

Atkins Physical Chemistry Book Physics Forums The

aspects of the learning process are fully supported, including the understanding of terminology, notation, mathematical concepts, and the application of physical chemistry to other branches of science." "Building on the heritage of the world-renowned Atkins' Physical Chemistry , Quanta, Matter, and Change gives a refreshing new insight into the familiar by illuminating physical chemistry from a new direction." --Book Jacket.

PRINCIPLES OF INSTRUMENTAL ANALYSIS is the standard for courses on the principles and applications of modern analytical instruments. In the 7th edition, authors Skoog, Holler, and Crouch infuse their popular text with updated techniques and several new Instrumental Analysis in Action case studies. Updated material enhances the book's proven approach, which places an emphasis on the fundamental principles of operation for each type of instrument, its optimal area of application, its sensitivity, its precision, and its limitations. The text also introduces students to elementary analog and digital electronics, computers, and the treatment of analytical data. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Combining broad coverage with an innovative use of pedagogy, Atkins' Physical Chemistry remains the textbook of choice for studying physical chemistry. Significant re-working of the text design makes this edition more accessible for students, while also creating a clean and effective text that is more flexible for instructors to teach from.

Table of contents

The ideal course companion, Elements of Physical Chemistry is written specifically with the needs of undergraduate students in mind, and provides extensive mathematical and pedagogical support while remaining concise and accessible. For the seventh edition of this much-loved text, the material has been reorganized into short Topics, which are grouped into thematic Focuses to make the text more digestible for students, and more flexible for lecturers to teach from. At the beginning of each Topic, three questions are posed, emphasizing why it is important, what the key idea is, and what the student should already know. Throughout the text, equations are clearly labeled and annotated, and detailed 'justification' boxes are provided to help students understand the crucial mathematics which underpins physical chemistry. Furthermore, Chemist's toolkits provide succinct reminders of key mathematical techniques exactly where they are needed in the text. Frequent worked examples, in addition to self-test questions and end-of-chapter exercises, help students to gain confidence and experience in solving problems. This diverse suite of pedagogical features, alongside an appealing design and layout, make Elements of Physical Chemistry the ideal course text for those studying this core branch of chemistry for the first time.

Explains how scientists first observed the second law of thermodynamics, discusses its connection with living things, and looks at the nature of structure and chaos

This volume features a greater emphasis on the molecular view of physical chemistry and a move away from classical thermodynamics. It offers greater explanation and support in mathematics which remains an intrinsic part of physical chemistry.

Most people remember chemistry from their schooldays as a subject that was largely incomprehensible, fact-rich but understanding-poor, smelly, and so far removed from the real world of events and pleasures that there seemed little point, except for the most introverted, in coming to terms with its grubby concepts, spells, recipes, and rules. Peter Atkins wants to change all that. In What is Chemistry? he encourages us to look at chemistry anew, through a chemist's eyes, to understand its central concepts and to see how it contributes

not only towards our material comfort, but also to human culture. Atkins shows how chemistry provides the infrastructure of our world, through the chemical industry, the fuels of heating, power generation, and transport, as well as the fabrics of our clothing and furnishings. By considering the remarkable achievements that chemistry has made, and examining its place between both physics and biology, Atkins presents a fascinating, clear, and rigorous exploration of the world of chemistry - its structure, core concepts, and exciting contributions to new cutting-edge technologies.

