

Additions and Corrections

Suning Wang and John P. Fackler, Jr.*: Organobimetallic Complexes with $\text{Hg}(\text{CH}_2\text{P}(\text{S})\text{Ph}_2)_2$. Syntheses and Characterization of Two Structural Isomers of $[\text{HgAu}(\text{CH}_2\text{P}(\text{S})\text{Ph}_2)]\text{PF}_6$ and the Hg Precursor. 1988, 7, 2415–2417.

The C–Hg–C' bond angle in Figure 1 is 179.3 (2)°. The intermolecular Hg–S contacts, page 2417, are equal at 3.17 Å.

Book Reviews

Advances in Polyolefins, The World's Most Widely Used Polymers. Raymond B. Seymour and Tai Cheng, Editors. Plenum Press, New York. 1987. xi + 568. \$95.00.

Transition Metals and Organometallics as Catalysts for Olefin Polymerization. W. Kaminsky and H. Sinn, Editors. Springer-Verlag, Berlin, Heidelberg. 1988. xix + 442. \$77.60.

Both of these volumes are proceedings from international symposia—the first is from the ACS International Symposium on Recent Advances in Polyolefins held September 8–13, 1985, in Chicago, IL, and the second is from the International Symposium on Transition Metals and Organometallics as Catalysts for Olefin Polymerization held in Hamburg, FRG, September 21–24, 1987. One might think that these two volumes would be very similar. Despite sharing 10 authors in common, the two volumes are quite different and reflect the tastes of their respective editors. These differences are accurately reflected by the titles chosen—Seymour and Cheng focus on the polymers while Kaminsky and Sinn focus more on catalysts. As would be expected for proceedings, both volumes are in a camera-ready format and both are well done with relatively few errors. It is unfortunate and difficult to understand why the former took so long to get to print.

Seymour and Cheng provide a useful Introduction (4 papers) which includes an interesting historical and commercial perspective on this important area. Subsequent sections are as follows: Elastomers (4 papers including polyisobutylene and E/P copolymers); Stereospecific Catalysts for Olefin Polymerization (7 papers on Cr, Ti and V catalysts); Magnesium Chloride Supported Catalysts (a good selection of 7 papers on this technologically important class of catalysts); and Linear Low Density Polyolefins (5 papers on ethylene copolymers and their stabilization). The two final sections on Characterization of Polyolefins (7 papers) and Polypropylene Film (4 papers) cover very important areas usually overlooked by organometallic chemists. The relatively thorough index contributes greatly to this volume.

Kaminsky and Sinn jump right into the technical aspects of catalysts with sections on Studies of Active Sites and Kinetics and Mechanism of Heterogeneous Catalysts (14 papers), New Aspects in the Heterogeneous Catalysts (for?) Polymerization of Olefins (11 papers on MgCl_2 - and Al_2O_3 -supported catalysts), Homogeneous Catalysts for Olefin Polymerization (13 papers focussed mostly on Kaminsky's very interesting Cp_2ZrX_2 /alumoxane system and related systems), and The Influence of the Reactor Design, Polyolefin Characterization (4 papers). There is no index.

Of the two volumes, organometallic chemists will undoubtedly be more interested in Kaminsky and Sinn with its focus on an important and exciting direction in current organometallic chemistry. Nonetheless, Seymour and Cheng will be the more lasting and useful volume with its broader and more balanced perspective.

Steven D. Ittel, *E. I. du Pont de Nemours and Company*

Carbon Dioxide Activation by Metal Complexes. By Arno Behr. VCH Publishers, New York. 1988. VIII + 161 pp. \$98.00

The use of carbon dioxide as a component in the synthesis of fuels and chemicals is a potentially important long term goal. Results from the recent surge of interest in CO_2 chemistry, especially catalytic reactions, are the subject of numerous specialist reviews but few books. Arno Behr's *Carbon Dioxide Activation by Metal Complexes* attempts to fill this literature gap.

Although CO_2 chemistry is, at its richest, a multidisciplinary area, this book focusses on organometallic chemistry, especially the author's numerous studies of metal-catalyzed CO_2 /hydrocarbon coupling reactions. Examples include the reactions of hydrocarbon substrates such as cycloalkenes, dienes, and polyenes with CO_2 mediated by Ni- or Pd-based phosphine catalysts. The resulting products are complex organic structures that incorporate the CO_2 skeleton.

The book is organized so as to present the stoichiometric reactions of CO_2 in an initial section, which covers metal CO_2 complexes and the insertion of CO_2 into metal–element bonds, but leaves CO_2 /hydrocarbon coupling reactions for later sections. The information on CO_2 /hydrocarbon reactions is, in my opinion, the strength of the book. These studies, which are primarily descriptive in nature, point the way to future product-specific, catalytic syntheses of carboxylic acids, esters, and lactones.

Discussion and critical comment on many of these reactions are presented in a cursory fashion that could easily be broadened in scope in a future edition. For example, no kinetics and mechanism studies are explored in depth in the section on CO_2 insertion reactions. A somewhat annoying aspect of the book is the incomplete editing, which leaves German in the text and, at some points, awkward verb constructions.

As far as overall content, however, this monograph is a valuable addition to the literature that enables researchers to grasp an overview of a rapidly growing area.

B. Patrick Sullivan,
University of North Carolina, Chapel Hill