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Book review

Organometallic Syntheses, Vol. 4; edited by R.B. King (University of Georgia, Athens, GA) and J.J. Eisch (State University of New York, Binghamton, NY), Elsevier, Amsterdam, 1988, xx + 617 pages, ISBN 0-444-42956-5 Dfl.450 US\$236.75.

Volume 4 of "Organometallic Syntheses" gives procedures for the synthesis of 76 transition metal and 85 non-transition metal organometallic compounds. The format is very similar to that of Volume 3 (reviewed in *J. Organomet. Chem.*, 323 (1987) C18). Thus each synthesis is described in an article giving the reasons why the particular procedure is selected, the experimental method, the properties, reactions, and uses of the products, and references; in many cases the article covers several related compounds. The ordering of the entries follows the Periodic Table, so that it is reasonably easy from the contents page to find whether a particular compound has been included.

The articles are authoritative. The editors have invited contributors who are acknowledged experts with first hand experience in their areas. Those wishing to use compounds in this book as starting materials will find a great deal of useful information and save themselves a good deal of time by consulting it. The authors have been especially enjoined to give methods that are safe: there are thus numerous warnings about toxicity or inflammability which should alert beginners to find out more before they attempt particular syntheses. Of the procedures which I examined in detail I did however find one where the dangers were underplayed. In a synthesis of $\text{Br}_2\text{AlCH}_2\text{CH}_2\text{AlBr}_2$ (not published elsewhere) trimethylaluminium is casually mentioned as a solvent for extraction or NMR spectroscopy. Though this is undoubtedly safe in the hands of experienced workers in an industrial laboratory it is hardly to be recommended to a raw graduate student who may be seeking a reliable synthesis of a starting material. The book as a whole is however a useful source of background information and practitioners in organometallic chemistry will find much enjoyment in browsing through it.

Some problems remain for this series, for the publishers rather than for the editors. Inevitably, each volume consists of a miscellaneous collection of articles. Someone seeking information about a particular compound or group of compounds would find a cumulative index covering all four volumes useful. Also, there could be more uniformity in camera-ready manuscript presentation which would improve the appearance and reduce the cost per page. Perhaps prospective authors could be provided with a model to which they could conform (e.g. over spacing and use of paragraphs) as closely as possible.

It looks as if "Organometallic Syntheses" has the potential to become as important and well established as "Organic Syntheses" and "Inorganic Syntheses". This volume and its predecessors should be essential purchases for the libraries of all institutions where there is research in organometallic chemistry.

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