The marvellous complexity of the Universe emerges from several deep laws and a handful of fundamental constants that fix its shape, scale, and destiny. There is a deep structure to the world which at the same time is simple, elegant, and beautiful. Where did these laws and these constants come from? And why are the laws so fruitful when written in the language of mathematics? Peter Atkins considers the minimum effort needed to equip the Universe with its laws and its constants. He explores the origin of the conservation of energy, of electromagnetism, of classical and quantum mechanics, and of thermodynamics, showing how all these laws spring from deep symmetries. The revolutionary result is a short but immensely rich weaving together of the fundamental ideas of physics. With his characteristic wit, erudition, and economy, Atkins sketches out how the laws of Nature can spring from very little. Or arguably from nothing at all. Atkins' Physical Chemistry is widely acknowledged by both students and lecturers around the globe to be the textbook of choice for studying physical chemistry. Now in its eleventh edition, the text has been re-organised into discrete Topics, breaking down material to help you build confidence, and grouped into overarching Focuses, to show you the bigger picture. Enhanced with additional learning features and maths support, the text helps you learn more effectively with: detailed annotations of worked examples, broken into clear steps with sign-posted 'physical interpretation' sections: a new 'How is that done?' feature, which brings you to a question by leading you through the solution; 'Chemist's toolkits', which provide you with succinct reminders of mathematical concepts and techniques right where you need them. This volume covers quantum chemistry, spectroscopy, and statistical thermodynamics. Beginning with an examination of the structures and properties of individual atoms and molecules, the volume then goes on to show how structural data are used to predict and explain the bulk thermodynamics properties and the ways that intermolecular forces lead to the aggregation of molecules. This volume ends with a consideration of how molecular properties influence the properties of the resulting liquids and solids, and how the structure of these condensed phases are determined. -- From back cover.

Emphasizes a molecular approach to physical chemistry, discussing principles of quantum mechanics first and then using those ideas in development of thermodynamics and kinetics. Chapters on quantum subjects are interspersed with ten math chapters reviewing mathematical topics used in subsequent

chapters. Includes material on current physical chemical research, with chapters on computational quantum chemistry, group theory, NMR spectroscopy, and lasers. Units and symbols used in the text follow IUPAC recommendations. Includes exercises. Annotation copyrighted by Book News, Inc., Portland, OR

The laws of thermodynamics drive everything that happens in the universe. From the sudden expansion of a cloud of gas to the cooling of hot metal, and from the unfurling of a leaf to the course of life itself - everything is directed and constrained by four simple laws. They establish fundamental concepts such as temperature and heat, and reveal the arrow of time and even the nature of energy itself. Peter Atkins' powerful and compelling introduction explains what the laws are and how they work, using accessible language and virtually no mathematics. Guiding the reader from the Zeroth Law to the Third Law, he introduces the fascinating concept of entropy, and how it not only explains why your desk tends to get messier, but also how its unstoppable rise constitutes the engine of the universe.

Atkins' Physical Chemistry: Molecular Thermodynamics and Kinetics is designed for use on the second semester of a quantum-first physical chemistry course. Based on the hugely popular Atkins' Physical Chemistry, this volume approaches molecular thermodynamics with the assumption that students will have studied quantum mechanics in their first semester. The exceptional quality of previous editions has been built upon to make this new edition of Atkins' Physical Chemistry even more closely suited to the needs of both lecturers and students. Re-organised into discrete 'topics', the text is more flexible to teach from and more readable for students. Now in its eleventh edition, the text has been enhanced with additional learning features and maths support to demonstrate the absolute centrality of mathematics to physical chemistry. Increasing the digestibility of the text in this new approach, the reader is brought to a question, then the math is used to show how it can be answered and progress made. The expanded and redistributed maths support also includes new 'Chemist's toolkits' which provide students with succinct reminders of mathematical concepts and techniques right where they need them. Checklists of key concepts at the end of each topic add to the extensive learning support provided throughout the book, to reinforce the main take-home messages in each section. The coupling of the broad coverage of the subject with a structure and use of pedagogy that is even more innovative will ensure Atkins' Physical Chemistry remains the textbook of choice for studying physical chemistry.

Edition after edition, Atkins and de Paula's #1 bestseller remains the most contemporary, most effective full-length textbook for courses covering thermodynamics in the first semester and quantum mechanics in the second semester. Its molecular view of physical chemistry, contemporary applications, student friendly pedagogy, and strong problem-solving emphasis make it particularly well-suited for pre-meds, engineers, physics, and chemistry students. Now organized into briefer, more manageable topics, and featuring additional

applications and mathematical guidance, the new edition helps students learn more effectively, while allowing instructors to teach the way they want. Available in Split Volumes For maximum flexibility in your physical chemistry course, this text is now offered as a traditional text or in two volumes: Volume 1:

