

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Multicompartment micelles with block copolymer blending through kinetic control of solution assembly DARRIN Pochan, JIAHUA ZHU, University of Delaware, KE ZHANG, Washington University-St. Louis, KAREN WOOLEY, Texas A&M — By manipulating the interaction of charged poly(acrylic acid) (PAA) hydrophilic corona blocks with organic multiamines, and controlling the kinetic pathway of block copolymer solution assembly, multicompartment micelles were formed. Specifically, block copolymers with the same hydrophilic block PAA chemistry but different hydrophobic block chemistry were blended together and forced to reside within the same micelle particle. The hydrophobic core blocks phase separate into distinct domains within the micelle. Unlike core blocks were used to construct different sizes of compartments and also different shapes such as sphere-cylinder hybrid micelles. The kinetic control required to construct such blended micelles will be discussed. The system has been investigated by means of cryogenic transmission electron microscopy (cryo-TEM) and small angle neutron scattering (SANS).

Darrin Pochan
University of Delaware

Date submitted: 23 Nov 2009

Electronic form version 1.4