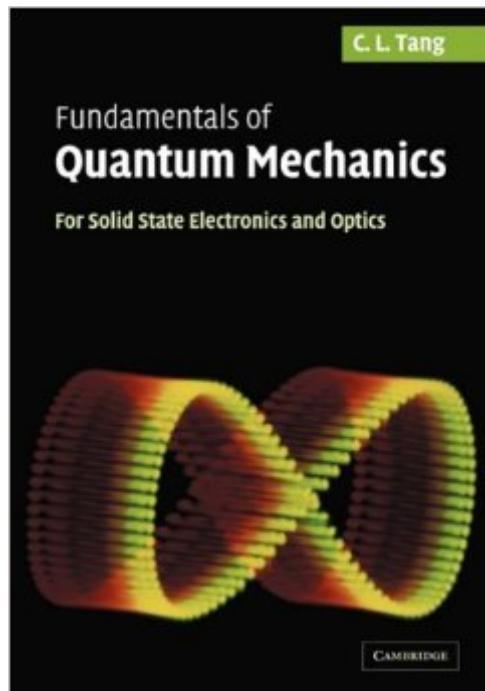


The book was found

Fundamentals Of Quantum Mechanics: For Solid State Electronics And Optics



Synopsis

Quantum mechanics has evolved from a subject of study in pure physics to one with a wide range of applications in many diverse fields. The basic concepts of quantum mechanics are explained in this book in a concise and easy-to-read manner, leading toward applications in solid-state electronics and optics. Following a logical sequence, the book focuses on key ideas and is conceptually and mathematically self-contained. The fundamental principles of quantum mechanics are illustrated by showing their application to systems such as the hydrogen atom, multi-electron ions and atoms, the formation of simple organic molecules and crystalline solids of practical importance. It leads on from these basic concepts to discuss some of the most significant applications in semiconductor electronics and optics. Containing many homework problems, the book is suitable for senior-level undergraduate and graduate-level students in electrical engineering, material sciences, applied physics and chemistry.

Book Information

Paperback: 224 pages

Publisher: Cambridge University Press; 1 edition (March 5, 2009)

Language: English

ISBN-10: 0521536405

ISBN-13: 978-0521536400

Product Dimensions: 6.7 x 0.5 x 9.6 inches

Shipping Weight: 1 pounds (View shipping rates and policies)

Average Customer Review: 3.7 out of 5 starsÂ See all reviewsÂ (3 customer reviews)

Best Sellers Rank: #4,356,205 in Books (See Top 100 in Books) #100 in Books > Engineering & Transportation > Engineering > Electrical & Electronics > Electronics > Solid State #331 in Books > Engineering & Transportation > Engineering > Electrical & Electronics > Electronics > Optoelectronics #2289 in Books > Science & Math > Physics > Optics

Customer Reviews

This slim and affordable book gives a gentle introduction to quantum mechanics, then applies these concepts and tools to examine the fundamental electronic properties of atoms and molecules, including their interaction with photons. It concludes with an analysis of the electronic properties of semiconductors and the pn junction, and the nonlinear response of optical materials to intense light. Rather than presenting a reiteration of its historical development to motivate the introduction of QM, the author takes the direct approach of showing why Newtonian mechanics cannot be applied

to analyzing the dynamics of particles on an atomic scale. In early chapters the author makes a systematic comparison of how the motion of particles is described in QM and in classical mechanics so that the reader unfamiliar with QM can make the necessary conceptual leaps from familiar ground. Periodically the book presents both the classical and quantum views of a particular problem to show the more detailed and subtle effects predicted by quantum mechanics. I found presentation of the material was logical and with just enough depth to get a basic understanding of semiconductor and opto-electronic material properties. Although it is succinctly reviewed in the early chapters, a prior familiarity with the concepts of linear algebra will make for easier going in some sections.

I purchased this book as a student hoping to learn more about Quantum Mechanics. Unfortunately, I was more confused about Quantum before I read this book than afterwards. It contains a number of typos, especially in equations, that are easy to spot with prior knowledge on the subject but will confuse the new reader. The writing is very dense, and can be difficult to understand. A strong understanding of linear algebra is also a requirement for understanding this book. This isn't a terrible book, but I won't recommend it and have found better resources simply by searching google for "quantum mechanics."

I got the book in a damaged condition. But the seller was very good in accepting the mishap and responded in a very positive manner.

[Download to continue reading...](#)

Fundamentals of Quantum Mechanics: For Solid State Electronics and Optics
Mosfet Modeling for VLSI Simulation: Theory And Practice (International Series on Advances in Solid State Electronics)
(International Series on Advances in Solid State Electronics and Technology) The Physics And Modeling of Mosfets (International Series on Advances in Solid State Electronics) (International Series on Advances in Solid State Electronics and Technology (Unnumbered)) Handbook of Optics, Third Edition Volume V: Atmospheric Optics, Modulators, Fiber Optics, X-Ray and Neutron Optics
Handbook of Optics, Third Edition Volume IV: Optical Properties of Materials, Nonlinear Optics, Quantum Optics (set) Fiber Optics and Optoelectronics (Prentice Hall Series in Solid State Physical Electronics) Photonics Rules of Thumb: Optics, Electro-Optics, Fiber Optics, and Lasers (Optical and Electro-Optical Engineering Series) Photonics Rules of Thumb: Optics, Electro-Optics, Fiber Optics and Lasers Towards Solid-State Quantum Repeaters: Ultrafast, Coherent Optical Control and Spin-Photon Entanglement in Charged InAs Quantum Dots (Springer Theses) Fundamentals of

Physics II: Electromagnetism, Optics, and Quantum Mechanics: 2 (The Open Yale Courses Series) Fundamentals of Network Analysis and Synthesis (Prentice-Hall electrical engineering series. Solid state physical electronics series. Prentice-Hall networks series) Fundamentals of Solid-State Electronics: Solution Manual Fundamentals of Solid State Electronics Logic Non-Volatile Memory: The NVM Solutions from eMemory (International Series on Advances in Solid State Electronics and Technology) Basic Solid State Electronics: The Configuration and Management of Information Systems (5 Volume Set) Waves and Fields in Optoelectronics (Prentice-Hall series in solid state physical electronics) Logic Non-Volatile Memory : The NVM Solutions from eMemory (International Series on Advances in Solid State Electronics) Basic Solid-State Electronics, Complete Course (5 Vols. in 1) Optical Processes in Semiconductors (Prentice-Hall electrical engineering series. Solid state physical electronics series) Solid-State Electronics

[Dmca](#)