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Nota di contenuto	<p>Tree; Tree Text; Half Title; Title Page; Copyright; Dedication; Contents; Sources of Photographs and Figures; Introduction; 1 The Magic of Quantum Mechanics; 1.1 History of a Revolution; 1.2 Postulates of Quantum Mechanics; 1.3 The Heisenberg Uncertainty Principle; 1.4 The Copenhagen Interpretation of the World; 1.5 Disproving the Heisenberg Principle-Einstein-Podolsky-Rosen's Recipe; 1.6 Schrodinger's Cat; 1.7 Bilocation; 1.8 The Magic of Erasing the Past; 1.9 A Test for a Common Sense: The Bell Inequality; 1.10 Photons Violate the Bell Inequality; 1.11 Teleportation; 1.12 Quantum Computing</p> <p>Additional Literature2 The Schrodinger Equation; 2.1 Symmetry of the Hamiltonian and Its Consequences; 2.1.1 The Non-Relativistic Hamiltonian and Conservation Laws; 2.1.2 Invariance with Respect to Translation; 2.1.3 Invariance with Respect to Rotation; 2.1.4 Invariance with Respect to Permutation of Identical Particles (Fermions and Bosons); 2.1.5 Invariance of the Total Charge; 2.1.6 Fundamental and Less Fundamental Invariances; 2.1.7 Invariance with Respect to Inversion-Parity; 2.1.8 Invariance with Respect to Charge Conjugation 2.1.9 Invariance with Respect to the Symmetry of the Nuclear Framework2.1.10 Conservation of Total Spin; 2.1.11 Indices of Spectroscopic States; 2.2 Schrodinger Equation for Stationary States; 2.2.1 Wave Functions of Class Q; 2.2.2 Boundary Conditions; 2.2.2.1 Mathematical and Physical Solutions; 2.3 The Time-Dependent Schrodinger Equation; 2.3.1 Evolution in Time; 2.3.2 Time Dependence of Mechanical Quantities; 2.3.3 Energy Is Conserved; 2.3.4 Symmetry Is</p>

Conserved; 2.3.5 Meditations at a Spring; 2.3.6 Linearity; 2.4 Evolution After Switching a Perturbation
2.4.1 The Two-State Model-Time-Independent Perturbation2.4.2 Two States-Degeneracy; 2.4.3 The Two-State Model - An Oscillating Perturbation; 2.4.4 Two States-Resonance Case; 2.4.5 Short-Time Perturbation-The First-Order Approach; 2.4.6 Time-Independent Perturbation and the Fermi Golden Rule; 2.4.7 The Most Important Case: Periodic Perturbation; Additional Literature; 3 Beyond the Schrodinger Equation; 3.1 A Glimpse of Classical Relativity Theory; 3.1.1 The Vanishing of Apparent Forces; 3.1.2 The Galilean Transformation; 3.1.3 The Michelson-Morley Experiment 3.1.4 The Galilean Transformation Crashes3.1.5 The Lorentz Transformation; 3.1.6 New Law of Adding Velocities; 3.1.7 The Minkowski Space-Time Continuum; 3.1.8 How Do We Get $E=mc^2$?; 3.2 Toward Relativistic Quantum Mechanics; 3.3 The Dirac Equation; 3.3.1 The Dirac Electronic Sea and the Day of Glory; 3.3.2 The Dirac Equations for Electrons and Positrons; 3.3.3 Spinors and Bispinors; 3.3.4 What Next?; 3.3.5 Large and Small Components of the Bispinor; 3.3.6 How to avoid Drowning in the Dirac Sea; 3.3.7 From Dirac to Schrodinger-How Is the Non-Relativistic Hamiltonian Derived? 3.3.8 How Does the Spin Appear?

Sommario/riassunto

Ideas of Quantum Chemistry shows how quantum mechanics is applied to chemistry to give it a theoretical foundation. From the Schrödinger equation to electronic and nuclear motion to intermolecular interactions, this book covers the primary quantum underpinnings of chemical systems. The structure of the book (a TREE-form) emphasizes the logical relationships among various topics, facts and methods. It shows the reader which parts of the text are needed for understanding specific aspects of the subject matter. Interspersed throughout the text are short biographies of key scientists an
