

Classics, Catalysis, and Colloids

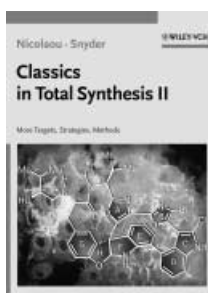
Classics in Total Synthesis II: More Targets, Strategies, Methods

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At the beginning of the term, there is the perpetual question: which books to recommend? Besides some obvious modern classics, is there anything new for the novice, the advanced student and the experienced? Well, there is a new pleasant read for the advanced student and even the experienced. It is the second volume to the established *Classics in Total Synthesis* and it continues the series extremely well. Fortunately, the general format and features remained unchanged, because there was little to be gained by altering them. And once more we found it particularly useful that the important intermediates of every synthesis reappear in the margins of the following pages. This avoids thumbing back and forth and contributes to leisure reading.

The charming introduction: *Perspectives in Total Synthesis* gives way to over 36 total synthesis of 21 natural products grouped into 21 chapters. Snyder and Nicolaou took on the delicate task of selecting the “most impressive” efforts in total synthesis covering the period from 1993–2003. Of course, this selection is open to criticism, but it covers such



diverse and exiting chemistry that we did not miss any major efforts in this area. All topics are grouped in chronological order according to the first accomplished total synthesis, which is the same system as in the previous volume. This order may look a bit arbitrary at first glance, but it worked well in the first volume, and so it does in the sequel. The feasibility of the concept is revealed in the second chapter: the introduction highlights a natural product in the context of a specific synthetic problem and then elaborates this issue. For example: the total synthesis of *isochrysohermidin* serves as an anchor for Diels–Alder reactions in total synthesis. Two excursions take the reader through related total syntheses, exemplify the individual obstacles in every approach and repeat the lessons learned. The concept of retrosynthetic analysis is applied to all examples; this stimulates discussion and eventually results in rather different synthetic approaches as presented in this volume. The arsenal of modern synthetic methodology is summarized in an amazing style and is extremely enjoyable to read. Some highlights on this journey through modern synthetic methodology are the chapters on *swinholidin A* (3), the epothilones A and B (7), vancomycin (9) and diazepam (20). These natural products provide the platforms for a wide range of reactions: boron-mediated aldol coupling, non-natural amino acid and peptide synthesis, alkene metathesis (which was in its infancy when volume 1 appeared) and solid-phase supported synthesis. The pages (163–191) are devoted to the development of ring-closing metathesis and present today's essentials of this powerful reaction. The contribution of alkene metathesis to total synthesis and bioor-

ganic chemistry is exemplified by R. Ghadiri's β -barrels, the cross metathesis of vancomycin analogues and domino ring-closures. Needless to say, this compilation includes the cyclisation release strategy in the solid-phase supported synthesis of epothilones analogues, which was a masterpiece in the combinatorial synthesis of a complex natural product.

All chapters are presented in impressive clarity and even complex strategies are explained well; this is particularly important for the book's use in seminars or studying on your own. Numerous references to the original literature make it easy to use the book as a source for inspiration.

The schemes are of high quality throughout the book and mistakes are few: Chapter II, Scheme 5, the depicted stereochemistry of *isochrysohermidin* is inconsistent with the text, and on pp. 240–241 the explanation on vancomycin-resistant bacteria does not match the D-Lac peptide depicted in Scheme 1.

One question remains: hardcover or softcover? The CD-ROM, which only comes with the hardcover, provides the answer. If you consider using it just once in teaching or in a presentation, you better take the hardcover. Most schemes are black on a light blue background, which does not make for good scanning. The CD-ROM contains all schemes in black and white as high-resolution .pdf files, which are ready to use for overheads or PowerPoint presentations.

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