

POLYMER-ORIENTED TOOLS IN THE *IRENA* PACKAGE FOR SMALL-ANGLE SCATTERING DATA ANALYSIS

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Scientists in the various fields have used the *Irena* package for analysis of small-angle scattering data for nearly ten years. Over time, *Irena* has been extended with tools oriented to specific materials or problems. Polymers were one of the major targets of this package from the very beginning, as can be seen by early inclusion of the “Unified fit” tool based on a method pioneered by Gregory Beaucage. Some users have proposed it to be the most flexible tool in the *Irena* arsenal, and it has been used on a wide range of other materials. The Unified fit tool is currently being updated with new developments published during the last few years, which enable estimation of branching and other pertinent parameters specifically applicable to polymers.

However, the *Irena* package contains other methods that seem to be less well-known and therefore less used. For example, the Debye-Bueche method has been implemented in the *Irena* package for a number of years. This tool is suited for specific applications in gels. Further, a number of block copolymer mixtures are manufactured to have specific ordered structures, and in these cases, a small-angle diffraction tool can be of major importance.

This presentation will review polymer-oriented tools in the *Irena* package, present examples of science where these tools are useful, and discuss their applicability.

Acknowledgement: Use of the Advanced Photon Source at Argonne National Laboratory was supported by the U. S. Department of Energy, Office of Science, Office of Basic Energy Sciences, under Contract No. DE-AC02-06CH11357.