

Asymmetric Catalysis on Industrial Scale: Challenges, Approaches and Solutions, 2nd ed. Edited by Hans-Ulrich Blaser and Hans-Jürgen Federsel. Wiley VCH: Weinheim. 2010. 542 + xxxvii pages. Price £66.95. ISBN 978-3-527-32489-7.

For those readers who purchased the first edition of the outstanding *Asymmetric Catalysis on Large Scale* (2004), it should be pointed out that this new edition is not an update—it is a completely new book. It should really be designated volume 2. Hopefully, there will be a volume 3 in a few year's time. This new work has a new title, the word “large” has been replaced by “industrial”, and a new coeditor, Hans-Jürgen Federsel from AstraZeneca. This second volume even surpasses the quality of the first—and is longer too. A simple review of the book would say “just buy it”. However, if you are going to buy one for your institution library (if it still exists), then you should also order a personal copy for yourself—it will never be on the library shelf; you will always be using it.

The editors have gathered together 87 authors who have produced 28 chapters, each with a strong process R&D focus. The emphasis is on case studies, and among the topics are interesting detail on optimisation, scale-up, and in some cases useful safety information on calorimetry of the process under discussion.

The topics are too numerous to mention, but as expected, there is a strong emphasis on catalytic asymmetric hydrogenation and on biotransformations. Oxidation, phase-transfer alkylations, and other C–C bond-forming processes are also discussed.

Most chapters are of very high quality, and the chemistry is discussed from an industrial viewpoint, the emphasis being

on optimisation, workup, efficiency, cost, safety, scaleability, etc. In some cases catalyst removal/recycling is mentioned; in others the move towards continuous processing is discussed. Case studies are from the flavour/fragrance and fine chemicals industries, as well as the pharmaceutical industry. Most processes discussed have been scaled to kilogram and many to tonne scale.

A constant theme is the transfer of chemistry from academia to industry, and how the initial discovery of a new methodology in an academic institution needs to be modified, developed, and further understood before it can be applied on kg and tonne scale on more complex substrates. Often processes are optimised by improving the substrate-to-catalyst ratio/turnover number through subtle changes to reaction conditions. Also discussed are patent issues surrounding catalyst/ligand licensing.

Thus, to conclude, this is a book that should be read—cover-to-cover—by every process chemist. Academics will also learn a lot and will be provided with excellent industrial examples to enhance their teaching, many of them not published previously. Chemists in other disciplines, such as molecule discovery, will also appreciate the practical discussions on optimisation and choice of appropriate reaction conditions.

To the editors, I can say that you have done a fantastic job, and I ask you to start preparing volume 3 as soon as possible. Many Hans make light work!

Trevor Laird

Editor

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