Book Reviews

Handbook of Enantioselective Catalysis with Transition Metal Compounds. Vol. 1 + 2. By H. Brunner and W. Zettlmeier. VCH: Weinheim; 1993, 917 pp., paperback, Vol. I/II DM 598. ISBN 3-527-29068-0.

Innovation in science is in most cases brought about by creative association of established concepts. Today, enantioselective catalysis with transition metal complexes is the field most arousing chemist's interest and many new concepts appear in the form of new asymmetric synthesis and new ligands in a wide range of chemical journals. The number of papers is also growing very rapidly. Accordingly it gets difficult for a chemist to follow all the published data on enantioselective catalysis. Nevertheless it is indispensable for creative researchers to be familiar with asymmetric reactions and ligands available today. This book "Handbook of Enantioselective Catalysis" compiles almost all transition metal-catalyzed enantioselective reactions and ligands used for those catalysts, reported by 1992 in volumes I and II, respectively. The great merit of this book is that the reader can easily access the pursuing reaction through the product formula arranged in the order of increasing number of carbon atoms in volume I. The important information about the reaction is compactly summarized there so that he can easily seize the principal aspect of the reaction. Reference to the original papers is also given in all cases. For example, when the reader wants to search for the asymmetric reduction of aryl ketones, he can find as many as seventeen examples by referring to isopropyl phenyl carbinol according to the formula index. Thus, the reader can get the information about transition metal catalysts available for the asymmetric reduction of aryl ketones and the iridium-catalyzed Meerwein–Ponndorf–Verley reduction is found to be the amongst most useful one in terms of enantioselectivity. Volume II is tremendous. It lists already-known ligands, the embodiments of creative chemist's ideas, illustrated with their structures. No synthetic chemist can look through this volume without their imagination being stimulated. Most of the readers will be full of new ideas and will look again at volume I for the reaction in order to apply his new idea. Therefore, if there is a convenient device to relate the ligand in volume II to the reaction in volume I, it will be of great use to the reader. The reader also may find some difficulty in searching the desired asymmetric synthesis according to reaction types. Since so many reactions are included in this book, there seems to be the need for an index of reactions according to their types.

It is needless to say that this is a book indispensable to both academic and industrial synthetic chemists and the reader can enjoy the privilege of receiving the essence of current enantioselective catalysis that certainly enhances his research activity. The reviewer shows his great respect to Professor Brunner and Doctor Zettlmeier for their huge endeavor paid for this excellent task. The publication of a new edition including the reports from 1993 forward is eagerly waited for.

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