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Book review

Industrial Enzymes and their Applications, H. Uhlig (translated and updated by E.M. Linsmaier-Bednar), Wiley, 1998, 454 pages.

This book was originally published in 1991 under the title 'Enzyme arbeiten für uns'. The author is a former Director of Enzyme R&D at the enzyme producer, Röhm. Together with his Röhm colleagues he collected their practical experience of enzymes. The German original has now been translated and updated. However, on browsing through the references I found very few from the 1990's, i.e. that had been added to the original. Hence, recent developments, such as cross-linked enzyme crystals are missing.

The book opens with a short introduction to enzymes: what they do and the historical development of enzyme applications. This is followed by a general description of the characteristic properties of enzymes, e.g. pH and temperature dependence of catalytic activity, structure and mechanism, analysis and kinetics.

Chapter 3 gives an overview of various types of enzymes: carbohydrases, proteases, lipases and esterases, oxidases and glucose isomerase. The choice is a reflection of the applications to be treated later, i.e. food and beverages, detergents, textiles, etc. but not chemical synthesis. If you are looking for information on synthetic applications of enzymes then this is not the book for you. But the applications treated here are after all the important practical uses of enzymes. This is followed (Chapter 4) by a survey of different methods of enzyme immobilization. Unfortunately, as noted above, recent developments such as cross-linked enzyme crystals are missing.

Chapter 5 forms the heart of the book (180 pages) and discusses in detail the various technical applications of enzymes, including starch processing, brewing, juice- and winemaking, baking, cheesemaking, detergents, textiles, modification of fats and oils and animal nutrition. This is followed by short chapters on legal regulatory issues and economic considerations.

The book is a mine of information on *applications* of enzymes and contains, in appendices, a list of enzyme producers and a list (6 pages) of important industrial enzymes. What I missed was information on the *production* of industrial enzymes including a discussion of modern developments, e.g. recombinant DNA techniques, site-directed mutagenesis, directed evolution, etc.

Nevertheless I can recommend the book as an easy-to-read source of detailed information on the applications of industrial enzymes.

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