

BOOK REVIEW

Synthetic Methods of Organometallic and Inorganic Chemistry (Hermann-Brauer). edited by W. A. Herrmann. Volume 6, Lanthanides and Actinides. F. T. Edelmann. George Thieme Verlag; Stuttgart and New York. 1997. x+226 pp. Price: not stated. ISBN 0 86577 663 6 (TMP); 3 13 103071 2 (GTV).

Successor to the honourable title and tradition of Brauer's 'Handbook of Preparative Inorganic Chemistry', this book sets out to provide reliable and useful syntheses of inorganic and organometallic compounds of the lanthanides and actinides. The first group of compounds found here are binary compounds such as halides, oxides, sulfides, selenides, nitrides; anhydrous nitrates and carbonates; and useful starting materials such as $[\text{LnCl}_3(\text{THF})_n]$ and $[\text{LnI}_2(\text{THF})_2]$; alkylamides, alkoxides and triflates. Many lanthanide coordination compounds are very easy to make and the editor obviously considered (correctly, in my view) their syntheses too trivial to include. I do feel, however, that lanthanide porphyrin complexes, β -diketonates, carboxylates and gadolinium MRI agents should have been found in this volume.

Organometallic coverage of lanthanide and actinide compounds is uniformly excellent; π -arenes, alkyls, cyclopentadienyls, pentamethylcyclopentadienyls; halides, alkyls and aryls of cyclopentadienyls; cyclooctatetraenyls and organometallic hydrides all find a place here. The quality of this section can be judged by the names of the contributors of syntheses, which form a roll call of 40 years research in this area. Most importantly for these very air and moisture sensitive substances, very complete practical details of the synthesis are included and properties of the compound are given, including spectroscopic data. Structural data are given for most, but not, I think, all of the compounds whose structure has been determined. Compounds are indexed (thoroughly) by name but not by formula. This volume should be (and I think will be) found in any laboratory working with the 4f and 5f elements.

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