

Electron energy spectrum in 2D quantum dot

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Semiconductor quantum dots introduced into the photoelectric material are currently a very important and effective way to increase the efficiency of photoelectric devices and photovoltaic cells. This is related to the appearance of additional energy levels in the system, and it expands the range of absorption frequencies toward the infrared. This work contains the theory and numerical calculation of energy levels in quantum dots in perovskite solids. The model of the structure includes a semiconductor quantum dot shaped in nanodisk which is surrounded by another semiconductor. The calculations of the energy levels as functions of the dot radius and various types of semiconductor materials are performed.