Thermodynamics and Kinetics: 1-4641-2451-5 Volume 2: Quantum Chemistry: 1-4641-2452-3

With its modern emphasis on the molecular view of physical chemistry, its wealth of contemporary applications, vivid full-color presentation, and dynamic new media tools, the thoroughly revised new edition is again the most modern, most effective full-length textbook available for the physical chemistry classroom. Volume 1 of Physical Chemistry, Ninth Edition, contains the new edition's new Fundamentals chapters (Chapter 0), plus coverage of thermodynamics (Chapters 1-6) and kinetics (Chapters 20-23)

Most people remember chemistry from their schooldays as largely incomprehensible, a subject that was fact-rich but understanding-poor, smelly, and so far removed from the real world of events and pleasures that there seemed little point, except for the most introverted, in coming to terms with its grubby concepts, spells, recipes, and rules. Peter Atkins wants to change all that. In this Very Short Introduction to Chemistry, he encourages us to look at chemistry anew, through a chemist's eyes, in order to understand its central concepts and to see how it contributes not only towards our material comfort, but also to human culture. Atkins shows how chemistry provides the infrastructure of our world, through the chemical industry, the fuels of heating, power generation, and transport, as well as the fabrics of our clothing and furnishings. By considering the remarkable achievements that chemistry has made, and examining its place between both physics and biology, Atkins presents a fascinating, clear, and rigorous exploration of the world of chemistry - its structure, core concepts, and exciting contributions to new cutting-edge technologies. ABOUT THE SERIES: The Very Short Introductions series from Oxford University Press contains hundreds of titles in almost every subject area. These pocket-sized books are the perfect way to get ahead in a new subject quickly. Our expert authors combine facts, analysis, perspective, new ideas, and enthusiasm to make interesting and challenging topics highly readable. Explains how different kinds of chemical reactions ranging from precipitation and combustion to polymerization and catalysis are formed, including examples, color illustrations, and real-life applications for each reaction.

This best-selling comprehensive lab textbook includes experiments with background theoretical information, safety recommendations, and computer applications. Updated chapters are provided regarding the use of spreadsheets and other scientific software as well as regarding electronics and computer interfacing of experiments using Visual Basic and LabVIEW. Supplementary instructor information regarding necessary supplies, equipment, and procedures is provided in an integrated manner in the text. Reaction Mechanisms of Inorganic and Organometallic Systems helps students develop both an appreciation of and skepticism about mechanistic studies.

Atkins' Physical Chemistry 11eVolume 3: Molecular Thermodynamics and KineticsOxford University Press, USA

Portrays the structures of the substances that make up our everyday world.

The Irish experience of Christianity has never been simple or uncomplicated.

Here, Crawford Gribben describes the ancient emergence, long dominance, sudden division, and recent decline of Ireland's most important religion, as a way of telling the history of the island and its peoples, from earliest times to the present day.

Elements of Physical Chemistry has been carefully crafted to help students increase their confidence when using physics and mathematics to answer fundamental questions about the structure of molecules, how chemical reactions take place, and why materials behave the way they do.

In this Very Short Introduction Peter Atkins inspires us to look at chemistry through new eyes. Considering the remarkable achievements chemistry has made, he presents a fascinating, clear, and rigorous exploration of the world of chemistry - its structure, core concepts, and contributions to the material comfort and culture of the modern world.

Peter Atkins and Julio de Paula offer a fully integrated approach to the study of physical chemistry and biology.

From the sudden expansion of a cloud of gas or the cooling of a hot metal, to the unfolding of a thought in our minds and even the course of life itself, everything is governed by the four Laws of Thermodynamics. These laws specify the nature of 'energy' and 'temperature', and are soon revealed to reach out and define the arrow of time itself: why things change and why death must come. In this Very Short Introduction Peter Atkins explains the basis and deeper implications of each law, highlighting their relevance in everyday examples. Using the minimum of mathematics, he introduces concepts such as entropy, free energy, and to the brink and beyond of the absolute zero temperature. These are not merely abstract ideas: they govern our lives. In this concise and compelling introduction Atkins paints a lucid picture of the four elegant laws that, between them, drive the Universe. ABOUT THE SERIES: The Very Short Introductions series from Oxford University Press contains hundreds of titles in almost every subject area. These pocket-sized books are the perfect way to get ahead in a new subject quickly. Our expert authors combine facts, analysis, perspective, new ideas, and enthusiasm to make interesting and challenging topics highly readable.

