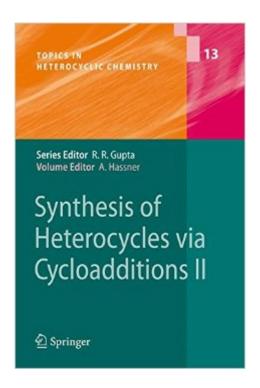
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Synthesis Of Heterocycles Via Cycloadditions II (Topics In Heterocyclic Chemistry) (No. 2)





Synopsis

Heterocyclicmoleculesplayasigni?cantroleinlifeprocessesandhaveplayed a major rolein industrial developments of the last century, for instance in the ?eld of dyes, pharmaceuticals, pesticides, polymers etc. They comprise not

onlysomeofthemostinterestingandbiologicallyimportantnatural products like alkaloids, carbohydrates, nucleic acids, and antibiotics but include many practical drugs and a large segment of known synthetic organic compounds.

Hencescientistshavedevotedagreatamountofeffortto?ndoptimalsynthetic approachesto a variety ofheterocyclic compounds. Amongthemostsuccessfulandselectivesyntheticprocessesarecycloadtionreactions, since theyinvolvesimultaneous orsequential formationoftwo or more bonds often with a high degree of stereoselectivity and regiosel-tivity. Forinstance, 1,3 dipolar cycloadditions, whichare electronically equ- alent to Diels-Alder reactions, are among the most-common 5-membered ring-forming systems. In addition they usually proceed with a high degree of stereo-andregio-control. Itistherefore, notsurprising that synthesis of many important classes ofheterocycles, including those of useful biologically active molecules, have utilized cycloadditionsteps intheirformation. Furthermore, many heterocycles serve as intermediates in the synthesis of polyfunctional molecules. Volume I of "Synthesis of Heterocycles via Cycloadditions" featured ?ve chapters on the following topics: - Isoxazolines from Nitro Compounds: Synthesis and Applications; - Cycloaddition Reactions of Azides Including Bioconjugation; - Enantioselective Cycloadditions of Azomethine Ylides; - Heterocyclesby Cycloadditions of Carbonyl Ylides Generated fromDiazo Ketones; - HeterocyclesfromUnsaturated Phosphorus Ylides. In this volume we present four selected contributions by well-known authors, each an authority in his ?eld. The ?rst chapter is devoted to the use of oximes in cycloadditions which leads to formation of isoxazolines and isoxazolidines and from there to synthesis of macrolides like amphotericin and of other natural products and bioactive molecules. Furthermore, 4+2 cycloadditions of nitrosoalkenes are also included. This chapter complements the one in the X Preface previous volume which discussed access to isoxazolines via nitroalkanes.

Book Information

Series: Topics in Heterocyclic Chemistry (Book 13)

Hardcover: 214 pages

Publisher: Springer; 2008 edition (August 27, 2008)

Language: English

ISBN-10: 3540783725

ISBN-13: 978-3540783725

Product Dimensions: 6.1 x 0.6 x 9.2 inches

Shipping Weight: 15.5 ounces (View shipping rates and policies)

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