1. Record Nr. UNINA9910829862803321

Titolo	Acetylene chemistry [[electronic resource]] : chemistry, biology, and material science / / edited by F. Diederich, P.J. Stang, R.R. Tykwinski
Pubbl/distr/stampa	Weinheim, : Wiley-VCH, c2005
ISBN	1-280-51994-0 9786610519941 3-527-60548-7 3-527-60470-7
Descrizione fisica	1 online resource (530 p.)
Classificazione	35.68
Altri autori (Persone)	DiederichFrancois StangPeter J TykwinskiR. R (Rik R.)
Disciplina	547.413
Soggetti	Acetylene Alkynes
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Acetylene Chemistry; Preface; Contents; Symbols and Abbreviations; List of Contributors; 1 Theoretical Studies on Acetylenic Scaffolds; 1.1 Introduction; 1.2 Linear Acetylenic Scaffolds; 1.2.1 The Dicarbon Molecule and Acetylene; 1.2.2 Uncapped Pure sp Carbon Chains; 1.2.3 Capped All-sp Oligoacetylenic Chains; 1.2.4 Hybrid sp-sp(2) Oligoacetylenic Molecules; 1.2.5 Hybrid sp-sp(3) Oligoacetylenic Molecules; 1.3 Cyclic Acetylenic Scaffolds; 1.3.1 Hybrid sp-sp(3) Rings; 1.3.2 Hybrid sp-sp(2) Rings (Dehydroannulenes); 1.3.3 carbo-Heteroannulenes; 1.4 Star-Shaped Acetylenic Scaffolds 1.4.1 Atomic Cores1.4.2 Rod Cores; 1.4.3 Cyclic Cores; 1.5 Cage Acetylenic Scaffolds; 1.6 Conclusion; Acknowledgements; 2 Synthesis of Heterocycles and Carbocycles by Electrophilic Cyclization of Alkynes; 2.1 Introduction; 2.2 Cyclization of Oxygen Compounds; 2.2.1 Cyclization of Acetylenic Alcohols; 2.2.2 Cyclization of Acetylenic Phenols; 2.2.3 Cyclization of Acetylenic Ethers; 2.2.4 Cyclization of Acetylenic Acids and Derivatives; 2.2.5 Cyclization of Acetylenic Aldehydes and Ketones; 2.3 Cyclization of Sulfur and Selenium

Compounds; 2.4 Cyclization of Nitrogen Compounds
2.4.1 Cyclization of Acetylenic Amines2.4.2 Cyclization of Acetylenic Amides; 2.4.3 Cyclization of Acetylenic Carbamates; 2.4.4 Cyclization of Acetylenic Sulfonamides; 2.4.5 Cyclization of Acetylenic Enamines and Imines; 2.4.6 Cyclization of Other Acetylenic Nitrogen Functional Groups; 2.5 Cyclization of Carbon onto Acetylenes; 2.5.1 Cyclization of Acetylenic Carbonyl Compounds and Derivatives; 2.5.2 Cyclization of Diacetylenes; 2.5.3 Cyclization of Aryl Acetylenes; 2.5.4 Cyclization of Acetylenic Organometallics; 2.6 Conclusions; 2.7 Representative Experimental Procedures
2.7.1 Synthesis of -Methylene--butyrolactones by Carbonylation of 1-Alkyn-4-ols2.7.2 Synthesis of 1-Alkoxyisochromenes by Cyclization of 2-(1-Alkynyl)benzaldehydes; 2.7.3 Synthesis of 3-Aryl(vinylic) indoles by Palladium-catalyzed Cross-coupling of Aryl Halides or Vinylic Triflates and 2-(1-Alkynyl)trifluoroacetanilides; 2.7.4 Synthesis of Pyridines by the Gold-catalyzed Cross-coupling of Ketones and Propargyl Amine; 2.7.5 Synthesis of 4-Iodoisoquinolines by the Cyclization of Iminoalkynes; 2.7.6 Synthesis of Cyclic Amines by Acetylene-Iminium Ion Cyclizations; Acknowledgements
3 Addition of Terminal Acetylides to CO and CN Electrophiles3.1 Introduction; 3.2 Background; 3.3 Additions with Stoichiometric Amounts of Metal Acetylides; 3.4 Nucleophilic CO Additions involving the Use of Zn(II) Salts; 3.5 Acetylene Additions to CN Electrophiles; 3.6 Conclusion; 3.7 Experimental Procedures; 3.7.1 General Procedure for the Enantioselective Alkynylation of Aldehydes by the Use of Stoichiometric Amounts of Zn(OTf)(2); 3.7.2 General Procedure for the Zn(OTf)(2)-Catalyzed Enantioselective Alkynylation of Aldehydes
3.7.3 General Procedure for the Enantioselective Alkynylation of Ketones Catalyzed by Zn(salen) Complexes

Sommario/riassunto

Acetylenes are an important and valuable class of compounds in organic synthesis. This book expands on this historically well-established concept, while incorporating the many new developments that have widened the number of applications in this field. It remains the only handbook available that embodies all the important facets of acetylene chemistry. Following the first section on synthesis, the leading authors deal with advanced materials before turning to the properties and theory of acetylenes, while a final section looks at the biological aspects. With its range of experimental proced