

nized that some may not be available in all cases. Powder data corresponding to the information given in Table 1 are given, in the preferred form, in Table 2. Partial omission of the optional data will not preclude publication of the paper. Reprints of the complete standard, including copies of the blank data-form, are available from any Co-editor. Guidance in filling out the form is available from the JCPDS International Centre for Diffraction Data, 1601 Park Lane, Swarthmore, PA 19081, USA.

Among the requirements for reporting powder diffraction data are:

(a) The published powder pattern should be as complete as possible and should include weak as well as strong diffraction lines. Where possible, the data should extend to at least  $100^\circ 2\theta$  (Cu  $K\alpha$  radiation). Patterns with a small number of lines should extend to the limit of the experimental method used.

(b) The experimentally observed  $2\theta$  values should be given in degrees,

corrected for systematic instrumental error.

(c) Intensities should be reported numerically, with the most intense line scaled to 100 and intensities less than 1 reported as decimal fractions. Intensity values reported should not imply a precision greater than that measured.

(d) The reproducibility of the measured values of  $2\theta$  and  $I$  should be indicated, as obtained by multiple mountings of the sample material.

(e) Indexing of the powder diffraction data is required for all but the rarest and best-defended cases. Authors should report a figure of merit based on the accuracy of the  $2\theta$  measurements and the completeness of their data.

(f) Information concerning line breadth of the sample should be supplied.

(g) Additional information of value to future users should be supplied, such as the standard deviations, Chemical Abstracts Service Registry number, Crystal Data index number, etc.

To justify being published, powder diffraction data must constitute an original contribution to the literature. As an original contribution, the data must be the first published for a well-characterized phase, must be a significant correction to or an improvement on published data, or must relate to the phase in a previously uncharacterized condition, e.g. at elevated temperatures or pressure. A powder pattern calculated from single-crystal structure data does not in itself meet the criterion of originality.

#### References

- Appleman, D. E. & Evans, H. T. (1973). NTIS Document No. PB-216188.  
 Bragg, W. H. (1915). *Nature (London)*, **95**, 561.  
 Smith, G. S. & Snyder, R. L. (1979). *J. Appl. Cryst.* **12**, 60.

#### Communicated Abstracts

#### Twelfth International Congress of Crystallography, Carleton University, Ottawa 16–25 August 1981

The abstracts of papers communicated to the Congress will be published as a Supplement to *Acta Crystallographica*, Section A. The Supplement will contain abstracts directly reproduced from typescript copy furnished by the authors. Copies will be sent *gratis* to subscribers

to Section A, but not to subscribers to Section B or to *Journal of Applied Crystallography*. However, copies may be ordered direct from the publishers, Munksgaard, 35 Nørre Søgade, DK-1370 Copenhagen K, Denmark, at a price of 170 Danish kroner.

#### Crystallographers

Dr S. C. Abrahams, of Bell Laboratories, Murray Hill, and Editor of *Acta Crystallographica*, will receive the degree of Doctor of Philosophy *honoris causa* from the University of Uppsala at a ceremony on 5 June 1981.

Professor D. A. Bekoe, Vice-Chancellor of the University of Ghana, was elected President of the International Council of Scientific Unions in September 1980. He had previously served as Treasurer and then Vice-President of the International Council of Scientific Unions.

Professor Dorothy Hodgkin, formerly head of the Laboratory of Chemical Crystallography at the University of Oxford, has been elected a foreign member of the Bayerische Akademie der Wissenschaften, where Max von Laue presented his well-known paper on the discovery of X-ray diffraction. Professor Hodgkin is the first lady to be so elected to the Akademie.

Dr B. A. Joyce, Philips Research Laboratories, Redhill, England, has been awarded the Duddell Medal and Prize of the Institute of Physics for his work on the growth of epitaxial semiconductor materials and related surfaces.

Professor H. Lipson, who was Professor of Physics at the University of Manchester Institute of Science and Technology until his retirement in 1977, will give the fifth Bragg Lecture at the Royal Institution, London, and at the University of Leeds on 28 and 29 October 1981. Professor M. M. Woolfson, of the Department of Physics at the University of York, will give the sixth Bragg Lecture in Manchester and Cambridge in October 1982. The Bragg Lectures were initiated in 1962 to commemorate the work of Sir William and Sir Lawrence Bragg. Previous lecturers were Professor P. P. Ewald (1962), Dame Kathleen Lonsdale (1965), Professor Dorothy Hodgkin (1968) and Professor R. W. G. Wyckoff (1973).

