

Relative Nucleophilicity of Common Nucleophiles toward Sulfinyl Sulfur. Comparison of the Relative Reactivity of Different Nucleophiles toward Sulfinyl vs. Sulfonyl Sulfur [*J. Am. Chem. Soc.*, **98**, 4259 (1976)]. By JOHN L. KICE* and LAWRENCE F. MULLAN, Department of Chemistry, University of Vermont, Burlington, Vermont 05401.

Some text was omitted. On page 4262 in the last paragraph of text preceding the Discussion, the line (four lines from the bottom) which ends "... it is almost certainly reliable" should be followed by the following text:

"to within a factor of 2, so that it seems certain that the true"

before one has the line beginning "value of $k_{OH}^{SO} \dots$ ".

Exciplex Photophysics. III. Kinetics of Fluorescence Quenching of α -Cyanonaphthalene by Dimethylcyclopentene-1,2 in Hexane [*J. Am. Chem. Soc.*, **98**, 4706 (1976)]. By DESMOND V. O'CONNOR and WILLIAM R. WARE,* The Photochemistry Unit, Department of Chemistry, University of Western Ontario, London, Ontario N6A 5B7, Canada.

The captions for Figures 3–8 were interchanged. The correct captions follow:

Figure 3. Corrected fluorescence spectra of α -cyanonaphthalene + dimethylcyclopentene-1,2 at -22°C .

Figure 4. Exciplex-monomer fluorescence ratio vs. [dimethylcyclopentene-1,2].

Figure 5. Comparison of experimental and calculated λ_1 .

Figure 6. Comparison of experimental and calculated λ_2 .

Figure 7. Arrhenius plots of k_3 , k_4 , k_p . Open circle values were taken from paper I.

Figure 8. Arrhenius plot of k_3/k_4 . The four high-temperature points were taken from paper I.

Multiple Metal–Carbon Bonds. 5. The Reaction of Niobium and Tantalum Neopentylidene Complexes with the Carbonyl Function [*J. Am. Chem. Soc.*, **98**, 5399 (1976)]. By RICHARD R. SCHROCK, Central Research and Development Department, Experimental Station, E. I. du Pont de Nemours and Company, Wilmington, Delaware 19898.

Page 5400, column 1, line 47. The sentence should read: "... Since **1** is electron deficient (10 valence electrons) ..."

Additions and Corrections [*J. Am. Chem. Soc.*, **98**, 4691 (1976)].

Page 4692, column 1, line 6. The sentence should read: "We are indebted to Dr. Walter K. Duerksen for pointing out this error."

Book Reviews

Foundations of Ultracentrifugal Analysis. By HIROSHI FUJITA (Department of Polymer Science at Osaka University). John Wiley & Sons, New York, N.Y. 1975. xviii + 459 pp. \$25.95.

This is Volume 42 in the "Chemical Analysis" series. The theoretical contributions which have played a key role in the development of ultracentrifugal methods are described in a logical and coherent manner. Each method is developed with a thorough, rigorous mathematical treatment; however, the discussion often deals with problems of particular interest to the experimentalist such as the ways and conditions in which a theoretical relation is compared with experimental data to evaluate the parameters contained in it.

Nearly all of the important experimental methods are backed with solutions to their respective differential equations. Methods of obtaining approximate solutions are elucidated along with the working equations derived therefrom which are often employed in sedimentation analyses. The experimentalist will learn what may or may not be done in actual analyses employing the ultracentrifuge.

The fields of biochemistry and molecular biology have both contributed to and benefited from the theoretical and experimental aspects of ultracentrifugation in a major way. The author cites many instances in which macromolecules of biological origin are studied including two chapters on methods of investigating chemically reacting systems: one by sedimentation transport, the other by sedimentation equilibrium. Density gradient sedimentation equilibrium, one of the newest techniques of analytical ultracentrifugation, received adequate coverage to benefit those investigating DNA and other nucleic acids.

This treatise is an effective and timely update of a previously published monograph by the author, "Mathematical Theory of Sedimentation Analysis" (Academic Press, New York, 1962). It retains the thoroughness of this eminently qualified author.

Robert L. Schneider, Eastman Kodak Company

The Dynamics of Spectroscopic Transitions. By J. D. MACOMBER (Louisiana State University). John Wiley & Sons, Inc., New York, N.Y. 1976. xxiv + 332 pp. \$19.95.

Books on spectroscopy generally fall into two categories: those that present rigorous treatments of the theory behind spectra and those

that provide qualitative discussions with the help of collections of spectral data. Surprisingly, this monograph does not fit either category, and is certainly a welcome change from the traditional tutorial approaches to spectroscopy. The most outstanding feature is the extensive use of physical explanations to accompany the development of theoretical expressions that are needed to interpret the experimental observations.

This book is aimed toward the advanced undergraduate, graduate students, and research scientists using spectroscopic techniques. It starts from elementary principles and gradually builds up to advanced topics such as lasers, coherent magnetic resonance, and self-induced transparency. Because of the systematic development of the topics, the reader is not left with a feeling of an incomplete discussion. And, because of the judicious use of a minimum of mathematics, the reader is not overwhelmed by lengthy equations, which may have obscured the significance of the physical concepts involved. Particularly impressive is the frequent use of well-conceived illustrations, most quite original, and this undoubtedly is the key to the overall eloquence of the presentation. One such example is the electron probability density plots as a function of time to illustrate the physical process of radiation of the first Lyman line in hydrogen atom.

As is indicated by the title, this book follows a time-dependent approach rather than the usual static approach of energy levels and arrows. Such an approach does not readily lead to an understanding of the location of spectral lines, but does provide the badly needed insight into the dynamics of the actual interactions. Furthermore, the time-dependent features are necessary to describe the coherent phenomena that have gained much importance and interest in recent years. In this respect, this monograph is valuable to scientists not too familiar with time-dependent effects of radiation. In particular, those in the areas of NMR, EPR, and lasers can obtain an excellent introduction from it.

From a pedagogical point of view, the problems included at the end of each chapter are most helpful. Historical material now and then gives the reader a feel for how things developed, and an occasional interjection of humor keeps the reading easy. It is, however, probably not advisable to learn quantum mechanics and elementary electromagnetic theory using this as the only text. The chapters on these