Erratum: Electron optical-phonon coupling in GaAs/Al$_x$Ga$_{1-x}$As quantum wells due to interface, slab, and half-space modes [Phys. Rev. B 48, 4666 (1993)]

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In Eqs. (30), (31), (41), (42), (47) and (48) the following error appeared: $1/\sqrt{E_z}$ in the integrands of these equations should be replaced by $1/\sqrt{E_z - V_0}$. As a consequence, the numerical results presented in Figs. 1(b), 2(b), 3(b), 4(b), 5, and 6 should be replaced by the following figures. This error does not affect the validity of the discussion in the paper nor the numerical results for the limits of zero and infinite width of the quantum well.

We thank Professor M. Smondyrev for drawing our attention to the error in our paper.
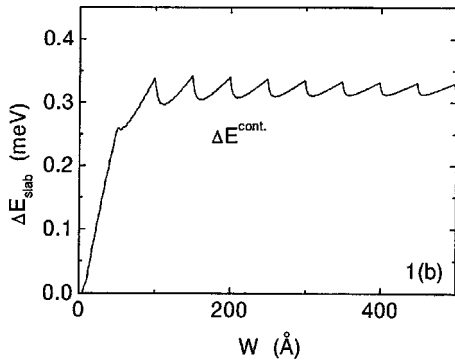

FIG. 1. The confined slab phonon mode contribution to the polaron binding energy from (a) the discrete levels in the well, and (b) the continuum states above the barrier for a GaAs/Al$_{0.3}$Ga$_{0.7}$As quantum well structure. The arrows indicate the position at which a new discrete level appears. The number n gives the number of discrete levels in the quantum well.
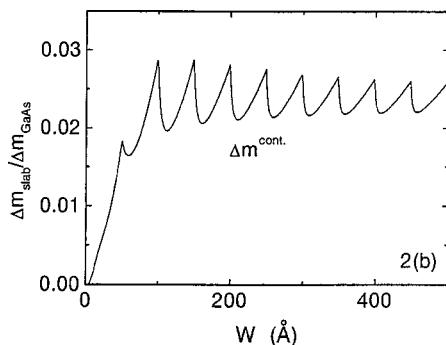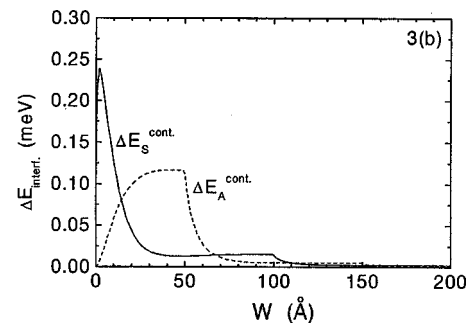

FIG. 3. The interface phonon mode contribution to the polaron energy from (a) the discrete levels in the well, and (b) the continuum states above the barrier in a GaAs/Al$_{0.3}$Ga$_{0.7}$As quantum well structure. The solid and dashed curves in (b) indicate the contribution from the symmetric ($\Delta E_S^{\rm cont}$) and the antisymmetric ($\Delta E_A^{\rm cont}$) phonon modes, respectively.

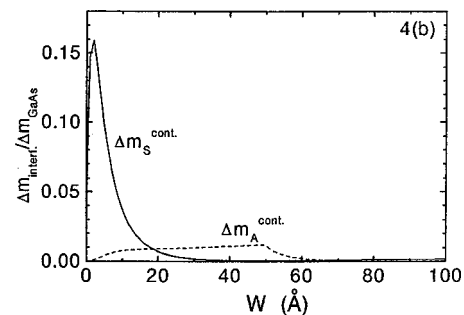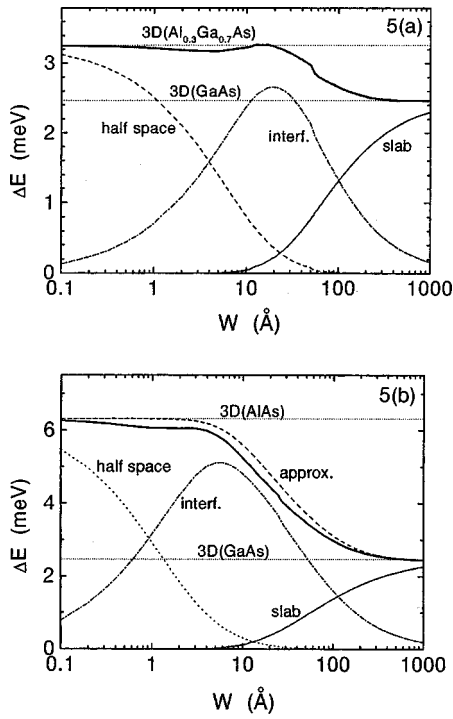FIG. 2. The same as Fig. 1 but for the polaron effective mass.

FIG. 4. The same as Fig. 3 but for the polaron effective mass.

FIG. 5. The polaron binding energy as a function of the well width for (a) GaAs/Al$_{0.3}$Ga$_{0.7}$As and (b) GaAs/AlAs quantum-well structures. The thin-solid, dot-dashed, and dotted curves indicate the contribution from the slab, interface, and half-space modes, respectively. The thick-solid curves give the total polaron binding energy. The thin-dashed curve in (b) is the approximate results as given in Ref. 9.
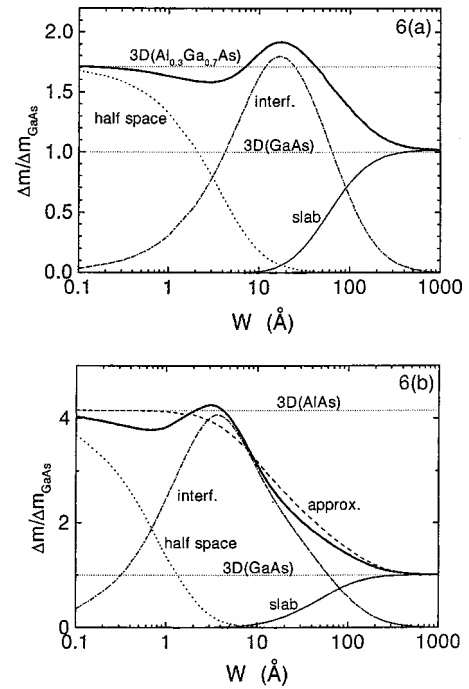
FIG. 6. The same as Fig. 5 but for the polaron effective mass.