A Polaron in a Quantum Dot Quantum Well

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Abstract: The polaron effect in a quantum dot quantum well (QDQW) system is investigated by using the perturbation method. Both the bound electron states outside and inside the shell well are taken into account . Numerical calculation on the CdS/HgS QDQW shows that the phonon correction to the electron ground state energy is quite significant and cannot be neglected.

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