vations of structural changes under various conditions, he directed his students to observe the motion of domains in ferroelectric crystals under an applied electric field. When he turned his scientific interests to the study of thin films and surfaces, he also put emphasis on the importance of *in situ* observations which led him with great success to see the growth process of thin films on various crystalline substrates. In fact he pioneered the field on UHV electron microscopy and surface studies and the work he has performed in this field is undoubtedly valued as absolutely outstanding. As conveyed in a letter to Mrs Honjo from Dr C. J. Humphreys, 'his death is a great loss to our field but his life has really been one in which he pioneered and led the world in various important aspects of electron diffraction and electron microscopy'.

In his group he trained many fine young scientists who are now leading figures in the field of diffraction crystallography in Japan. He will long be remembered by his students not only for his scientific guidance but also for his openness and personal warmth.

Goro Honjo played a leading role in many scientific societies: Japanese Association of Crystal Growth and The Japanese Society of Electron Microscopy. In particular, he performed an excellent job as a former Chairman of the Commission on Electron Diffraction of the International Union of Crystallography for a period of six years and President of the Crystallographic Society of Japan. He was also for some time a member of the Japan National Committee for Crystallography.

J. HARADA

Professor **T. L. Blundell**, Head of the Department of Crystallography, Birkbeck College, University of London, has been awarded the CIBA Medal and Prize for 1987. During the past 20 years Professor Blundell has been concerned with the development of protein crystallography. Over the past decade he has been concerned with using known structures to provide a basis for the determination of tertiary structure from amino acid and DNA sequences. He is now involved, with others at Birkbeck College, in the development of a relational database of protein tertiary structure for use in protein prediction and protein engineering.

Dr **Alan Kenneth Head**, Acting Head of the Division of Material Science and Technology, CSIRO, Australia, has been elected a Fellow of the Royal Society, in recognition of his contribution to the understanding of dislocations of crystals, especially near surfaces and under conditions of crystal anisotropy. He pioneered the computer simulation of dislocation images in the electron microscope, which has led to the identification of many types of such defects in engineering materials.

Sir **Peter Hirsch**, Isaac Wolfson Professor of Metallurgy at the University of Oxford, has been awarded the 1988 Holweck Medal and Prize of The Institute of Physics and the French Physical Society. His general research interests are the electron microscopy of defects in crystalline solids, and the relation between structural defects and physical properties of materials. Currently he has been working with Dr S. G. Roberts on a theory to explain quantitatively the ductile–brittle transition of intrinsically brittle materials. He is also concerned with developing an understanding of the plastic deformation processes which occur in an indentation in single crystals, and the mechanisms responsible for hardness anisotropy. Other interests include the effect of doping on mechanical properties of covalently bonded solids, and the observation of dislocations at surfaces by diffraction channelling contrast in a scanning electron microscope.

Dr **P. Horn**, Acting Director of the Physics Sciences Department, IBM Research Division, Thomas J. Watson Research Center, Yorktown Heights, NY, USA, and Professor **R. Birgeneau**, Cecil and Ida Green Professor of Physics at the Department of Physics, MIT, Cambridge, MA, USA, are the joint recipients of the 1988 Bertram Eugene Warren Diffraction Physics Award in recognition of their many contributions in the field of solid-state physics including studies of surface physics, inhomogeneous superconductivity, organic conductivity and charge-density-wave phenomena, magnetic critical phenomena, the structure of quasicrystals and high-temperature superconductivity.

Professor **G. A. Jeffrey**, Department of Crystallography, University of Pittsburgh, Pittsburgh, PA 15260, USA, will receive the Martin J. Buerger Award in recognition of his outstanding crystallographic studies of clathrates and carbohydrates by the use of both X-ray and neutron diffraction techniques and the many contributions he has made to the crystallographic community.

Dr **Alan Lindsay Mackay**, Reader in Crystallography at Birkbeck College, London, England, has been elected a Fellow of the Royal Society, in recognition of his contributions to crystallography. He correctly predicted the occurrence of fivefold symmetry in nature, and is a leading authority on the geometry and symmetry of crystalline and quasicrystalline materials.

Professor **John Wickham Steeds**, Professor of Physics at the University of Bristol, England, has been elected a Fellow of the Royal Society, in recognition of his wide-ranging investigations of the microstructure of materials by means of electron microscopy and convergent-beam electron diffraction. His work on dislocation arrangements, solitons and precipitates has had significant applications to steels and other materials.

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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Synchrotron Radiation News

A new magazine with this title has just been published by Gordon and Breach. Volume 1, which will comprise six bimonthly issues, is being distributed free of charge to over 5000 synchrotron users worldwide. The editorial to the first issue states that the backbone of the coverage will be provided by correspondents at each facility who will report regularly on local developments. In addition, issues will include articles ranging from teaching and historical articles to conference reports, book reviews, a calendar of events, and a letters and comments section.

Sample copies of Volume 1 and subscription details for Volume 2 may be obtained from the Editorial Office, Gordon and Breach Science Publishers SA, PO Box 401, 2130 AK Hoofddorp, The Netherlands.

