

Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Molecular-based polyhedral crystalline colloids MELINDA SINDORO, NOBUHIRO YANAI, STEVE GRANICK, University of Illinois at Urbana Champaign — We fabricate a new family of colloids with polyhedral morphology by controlled crystallization of metal ions and organic bridging ligands in the presence of capping reagents. The size and morphology of the crystalline colloids can be tuned by changing the ratio of the metal ions to the organic ligands and the amount of the capping reagents. Unlike spheres that isotropically interact along a curved surface, the polyhedral particles in suspension associate in a directional facet-to-facet fashion, forming clusters whose elemental units are orderly not only in interparticle distance but also mutual orientation. We also present unique supraparticle structures obtained by mixing different particles.

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Date submitted: 01 Nov 2011

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