Physical Chemistry for the Life Sciences

NEW EDITION

Second Edition

***Peter Atkins**, University of Oxford, and **Julio de Paula**, Lewis & Clark College, USA*

- Offers a fully integrated approach to the study of physical chemistry and biology; lecturers and students alike have a text that is truly tailor-made for their course.

New to this edition

- Significant revision of the 'Fundamentals' chapter, to include Boltzmann theory and structural biology.
- New and expanded coverage of numerous topics, including Hückel and Ligand theories.
- New learning features, including Equation and Concept tags, used to flag up key pieces of information about equations, and Mathematical Toolkits, to deepen your understanding of mathematical concepts.
- 'Atlas' of biomolecular structures at the back of book depict the three-dimensional structures of a range of important biomolecules.

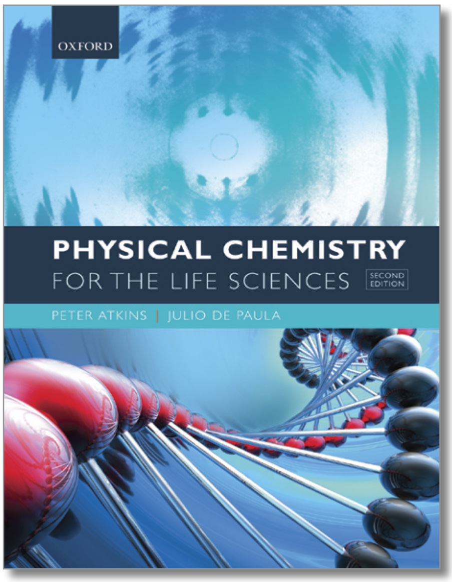
Physical Chemistry for the Life Sciences provides a balanced presentation of the concepts of physical chemistry, and their extensive applications to biology and biochemistry. It is written to straddle the worlds of physical chemistry and the life sciences and to show students how the tools of physical chemistry can elucidate and illuminate biological questions.

Physical Chemistry for the Life Sciences places emphasis on clear explanations of difficult concepts, with an eye toward building insight into biochemical phenomena. An extensive range of learning features, including worked examples, illustrations, self-tests, and case studies, support student learning throughout, while special attention is given to providing extensive help to students with those mathematical concepts and techniques that are so central to a sound understanding of physical chemistry.

Balancing clarity and rigor of exposition of basic concepts with extensive discussion of biological techniques and processes, *Physical Chemistry for the Life Sciences* is the perfect resource for every life science student who seeks to master those essentials of physical chemistry that underpin life itself.

Readership: First and second year undergraduates taking a first course in physical chemistry as part of a life science, biological chemistry, or biochemistry degree programme.

680 pages 2010 978-0-19-956428-6 Paperback £34.99



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ONLINE RESOURCE CENTRE

For registered adopters of the book:
- Figures in electronic format

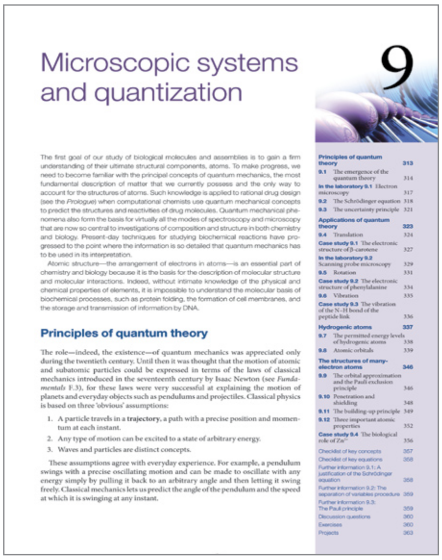
For students:
- Web links for each chapter
- List of key equations for each chapter
- Living graphs, which present graphs from the text in interactive format
- Three-dimensional, interactive models of the biomolecules appearing in the end-of-book atlas of structures

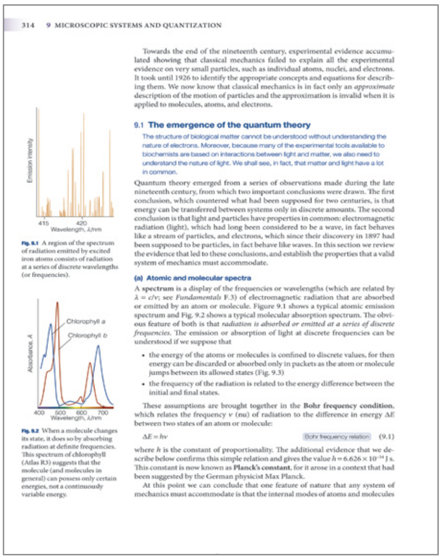
www.oxfordtextbooks.co.uk/orc/lchem2e/

Review from previous edition

"An excellent textbook - fun to read and crystal clear."

Dr Hans A. Heus, Radboud University Nijmegen





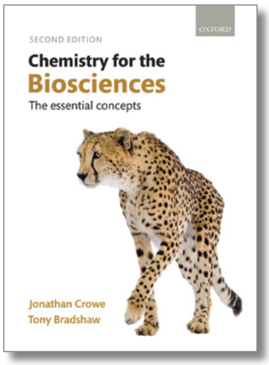
Chemistry for the Biosciences

The Essential Concepts

Second Edition

***Jonathan Crowe** and **Tony Bradshaw**, Oxford Brookes University*

> The text is clear and precise, and at times utterly delightful, with fantastic analogies that have remained in my head for weeks after reading it.
>
> **Kirsty MacLeod, 4th year Zoology student, St. Andrews University**



Chemistry for the Biosciences leads students through the essential concepts that are central to understanding biological systems, using everyday examples and analogies to build their confidence in an often daunting subject. Placing an emphasis on clear, straightforward explanations, it fosters understanding as opposed to rote learning; by using relevant biological examples throughout, it illustrates just how integral chemistry is to the biosciences.

With scientific research placing more emphasis on the interface of chemistry and biology than ever before, few cannot argue that mastering some essential chemical concepts is central to fully understanding biology itself. *Chemistry for the Biosciences* is the ideal teaching and learning resource to ensure today's biology students grasp these concepts, and appreciate their importance throughout the subject.

Readership: Foundation level and first year undergraduate bioscience students, particularly those without A-level chemistry.

678 pages 2010 978-0-19-957087-4 Paperback £27.99

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For registered adopters of the book:

- Figures from the book in electronic format, ready to download
- A testbank of questions, with feedback linked to the text

For students:

- Full solutions to numerical self-check questions
- A bank of online multiple-choice questions

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Principles and Problems in Physical Chemistry for Biochemists

Third Edition

***Nicholas C. Price**, University of Glasgow, **Raymond A. Dwek**, University of Oxford, **R. G. Ratcliffe**, University of Oxford, **Mark Wormald**, Glycobiology Institute and University of Oxford*

> Remarkably efficient [at] putting across conceptually difficult material … *Principles and Problems* will continue to be essential reading for biochemistry undergraduates.
>
> **The Biochemist**

Principles and Problems in Physical Chemistry for Biochemists starts by introducing the laws of thermodynamics, and then uses these laws to derive the equations relevant to the student in dealing with chemical equilibria (including the binding of small molecules to proteins), properties of solutions, acids and bases, and oxidation-reduction processes. The student is thus shown how a knowledge of thermodynamic qualities makes it possible to predict whether, and how, a reaction will proceed.

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Readership: Undergraduates in biological sciences and biochemistry

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