

## Effect of Flory–Huggins Interaction Parameter on Aspect Ratio of Block Copolymer Particle

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Systematic modulation of shape-anisotropy of block copolymer (BCP) particles into spheroids (prolate and oblate) have received great attention. Herein, we investigate the effect of Flory–Huggins interaction parameter ( $\chi$ ) on aspect ratio (AR) by introducing four different series of BCPs with varying  $\chi$  values. In this study, polystyrene-*b*-polybutadiene (PS-*b*-PB), polystyrene-*b*-polydimethylsiloxane (PS-*b*-PDMS), polystyrene-*b*-poly4-vinylpyridine (PS-*b*-P4VP), and polydimethylsiloxane-*b*-poly-4-vinylpyridine (PDMS-*b*-P4VP) with similar degree of polymerization ( $N$ ) were prepared for accurate comparison. Lamellae-forming BCPs with higher  $\chi$  assembled into ellipsoidal particles with more elongation. Similarly, cylinder-forming BCPs with higher  $\chi$  assembled into flatter convex lens-like particles. There is a difference in the tendency of AR depending on the shape of BCP particles, and it is supported by a theoretical model.