



# ORGANIC CHEMISTRY

EIGHTH EDITION

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# [MOBI] Organic Chemistry

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## Organic Chemistry

**Organic Chemistry**-J. David Rawn 2018-02-03 Organic Chemistry: Structure, Mechanism, Synthesis, Second Edition, provides basic principles of this fascinating and challenging science, which lies at the interface of physical and biological sciences. Offering accessible language and engaging examples and illustrations, this valuable introduction for the in-depth chemistry course engages students and gives future and new scientists a new approach to understanding, rather than merely memorizing the key concepts underpinning this fundamental area. The book builds in a logical way from chemical bonding to resulting molecular structures, to the corresponding physical, chemical and biological properties of those molecules. The book explores how molecular structure determines reaction mechanisms, from the smallest to the largest molecules—which in turn determine strategies for organic synthesis. The book then describes the synthetic principles which extend to every aspect of synthesis, from drug design to the methods cells employ to synthesize the molecules of which they are made. These relationships form a continuous narrative throughout the book, in which principles logically evolve from one to the next, from the simplest to the most complex examples, with abundant connections between the theory and applications. Featuring in-book solutions and instructor PowerPoint slides, this Second Edition offers an updated and improved option for students in the two-semester course and for scientists who require a high quality introduction or refresher in the subject. Offers improvements for the two-semester course sequence and valuable updates including two new chapters on lipids and nucleic acids Features biochemistry and biological examples highlighted throughout the book, making the information relevant and engaging to readers of all backgrounds and interests Includes a valuable and highly-praised chapter on organometallic chemistry not found in other standard references

**Organic Chemistry**-Jonathan Clayden 2012-03-15 Rev. ed. of: Organic chemistry / Jonathan Clayden ... [et al.]

**Organic Chemistry**-Pierre Vogel 2019-08-26 The know-how about reactivity, reaction mechanisms, thermodynamics and other basics in physical organic chemistry is the key for successful organic reactions. This textbook presents comprehensively this knowledge to the student and to the researcher, too. Includes Q&As.

**Organic Chemistry**-Harold H. Trimm 2011-04-15 This book presents a range of research on important topics in the field. Of the approximately 11 million known chemical compounds, about 10 million are organic. Organic chemists are currently working to produce better polymers with specific properties, such as biodegradable plastics. The understanding of new drug structures from plants and the synthesis of improved pharmaceuticals is another area of great interest. Organic chemists are also researching the reactions that occur in living systems and understanding the molecular causes of disease.

## Advances in Physical Organic Chemistry

**Advances in Physical Organic Chemistry**- 1980-12-15 Advances in Physical Organic Chemistry

**Organic Chemistry**-Allan D. Headley 2020-01-02 Provides an in-depth study of organic compounds that bridges the gap between general and organic chemistry Organic Chemistry: Concepts and Applications presents a comprehensive review of organic compounds that is appropriate for a two-semester sophomore organic chemistry course. The text covers the fundamental concepts needed to understand organic chemistry and clearly shows how to apply the concepts of organic chemistry to problem-solving. In addition, the book highlights the relevance of organic chemistry to the environment, industry, and biological and medical sciences. The author includes multiple-choice questions similar to aptitude exams for professional schools, including the Medical College Admissions Test (MCAT) and Dental Aptitude Test (DAT) to help in the preparation for these important exams. Rather than categorize content information by functional groups, which often stresses memorization, this textbook instead divides the information into reaction types. This approach bridges the gap between general and organic chemistry and helps students develop a better understanding of the material. A manual of possible solutions for chapter problems for instructors and students is available in the supplementary websites. This important book: • Provides an in-depth study of organic compounds with division by reaction types that bridges the gap between general and organic chemistry • Covers the concepts needed to understand organic chemistry and teaches how to apply them for problem-solving • Puts a focus on the relevance of organic chemistry to the environment, industry, and biological and medical sciences • Includes multiple choice questions similar to aptitude exams for professional schools Written for students of organic chemistry, Organic Chemistry: Concepts and Applications is the comprehensive text that presents the material in clear terms and shows how to apply the concepts to problem solving.

