Electronic Supplementary Material (ESI) for Soft Matter.

Nanoparticle packing within block copolymer micelles prepared by the interfacial instability method

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Supplemental Information

Supplementary Figure 1

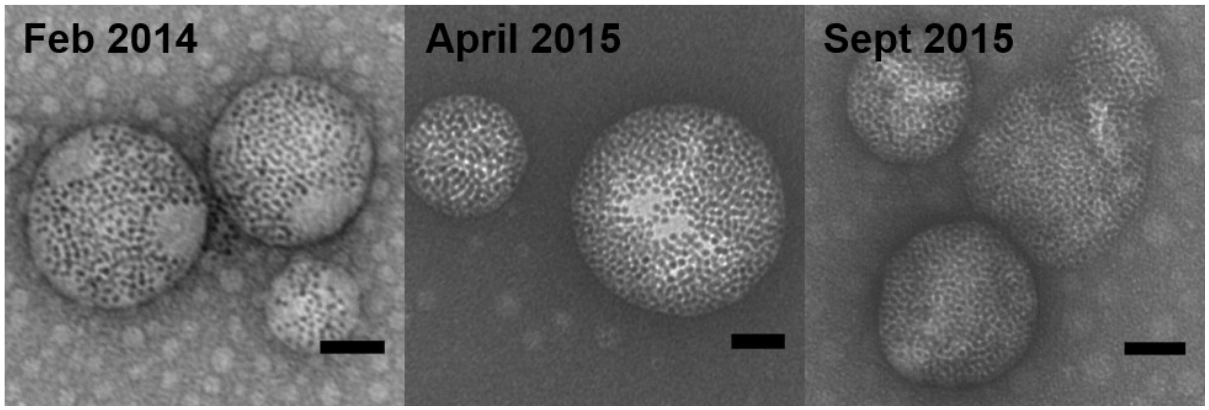

Figure S1: SPION:PS-b-PEO=1 samples synthesized with different lots of PS-b-PEO and SPIONs. Samples exhibited similar size distributions and NP packing characteristics despite being produced with different reagents at different times, indicating high process reproducibility.

Supplementary Figure 2

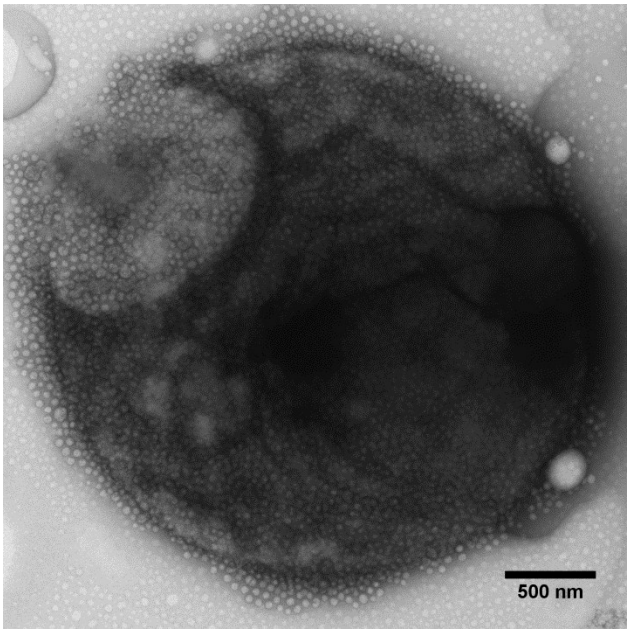

Figure S2: A typical TEM image for a QD:PS-b-PEO= 0.25 sample shows globules composed of large aggregates of micelles, indicating failed assembly.

