

STATIONARY AND QUASISTATIONARY STATES
OF HYDROGENIC IMPURITY IN A SPHERICAL
QUANTUM ANTIDOT

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S u m m a r y

Discrete states of a hydrogenic impurity have been calculated for CdS/ β -HgS spherical nanoheterostructures with various radii of a quantum antidot. The calculations are based on the exact solutions of the Poisson and Schrödinger equations and are carried out in the framework of the effective mass approximation. The dependence of discrete energy levels on the potential barrier height has been examined. The average value of electron distance in the structure concerned has been found and analyzed. The quasistationary states of the impurity have been studied, which allowed the quasistationary energy levels and the mean lifetime of an electron in those states to be determined.