

(Laughlin, 1973). Further attempts are presently being made to observe modulation images experimentally.

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### 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).*

Dr Michael Hart has been elected to serve on the Council of the British Institute of Physics for 1974–75.

Drs S. Baggio and Dr M. Ipohorski are, respectively, the new Chairman and Secretary of the Argentine National Committee for Crystallography.

Professor R. Gay has been elected Chairman of the French National Committee for Crystallography. Professor P. Muriel and Professor R. Weiss have been elected Vice-Chairmen and Professor A. Authier has been re-elected Secretary.

## International Union of Crystallography

*Acta Crystallographica  
Journal of Applied Crystallography*

The Executive Committee of the International Union of Crystallography has found it necessary to increase the yearly subscription rates for *Acta Crystallographica* and the *Journal of Applied*

*Crystallography*, as from 1 January 1975. Every effort has been made to keep these increases to a minimum.

### *Acta Crystallographica*

The following rates will apply for Volumes A31 and B31 (1975). All subscription rates are fixed in Danish kroner, and the U.S. dollar equivalents given below are subject to exchange-rate fluctuations.

#### *Complete volumes, regular price per volume*

Sections A & B (combined subscription)	D. Kr. 1400 (\$230.00)
Section A only	D. Kr. 315 (\$52.00)
Section B only	D. Kr. 1200 (\$197.00)

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#### *Single parts*

The prices of single parts are as follows:	
Vols. 1–23 (if available)	D. Kr. 79 (\$13.00)
Vols. A24–A31	D. Kr. 79 (\$13.00)
Vols. B24–B31	D. Kr. 150 (\$25.00)

### *Journal of Applied Crystallography*

The following rates will apply for Volume 8 (1975). All subscription rates are fixed in Danish kroner, and the U.S. dollar equivalents given below are subject to exchange-rate fluctuations.

<i>Complete volumes, regular price per volume;</i>	D. Kr. 360 (\$59.00)
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<i>Complete volumes reduced price for individuals;</i>	D. Kr. 180 (\$29.50)
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Vols. 1–8	D. Kr. 90 (\$15.00)
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### **Airfreighting of copies to the U.S.A. and Canada**

The airfreighting service introduced in 1973 will be continued and is obligatory for all subscribers in the U.S.A. and Canada. During 1974 the air freight costs have increased by approximately 25% and hence it would have been necessary to increase correspondingly the charges made to subscribers. However, in order to compensate for the delays or failures in delivery suffered by some North American subscribers in 1974, Munksgaard has agreed to meet these increases in costs. Hence the compulsory charges to North American subscribers for 1975 for this service remain the same as for 1974, namely:

#### *Acta Crystallographica*

Sections A & B (combined subscription)	Add D. Kr. 70 (\$12.00)
Section A only	Add D. Kr. 20 (\$3.50)
Section B only	Add D. Kr. 50 (\$8.50)

#### *Journal of Applied*

<i>Crystallography</i>	Add D. Kr. 20 (\$3.50)
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These charges are fixed in Danish Kroner. The U.S. dollar equivalents are subject to exchange-rate fluctuations.

## 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).*

### **Diffraction Studies of Real Atoms and Real Crystals**

The abstracts of papers presented at the recent International Crystallography Conference held under the above title have been published in a book. The conference, held in Melbourne, Australia, 19–23 August 1974, was sponsored by the International Union of Crystallography and the Australian Academy of Science. Under three topic headings there are over 180 abstracts, totalling

378 pages and including many half-tone reproductions. The topics are as follows:

### I. *Real atoms in crystals*

Determination of electronic charge distribution, comparison of experimental electron densities and quantum chemical calculations, accuracy in structure factor determination, TDS and lattice dynamics, Compton scattering.

### II. *The nature of extended defects in crystals*

Block and shear structures, transformations and atomic ordering, order-disorder and lattice dynamics, stacking faults, strains and precipitations and related phenomena, as studied by X-ray and neutron diffraction, high-resolution electron microscopy and other techniques.

### III. *The use of dynamical effects in the study of crystals*

General theory, interferometry, dynamical methods for structural analysis, experimental studies of dynamical X-ray scattering, surface studies — dynamical effects with slow and fast electrons.

Copies are available, price \$A12 including postage, from the Australian Academy of Science, P.O. Box 216, Civic Square, Canberra, A.C.T. 2068, Australia.

