



Semiconductor Nanocrystals

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An interactive module for graduate students

Semiconductor nanocrystals (NCs) provide an ideal test bed for experiments investigating quantum effects in confined systems. With recent advances in synthesis, characterization, and the emerging understanding of their size-, shape-, and composition-dependent properties, semiconductor nanocrystals have emerged as promising building blocks for a range of nanotechnology applications. In this module, we will provide an introduction to key concepts in the rapidly evolving field of semiconductor nanocrystal research. Spanning multiple length scales, major topics will include quantum confinement effects, synthesis and characterization of structural and electronic properties, and assembly into ordered superstructures and the application of nanocrystals in prototype devices.

Lectures 3:00–4:30 pm in Clark 609

All interested students welcome

Tuesday, November 10

**Semiconductor NCs as *artificial atoms*:
Fundamental quantum confinement
effects and synthesis of test structures**

Tuesday, November 17

**Characterization of NC optical and
electronic properties**

Thursday, November 12

**Characterization of NC structure,
composition & surface chemistry**

Thursday, November 19

**NC applications and ordered NC
assemblies as *artificial solids***

For more information on the IGERT Fellowship program, see <http://www.ccmr.cornell.edu/igert/>