Supplementary Figure 3

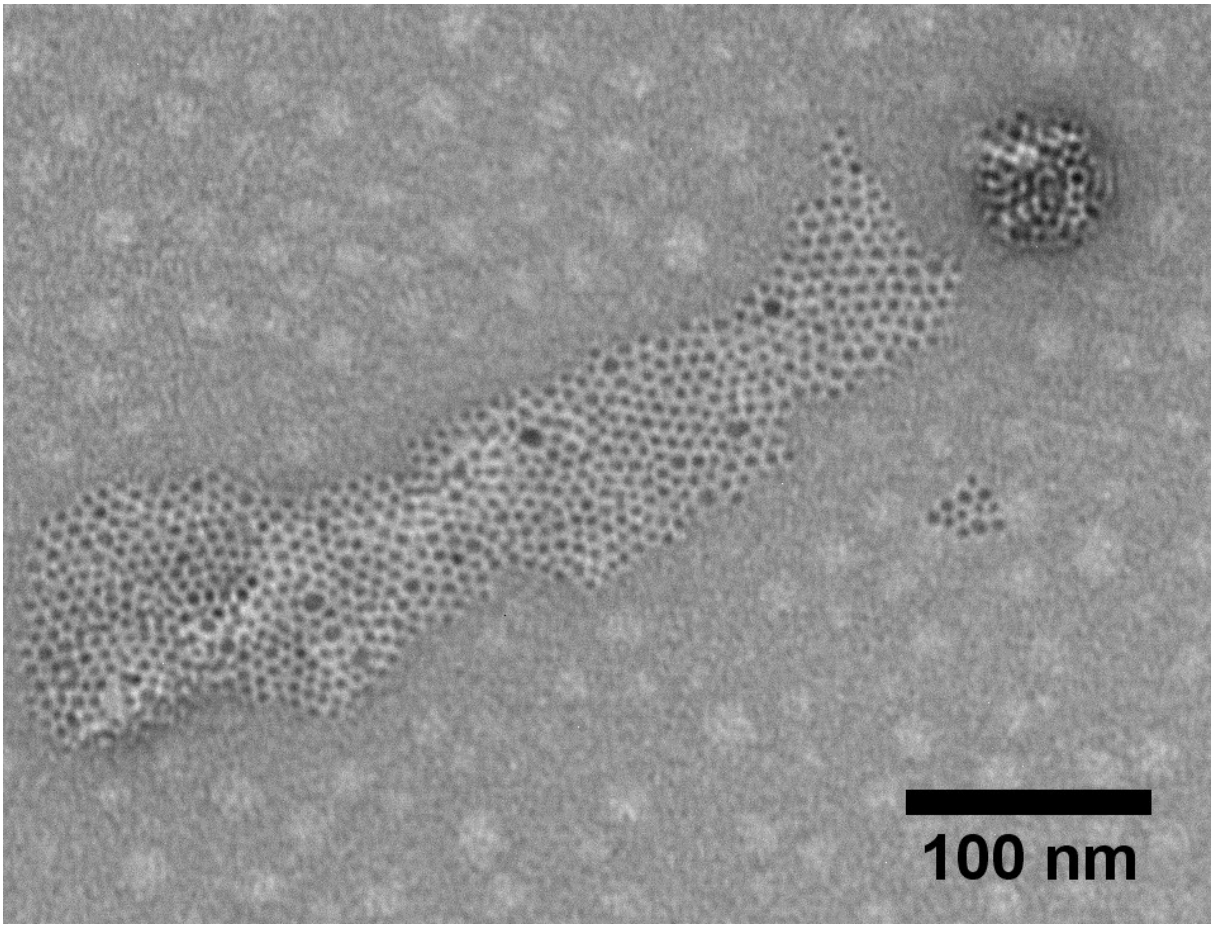

Figure S3: Dense SPION aggregates formed in the absence of PS-b-PEO (NPs and PVA present). The solution forms a mixture of densely packed spheres and rafts. Experiment was performed by mixing SPIONs (2.5 mg/mL in chloroform, 0.2 mL) with aqueous PVA (5 mg/mL, 3mL) in a bath sonicator. Gradual chloroform extraction and evaporation by diffusion through the PVA solution induced the formation of densely-packed, highly-ordered, structures.

