionally-reinforced carbon fiber epoxy composite leads to a significant enhancement in mechanical properties. Particularly, it is found that the axial stiffness of the composites is increased by ~10 GPa accompanied by an increase in axial strength of 200 MPa. X-ray computed tomography and polarized Raman spectroscopy have demonstrated that