

## International Union of Crystallography

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### *International Tables for Crystallography* Volume A – Brief Teaching Edition

A second, revised edition of the Brief Teaching Edition of Volume A of *International Tables for Crystallography* (*Space-Group Symmetry*) has now been published. This new edition incorporates the changes where appropriate to the second, revised edition of Volume A, which was published in 1987. It also has a subject index. The Netherlands Guilder price of the Teaching Edition remains unchanged, at Dfl28.50. Because of significant changes in exchange rates

over recent months it has been necessary to revise the sterling and dollar prices, which are now £8.00 and \$15.00. Discounts are available for orders of 10 or more copies, provided that these orders are sent direct to the publishers, Kluwer Academic Publishers (Spuiboulevard 50, PO Box 17, 3300 AA Dordrecht, The Netherlands). (D. Reidel Publishing Company, who published this and other books for the Union, have now been merged with other companies into a single company known as Kluwer Academic Publishers.) Orders for single copies of the Teaching Edition can be sent either to Kluwer Academic Publishers or to Polycrystal Book Service (PO Box 3439, Dayton, Ohio 45401, USA).

## Notes and News

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### The Kathleen Lonsdale Lecture

These lectures were established in 1987. The second Kathleen Lonsdale lecturer is Professor Michael Hart, who will

deliver the lecture at 4 p.m. on 5 September 1988 at the Annual Meeting of the British Association for the Advancement of Science, which will be held in Oxford, England, 5–9 September 1988. The title of the lecture is 'Synchrotron Radiation Throws Light on a Microscopic World'.

## Book Reviews

*Works intended for notice in this column should be sent direct to the Book-Review Editor (R. O. Gould, Department of Chemistry, University of Edinburgh, West Mains Road, Edinburgh EH9 3JJ, Scotland). As far as practicable books will be reviewed in a country different from that of publication.*

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**Physics of phonons.** Edited by T. PASZKIEWICZ. (Proceedings of the XXIII Winter School of Theoretical Physics, Karpacz, Poland, February 26–28, 1987. Volume 285 of *Lecture Notes in Physics*.) Pp. x + 486. Berlin: Springer-Verlag, 1987. Price DM80.

This volume contains the proceedings of the 1987 Karpacz Winter School on the Physics of Phonons. When one turns from the Preface to the Contents pages, however, one finds that this opening sentence requires qualification, for the contributions are classed as 'Invited Talks', 'Contributed Papers' and 'Talks not included in this volume'. There are 21, 11 and 11 papers in these three categories respectively, ranging in length from one to 50 pages – or none at all of course!

Crystallographers have known of the importance of lattice vibrations since the work of Debye and of Waller. 'Phonon' is now used as a catch-word even when quantization is not important, as in most applications to diffraction crystallography. For example, in computer simulations of the dynamics of protein molecules, the atoms are treated as point masses with spring-like forces between them and the equations of motion are strictly Newtonian. Such studies have already served to explain, for example, how oxygen atoms gain access to the haem group in myoglobin, and escape again through potential barriers which are lowered

by thermal excitation. A paper entitled 'Protein dynamics and the theory of enzymatic catalysis', which might have been of interest to readers of this Journal, is unfortunately in the third of the categories mentioned above.

The emphasis in most contributions is heavily theoretical, as one would expect from a School on theoretical physics, and the topics can mainly be classed under the headings of surface vibrations, localization of phonons and scattering by defects, phonon spectroscopy and electron-phonon interaction. The only paper which can be described as of general interest is the introductory survey by A. A. Maradudin. This is a veritable *tour de force*, touching on the connection between phonon physics and almost every advance in the physics of condensed matter of the past few years, including molecular dynamics and computer simulations, new amorphous materials, quasi-crystals, including examples in one and in two dimensions, 'artificial' superlattices (and the quantum Hall effect), and surface phonons. Whatever your specialization, you will find topics of interest in the introductory survey, but possibly not elsewhere in this volume.

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