STUDY OF AN ACCEPTOR IMPURITY LOCATED AT THE CENTER OF A SPHERICAL NANOHETEROSTRUCTURE

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S u m m a r y

Using the spherical 4×4 Hamiltonian, the discrete states of a hydrogenic acceptor impurity in a spherical GaSb/AlSb nanoheterostructure with various quantum-dot sizes are determined. The energies obtained are compared with those calculated without consideration of the complex structure of the valence band. The calculations are carried out for both finite and infinite potentials at the heterostructure interface. The selection rules are found for intraband optical transitions between hole levels. The average distances and the transition probabilities for holes are determined as functions of the quantum-dot sizes.