Crystallographers

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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, 5 Abbey Square, Chester CH1 2HU, England.

Dr **John E. Derry**, Deputy Technical Editor of the International Union of Crystallography, died on 2 September 1985. A full obituary has been published in the February 1986 issue of *Acta Crystallographica*, Section B.

Professor **Alexander Isaakovich Kitaigorodskii** died on 16th July 1985, aged 71. He was born in Moscow. He graduated from the Physics Department of the Moscow State University. In 1939 he defended his candidate dissertation on X-ray structure investigation of amino acids and during World War II he worked in industry. From 1944 until his last days he worked in the Academy of Sciences of the USSR, first at the Institute of Organic Chemistry and then, since 1954, at the Institute of Elemento-Organic Compounds, where he headed the laboratory of chemical organic crystallography. In 1946 he defended his doctoral dissertation *Distribution of Molecules in Crystals of Organic Compounds*. In 1947 the title of Professor was conferred on him. Dr R. M. Myasnikova writes that in the world of science the name of Professor A. I. Kitaigorodskii has been related to the foundation and development of chemical organic crystallography – the science dealing with the structure and properties of organic solids. The elaboration of the principle of closest packing of molecules – the main law governing the structure of molecular crystals, the derivation, on the basis of this law, of the most probable, possible and forbidden space groups of symmetry for organic crystals, the elucidation of geometrical and thermodynamic conditions for the formation of solid solutions by organic substances, and the elaboration of the atom–atom potential method, now widely used for the calculation of static and dynamical properties of organic molecules and crystals; these are just the principal innovations introduced by Professor Kitaigorodskii into this field of science. His internationally known monographs are *Chemical Organic Crystallography* (1961), *Molecular Crystals and Molecules* (1973), *Mixed Crystals* (1984), and *The Atom–Atom Potential Method in the Physics and Chemistry of Organic Molecular Solids* (1985) (with A. I. Pertsin). Well known are his works on the elaboration of experimental and theoretical foundations of X-ray structure analysis. His three monographs on this subject include an English publication *The Theory of Crystal Structure Analysis* (1961). Professor A. I. Kitaigorodskii was awarded two honorary prizes within the patronage of the Academy of Sciences of the USSR: the D. I. Mendeleev Prize in 1949 and the E. S. Fedorov Prize in 1967. Professor A. I. Kitaigorodskii was the founder of a big scientific school, the graduates of which are now active in many scientific centres and higher educational institutions of the USSR and other countries. Alexander Kitaigorodskii was a gifted popularizer of science. His popular scientific books *Physics is my profession*, *Order and Disorder in the Atomic World*, *Physics for Everybody* (with L. D. Landau) and many others have been translated into various languages of the world. Until his last days Professor A. I. Kitaigorodskii has been working actively and fruitfully. The memory of both a remarkable, kind and considerate person and a prominent scientist will live for ever in science and in the hearts of all who had the privilege of knowing Alexander Isaakovich as either his colleague or his student.

Professor **Herbert A. Hauptman**, Director of the Medical Foundation of Buffalo, and Dr **Jerome Karle**, Chief Scientist at the Laboratory for the Structure of Matter of the Naval Research Laboratory in Washington, DC, have been awarded the 1985 Nobel Prize in Chemistry 'for their outstanding achievements in the development of direct methods for the determination of crystal structures'. For a long time they worked together at the Naval Research Laboratory in Washington. It was Isabella Karle's application of their work on direct methods which led to its general use today for solving the structure of low molecular weight compounds. They were also joint recipients of the A. L. Patterson award of the American Crystallographic Association in 1984.

Dr Karle has served on the Executive Committee of the International Union of Crystallography for many years and was President of the Union between 1981 and 1984. He is also a member of the US National Academy of Sciences.

Notes and News

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The J. D. Hanawalt Powder Diffraction Award

The award is sponsored by the JCPDS – International Centre for Diffraction Data. It is to be presented every three years for an important, recent contribution to the field of powder diffraction. The award will consist of a certificate and $1000. The awardee is expected to submit an abstract and present a paper on the work being recognized at the IUCr Satellite Meeting on X-Ray Powder Diffractometry, Perth, Western Australia, 20–22 August 1987. Travel expenses to the meeting will be provided.

The award was first presented in 1983 to Dr Ludo Frevel at the Denver X-ray Conference. Work that is eligible for consideration for the second presentation of the award must have been published between 1 January 1980 and 31 August 1985. There are no restrictions as to age, experience, or nationality of the recipient.

The selection committee will welcome suggestions, nominations, and documentation of accomplishments for possible recipients through 30 April 1986 from any interested persons. These can be sent directly to the chairman, C. R. Hubbard, A257 MATL, National Bureau of Standards, Gaithersburg, Maryland 20899, USA.

