

## Book Review

# Immobilization of Enzymes and Cells, edited by G. F. Bickerstaff

*Humana Press, Totowa, New Jersey;  
1997; ISBN 0-89603-386-4; 384 pp.; \$74.50 (hardcover)*

In *Immobilization of Enzymes and Cells*, the editor offers a comprehensive overview on immobilization methods and supports, and gives many detailed examples of experimental techniques and procedures.

During the last three decades, immobilization of enzymes, cells, and organelles has found vast analytical, technological, and medical applications. Biological materials have a great variety of properties, and for each particular application, the proper choice of support and immobilization method may not always be easy to accomplish. The know-how provided by this volume could be a good guide on how to achieve optimal function, stability, and efficiency of the immobilized system. What makes the book different is the combination of surveys of the main principles of immobilization with detailed descriptions of immobilization examples. The experience and “secrets” of the contributors are summarized in the notes section at the end of each chapter. These notes give valuable insights into the described procedures and make their reproduction easy. The book not only offers representative examples of immobilization, but provides a comparative view on the advantages, disadvantages, and limitations of the support materials and methods used. It also suggests how to weigh the characteristics of the biological molecules (enzymes, cells, organelles), the carriers, and the immobilization methods for their compatibility. Examples for the supports employed range from different variants of natural and synthetic polymers via polyelectrolytic complexes; biocompatible supports and erythrocytes to glass, graphite, and magnetic particles; silicon wafer; and carriers responding to light, temperature, and electric and magnetic fields. All principal binding methods—adsorption, covalent attachment, multi-point attachment, gel entrapment, crosslinking, immobilization based on bioselective interactions, chelation, coimmobilization, reversible immobilization, photochemistry- and electrochemistry-based immobilization—are presented with their relative merits and drawbacks. The book also gives examples of the uses of immobilized enzymes in fundamental studies and for special applications in diagnostics, therapy, and drug delivery.

Many well-known authors from research laboratories worldwide have contributed to this successful volume of the *Methods in Biotechnology* series. Without the pretense to cover the vast range of known immobilization

techniques, this book provides a basic reference tool for all those who will need to immobilize biological materials in their work—not only for the beginner in the field, but also for experienced researchers.

**B. Galunsky**