

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Thin Film morphologies of rod-coil block copolymers MANAS SHAH, VENKAT GANESAN, University of Texas at Austin — The interplay of microphase separation and liquid crystalline ordering in rod-coil block copolymers leads to complex morphologies distinct from that of conventional flexible block copolymer phases. For many electronic and semi-conducting applications, rod-coil block copolymers need to be patterned into thin films. The final morphology and the nature of orientation of rod units would now depend (in addition to the constituent interactions) on the interactions of the blocks with the confining surfaces. We combine the self-consistent field theory models of rod-coil block copolymers in a thin film framework to understand the effect of confinement on the morphology and the nature of orientation of rod-units.

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Date submitted: 27 Nov 2007

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