

Cinchona Alkaloids in Synthesis and Catalysis: Ligands, Immobilization and Organocatalysis. Edited by Choong Eui Song. Wiley-VCH: Weinheim. 2009. 546 pp. £130. ISBN 978-3-527-32416-3.

Process chemists will find much of interest in this multi-author work. Cinchona alkaloids are relatively inexpensive organocatalysts, and the structure is easily modified (e.g., to make quaternary ammonia salts, useful as asymmetric phase transfer catalysts). As a result a few industrial processes have involved the use of cinchona alkaloid derivatives as catalyst.

The early chapters in part I include asymmetric reductions (Blaser), oxidations (Ager), and C–C and C–X bond-forming reactions (Deshmukh, Ryu, and Song), and these will most interest the process chemist; in some, examples of scaled-up processes are given.

However, later chapters in part II cover other interesting processes such as additions to C=O, C=N, and C=C double bonds, and cycloadditions as well as desymmetrization of meso-compounds.

The final part begins with a fascinating chapter on the organic chemistry of cinchona alkaloids, where in some cases the quinoline ring may have been lost—the resultant compounds are interesting as building blocks in synthesis.

The editor and co-workers have also provided a useful Tabular Survey of all asymmetric reactions promoted by cinchona alkaloids, which aids in finding particular reactions in the various chapters.

Overall, this book was enjoyable to read and is recommended to discovery and process chemists.

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