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Computer program for calculation of interface structures

A computer program is now available for calculation of interface structures, based upon methods contained in the book by W. Bollman: *Crystal Lattices, Interfaces, Matrices*. The book was reviewed in *J. Appl. Cryst.* (1984), **17**, 123–124 and is an introduction to the mathematical methods for dealing with practical problems in crystallography, especially the structure of interfaces in crystals. The author has now released a set of computer programs, written in Basic for the

IBM PC and compatibles, which perform the calculations and prepare lattice drawings. Program instructions and documentation are included on the diskette. The program is available to previous purchasers of the book for $43.00 + $2.50 shipping. The book and program together cost $99.00 + $3.50 shipping, and the current price for the book alone is $56.00 + $3.50 shipping. If you purchase ten copies of the book for a course, a copy of the program will be provided free of charge. For less than ten copies, only one program copy need be purchased with the books.

Send orders to Polycrystal Book Service, PO Box 3439, Dayton, OH 45401, USA (Phone: 513-275-2424).

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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'.

New Commercial Products

Announcements of new commercial products are published by the Journal of Applied Crystallography *free of charge. The descriptions, up to* 300 *words or the equivalent if a figure is included, should give the price and the manufacturer's full address. Full or partial inclusion is subject to the Editor's approval and to the space available. All correspondence should be sent to the Editor, Professor M. Schlenker, Editor* Journal of Applied Crystallography, *Laboratoire Louis Néel du CNRS, BP*166, *F*-38042 *Grenoble CEDEX, France.*

The International Union of Crystallography can assume no responsibility for the accuracy of the claims made. A copy of the version sent to the printer is sent to the company concerned.

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IR1000 Series Polarising Infrared Micro- and Macroscopes

Structural defects in semiconductors adversely affect device performance and reliability. Semiconductors are usually assessed by X-ray topography, scanning electron microscopy (SEM) or chemical etching. All of these techniques are time consuming and inconvenient.

Many of the materials of current interest are transparent at infrared wavelengths and exhibit birefringence when stressed by lattice defects. This means that these materials can be examined using polarised infrared light, and the defects observed by rotating the plane of polarisation. The polarising infrared technique gives results that agree with both X-ray topography and chemical etching. The technique is part non-destructive so that wafers may be examined before they are processed.

Two **Polarising Infrared Systems** are available from Bio-Rad, the **IR1100 Microscope** and **IR1200 Macroscope**. They are equally suited to laboratory or production environments and are invaluable for research and quality assurance applications in the crystalline materials industry.

The IR1100 is based on a research-grade microscope and incorporates a high-quality strain-free polarising optical system. With the standard 1 micrometre camera tube the IR1100 is able to inspect materials such as CdTe, GaAs, InP, Si and YIG. With the optional 2 micrometre tube, this range is extended to include the ternary and quaternary compounds such as InGaAs and InGaAsP.

The IR1200 has been specifically designed for the examination of whole wafers. It incorporates a zoom lens system for infinitely variable magnification. The system employs a 6 inch wafer stage and can be operated in transmission or polarising modes. The IR1200 is able to inspect materials such as CdTe, GaAs, GaP, InP and the ternary and quaternary compounds such as InGaAs and InGaAsP.

*Dr B. C. Beadle, Semiconductor Business Unit, Bio-Rad Microscience Division, 53-63 Greenhill Cresent, Watford Business Park, Watford, Herts WD*1 8*QS, England*

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AD21 Dry Air Unit

Oxford Cryosystems, based at the University of Oxford, has developed a portable stand-alone unit that takes in atmospheric air and converts it to dry air with a dew point lower than -50°C, with a maximum flow rate of 25 l min^{-1}. A built-in compressor produces air at 3 bars pressure, which is passed *via* a particle filter to a factory-sealed twin column adsorption dryer. The whole unit is enclosed in a quiet box. At any one time, pressurised air is dried by passing it up one of the columns. A small fraction of the output dry air is bled back down the other column to purge it of water vapour. After a preset time, the action of the two columns is reversed by means of an electrically operated changeover valve. The output dry air then passes through a filter regulator to remove pressure pulses during column switching and to limit outlet pressure. Finally the output flow is adjusted by a needle valve attached to a flowmeter.

The **AD21** operates from a 13 amp socket and the dry-air output connection accepts 8 mm OD nylon tubing (or a nozzle for other types of tubing).

D. Brown, Stoe Diffraction Systems, 21 Dorset Avenue, Norwood Green, Middlesex UB2 4HF, England

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CPC Temperature Controller

The majority of temperature controllers available at the present time are severely limited in the number of temperature segments that can be programmed in. Oxford Cryosystems has recently developed a **fully programmable temperature controller**, originally as part of their Cryostream low-temperature cooler [see *J. Appl. Cryst.* (1987), **20**, 449]. The controller is capable of considerable versatility, and is available for any temperature range and temperature sensor. It uses three terms, Proportional, Integral and Differential (PID), with temperature control being maintained through *software* held on an EPROM in a built-in computer system. All control functions are displayed on a VDU incorporated into the housing and can be output to a printer. The unique feature of this controller is its ability to be programmed simply to enable more than 10^{11} temperature segments! The user sets up a series of run data on separate lines (phases), each of which contains an option. The available options include:

RAMP	Change between any two temperatures at any rate
PLAT	Maintain temperature on a plateau for a fixed time or until an external prompt is encountered.
HOLD	Indefinite plateau
STEP	Alternating sequence of ramps and plateaus
LOOP	Ability to loop back any number of times to previous phases.

By adding several phases one after another, each one containing an option, a complex sequence of temperature-control events can be set up with ease. The programmer ensures that the final temperature of each successive phase matches the initial temperature of the next phase. Phases can be added or changed while the temperature is being controlled. Because all control is *via* software, it is relatively straightforward to supply a controller for special needs. Provision is currently made for printer output, external prompt and RS423.

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