

**Asymmetric Catalysis on Industrial Scale**; edited by H.U. Blaser, E. Schmidt; Wiley-VCH: Weinheim, 2004, 454 pages; ISBN 3-527-30631-5

“Enantioselective catalysis has found its way into numerous industrial applications” – this phrase is present in practically every publication dealing with this special and highly topical subject, and it is definitely true, but where is the proof? Whereas chemists in industry have fairly open access to academic progress, the reverse flow of know-how is rare because interesting industrial results, processes and applications are normally encrypted in patents and thus remain a “black hole” for students. The monograph of Blaser and Schmidt is an impressive effort to counteract this one-way street of communication and invites interested students and teachers to get an idea of the way research and process development are conducted in industry. In 25 case studies from pharmaceutical, agro and fine chemicals companies, not only the catalytic reactions themselves are described – even more inspiring is the background information on failed attempts in the development process, as well as the economic driving forces.

The extensive introduction gives a practical overview and an explanation of the special organisation of the book which is divided into 4 main parts. As the major classification criterion the authors chose “the nature of the task of the development chemist,” ending up in two sections with problem-driven issues and in two categories focussed on technology-driven tasks. The latter mainly consists of contributions

from fine chemicals companies because new pathways to important building blocks including unnatural amino acids, chiral alcohols, cyanohydrins and many others are discussed. On the other hand, the majority of the problem-driven contributions originate from Life Science companies and tell the process development stories of key steps to pharmaceuticals (such as L-Dopa, 7-ACA, Roxifiban, Esomeprazole, ACE-, Renin- and Collagenase-inhibitors) and pesticides (Metolachlor). As to be expected from a monograph, each case study has its own character and emphasis – nevertheless the major issues and problems, as well as their effect on the course of the work, are clearly presented in each contribution.

From reading the book, one may come to the conclusion that enantioselective catalysis in industry is based on two core technologies – asymmetric hydrogenation and biocatalysis – because the monograph contains only a few exceptions. In order to correct that impression the authors have inserted a section for “missing processes” into the introduction, including a series of further examples and the corresponding literature.

It was high time to publish a comprehensive book on the topic. “Asymmetric Catalysis on Industrial Scale” is an excellent monograph in structure, form and content and may become the standard reference book for large scale applications of enantioselective catalysis in the next few years.

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