Administrator, Physics Department, Brookhaven National Laboratory, Upton, NY 11973, USA. For a list of PRT members and their addresses, contact Professor R. A. Young, PRT Chairman for the HRPND, School of Physics, Georgia Institute of Technology, Atlanta, GA 30332, 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, Dr A. M. Glazer, Editor* Journal of Applied Crystallography, *Clarendon Laboratory, University of Oxford, Parks Road, Oxford OX1 3PU, England.*
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 compny concerned.

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Mirror Optics

The Molecular Structure Corporation (MSC) has introduced a **high-performance focusing mirror system** that produces a three- to fourfold improvement in flux relative to a standard graphite monochromator. The system is completely integrated with the Rigaku R-AXIS imaging-plate system and rotating-anode source. It is easily coupled with the R-AXIS 2θ stage developed by MSC. It is also sold as a stand-alone unit. Diffraction experiments requiring a high-flux fine-focus X-ray source will benefit from this device.

The double-focusing mirror optics assembly is enclosed in an He-filled chamber with leaded glass front for safe viewing during alignment. The optics consist of a Pt-plated 160 mm focusing mirror. Both mirrors have a remote control for translation, bending and slit insertion. A fluorescent screen and attenuators are also enclosed in the He-filled chamber, which can be changed by a remote selection switch. The collimator is attached to a high-precision *xy* assembly.

The system was designed to be easy to align, generally taking less than 30 min. The alignment is unique in that it starts with the mirror nearest the X-ray source and proceeds component by component all the way to the alignment of the φ axis.

Molecular Structure Corporation, 3200 *Research Forest Drive, The Woodlands, TX* 77381, *USA.*

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Efficient SHG/THG Generation of Ultrafast Lasers

An **all-reflective second- and third-harmonic-generation system** is now available from INRAD for use with ultrafast Ti:sapphire lasers. Model 5-050 features a compact reflective design to minimize pulse distortion due to chromatic aberration and group-velocity dispersion that typically are found in lens-based systems. A precision optical delay, polarization-altering optics and crystals are all contained in one compact package. A selection of crystals and optics is available to maintain either fs or ps pulse durations with efficient SHG from 350 to 450 nm and THG from 233 to 300 nm. Typically, 100 mW of average THG power can be obtained while maintaining a THG pulse duration of 200 fs, as shown by cross-correlation measurements of the third harmonic and fundamental with an INRAD model 5-14BX computerized autocorrelator.

INRAD, 181 *Legrand Avenue, Northvale, NJ* 07647, *USA.*

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Cold Probe

The new **FC55 immersion cooler** generates temperatures down to $-55°$C using non-CFC refrigerant gas in a reliable mechanical refrigeration system. The FC55 can be used in place of dry ice or liquid nitrogen as a cooling source for liquid baths or as a cold trapping surface to trap solvents or other condensates from vapor streams. The FC55 generates cooling power of more than 230 BTU h^{-1} at $-40°$C and has a footprint of only 10.5 in wide × 16.5 in deep.

The FC55 cold probe

FTS Systems, Inc., PO Box 158, *Rt* 209, *Stone Ridge, NY* 12484, *USA.*

Book Reviews

Works intended for notice in this column should be sent direct to the Book-Review Editor (R. F. Bryan, Department of Chemistry, University of Virginia, McCormick Road, Charlottesville, Virginia 22901, USA). As far as practicable, books will be reviewed in a country different from that of publication.

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The Rietveld method. (IUCr Monograph on Crystallography, No. 5.) Edited by *R. A. Young*. Pp. x + 298. Oxford: International Union of Crystallography/Oxford University Press, 1993. Price £45.00. ISBN 0-19-855577-6.

In 1969, H. M. Rietveld published his seminal paper on structure refinement based on the complete powder diffraction profile rather than a limited amount of low-angle integrated intensity data. This paper laid the foundation for a dramatic renaissance of powder diffraction, widely regarded at the time as a valuable tool for phase identification and qualitative analysis but of little use for quantitative structure determination. The coming-of-age of Rietveld refinement, as it is now known, was celebrated in June 1989 at an International Workshop on the Rietveld Method, hosted by the Netherlands Energy Research Foundation at Rietveld's home institution in Petten and organized by the Commission on Powder Diffraction of the International Union of Crystallography.

The Rietveld method is an outcome of the Petten meeting but is certainly not a Proceedings in the accepted sense. The contributing authors, all of them leaders in the field, were requested to write articles suitable for a book aimed primarily at those with some experience of the technique but also providing some introductory material for beginners. The first drafts of these chapters underwent considerable revision under the guidance and encouragement of the editor and the end result is not only an authoritative and coherent text but also an excellent reference work covering the literature up to the start of 1991 or thereabouts.

The first chapter (R. A. Young) provides an excellent introduction to the Rietveld method. It contains an account of the basic mathematical procedures used in the fitting to the diffraction pattern, the types of parameters to be refined, a list of the peak-shape functions commonly used, corrections for preferred orientation (one of the more troublesome systematic errors afflicting X-ray powder data), some of the popular computer programs currently available, criteria of fit and precision and accuracy,