

Abstract Submitted
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Phase Equilibria in Nanoparticle Solutions CHRISTOPHER SORENSEN, HAO YAN, BRANDON LOHMAN, AMIT CHAKRABARTI, Kansas State University — Quasi-monodisperse nanoparticle suspensions can act as solutions. We have studied the thermally reversible precipitation/dissolution of ca. 5nm gold nanoparticles (NP) in various solvents. The NPs have a narrow size distribution. They are ligated with alkyl thiols: C8SH, C10SH and C12SH. The solubility depends on both the solvent and the ligand. Solvents used were the series of normal alkanes from hexane to hexadecane, simple aromatics and mixtures of these with 2-butanone. Concentration versus temperature yields enthalpies of dissolution which can be compared to superlattice cohesive energies.

Christopher Sorensen
Kansas State University

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