

ancing filters, including the three-foil technique, has been discussed in detail by Young (1963). If the three-foil technique is to be used, the second bracket may be fitted with an adjustable filter holder in addition to the fixed filter.

Filter and attenuator-position feedback signals are generated by a system of light sources and photocells. Each filter bracket has a wing with two holes [4] that moves in a slot cut in the electrical hardware mounting bracket [16]. Two light sources [18] are mounted in the block on one side of the wing with two photocells [14] directly opposite them. The holes are arranged so that one of the photocells is illuminated when the filter bracket is in the 'up' position while the other is illuminated in the 'down' position. The size and location of the holes in wings are such that, unless the filters are in their proper position to within 0.030 inch, neither photocell will be conductive.

The balanced filter device described here may be interfaced with an automatic control system in one of several ways. In our laboratory, the interface is with a Humphrey Electronics Model 901OR step scanner which both prints the output data and punches it into paper tape. On command from the programmer control, appropriate signals are sent to the balanced-filter box to move the filters into the required positions.

At the same time, signals are generated which set up a conditional filter-position printout. These filter-position

printouts occur only if the correct feedback signals have been received from the photocells. If the correct feedback is not received, the filter position printout is replaced by an error message. With the attenuator and balanced filter data, scaling of attenuated data, and identification and correction of erroneous data may be readily performed on a digital computer.

If an automatic control system is not available, the box may be operated manually with a simple circuit consisting of the appropriate power supply, toggle switches to position the filters and attenuators, and lights operated by the feedback system to show their positions.

Complete engineering and electrical drawings of the balanced-filter box and specifications for all commercial components may be obtained from the authors.

References

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Meetings

Ad Hoc Committee on Small-Angle X-ray Scattering American Crystallographic Association

A list of forthcoming meetings on Small-Angle X-ray Scattering (SAXS) follows. These are either firmly arranged or in the planning stage. Future announcements of the SAXS committee will generally be made in the *ACA Newsletter*.

I. SAXS Symposium, ACA Summer Meeting Buffalo, N.Y., August 12-16, 1968

A one-day symposium on Small-Angle X-ray Scattering has been organized as part of the ACA summer meeting which will be held at the State University of New York at Buffalo. The symposium will take place on 13 August. Professor D.F. Parsons (Roswell Park Memorial Institute, Department of Biophysics) is Chairman. The tentative program follows:

Keynote paper	A. Guinier (Paris)
X-ray Scattering of Biological Materials (RNA, Viruses, Ribosomes)	W. W. Beeman (Wisconsin)
SAX Diffraction of Myelin Cell Membranes	D. F. Parsons (Roswell Park)
Critical Phenomena	H. Brumberger (Syracuse)
SAXS of Liquid Crystals	G. W. Brady (Bell Laboratories)
Application of SAXS to Metals	R. W. Hendricks (Oak Ridge)
Collimation Corrections	P. W. Schmidt (Missouri)

II. SAXS Session, Eighth International Congress of Crystallography International Union of Crystallography August 13-21, 1969 (General) August 22-27, 1969 (Topical Meetings)

Arrangements are currently under way for a SAXS contribution to this congress via a 1½ day topical meeting on 23 and 24 August. Invited and contributed papers will be included. More details will become available in the autumn 1968.

III. Conference on the Small-Angle Scattering of Glasses University of Missouri, Rolla, Mo. 65401 Sept. 19-21, 1969

This conference will emphasize recent work on the small-angle X-ray scattering of glasses and ceramics; papers dealing with general advances in the SAXS technique will also be welcome. The meeting is sponsored jointly by the Materials Research Center, the Department of Ceramic Engineering at Rolla, and the Department of Physics at the University of Missouri, Columbia. Dr N.J. Kreidl (Rolla) is Programme Chairman.

IV. Second International Conference on Small-Angle X-ray Scattering Graz, Austria; Summer 1970

A major international meeting similar to the 1965 Syracuse Conference is in the early planning stages under the direction of Prof. O. Kratky, with the participation of this committee. The conference is planned for Graz, Austria, during the summer of 1970.