

Book review

Organolithium Compounds / Solvated Electrons, contributions by N.M. Alpatova, L.I. Krishtalik, A. Maercker, R.S. Mali, N.S. Narasimhan, Y.V. Pleskov, and M. Theis, *Topics in Current Chemistry, Volume 138*, Springer Verlag, 1987, 226 pages, DM 134, £45, ISBN 3-540-1631-8

The first section of this book is a discussion of some aspects of polyolithiated aliphatic hydrocarbons. Theoretical work in the area is first considered, with special attention given to the geometries and degrees of aggregation of the polyolithiated alkanes, alkenes and alkynes. The authors then turn to the syntheses of such compounds, direct metallations and transmetallation being the most important routes. Whilst the reactivity of polyolithiated compounds in which the lithium atoms are attached to different carbon atoms differs little from that of monolithiated compounds, isocentric polyolithiated species show most unusual properties. Dilithiomethane undergoes many radical reactions but reacts extremely sluggishly with trimethylchlorosilane. The chapter concludes with a discussion of the structures, both solid state and solution, of the polyolithiated species. Both organometallic and organic chemists should find this a most interesting account; it is to be hoped that this leads to some applications of what has perhaps been a somewhat recondite field of research.

By contrast, the second chapter of this work reviews a type of lithiation which has received very wide attention for its applications in organic synthesis. This is the lithiation of arenes directed by heteroatom substituents. First, the principles are discussed and this is followed by details of numerous applications in the preparation of heterocycles. This is a very thorough account, but will be chiefly of interest to organic chemists interested in natural product syntheses. This section is well referenced into 1985. The final review in this volume is of the electrochemistry of solvated electrons. It deals with theoretical concepts, energy levels, generation of solvated electrons and some electrosyntheses.

As always with this series, standards of production are high, with few errors and clear diagrams. The lack of index is not a severe disadvantage and this volume contains the author index for volumes 101 to 138 of this series. Overall this volume contains much of interest and should be held by libraries. However, it is a slim work and considers rather exotic subjects so that I cannot foresee that it will attract many individual purchasers.