

Laboratory Notes

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Two simple devices for sealing wet single crystals in capillary tubes

This short note illustrates two simple devices useful for sealing capillary tubes containing a single crystal together with its mother liquor. It is well known that single crystals should be attached at the top of a glass fibre in order for X-ray diffraction effects to be observed. This setting is relatively easy, but it is not applicable for mounting wet crystals in equilibrium with their mother liquor. Generally in these cases the crystals are sealed in capillary tubes with a small portion of the mother liquor. The sealing of capillary tubes has to be performed with some care to prevent alteration of the crystals or evaporation of the liquid with formation of drops of condensate.

Two simple devices facilitate this operation. They consist of (1) a small electric heater made with some coils of resistive wire ($4\ \Omega$) which becomes incandescent when properly supplied (in this case a 24 V AC, 2A power supply was used) and (2) a refrigerating microcell in plexiglas of dimensions $1.5 \times 1.5 \times 7.5$ cm (Figs. 1 and 2) which contains a copper tube 0.3 cm in diameter.

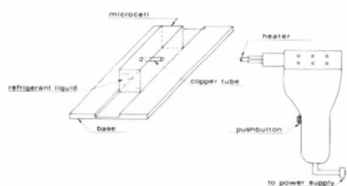


Fig. 1. Schematic drawing of the set-up.

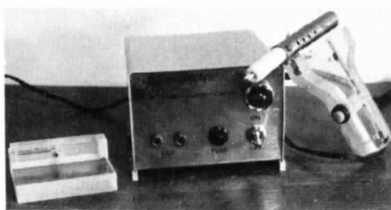


Fig. 2. Illustration of the devices.

The capillary tube is introduced into the copper tube which will exchange the heat with the refrigerating fluid of the microcell during the sealing with the small heater. The small dimensions of the devices permit easy operation at the microscope.

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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 13 White Friars, Chester CH1 1NZ, England).

Mr S. A. Bryant retires on 31 December 1975 from the position of Technical Editor which he has held for thirteen years. Mr Bryant graduated at Oxford in 1930 with first class honours in chemistry and crystallography, having studied the latter under T. V. Barker. After also obtaining the degree of B. Sc. by research he spent two years at Armstrong College (now part of the University of Newcastle-upon-Tyne) as a lecturer in organic chemistry, followed by a further period of research at the University of Bristol. In 1934 he moved to the Forest Products Research Laboratory, Princes Risborough, and from there ten years later to Shell, in which he was successively research chemist, technical information officer in the London office, and senior technical editor at the Thornton Research Centre near Chester.

In 1962 the then Technical Editor of *Acta Crystallographica*, Professor R. W. Asmussen, signified his desire to resign as at the end of that year, but it proved impossible to find a successor who could continue the work on the previous part-time basis. The Executive Committee of the IUCr therefore decided to appoint a full-time Technical Editor for Union publications, and Mr Bryant started work in this capacity on 15 November 1962. For some time he worked alone, but because of the continued expansion of *Acta Crystallographica* it soon became necessary to engage first a secretary and then an Editorial Assistant. After the division of the journal into two sections at the beginning of 1968, and the launching of the *Journal of Applied Crystallography* in the same year, an even more rapid increase ensued in the number of journal

pages published annually, and the technical editing staff needed to be further enlarged. The normal complement in addition to the Technical Editor is now an Assistant Technical Editor, two Editorial Assistants, and a secretary.

Dr D. W. Penfold, at present Assistant Technical Editor, succeeds Mr Bryant as Technical Editor from 1 January 1976. Dr Penfold studied at Imperial College, London, where he obtained an honours degree in physics, becoming an Associate of the Royal College of Science. Subsequently he carried out research on the relation of superconductivity to structure in β -W type compounds, for which he was awarded the degree of Ph.D. He spent a short period as a research assistant at University College London before joining the full-time editorial staff of the Union on 12 July 1971.

Dr J. E. Derry, who has been a member of the Technical Editor's staff since January 1972, becomes Assistant Technical Editor in succession to Dr Penfold. Dr Derry is an honours chemistry graduate of the University of Birmingham, where he also obtained a Ph.D. in X-ray crystallography for his research on the structures of diquat and related compounds. He is a co-author of a number of recent papers in *Acta Crystallographica*.

