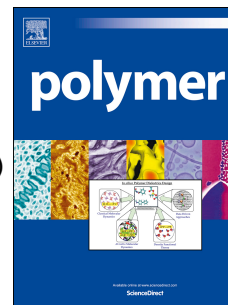


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High dielectric constant and low loss in poly(fluorovinylidene-co-hexafluoropropylene) nanocomposite incorporated with liquid-exfoliated oriented graphene with assistance of hyperbranched polyethylene

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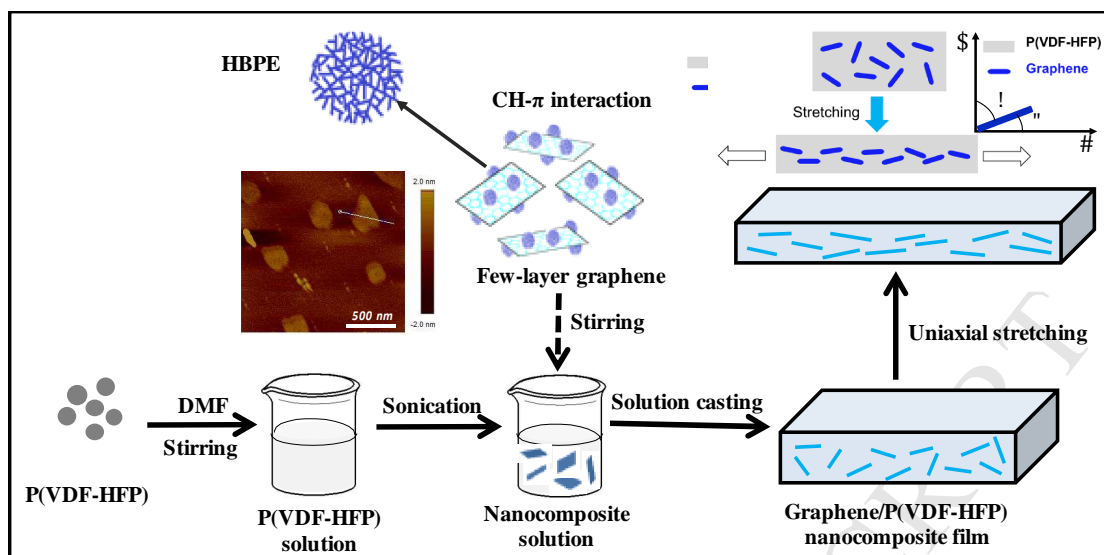
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The fabrication of polymer dielectrics combining large dielectric constant and low loss is still challenge for now. Here we demonstrate that the significantly enhanced dielectric property is achieved in P(VDF-HFP) nanocomposite incorporated with few-layer graphene, which is liquid exfoliated with assistance of HBPE based on CH- π stacking. The arrayed nanosheets in nanocomposite is accomplished via uniaxial stretching and is modeled based on Jeffery equation. High dielectric performance is obtained in stretched nanocomposite due to formation of micro-capacitor and large content of electroactive phase, which is attributed to macromolecular crystallization and electrostatic force between matrix and modifier of graphene.

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