عنوان مقاله:

Study the effects of electric field and impurities on linear and nonlinear optical properties of spherical quantum dots GaAs/ALGaAs

محل انتشار:

یازدهمین کنفرانس بین المللی علوم و توسعه فناوری نانو (سال: 1402)

تعداد صفحات اصل مقاله: 12

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خلاصه مقاله:

Electro-optical properties of semiconductor nanostructures depends on their dimensions and geometric scheme, the semiconductor GaAs / AlGaAs is of critical importance In the manufacture of infrared detectors and optical sensors because the two constituents have a network constant close to each other. The nano-structure includes a potential well in the center and two spherical impurity shells. This electro-optical properties of nanostructured affected by changes in dimensions, density impurity, the width of the potential well, and the external field is applied. Our method for assessing the changes introduced by the Schrödinger equation based on single electron effective mass approximation and also is based on matrix theory and calculation of the density matrix elements of dipole transitions between the ground state and the first excited state. And finally we can calculate the optical susceptibility and linear absorption coefficients and changes in refractive indices.

کلمات کلیدی:

"Quantum dot "nonlinear optical" effects of electic field and impuritie."

لینک ثابت مقاله در پایگاه سیویلیکا: