

The Nobel Prize in Chemistry - 2023

The 2023 Nobel Prize in Chemistry was awarded jointly to Moungi Bawendi, Louis Brus, and Aleksey Yekimov for the discovery and development of quantum dots. These are nanoparticle semiconductors that have useful optical properties.

You can get a basic understanding of quantum dots using the simple particle-in-a-box model from undergraduate quantum mechanics. The gap between electronic energy levels in a quantum dot depends on the size of the particle, as is familiar from that model. They find widespread application in solar cells, LEDs, and optical displays, among other things.



Left: quantum dots in a range of sizes, showing different emission energies. **Right:** Moungi Bawendi, Louis Brus, and Aleksey Yekimov..

