Robin Owen
Diamond Light Source, Harwell Science and Innovation Campus, Didcot, OX11 0DE, UK

Fixed target approaches for time and sample efficient serial delivery at Diamond and beyond.

Microfocus crystallography has had a considerable impact in recent years, with structure determination from crystals less than 10 microns in size now considered routine. This includes crystals held at room temperature in crystallisation trays. With ever-smaller beams however, come new challenges. Routine aspects of the diffraction experiment from crystal mounting to data analysis become difficult, and new approaches are required for sample delivery and data collection.Free Electron Lasers (FELs) offer an exciting new frontier in structural biology complementing data collected at synchrotron sources.

Despite the apparent contrast in experimental approach, many similarities exist between data collection at free electron lasers and microfocus synchrotron beamlines and I will describe the development of instrumentation for reliable delivery of many 1000's of crystals into the X-ray beam at both Diamond and FELs with examples of the data collected and results gained, in addition to changes to the I24 endstation facilitating serial, *in situ* and conventional crystallography of microcrystals.