**Advanced Practical Organic Chemistry, Second Edition**-John Leonard 1994-06-02 The first edition of this book achieved considerable success due to its ease of use and practical approach, and to the clear writing style of the authors. The preparation of organic compounds is still central to many disciplines, from the most applied to the highly academic and, more than ever is not limited to chemists. With an emphasis on the most up-to-date techniques commonly used in organic syntheses, this book draws on the extensive experience of the authors and their association with some of the world's mleading laboratories of synthetic organic chemistry. In this new edition, all the figures have been re-drawn to bring them up to the highest possible standard, and the text has been revised to bring it up to date. Written primarily for postgraduate, advanced undergraduate and industrial organic chemists, particularly those involved in pharmaceutical, agrochemical and other areas of fine chemical research, the book is also a source of reference for biochemists, biologists, genetic engineers, material scientists and polymer researchers.

## Organic Chemistry

**Theoretical Organic Chemistry**-C. Párkányi 1997-12-09 This volume is devoted to the various aspects of theoretical organic chemistry. In the nineteenth century, organic chemistry was primarily an experimental, empirical science. Throughout the twentieth century, the emphasis has been continually shifting to a more theoretical approach. Today, theoretical organic chemistry is a distinct area of research, with strong links to theoretical physical chemistry, quantum chemistry, computational chemistry, and physical organic chemistry. The objective in this volume has been to provide a cross-section of a number of interesting topics in theoretical organic chemistry, starting with a detailed account of the historical development of this discipline and including topics devoted to quantum chemistry, physical properties of organic compounds, their reactivity, their biological activity, and their excited-state properties.

## The organic chemistry of nitrogen- 1966

**Silver in Organic Chemistry**-Michael Harmata 2011-01-11 The first authoritative book on using silver cations in organic chemistry—for catalysis and more! With more sophisticated catalytic methodologies fueling a resurgence in the study of cation-based chemistry, gold and platinum have stepped to the fore as the unique agents used to create new chemical reactions. Although these metals have become a primary focus of researchers in the field, another coinage metal that is often overlooked—but is as powerful as the others—is silver, a far less costly alternative to gold and platinum in aiding the development of new reactions. Making a strong case for the use of silver as a catalyst and structural element in organometal constructs, this authoritative book is the first to explore the benefits of using silver in organic chemistry by taking a close look at silver's unique reactivity and structural characteristics for the development of new methods and materials. Silver in Organic Chemistry is: The first book to address catalysis using silver, whose use in organic chemistry is on the verge of exploding A resource for researchers wishing to do chemistry with silver cations, an area that stands in the shadow of gold chemistry, but still glistens, demonstrating that all that glitters is not gold—sometimes it's silver! A guide for "first attempts" in working with silver cations Edited by a very well-respected, highly visible authority in this field Silver in Organic Chemistry promotes further scientific discussion by offering important new ways to examine the future possibilities of an emerging field. By elevating the importance of silver chemistry, this thought-provoking guide illustrates how this versatile metal can become an increasingly significant player in opening the door to new catalytic organic reactions and new organometal materials.

## Organic Chemistry

**Organic Chemistry for Babies**-Chris Ferrie 2018-05-01 Fans of Chris Ferrie's Rocket Science for Babies, Quantum Physics for Babies, and 8 Little Planets will love this introduction to organic chemistry for babies and toddlers! It only takes a small spark to ignite a child's mind. Written by an expert, Organic Chemistry for Babies is a colorfully simple introduction to the structure of organic, carbon-containing compounds and materials. Gift your special little one the opportunity to learn with this perfect science baby gift and help them be one step ahead of pre-med students! With a tongue-in-cheek approach that adults will love, this installment of the Baby University baby board book series is the perfect way to introduce STEM concepts for babies and toddlers. After all, it's never too early to become an organic chemist! If you're looking for the perfect STEAM book for teachers, science toys for babies, or chemistry toys for kids, look no further! Organic Chemistry for Babies offers fun early learning for your little scientist!

