Science of Synthesis, Stereoselective Synthesis 2: Stereoselective Reactions of Carbonyl and Imino Groups; edited by Gary A. Molander, Georg Thieme Verlag: Stuttgart, **2011**, hardcover, 1056 pp., €2590, ISBN: 978-3-13-154121-5; softcover, 1056 pp., €249, ISBN: 978-3-13-165171-6

The *Science of Synthesis* series has produced a new three-volume set solely dedicated to stereoselective reactions: Volume 1 covers the reactions of carbon–carbon double bonds, volume 2 covers the reactions of carbonyl and imino groups, and volume 3 covers pericyclic reactions, cross coupling and C–H/X bond activation. *Stereoselective Synthesis 2: Stereoselective Reaction of Carbonyl and Imino Groups* represents the most comprehensive overview of modern stereoselective reactions using two of the most useful functional groups in organic synthesis, carbonyl and imino groups.

The abstracts of each chapter and the table of contents summarize and lay out the content of the book in a concise manner. The 18 chapters and 1000-plus pages of volume 2 survey the current state-of-the-art in stereoselective carbon–carbon bond formation, carbon–heteroatom bond formation, and hydrogenation of carbonyl and imino groups via both chemical synthesis and biocatalysis. Nearly half of this volume focuses on the formation of carbon–carbon bonds via stereoselective nucleophilic addition reactions. There are chapters dedicated to alkylation, allylation, alkenylation, arylation, alkynylation, Mukaiyama and direct aldol reactions, Morita–Baylis–Hillman and Mannich reactions, benzoin and Stetter reactions, and the preparation of spiroketals and spiroaminals. The rest of the content describes both hydrogenation and carbon–heteroatom bond formation. There are chapters dedicated to the hydrogenation of numerous types of carbonyl (ketones, esters, aldehydes, etc.) and imino (ketimines, imino esters, aldimines, etc.) compounds, transfer hydrogenation, hydroboration, hydrosilylation, hydrocyanation, cyanosilylation, hydrophosphonylation, and epoxide and aziridine formation.

Each chapter is clear, succinct, well-organized, and well-written by distinguished experts in their respective disciplines, including contributions from J. Leighton, P. J. Walsh, E. N. Jacobsen, E. M. Carreira, T. Rovis, and C. J. Li. For example, E. M. Carreira and co-workers share their expertise on the addition of alkynyl nucleophiles into carbonyl and imino electrophiles. T. Rovis and co-workers provide valuable insight into developing chiral carbene catalysts for the asymmetric benzoin and Stetter reactions (chapter 17).

With a reference book of this magnitude containing a large number of contributing authors, one might expect different writing and formatting styles from chapter to chapter. Yet, the layout of this volume is uniform and consistent from cover to cover. All of the tables and schemes are well displayed and similarly formatted, which leads to a consistent style and tone. Within each chapter, a general introduction is provided about the specific area of carbonyl and/or imino chemistry and this introduction is followed by various subdivisions. For example, the authors (L. Liu, D. Wang, and C.-J. Li) of chapter 12 start with a concise introduction to the asymmetric Mukaiyama aldol reaction. This introduction is followed by five subdivisions: 1) reactions with chiral substrates, 2) reactions with chiral metal catalysts, 3) reactions with chiral organocatalysts, 4) reactions in aqueous media, and 5) vinylogous aldol reactions. Each chapter is concluded with a list of appropriate references.

The content of this volume goes beyond information offered by traditional review articles and electronic databases. Distinct to the *Science of Synthesis* series, experimental procedures and chemical safety properties and precautions are included. This added feature will be particularly welcomed and appreciated by experimentalists.

Given the wealth of information, the thoughtful organization, and the detailed experimental procedures, research groups in both academia and industry will benefit from this handy reference.

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