Abstract Submitted
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Block Copolymer Brushes[1] MARK MATSEN, University of Reading — Using self-consistent field theory (SCFT), we examine dry brushes of AB diblock copolymer, where the B ends are uniformly grafted to a planar substrate. Four different morphologies are predicted, which are conveniently described as the uniform, stripe, hexagonal, and inverted hexagonal phases on the basis of the patterned formed at the air surface by the A-rich domain. Phase diagrams are calculated for different grafting densities and for different A-segment surface affinities. In contrast to unanchored diblock-copolymer films, the brush system has a much greater tendency to form chemically-patterned surfaces.

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