

Additions and Corrections

The First Metalladiene of Group 14 Elements with a Silole-Type Structure with Si=Ge and C=C Double Bonds [*J. Am. Chem. Soc.* **2000**, *122*, 12604–12605]. VLADIMIR YA. LEE, MASAOKI ICHINOHE, AND AKIRA SEKIGUCHI*

Page 12604, second paragraph first column, lines 5 and 10 and ref 5, line 7: There is an error in the assignment of the chemical shift of the sp²-Si atom of compound **4a**: the correct value is +124.2 ppm instead of +75.8 ppm.

JA015151W

10.1021/ja015151w

Published on Web 04/25/2001

Structural Studies of the Low-Valent Titanium “Solution”: **What Goes on in the Pinacol Coupling Reaction?** [*J. Am. Chem. Soc.* **2001**, *123*, 1503–1504]. YUKO HASHIMOTO, UTAKO MIZUNO, HIDEKI MATSUOKA, TAKAFUMI MIYAHARA, MASAHIRO TAKAKURA, MAMORU YOSHIMOTO, KOICHIRO OSHIMA, KIITIRO UTIMOTO, AND SEIJIRO MATSUBARA*

Page 1503: Reference 7 (Naula, S. P.; Sharma, H. K. *Inorg. Synth.* **1985**, *24*, 181) was corrected in the same journal by A. R. Hermes and G. S. Girolami in 1998. Reference 7 should be replaced with the following: Hermes, A. R.; Girolami, G. S. *Inorg. Synth.* **1998**, *32*, 309.

Pages 1503 and 1504: According to the report by Girolami, the titanium chloride prepared by the Scheme 2 on page 1503 is TiCl₃. All TiCl₂ on pages 1503 and 1504 (including schemes and figures) should be replaced with TiCl₃. All titanium(II) chloride on pages 1503 and 1504 (including schemes and figures) should be replaced with titanium(III) chloride. Compound **1** should be titanium(III) chloride.

We thank Prof. Dr. Gregory S. Girolami, Prof. Dr. Otto Agustsson, and Prof. Dr. John J. Eisch who pointed out our mistake.

JA015152O

10.1021/ja015152o

Published on Web 04/26/2001

Book Reviews *

Superconductivity: Elementary Topics. By Keshav N. Shrivastava (University of Hyderabad). World Scientific: Singapore, New Jersey, London, Hong Kong. 2000. xiv + 362 pp. \$52.00. ISBN 981-02-4451-7

The field of superconductivity has seen dramatic new developments since De Gennes and Tinkham set quality standards with their classic elementary books on that subject. A modern, up-to-date account at the same level would therefore be most welcome. The present book attempts to provide this in ten chapters and eight appendices dealing with various aspects of superconductivity and related fields. Unfortunately, it fails to live up to the historic standards by a large margin. This is due to an unfortunate combination of lack of focus, inconsistency in the level of presentation, and innumerable mistakes, ranging from merely annoying typographical errors to deep conceptual flaws. The book's shortcomings are so pervasive that it is not possible to do all of them justice within the framework of a review; some examples must suffice.

The trouble starts with Eq. (1.1), which presents London's bold postulate as if it were a commonplace result of classical electrodynamics. It continues with the discussion after Eq. (1.9), which states,

correctly, that the transverse electric field in a superconductor is zero. The author incorrectly takes this as proof that the conductivity is infinite. The oversimplified argument given in the book misses a subtle point that led to substantial confusion soon after the development of BCS theory, namely, the necessity to carefully distinguish between the transverse and longitudinal responses, respectively. This is the reason why most elementary treatments of the subject shy away from discussing the electric response of a superconductor. The point was clarified around 1960 by P. W. Anderson, Y. Nambu, and N. N. Bogoliubov, whose influential work is not mentioned in the book.

In the remainder of the introductory Chapter 1, it is unclear what level of preparation the book assumes. Chapter 1.2 discusses the 1-d harmonic oscillator, which renders the title “Bosons” a misnomer, while the beginning of Chapter 1.3 assumes that the reader is familiar with the motivation of the Dirac equation. This assumption is entirely unnecessary, since the Dirac equation is never used again, except in Appendix E. The presentation then jumps to many-particle systems and Fock space, only to return to Cooper's two-body problem, which is presented as if it encompassed all of BCS theory. Another example of the general lack of focus and logical coherence is the disjointed

*Unsigned book reviews are by the Book Review Editor.

discussions of the Debye–Waller factor in both Chapter 7.2 and Chapter 9.3 with no cross-references. Chapter 9, on fractals, is prefaced by a discussion of the largely unrelated topic of critical behavior at a continuous phase transition. Reference is made to “eigenvalues of the linearized renormalization group” without any further explanation, and the hyperscaling relation between the exponents α and ν is portrayed, incorrectly, as somehow containing the explanation for universality.

Confusing and misleading statements on a less technical level can also be found throughout the book. A good example is the introduction to Chapter 8, on levitation, which states that, given “[a] pair of a superconductor and a magnet...[t]he magnet as well as the superconductor freely float in the air and do not fall under gravity”. It continues with the statement, “the force between the superconductor and the magnet becomes negative so they can fly off the container”.

