

BOOK REVIEW

ADVANCES IN BIOCHEMICAL ENGINEERING Vol. 5.

Edited by T. K. Ghose, A. Fiechter, N. Blakebrough Springer Verlag Berlin, Heidelberg, New York, 1977. (145 pages, 31 figures, 490 references)

The latest volume of the series giving bioengineers and microbiologists an up-to-date information about the fundamentals of, and advances in the biochemical processes included six reports on different problems of bioengineering.

The first two papers T. M. ENARI and P. MARKVANEN "Production of Cellulolytic Enzymes by Fungi" and M. LINKO "An Evaluation of Enzymatic Hydrolysis of Cellulosic Materials" give a survey about the possibilities of using cellulosic materials as new sources for the fermentation and food industries. The mechanism of the enzymatic degradation of cellulose is described and a good survey is given about the cellulase production by *Trichoderma viride*. The very detailed analysis of possible technological realization shows that the economic feasibility of processes based on enzymatic hydrolysis of cellulosic materials is uncertain so far, but the potential of these processes encourages further developmental work.

The next report (R. G. GOMEZ: "Nucleic Acid Damage in Thermal Inactivation of Vegetative Microorganisms") covers some important aspects of thermal damage. The effects of heat on ribosomes and rRNA, degradation and resynthesis are discussed. A very interesting part of the paper is that connected with the effect of heat treatment on the DNA. New experimental data are given showing the mutagenic effect of heat as well as genetic and biochemical evidences of DNA damage.

The use of microorganisms in xenobiotic metabolism studies has a growing tendency. The report by R. V. SMITH, D. ACOSTA and J. P. ROSAZZA ("Cellular and Microbial Models in the Investigation of Mammalian Metabolism of Xenobiotics") gives very interesting data not only from the point of view of investigation of metabolism of drugs and other foreign chemicals but also of the microbial transformation and fermentative production of biologically active substances.

One of the problems facing the designer of a fermenter is the choice of the correct form of mechanical agitation system. In solving the problems mentioned above the study by J. BRYANT ("The Characterization of Mixing") may be of interest giving a basic theoretical approach of the design of fermenters.

One of the most interesting part of the book is that on the application of immobilized whole cells in fermentation processes. (T. R. JACK and J. E. ZAJIC: "The Immobilization of Whole Cells.") The methods of whole cell immobilization (entrapment techniques, adsorption techniques, selective binding of cells by immobilized macromolecules, covalent bonding of cells to support) are reported and so is the wide possibility of use in fermentation industries including also food industries.

The great many references facilitate comprehensive study of the papers.

Prof. R. LÁSZTITY