

## Fabrication of Block Copolymer Nanoparticles by Capillary Force Lithography

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Recently, the microphase separation of block copolymers has been developed in geometrical confinement. Depending on the size of the confining geometry relative to the characteristic length of the microphase, the distinctive and various morphologies have been observed in both experimental and theoretical studies. We report a new method for the preparation of block copolymer particles through a combination of block copolymer self-assembly and capillary force lithography (CFL) techniques. The internal morphology of the nanoparticles could be modulated by controlling the volume fractions of two chemical compounds, which was achieved simply by adding polystyrene homopolymer of relatively low molecular weight. By varying the amount of homopolymer, lamellae, perforated lamellae, cylindrical and spherical phases were formed in the nanoparticles depending on the weight fraction of PS in the block copolymer/hPS blends.