

Physico-chemical nanomaterials science

Energy levels and optical properties of CdSe spherical quantum dots

N. Bouarissa

*Laboratory of Materials Physics and Its Applications, University of M'sila, 28000 M'sila, Algeria
E-mail: n_bouarissa@yahoo.fr*

The present contribution reports on the energy levels, band gaps, refractive index and dielectric constants of CdSe spherical quantum dots. The dependence of the studied properties on the quantum dot radius is examined and discussed. The calculations are performed using a pseudopotential approach. Our findings showed that the nanostructured direct band gap is opened relative to the bulk one. The opposite is seen for the optical parameters which are reduced when moving from bulk to nanostructured CdSe. This has been attributed to the quantum confinement effect.