**Organic Chemistry I For Dummies**-Arthur Winter 2016-05-13 Organic Chemistry I For Dummies, 2nd Edition (9781119293378) was previously published as Organic Chemistry I For Dummies, 2nd Edition (9781118828076). While this version features a new Dummies cover and design, the content is the same as the prior release and should not be considered a new or updated product. The easy way to take the confusion out of organic chemistry Organic chemistry has a long-standing reputation as a difficult course. Organic Chemistry I For Dummies takes a simple approach to the topic, allowing you to grasp concepts at your own pace. This fun, easy-to-understand guide explains the basic principles of organic chemistry in simple terms, providing insight into the language of organic chemists, the major classes of compounds, and top trouble spots. You'll also get the nuts and bolts of tackling organic chemistry problems, from knowing where to start to spotting sneaky tricks that professors like to incorporate. Refreshed example equations New explanations and practical examples that reflect today's teaching methods Fully worked-out organic chemistry problems Baffled by benzenes? Confused by carboxylic acids? Here's the help you need—in plain English!

**Organic Chemistry Study Guide**-Robert J. Ouellette 2015-04-30 Organic Chemistry Study Guide: Key Concepts, Problems, and Solutions features hundreds of problems from the companion book, Organic Chemistry, and includes solutions for every problem. Key concept summaries reinforce critical material from the primary book and enhance mastery of this complex subject. Organic chemistry is a constantly evolving field that has great relevance for all scientists, not just chemists. For chemical engineers, understanding the properties of organic molecules and how reactions occur is critically important to understanding the processes in an industrial plant. For biologists and health professionals, it is essential because nearly all of biochemistry springs from organic chemistry. Additionally, all scientists can benefit from improved critical thinking and problem-solving skills that are developed from the study of organic chemistry. Organic chemistry, like any "skill", is best learned by doing. It is difficult to learn by rote memorization, and true understanding comes only from concentrated reading, and working as many problems as possible. In fact, problem sets are the best way to ensure that concepts are not only well understood, but can also be applied to real-world problems in the work place. Helps readers learn to categorize, analyze, and solve organic chemistry problems at all levels of difficulty Hundreds of fully-worked practice problems, all with solutions Key concept summaries for every chapter reinforces core content from the companion book

**Organic Chemistry Concepts**-Gregory Roos 2014-10-15 Organic Chemistry Concepts: An EFL Approach provides an introductory overview of the subject, to enable the reader to understand many critical, experimental facts. Designed to cover a single-semester course or a needed review on the principles of Organic Chemistry, the book is written and organized for readers whose first language is not English. Approximately 80% of the words used are drawn from the list of the 2,000 most common English words; the remaining 20% includes necessary technical words, common chemistry terms, and well-known academic words (per the Academic Word List). The book has been class-tested internationally as well as with native English speakers, and differs from other introductory textbooks in the subject both in its coverage and organization, with a particular focus on common problem areas. Focused on a limited number of functional classes, Organic Chemistry Concepts: An EFL Approach introduces those organic compounds early in the book. Once readers have a foundation of the concepts and language of organic chemistry, they can build from that knowledge and work with relatively complex molecules, such as some natural product types covered in a later chapter. The book describes basic level reaction mechanisms when instructive, and illustrations throughout to emphasize the 3D nature of organic chemistry. The book includes multiple pedagogical features, such as chapter questions and useful appendices, to support reader comprehension. Covers all primary concepts in accessible language and pedagogical features, worked examples, glossary, chapter questions, illustrations, and useful summaries Builds a foundation of key material through a structured framework from which readers can expand their understanding Contains class-tested content written in a straightforward and accessible manner for non-native English speakers

**The Organic Chemistry of Sugars**-Daniel E. Levy 2005-09-21 Intrigued as much by its complex nature as by its outsider status in traditional organic chemistry, the editors of The Organic Chemistry of Sugars compile a groundbreaking resource in carbohydrate chemistry that illustrates the ease at which sugars can be manipulated in a variety of organic reactions. Each chapter contains numerous examples demonst

**Modern Electrosynthetic Methods in Organic Chemistry**-Frank Marken 2018-10-11 Modern Electrosynthetic Methods in Organic Chemistry introduces readers to new ways of making materials and compounds using low waste processes, employing energy from electricity rather than chemical reagents. It explores electro-organic synthesis, which offers clean synthesis tools as well as unusual reaction intermediates and reaction types. Despite applications previously remaining niche, due to the advent of microfluidic reactors this book is a must-read for industry professionals and academics alike. It targets specific areas of recent progress and development in the field that show high novelty and potential, at the same time inviting a wider range of applications in green and clean technology. Key Features: Offers clean synthesis tools Targets areas of recent progress and development Addresses the most recent advances in the field

