Superelectrophiles and Their Chemistry; by G. A. Olah, D. A. Klumpp, John Wiley & Sons: Hoboken, **2008**; € 99.90, US$ 125.00, £ 65.95; ISBN 978-0-470-04961-7

Survey about very strong electrophiles beyond the usual textbook treatment

Activation of low-reactivity substrates by very strong electrophiles is a useful concept which was introduced about 30 years ago and recognized in 1994 by the Nobel Prize that was awarded to one of the authors. Superacids and superelectrophiles allow the exploitation of unusual reaction pathways and are complementary to the standard reaction conditions.

Olah and Klumpp are both outstanding experts in the field of electrophilic chemistry and have written this book about superelectrophiles and their chemistry. The book is organized into eight chapters with a clear didactical concept. The monograph treats not only pure organic species but also heteroatom analogues of nitrogen, oxygen, sulfur and related elements.

The monograph commences with a general introduction covering the historic background. In this part, the reader is made familiar with the specific terms in the area of superelectrophiles. The second chapter deals with the diverse methods for the investigation of these very reactive species, including theoretical and computational tools. Listings of about 170 structures which have been theoretically treated in detail are given (Table 9, 20 pages). The next chapter is devoted to the generation of supernucleophiles. In solution, mostly superacids are employed for this purpose. The electrophiles become superelectrophiles when two cationic centers are closely located (gitonic). The close spatial arrangement of the electrophilic centers leads to different reactivity, and are treated in the three subsequent chapters. Gitonic geminal systems are centers with a dicationic nature and represent extremely powerful electrophiles. The gitonic vicinal superelectrophiles are species with adjacent cationic centers. The gitonic 1,3-supernucleophiles are summarized in a subsequent chapter. The seventh chapter treats distonic derivatives, which are supernucleophiles involving a larger distance between both cationic centers. Most examples exhibit either a rigid scaffold or a π-system. The book closes with an outlook about supernucleophilic activation which might be extended to biological systems as well.

The book was prepared with great care. The number of typos in the written part and the schemes is on a tolerable level. Chemical mistakes are very rare and obvious (e.g., page 255). The numbering of the compounds and chemical transformations is consistent for the individual chapters.

The reader might have problems in finding the desired subject-specific topic. Although gas-phase chemistry is frequently mentioned throughout the book and a subchapter is named as such (p. 42), this particular topic is not part of the index. However, the book is an excellent survey about superelectrophiles and treats the topic far beyond general textbooks. The book provides every scientist with a fast entry into the field of superelectrophiles. The literature is mostly covered up to mid-2006. With about 530 references and many citations leading to existing reviews and further reading, the book will be an indispensable reference source, and will definitely find a place in every good scientific library. For all chemists dealing with electrophilic reaction conditions, this book should be compulsory reading.

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SYNTHESIS 2008, No. 10, pp 1646–1646
Advanced online publication: 09.05.2008
Art ID: B11008SS