When there is good reason for using other units (for example, when a dimension is determined by a standard machine tool or commercial practice) the SI equivalent should follow in parentheses [see *Notes for Authors. Acta Cryst.* (1978), **A34**, 143–157]. A useful publication on the SI system is *A Guide to International Recommendations on Names and Symbols for Quantities and on the Units of Measurement* (1975) by D. Armstrong Lowe (Geneva: World Heath Organization).

Structural Data

Routine checking of papers containing structural data, for consistency between the atomic coordinates and lattice constants and the quoted bond lengths, bond angles and torsion angles, is now being introduced by all Co-editors. Since the detection of inconsistency will result in a paper being returned to its authors, care should be taken to ensure that the final tables and results presented in the manuscript correspond accurately to the primary data.

Anisotropic Thermal Parameters

Anisotropic thermal parameters are to be published only if the table of values is very short, or they are necessary for understanding the paper, or they possess unusual features or cast doubt on the structure but do not lead to rejection of the paper. In all other cases, the table of values is to be deposited: a brief discussion of deposited values should instead be presented, including the maximum and minimum values found and the presence of any nonpositive-definite coefficients determined. In addition, the equivalent values of the Debye–Waller factor should be given for publishing with the list of atomic coordinates.

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, 5 Abbey Square, Chester CH1 2HU, England).

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Request for donations of publications and geological specimens

On 18 March 1978 a fire destroyed a large part of the University of Lisbon, namely the building where the Faculty of Science and the Natural History Museum were located. The Mineralogical and Geological Museums were almost completely destroyed, together with all records and specimens, as was the Library belonging to the Geological Society of Portugal, entrusted to the Department, and all its books, maps, *etc.* were lost in the fire.

Under these circumstances, teaching and research activities are almost impossible, and the Department is making an appeal for international assistance, requesting donations of books, magazines and geological specimens (including minerals, rocks and fossils).

Offers of assistance should be sent to Professor C. A. de Matos Alves, Head of the Department of Mineralogy and Geology, Faculty of Science, University of Lisbon, Lisbon, Portugal.

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, 5 Abbey Square, Chester CH1 2HU, England).

Professor **E. F. Bertaut** has been elected to the Académie des Sciences de l'Institut de France. Professor Bertaut is head of the Laboratoire de Cristallographie de CNRS in Grenoble and is a member of the Executive Committee of the International Union of Crystallography.

Professor **J. M. Cowley**, of the Department of Physics, Arizona State University, and Professor **D. W. J. Cruickshank**, of the Department of Chemistry, University of Manchester Institute of Science and Technology, have been elected Fellows of the Royal Society.

Dr **Jenny P. Glusker**, a member of the Department of Molecular Structure of the Institute for Cancer Research at Philadelphia, Pennsylvania, and Research Associate Professor of Physical Biochemistry at the University of Pennsylvania, has been awarded the Garvan Medal of the American Chemical Society. Dr Glusker also received the Philadelphia Section Award in October 1978. She is currently President of the American Crystallographic Association.

Professor **James A. Ibers**, Professor of Chemistry at Northwestern University, Evanston, Illinois, has been awarded the American Chemical Society Award in Inorganic Chemistry.

Professor **George A. Jeffrey**, Chairman of the Department of Crystallography at the University of Pittsburgh, Pennsylvania, received the Pittsburgh Section Award of the American Chemical Society in December 1978.

At the time of his death on 23 August 1978 Professor **Sergio Quareni** was only 49 years of age. It is a great sorrow to see a scientist pass away at the height of his career. For the last two years, he had been in and out of hospital. But, during the brief moments when he returned to the Laboratory, he still found the strength to work and teach.

Sergio Quareni was Professor of Mineralogy at the University of Padova (Italy). His scientific interests had always been directed towards crystallography. His contributions to the study of feldspars were outstanding. So too was his attitude towards perfecting equipment – particularly high-temperature apparatus for Weissenberg and precession cameras – which permitted him to carry out his experiments.

For many years, he was the Treasurer of the Italian Crystallographic Association.

Clearly, it is impossible to do justice to a scientist like Professor Quareni in such a limited space. But, above all, his warm humanity towards his students and colleagues will be remembered; also his attachment to his family. These great gifts of his, together with his scientific talents, will be greatly missed.

Professor **Harold W. Wyckoff**, of the Department of Molecular Biophysics and Biochemistry, Yale University, has been elected Vice-President of the American Crystallographic Association for 1979 and will become President in 1980. Dr **K. Ann Kerr**, of the Department of Chemistry and Physics, University of Calgary, has been elected Secretary, and Professor **Charles N. Caughlan**, of the Department of Chemistry, Montana State University, continues as Treasurer.

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.

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Multicomponent alloy constitution bibliography. By *Alan Prince*. Pp. xxxviii + 1105. London: The Metals Society, 1978. Price £30.00, $90.00.

