

Dynamic Studies in Biology: Phototriggers, Photoswitches, and Caged Biomolecules. Edited by Maurice Goeldner (Université L. Pasteur Strasbourg, France) and Richard Givens (University of Kansas, USA). Wiley-VCH GmbH & Co. KGaA: Weinheim. 2005. xxviii + 558 pp. \$259.00. ISBN 3-527-30783-4.

There is increasing interest in using light to effect spatial and/or temporal control over chemical and biological processes. These goals challenge organic chemists to discover and develop selective and efficient photochemical reactions capable of generating useful molecules in a variety of matrices. This in turn has led to an exponential growth in the primary literature describing development and applications of photoreleasable protecting groups and other phototriggering strategies. Thus the appearance of this monograph, an attempt to summarize the literature up to approximately 2004, is quite welcome.

The book is divided into chapters that have been written by what appears to be a significant fraction of the experts in the field. In many cases, different sections of chapters have been written by different authors. In all, some 47 different coauthors have contributed to the monograph. The advantage of such an organization is that the various sections of the book are written by scientists having the greatest familiarity on a given topic. The disadvantage inherent in this approach is that there is bound to be some discontinuity in writing styles and unnecessary

repetition of some topics. The editors have done a reasonable job at minimizing these problems.

As implied in the title, the monograph emphasizes biological applications of phototriggering technology. Thus there are chapters on very specific applications, such as the photoregulation of proteins and photocontrol of cellular processes. Two chapters cover the use of phototriggers in solid-phase synthesis and the fabrication of DNA microarrays. These latter two topics are not biology in the strictest sense, but they are certainly very relevant to biological research. There is also significant coverage of some of the basic photochemistry and reaction mechanisms involved in photorelease of substrates.

On the whole, I learned a lot by reading this book. The mix of fundamental chemistry and biological applications should make it an invaluable resource for any graduate student or researcher who hopes to enter this fascinating area of research. It does not aim to teach basic photochemistry, organic chemistry, or biochemistry, so I doubt it will find use as a textbook, outside of very specialized advanced courses. On the other hand, its excellent breadth of coverage and generally lucid descriptions make this book indispensable for any scientist who intends to develop or make use of phototriggers in biological systems.

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