SIZE QUANTIZATION STARK'S EFFECT IN SEMICONDUCTOR QUANTUM DOTS

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S u m m a r y

A theory of the size quantization Stark's effect in a semiconductor nanocrystal is developed under conditions when the polarization interaction of an electron and a hole with the surface of a nanocrystal is importance. It is established that shifts of size quantization levels of an electron and a hole in the nanocrystal in the external homogeneous electric field in the region of interzone absorption are determined by the size quantization square Stark's effect. A new electric optical method, defining values of the critical radii of nanocrystals, where bulk excitons can arise, is developed.