Supplementary Information (SI) for Soft Matter.

Supporting Information

Organic/inorganic heterostructures templated by interfacial instability-driven BCP colloids in deformable emulsion droplets

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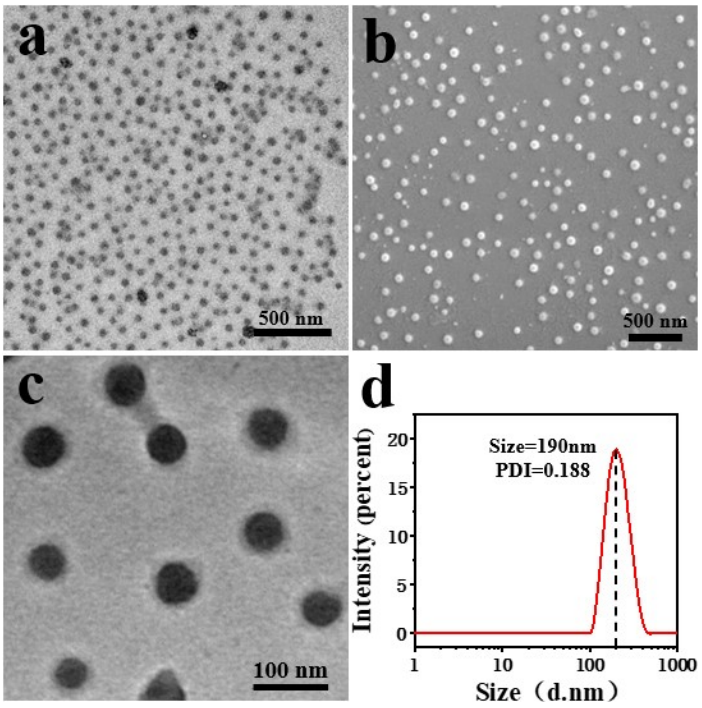

Fig. S1. (a) TEM and (b) SEM images of the highly uniform PS_{38k}-*b*-$P4VP_{82k}$ spherical clusters at relatively low magnification. (c) Magnified TEM image of PS_{38k}-*b*-$P4VP_{82k}$ spherical clusters, in which the P4VP domains are selectively stained by I_2 vapor. (d) The size distribution of the PS_{38k}-*b*-$P4VP_{82k}$ spherical colloids by DLS measurement.

The time autocorrelation function can be expressed as the equation of $g(2)(\tau)=\frac{\langle I(t)\cdot I(t+\tau)\rangle}{\langle I(t)\rangle^2}$, in which $I(t)$ represents the intensity of scattered light at a given time t, while $\langle I(t)\ I(t+\tau)\rangle$ is the average of the product of light intensities at times t and $t+\tau$. $\langle I(t)\rangle^2$ denotes the square of the mean intensity of the light. The attenuation characterization of this autocorrelation function, which varies with the delay time (τ), can be used to calculate the diffusion coefficient of the particle, thus generating the size distribution of the particles.

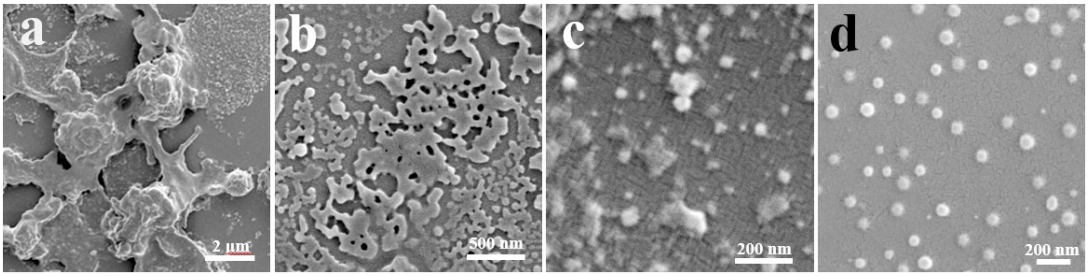

Fig. S2. SEM images of PS_{38k}-*b*-$P4VP_{82k}$ assemblies emulsified with SDS aqueous solution of different concentrations. (a) 0.1 mg/mL; (b) 0.2 mg/mL; (c) 0.5 mg/mL; (d) 3 mg/mL.

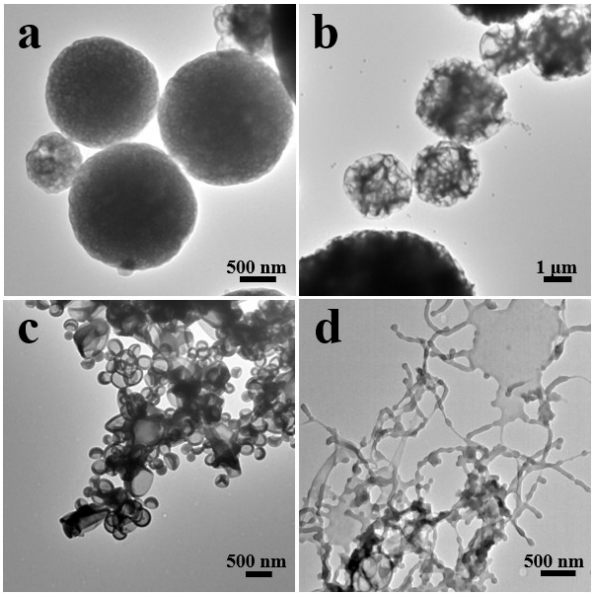

Fig. S3. A series of BCP aggregates assembled from (a) PS_{35k}-*b*-$P4VP_{2.7k}$; (b) PS_{165k}-*b*-$P4VP_{35k}$; (c) PS_{75k}-*b*-$P4VP_{25k}$; and (d) PS_{102k}-*b*-$P2VP_{97k}$.

