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).

J. Appl. Cryst. (1988). **21**, 382

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.

J. Appl. Cryst. (1988). **21**, 382

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*

J. Appl. Cryst. (1988). **21**, 382

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

J. Appl. Cryst. (1988). **21**, 382

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.

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