

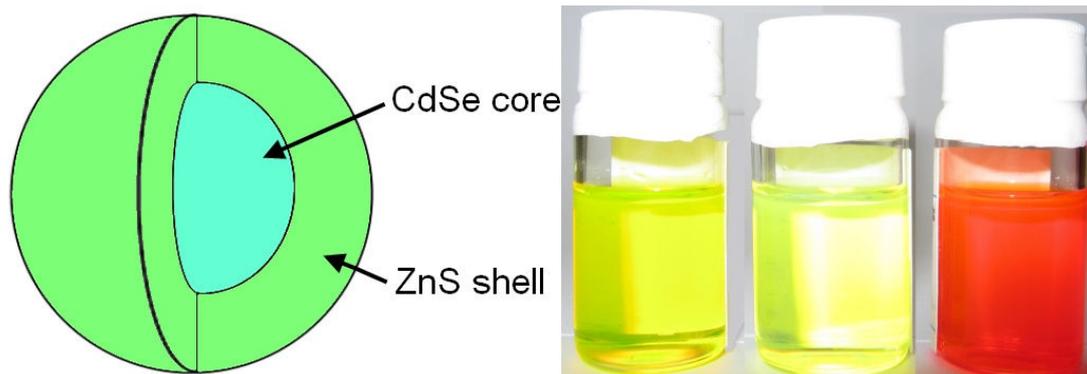
## Quantum dots summary report

### Potential applications:

Uses for quantum dots include transistors, solar cells, LEDs, and diode lasers.

### Properties:

Three samples of CdSe/ZnS core-shell quantum dots were provided for study. All of the samples, which were produced by Evident Technologies, were suspended in toluene and handled under standard conditions.



**Quantum dot structure and samples in toluene (Left to right: Lake Placid Blue, Catskill Green, Fort Orange)**

Absorption and emission wavelengths were measured for each sample, followed by emission lifetimes. This information is important when deciding the suitability of the quantum dot for a particular application, e.g. does it absorb visible light? How long does it take to decay and re-emit energy absorbed?

**Characterisation of quantum dot samples**

Quantum dot	Lake Placid Blue	Catskill Green	Fort Orange
<b>Absorption peak (nm)</b>	461	514	506
<b>Emission peak (nm)</b>	486	538	613
<b>Emission lifetime (ns)</b>	20.21	26.1	19.63
<b>Approximate crystal diameter (nm)</b>	1.9	2.4	4

Note: crystal diameter supplied by manufacturer: Quantum Dot Nanomaterials for Research Specification Sheet, Evident Technologies, Inc., 2006