

Book Reviews

Electron Paramagnetic Resonance: Techniques and Applications. By RAYMOND S. ALGER, U. S. Naval Radiological Defense Laboratory, San Francisco, Calif. Interscience Publications, John Wiley and Sons, Inc., 605 Third Ave., New York, N. Y. 1968. xvii + 580 pp. 16 × 23.5 cm. \$15.95.

The author states in the Preface that this is a book "for the experimentalists and is designed to expedite the entry of physicists, chemists, biologists and engineers into the rite and practices of the EPR fraternity." He has succeeded admirably in this goal by collecting together a vast wealth of experimental lore from the epr literature and from visits to 43 epr laboratories in the United States and Europe. The unpublished details gleaned from these visits should prove especially valuable not only to the novice but also to the experienced worker in the field.

Chapter II on epr theory is generally good, especially the section on relaxation times. There are a few rough spots. For instance, Eq. (2-4) is valid only when the g and hyperfine tensors have the same principal axes, and on page 34 the magnetic moment of a nucleus does not indicate how many hyperfine lines to expect.

Chapters III and IV cover spectrometer components, spectrometer systems, and measurement techniques. Here the reader will find detailed directions and recipes for a wide variety of situations from directions on how to minimize bubbling in a liquid nitrogen dewar to a recipe for silvering the inside walls of a plastic cavity.

The last half of the book is devoted to a discussion of selected applications illustrating techniques of sample preparation, special spectrometer conditions for optimum performance, and typical results. The emphasis is heavily on solid-state applications, but the author admits that this reflects his own interests rather than an indication of relative importance of the solid state.

If this book is to be criticized, it would be that the emphasis is perhaps a little heavy on experimental details and light on the treatment and analysis of the results. For instance, there is a very little discussion on how to obtain hyperfine and g tensors from single-crystal data. Also a book of this type is especially prone to being out of date especially in areas that are advancing rapidly. Thus the material on biological applications is already badly out of date.

The drawings by Ichiro Hayashi are superb in their simplicity and perspective. My only objection is that his redrawings of spectra

were done in free hand and detract from the symmetry and beauty of the original spectra.

In summary, I highly recommend this book to the epr experimentalist.

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BOOKS RECEIVED, February 1969

B. CAPON, M. J. PERKINS, and C. W. REES. "Organic Reaction Mechanisms, 1967. An Annual Survey Covering the Literature dated December 1966 through November 1967." Interscience Publishers, John Wiley and Sons, Inc., 605 Third Ave., New York, N. Y. 1968. 512 pp. \$17.50.

ERNEST L. ELIEL and NORMAN L. ALLINGER, Editors. "Topics in Stereochemistry." Volume 3. Interscience Publishers, John Wiley and Sons, Inc., 605 Third Ave., New York, N. Y. 1968. 377 pp. \$15.00.

WILLIAM L. JOLLY, Editor. "Preparative Inorganic Reactions." Volume 5. Interscience Publishers, John Wiley and Sons, Inc., 605 Third Ave., New York, N. Y. 1968. 248 pp. \$14.50.

WAYNE R. SORENSON and TOD W. CAMPBELL. "Preparative Methods of Polymer Chemistry." Second Edition. Interscience Publishers, John Wiley and Sons, Inc., 605 Third Ave., New York, N. Y. 1968. 504 pp. \$15.00.

ANDREW STREITWIESER, JR., and ROBERT W. TAFT, Editors. "Progress in Physical Organic Chemistry." Volume 6. Interscience Publishers, John Wiley and Sons, Inc., 605 Third Ave., New York, N. Y. 1968. 466 pp. \$17.00.

RALPH W. G. WYCKOFF. "Crystal Structures." Second Edition. Interscience Publishers, John Wiley and Sons, Inc., 605 Third Ave., New York, N. Y. 1968. 566 pp. \$25.00.