Single Crystal Studies using the 9.8 Station at SRS Daresbury

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Synchrotron radiation offers significant advantages for high pressure single crystal studies in that significantly shorter wavelengths can be accessed than are available with conventional laboratory sources. This greatly increases the volume of reciprocal space that can be accessed and hence improves the quality of the structure refinement.

The small-molecule single-crystal beamline, 9.8, at SRS Daresbury has carried out a significant number of successful high-pressure studies. The station is equipped with a Bruker diffractometer with an Apex II CCD detector and can obtain a complete routine data set in 1.5 hours.

In this talk I will describe the procedures to index often complex diffraction patterns in the presence of significant scattering from the pressure cell materials and to proceed from indexed diffraction patterns to integrated intensities. Examples from recent work of the structures of elements including rubidium, barium, tellurium and selenium will be used to illustrate this.

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