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Self-assembly of a diblock a copolymer melt absorbed in porous materials. PANAGIOTIS MANIADIS, Theoretical Division and Center for Nonlinear Studies, Los Alamos National Laboratory, Los Alamos, New Mexico 87545, IOANNIS TSIMPANOGIANNIS, Los Alamos National Laboratory, Los Alamos, New Mexico 87545, EDWARD KOBER, Theoretical Division, Los Alamos National Laboratory, Los Alamos, New Mexico 87545 — Self-consistent field theory is used to study the self-assembly of a diblock copolymer melt absorbed in a porous material. We find that self-assembly is affected when the characteristic length scales of the porous material are of the same order as the polymer ratio of gyration (Rg). When the porous size is much larger than Rg, then the polymer self-assembly is affected only locally close to the contact with the pore surface. Interesting new morphologies appear when the size of the pores and the distance between them is comparable to the diblock characteristic lengths. In this case the polymer structure changes according to the constrains from the porous. We will present results for two types of regular pores arrangement a) checkers board and b) staggered lattice.

Panagiotis Maniadis
Theoretical Division and Center for Nonlinear Studies,
Los Alamos National Laboratory, Los Alamos, New Mexico 87545

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