Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Soft Patchy Particles of Block Copolymers from Interface-Engineered Emulsions YONGJOO KM, KANG HEE KU, Korea Adv Inst of Sci Tech, GI-RA YI, Sungkyunkwan University, YEON SIK JUNG, BUMJOON J. KIM, Korea Adv Inst of Sci Tech — We report a simple and practical method for creating colloidal patchy particles with a variety of three-dimensional shapes *via* the evaporation-induced assembly of polystyrene-*b*-poly(4-vinylpyridine) (PS-*b*-P4VP) block copolymer (BCP) in an oil-in-water emulsion. Depending on the particle volume, a series of patchy particles in the shapes of snowmen, dumbbells, triangles, tetrahedra, and raspberry can be prepared, which are then precisely tuned by modulating the interfacial interaction at the particle/water interface using a mixture of two different surfactants. In this talk, theoretic calculations of free energy of the system based on the strong segregation theory(SST) will be mainly discussed to support the experimental observation of various soft patchy particles and identified the underlying principles of their formation with tunable 3D structures.

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Date submitted: 02 Nov 2015 Electronic form version 1.4