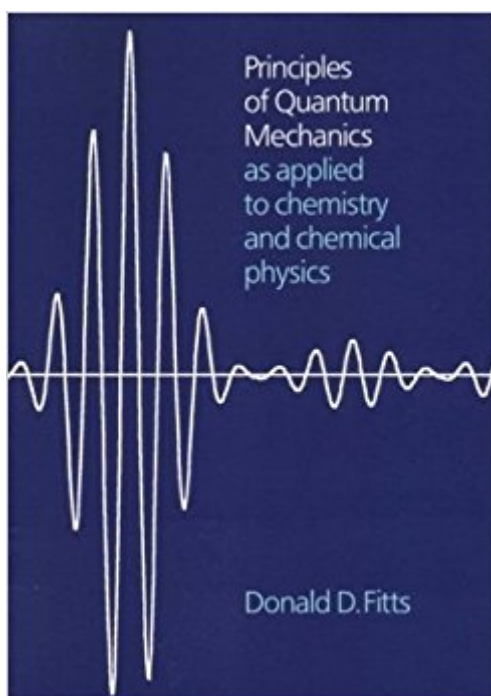


The book was found

# Principles Of Quantum Mechanics: As Applied To Chemistry And Chemical Physics



## Synopsis

Quantum behavior encompasses a large fraction of modern science and technology, including the laws of chemistry and the properties of crystals, semiconductors, and superfluids. This graduate-level text presents the basic principles of quantum mechanics using modern mathematical techniques and theoretical concepts, such as hermitian operators, Hilbert space, Dirac notation, and ladder operators. The first two chapters serve as an introduction to quantum theory with a discussion of wave motion and Schrödinger's wave mechanics. Coverage then details the fundamental principles of quantum mechanics. Throughout, basic theory is clearly illustrated and applied to the harmonic oscillator, angular momentum, the hydrogen atom, the variation method, perturbation theory, and nuclear motion. This volume is the ideal textbook for beginning graduate students in chemistry, chemical physics, molecular physics and materials science.

## Book Information

Paperback: 364 pages

Publisher: Cambridge University Press; 1 edition (August 28, 1999)

Language: English

ISBN-10: 0521658411

ISBN-13: 978-0521658416

Product Dimensions: 6.8 x 0.8 x 9.7 inches

Shipping Weight: 1.7 pounds (View shipping rates and policies)

Average Customer Review: 4.7 out of 5 stars 3 customer reviews

Best Sellers Rank: #1,297,482 in Books (See Top 100 in Books) #15 in Books > Science & Math > Chemistry > Chemical Physics #61 in Books > Science & Math > Chemistry > Physical & Theoretical > Quantum Chemistry #178 in Books > Science & Math > Physics > Molecular Physics

## Customer Reviews

"Whoever is looking for a solid, pedagogically very well constructed, and easy to read introduction to quantum mechanics for chemists, chemical physicists, and molecular physicists will find it here. The good readability with simultaneous mathematical rigor... the book is an excellent textbook, from which students of chemistry and chemical physics can acquire necessary quantum-mechanical understanding and rigor. Also can be highly recommended to instructors for preparation of lectures." /s Zeitschrift fur Physikalische Chemie, vol 214, issue #9, 2000

Quantum behavior encompasses a large fraction of modern science and technology, including the laws of chemistry and the properties of crystals, semiconductors, superconductors, and superfluids. Applications of quantum mechanics give us transistors, computer chips and lasers. The relatively new field of molecular biology, which leads to our better understanding of biological structures and life processes, derives from quantum considerations. This book presents the basic principles of quantum mechanics using modern mathematical concepts and techniques, particularly as applied to chemistry and chemical physics.

I recently received this book and it had way better explanations for math concepts than any of my physics or math textbooks, if you are having trouble with Fourier series or Dirac delta function you may want a copy of this book lying around.

This is exactly what I was looking for when I wanted to put a face to some of the more complex theories and physics that I've been studying on my own about the fundamentals of some string and quantum mechanics theories. He starts from the beginning and goes nice and fast, however its nice small steps he takes, you can read it at any pace but its a LOT packed into it. I'm just glad he was able to finish it without going crazy :) Thanks for taking the time to split up the math and put it all together into one source. This makes it much easier to apply some theory with this kind of background. The math is easily layed out and forshadowed. the formulas and values are explained as they are used and each propogation is shown and explained. It assumes knowledge of physics but explains anyway. I'm not a graduate student, but I can understand it anyway, great work.

Despite its title, this book contains few applications to chemistry. What distinguishes it from most QM texts is the absence of physics-specific applications like solid state, and the careful, step-by-step process by which the author derives results. I'd recommend it to anyone (chemist, physicist, whatever) who wants to know nonrelativistic quantum theory. It's also a handy reference for a few subjects that have wide use outside QM, like group velocity and spherical harmonics. The style is a bit dry, and I doubt that I'll ever read it cover to cover, but as a textbook it's hard to beat.

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

Advanced Molecular Quantum Mechanics: An Introduction to Relativistic Quantum Mechanics and the Quantum Theory of Radiation (Studies in Chemical Physics) Principles of Quantum Mechanics: As Applied to Chemistry and Chemical Physics Recent Advances in the Theory of Chemical and Physical Systems: Proceedings of the 9th European Workshop on Quantum Systems in Chemistry

and Physics ... in Theoretical Chemistry and Physics) Quantum Mechanics: Re-engineering Your Life With Quantum Mechanics & Affirmations The Quantum Mechanics Solver: How to Apply Quantum Theory to Modern Physics The Feynman Lectures on Physics, Vol. III: The New Millennium Edition: Quantum Mechanics: Volume 3 (Feynman Lectures on Physics (Paperback)) Ab Initio Methods in Quantum Chemistry, Part 1 (Advances in Chemical Physics) AB INITIO Methods in Quantum Chemistry 2 (Advances in Chemical Physics) (Vol 67) Advances in Chemical Physics, Volume 15: Stochastic Processes in Chemical Physics (v. 15) Quantum Mechanics in Chemistry (Dover Books on Chemistry) Introduction to Chemical Physics (International Series In Pure And Applied Physics) Quantum Electrodynamics: Gribov Lectures on Theoretical Physics (Cambridge Monographs on Particle Physics, Nuclear Physics and Cosmology) Problems and Solutions in Quantum Chemistry and Physics (Dover Books on Chemistry) Quantum Ontology: A Guide to the Metaphysics of Quantum Mechanics Head First Physics: A learner's companion to mechanics and practical physics (AP Physics B - Advanced Placement) Introduction to magnetic resonance with applications to chemistry and chemical physics (Harper's chemistry series) Quantum Runes: How to Create Your Perfect Reality Using Quantum Physics and Teutonic Rune Magic (Creating Magick with The Universal Laws of Attraction Book 1) Covariant Loop Quantum Gravity: An Elementary Introduction to Quantum Gravity and Spinfoam Theory (Cambridge Monographs on Mathematical Physics) Applied Quantum Mechanics Quantum Thermodynamics: Emergence of Thermodynamic Behavior Within Composite Quantum Systems (Lecture Notes in Physics)

[Contact Us](#)

[DMCA](#)

[Privacy](#)

[FAQ & Help](#)