Additions and Corrections

Synthesis and Reactivity of the Bridging Thiocarbyne Radical, $Cp_2Fe_2(CO)_2(\mu\text{-}CO)(\mu\text{-}CSMe)$ [*J. Am. Chem. Soc.* **1986**, *108*, 3688–3693]. NORMAN C. SCHROEDER and ROBERT J. ANGELICI*

Page 3689, left column, line 29: 0.2 μA should read 0.2 mA.

Page 3691, left column, the line above eq 2: **4** should read **2**.

Epoxy Silyl Ether Rearrangements: A New, Stereoselective Approach to the Synthesis of β-Hydroxy Carbonyl Compounds [*J. Am. Chem. Soc.* **1986**, *108*, 3827–3829]. KEIJI MARUOKA, MASAICHI HASEGAWA, HISASHI YAMAMOTO,* KEISUKE SUZUKI, MASATO SHIMAZAKI, and GEN-ICHI TSUCHIHASHI*

We wish to point out that in prior papers by C. J. Cheer and C. R. Johnson [*J. Org. Chem.* **1967**, *32*, 428; *J. Am. Chem. Soc.* **1968**, *90*, 178] a ring-expansion reaction of some epoxy alcohols with acidic alumina has been published.

Electronic Structure Factors of Carbon–Hydrogen Bond Activation. The Photoelectron Spectroscopy of (Cyclohexenyl)manganese Tricarbonyl [*J. Am. Chem. Soc.* **1986**, *108*, 2560–2567]. DENNIS L. LICHTENBERGER* and GLEN EUGENE KELLOGG

Pages 2560 and 2565: The captions in Schemes I and V are correct but the accompanying drawings have been exchanged.

Book Reviews*

Thermoluminescence of Solids. By S. W. S. McKeever (Oklahoma State University). Cambridge University Press: New York. 1985. xiii + 376 pp. $69.50. ISBN 0-521-245206.

Thermoluminescence is defined as the emission of light from an insulator or semiconductor when it is heated. Generally, three factors are necessary for the production of thermoluminescence. They are the following: (1) the material must be an insulator or a semiconductor; (2) the material must have at some time absorbed energy during exposure to radiation; and (3) the luminescence emission must be triggered by heating the material. A peculiar characteristic of thermoluminescence is that once heated to excite light emission, the material will not exhibit thermoluminescence again by merely cooling the sample and reheating. To exhibit thermoluminescence again, the material has to be reexposed to radiation. The fundamental principles that govern the production of thermoluminescence are essentially the same as those which govern all luminescence processes; thermoluminescence is thus a member of the large group of luminescence phenomena.

The purposes of this book are twofold: (a) to illustrate how solid-state properties of insulators and semiconductors determine their thermoluminescence characteristics; and (b) to show in detail how the technique is being utilized as a fundamental research tool in many fields. The latter includes such diverse disciplines as biology, chemistry, archaeology, geology, solid-state physics, medicine, and many others.

The book consists of nine chapters; they are the following: 1. Introduction; 2. Theoretical background; 3. Themoluminescence analysis; 4. Additional factors governing thermoluminescence; 5. Defects and thermoluminescence; 6. Thermoluminescence dosimetry; 7. Thermoluminescence dating; 8. Geological applications; and 9. Instrumentation.

The book is very well written and should be of interest to chemists as well as to workers in the other scientific fields previously mentioned.

W. W. Wendlandt, *University of Houston*

Progress in Reaction Kinetics. Volume 12. Edited by K. R. Jennings (University of Warwick), R. B. Cundall (University of Salford), and D. W. Margerum (Purdue University). Pergamon Press: Oxford, New York, Toronto, Sydney, and Frankfurt. 1985. v + 268 pp. $120.00. ISBN 0-08-032326-X.

This volume is the continuation of an excellent series. The present volume contains three chapters, two on gas-phase free-radical kinetics and one on catalytic conversion of hydrocarbons. A subject index and a bibliography of previous volumes are provided. The book is done camera-ready, but it has uniform typescript which is attractive and easy to read.

The first chapter is Kinetics of Gaseous Hydroperoxyl Radical Reactions, by M. Kaufman and J. Sherwell; it is 54 pages in length and contains 257 references which cover the literature through 1981. The role of HO_2 radicals in atmospheric chemistry, combustion chemistry, and radiation chemistry is discussed briefly, as are the physical properties of HO_2 and experimental methodology for its production and detection. A majority of the chapter is a survey of HO_2 reactions for which kinetic data are available. The chapter is well written but, as is often the case with survey articles on topics of current research interest, it suffers from having become somewhat outdated soon after publication.

The second chapter is The Kinetics of Radical–Radical Processes in the Gas Phase, by M. J. Howard and I. W. M. Smith; it is 146 pages in length and contains 407 references which cover the literature through 1982. The authors present a theoretical framework for treating radical–radical processes, briefly discuss experimental methods for studying them, then survey the literature. Three classes of radical–radical interactions are considered—association reactions, nonassociative reactions, and nonreactive collisions which result in vibrational relaxation. Throughout the literature survey, the authors draw mechanistic inferences based on comparison of experimental results with their theoretical framework. At the end of the chapter, they present a flow diagram which can be used to estimate rates of nonassociative reactions between simple free radicals.

The third chapter is On Determining the Mechanism and Kinetics of Reactions on Decaying Catalysts, by A.-N. Ko and B. W. Wojciechowski; it is 62 pages in length and includes 96 references. Only five of the references are to work published in the 1980's and nearly half the references are to the author's own work. In the first third of the chapter a kinetic theory is presented for treating reactions occurring on decaying catalysts. The remainder of the chapter considers applications of the theory to interpretation of experimental data on catalytic cracking of hydrocarbons.

Paul H. Wine, *Georgia Institute of Technology*

The Electronic Laboratory: Tutorials and Case Histories in Laboratory Automation. By Raymond E. Dessy (Virginia Polytechnic Institute and State University). American Chemical Society: Washington, D.C. 1985. ix + 156 pp. $29.95. ISBN 0-8412-0928-6.

This book is a compilation of tutorial articles which appeared in the "A" pages of *Analytical Chemistry* as A/C Interface from 1982 to 1985. Each tutorial is followed by several case studies where actual laboratory installations are described. The topics—which appear in chronological order—are the following: Local Area Networks (1982), Laboratory Information Management Systems (1983), Languages for the Laboratory (1983), Operating Systems for the Laboratory (1983), Robots in the Laboratory (1983), A Laboratory *Son et Lumière* [voice I/O, graphics, and image processing] (1984), Managing the Electronic Laboratory 1984), Expert Systems (1984), Workstations in the Laboratory (1985), and Disks for the Laboratory (1985).

The intent is to provide a quick summary of the important concepts in each area and to acquaint the reader with some of the basic vocabulary. The tutorials and case studies give no details on how to interface analytical equipment, set up a specific laboratory installation, or massage particular data. In some cases, the specific equipment used in the case studies is not even identified. This is not as serious a drawback as it sounds, since the rapid pace of change in the computer area would have rendered most of the equipment absolete and unavailable anyway. The name and address of each contributor to the case studies is given, so if the application appears useful, the reader could contact the authors

*Unsigned book reviews are by the Book Review Editor.