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Micelle Formation in Diblock Copolymer/Homopolymer Films

JIAJIA ZHOU, AN-CHANG SHI, McMaster University — Diblock copolymers blended with homopolymers may self-assemble into micelles. When the diblock copolymer/homopolymer blends are confined between two flat surfaces, the shape of the micelles may differ from the bulk micelles when the thickness of the film is compatible to the micelle size. A real-space self-consistent field theory is used to study the micelle formation in diblock copolymer/homopolymer films. This study focuses on the effects of film thickness and surface selectivity. The results reveal that the spherical symmetry is destroyed by the film geometry whereas the top-down symmetry is broken by the surface selectivity.

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