Organic Stereochemistry: Experimental and Computational Methods

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DESCRIPTION

Adopting a novel approach to the topic by combining theoretical knowledge and practical results, this book presents the most popular and useful computational and experimental methods applied for studying the stereochemistry of chemical reactions and compounds.

The text is clearly divided into three sections on fundamentals, spectroscopic and computational techniques, and applications in organic synthesis. The first part provides a brief introduction to the field of chirality and stereochemistry, while the second part covers the different methodologies, such as optical rotation, electronic circular dichroism, vibrational circular dichroism, and Raman spectroscopy. The third section then goes on to describe selective examples in organic synthesis, classified by reaction type, i.e. enantioselective, chemoselective and stereoselective reactions. A final chapter on total synthesis of natural products rounds off the book.

A valuable reference for researchers in academia and industry working in the field of organic synthesis, computational chemistry, spectroscopy or medicinal chemistry.

ABOUT THE AUTHOR

Hua-Jie Zhu is the vice director of the Key Laboratory of Medicinal Chemistry and Molecular Diagnostics at Hebei University, China. After having obtained his academic degrees from Chinese Academic of Sciences (CAS), he became an assistant research professor in the group of Prof. C. U. Pittman Jr. at Mississippi State University, USA. He spent most of his career working for
Kunming Institute of Botany of CAS, Yunnan, China, before taking up his present appointment at Hebei University. The focus of his study is the combinational use of different theoretical methods in organic reactions to determine relative and absolute configuration of molecules. He has authored nearly 100 scientific publications and has received numerous scientific awards, including Hundreds Talent Program of CAS, Wangkuangcheng Outstanding Contribution Scholar in West China of CAS, and the Outstanding Expert in Yunnan Province.

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