**A Concise Text-Book of Organic Chemistry**-C. G. Lyons 2016-06-06 A Concise Text-Book of Organic Chemistry is a handy guide for chemistry students preparing for Advanced Level certificates. The nature of organic chemistry, compared with that of inorganic chemistry, is basically the chemistry of carbon. The book focuses on the arrangements and changes of the atoms inside the carbon molecules. The molecular formulas of organic compounds are therefore studied, including alkanes and their derivatives known as aliphatic or fatty acids, as well as the hydrocarbons of the benzene series and derivatives known as the aromatic compounds. The aliphatic amines as derivatives of ammonia resulting from the substitution of the hydrogen atoms by alkyl groups are described. The formula for methane, although at present is

convenient for general purposes, is shown to be not a true representative of the actual arrangement in which four H radicals are grouped around the carbon atom. Castor oil, linseed, and other drying oils are also examined in terms of their glyceride (of other long chain unsaturated acids) content. Carbohydrates, divided as monosaccharides, polysaccharides, and glycosides, are discussed as to their empirical composition. The several methods and reagents for synthesizing organic compounds are explained, using the simple aliphatic organic compounds as an example. The aromatic series of organic compounds, such as the benzene series of hydrocarbons, and the aromatic sulfonic acids, phenols, and ethers are then analyzed. This book is suitable for students of organic chemistry and for those preparing for tests in the General Certificate of Education and for the Ordinary National Certificate. Readers related to agricultural, medical, pharmaceutical, and technological and technical courses can find this guide relevant.

**Green Organic Chemistry in Lecture and Laboratory**-Andrew P. Dicks 2016-04-19 The last decade has seen a huge interest in green organic chemistry, particularly as chemical educators look to "green" their undergraduate curricula. Detailing published laboratory experiments and proven case studies, this book discusses concrete examples of green organic chemistry teaching approaches from both lecture/seminar and practical perspe

**Introductory Organic Chemistry**-J. T. Gerig 2012-12-02 Introductory Organic Chemistry provides a descriptive overview of organic chemistry and how modern organic chemistry is practiced. Organic compounds such as alkanes, cycloalkanes, alkenes, cycloalkenes, and alkynes are covered, along with aromatic hydrocarbons, compounds derived from water and hydrogen sulfide, and compounds derived from ammonia. This book also explores organic reaction mechanisms and describes the use of molecular spectroscopy in studying the chemical structure of organic complexes. This text consists of 15 chapters and begins with a discussion on some fundamental ideas about organic chemistry, from the electronic structure of atoms to molecular structure, molecular orbitals, hybridization of atomic orbitals in carbon, chemical equilibrium, enthalpy, and acids and bases. The chapters that follow focus on the compounds of carbon such as alkanes and cycloalkanes; benzene and other aromatic hydrocarbons; amines and other heterocyclic molecules; aldehydes and ketones; carboxylic acids and their derivatives; nucleic acids; amino acids; peptides; and proteins. The use of instrumentation methods in organic chemistry, particularly mass spectrometry and nuclear magnetic resonance spectroscopy, is also considered. An account of the mechanisms of an organic reaction is presented, paying particular attention to displacement and elimination reactions. This book concludes with a commentary on how most of the amino acids, sugars, heterocyclic molecules, and fatty acids necessary for life processes could have been formed on Earth. This book is intended for nonmajors taking an introductory organic chemistry course of two quarters or one semester in length.

