

Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Phase Behavior of SIS'O Tetrablock Terpolymers: A Self-consistent Field Theory Study AKASH ARORA, DAVID C. MORSE, FRANK S. BATES, KEVIN D. DORFMAN, Univ of Minn - Minneapolis — Block copolymers with three or more blocks show richer phase behavior than diblock copolymers. In this work, we use self-consistent field theory (SCFT) to study the phase behavior of *ABA'C* type tetrablock terpolymers. In particular, we are motivated by experimental studies on poly(styrene-*b*-isoprene-*b*-styrene-*b*-ethylene oxide) (SIS'O) that report interesting phases such as core-shell spheres and cylinders, the Frank-Kasper σ phase, and the dodecagonal quasicrystalline morphology. We compare SCFT predictions to experimental results for SIS'O copolymers using values of the Flory-Huggins interaction parameters that are estimated from analysis of literature data on related systems.

Akash Arora
Univ of Minn - Minneapolis

Date submitted: 06 Nov 2015

Electronic form version 1.4