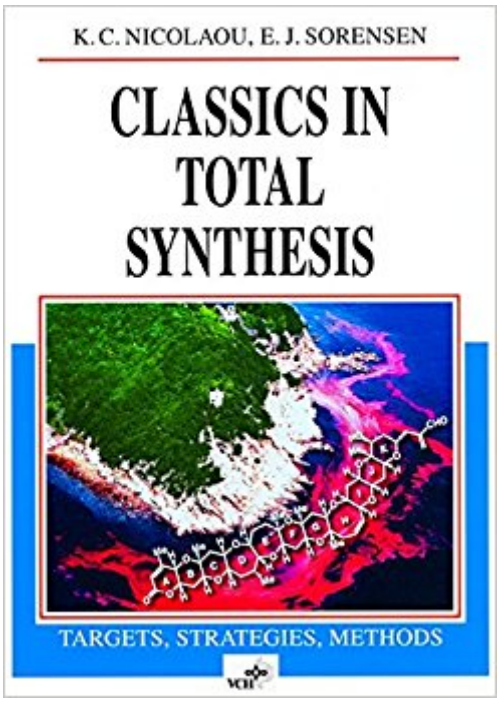
Classics In Total Synthesis



Synopsis

K. C. Nicolaou, E. J. Sorensen Classics in Total Synthesis Targets, Strategies, Methods This book is a must for every synthetic organic chemist. With didactic skill and clarity, K. C. Nicolaou and E. J. Sorensen present the most remarkable and ingenious total syntheses from the laboratories of some of the world's greatest synthetic organic chemists. To make the strategies more understandable and accessible, especially to the novice, each total synthesis is first analyzed retrosynthetically. The authors then carefully describe each step and comment on alternative methods and potential pitfalls. When appropriate, key chemical reactions are discussed in the wider context of the chemical literature, giving the reader a lesson in both total synthesis and synthetic methods. Diverse structural types of natural products and important organic transformations including pericyclic, ionic, radical, and photochemical reactions are covered. Catalysis, asymmetric synthesis, organometallic chemistry, and cyclization reactions are especially highlighted. Mechanism, reactivity, selectivity, and stereochemistry are presented clearly and discussed analytically. Numerous references to useful reviews and the original literature will make this book the first point of entry into the vast field of synthetic organic chemistry. Special emphasis is placed on the skillful use of graphics and schemes. Retrosynthetic analyses, reaction sequences and crucial synthetic steps are presented in boxed, blue background sections within the text. For easy reference, key intermediates are also shown in the margins. Graduate students, teachers, and researchers alike will find this book to be a gold mine of useful information. Every synthetic chemist will have a copy on his or her desk.

Book Information

Hardcover: 798 pages
Publisher: Wiley-VCH; 1 edition (January 31, 1996)
Language: English
ISBN-10: 3527292845
ISBN-13: 978-3527292844
Product Dimensions: 7.7 x 1.5 x 10 inches
Shipping Weight: 4 pounds
Average Customer Review: 5.0 out of 5 stars 3 customer reviews
Best Sellers Rank: #3,451,223 in Books (See Top 100 in Books) #50 inÃ Â Books > Science & Math > Chemistry > Organic > Synthesis #935 inÃ Â Books > Science & Math > Chemistry > Physical & Theoretical > Physical Chemistry #8103 inÃ Â Books > Textbooks > Science & Mathematics > Chemistry

Customer Reviews

This book is first to cover in detail the syntheses, reactions, and physical properties of nitrocarbons. Examples from the group of other, as yet unknown nitrocarbons are also discussed. It further includes a very complete survey of all published literature on the subject.

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Nicolaou has written the book that Corey’s _Logic of ChemicalSynthesis_ should have been. The total synthesis of over thirtynatural products is described in great detail, outlining the strategy and retrosynthetic analysis for each compound. The book begins with Woodward’s ground-breaking synthesis of strychnine (in 1954!) and culminates with one of Nicolaou’s own great triumphs, the synthesis of brevetoxin B. The other syntheses presented, including vitamin B12, ginkgolide B, and Taxol, are no less impressive. This book is truly inspiring; it is the kind of book that will induce bright young students to enter the field of organic chemistry. It is exciting reading, and I hope it will be but the first in a series. Congratulations, Nicolaou, on an excellent book. (For a sample of the tone of

the book, see Nicolaou’s recent article on the synthesis of brevetoxin B in the journal Angewandte Chemie International Edition, issue 35, pages 589-607, 1996)

A graduate student strongly recommended me to get this book and start reading. At first intimidated by the complex synthesis steps and unfamiliar reagents, the Nicolaou synthesis book is a must read for organic students and chemists. Unlike "The Logic of Chemical Synthesis" (no doubt is also well-written), Nicolaou’s "Classics in Total Synthesis" is a pictorial account of some of the representative syntheses of natural products. The detailed, well-written text discusses total synthesis work of chemists such as Heathcock, Corey, Evans, and Nicolaou himself. Each synthesis is preceded with the historical background and significance. A detailed synthetic scheme is included with detailed discussion of each intemediate and inidvidual step. Reader will surely learn a great deal by working through each synthetic step with a pencil and paper. While most advanced organic texts discuss the typical traditional methods in synthetic chemistry, Nicolaou discusses practical approach to synthesizing complex stereospecific compounds. Corey’s "The Logic of Chemical Syntheses" might have the similar scope in organic synthesis, yet Nicolaou will be more reader-friendly especially for beginning students in organic synthesis. Nicolaou presents not only the tactics of the subject, it also brings out the beauty of the art of total synthesis. A good read!

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