Supplementary Figure 4:

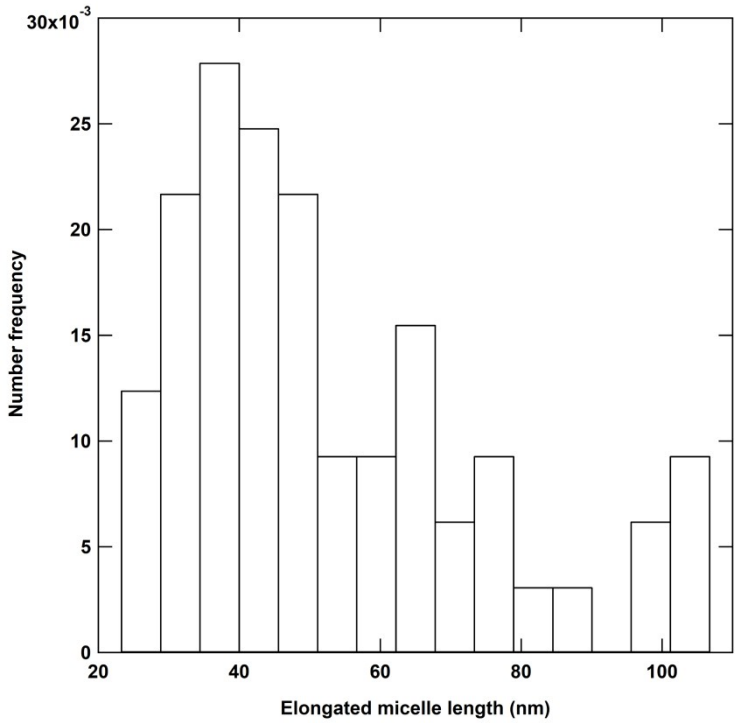

Figure S4: Length distribution of elongated micelles produced at SPION:PS-b-PEO= 0.1.

Supplementary Figure 5:

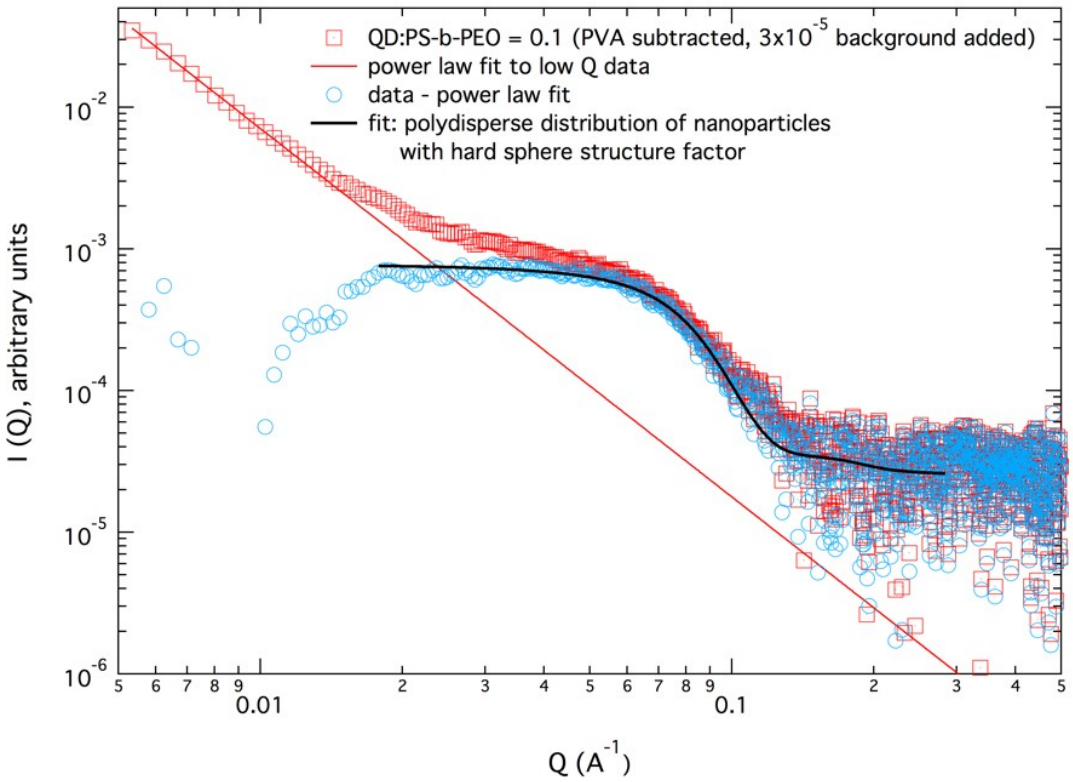

Figure S5: The SAXS spectra for the QD:PS-b-PEO = 0.1 sample can be decomposed into a power law function and scattering from a polydisperse distribution of nanoparticles with a hard sphere structure factor. For clarity, a small positive background ($3x10^{-5}$) has been added to the data and the error bars are not shown. Fit parameters are given in Table 3 of the main text.

