

ENERGY SPECTRUM OF AN ELECTRON WITH  
PHONON REPLICAS IN A FLAT SEMICONDUCTOR  
NANOHETEROSTRUCTURE  
WITH QUANTUM WELL

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S u m m a r y

We investigated the renormalization of the energy spectrum of an electron in a flat semiconductor nanoheterostructure with a rectangular quantum well of finite depth due to its interaction with optical polarization phonons. The analytical form of the mass operator with regard for two-phonon processes of the electron-phonon interaction at  $T = 0$  K is obtained in the framework of the Green function method. The corrections to the main-band bottom energy of an electron and positions of the first phonon replicas induced by its interaction with confined, half-space, and interface phonons are calculated.