Errata

Erratum: Electron-hole droplets and impurity band states in heavily doped Si(P): Photoluminescence experiments and theory [Phys. Rev. B 14, 1633 (1976)]

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The results of the calculations presented as the solid lines in Figs. 2 and 3 in Sec. II are incorrect as a result of a programming error carried over from the calculations in Ref. 10. After the computer programs have been corrected we no longer find a minimum in $\overline{E}(n_d, n_h)$ as a function of hole concentration for impurity concentrations above 3×10^{17} cm^3. The impurity energy E_{imp} plays an important role in destabilizing the EHD. If this contribution to the energy is supressed we do get a minimum in $\overline{E}(n_d, n_h)$ for conduction-electron densities up to a value close to the density for which the semiconductor-to-metal transition occurs (3×10^{18}). The calculation using a phenomenological value for $E(n_d, 0)/n_h$ (chained curve in Fig. 2, dashed curve in Fig. 3) was numerically correct. We feel that for reasons explained in Sec. IIC this calculation probably represents a better model for the EHD below n_{crit} and that therefore the existence of the EHD below n_{crit} can be understood qualitatively in spite of the lack of a first-principles theory. Above n_{crit} we do not at present have any theoretical model for the EHD. We are currently attempting to make improved estimates of the different contributions to the energy and also critically reexamining the experimental data to see if they allow for an alternative explanation. We are grateful to G. Kirczenow for help with the numerical work.

Erratum: Surface contribution to the low-temperature specific heat of a hexagonal crystal [Phys. Rev. B 14, 2200 (1976)]

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Equation (4.33) should read

$$u^2F(u) = \frac{-\rho}{2(c_{11}-c_{12})} - \frac{\rho}{4(c_{11}c_{33}/c_{13}-c_{13})}\,\frac{R-P}{\Delta} + O\left(\frac{1}{u^2}\right) .$$

Equation (4.35) should read

$$P = 6\left(1-\frac{c_{11}}{c_{13}}\right) - 2\frac{c_{13}}{c_{33}} - \frac{c_{11}c_{33}}{c_{44}c_{13}}\left(1+\frac{c_{11}}{c_{44}}\right) + 2\left[\frac{c_{11}}{c_{44}} + \frac{c_{13}}{c_{33}}\left(\frac{c_{13}}{c_{11}} - \frac{c_{13}}{c_{44}}\right)\right] + \frac{c_{13}}{c_{44}}\left[2\frac{c_{11}}{c_{44}} + \frac{c_{13}}{c_{33}}\left(\frac{c_{13}}{c_{11}} - \frac{c_{13}}{c_{44}}\right)\right] .$$

Equation (4.37) should read

$$\Omega(y) = -\frac{S}{2\pi}\left(\frac{\rho}{2(c_{11}-c_{12})} + \frac{\rho}{4(c_{11}c_{33}/c_{13}-c_{13})}\,\frac{R-P}{\Delta}\right)\ln|y| + o(\ln|y|) .$$

Equation (4.38) should read

$$\Delta C_v(T) = 6\pi\frac{k_B^3}{h^2}\zeta(3)\left(\frac{\rho}{c_{11}-c_{12}} + \frac{\rho}{2(c_{11}c_{33}/c_{13}-c_{13})}\,\frac{R-P}{\Delta}\right)ST^2 + o(T^2) .$$