Supplementary Figure 6:

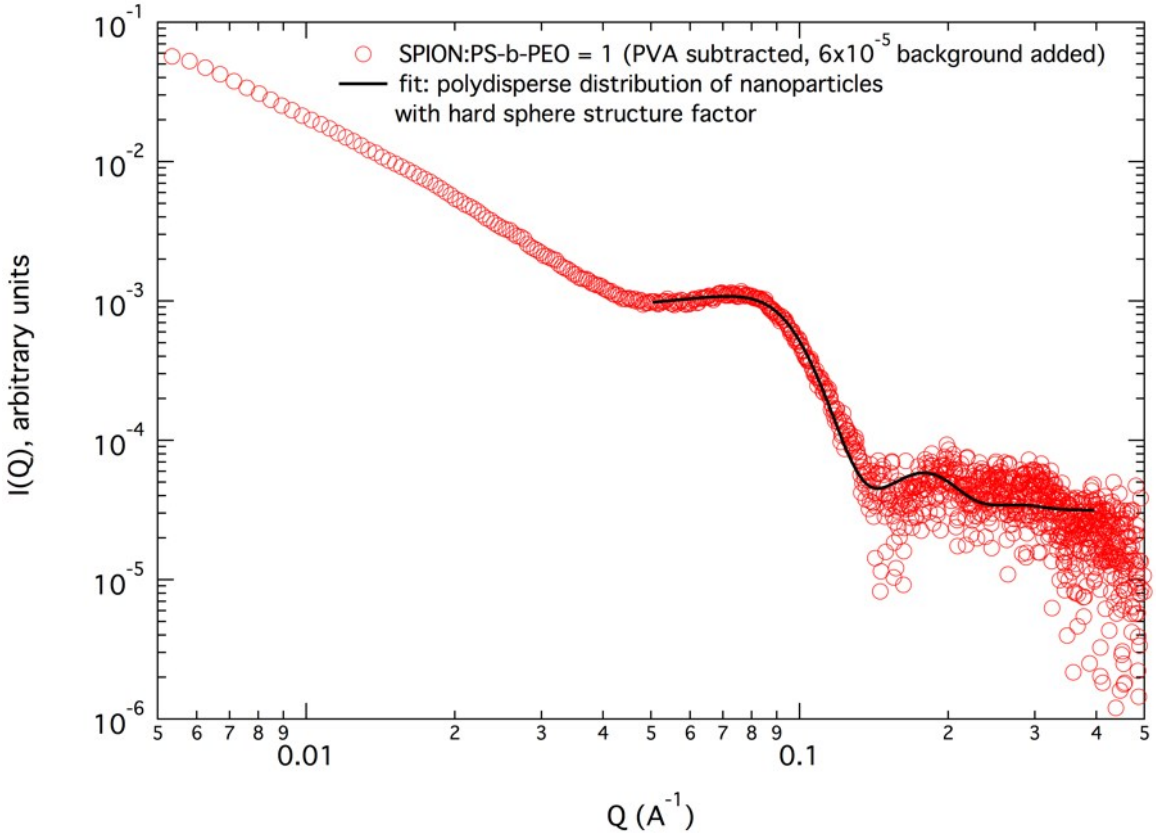

Figure S6: At higher Q, the SAXS spectra for the SPION:PS-b-PEO = 1 sample can be fit to scattering from a polydisperse distribution of nanoparticles with a hard sphere structure factor. For clarity, a small positive background ($6x10^{-5}$) has been added to the data and the error bars are not shown. The changing slope at low Q makes it difficult to completely decompose the signal as was done for the QDs in Figure S5, but at sufficiently high Q, scattering from the nanoparticles should dominate. Fit parameters are given in Table 3 of the main text.