A leading book for 80 years, Silbey's Physical Chemistry features exceptionally clear explanations of the concepts and methods of physical chemistry for students who have had a year of calculus and a year of physics. The basic theory of chemistry is presented from the viewpoint of academic physical chemists, but the many practical applications of physical chemistry are integrated throughout the text. The problems in the text also reflect a skillful blend of theory and practical applications. This text is ideally suited for a standard undergraduate physical chemistry course taken by chemistry, chemical engineering, and biochemistry majors in their junior or senior year.

The Instructor's solutions manual to accompany Atkins' Physical Chemistry provides detailed solutions to the 'b' exercises and the even-numbered discussion questions and problems that feature in the ninth edition of Atkins'

Physical Chemistry . The manual is intended for instructors and consists of material that is not available to undergraduates. The manual is free to all adopters of the main text.

"Physical Chemistry for the Life Sciences breaks new ground by bringing the worlds of physical chemistry and the life sciences together, showing how the tools of physical chemistry are used to answer biological questions. Written specifically to meet the needs of life science majors who must master a basic level of physical chemistry, this text provides clear explanations of difficult concepts with an eye toward building insight into biochemical phenomena."--BOOK JACKET.

The exceptional quality of previous editions has been built upon to make the tenth edition of Atkins' Physical Chemistry even more closely suited to the needs of both students and lecturers. The text has been enhanced with additional learning features and maths support, and has been radically restructured into short focussed topics. An innovative use of pedagogy is combined with rigorous but accessible coverage of the subject to ensure Atkins' Physical Chemistry tenth edition remains the textbook of choice for studying physical chemistry. New to this edition : significant reorganization of the material within each chapter into discrete 'topics' makes the text more readable for students and more flexible for instructors ; expanded maths support includes new 'Chemist's toolkits' which provide students with succinct reminders of mathematical concepts and techniques ; three questions at the beginning of each topic engage and focus the attention of the reader : 'Why do you need to know this material ?', 'What is the key idea ?', and 'What do you need to know already ?' ; New checklists of key concepts at the end of each topic reinforce the main take-home messages in each section.

The Student Solutions Manual to accompany Atkins' Physical Chemistry 11th Edition provides full worked solutions to the "a" exercises, and the odd-numbered discussion questions and problems presented in the parent book. The manual is intended for students and provides helpful comments and friendly advice to aid understanding.

Provides solutions to the 'a' exercises, and the odd-numbered discussion questions and problems that feature in the eighth edition of Atkins' Physical Chemistry. This manual offers comments and advice to aid understanding. It is intended for students and instructors alike.

Hailed by advance reviewers as "a kinder, gentler P. Chem. text," this book meets the needs of an introductory course on physical chemistry, and is an ideal choice for courses geared toward pre-medical and life sciences students.

Physical Chemistry for the Chemical and Biological Sciences offers a wealth of applications to biological problems, numerous worked examples and around 1000 chapter-end problems.

With its modern emphasis on the molecular view of physical chemistry, its wealth of contemporary applications, vivid full-color presentation, and dynamic new

media tools, the thoroughly revised new edition is again the most modern, most effective full-length textbook available for the physical chemistry classroom. Available in Split Volumes For maximum flexibility in your physical chemistry course, this text is now offered as a traditional text or in two volumes. Volume 1: Thermodynamics and Kinetics; ISBN 1-4292-3127-0 Volume 2: Quantum Chemistry, Spectroscopy, and Statistical Thermodynamics; ISBN 1-4292-3126-2 Peter Atkins' Very Short Introduction explores the contributions physical chemistry has made to all branches of chemistry. Providing insight into its central concepts Atkins reveals the cultural contributions physical chemistry has made to our understanding of the natural world.

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