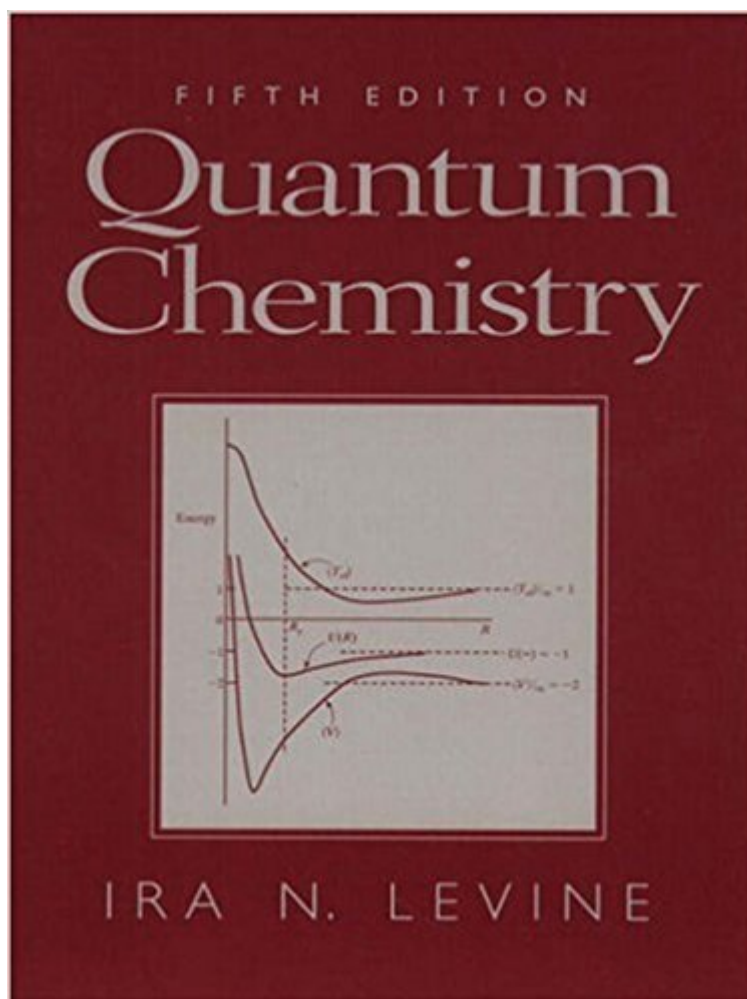


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Quantum Chemistry (5th Edition)



Synopsis

Integrating many new computer-oriented examples and problems throughout, this modern introduction to quantum chemistry covers quantum mechanics, atomic structure, and molecular electronics, and clearly demonstrates the usefulness and limitations of current quantum-mechanical methods for the calculation of molecular properties. Covers such areas as the Schrödinger Equation, harmonic oscillator, angular momentum, hydrogen atom, theorems of quantum mechanics, electron spin and the Pauli Principle, the Virial Theorem and the Hellmann-Feynman Theorem, and more. Contains solid presentations of the mathematics needed for quantum chemistry, clearly explaining difficult or subtle points in detail. Offers full, step-by-step examinations of derivations that are easy to follow and understand. Offers comprehensive coverage of recent, revolutionary advances in modern quantum-chemistry methods for calculating molecular electronic structure, including the ab initio and semiempirical methods for molecular calculations. Now integrates over 500 problems throughout, with a substantial increase in the amount of computer applications, and fully updated discussions of molecular electronic structure calculations. For professionals in all branches of chemistry.

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This comprehensive, modern introduction to quantum chemistry covers quantum mechanics, atomic structure and molecular electronic structure. --This text refers to an out of print or unavailable edition

of this title.

Integrating many new computer-oriented examples and problems throughout, this modern introduction to quantum chemistry covers quantum mechanics, atomic structure, and molecular electronics, and clearly demonstrates the usefulness and limitations of current quantum-mechanical methods for the calculation of molecular properties. Covers such areas as the Schrödinger Equation, harmonic oscillator, angular momentum, hydrogen atom, theorems of quantum mechanics, electron spin and the Pauli Principle, the Virial Theorem and the Hellmann-Feynman Theorem, and more. Contains solid presentations of the mathematics needed for quantum chemistry, clearly explaining difficult or subtle points in detail. Offers full, step-by-step examinations of derivations that are easy to follow and understand. Offers comprehensive coverage of recent, revolutionary advances in modern quantum-chemistry methods for calculating molecular electronic structure, including the ab initio and semiempirical methods for molecular calculations. Now integrates over 500 problems throughout, with a substantial increase in the amount of computer applications, and fully updated discussions of molecular electronic structure calculations. For professionals in all branches of chemistry.

Levine's Quantum Chemistry is one of the best books to understand quantum chemistry. It provides a rigorous foundation for students pursuing a career in theoretical chemistry. Once a student finishes reading this book, he or she can quickly go to the more specialized books like Szabo and Ostlund's Modern Quantum Chemistry.

"Quantum Chemistry" takes on a complex and esoteric subject and does the best introduction that I have read yet. There are numerous mathematical examples that follow the theory. I know that readers will always want more of actual usage and linking to give this area real relevance, as I did. But, this is the best that is available for the present, and for the last two decades. You will have to use your imagination and intuition to complete the story. But, if you are a practicing scientist, as I am, that won't be hard to do, just time consuming. There is a whole new field of materials integration that is emerging using the idea of convergent materials that have the properties of all the invested contents. Look into flexible glass plates, the ancients did it so we must be able to surpass their efforts, ceramic magnetic shields, guess who again and others.

I have gone through many books on quantum and this one is by far my favorite. The explanations

are clear, derivations are concise, easy to follow and straightforward.

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