BOOK SECTION

CHEMISTRY, STRUCTURE AND BONDING OF ZINTL PHASES AND IONS, Edited by **Susan M Kauzlarich** *VCH Publishers Inc.*, 333, 7th Avenue, New York, NEW YORK 10001 (1996) ISBN-1-56081-900-6 306 pages

Intermetallic phases of non-noble metals with unusual properties - like melting points higher than either component, high heats of formation, poor conductivity notwithstanding their metallic luster, greater brittleness as compared to normal metals and tendency to crystallise in typical salt-like structures-have been studied in depth by Eduard Zintl. In view of his pioneering work in this field, such phases are named as Zintl phases. Liquid alloys of the system K-Pb, Rb-Pb. Cs-Pb, K-Sn, Rb-Sn, Cs-Sn and K-Te behave as if all the anions are in the form of Zintl ions. Zintl phases are the rather remarkable clusters observed in solid phases, melts and which crystallise from solutions.

This class of compounds are electrically positioned between intermetallic compounds and insulating valence compounds. The reactivity of Zintl phases is of interest not only to inorganic chemists. Industrial chemistry of metals also got essential stimulation from these studies.

This book presents advances in the solid state, melt and solution chemistry of Zintl phases and ions. Seven chapters of this book cover (i) Structure and Bonding at the Zintl Border (written by Gordon J.Miller), (ii) Structural Patterns of Homo- and Heteronuclear Anions in Zintl phases and Related Intermetallic Compounds and Concepts for Their Interpretation (written by Brigitte Eisenmann and Gerhard Cordier), (iii) Zintl Phases of the Early p-Block Elements (written by John D. Corbett), (iv) Polyanions in Liquid Ionic Alloys (written by W. van der Lugt), (v) Molecular Transition Metal Complexes of Zintl Ions (written by Joseph W.Kolis and Diana M.Young), (vi) Transition Metal Zintl Compounds (written by Susan M. Kauzlarich) and (vii) Synthesis and Characterization of Intermetallic Materials Using Zintl Phases as Precursors (written by Charles J.O'Connor, Jin-Seung Jung and Jian H. Zhang). The introductory chapter written by Rudiger Kniep covers the Personal profile of Eduard Zintl and his scholarly contribution which gave rise to a clear undestanding of Zintl phase and Zintl ions.

This book will be of interest to inorganic chemists, organometallic chemists, solid state chemists & not to forget the graduate students of inorganic chemistry.

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