

Crystallographic Instrumentation. By L. A. Aslanov, G. V. Fetisov and J. A. K. Howard. IUCr Monographs on Crystallography, 7. Oxford: Oxford University Press/International Union of Crystallography, 1998. Pp. xv + 309. Price £65.00. ISBN 0 19 855927 5.

In their introduction to this book, the authors cite the need for a book which describes the instrumentation used for single-crystal diffractometry and the principles underlying the technique. Despite the title of the book, much more space is devoted to the principles than to the instrumentation itself. The authors quote the rapid advances in the field and the number of inexperienced users entering the field as their motivation for writing this book. This is indeed a laudable reason to produce such a volume; however, it implies a completeness that is lacking in this work and which is acknowledged in the introduction: 'It is not an exhaustive description of all methods'. It is clear that the authors have based the book mostly on their own laboratory experiences. This has led to several in depth chapters which will serve as references for advanced users of the technique. There are, however, significant voids, especially in the area of modern instrumentation.

New Cryostream Cooler

Oxford Cryosystems has announced the launch of its new 700 Series nitrogen gas **Cryostream Cooler** for X-ray crystallography.

Oxford Cryosystems, a leading cryostat and software specialist for X-ray crystallography, has redesigned its very successful Cryostream Cooler to improve its ease of use and versatility. The 700 Series has also been designed to withstand intensive and long-term use at demanding laboratories around the world.

book reviews

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The early chapters describe the generation of X-rays and the nature of the diffraction experiment using the Ewald construction. The description of four-circle geometry is very detailed and the discussion of the contributions to reflection broadening is excellent. Except for a brief description of the kappa geometry, no other common geometries are explicitly described. In particular, readers are left to interpret for themselves the implications of using any of the platform instruments commonly used with area detectors. The description of intensity data collection with a point detector is very complete (including profile fitting); however, the only discussion with respect to area detectors is in a short treatment of the Laue technique. Indeed, the treatment of the basic principles of detectors in general is rather sketchy. In the chapter on data reduction, the treatment of absorption corrections using empirical or integration methods with point detector data is suitably detailed. Only a discussion of the multipole methods currently employed for both point and area detectors is lacking. The treatments of primary beam inhomogeneity, the Renninger effect and thermal diffuse scattering are presented in great detail but, surprisingly, there is no mention of decay corrections. The chapter

devoted to defects is really a discussion of the extinction problem. However, it does provide a strong argument against the grinding of crystals into spheres, contrary to popular dogma. The final chapter on hardware accessories provides a nice history of nitrogen cooling systems and a more sketchy description of helium cooling devices. The examples for high-pressure cells are well chosen but some of the details of the need for corrections for absorption or diamond extinctions would have been welcome.

Although several chapters of this book will be valuable to experienced crystallographers, there are a number of gaps that will leave the experienced unsatisfied. On the other hand, the introductory chapters will be helpful to the proposed audience of inexperienced users. However, many of the chapters are written at a level that the inexperienced will find daunting.

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new commercial products

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The Cryostream Cooler is a universal attachment for X-ray diffraction and is designed for cooling inorganic, small-molecule and macromolecular crystals for X-ray crystallography. Improved features include:

- a new fast and user-friendly programmable temperature controller;
- push-button control of the nitrogen flow from 5 to 10 l min⁻¹;
- new robust coldhead design enabling unlimited orientation and longer vacuum lifetime;
- longer transfer line to allow for a greater variety of set-ups;

new turbo flow and 'Cool' function to reduce cool-down time.

For a more detailed specification of new features, visit the 700 Series Cryostream Cooler web site at <http://www.oxfordcryosystems.com/700series>.

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