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, BP166, 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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Digital Oscilloscope with Segmentable Memories

A segmentable 32K × 8 bit memory in each channel of the **LeCroy 9400 digital oscilloscope** enables logging of successive events on trigger command.

This allows, at one extreme, 250 waveforms of 125 words to be logged well within 50 ms; at the other, 8 waveforms of 2500 words within 2 ms. In window mode memory segmentation offers another significant benefit, as two trigger levels can be set symmetrically or asymmetrically around the zero-base level. Triggering will take place only when the signal in positive or negative direction exceeds the present levels: *i.e.* 'normal within window' signals do not set the triggers. Combining memory segmentation and window triggering, the user can log excessive signals over time.

The oscilloscope has a bandwidth of

125 MHz, an ADC rate of 100 megasamples s^{-1} for transients and 5,000 megasamples s^{-1} for repetitive signals. It has one GPIB, two RS232-C standard interfaces, and a built in digital plotter driver.

LeCroy Research Systems Ltd, Elms Court, Botley, Oxford OX2 9LP, England

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New Precision Laue Camera

Bede Scientific Instruments announce a **precision Laue camera** designed so that the intrinsic referencing of the cassette and specimen is of very high accuracy. This is achieved by use of a dovetail slide and fine screw adjustment for specimen to film setting. Transparent sides allow the distance to be measured optically or alternatively a simple spacer jig may be used. The cassette is located on a classical kinematic mount with the correct number of constraints and a magnetic holding device. It will relocate to within 10 arc seconds and the film plane can thus be kept accurately perpendicular to the incident beam direction. Low beam divergence is achieved by use of a hypodermic needle which cuts its own hole in the film and is cheaply replaced if damaged. The camera is capable of an accuracy better than 0.1° in orientation determination. It is a precision instrument, priced at £5500.00.

Bede Scientific Instruments Limited, Church Street, Coxhoe, Durham DH6 4HE, England

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New Zeiss Transmission Electron Microscope

The **EM 902 transmission electron microscope** is the first series-manufactured transmission electron microscope with an integrated imaging electron energy spectrometer. The function of the instrument is based on the principle that in every EM specimen electrons undergo scattering with or without energy losses. On the one hand energy-loss electrons degrade the image quality in conventional TEM's; on the other they carry information about the chemical composition of the specimen. The spectrometer of the Zeiss EM 902 disperses the electrons according to their energy, thus offering the possibility of imaging with electrons of selected energy.

The EM 902 offers:

Improved spatial resolution and image contrast with thick sections (*e.g.* up to 1 μm sections of biological material). The image quality is comparable to that of 300 kV to 1 MV TEMs:

Element-specific selective contrast with thin unstained specimens. There is no longer a need for heavy-metal staining, which has been known to produce artefacts and other problems.

Direct observation of elemental distribution in thin specimens enabling higher resolution, time advantage, reduced contamination and mass loss in comparison to conventional STEM-EDX/EELS-mapping techniques.

Improved resolution and contrast for darkfield images.

Improved resolution and contrast for diffraction patterns.

No limitation for conventional TEM-specimens.

Carl Zeiss, Postfach 1369/1380, *D*7082 *Oberkochen, Federal Republic of Germany.*

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TV Display for JEOL TEM Range

Now available for all **JEOL transmission electron microscopes** is a new **low-light-level TV camera** and display, which couples to a transmission screen below the internal microscope camera. With such a camera fitted, the range of TEM operation can be increased by lowering beam current to reduce specimen damage. In practice the beam can be so low that no image is visible on the usual fluorescent screen, yet the TV display shows all the image detail normally seen at higher current.

With this reduction in specimen exposure, it is now possible to use the TV system to view thick samples or to manipulate contrast and extend into image storage, processing, analysis and recording of dynamic experiments. The scaling standard is 625 lines/25 frames/s, 2:1 interlace, so that many existing systems are compatible for further linking.

JEOL (UK) Ltd, Jeol House, Grove Park, Colindale, London NW9 0JN.

Books Received

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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.

Semiconductor physics: an introduction. 3rd edition. By *K. Seeger*. Pp. xiv + 476. Springer, 1985. Price DM 88.0, US$34.50.

Metamorphic reactions: kinetics, textures and deformation. Edited by *A. B. Thompson* and *D. C. Rubie*. Pp. xii + 291. Springer, 1985. Price DM 154.00. This is a book written by geologists, for geologists. Two short chapters only would be of direct interest to crystallographers: one on cation disorder during crystal growth, the other on the influence of defects on properties of orthosilicates.