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Book Reviews

Metal-to-Metal Bonded States of the Main Group Elements

By M. J. Taylor, Academic Press, London, New York, San Francisco. Price: £5.80. Number of pages: 211.

The presence of metal to metal bonding in inorganic molecules has always attracted the interest of inorganic chemists. Over the last decade the number and extensive nature of this range of compounds has become appreciated. Much of the current work reported in the literature is concerned with transition metal complexes, and this book provides an admirable survey of the complementary chemistry of the main group elements. Complexes formed with the transition elements and main group metals are included in the survey and provide a useful bridge between the two fields.

The book covers well the literature up to the end of 1973. The text is well written and the detailed coverage of the subject matter is good. For a book of this length, a certain degree of selection has been inevitably made, but the main approach has been to cover the salient features of the chemistry and review critically the various physical techniques available for the detection and determination of metal–metal bonding in molecules.

As a worker with interest in this field, I can recommend this text as a good introductory survey that should prove of benefit to both the undergraduate advanced classes and provide a good general background for the researcher in inorganic chemistry.

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Inorganic Chemistry of the Main-group Elements – Vol 2

Chemical Society specialist Periodical Report: Senior Editor C. C. Addison

The London Chemical Society's Specialist Periodcal Reports provide one of the most convenient and satisfactory ways of maintaining contact with the literature in specific fields. The present volume of 726 pages covers the literature from September 1972 to September 1973 and is divided into eight chapters beginning with the alkali metals and ending with the noble gases.

Although primarily devoted to strictly inorganic compounds those with metal to carbon bonds receive quite extensive coverage, and among the notable features to this review are the large numbers of illustrated crystal structures that are included, and the large number of references to Russian work. The presentation of each chapter is excellent with extensive use of sub-headings, tables and structural formulae. The author index occupies 42 pages.

This book can be very strongly recommended to all inorganic chemists.

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Growth of Crystals from the Vapour

By M. M. Faktor and I.Garrett,Chapman and Hall, London. Price: £7.00.

This book is an attempt at linking all the different aspects inherent to the science of crystal growth from the vapour in a final synthesis after having separately deepened each of them in five monographic chapters. As is known, crystal growers come from a variety of fields: chemistry, physics, electronic engineering, chemical engineering. This book may assist new workers in entering the field because it includes under one cover relevant concepts and information disseminated in the textbooks of a variety of disciplines: hydrodynamics, surface chemistry, thermodynamics, crystallography and inorganic chemistry.

For some topics as thermodynamics and crystallography long accounts are given starting at first principles, because these subjects are central to crystal growth and are well developed. The coverage of other subjects, on the contrary, such as surface chemistry, is scant. This fact may be justified not because these subjects are less important but because they are in a comparatively primitive state of development.

The subject matter of this book was not placed in an entirely logical manner but rather in a pragmatic one. For example the chapter on Experimental Methods is placed as the penultimate chapter because it is considered by the authors as a point of arrival of the book, *i.e.* as the synthesis and the application of all the previously treated theoretical principles. In this way the design and the modification of the apparatus and the choice of the optimum conditions