

## Errata for *Introduction to Solid State Physics* by Charles Kittel, 8<sup>th</sup> Edition

Compiled (and largely discovered) by Dr. John S. Colton. Most recent update, Sep 2021

- pg ix, Chapter 5 title. It should read “Phonons II”, not “Phonons 11”.
- pg 12, Figure 14 caption. One of the (100)’s should be  $(\bar{1}00)$ .
- pg 30, Figure 6. The phase factor under the outgoing beam should be  $e^{i\mathbf{k}'\cdot\mathbf{r}}$ . (The prime is missing on  $\mathbf{k}$ .)
- pg 36, the text between Eq (30) and Eq (31). “We have, using (28)” should be “We have, using (29)”.
- pg 42, Eq (50). The last equals sign should be deleted;  $\frac{\sin Gr}{Gr}$  is part of the integrand.
- pg 58, Figure 6. In the 7th edition, the vertical axis was labeled  $U(R)/4\epsilon$  and the minimum value was -0.25, which is correct. In the 8th edition, they changed the axis label to  $U(R)/\epsilon$  (which would make the minimum value -1.0), but forgot to actually multiply the curve by a factor of 4. Therefore the y-axis label should be  $U(R)/4\epsilon$ .
- pg 61, Figure 8, lower right corner. Change “Cohesive energy” to “Lattice energy”.
- pg 62, Eq (17). A prime is used on the summation without explanation. Where he says “where the summation includes all ions except  $j = i$ ” a better way of putting it would be, “where the prime on the summation indicates that the summation includes all ions except  $j = i$ ”.
- pg 73, Line 5. Change “ $a = 4.16 \text{ \AA}$ ” to “ $a = 5.88 \text{ \AA}$ ”. (Note: I haven’t verified this one. A student of mine found it on someone else’s list.)
- pg 80, Eq (51). The left-most variable should be  $C_{44}$ , not  $C_{14}$ .
- pg 98, Eq (21). The upper right matrix entry should be  $-C(1 + e^{-ika})$ ; the minus sign is missing in the exponent.
- pg 104, equation in the middle of problem 7. The minus sign printed between  $\omega^2/\omega_0^2$  and the  $\sin^2$  term should be an equals sign; also, below the summation sign, “ $p - 1$ ” should be  $p = 1$ .
- pg 128, Problem 5-1, Singularity in density of states. In the last sentence, change the word “discontinuous” to “continuous, but has a kink.”
- pg 142, Eq (24a). The closing bracket in the denominator should follow the T, not the 1:  $.../k_B T] + 1$
- pg 205, Eq (37). It should be density of states per volume, not just density of states.
- pg 206, Eq (42). The integral should go from  $-\infty$  to  $E_v$ , not to  $E_c$ , and should have  $(E_v - \mu)$  in the exponential, not  $(E_c - \mu)$ .
- pg 213, Eq (53). The leading part should be  $\left(\frac{n_0 N_d}{2}\right)^{1/2}$  rather than  $(n_0 N_d)^{1/2}$ .
- pg 258, Chapter 10 table of contents. The Appendices’ page numbers should be H: 665; I: 667; J: 671.
- pg 514, Problem 17-3. Part (a) should read  $\mathcal{D}(E) = m/\pi\hbar^2$  instead of  $m/\pi h^2$ .
- pg 648, Appendix C Eq (1). The summation should go from 1 to N, not 1 to n.
- pg 649, Appendix C Eq (7). The second summation should be over  $s$ , not over  $x$ .