Laboratory Note

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A shielding arrangement for X-ray diffraction equipment

Although effective shielding can be achieved at almost any distance from X-ray apparatus, the simplest and most economical strategy is to alleviate the problem as close as possible to its source. The arrangement shown in exploded form in Fig. 1 and in cross section in Fig. 2 has proved to be an effective solution for equipment in which the detector is constrained to move in a plane. The shielding consists of a jacket (*A*) which is clamped over the evacuated chamber containing the diffracting crystal. The main feature is an interlocking set of shutters (*B*) which are free to move in concentric circular tracks cut in two annuli (*C*) fixed to the jacket. Mechanical stops ensure that the only 'visible' part of the exit window (*D*) is that seen through the exit tube (*E*) carried by the central

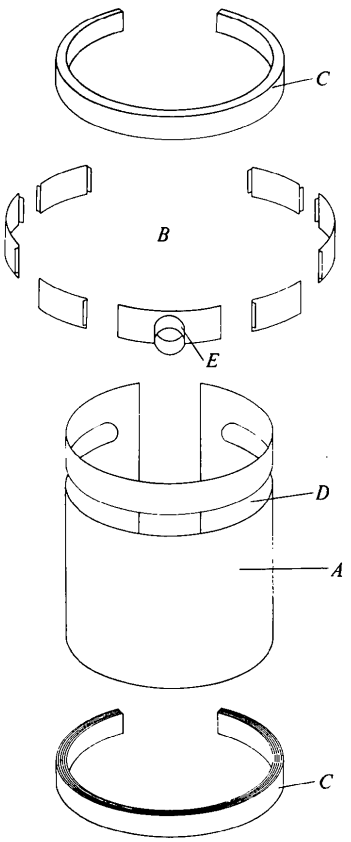

Fig. 1. Exploded view of shielding arrangement (see text for details).

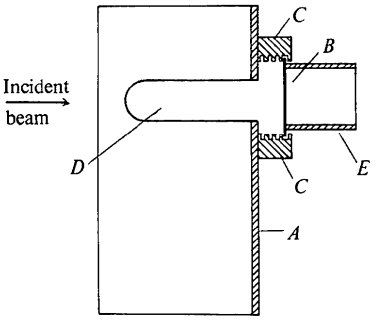

Fig. 2. Cross sectional view with exit tube (*E*) in 'straight through' position.

shutter. The exit tube may be positioned either manually or by a mechanical link to the receiving slit–detector assembly. In the present apparatus, using Mo $K\alpha$ radiation, 0·5 mm thick steel is used for the shutters, the remainder being constructed of brass. An electronic interlock was added so that, if the detector assembly is not positioned over the end of the exit tube, an audible warning device is activated. Since the incident beam is almost totally enclosed, this arrangement satisfies the present radiation protection regulations [*The Ionising Radiations (Sealed Sources) Regulations*, 1969] and is flexible enough to meet any foreseeable future requirements.

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Reference

The Ionising Radiations (Sealed Sources) Regulations (1969).No. 808. Regulation 45.

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 **D. Gabor** died in London on 9 February 1979 at the age of 78. He was born in Budapest, but came to England in 1933 and became a research engineer with Thomson-Houston. In 1948 he moved to Imperial College, London, where he remained as Professor of Applied Electron Physics until he retired in 1967. He was awarded the Nobel Prize for Physics in 1971 for his invention of holography, which he made in 1947 whilst working to improve the resolution of electron microscopes. He also made major contributions in the fields of electron physics and communication theory.

Dr **F. W. Lytle,** Dr **D. E. Sayers** and Dr **E. A. Stern** received the Warren Award for 1979 at the Boston meeting of the American Crystallographic Association in August 1979.

Dr **L. L. Marton,** who was born in Hungary in 1901, died on 22 January 1979. He received his doctorate in physics in Zürich in 1924, and joined the staff at the University of Brussels in 1929. Whilst in Belgium he and his wife built one of the first electron microscopes and developed it for the study of biological specimens. They continued to develop and build electron microscopes when they moved to the USA in 1938. In 1946 Dr Marton joined the National Bureau of Standards and founded the Electron Physics Section, of which he was the head until 1962, when he transferred to head the NBS Office of International Relations until his retirement in 1970. With his wife he began the editorship of *Advances in Electronics and Electron Physics* in 1947, and *Methods of Experimental Physics* in 1957. He joined the Smithsonian Institute as an honorary research associate in 1970.

Dr **M. F. Perutz,** Chairman of the MRC Laboratory of Molecular Biology at Cambridge, has been awarded the Copley Medal of the Royal Society.

Professor **D. C. Phillips,** Professor of Molecular Biology at the University of Oxford and Biological Secretary of the Royal Society, has received a knighthood.

Professor **R. J. P. Williams,** Napier Research Professor of the Royal Society at the University of Oxford, has been awarded the Hughes Medal of the Royal Society.

Professor **R. A. Young** of the School of Physics and Engineering Experiment Station, Georgia Institute of Technology, recently received an honorary degree from l'Institut National Polytechnique de Toulouse on the occasion of the 750th anniversary of the University of Toulouse.

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