

oped, untested chemicals. It is a good tutorial for the novice. A clear presentation of toxicology is provided and followed with excellent brief introductions to three computational approaches for toxicological study. Lewis clearly defines the parameters used in the traditional quantitative structure-activity relationship (QSAR) methods of Hansch, and explains pattern-recognition methods and knowledge-based systems. These methods are demonstrated and further explained by consideration of the P450 cytochromes and their role in toxic activation or detoxification of chemicals. Through this presentation, the author discusses several computer programs and their specific strengths. The chapter ends with a list of sources for these programs.

The editors conclude the book with a compendium of software, providing both a synopsis of and access information for 29 PC-based programs and 49 minicomputer or workstation-based programs for molecular modelling, quantum chemistry calculations, molecular graphics and molecular databases. This compendium is useful, but available in a much less expensive format from the Quantum Chemistry Program Exchange.

Overall, the book is elegantly presented and carefully edited. Two of the four chapters meet the stated aims of the series and provide a clear tutorial for novice readers. The book would be a useful addition to a research library; however, the lack of successful tutorial approaches for all four presentations makes it less desirable for a personal collection.

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Books Received

The following books have been received by the Editor. Brief and generally uncritical notices are given of works of marginal crystallographic interest; occasionally, a book of fundamental interest is included under this heading because of difficulty in finding a suitable reviewer without great delay.

Minerals and reactions at the atomic scale. Transmission electron microscopy. Edited by PETER BUSECK. (Reviews in Mineralogy, Vol. 27). Pp. xv + 508. Washington: Mineralogical Society of America, 1992. Price \$28.00. ISBN 0-939950-32-4. The volume presents the proceedings of an MSA three-day short course, convened by the editor at College Corner, OH, in October 1992, on principles of electron microscopy and their

application to aspects of mineralogy, petrology and geochemistry. There are 11 individual contributors to 12 chapters. Five of the 12 are devoted to principles and seven to applications. As well as for TEM, there are descriptions of SAED, CBED, EELS, ALCHEMI, high-resolution image simulation and X-ray analysis. Among the mineralogical applications described are the studies of polysomatism, polytypism, and chemical and structural definition and disorder in silicates. In petrology, applications to both low- and high-temperature and deformation-induced reactions are presented. Each chapter concludes with a comprehensive set of references to the original literature.

Electron crystallography. Edited by DOUGLAS DORSET. Pp. v + 182. Buffalo: American Crystallographic Association, 1994. Price \$25.00. ISBN 0-937140-37-6. Volume 28 of the Transactions of the American Crystallographic Association, the book contains the proceedings of a symposium on electron crystallography held in conjunction with the annual meeting of the ACA at the University of Pittsburgh in August 1992. The book contains 15 presentations, by 36 different authors, and an editorial preface. Available from Polycrystal Book Service, PO Box 3439, Dayton, OH 45401, USA.

The structural chemistry of silicates. Edited by ADRIAN WRIGHT. Pp. xviii + 329. Buffalo: American Crystallographic Association, 1993. Price \$25.00. ISBN 0-937140-36-8. Volume 27 of the Transactions of the American Crystallographic Association, the book contains the proceedings of a symposium on the structural chemistry of silicates, held in conjunction with the annual meeting of the ACA at the University of Toledo, OH, in July 1991. The volume contains transcripts for 13 of the invited and 11 of the contributed talks, including the Society of Glass Technology lecture delivered by John M. Parker, and five of the poster presentations offered at the symposium. The symposium was dedicated to the memory of the late Doris L. Evans and contains an appreciation of her work in silicate science, given by Michael P. Teter. Available from Polycrystal Book Service, PO Box 3439, Dayton, OH 45401, USA.

Linear and nonlinear optical properties of molecules. By G. H. WAGNIÈRE. Pp. xii + 196. Weinheim and Basel: VCH mbH and Verlag Helvetica Chimica Acta, 1993. Price DM 88.00. ISBN 3-527-29045-1. This is a concise enumeration and general treatment of the phenomena and principles of molecular optical spectroscopy, with particular emphasis on the molecular properties contributing to the various interactions of molecules with light, alone and in combination with static electrical and magnetic fields. The more detailed mathematical formalisms are placed in appendices that occupy rather more than half the text. A useful overview for the non-specialist and new students in the field.