

ABSORPTION AND SCATTERING OF LIGHT IN SEMICONDUCTOR QUANTUM DOTS

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S u m m a r y

A theory of the interaction of an electromagnetic field with single-particle states of the charge carriers arising in the bulk of a semiconductor quantum dot is developed in the framework of the dipole approximation. It is shown that the oscillator strength of the transition, the transition dipole moments for single-particle states, and the light absorption cross-section in quantum dots have large values greater than the typical corresponding values for semiconductor materials.