Mr R. S. Daykin resigned as Editorial Assistant earlier this year and two new Editorial Assistants have been appointed. Mrs S. Wallis, an honours graduate in physical sciences of the University of Surrey, joined the Chester office on 1 September 1975, having previously worked for a year in Karlsruhe with the European Institute for Transuranic Elements. Mr M. H. Dacombe, a first-class honours graduate of the University of Leeds, where he studied chemistry and earth sciences, commenced work in Chester on 1 October 1975. Mr Dacombe was previously on the staff of the BNF Metals Technology Centre, and was editor of the monthly bulletin *BNF Abstracts*.

International Union of Crystallography

Acta Crystallographica
Journal of
Applied Crystallography

The Executive Committee of the International Union of Crystallography has found it necessary to increase the yearly

subscription rates for *Acta Crystallographica* and *Journal of Applied Crystallography* as from 1 January 1976.

Acta Crystallographica

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Journal of Applied Crystallography

The following rates will apply for Volume 9 (1976). All subscription rates are fixed in Danish kroner, and the U.S. dollar equivalents given below are subject to exchange-rate fluctuations.

<i>Complete volumes, regular price per volume</i>	D.kr. 380	(\$ 64.00)
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Deliveries of *Acta Crystallographica* and *Journal of Applied Crystallography* to the U.S.A. and Canada in 1976 will continue to be by air freight to New York and thence by second class mail. The use of this service is obligatory for all subscribers in these countries. The charges in Danish kroner remain the same as in previous years, and are as given below.

Acta Crystallographica

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Section B only	Add D.kr. 50	(\$ 8.50)

Journal of Applied Crystallography

Add D.kr. 20 (\$ 3.50)

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Orders

Orders for *Acta Crystallographica* and *Journal of Applied Crystallography* may be addressed to Munksgaard International Publishers Ltd., 35 Nørre Søgade, DK-1370 Copenhagen K, Denmark. Orders for complete volumes from subscribers in North America may alternatively be placed through Polycrystal Book Service, P.O. Box 11567, Pittsburgh, Pa. 15238, U.S.A.

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, 13 White Friars Chester CH1 1NZ, England).

Temperature Factors

A number of recent X-ray and neutron diffraction studies have shown small

systematic discrepancies between X-ray and neutron temperature factors which are not readily understood and which do not appear related to errors in experimental measurements. In particular the ratio $(U_{ii})_X((U_{ii})_N)$ seems frequently dependent on the value of i . To gain understanding of the source of such discrepancies and their possible significance the Commission on Neutron Diffraction of the IUCr decided, at the Amsterdam Congress, to gather information on X-ray and neutron diffraction temperature factors of crystals which have been studied accurately by both methods at identical temperatures.

Interested scientists are requested to send U_{ij} values together with information on the crystal symmetry and cell dimensions, the orientation of the specimen on the diffractometer, scattering factors used in the refinement, experimental temperature and experimental reproducibility as estimated by comparison of symmetry-related reflexions, and (for the neutron experiment only) the type of beam collimation and/or Soller slits, type of analyser crystal used if any, and estimate of second order contamination of the beam, to either Dr P. Coppens, Chemistry Department, State University of New York at Buffalo, Buffalo, New York 14214, U.S.A., or Dr T. Koetzle, Chemistry Department, Brookhaven National Laboratory, Upton, Long Island, New York 11973, U.S.A. Results will be analysed at regular intervals depending on the available volume of the data and communicated to participating laboratories.

Book Reviews

Works intended for notice in this column should be sent direct to the Book-Review Editor (J. H. Robertson, School of Chemistry, University of Leeds, Leeds LS2 9JT, England). As far as practicable books will be reviewed in a country different from that of publication.

Liquid phase epitaxy. By G. M. BLOM, S. L. BLANK and J. M. WOODALL. Pp. x + 332, Figs. 294, Tables 40. Amsterdam: North Holland, 1974. Price f160.00 (about US \$66.75).

This special issue of the *Journal of Crystal Growth* presents the state of the art in the very important field of liquid-phase epitaxial growth. Its utility in the production of complex device structures for CW injection lasers, solid-state