Supporting Information

# Preparation of CO2-Switchable Graphene Dispersions and Their Polystyrene Nanocomposite Latexes by Direct Exfoliation of Graphite Using Hyperbranched Polyethylene Surfactants

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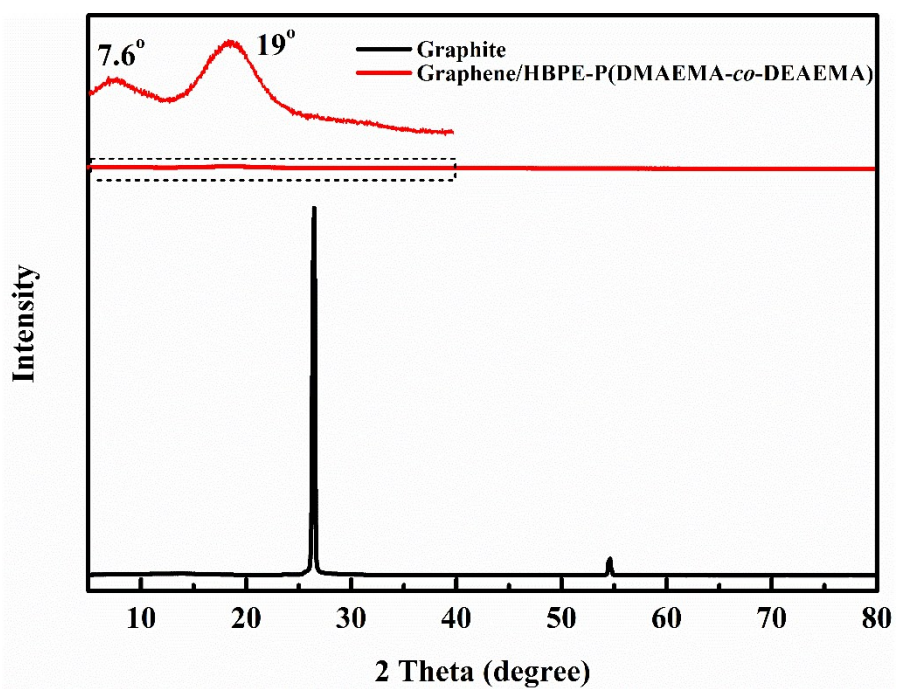
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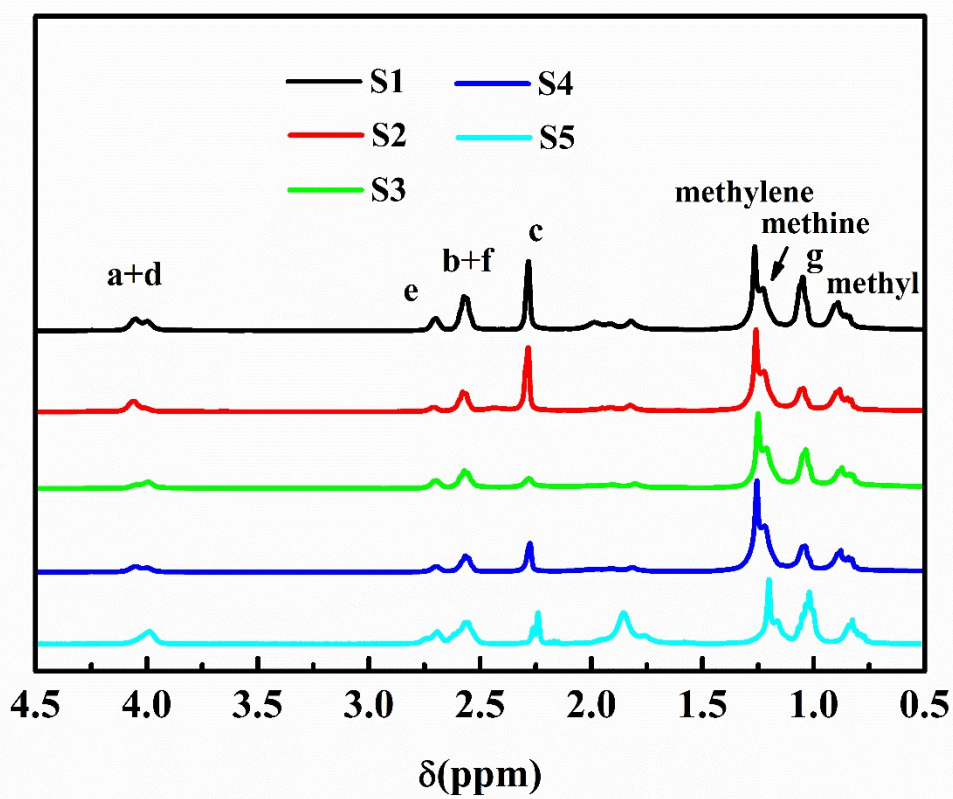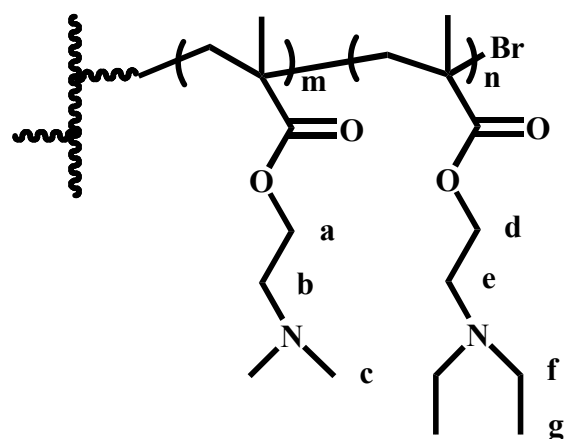