## Current Organic Chemistry

**Basic principles of organic chemistry**-John D. Roberts 1979

**Organic Chemistry**-David R. Klein 2011-01-05 Students often say, "I studied 40 hours for this exam and I still didn't do well. Where did I go wrong?" Most instructors hear this complaint every year. In many cases, it is true that the student invested countless hours, only to produce abysmal results. Often, inefficient study habits are to blame. The important question is: why do so many students have difficulty preparing themselves for organic chemistry exams? There are certainly several factors at play here, but perhaps the most dominant factor is a fundamental disconnect between what students learn and the tasks expected of them. To address the disconnect in organic chemistry instruction, David Klein has developed a textbook that utilizes a skills-based approach to instruction. The textbook includes all of the concepts typically covered in an organic chemistry textbook, but special emphasis is placed on skills development to support these concepts. This emphasis upon skills development will provide students with a greater opportunity to develop proficiency in the key skills necessary to succeed in organic chemistry. As an example, resonance structures are used repeatedly throughout the course, and students must become masters of resonance structures early in the course. Therefore, a significant portion of chapter 1 is devoted to drawing resonance structures. Two chapters (6 and 12) are devoted almost entirely to skill development. Chapter 6 emphasizes skills that are necessary for drawing mechanisms, while chapter 12 prepares the student for proposing syntheses. In addition, each chapter contains numerous Skillbuilders, each of which is designed to foster a specific skill. Each skillbuildercontains three parts:1. Learn the Skill: a solved problem that demonstrates a particular skill; 2. Practice the Skill: numerous problems (similar to the solved problem) that give the students an opportunity to practice and master the skill; 3. Apply the Skill: one or two more-challenging problems in which the student must apply the skill in a slightly different environment. These problems include conceptual, cumulative, and applied problems that encourage students to think out of the box. Sometimes problems that foreshadow concepts introduced in later chapters are also included. All SkillBuilders are visually summarized at the end of each chapter (Skillbuilder review), followed by a list of suggested in-chapter and end-of-chapter practice problems. This text is an unbound, three hole punched version.

**Organic Chemistry: 100 Must-Know Mechanisms**-Roman Valiulin 2020-04-20 This book summarizes 100 essential mechanisms in organic chemistry ranging from classical such as the Reformatsky Reaction from 1887 to recently elucidated mechanism such as the copper(I)-catalyzed alkyne-azide cycloaddition. The reactions are easy to grasp, well-illustrated and underpinned with explanations and additional information.

## Current Organic Chemistry

**Electrochemical Reactions and Mechanisms in Organic Chemistry**-J. Grimshaw 2000-12-01 Electrochemical reactions make significant contributions to organic synthesis either in the laboratory or on an industrial scale. These methods have the potential for developing more "green" chemical synthesis. Over recent years, modern investigations have clarified the mechanisms of important organic electrochemical reactions. Progress has also been made in controlling the reactivity of intermediates through either radical or ionic pathways. Now is the time to gather all the electrochemical work into a textbook. As an essential addition to the armory of synthetic organic chemists, electrochemical reactions give results not easily achieved by many other chemical routes. This book presents a logical development of reactions and mechanisms in organic electrochemistry at a level suited to research scientists and final year graduate students. It forms an excellent starting point from which synthetic organic chemists, in both academia and industry, can appreciate uses for electrochemical methods in their own work. The book is also a reference guide to the literature.

**Environmental Inorganic Chemistry for Engineers**-James G. Speight 2017-05-10 Environmental Inorganic Chemistry for Engineers explains the principles of inorganic contaminant behavior, also applying these principles to explore available remediation technologies, and providing the design, operation, and advantages or disadvantages of the various remediation technologies. Written for environmental engineers and researchers, this reference provides the tools and methods that are imperative to protect and improve the environment. The book's three-part treatment starts with a clear and rigorous exposition of metals, including topics such as preparations, structures and bonding, reactions and properties, and complex formation and sequestering. This coverage is followed by a self-contained section concerning complex formation, sequestering, and organometallics, including hydrides and carbonyls. Part Two, Non-Metals, provides an overview of chemical periodicity and the fundamentals of their structure and properties. Clearly explains the principles of inorganic contaminant behavior in order to explore available remediation technologies Provides the design, operation, and advantages or disadvantages of the various remediation technologies Presents a clear exposition of metals, including topics such as preparations, structures, and bonding, reaction and properties, and complex formation and sequestering

## A Laboratory Manual of Organic Chemistry for Medical Students

**A Q&A Approach to Organic Chemistry**-Michael B. Smith 2020-05-17 A Q&A Approach to Organic Chemistry is a book of leading questions that begins with atomic orbitals and bonding. All critical topics are covered, including bonding, nomenclature, stereochemistry, conformations, acids and bases, oxidations, reductions, substitution, elimination, acyl addition, acyl substitution, enolate anion reactions, the Diels-Alder reaction and sigmatropic rearrangements, aromatic chemistry, spectroscopy, amino acids and proteins, and carbohydrates and nucleosides. All major reactions are covered. Each chapter includes end-of-chapter homework questions with the answer keys in an Appendix at the end of the book. This book is envisioned to be a supplementary guide to be used with virtually any available undergraduate organic chemistry textbook. This book allows for a "self-guided" approach that is useful as one studies for a coursework exam or as one reviews organic chemistry for postgraduate exams. Key Features: Allows a "self-guided tour" of organic chemistry Discusses all important areas and fundamental reactions of organic chemistry Classroom tested Useful as a study guide that will supplement most organic chemistry textbooks Assists one in study for coursework exams or allows one to review organic chemistry for postgraduate exams Includes 21 chapters of leading questions that covers all major topics and major reactions of organic chemistry

