

Recent Developments in Carbocation and Onium Ion Chemistry

Cations as very important reaction intermediates have fascinated chemists for a long time. Modern experimental, analytical, and computational methods now allow much more detailed insights into species which were previously thought as being only transient intermediates in synthesis. Kenneth K. Laali has compiled and edited an impressive number of different contributions from authors all over the world. Based on a recent symposium, the book serves as an update on current developments and results in an area that can be widely summarized as carbocation and onium chemistry.

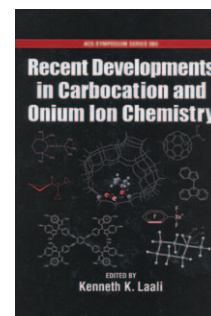
Many chapters of this book are written by experimentalists describing syntheses and analyses of stable carbocations. Silyl, vinyl, or allyl substitutions or the proximity to aromatic and even antiaromatic moieties are possible routes for stabilizing cationic species. In most of the contributions computational approaches are used to support the experimental findings. Some other chapters exclusively rely on calculations to predict structures and

dynamics of—sometimes quite exotic—carbocations. However, even ways to increase cation reactivity through adjacent electrophilic sites are discussed, as well as rapid and controlled generation and reaction of cations through flow and pool methods. As all contributions are written by different authors, not only style, but unfortunately also quality and appearance are variable. Some of the computational results are unreadable whereas others are very clear and not pasted from previous publications. Several of the 22 contributions serve as excellent tutorial reviews in their areas, most of the chapters on onium ions (bromonium, iodonium, xenonium, and phosphonium are highlighted) also contain unpublished work and provide new insights with prospects for novel research directions.

Although this book is mainly an update for the specialists in the area of carbocations, interested students and researchers will find contributions providing fundamental insights beyond textbook knowledge. It is recommended for libraries and researchers in this area.

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