

Crystallographers

This section is intended to be a series of short paragraphs dealing with the activities of crystallographers, such as their changes of position, promotions, assumption of significant new duties, honours, etc. Items for inclusion, subject to the approval of the Editorial Board, should be sent to the Executive Secretary of the International Union of Crystallography (J. N. King, International Union of Crystallography, 13 White Friars, Chester CH1 1NZ, England).

Professor **D. W. J. Cruickshank** of the Department of Chemistry, University of Manchester Institute of Science and Technology, has received the Structural Chemistry Award of the British Chemical Society for 1977 for his pioneering contributions to crystal structure analysis and molecular structure determinations.

Dr **Jenny P. Glusker**, of the Institute of Cancer Research, Philadelphia, USA, has been elected Vice-President of the American Crystallographic Association for 1978 and will hence become President of the ACA in 1979.

Professor **K. A. Gschneidner Jr** has received the 1978 William Hume-Rothery Award of the Metallurgical Society of the American Institute of Mining, Metallurgical and Petroleum Engineers, in recognition of his scholarly contributions to the science of alloys. Dr Gschneidner is assistant programme director for metallurgy and ceramics at Ames Laboratory, as well as Professor of Materials Science and Engineering and Director of the Rare-Earth Information Center at Iowa State University, Ames, USA.

Dr **R. W. Hendricks** of Oak Ridge National Laboratory has been honoured by the magazine *Industrial Research*, which cites his development of the Oak Ridge small-angle X-ray scattering systems (ORSAXS) as one of the 100 most significant technical developments in 1977. ORSAXS uses a two-dimensional position-sensitive detector, pin-hole collimation and a rotating-anode X-ray source [*J. Appl. Cryst.* (1978), **11**, 15–30].

Dr **Hans Jaffe** died on 8 November 1977. He was born in Heidelberg but went to the USA in 1935. He led the research into piezoelectric crystals and ceramics at Gould Inc. and its predecessors, Clevite Corporation and Brush Development Company, from 1940 to his retirement, as a Vice-President of Gould Inc. in 1974.

Dr **W. A. Lester Jr** has been appointed Director of National Resource for Computation in Chemistry at Lawrence Berkeley Laboratory, California, USA. He was formerly in charge of the Molecular Interactions

Group at the IBM Research Laboratory at San Jose.

Dr **J. W. Matthews**, reader in electron microscopy at the University of the Witwatersrand, Johannesburg, died in May 1977. His work on crystal defects in epitaxy did much to stimulate metal-physics research in South Africa.

International Union of Crystallography

Structure Reports

Volumes 42A and 41B of *Structure Reports* have recently been published. Volume 42A, covering the literature for metals and inorganic compounds for 1976 (viii + 492 pages), costs 127.50 Netherlands guilders for subscribers with standing orders. The full price for individual copies is 150 guilders but personal subscribers may buy a copy for their own use at 75 guilders.

Volume 41B, covering the literature for organic compounds for 1975, is bound in two parts (viii + 702 pages and iv + 622 pages) and costs 289.50 Netherlands guilders for subscribers with standing orders. The full price for individual copies is 340 guilders but personal subscribers may buy a copy for their own use at 170 guilders. A 200-page supplement for 1974 and 1975 to Section B (*Organic Compounds*) of the 60-Year *Structure Index* is being solid with Volume 41B, and is included in the price for that volume. Additional copies of the supplement are available at a price of 33 Netherlands guilders.

Orders for these publications may be placed direct with the publisher, Bohn, Scheltema & Holkema, Emmalaan 27, Utrecht, The Netherlands, with Polycrystal Book Service, PO Box 11567, Pittsburgh, Pa. 15238, USA, or with any bookseller.

Notes and News

Announcements and other items of crystallographic interest will be published under this heading at the discretion of the Editorial Board. The notes (in duplicate) should be sent to the Executive Secretary of the International Union of Crystallography (J. N. King, International Union of Crystallography, 13 White Friars, Chester CH1 1NZ, England).

Radiation safety

NBS Handbook 111, entitled *Radiation Safety for X-ray Diffraction and Fluorescence Analysis Equipment*, has been revised and approved by the American National Standards Institute. It can be obtained from the US Government Printing

Office, Washington DC 20402, USA, at a price of \$1.00. The publication number is 003-003-01917-8.

Cooperation Scheme for Crystallographers in Developing Countries

The European Crystallographic Committee have received a request from Dr B. N. Mehrotra, of the University of Science of Malaysia, asking if anyone could help their laboratory by donating a heating attachment for use with powder and/or single-crystal cameras. If anyone has such equipment to spare or could offer to take the necessary measurements could they please get in touch with Professor D. Feil, Chemical Physics Laboratory, Twente University of Technology, PO Box 217, Enschede, The Netherlands, who acts as coordinator of the Scheme.

New small-angle neutron scattering facility

A user-oriented small-angle neutron scattering facility is being established at the Oak Ridge National Laboratory, USA, under a major grant from the National Science Foundation. The facility will be located at the high-flux isotope reactor. It will use a two-dimensional position-sensitive detector and is scheduled for completion by late 1979. Interested persons should contact Dr W. C. Koehler or Dr R. W. Hendricks, Oak Ridge National Laboratory, Oak Ridge, Tennessee 37830, USA.

