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Journal of Organometallic Chemistry 678 (2003) 180

Journal
of Organometallic
Chemistry

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Book review

***Organolithiums: selectivity for synthesis* J. Clayden, Tetrahedron Organic Chemistry Series 23, Pergamon Press, Oxford, 2002, 384 pp., €45, \$145; ISBN 0-08-043262X (hardback); €145, \$45; ISBN 0-08-0432611 (paperback)**

Although organolithium chemistry has a long and distinguished history and is well established as a cornerstone of organic synthesis, the area has continued to develop rapidly over recent years, especially in regard to stereochemical aspects. Specialised reviews abound in the literature but no textbook has tackled synthetic organolithium chemistry since Wakefield's 1970s text. A comprehensive, up-to-date and accessible text in the area is therefore long overdue. This book, aimed at graduate students and professional chemists, the latest in the well-established *Tetrahedron Organic Chemistry Series*, fulfils this need admirably.

The book describes and illustrates all aspects of the synthesis and reactions of organolithiums, with special emphasis on aspects of regio- and stereo-control. Throughout, there are plenty of clear schemes, showing real synthetic results rather than dull, generic structures, and each chapter has a substantial bibliography, including references up to 2001.

Overall, the book tends towards comprehensiveness with many topics being dealt with very thoroughly indeed. Especially detailed accounts are reserved for aspects of diastereo- and enantio-controlled organolithium synthesis and reactions, for example, using sparteine as a chiral ligand. Whilst the level of detail is useful from the point of view of a reference work, it does make parts of the book quite challenging to the casual reader. Nevertheless, the author has done a superb job

of explaining the myriad aspects of selectivity involved in this chemistry and I was particularly impressed by the clarity with which complex issues, such as the influence of kinetic isotope effects on asymmetric processes, are conveyed.

The organisation of the material can make the navigation of a particular topic less than straightforward until you find your bearings. For example, aspects of organolithium synthesis by cleavage of a C-S bond can be found in each of chapters 2-5, depending on the particular sulfur function and mode of reaction involved. This reflects the difficulty in subdividing the various aspects of organolithium synthesis and reactivity when they are frequently inextricably linked. Nevertheless, the approach taken by the author does result in some less-than-obvious arrangements. For example the Shapiro reaction, a very useful process for alkenyllithium synthesis, eventually finds a home in chapter 8, which bears the title *Organolithium Rearrangements*. The index is only just up to the task of directing you to the pages describing a particular subject.

Minor criticisms aside, this is an excellent book that should be in the collection of anyone with an interest in synthetic chemistry, and on the library shelves of colleges, universities and chemical companies alike. Although the target audience is (rightly) postgraduate, this is a book that will also be very useful to those constructing advanced undergraduate courses on synthesis and organometallic chemistry.

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