Biocatalysis, Fundamentals and Applications; edited by A. S. Bommarius and B. R. Riebel; Wiley-VCH, Weinheim, **2004**; hardback, 129 €, ISBN 3-527-30344-8

Time is on nature's side. Biological systems are rooted in chemistry that has had eons to reach an awe-inspiring level of sophistication. Developments in recombinant DNA technology, protein engineering, immunology, and bioinformatics have made nature's lab notebook much easier to read in recent years. Its pages have been put into sharper focus by Andreas S. Bommarius and Bettina R. Riebel, who have collected, condensed and organized this wealth of information to create a highly valuable resource in *Biocatalysis, Fundamentals and Applications*. Both authors share their expertise in academic and industrial research projects, which yields especially important insight into the biocatalytic fundamentals and applications illustrated in this book.

Biocatalysis will be most appreciated by chemists who seek alternate routes for organic transformations perhaps too difficult to achieve with conventional catalysts, or who wish to explore ways to optimize existing protocols. The book is divided into three main sections: *Basic Tools, Advanced Tools,* and *Applications*; the target readership is clearly one with research applications in mind. It is definitely not limited to organic chemists, however. The discipline of biocatalysis is, of course, interdisciplinary, and this book treats its wide scope of topics with concise detail. Anyone who wishes to identify, isolate, and fine-tune an enzyme into an optimized catalyst for a given reaction will need the resources and adaptability to engage in the techniques of microbiology; molecular biology; enzymology; organic, analytical, and process chemistry; and bioinformatics data mining. For such a person, *Biocatalysis* should definitely be the first book off the shelf.

The authors begin their book with a well-organized discussion surrounding the merits and current limitations of biocatalysis. Each chapter supplies sufficient background information for the topic at hand, and steers the reader/researcher in the appropriate direction in pursuit of more information specific to one's particular needs. *Biocatalysis* would therefore serve not only as an excellent launching pad for research projects, but as a thorough, comprehensive resource for the improvement of ongoing efforts.

The book targets a readership that is advanced in its scientific literacy. This is not do discount the potential value of *Biocatalysis* in the university classroom. As an educational resource, this book would serve students best as a means to get an advanced, overall picture of the current techniques in chemistry, chemical engineering, and biological sciences. Much more than a 'how-to' manual for research chemists, *Biocatalysis* contains numerous case examples and historical accounts which would be of interest to students in advanced- or graduate-level organic and biochemistry courses, and not just those who pick up the book with the intent of designing or complementing a research project. Perhaps most valuable to today's researchers-in-training is a very simple and subtle message this book has to offer: solutions can sometimes be found by venturing beyond one's primary research discipline.

At the technical level, a small number of the figures in the book are a bit difficult to either read or interpret. A subset of these could be improved by captions that yield more detailed explanations. This is a minor drawback that removes only little from the overall quality of the work; it can (and should) be addressed with relative ease in a future edition of this book.

Biocatalysis is, at the very least, a timely and detailed summary of the important recent developments in the rapidly moving fields pertinent to harnessing the efficiency and specificity of biological catalysts. It will definitely assist research scientists' efforts to improve their own chemical transformations. Meanwhile, nature's chemistry will, of course, continue to develop and perfect itself at its own pace, over the eons to come.

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