Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Hierarchical Self-assembly of Triblock Janus Spheres
QIAN CHEN, SUNG CHUL BAE, STEVE GRANICK, University of Illinois at Urbana-Champaign — We show how monodisperse triblock Janus spheres in aqueous suspension, whose poles are attractive and middle band repulsive, self-assemble into hierarchical supracolloidal structures, on two sequential levels. Based upon the delicate dependence of interactions on ionic strength, we first activate attraction between larger patches, obtaining finite-sized 3D clusters. These clusters, now concrete objects themselves, are triggered later to be linked through topologically determined orientations. A family of unprecedented, complex structures is produced, with order over multiple length scales.

Qian Chen
University of Illinois at Urbana-Champaign

Date submitted: 26 Nov 2011 Electronic form version 1.4