《Quantum Mechanics - Concepts And Applications 2E(ISBN=9780470026793)》

书籍信息

版 次：1
页 数：671
字 数：
印刷时间：2009年03月01日
开 本：大16开
纸 张：胶版纸
包 装：平装
是否套装：否
国际标准书号ISBN：9780470026793

编辑推荐

Quantum Mechanics: Concepts and Applications provides a clear, balanced and modern introduction to the subject. Written with the student ’ s background and ability in mind the book takes an innovative approach to quantum mechanics by combining the essential elements of the theory with the practical applications: it is therefore both a textbook and a problem solving book in one self-contained volume. Carefully structured, the book starts with the experimental basis of quantum mechanics and then discusses its mathematical tools. Subsequent chapters cover the formal foundations of the subject, the exact solutions of the Schr?dinger equation for one and three dimensional potentials, time-independent and time-dependent approximation methods, and finally, the theory of scattering.

The text is richly illustrated throughout with many worked examples and numerous problems with step-by-step solutions designed to help the reader master the machinery of quantum mechanics. The new edition will be completely updated

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Problems.Exercises.4. One-Dimensional Problems.4.1 Introduction.4.2 Properties of One-Dimensional Motion.4.3 The Free Particle: Continuous States.4.4 The Potential Step.4.5 The Potential Barrier and Well.4.6 The Infinite Square Well Potential.4.7 The Finite Square Well Potential.4.8 The Harmonic Oscillator.4.9 Numerical Solution of the Schr?dinger Equation.4.10 Solved Problems.Exercises.

11.2 Scattering Amplitude of Spinless Particles.11.3 The Born Approximation.11.4 Partial Wave Analysis.11.5 Scattering of Identical Particles.11.6 Solved Problems.Exercises.A. The Delta Function.A.1 One-Dimensional Delta Function.A.2 Three-Dimensional Delta Function.B. Angular Momentum in Spherical Coordinates.B.1 Derivation of Some General.B.2 Gradient and Laplacianin Spherical Coordinates.B.3 Angular Momentum in Spherical Coordinates.C. Computer Code for Solving the Schr?dinger Equation.Index.

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媒体评论

"The strength of the book lies in the long list of problems and the detailed solutions that makes the book student-oriented, especially, undergraduates. Teachers of the subject can benefit from the end-of-chapter exercises for assignments." (Contemporary Physics, 11 July 2011)

"The book contains almost six hundred examples, problems and exercises, some of them fully solved. They are intended to empower students to become independent learners and adept practitioners of quantummechanics." (*Mathematical Reviews,* July 2010)

“ Zettili provides a second edition of this textbook on quantum mechanics. The material is suitable for two undergraduate semesters and one graduate level semester. ” (*Book News*, September 2009)