Appendix H is devoted to the quantum Hall effect, for reasons that remain mysterious. The presentation misleads the reader and trivializes the integer quantum Hall effect by failing to make the crucial distinction between the transverse resistivity as a function of filling factor and the transverse resistivity as a function of magnetic field. The author then discusses his own ideas about the fractional quantum Hall effect. R. B. Laughlin’s Nobel prize-winning work is neither referenced nor mentioned in the text. Generally, the lack of references is disturbing. De Gennes’s book is never mentioned, many figures showing experimental data do not give a reference, and neither do the tables in Appendix A, which might otherwise be useful.

Typographical errors are abundant. Some are obvious, while others, like the incorrect value given for the T_c of vanadium in Table 1.1 (whose caption, strangely, refers to “normal elements”), or the missing sums over states in Chapter 1.2, are less so.

This book cannot be recommended for any purpose.

Dietrich Belitz, *University of Oregon*

JA004856F

10.1021/ja004856f

Electron Spectroscopies Applied to Low-Dimensional Structures.

Edited by H. P. Hughes (University of Cambridge) and H. I. Starnberg (Göteborg University and Chalmers University of Technology). Kluwer Academic Publishers: Dordrecht, Boston, London. 2000. xi + 504 pp. \$210.00. ISBN 0-7923-6526-7

The area of low-dimensional materials is an extremely active one because of its important applications to diverse areas, including superconducting materials. Indeed, all the electron spectroscopies—photoelectron, photoemission, low-energy diffraction, and scanning tunneling—have contributed to our fundamental understanding of these materials. The first chapter, by L. Kipp and M. Skibowski, provides an excellent overview of how these spectroscopies produce data of interest and also includes a discussion of the application of synchrotron radiation with angular distribution measurements of the photoelectrons. After this first chapter, however, the subsequent chapters focus more on specific low-dimensional materials and include examples of both theory and experiments involving intercalated transition metal dichalcogenides, layered materials, Fermi liquids, metal insulators, organic systems, epitaxial films, and interfaces as well as more specific investigations of layered cuprates and layered ruthenates.

The chapters vary in style and content to reflect more the interest of the specific authors, but the editors have chosen their contributors well. The index, in particular, is organized to aid in finding a specific compound that is covered in the nine chapters. This reviewer found the book quite helpful as a review of the current status of the field with references current, for the most part, up to 1999.

James W. Taylor, *University of Wisconsin—Madison*

JA004835L

10.1021/ja004835l

Catalysis from A to Z: A Concise Encyclopedia. Edited by Boy Cornils (Hoechst AG, Frankfurt), Wolfgang A. Herrmann (Technische Universität München), Robert Schlögl (Fritz-Haber-Institut der Max-Planck-Gesellschaft), and Chi-Huey Wong (Scripps Research Institute). Wiley-VCH: Weinheim. 2000. 640 pp. \$195.00. ISBN 3-527-29855-X

Approximately 3000 catalytic or catalysis-related terms are discussed in this encyclopedia, written by 165 authors and coauthors, all of whom are currently active in their respective fields. Many of the entries also cite references to recent publications that explain the keyword more fully in terms of the current state of the field.

JA0152299

10.1021/ja0152299

Mass Spectral and GC Data of Drugs, Poisons, Pesticides, Pollutants and Their Metabolites, 2nd Revised and Enlarged Edition. Part 4. Wiley-VCH: Weinheim. 2000. xii + 706 pp. \$325.00. ISBN 3-527-28880-5

This handbook compiles spectral and gas chromatographic data of new drugs, poisons, pesticides, pollutants, and their metabolites and updates the first edition by providing 2120 new or revised electron ionization mass spectra, bringing the total number of mass spectra to more than 6300. Updates were also made to the sections on sample preparation and GC–MS methods.

JA004872C

10.1021/ja004872c

Houben–Weyl. Methods in Organic Chemistry. Additional and Supplementary Volumes to the 4th Edition. Volume E 23d/Parts 1, 2, and 3. Substance Index. Aliphatic Compounds II: Alkynes, Alkenes, Alkanes. Georg Thieme Verlag: Stuttgart, New York. 2001. Part 1: 743 pp; 3300 DM; ISBN 3-13-111634-X. Part 2: 1124 pp; 3300 DM; ISBN 3-13-126444-6. Part 3: 714 pp; 3300 DM; ISBN 3-13-128844-2. Series subscription price: 2970 DM

The Volume E 23d index lists all monoheterosubstituted chemical compounds found in Houben–Weyl volumes E1–21 that contain triple, double, or single carbon–carbon bonds.

JA015238H

10.1021/ja015238h

Houben–Weyl. Methods in Organic Chemistry. Additional and Supplementary Volumes to the 4th Edition. Volume E 23o. Synopsis of the Structure of Houben–Weyl I. General Overview and 4th Edition. By S. A. Boucher (Chichester, UK) and H. G. Padeken. Managing Editor H.-G. Padeken (Stuttgart, Germany). Georg Thieme Verlag: Stuttgart, New York. 2001. x + 872 pp. 3300 DM. ISBN 3-13-116694-0.

This volume describes the history, purpose, and structure of the Houben–Weyl volumes, with specific information provided about the 163 volumes in the 4th Edition and Supplemental series (E series). It includes an overview of Houben–Weyl as well as tables of contents of the E series in both summary and detailed forms.

JA015239+

10.1021/ja015239+