BOOK REVIEW

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Marcel Dekker, Inc. (270 Madison Avenue, New York NY 100 16, USA)
New York – Basel – Hong Kong (1991)
248 pages, bound, illustrated (39 tables, 37 figures), bibliographical references, subject index. (99.75$ U.S. and Canada; 114,50$ all other countries).

Within the broad scope of biotechnology, enzyme technology also promises to play a growing role in the translation of advances in molecular biology into successful products and processes, Although the use of some enzymes in food production and some other fields is known since longer time and a relatively wide literature dealing with this topic is available, there is a lack in literature dealing with this topic is available, there is a lack in literature of comprehensive review connected with newer, important achievements in biocatalytic science and technology. So the initiative of editors and publishers to begin a new series that will highlight recent advances in the application and commercialisation of biological catalysis is timely and valuable.

In this first volume in five chapters contributions from world-class authorities have been assembled. All the topics discussed: (a) Principles and Applications of Nonaqueos Enzymology; (b) Enzyme Design for Nonaqueous Solvents; (c) Applications of Enzymatic Aldol Reactions in Organic Synthesis; (d) Enzymatic Modification of Steroids, are interesting from both theoretical and practical point of view.

The problems of nonaqueos enzymology discussed in first two chapters may be interesting first at all for chemical industry showing some possibilities to apply enzymes in the syntheses of pharmaceuticals, chiral intermediates, specially polymers, and biochemicals. The main topics of this part of book are connected with explanation of effect of organic solvents on biocatalysts and potential methods enhancing the stability and activity of enzymes in nonaqueous solvents including protein engineering.

The application of protein engineering is demonstrated with the enzyme subtilisin.

The third chapter discusses the utility of readily available carbon-carbon bond forming enzymes as catalysts for the asymmetric aldol reaction.

Although a large number of aldolases have been isolated and characterized only some of then were used in organic synthesis. A good review of potential applicability is given by author with a comment that aldolases of bacterial origin may be of more use than the enzymes from plant or animal source.

The last two chapters dealing with biologically important complex carbohydrates steroids are also very interesting. After a short review of glycoconjugate carbohydrates and their biological function a review is given about synthesis of some products suitable for clinical and other applications. The last chapter is limited to the applications of isolated enzymes are not competitive with the usual mode of fermentation, the collected data may be useful for the future work.

The book is well illustrated, contains a lot of tables and figures helping the overview of materials. The only note of the reader is that the mode of publishing references is not harmonized by editors and there are differences in numbering of tables in different chapters.

The book and hopefully the further volumes of the serie will be a valuable source of both general information on enzyme technology and new achievements and trends of development in application of enzyme catalysis for specialists and educators in this field.

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