Record Nr. UNINA9910787418903321 Handbook of metathesis . Volume 2 Applications in organic synthesis / **Titolo** / editors, Prof. Robert H. Grubbs, Prof. Daniel J. O'Leary Pubbl/distr/stampa Weinheim an der Bergstrasse, Germany:,: Wiley-VCH,, 2015 ©2015 **ISBN** 3-527-69404-8 3-527-69402-1 Edizione [2nd ed.] Descrizione fisica 1 online resource (772 p.) Disciplina 660.299 Soggetti Metathesis (Chemistry) **Alkenes** Organic compounds - Synthesis Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di bibliografia Includes bibliographical references at the end of each chapters and index. Nota di contenuto Cover; Contents; Preface; List of Contributors; List of Abbreviations; Chapter 1 General Ring-Closing Metathesis; 1.1 Introduction; 1.2 Carbocycles (Introduction); 1.2.1 Small-Sized Carbocycles; 1.2.2 Medium-Sized Carbocycles; 1.2.3 Spiro Carbocycles; 1.3 Synthesis of Bridged Bicycloalkenes; 1.4 Synthesis of Heterocycles Containing Si, P, S. or B: 1.4.1 Si-Heterocycles: 1.4.2 P-Heterocycles: 1.4.3 S-Heterocycles: 1.4.4 B-Heterocycles: 1.5 Synthesis of O-Heterocycles: 1.5.1 Small and Medium-Size Cyclic Ethers; 1.5.2 Polycyclic Ethers; 1.6 Synthesis of N-Heterocycles: 1.6.1 N-Heterocycles 1.6.2 Small and Medium-Sized Lactams 1.7 Synthesis of Cyclic Conjugated Dienes; 1.8 Alkyne Metathesis; 1.9 Enyne Metathesis; 1.9.1 General Envne Metathesis: 1.9.2 Dienvne Metathesis: 1.10 Tandem Processes: 1.10.1 Tandem ROM/RCM; 1.10.2 Other Tandem RCMs: 1.11 Synthesis of Macrocycles; 1.11.1 Macrocycles; 1.11.2 Macrolactones; 1.11.3 Macrolactams; 1.12 RCM and Isomerization via Ru-H; 1.13 Relay RCM (RRCM); 1.14 Z-Selective RCM; 1.14.1 Substrate-Controlled Z-Selective RCM; 1.14.2 Catalyst-Controlled Z-Selective RCM; 1.15 Enantioselective RCM; 1.16 Conclusion; Acknowledgments;

References

Chapter 2 Cross-Metathesis2.1 Early Examples Using Well-Defined Molybdenum and Ruthenium Catalysts; 2.2 The General Model for Selectivity in CM Reactions; 2.3 Definition of Cross-Metathesis Reaction Categories and Chapter Organization; 2.4 Hydrocarbons; 2.4.1 Alkane Extensions; 2.4.2 Unsaturated Hydrocarbons, Including Styrene; 2.4.3 Ethylene Cross-Metathesis; 2.5 Boron; 2.6 Nitrogen; 2.6.1 Amines; 2.6.2 Amines as CM Partners in Heterocycle Syntheses; 2.6.3 Acrylonitrile and Other Nitrile-Based CM Applications; 2.6.4 Other Nitrogenous Substrates; 2.7 Oxygen

2.7.1 Primary Allylic Alcohols and Derivatives2.7.2 Secondary Allylic Alcohols and Derivatives; 2.7.3 Tertiary Allylic Alcohols and Derivatives; 2.7.4 Homoallylic Alcohols and Derivatives; 2.7.5 Vinyl Ethers; 2.7.6 Acrolein, Crotonaldehyde, and Methacrolein; 2.7.7 Methyl Vinyl Ketone and Related Systems; 2.7.8 Acrylic Acid; 2.7.9 Acrylic Acid Derivatives, Including Esters, Thioesters, and Amides; 2.8 Halides; 2.9 Phosphorus; 2.10 Sulfur; 2.11 Fragment Coupling Reactions; 2.11.1 Acetogenins; 2.11.2 Cross-Metathesis Selectivity; 2.11.3 Tuning Metathesis Selectivity

2.11.4 CM as an Alternative Coupling Strategy2.11.5 CM-Based Analog Synthesis; 2.11.6 Polyene Metathesis; 2.11.7 Cross-Metathesis Reaction Optimization: Pinnaic Acid; 2.12 Conclusions; References; Chapter 3 Vignette: Extending the Application of Metathesis in Chemical Biology - The Development of Site-Selective Peptide and Protein Modifications; 3.1 Introduction; 3.2 Cross-Metathesis Methodology Studies in Aqueous Media; 3.2.1 Allyl Sulfides are Reactive Substrates in Olefin Metathesis; 3.2.2 Sulfur-Relayed Cross-Metathesis 3.2.3 Application of Aqueous Metathesis of Allyl Sulfides in Synthesis

Sommario/riassunto

The second edition of the ""go-to"" reference in this field is completely updated and features more than 80% new content, with emphasis on new developments in the field, especially in industrial applications. No other book covers the topic in such a comprehensive manner and in such high quality. Edited by the Nobel laureate R. H. Grubbs and D. J. O Leary, this volume 2 of the 3-volume work focusses on applications in organic synthesis. With a list of contributors that reads like a ""Who's-Who"" of metathesis, this is an indispensable one-stop reference for chemists in academia and industry.