W0498

MX at Diamond. J. Brandao-Neto, L. Johnson, E. Duke, G. Evans, K. McAuley, R. Flaig, T. Sorensen, A. Wagner, A. Grant[++], G. Preece, R. Wooliscroft, A. Ashton, M. Harding, D. Butler, A. Taylor, Diamond Light Source, Chilton, OX11 0DE, UK; [++]Synchrotron Radiation Source, Daresbury, Warrington, WA4 4AD, UK.

Diamond is the largest scientific investment in the UK for 30 years and is funded by the UK Government and the Wellcome Trust. Phase 1 of Diamond includes the construction of the machine and seven beamlines and will be complete in 2007. A further 15 beamlines will be built in Phase II. Three of the Phase I and two of the Phase II beamlines are dedicated to macromolecular crystallography (MX).

The Phase 1 MX beamlines will receive radiation from in-vacuum undulators and will be tunable between 0.5Å-2.5Å with operation optimised at 1A. A flux of 10^12 photons/s in a 100μm x 100μm spot at the sample is expected. All beamlines will be equipped with robotic sample changers, CCD detectors and other essential equipment associated with MX beamline operation. In addition one of the beamlines is being designed to permit data collection on samples from Category 3 pathogens.

The first Phase 2 MX beamline is being designed as a microfocus beamline with a beam focus down to 5μm, whereas the second one will be a fixed wavelength station operating at 0.93Å. Additionally there are plans for a beamline optimised for longer wavelengths (2Å+).