

Book Reviews

Lanthanides in Organic Synthesis by T. Imamoto. Academic Press: London, 1994, 154 pp., hardback, £ 30. ISBN 0-12-370722-6.

The book "Lanthanides in Organic Synthesis" is the fifteenth in the "Best Synthetic Methods" series. Like its predecessors, it strives to provide a concise overview of the treated field, with a heavy emphasis on practical aspects. By and large, the book fulfills this goal. Essentially all important uses of lanthanide reagents in organic synthesis are surveyed. Brief descriptions and equations of transformations are accompanied by Tables of examples in some cases. There is little mechanistic discussion. In keeping with the practical slant, there are representative, detailed experimental procedures for about 75 of the most important types of features reagents and reactions.

Though it will probably be used more as a reference work, the book is well written, and is easy to read. For reference purposes, the book is easily entered through a good Index of Compounds and Methods, or better yet, through a very thorough Table of Contents (which lists each experimental procedure individually). There are several hundred references, and most recent ones go into the early 1990s.

The book opens with a brief "Introduction", and two short chapters on the "General Properties of Lanthanides" and the "Use of Lanthanide Metals in Organic Synthesis" follow. The bulk of the book then unfolds in three chapters on divalent, trivalent, and tetravalent lanthanides. Divalent lanthanides are used as reducing agents, and this chapter appropriately features the chemistry of samarium diiodide and related reagents. Trivalent lanthanides are usually used as Lewis acids, and a diverse collection of transformations are summarized in this chapter. Tetravalent lanthanides are oxidants, and this chapter features the diverse chemistry of cerium (IV) reagents.

This book is a trove of experimental procedures for organic reactions involving lanthanides, and it will appeal both to workers in the lanthanide field, and, more broadly, to synthetic chemists wishing to learn about both whether and how lanthanide chemistry can be used to solve their specific problems.

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