Eigenvalue Calculations For Quantum Dots System By Density Functional Theory Using Local Density Approximation.

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ABSTRACT

Eigenvalue of quantum dots system contains 2, 4, 6, 8, 10, 12, 14, 16, 18, 20 electrons is calculated by direct direct constrain minimization (DCM) and self consistent field (SCF) algorithm which based on density functional theory used local density approximation. The results show that DCM methods deliver total energy lower than SCF methods. So, DCM method is effective to minimize Kohn Sham total energy which principle to calculate ground state energy from quantum dots systems. Charge density profile represented after calculation by DCM, which describe energy at ground state and probability to find electron at that state.

Keyword: quantum dots, DCM, SCF, density functional theory, local density approximation, KSSOLV