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Comprehensive Organic Synthesis II (Book Review)

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[Internet Resource]

Comprehensive Organic Synthesis II, ed. by Paul Knochel and Gary A. Molander. Elsevier. Contact publisher for pricing. Internet Resource.

<http://www.sciencedirect.com/science/referenceworks/9780080977430>

[Visited Jan'15] In the nearly quarter century since the first edition of *Comprehensive Organic Synthesis* (CH, Oct'92, 30-0931) was published, a tremendous amount of work has been done extending the synthetic toolbox available to organic chemists. This new edition attempts to incorporate these advances into the framework of the original. The preface suggests that the work is an update rather than a rewrite. Background material is present, but each chapter appears to emphasize the current (as of 2014) state of the art. The print version runs to nine volumes and 9,806 pages. This review focuses on the online version available through *ScienceDirect* (CH, Nov'12, 50-1430). It is an amazing resource, but its huge size can make it difficult to navigate or find a particular topic. Scanning through the table of contents is probably the best way to approach this material. The nine volumes are organized by reaction type: "Additions to C-X -Bonds" (parts 1 and 2), "Carbon-Carbon Bond Formation," "Additions and Substitutions at C-C -Bonds," "Combining C-C -Bonds," "Heteroatom Manipulation," "Oxidation," "Reduction," and "Enabling Technologies for Organic Synthesis." These fairly broad categories are subdivided into 17 to 36 essays, each by an author who works in that area. This is the collection's greatest strength: the array of topics presented by subject experts. This helps ensure that content is up-to-date and relevant. However, there can be some variation in the quality of presentation, depending on the skills of individual authors. Perusal of a couple of chapters revealed that they were largely a review of the work published after the release of the first edition.

Complete subject and author indexes are available. Users can browse the alphabetical listings and click on the hyperlinked page numbers to retrieve the desired content. The simple and advanced searching options available through *ScienceDirect* are sometimes of limited help. For example, a search for "Beckmann" does bring up the monograph on the Beckmann reaction, but it also retrieves numerous hits that are not particularly relevant. The index is probably the best place to find useful references, as it was compiled by the authors and is not just keywords out of context. Unfortunately the index is difficult to search. There is no built-in search function, it can be slow to navigate (because it is so extensive), and the Internet browser search function only works on the current page, not throughout the index. Individual articles can be viewed in PDF, HTML, ePub, and Mobipocket formats. The articles/reviews appear complete and well referenced, although this reviewer is sure that most synthetic organic chemists would feel that their particular area of expertise is underrepresented. Overall, this is an important tool for academic and professional chemistry collections.

--J. H. Glans, Sacred Heart University

Summing Up: Highly recommended. Graduate students through professionals/practitioners.