**High-resolution NMR Techniques in Organic Chemistry**-T. Claridge 1999 From the initial observation of proton magnetic resonance in water and in paraffin, the discipline of nuclear magnetic resonance has seen unparalleled growth as an analytical method. Modern NMR spectroscopy is a highly developed, yet still evolving, subject which finds application in chemistry, biology, medicine, materials science and geology. In this book, emphasis is on the more recently developed methods of solution-state NMR applicable to chemical research, which are chosen for their wide applicability and robustness. These have, in many cases, already become established techniques in NMR laboratories, in both academic and industrial establishments. A considerable amount of information and guidance is given on the implementation and execution of the techniques described in this book.

## Studies in Organic Chemistry

**Current Organic Chemistry**- 1998-11

## Organic Chemistry

**Basic Techniques of Preparative Organic Chemistry**-William Sabel 2013-09-03 Basic Techniques of Preparative Organic Chemistry covers a detailed guide for carrying out the procedures commonly needed in preparative organic chemistry. The book discusses the nature of organic reactions; the basic principles of preparative organic chemistry; unit operations; and good laboratory practice. The text then provides a review of apparatus and equipment and describes the potential hazards involved in a chemical operation, such as toxicity, bodily injuries, smoking, fire, explosion, and implosion. Techniques and unit operations for carrying out a reaction and for isolating and purifying a reaction product; and the criteria for and methods of assessing purity are also considered. The book further tackles packing and storing products and samples and making reports and communications. Students taking organic chemistry courses will find the text useful.

## Organic Chemistry

**Organic Chemistry in Action**-F. Serratosa 1996-05-09 The first edition of this book was welcomed with great enthusiasm by teachers and students. It therefore seemed opportune to publish a second, revised, updated and extended edition. Unfortunately, Professor Félix Serratosa died before he could complete this task. Some new material has been added, the more significant changes being: The book has been restructured into two well-differentiated sections: Part A, dealing with conventional organic synthesis, and Part B, devoted exclusively to computer-assisted organic synthesis and based on the former Chapter 11 and Appendices 2, 3 and 4 of the first edition. As decided in advance, Part B was to be the sole responsibility of Dr. Josep Xicart, who prepared the first versions of the CHAOS (Computerisation and Heuristics Applied to Organic Synthesis) program under the direction of Professor Serratosa.

## Laboratory manual of organic chemistry

**Principles of Organic Chemistry**-Robert J. Ouellette 2015-02-13 Class-tested and thoughtfully designed for student engagement, Principles of Organic Chemistry provides the tools and foundations needed by students in a short course or one-semester class on the subject. This book does not dilute the material or rely on rote memorization. Rather, it focuses on the underlying principles in order to make accessible the science that underpins so much of our day-to-day lives, as well as present further study and practice in medical and scientific fields. This book provides context and structure for learning the fundamental principles of organic chemistry, enabling the reader to proceed from simple to complex examples in a systematic and logical way. Utilizing clear and consistently colored figures, Principles of Organic Chemistry begins by exploring the step-by-step processes (or mechanisms) by which reactions occur to create molecular structures. It then describes some of the many ways these reactions make new compounds, examined by functional groups and corresponding common reaction mechanisms. Throughout, this book includes biochemical and pharmaceutical examples with varying degrees of difficulty, with worked answers and without, as well as advanced topics in later chapters for optional coverage. Incorporates valuable and engaging applications of the content to biological and industrial uses Includes a wealth of useful figures and problems to support reader comprehension and study Provides a high quality chapter on stereochemistry as well as advanced topics such as synthetic polymers and spectroscopy for class customization

## Outlines of Organic Chemistry