

Abstract Submitted
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Directing morphology development in Triblock copolymers: A Self-Consistent Field Theory Study MOUGEH MOHAGHEGHI, BAMIN KHOMAMI, Mraíl — Using combinatorial screening method based on self-consistent-field theory for multicomponent polymers, we study ABC block copolymers melt confined between two parallel neutral walls separated by distance L in which the backbone consists of A and B and C is the graft. We analyze the behavior of the system as a function of film thickness. It is shown that confining walls can direct the assembly of thin films of block copolymers. Moreover, by judicious select of film thickness and the position of the graft point, a number of novel morphologies that have not been experimentally realized to date can be created. Overall, These results demonstrate a promising strategy for fabrication of complex nanostructure materials for a variety of important applications such as organic photovoltaic materials.

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