## Book Reviews

*Works intended for notice in this column should be sent direct to the Book-Review Editor (M. M. Woolfson, Physics Department, University of York, Heslington, York YO1 5DD, England). As far as practicable books will be reviewed in a country different from that of publication.*

**Standard X-ray diffraction powder patterns. Section 11.** By H. E. SWANSON, H. F. McMURDIE, M. C. MORRIS, E. H. EVANS, and BORIS PARETZKIN. Pp. 130. Springfield, Mass.: U. S. Dept. of Commerce, 1974. Price \$1.55. (Available from the U. S. Government Printing Office, Washington, D. C. 20402, under SD Catalog No. C13.44:25 /Sec. 11)

Latest in this series of NBS publications, Section 11 contains 52 powder patterns determined from diffractometer data, plus a further 18 calculated from published single-crystal work using a modified version of Smith's program (Lawrence Radiation Lab., 1967). The substances are mainly inorganic double

salts and hydrates (selected according to no obvious scheme), but also include glucose, sucrose, and cysteine. Each pattern is indexed and accompanied by brief but useful notes and references on method of preparation, structure, density etc., together with some moderately accurate optical data.

To test the quality of the patterns, I submitted two (one monoclinic and one orthorhombic) to the Fortran version of Visser's zone-indexing program. Both were successfully indexed at the first attempt, with figures of merit ( $M_{20}$ ) of around 80! This confirms the excellent quality of the data, and underlines the virtues of using only measurements corrected for both random and systematic errors for indexing work. The resulting cell constants were in very good agreement with those published.

The report can be recommended to workers in this field as a set of high-quality standard data at a very reasonable price.

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**The growth of crystals from liquids.** Par J. C. BRICE. Vol. XII. Pp. xiii + 379, Figs. 17. Tableaux 71. Amsterdam: North-Holland, 1973. Prix f80.00 (U.S. \$30.80).

Le vaste champ d'étude des propriétés fondamentales des cristaux et l'important développement de leurs applications variées font que de nombreux chercheurs doivent être au courant des problèmes de la croissance cristalline. Ils trouveront dans l'excellent ouvrage de J. C. Brice un bon exposé critique des connaissances pratiques et théoriques acquises comme des méthodes employées, mais ils y puiseront aussi des conseils pertinents. Ce livre couvre un domaine plus étendu que celui publié par l'auteur en 1965. En effet il traite non seulement de la croissance des cristaux à partir de bains constitués en les fondant, mais également de celle réalisée à partir de solutions préparées avec des solvants dont la gamme s'étend de l'eau aux mélanges d'halogénures.

Le premier chapitre fait état des méthodes utilisées pour la croissance cristalline à partir de phases solide, liquide ou vapeur. Il comporte un rappel, qui ne sera

pas toujours inutile, sur les diagrammes de phases, un paragraphe sur la cinétique de croissance, et il se termine par des informations sur les effets de transport. Il est donc consacré aux concepts de base de la croissance. Le deuxième chapitre, intitulé *Solides, Liquides et Gaz*, débute comme tous les autres par une introduction qui présente les sujets traités. Ensuite viennent deux paragraphes très courts sur les forces de liaisons dans les cristaux et sur les réseaux, puis un exposé plus substantiel sur les défauts. Les transitions entre solide d'une part, liquide ou gaz d'autre part, les relations de phases, donnent lieu à un développement important. Le chapitre se termine par une comparaison entre les propriétés physiques des matériaux classés par type de liaison dominant: covalent, ionique, métallique ou moléculaire; des tables chiffrent les ordres de grandeur.

Le troisième chapitre *Cinétique de Croissance* motive la grande importance de la cinétique, puis traite de la morphologie cristalline, de la nucléation, du rôle de l'interface. Quelques brèves parties de développements thermodynamiques et mathématiques des théories sont indiquées, mais en général l'auteur renvoie aux articles originaux tandis qu'il analyse les aspects importants des principales formules théoriques. Des comparaisons sont établies entre théories et résultats expérimentaux, des relations empiriques sont données. Le quatrième chapitre est consacré à l'aspect plutôt théorique des phénomènes de transport dans les liquides et les solides et à leur frontière. Le chapitre 5 traite des techniques générales: propriétés des matériaux de construction des appareils, méthodes de chauffage et de contrôle des températures, techniques de fixation des germes.

Les trois chapitres 6, 7 et 8 sont relatifs aux croissances effectuées respectivement (i) à partir de la fusion en creusets (par exemple fusion de zone), (ii) par tirage à partir du bain fondu, (iii) par les méthodes de Verneuil et de la zone flottante. Ils sont tous les trois illustrés par des tables contenant chacune de 20 à 30 exemples. Des descriptions critiques de types d'appareils y sont faites de même qu'une revue des propriétés que les substances doivent présenter pour pouvoir être traitées par l'une ou l'autre méthode. On y trouve des informations relatives aux dopants, à la qualité des cristaux et aux moyens d'éviter les principaux types d'imperfections. Le neuvième chapitre, intitulé *Croissance à Partir de Solution à Basse*