

function is able to provide a measurement of parameters such as the crystalline and amorphous layer thicknesses and the electron density difference between the layers. The 1-D correlation function could be calculated from data produced by OTOKO using extrapolation methods combined with a Fourier transform technique. Another useful development for interpreting SAXS data from polymers (and other materials) would be the introduction of experimental uncertainty measurements. This is not a straightforward task, but would enable error-weighted fitting of experimental data to models and would improve the general appreciation of data quality.

A further improvement for SAXS analysis of polymers would be the increased use of absolute intensities (or differential scattering cross-section per unit volume) rather than using arbitrary units. The availability of absolute scattering intensities [5] enables absolute electron density values to be determined and also provides an internal consistency check when fitting data to models such as the Debye-Bucche random two-phase model or Guinier's Law.

A recent development in data manipulation and display within the CCP13 package has been the incorporation of a circular integration routine for 2-D images. This enables the azimuthal variation in intensity to be plotted for a specified range of Q values. This is particularly valuable for oriented polymer specimens in both SAXS and WAXS.

It is hoped that CCP13 may be able to incorporate more of these broad ideas into standard software packages which are generally available. Suggestions for improvements in the general capabilities of data analysis or manipulation of 1-D and 2-D diffraction patterns are very welcome. In particular, the CCP13 Workshop in May is an ideal forum for discussing the scientific achievements as well as the software needs of all 'NCD' users, regardless of the nature of the materials which they study.

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CHAIRMAN'S NOTE

In order to promote the development within CCP13 of software which will be generally useful in the synthetic polymer field, an application to SERC to fund a young Research Assistant in this area is currently being made by CCP13. If successful, this appointment will be made in October 1994. Those interested in details of this position should contact the Chairman.

COVER ILLUSTRATION

Fibre X-ray diffraction pattern from an oriented sample of PEN [poly(ethylene-naphthalate)] recorded on beamline 7.2 at the Daresbury Synchrotron Radiation Source by A. Mahendrasingam as part of an ICI/ Keele University collaboration.