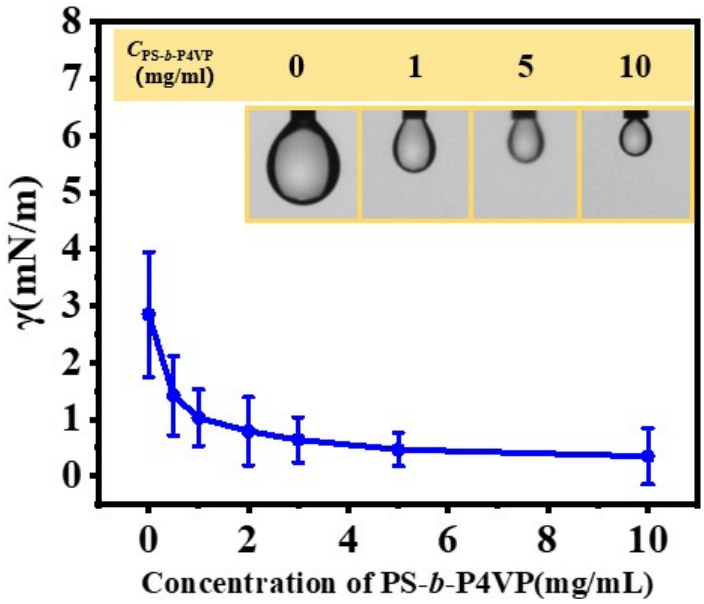

Fig. S4. The plot showing the interfacial tension values of the PS_{38k}-*b*-$P4VP_{82k}$ chloroform solution of different BCP concentrations in 3.0 mg/mL of SDS aqueous solution.

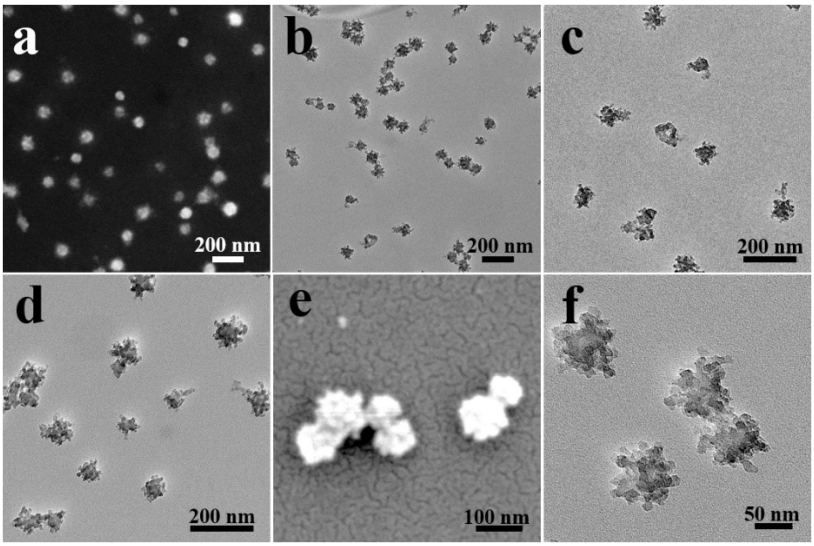

Fig. S5. (a) STEM and (b-d) TEM images of the hybrid heterostructures. Magnified (e) SEM and (f) TEM images of PS_{38k}-$P4VP_{82k}$/SiO_2 heterostructures.

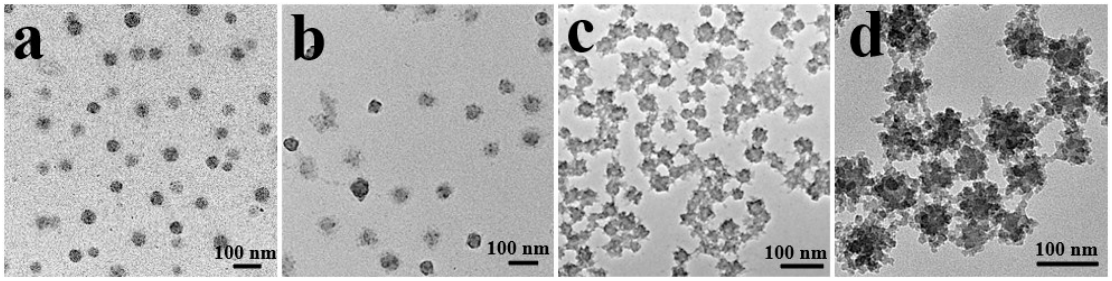

Fig. S6. A series of TEM images of PS_{38k}-*b*-$P4VP_{82k}$/SiO_2 heterostructures with varied SiO_2 layer thickness generated by addition different amount of TEOS precursor. (a) 1 μL; (b) 3 μL; (c) 4 μL; (d) 5 μL.