The compound selected was through these, and the reflected image through a series of electron density maps. Richards (1968) developed a method for optically superimposing a skeletal molecular model over three-dimensional electron density maps. Although Rudko & Low (1970) report a simpler, more compact device, we have developed one that not only is simple, cheap, and compact but works in direct and not reflected space.

The apparatus (Fig. 1) consists of a metal box producing light which passes through a series of electron density maps, (a) light, (b) three dimensional electron density maps, (c) mirror set at 45°, (d) skeletal model, (e) three dimensional electron density maps, (f) mirror set at 45°, (g) skeletal model. Although Rudko & Low (1970) report a simpler, more compact device, we have developed one that not only is simple, cheap, and compact but works in direct and not reflected space.

The apparatus (Fig. 1) consists of a metal box producing light which passes through a series of electron density maps. The image of the maps is seen at right angles to the maps by using a mirror set at 45°. The electron density maps were drawn from output listings and copied by a xerographic process onto clear transparency sheets of suitable thickness and clamped into a holding frame. Light was passed through these, and the reflected image compared directly with a skeletal model. The compound selected was hexachlorocyclohexane, or lindane (Smith, Kennard & White, 1976).

COLIN H. L. KENNARD
LESLIE BRETHERTON

Department of Chemistry
University of Queensland
Brisbane
Australia, 4067

(Received 17 July 1978; accepted 12 September 1978)

References

Meeting Reports


One of the symposia of the Fourth General Conference of the European Physical Society 'Trends in Physics' held at York (England) from 25-29 September 1978 was devoted to synchrotron radiation and its application.

More than half of the contributions - papers and posters - belonged to the category of X-ray work and two thirds of this dealt with X-ray structure research. These numbers reflect a development which was reviewed in a very impressive way by S. Kapitza.

The highly directional properties of synchrotron radiation have led to small-angle diffraction work especially at Hamburg, Novosibirsk and Paris. The investigation of biological specimens, mostly muscle connective tissue, which has already been started as one of the earliest X-ray synchrotron radiation projects is far from losing its fascination for scientists. Time-resolved X-ray diffraction patterns of contracting muscle of various origins have been studied recently and one may expect that the new experimental results will contribute considerably to the understanding of the molecular mechanism of mechanical force generation. First results from diffuse small-angle scattering of solutions were reported. Small-angle scattering instruments are now routinely used at several synchrotron radiation facilities. The performance of the small-angle instruments can still be increased considerably and a lot of hope is based on faster position-sensitive area detectors. A detailed account was given on the use of anomalous dispersion for metal protein structure investigation. The continuous spectrum of synchrotron radiation makes this technique very promising.

The same property of synchrotron radiation has very much facilitated the use of energy-dispersive counters for the measurement of isotropic scattering patterns from solutions or powders. As the path of both incoming and outgoing X-rays does not change in such a set up it offers advantages which might be essential in high-pressure investigations.

Several papers and posters reported on results from topography. The usefulness of this technique has been clearly demonstrated in the investigation of magnetic materials (movement of magnetic-domain walls under external fields, e.g. stress or magnetic field). The use of synchrotron radiation has very much reduced the periods of topographic measurements and therefore time-resolved studies of wall motions have become feasible (e.g. by stand-still stroboscopy).

The investigation of the fine structure of X-ray absorption edges has become a routine method, at least as far as the investigation of inorganic matter (e.g. glasses) is concerned. With biological samples (metal proteins) the concentration of metal atoms is fairly low and the instrumental development for an accurate measurement of the absorption fine structure or the fluorescence is not yet at a satisfactory stage.

Very promising results have also been obtained from lithography and microscopy with soft X-rays.

The general impression from all work with X-ray synchrotron radiation is that most instruments are at a test stage or near to completion and that more interesting results will certainly be obtained in the near future.

Great hope is attached to the development of more powerful synchrotron radiation sources. First results on the experimental study of the spectral, angular and polarization properties of undulator radiation were reported in the poster session by two Russian groups from Tomsk and Moscow.

The Symposium on Synchrotron Radiation was organized by Dr S. Leach (Paris).
Finally, applications of crystallography to metallurgy, earth sciences, industry and engineering, chemistry and biology were presented. Informal discussions took place on many subjects, such as comparisons of curricula in various countries. These discussions and contacts between participants from different countries and different specialties were found by all present to be extremely profitable.

The School was the occasion for testing the first pamphlets prepared for the IUCr Commission on Crystallographic Teaching. They are short texts by different authors, on different topics pertaining to the teaching of crystallography at various levels and are the early steps of a major project by the Commission. Information concerning this project can be obtained from Professor C. A. Taylor, University College, PO Box 78, Cardiff CF1 1XL, England and from Professor A. Authier at the address below.

A. AUTHIER
Laboratoire Minéralogie Cristallographie
4 place Jussieu
tour 16
75230 Paris CEDEX 05
France

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


Professor W. Cochran, Professor of Natural Philosophy at the University of Edinburgh, has been awarded the Hughes Medal of the Royal Society for his work on electron density distributions and lattice dynamics.

International Union of Crystallography


Union Office, Change of Address

The Union Office, incorporating the Union secretariat and the technical editing office, has now moved to 5 Abbey Square, Chester CH1 2HU, England. All correspondence for the Executive Secretary and the Technical Editor should be sent to this address. The telephone number (Chester 42878), the cable address (Uncrystal) and the telex address (667325 COMCAB G, attention Uncrystal) remain unchanged.


Copying Fees and Copyright Law

In response to the rapid increase in the extent of photocopying during the past two decades, copyright laws in several countries have been, or are being, revised to clarify the conditions of ‘fair-use’ copying (see the statement on the inside front cover of this Journal). The property rights of copyright owners have at the same time been reaffirmed: these rights include authorization for reproducing the article, apart from ‘fair use’, and for setting photocopying fees. Permission for libraries and other organizations to copy articles, and a simple mechanism by which payments for photocopying in excess of ‘fair use’ are distributed to the publishers, may both be arranged through a central non-profit agency such as has already been established in one country. It is expected that other countries will set up agencies similar to the Copyright Clearance Center at 310 Madison Avenue, New York 10017, USA.

The fee for copying an article appearing in Acta Crystallographica or the Journal of Applied Crystallography, when such a fee is required, will be found from January 1979 in a coded number given at the foot of the first page of the article (or at the foot of the article if it starts and finishes on the same page), similar in appearance to the following example:

0021-8898/79/010001-09$01.00 © 1979 International Union of Crystallography

This Copyright Clearance Center (CCC) number unambiguously identifies each article. The first eight digits are the International Standard Serial Number (ISSN), the next two are the last digits of the year of issue, the following two give the part number for that year, the next four digits are the beginning page number and the final two give the number of pages the user must photocopy in order to capture the complete article. The amount following the dollar sign is the copying fee for any portion or all of the article. The year of copyright and the name of the copyright owner...