

in August, 1981. Aspects of catalysis at or near conducting or semiconducting electrode surfaces receive essentially as much attention as do nonelectrochemical catalytic processes. The electrochemical subjects addressed include the properties and behavior of conducting polymeric films on electrodes, digital simulation of cyclic voltammograms for second-order catalytic reactions, attachment of electroactive derivatives to semiconducting photoelectrodes, attachment of various ruthenium polypyridine complexes to electrode surfaces, electropolymerization techniques for depositing metallopolymers, and electrochromic applications of chemically modified electrodes. The nonelectrochemical articles span the range from several examples of catalysts attached to polymeric supports, chemically derivatized solids based on layered phosphonates, catalysts derived from intercalation in layered silicates, deposited metal clusters in Fischer-Tropsch synthesis, the behavior of organometallic catalysts deposited on refractory supports, and a new class of immobilized phase-transfer catalysts.

A fair fraction of the most active groups in the rapidly expanding field of chemically modified electrodes and surfaces are represented by contributions to this volume. The articles vary considerably in length and apparent objective. A few occupy 25–35 pages and present reasonably comprehensive discussions at some depth. Others are as brief as 8–10 pages and come closer to previews or extended abstracts than full-fledged articles. Overall, the volume provides a good account of representative activity in a field that has attracted considerable recent attention. It can be recommended to those seeking a perspective in the field.

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**Gmelin Handbook of Inorganic Chemistry. 8th Edition. Rh—Rhodium.** Supplement Volume B1. Compounds of Rhodium. W. P. Griffith, H. Jehn, J. A. McCleverty, C. J. Raub, and S. D. Robinson, volume authors. W. P. Griffith and K. Swars, volume editors. Gmelin Institut für Anorganische Chemie der Max-Planck-Gesellschaft zur Förderung der Wissenschaften and Springer-Verlag, Berlin/Heidelberg/New York. 1982. x + 221 pages. DM 720, \$300.30.

Considering the current high interest in various aspects of rhodium chemistry, it is welcome news that the Gmelin Institute is now updating its coverage of this element (the previous coverage is only through 1938). Although the progress in the area will undoubtedly leave the remaining volumes in the series somewhat dated, their completion will certainly fill a large gap in literature coverage and their appearance will be welcome. The arrangement of material follows the standard Gmelin system and the present volume is concerned primarily with binary and ternary species although some classical coordination compounds are also included. Evidently the majority of coordination complexes including those with phosphines, arsines, and stibines will be covered in Supplement Volume B2.

Beginning with a short section on the rhodium-hydrogen system, Volume B1 continues with 15 more sections covering binary compounds and complexes with oxygen, nitrogen, the halogens, the chalcogens, boron, carbon, silicon, and phosphorus, and arsenic, antimony, and bismuth. Within each section is listed first binary systems of rhodium with the element in question followed by listings of stoichiometric compounds and/or complexes. Thus for example with oxygen coverage begins with binary oxides, including nonstoichiometric phases, and continues with a large array of rhodates of various metals. The section closes with listings of hydroxides and hydroxo and aquo complexes. The coverage is through 1981 with some more recent references and the authors and publishers are to be commended for the despatch with which the volume has been produced.

The authors generally do a good job of indicating when there is doubt as to the proper formulation of species listed and have included considerable cross-references. There does seem to be some inconsistency in coverage in that a number of groups of coordination complexes are included but other closely related ones are not. Thus, for example, nitrate complexes are included but nitro complexes are to be left for a later volume. Also sulfoxide, sulfite, and sulfate complexes appear, but complexes of other sulfur-containing ligands do not. This is probably not a serious fault, but it is likely to cause some confusion for the person using the series for the first time.

All told, this volume does a good job of pulling together a lot of information from a wide variety of sources, listing it with a critical evaluation of its reliability and thereby indicating where the area could benefit from further investigation. It is rather dry reading but that is not unusual for an encyclopedic work. The number of errors found by this reviewer was very small and in their context should be readily recognized as such. Finally while the fact that it is published in English will undoubtedly increase its utility, the price (\$300!!!) will almost certainly restrict its appearance to libraries.

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**Topics in Current Chemistry. Vol. 105. Organic Chemistry.** F. Boschke, Managing Editor. Springer-Verlag, Berlin/Heidelberg/New York. 1982. 158 pp. \$38.00.

This book contains three chapters: (i) "Prostereoisomerism (Prochirality)" (E. L. Eliel), (ii) "Asymmetric Hydroformylation" (G. Consiglio, P. Pino), and "The Group 5 Heterobenzenes—Arsabenzene, Stibabenzene, and Bismabenzene" (A. J. Ashe, III).

The first chapter on prostereoisomerism is an excellent contribution to the current review literature on stereochemistry (76 pages, 178 references). Beginning with the terminology of prochirality and historical significance, this chapter describes "Homotopic and Heterotopic Ligands and Faces" (17 pages), "Prochirality and Nuclear Magnetic Resonance" (21 pages), "Prostereoisomerism in Enzyme-Catalyzed Reactions" (35 pages), and "Prochirality and Two-Dimensional Chirality" (2 pages). Each section is comprehensive and very useful for the chemists who are engaged in studies on asymmetric organic and biological reactions. Among these sections which are all of high quality the section dealing with "Prostereoisomerism in Enzyme-Catalyzed Reactions" is the highlight of the chapter, in that it covers many well chosen enzymatic asymmetric reactions. This section will give many good suggestions not only to bioorganic chemists but also to organic and organometallic chemists.

The second chapter is a complete review of asymmetric hydroformylation, which compiles literature up to early 1981 (46 pages, 87 references). Although the latest reports of high optical yields by Pittman's and Knowles's groups were not included, this chapter describes and discusses all aspects of asymmetric hydroformylation catalyzed by chiral transition-metal complexes. The chapter includes sections describing (i) formation of optically active aldehydes, (ii) regularities observed in asymmetric hydroformylation, (iii) a model for the diastereomeric transition states controlling asymmetric induction, and (iv) the possible significance of the observed regularities. From the mechanistic discussions mentioned here readers will be able to obtain the requisite information about the controlling factors which should be taken into account in catalytic asymmetric reactions.

The last chapter is a high quality comprehensive review of a unique class of aromatics, the group 5 heterobenzenes (31 pages, 120 references). This chapter compiles work of the author, Märkl, and Bickelhaupt on arsabenzene, stibabenzene, and bismabenzene and describes the synthesis and spectral, physical, and chemical properties of these interesting compounds. In the chemical property section, Diels-Alder reactions, basicity, transition-metal complexation, electrophilic aromatic substitution, free radical rearrangements, reactions with alkyl lithium reagents, and miscellaneous functional group chemistry are reviewed.

Although this book does not necessarily consist of topics in the same field, it is obvious that each chapter is of great value to the organic, bioorganic, or organometallic chemists who are interested in that particular field.

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**Topics in Current Chemistry. Vol. 106. Synthesis and Structural Problems.** F. L. Boschke, managing editor, Springer-Verlag, Berlin/Heidelberg/New York. 1982. 178 pages. \$39.00.

We have here another volume of Springer-Verlag's hard cover review journal. It is brought to our readers' attention because two of the four reviews which it contains deal with organometallic topics.

In his chapter entitled "Organotitanium Reagents in Organic Synthesis. A Simple Means to Adjust Reactivity and Selectivity