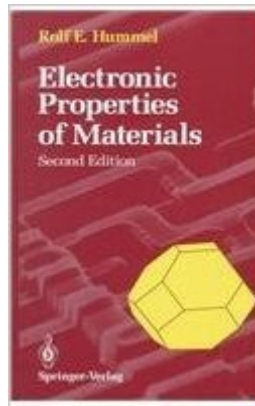


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Electronic Properties Of Materials



Synopsis

A book on electrical, optical, magnetic, and thermal properties of materials is in many aspects different from other introductory texts in solid state physics. DLC: Solid state physics.

Book Information

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Customer Reviews

It is amazing to me that after four editions, this book is still full of amazingly serious technical errors. The book reflects an extremely poor understanding of physics and quantum mechanics. The equation $p=mc$, for example (p. 8), uses a classical (NOT relativistic) momentum formula for a particle traveling at the speed of light and then implies that an electron can do this in the utterly nonsensical "derivation" of the de Broglie relationship (even given as Problem 2.7!!!). The book falsely implies the high-school level concept that all waves have a linear dispersion relationship (e.g., Eq. 2.4) when many including electron waves do not, gives a solution to the Schrodinger equation (Eq. 2.7) that is obviously NOT a mathematical solution of this equation (such solutions HAVE to contain the imaginary number "i" as that number appears in the equation itself), has an abnormal sign throughout the book in the time-dependent Schrodinger equation, incorrectly states the direction of propagation of waves (Eq. 4.5), gives a completely incorrect form of an evanescent wave inside a barrier (equation below 4.39 and Fig. 4.7) that falsely implies that such a wave oscillates in space when in fact it decays monotonically, incorrectly states that $\psi \cdot \psi(\text{conjugate})$ can not be greater than one (p. 26) when only the integral of that quantity over all x cannot be

greater than one, states that GaAs is doped by excess Ga or As on p. 119 (known to be untrue since the 1970's!), makes a completely false statement that energy levels are "narrow" in quantum wells (p. 278) when the energy including in-plane motion is actually a continuum in this case starting at the lowest quantized level, and on and on and on.

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