Figure S1. ^{1}H NMR spectra of HBPE-P(DMAEMA-*co*-DEAEMA) star copolymer S1-5 with CDCl$_3$ as deuterated solvent
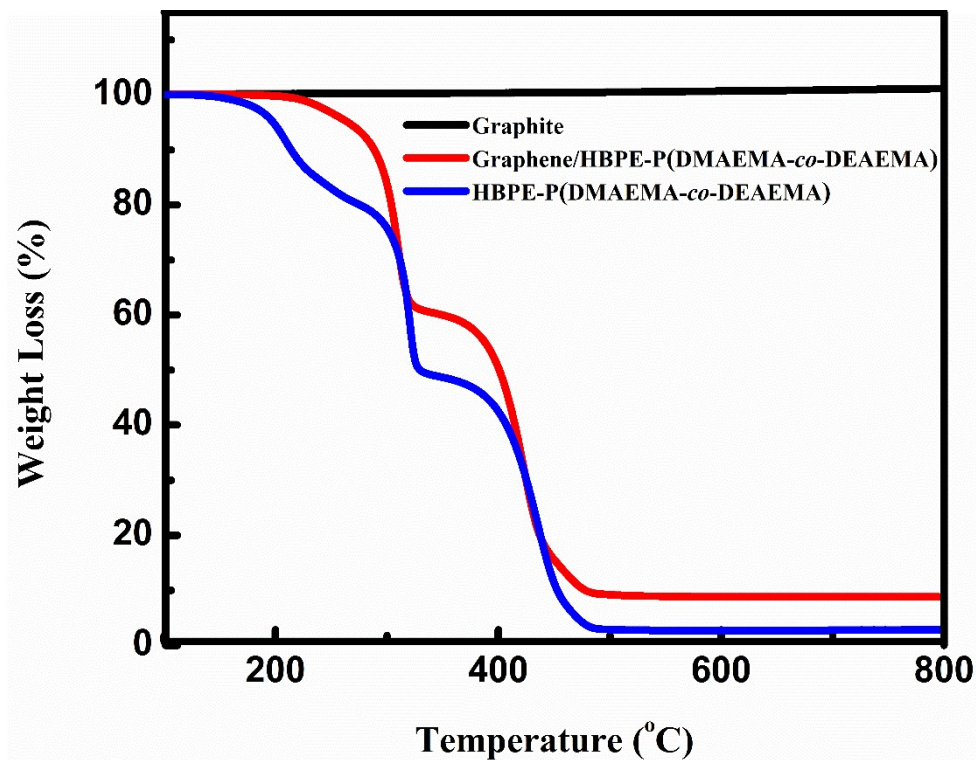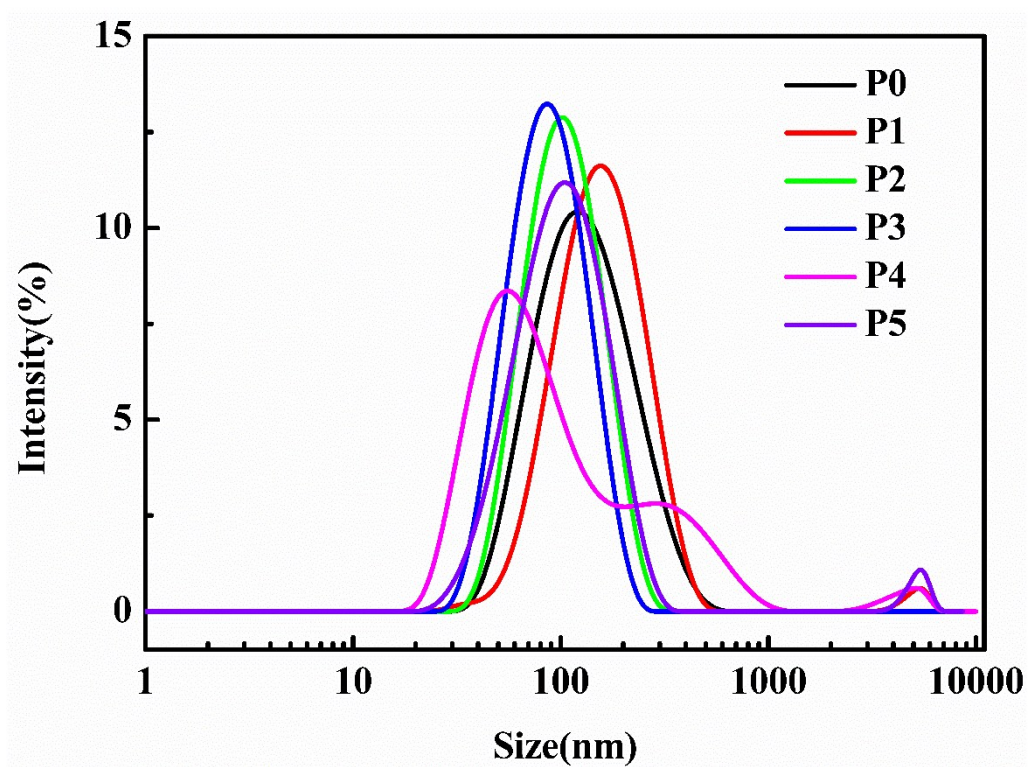
Figure S2. TGA thermograms of (a) pristine graphite, (b) graphene/HBPE-P(DMAEMA-*co*-DEAEMA) dried mixture from dispersion of D3, and (c) HBPE-P(DMAEMA-*co*-DEAEMA) sample S3.

