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## Book Review

**Modern Coordination Chemistry: The Legacy of Joseph Chatt, Edited by G.J. Leigh and N. Winterton, The Royal Society of Chemistry, Cambridge, 2002. xviii + 386 pp.; £89.50; ISBN: 0-085404-469-8**

This volume derives from a decision taken in the planning of the 34th International Coordination Conference (ICCC34) in Edinburgh to have as a theme 'Joe Chatt Chemistry' mainly because ICC34 was held in the UK to celebrate the Golden Jubilee of the first such meeting, which was organised by Joseph Chatt at the Frythe (then a corporate research laboratory of ICI), Welwyn, but also because Chatt's interests, seminal research contributions, and influence covered a very broad range of coordination chemistry.

The volume has a foreword by Lord Lewis, a brief introduction by Peter Tasker, the Chairman of ICC34, and a preface by the editors who point out that most of the contributions presented to the 'Joe Chatt Chemistry' sessions at Edinburgh are reproduced here in expanded form. These relate to areas close to Chatt's: particularly on phosphine-, hydride-, olefin- and dinitrogen-metal complex chemistry and generalisations on stability trends (the **a** and **b** classification), and chemistry, biochemistry and biology of nitrogen fixation. The additional attractive feature is that a number of Chatt's co-workers and colleagues contribute reminiscences, which provide a valuable human background to much of the Chatt science.

The book is divided into eight sections, **A–H**. The first, entitled 'Reminiscences of Joseph Chatt drawn from conversations and recollections of co-workers', has contributions by G.J. Leigh, R.G. Wilkins, G.A. Gamlen, D.M. Adams and L.A. Duncanson. For each of sections **B**, **C** and **E–G** useful introductions by the editors set the scene for the papers which follow; for Section **D**, a longer note (6 pages) by N. Winterton provides an account of the early development of the theory of modes of bonding in olefin-metal complexes. Section **B**, entitled 'Recent developments in the synthesis, bonding modes and reactivity of hydrido and dihydrogen complexes', has articles by R.H. Crabtree, S. Sabo-Etienne and B. Chaudret, and T. Ito. 'The chemistry of phosphines' is the theme of Section **C**, and has contributions by D.M.P. Mingos, S.M. Godfrey and C.A. McAuliffe, and B.T. Heaton. Section **D** is concerned with 'Transition metal complexes of olefins, acetylenes, arenes and related isolobal ligands', and has additional papers by G. Frenking, H.-W. Frühauf, V.C.

Gibson, M. Abou Rida and A.K. Smith, and M.A. Bennett and J.R. Harper. 'The chemistry related to dinitrogen complexes' is dealt with in Section **E**, with chapters by R.L. Richards, M.D. Fryzuk, C. Floriani, M. Hidai, Y. Ishii and S. Kuwata, and J.R. Dilworth, P. Arnold, D. Morales, Y.-L. Wong and Y. Zheng. Section **F** begins with a partly historical and personal contribution from J.R. Postgate which deals largely with the biological work of the ARC Unit of Nitrogen Fixation at the University of Sussex, but also with later developments, and is followed by bioinorganic articles by J.R. Sanders, C.D. Garner, S.C. Lee, Z. Xiao and A.G. Wedd. Section **G** is entitled 'Patterns and generalisation in stability and reactivity' with contributions by R.G. Pearson, F. Basolo, and S. Otto, S.N. Mzamane and A. Roodt. Section **H** has three papers of a rather diverse nature: 'Formaldehyde elimination from methoxylated transition metal carbonyl clusters' by P.J. Dyson, B.F.G. Johnson, J.S. McIndoe, D. Sambrook and P.R.R. Langridge-Smith; 'Exploring new structures based on Chatt's {Ph<sub>2</sub>S<sub>2</sub>} core for nucleation of intermetallic growth', by Z. Li, S.-W. Audi Fong, J.S.L. Yeo, W. Henderson, K.F. Mok and T.A.S. Hor; and 'A rational design of heteropolynuclear squarate complexes', by F. Dumitru, D. Berger, N. Stanica, I. Ciocoiu and C. Guran. Finally, there are three short indexes: of people, places and subject matter.

The reader will be aware that the principal authors to this volume are leaders in the field of coordination chemistry and the quality of their contributions is uniformly excellent; among them are three present (Gibson) or past (Basolo and Garner) RSC Chatt Lecturers.

The editors end their preface as follows: 'While this book is not solely biography, history, scientific text or conference proceedings, we hope that the mix of each will be of interest to many. We thank all the authors who have provided contributions and believe that they truly reflect the legacy of a great chemist to modern coordination chemistry'. The high expectations of the editors have been amply realised for the present reviewer, who warmly commends the book, despite the high price, to a wider audience.

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