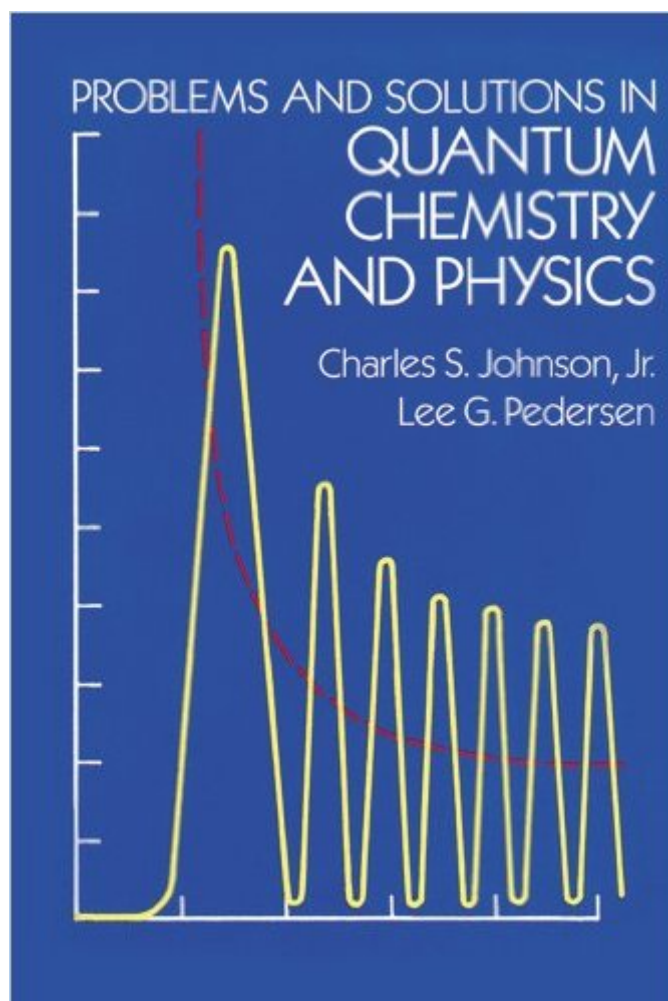


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# Problems And Solutions In Quantum Chemistry And Physics (Dover Books On Chemistry)



## Synopsis

"A very useful addition to the chemical literature." — Journal of the American Chemical Society. Designed to aid students and teachers in advanced physical chemistry, spectroscopy, or quantum chemistry courses, this carefully written book is unique in the variety of problems covered and the detail of the solutions provided. The book consists of 12 chapters, each of which includes a short introduction, followed by approximately 20 problems with detailed solutions. Also provided in each chapter are approximately 10 "supplementary" problems, with answers but no solutions. Chapter headings include: Atomic Physics and the Old Quantum Theory Waves and Superposition Postulates and Formalism of Quantum Mechanics Simple Exactly Soluble Problems in Wave Mechanics Angular Momentum Perturbation and Variation Theory Hydrogen-Like Atoms Electronic Structure of Atoms Electronic Structure of Molecules Radiation and Matter Molecular Spectroscopy Scattering Theory Assuming some facility with calculus, mechanics, and electricity and magnetism, the authors offer thorough and up-to-date coverage of both modern subject matter and standard topics. Interspersed among classic examples are lucid applications involving such topics as Fourier transforms, Poisson brackets, uncertainty, the virial theorem, van der Waals forces, lasers, tunneling, group theory, and the Born approximation. Students will also find 10 helpful appendixes covering a range of mathematical topics, a list of references cited in solutions to the problems, and a Subject Index. With its unique variety of problems, unusually detailed solutions, and wide range of applications, this book not only expounds the principles of quantum theory but also helps students develop the proper intuition for solving problems in a complex and subtle field of endeavor.

## Book Information

Series: Dover Books on Chemistry

Paperback: 448 pages

Publisher: Dover Publications (January 1, 1987)

Language: English

ISBN-10: 048665236X

ISBN-13: 978-0486652368

Product Dimensions: 6.5 x 0.9 x 9.2 inches

Shipping Weight: 1.3 pounds (View shipping rates and policies)

Average Customer Review: 4.5 out of 5 stars — See all reviews (4 customer reviews)

Best Sellers Rank: #1,300,582 in Books (See Top 100 in Books) #70 in Books > Science & Math

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This collection of numerous problems in both old atomic theory as well as (slightly) more modern theory is a great review to students who may have taken introductory QM classes and need a refresher, or as a supplement to those students currently learning QM. The topics covered are varied and problems include complete solutions. Overall a good volume to include in any early theorist's collection.

This is one of the most complete problem and solution book for the undergraduate quantum physics I have seen. Don't be disappointed by the look of this book, although it is printed somewhat unusual i.e cheap paper small fonts but, its complete. The problems are much like the problems you can find in quantum chemistry or quantum mechanics books( undergraduate) and the solutions are clear and concise. Of course prior knowledge in quantum mechanics and physical chemistry is required but that you already have if you are looking for a solution book parallel with your text book. At the beginning of every chapter some explanation and key points are given that help to recall from text book without opening the text book. I would say, its cheap and its almost complete for undergraduate in physics and more than complete for undergraduate in chemistry. 5 stars because of the price and quality.

Its been covered that its a good Quantum problems book, but I really can't read it. I knew it was old, but it looks like it was done on a type-writer. Can't fault them though, Caveat Emptor.

Very good for the 5\$. This book i bought for 5\$ is worth its money. Packed very well and is in very good condition. Got it in 2-3 days

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