

## Preparation of conductive PVC-graphene nanocomposite via latex technology

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Graphene, one-atom-thick planar sheet of  $sp^2$ -bonded carbon atoms, has increasingly attracted attention due to its fascinating electronic, mechanical and thermal properties, thus finding great potential applications. Similar to carbon nanotube, graphene is ideal filler for producing conductive nanocomposite which have a good combination of mechanical stiffness, strength, micro-cracking resistance, electrical and thermal conductivities, and barrier performance at a minimal filler concentration. Among of them, electrical conductivity is the most valuable properties of polymer - graphene composite which could be applied in electromagnetic interference shielding, electrostatic charge dissipation or in the fabrication of nanoelectronics devices such as thin - film transistors. In our study, graphene were prepared by chemically converting graphene oxide using hydrazine as reducing agent. The chemically converted graphene dispersion was then mixed with poly (vinyl chloride) latex which was synthesized by miniemulsion polymerization. The PVC - graphene dispersion was then filtrated and dried to obtain PVC - graphene composite.