

Handbook of Chiral Chemicals, 2nd Edition, D. Ager (Ed.), CRC Press/Taylor & Francis: Boca Raton, USA, 2006, hardcover, 664 pp, £ 115, ISBN 1-57444-664-9

Again another book on chiral compounds, one might say. Before walking away just all too quickly, a second look might be worthwhile. This one is different and aims for a unique approach as it intends to focus on commercial-scale production of chiral molecules. As a result, almost all of the contributing authors come from industrial laboratories and hence offer a broad overview on syntheses of those chiral molecules that are readily accessible from an economic standpoint. Overall, the book consists of 31 chapters, and even based on this broad content, it is obvious that given the advanced state of chiral compound synthesis, a comprehensive coverage of the field is beyond possibility. It is precisely this limitation that makes the charm of the book. Instead of trying to cover all the more traditional reactions and processes, the editor has provided a balanced blend of classical auxiliary-based stereoselective synthesis, resolution protocols, asymmetric catalysis and some more specialized topics. In particular, the final chapter on large-volume synthesis of selected examples of pharmaceutical, food ingredients and agricultural products emphasizes the importance of asymmetric synthesis in industry.

An initial chapter by Ager deals with general aspects on the synthesis of amino acids, including recent aspects on β -amino acid synthesis. This is followed by a very instructive article on bacterial production of amino acids. Asymmetric hydrogenation still appears the most promising catalytic approach for access of chiral materials, and it is

no surprise that the book contains four chapters on this topic. Burk, de Vries, and Blaser describe the state of the art in hydrogenation reactions, highlighting special ligand families such as DuPHOS, phosphates and phosphoramidites, and ferrocenes, respectively. In the first of these chapters, Laneman gives a broader overview, including some case-specific applications. These chapters give precise insight into the state of the art in this field.

Among the other expected topics to be covered within are biocatalysis, pericyclic reactions, metathesis reactions, asymmetric oxidations, and stereoselective syntheses with carbohydrates, terpenes and common chiral auxiliaries, while chiral sulfoxides represent one of the surprising absences. Furthermore, for a book issued in 2006, it is interesting to note that the current academic focus on organocatalysis has apparently not yet found a reflection in industrial application.

Overall, this book is well-written throughout, and represents a fine addition to the growing number of books on chiral synthesis. Its application of bulk production and industrial aspects renders it a valuable source on these particular topics and it should be of general use to readers from industry and academia of all levels.

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