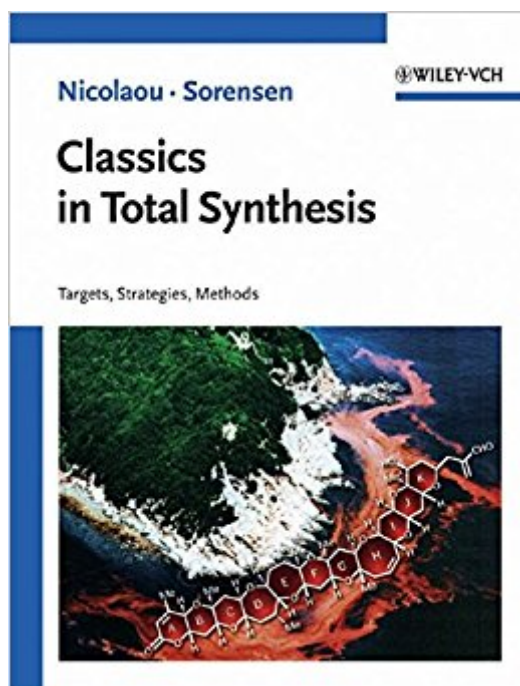


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Classics In Total Synthesis: Targets, Strategies, Methods



Synopsis

K.C. Nicolaou - Winner of the Nemitsas Prize 2014 in Chemistry This book is a must for every synthetic chemist. With didactic skill and clarity, K. C. Nicolaou and E. Sorensen present the most remarkable and ingenious total syntheses from outstanding synthetic organic chemists. To make the complex strategies more accessible, especially to the novice, each total synthesis is analyzed retrosynthetically. The authors then carefully explain each synthetic step and give hints on alternative methods and potential pitfalls. Numerous references to useful reviews and the original literature make this book an indispensable source of further information. Special emphasis is placed on the skillful use of graphics and schemes: Retrosynthetic analyses, reaction sequences, and stereochemically crucial steps are presented in boxed sections within the text. For easy reference, key intermediates are also shown in the margins. Graduate students and researchers alike will find this book a gold mine of useful information essential for their daily work. Every synthetic organic chemist will want to have a copy on his or her desk.

Book Information

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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.

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.

I liked this book because it shows the syntheses that have been done in a simple way and explains the retrosynthetic pathway and some important aspects on reactions or chirality. For my class I covered all reagents with post-its and it helped me remember them later.

I'm not big on writing reviews, and hardly ever do. I just wanted to add to the previous reviewers comments and say that this is hands down the best organic text available today. I fell in love with it when I used it for a presentation. The way it is written makes it read like a story. The explanations are comprehensive and clear. Every time I had a question, he promptly answered it in his book. I am jealous of his students who get to work for him. He must be a fantastic teacher!

A great book to have for anyone who is serious about synthetic organic chemistry.

Nobel Prize 2016.

The more I read and study out from the book, the more I appreciate the beauty of it. Nicolaou and

Sorensen's Classics in Total Synthesis is the most widely consulted title on organic synthesis. As many have commented, this book is a must for every synthetic organic chemist, organic student and researcher. Released in 1995, despite the advances in synthetic methodology, Nicolaou has presented some of the most remarkable and ingenious total syntheses from laboratories of the world's most prominent organic chemists. Molecules adopted include strychnine, prostaglandin, progesterone, vitamin B12, erythronolide B, monensin, endiandric acids, biotin, hirsutene, capnellene, methyl homosecodaphniphyllate, calicheamicin and more. Nicolaou has done an incredible favor to make the strategies more understandable and accessible. For each molecule, the total synthesis begins with a thorough retrosynthetic analysis. Sometimes more than one retrosynthetic routes are introduced in order to show the possibilities of finding the most efficient synthesis. Nicolaou then meticulously describes each step in synthesis with referral to important named reactions such as the Noyori asymmetric reduction, Luche reaction, Johnson Claisen rearrangement, Julia olefination, etc. With such didactic skill and clarity, Nicolaou has taught the gist of synthesizing complex molecules from commercially available building blocks. A great way to use the book and learn organic synthesis would be to write down every single step on a separate piece of paper and understand what each step does in the overall total synthesis. The synthesis steps and important reactions are presented in schemes with blue background sections, with emphasis on asymmetric synthesis, catalysts, stereochemistry and mechanism. Major reaction intermediates are presented at the margin. Chemical synthesis relies heavily on chemical literature research. Nicolaou also provides numerous references in each total synthesis for further studies and consultation. Nicolaou has made organic synthesis fun and approachable. Every synthetic chemist should own a copy of Nicolaou.

This is an impressive collection of 36 syntheses. Each chapter describes a different synthesis. Included are a retrosynthetic analysis (very helpful for those learning the art of total synthesis), the total synthesis (explaining key steps along the way and why the reaction gave the products it did) and then some conclusions. The appendix in chapter 22, on Catalytic Asymmetric Reactions is very useful. If you bought "The Logic of Chemical Synthesis" and were disappointed, don't let that scare you from this book. It is well worth the price.

If you want to do (total) synthesis yourself it is an absolute must to read this book. Not the book itself, but the synthesis described are brilliant. Even if some of them are 'old' it is great to see the progress synthetic chemistry made within the last 20-30 years.

It is an amazing work detailing many of the greatest accomplishments attained in organic chemistry. As a student, I recommend it highly.

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