Figure S3. XRD patterns of pristine graphite and graphene/HBPE-P(DMAEMA-*co*-DEAEMA) dried mixtures from dispersion D3.
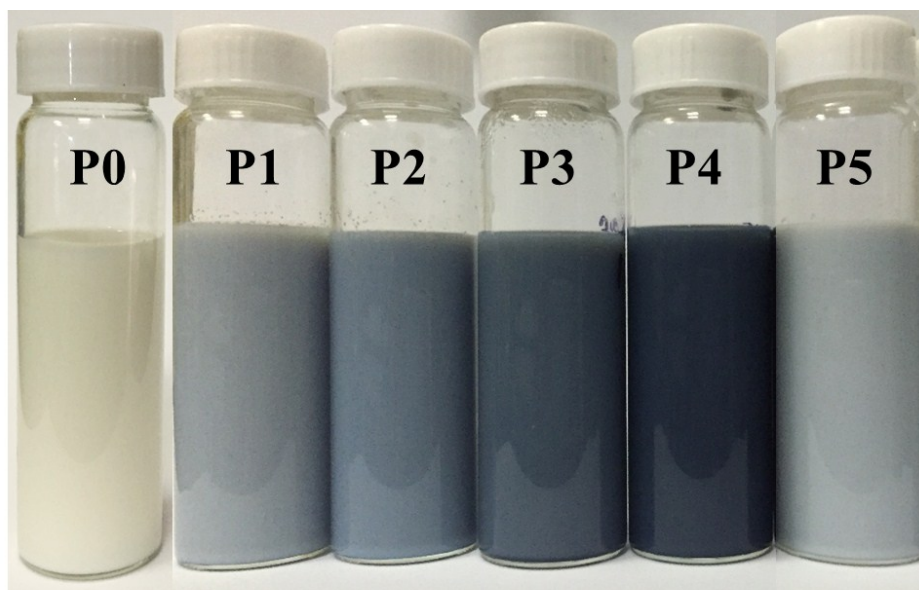
Figure S4. Appearances of PS latex P0 and graphene/PS nanocomposite latexes P1-P5

Figure S5 Particle size distributions of PS latex P0 and graphene/PS nanocomposite latexes P1-P5