Electronic Supplementary Material (ESI) for Soft Matter.

Supplementary Information: Structural Color from Solid-State Polymerization-Induced Phase Separation

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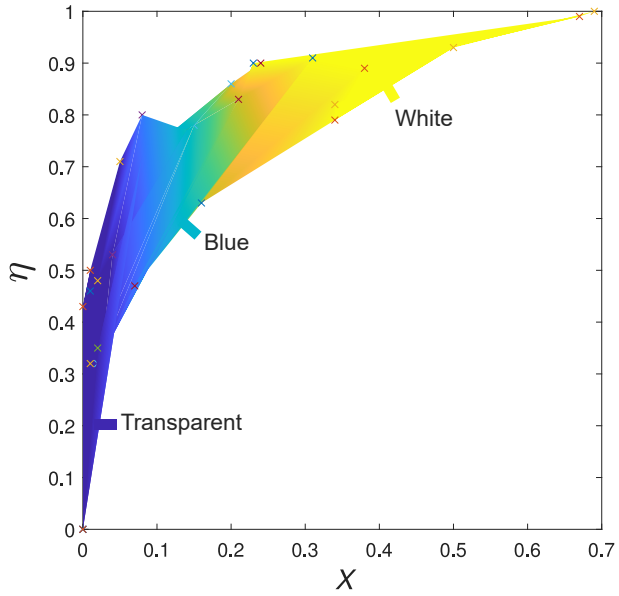

Figure S1: *Sample color as a function of PMMA fraction (X) and monomer conversion (η).* The colored area indicates the explored compositional space. Each 'x' indicates the composition of a sample. Regions corresponding to different colors are labelled.

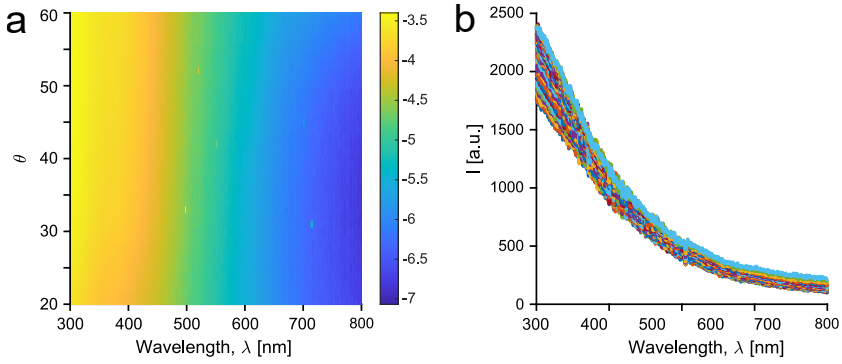

Figure S2: *Angle-independent color.* The color of the PS-PMMA composites is angle-independent. a) Logarithm of the intensity as a function of wavelength and detection angle, θ. As θ increases, the intensity of the spectra at specific wavelengths decreases slightly. On the right: color bar. b) The same spectra as a function of wavelength. The measured intensity is reported on the vertical axis. Each line corresponds to a different detection angle θ.

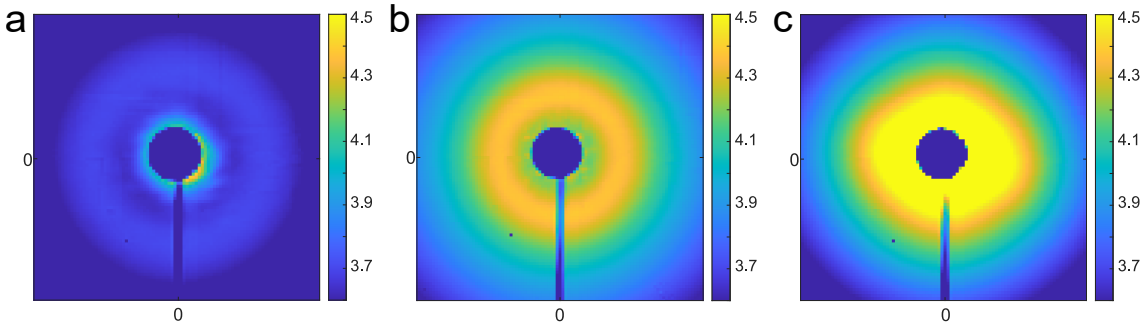

Figure S3: *SAXS patterns.* Complete small-angle X-ray scattering patterns for samples a) #1, b) #2, and c) #3. The dark feature in the middle is the beamstop. Each axis ranges from -0.05 to +0.05 nm^{-1}. On the right of each image: color bar.

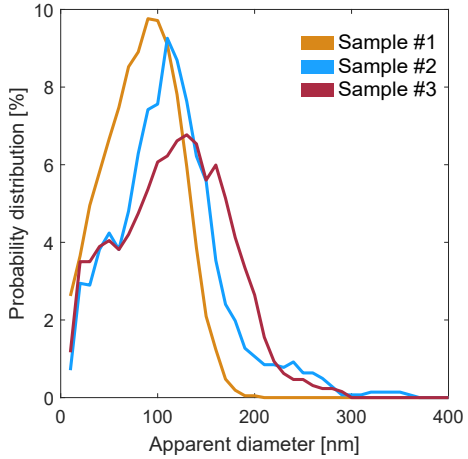

Figure S4: *Size distribution of PMMA inclusion.* Probability distributions of the diameters of PMMA inclusions calculated from the STEM images in Figure 4a for samples #1, #2 and #3. "Apparent" because the images section a 3D material along a 2D plane, and this affects the perceived size distribution of the spherical inclusions.