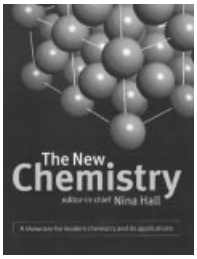
The New Chemistry. Edited by *Nina Hall.* Cambridge University Press, Cambridge 2000. xi + 493 pp, hardcover £ 30.00.—ISBN 0-521-45224-4

What a daring concept it is to juxtapose within one book the intricacies of the first total synthesis of taxol, the statistical thermodynamics of irreversible processes, the generation, detection, and investigation of artificial elements, new methods for fueling chemical reactions, advanced materials, and the structural complexities obtained by the principles of supramolecular chemistry. What a challenge it is for the reader to absorb within the confines of a single volume the mode of action of various classes of pesticides, the electronic description of a metal, new developments in surface chemistry, the role of inorganic chemistry in life, and the principles of molecular electronics and electrochemical energy conversion.



Nina Hall, a science journalist and a consultant for the public understanding of science, is certainly aware of the tour de force she encourages her readers to take in *The New Chemistry—A Showcase for Modern Chemistry and its Applications.* And, in fact, great efforts are made to assist them throughout their journey. First of all, the 30 authors, among them the Nobel Laureates Glenn Seaborg, Ilya Prigogine, and Jean-Marie Lehn, are established experts in their fields and are therefore well-positioned to present an overview of past achievements and current trends in their respective areas. They have written 17 self-contained chapters that not only highlight aspects of cutting-edge chemical research, but also present the topics from a historical perspective and embed them into an interdisciplinary context. Even those not overly familiar with the material presented will benefit from such a broad discourse. Most authors, it appears, have made an effort to avoid the factual boredom of technical language and managed to present their subjects in a very accessible way. What is more, the book as a whole (and some of the chapters in particular) is luxuriously illustrated, very often in full color, interspersed with boxes that provide additional information.

The choice of topics that have been included to represent "The New Chemistry" can naturally be a matter of debate within the chemical community, and some might be disappointed by the absence of examples from homogenous catalysis, analytical chemistry, and polymer chemistry, to name just a few. But by and large the selection is attractive and serves to present chemistry as a lively and exciting subject. Will it work for everyone? There I have my doubts. The degree of technical detail in each of the chapters is very high, and only the most dedicated generalist will be prepared to read it from cover to cover. In that sense, the book preaches to the converted and will be of little appeal to the general public. For those familiar with chemistry at an advanced level it will make a fascinating read.

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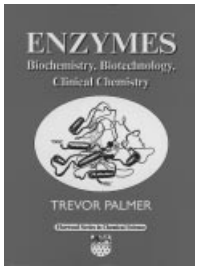
Enzymes: Biochemistry, Biotechnology, Clinical Chemistry. By *Trevor Palmer*. Horwood, Chichester 2001. xix + 402 pp., hardcover £ 30.00.—ISBN 1-898563-78-0

Without enzymes no metabolism is possible, and consequently they are a prerequisite for the life of all organisms. Besides their physiological role, biocatalysts now also represent important "reagents" for organic synthesis and clinical analysis. Thus, every (biology-oriented) natural scientist should know about the structure, mechanism, and function of enzymes.



The present book by Palmer—now published in its fifth revised edition—attempts to cover within about 400 pages, subdivided into 20 chapters, all important aspects of enzymes. First the reader learns the basic principles of the structure and function of enzymes. In explaining enzyme nomenclature the author emphasizes the usefulness of the interactive website http://www.expasy.ch/enzyme). The otherwise generally good chapter on the structure of proteins would have been improved by including a thorough description of modern NMR spectroscopic methods for structure determination and studying protein dynamics. Also the one-letter code for amino acids, which should be considered as basic knowledge, is inexplicably not covered in this section. Moreover, glutamine is abbreviated as Glun (instead of Gln) and asparagine as Aspn (instead of Asn).

A very extensive part of the book (9 chapters) deals with the kinetics and chemical mechanisms of enzyme-catalyzed reactions. These chapters impress by the wealth of information, and should be sufficient to solve most problems in practice without recourse to further literature.

The remaining chapters are devoted to the applications of enzymes. It remains unclear why instrumental methods for enzyme analysis and also extraction and purification are treated here. Moreover, some important modern methods for protein purification, such as immobilized metal ion affinity chromatography using His_6 tags, are not mentioned, even though the latter is already a standard technique.

The chapter about the application of enzymes in biotechnology is very brief, and does not take account of the rapid developments of the last few decades. This area cannot (and should not) be covered in an introductory textbook. However, from this chapter the newcomer might get the impression that the applications of enzymes are mainly restricted to the food and beverage industry, the production of semisynthetic penicillins, and washing detergent additives. A similar criticism applies to the sections entitled "Enzymes and recombinant DNA technology" and "Enzymes and bioinformatics". For example, new developments such as directed evolution or proteomics are not even mentioned. However, that would be unavoidable for a book published in the year 2000.

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