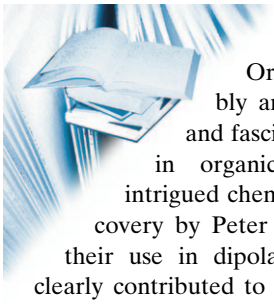

Organic Azides

Organic azides are probably among the most versatile and fascinating functional groups in organic synthesis and have intrigued chemists ever since their discovery by Peter Griess in 1864. Besides their use in dipolar cycloadditions, which clearly contributed to the renaissance of azide chemistry, they are excellent reaction partners for a wide variety of transformations and are precursors of highly reactive intermediates such as nitrenes and nitrenium ions, as well as more common and ubiquitous functional groups (amines, aziridines, triazoles, etc.). Their chemistry is not easily summarized because of the "azide paradox": although they are among the most reactive functional groups, they are often only spectators or even completely inert, at least from a kinetic point of view. The recently published book *Organic Azides—Syntheses and Applications*, edited by Stefan Bräse and Klaus Banert, is an ode to the chemistry of organic azides, and provides a comprehensive coverage of their multifaceted reactivity, together with their preparation, handling and applications. An impressive team of authors from all over the world, all experts in their areas, have contributed 16 chapters that review progress in four main directions: synthesis and safety, reactivity, applications in materials science, and bioorganic chemistry.

Azides are energetic molecules and have potentially hazardous properties (some statements in the introduction are quite evocative, such as "The explosion of a few tenths of a milliliter of free, liquid HN_3 can […] pulverize a complete laboratory-scale production unit"). In the first chapters, safety measures for their preparation, handling, and analysis are clearly and adequately emphasized. This provides an important checklist to keep in mind when handling organic azides. The most common sources for the preparation of azides are then overviewed, and examples of the large-scale and/or industrial preparation and use of organic azides nicely highlight the potential of azide chemistry, which has clearly come of age.

The following two chapters contain a detailed and extensive coverage of methods for the synthesis of organic azides. Some of the methods, and some of the azides themselves, are quite exotic. Chapters 5–12 (the central part of the book) present the state of the art of the reactive properties of organic azides, including some well-known reactions such as the Schmidt rearrangement and dipolar cycloaddition. In this section the editors and authors made a clever choice: although it could have been mostly devoted to these reactions, for which extensive reviews (and books) already exist, a tutorial presentation with selected examples was appropriately preferred. This leaves space for other interesting and key aspects of the reactivity of organic azides, such as their use in free-radical transformations or in photochemistry.

Special topics are presented in the last four chapters, which are devoted to the use of organic azides for the preparation of high-energy materials, rotaxanes, and catenanes, as well as their applications in bioorganic chemistry. Some of these chapters have a broad scope, whereas others are more specialized, but altogether a comprehensive presentation was chosen, and these contributions should definitely serve as excellent tutorial reviews in their areas.

The publication of this book is timely, as it complements other more specialized books on click chemistry, and provides an extensive and comprehensive overview of what can be done in the area of organic azides. As the contributions are written by different authors, there are some unavoidable repetitions and differences in quality. Most chapters present a critical analysis together with a historical perspective (some chapters are real page-turners). A similar treatment would have improved the synthesis part, where it is difficult to figure out which route is the most efficient for the preparation of a given class of azides. But this is a minor criticism for a work of 500 pages! Overall, my feeling is that this book will clearly be *the* reference source for the chemistry of organic azides for graduate students and researchers who want to approach this tantalizing field, and it should help to reduce the "azidophobia" mentioned by Barry Sharpless and Valery Fokin in their foreword. All you need to know is there, and any student who is about to deal with organic azides for the first time should definitely read the first chapter before beginning.

The book is a must have for all academic and industrial libraries, and it will definitely have a prime spot on my bookshelf!

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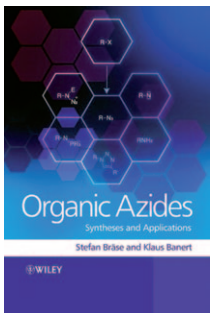

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