Dr M. Schlenker, Director of Laboratoire Louis Néel, CNRS, Grenoble, has been

Table 2. Powder data

Information in the first two columns is essential, that in the remaining three columns is desired (see text).

$2\theta$ exp ( $^\circ$ )	$I/I_0$	$d_{\text{exp}}$ ( $\text{\AA}$ )	$hkl$	$\Delta 2\theta^*$ ( $^\circ$ )
19.02	35	4.66	111	+0.019
31.27	40	2.858	220	-0.003
36.84	100	2.437	311	-0.009
38.53	3	2.335	222	-0.021
44.83	65	2.020	400	+0.016
55.64	9	1.650	422	-0.020
59.37	45	1.5554	511	+0.008
65.24	55	1.4289	440	-0.001
68.64	3	1.3662	531	+0.006
74.13	3	1.2780	620	+0.003
77.32	8	1.2330	533	-0.029
78.40	1	1.2187	622	-0.013
82.64	5	1.1666	444	+0.006
85.76	2	1.1320	711	-0.012
90.97	5	1.0802	642	-0.009
94.10	12	1.0524	731	-0.005
99.34	7	1.0104	800	-0.006
107.90	2	0.9527	822	-0.020
111.22	8	0.93343	751	-0.014
112.32	1	0.92738	662	-0.035
116.91	6	0.90384	840	-0.025
120.50	1	0.88722	911	+0.004
121.69	0.9	0.88203	842	-0.021
126.76	0.8	0.86161	664	+0.013
130.74	8	0.84737	931	-0.011
138.07	17	0.82488	844	+0.033
142.97	0.4	0.81232	933	+0.024
152.70	2	0.79266	10,2,0	-0.033
160.65	11	0.78139	951	+0.025

\* $2\theta_{\text{exp}} - 2\theta_{\text{calc}}$

appointed as a Co-editor of *Journal of Applied Crystallography* to succeed Professor **J. C. Joubert** who has been a Co-editor of the journal since 1976. Dr Schlenker's research interests are particularly concerned with X-ray and neutron diffraction topography and other neutron diffraction studies. His full address is given on the inside front cover of the journal.

## 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.*

*J. Appl. Cryst.* (1981). **14**, 218

**Electron microscopy and analysis 1979.** Edited by *T. Mulvey*. Pp. XVI+472. Bristol and London: The Institute of Physics, 1980. Price £23.00, US \$57.50.

This volume contains the proceedings of the 1979 conference on Electron Microscopy and Analysis held in Great Britain at the University of Sussex. The conference was organized by the Electron Microscopy and Analysis Group (EMAG) of the Institute of Physics.

These proceedings will be of interest to physical scientists who employ electron microscopy in their work. They will find this volume a good source of inspiration, since it contains work from some of the world's leading electron microscope laboratories.

The volume begins with a report of a pre-conference workshop on the definition, quantification, and measurement of 'high resolution'. This timely topic should be of interest to all electron microscopists. Fourteen invited papers and over 100 contributed papers make up the remainder of the volume. The papers were presented in sessions on: instrumentation, minerals, materials, image contrast, beam-sensitive materials, *in situ* studies, microanalysis, surface science, microanalytical techniques in surface studies, and high-resolution studies.

There are no surprises in this volume; progress in instrumentation and technique is slow, but continuing. The level of the experimental work is high, and this is a promising sign. However, electron microscopy must increase the influx of problems from the physical scientist if these trends are to continue.

R. E. VILLAGRANA

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USA

*J. Appl. Cryst.* (1981). **14**, 218

## 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.*

**Ferroelectric semiconductors.** By *V. M. Fridkin* (Translated from the Russian). Pp. xiii + 318. New York: Consultants Bureau, 1980. Price US \$69.50. A review of this book, by K. M. Castelliz, has been published in the May 1981 issue of *Acta Crystallographica*, Section A, pages 447-448.

**The physics and chemistry of liquid crystal devices.** Edited by *G. J. Sporkel*. New York, London: Plenum Press, 1980. Price US \$42.50. A review of this book, by S. Chandrasekhar, has been published in the May 1981 issue of *Acta Crystallographica*, Section A, page 448.

**Amorphous semiconductors (Topics in Applied Physics, Vol. 36).** Edited by *M. H. Brodsky*. Pp. xvi + 337. Berlin: Springer, 1979. Price US \$49.50. A review of this book, by M. Inoue, has been published in the May 1981 issue of *Acta Crystallographica*, Section A, pages 446-447.