

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Bulk and Thin film Properties of Nanoparticle-based Ionic Materials JASON FANG, MSE CORNELL UNIVERSITY, ITHACA, NY TEAM — Nanoparticle-based ionic materials (NIMS) offer exciting opportunities for research at the forefront of science and engineering. NIMS are hybrid particles comprised of a charged oligomeric corona attached to hard, inorganic nanoparticle cores. Because of their hybrid nature, physical properties –rheological, optical, electrical, thermal - of NIMS can be tailored over an unusually wide range by varying geometric and chemical characteristics of the core and canopy and thermodynamic variables such as temperature and volume fraction. On one end of the spectrum are materials with a high core content, which display properties similar to crystalline solids, stiff waxes, and gels. At the opposite extreme are systems that spontaneously form particle-based fluids characterized by transport properties remarkably similar to simple liquids. In this poster I will present our efforts to synthesize NIMS and discuss their bulk and surface properties. In particular I will discuss our work on preparing smart surfaces using NIMS.

Jason Fang

Date submitted: 04 Dec 2007

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