Since *The Constitutional Diagrams for Alloys: A Bibliography* (J. L. Haughton &

A. Prince, 1956, Inst. Met., Monogr. No. 2, pp 230–324) was published in 1956, no bibliography of references since 1955 on multicomponent alloy constitution has been available. The present work includes over 18 000 references from 1956 to December 1973 and also all the 1955 references not included in the previous compilation. References are given for alloy systems, systems containing metalloids, sulphide systems and oxide systems where equilibrium with a metal is dealt with. References to crystal structure determinations, the inorganic synthesis of ternary compounds and property–composition relations that provide constitutional data have been included in addition to those on phase equilibria. Binary alloy systems are not included since these are fully referenced in *The Constitution of Binary Alloys* (M. Hansen & P. Anderko, 1958, McGraw-Hill. First Suppl., R. P. Elliott 1965; Second Suppl., F. A. Shunk 1969), nor are references to equilibria between oxides since these are surveyed in *Phase Diagrams for Ceramicists* (E. M. Levin, C. R. Robbins & H. F. McMurdie, 1964, The American Ceramic Society. First Suppl. 1969; Second Suppl. 1975).

References to ternary systems occupy 88% of the total, quaternary systems 10% and quinary, senary, septenary and octonary systems the remaining 2%. Within each system the references are grouped in the alphabetical order of the chemical symbols for the components – a simple arrangement which obviates the need for an index to the systems included in the bibliography.

In compiling the bibliography the author has used two abstract journals – Chemical Abstracts published by the American Chemical Society and Metallurgical Abstracts, published initially by the Institution of Metallurgists and latterly as Metals Abstracts published jointly by the Metals Society and the American Society for Metals.

This bibliography is without doubt a standard work of reference which will form a necessary part of any scientific or technological library. It not only reflects on the great industry of its author but also his judgement in the selection of the references – a judgement which has been acquired as a result of his extensive knowledge and interest in the field of heterogeneous phase equilibria.

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Heteroepitaxial semiconductors for electronic devices.

Edited by *G. W. Cullen* and *C. C. Wang* (with contributions by V. S. Ban, S. Berkman, J. Blanc, G. W. Cullen, M. T. Duffy, N. Goldsmith, W. E. Ham, C. C. Wang and P. J. Zanzucchi). Pp. VIII + 299. Berlin-Heidelberg-New York: Springer, 1978. Price DM 158.00, US $ 79.00.

The intention of the authors of this book is to describe in some detail the preparation and characterization of heteroepitaxic thin films, mainly of silicon, but also of III–V and II–VI semiconductor compounds on sapphire and spinel substrates. A further intention is to demonstrate the intimate correlation between the particular properties of these epitaxic films and the technologies applicable to them in order to develop successfully electronic and optical devices. The most important film materials and their applications are Si for integrated MOS devices, GaP for LED's, GaAs for photocathodes, ZnO for electrooptic thin-film modulators, and AlN for surface acoustic wave (SAW) devices. In addition, this book contains broad information on epitaxic layers of other materials on sapphire and spinel.

After a brief introduction, Cullen gives a very comprehensive chapter of 100 pages on Si layers. The growth and surface preparation of the substrates and their reactions with epitaxic gases are discussed in detail.

In chapter 3, Wang presents the compound semiconductor layers. Numerous binary and even ternary III–V compounds are considered and the particular advantage of organometallic materials is pointed out.

In chapter 4, special films for SAW and electrooptical devices are discussed.

Chapter 5 treats the methods for characterizing film thickness, evenness, crystallinity, impurity content and properties of passivation layers.

A detailed chapter (6) of 50 pages is that by Ham on the electrical characterization of the films.

Gas flow dynamics are treated in chapter 7, and the last chapter is a study on misfit, strain and dislocations which, in addition to SOS, also discusses Si/Si and Si/Ge epitaxy.

The authors show up limiting factors in this field of technology, but they also point to chances of further developments. The title does not reveal that this book is really a detailed standard work on silicon-on-sapphire and related epitaxic material problems. It will be helpful for those working in this field or planning to do so, and for those looking for the properties of silicon or other semiconductors on transparent isolating substrates for new device applications or for their possible introduction into their production lines.

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Developments in electron microscopy and analysis 1977.

Edited by *D. L. Misell*. Proceedings of the Institute of Physics Electron Microscopy and Analysis Group Conference held in Glasgow, 12–14 September 1977 (EMAG 77). Conference Series No. 36. pp. xiii + 441. Bristol and London: The Institute of Physics, 1977. Price £11.00, $21.00.

An interesting question which arises prior to attending a Conference or reading the Proceedings of an Electron Microscopy Conference is how much time will be spent on instrument development – the search for the ultimate, how much time will be spent justifying relatively new techniques such as STEM and FIM and how much time will be devoted to the user, be he industrial or academic, who uses electron microscopy as a tool. Unfortunately EMAG 77 spent far too much time on the first two rather than the last mentioned. I say 'unfortunately' since it is, at the end of the day, the user who sustains the former interests and doesn't let the instrument die a natural death through non-use. Although the ideal in accelerating voltage or electron-beam source is of interest, most users or potential users are interested in an instrument which is adequate for the job without being phenomenally expensive. Cosslett states the same in his initial assessment of the state of the art by pointing out that the lagging of the acceptance of STEM in metallurgy and mineralogy is because of a lack of 'hard' results of which there is a vast quantity from traditional instruments.

The dynamic recording of events is useful since these often occur far too rapidly for complete visual detection and, consequently, appreciation. The eye very often misses the essential features. The