THE ELECTRON ENERGY SPECTRUM IN AN ELLIPSOIDAL QUANTUM DOT WITH REGARD FOR FINITE BAND GAP AT THE INTERFACE

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S u m m a r y

We have developed the theory of the energy spectrum of a charge with regard for a real band gap for an ellipsoidal quantum dot (QD) with arbitrary oblateness. The dependence of the energy of bound states of a particle on both the volume of a QD and a degree of anisotropy of its shape is obtained. It is shown that the increase of the anisotropy of a QD results in a decrease of the ground-state energy of a particle, which is not observed in the model of infinite potential well. In addition, the growth of anisotropy causes the appearance of the first excited state in a nanocrystal.