Book Reviews

Works intended for notice in this column should be sent direct to the Book-Review Editor (J. H. Robertson, School of Chemistry, University of Leeds, Leeds LS2 9JT, England). As far as practicable books will be reviewed in a country different from that of publication.

Crystal technology. By **W. L. Bond**.* Pp. xi + 342. Chichester: John Wiley, 1976. Price £ 13.50, \$27.00.

This book appears to have been written for non-crystallographers who have become interested in specifying or determining crystal orientations in order to produce defined, oriented shapes for optical, piezoelectric, semiconductor or other purposes. Parts of the book will also be of value to technicians not acquainted with crystallographic and advanced mathematical techniques.

* Died 30 March 1977.

It starts with a compressed account of the codification of crystal symmetry and type. A reader not already familiar with the jargon would be well advised to study a more comprehensive text for this part. The 32 point groups with their corresponding stereograms are beautifully illustrated.

Chapter 2 on atomic planes and their indices is a clear account which even a student armed with simple trigonometry should be able to follow.

Chapter 3 called *Space Groups and X-ray Reflections* assumes a working knowledge of the subject matter of chapter 1 and contains a useful table of the conditions limiting possible reflections from crystals of the 230 space groups. A description of powder diffraction photographs is followed by nomograms designed to help in indexing the photographs obtained. The powder diffractometer is also briefly introduced.

The single-crystal X-ray goniometer is adequately introduced in chapter 4 but the reader is then diverted into an involved discussion of various problems encountered in orienting some of the more complicated types of crystal. Optical methods, which would be more readily understood after reading the next chapter (though this is not referred to) are brought in, as is vector manipulation, which is also better introduced in chapter 13 (again without any reference at this point). Atomic-plane mapping is introduced via vector multiplication without mention of the reciprocal-lattice concept. A discussion of interplanar angles is conducted in vectorial terms without reference to stereographic projection methods, although these are introduced towards the end of the chapter. A further three pages of this discussion are relegated to the Appendix. In conjunction with the Laue photographic method the use of Gnomonic projection and the Geringer net are described. The chapter is interspersed with well illustrated mechanical details of useful attachments to X-ray goniometers, for handling various types and shapes of crystals, and methods for examining crystal perfection. It concludes with discussion of some of the sources of error in measure-

ment, of which there is more in the *Miscellaneous* section.

A good account of the transmission of light through crystals and the various optical methods available for orienting them is given. A comprehensive account of materials required in crystal working is presented followed by a very useful compilation of reflecting planes, angles and corresponding reflection intensities for many commonly used single-crystal materials.

The section on sawing techniques is well illustrated but is somewhat out of date. No mention is made of large capacity annular saws, diamond-impregnated wire saws, or electroplating as a method of bonding diamond powder to saw blades.

A well-illustrated account of flat, cylindrical, spherical and doubly curved grinding and polishing is complemented by a good section on methods for checking flatness, squareness, angle and curvature of the resultant surfaces. The sophisticated lens-grinding machines available are not mentioned. Notes on calculating some of the physical properties of X-rays and crystals complete the chapter.

The contents list and index give a satisfactory guide to the book's 342 printed pages. The book is well produced, the only minor criticism of its legibility being the lightness and miniscule size of the sub- and superscripts which frequently are difficult to see compared with the main type. Some of the tables make no apology for being composed on an office typewriter.

It is a pity that some of the spare pages at the end were not used to provide a reference list of other books and papers which give fuller coverage to some of the subjects dealt with rather briefly. A list of suppliers of equipment and materials would also have been useful.

Anyone becoming concerned with the manipulation of crystals would find this a very useful addition to their book shelf.

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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.

Electron and photon interactions with atoms. Edited by H. Kleinpoppen and M. R. C. McDowell. Pp. xviii + 682. New York: Plenum, 1977. Price \$66.00.

Synthetic gem materials. By M. O'Donoghue. Pp. 215. London: The Worshipful Company of Goldsmiths, 1976. Price £12.00.

This is a somewhat undigested compilation of literature references, with occasional abstracts, giving information on substances, mostly crystalline, used, or usable for artificial gems, such as 'Diagem'. The 1750 entries are alphabetic, from alums to zoisite.

Solid electrolytes (Topics in applied physics, Vol. 21). Edited by S. Geller. Pp. xi + 244. Springer-Verlag, 1977. Price DM 72.00, \$33.20.

A review of this book, by A. T. Howe, has been published in the July 1978 issue of *Acta Crystallographica*, Section A, page 640.

Crystallography and its applications. By L. S. Dent Glasser. Pp. viii + 224. Wokingham: Van Nostrand: Reinhold, 1977. Price £12.00 (cloth) or £5.95 (paper).

A review of this book, by W. C. Bigelow, has been published in the May 1978 issue of *Acta Crystallographica*, Section B, page 1750.