

## Book Review

### *Transition Metal Hydrides*

A. Dedieu (Ed.), VCH Publishers, 1992, 399 pages.  
DM? ISBN 0-89573-781-7 and ISBN 3-527-27985-7

The book has the following chapters, the names of the authors, the number of pages and the number of references being shown in parentheses:

Chapter 1 (P.B. Armentrout and L.S. Sunderlin). Gas-Phase Organometallic Chemistry of Transition Metal Hydrides (64) (239). This deals with diatomic transition metal hydrides, homoleptic transition metal hydrides and hydrides of transition metal clusters.

Chapter 2 (R.L. Sweany). Matrix Studies of Transition Metal Hydrides (38) (135). This is concerned with matrix isolation of stable hydrides and hydrides formed *in situ*.

Chapter 3 (C.W. Bauschlicher, Jr. and S.R. Langhoff). Transition metal hydrides: Structure and Bonding (24) (76). This describes qualitative features of transition metal bonding.

Chapter 4 (P.J. Hay). Theoretical Studies of Oxidative Addition and Reductive Elimination of Hydrogen and Alkanes (22) (66). Topics covered are oxidative addition to  $d^{10} ML_2$  metal complexes and addition of  $H_2$  and  $CH_4$  to  $d^8 ML_4$  and related complexes.

Chapter 5 (J.K. Burdett, O. Eisenstein and S.A. Jackson). Transition Metal Dihydrogen Complexes: Theoretical Studies (36) (71).

Chapter 6 (N. Koga and K. Morokuma). Hydrogen Transfer from Transition Metal Hydrides: Theoretical Aspects (50) (98). This concerns hydride migration to coordinated olefin, formaldehyde, carbon dioxide, carbonyl, or carbene.

Chapter 7 (C. Daniel and A. Veillard). Theoretical Studies of the Photochemistry of Transition Metal Hydrides (28) (140).

Chapter 8 (R.M. Bullock). Isotope Effects in Reactions of Transition Metal Hydrides (46) (99).

Chapter 9 (S.S. Kristjánssdóttir and J.R. Norton). Acidity of Hydrido Transition Metal Complexes in Solution (52) (184).

Chapter 10 (J.A. Labinger). Nucleophilic Reactivity of Transition Metal Hydrides (20) (72). This relates to definition of hydridic character, tests of nucleophilicity and hydridic character of anionic or early transition metal hydrides.

Chapter 11 (A. Dedieu). Summary and Conclusions (8).

Experts in the field will recognise that the volume has been written by authors of considerable experience. It is unlikely to be widely used by experimental organometallic chemists, because it is highly specialised and lays great emphasis on theoretical considerations, and not every chapter deals exclusively with organometallic compounds.

Although there does not appear to be a clear statement as to the cutoff time for references, the general impression is that it is around 1989 to 1990.

The book is well produced.

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