

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

**Modeling the Role of Ligands in Controlling the Sizes, Shapes
and Supramolecular Ordering of Quantum Dots** MICHAEL TAMBASCO,
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The density of electronic states controls many physical properties of a quantum dot and can be tuned by altering the dot's size, shape, or composition. In colloidal methods, ligands are used to control quantum dot size, shape, and polydispersity; however, there exists no a-priori means of describing specific conditions that will optimize the synthesis procedure. We apply a mean field theory to study the role of ligands in quantum dot synthesis with particular emphasis on non-spherical shapes. We examine the effects of ligand type and concentration on thermodynamic and structural properties, and compare our results with available data.

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Date submitted: 02 Dec 2006

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