

Effective high shear exfoliation of graphene in volatile organic solvent for commercial applications

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An outstanding property of graphene make it prominent material for different application . To brings out this material from laboratory to industry is becomes demand of the day and it is necessary to introduce mass productive method to produce large quantity of defect free graphene. To achieve this objective our group exfoliated graphite by high shear mixing to produce unfunctionalized and nonoxidized graphene in volatile liquids that results in high scale dispersion of graphite in nano -sheets. The characterization of samples shows few layered graphene; Raman Spectroscopy confirmed that exfoliated graphene has low defects and unoxidized. Atomic force Microscopy (AFM) and High Resolution Transmission Electron Microscope (HR -TEM) also indicated the exfoliation of graphene in volatile solvent. The removal of solvent is easy and quickly at room temperature, energy efficient and also reduces the overall production time.