I16: A Magnetic and Material Diffraction Beamline on Diamond

Alessandro Bombardi[a], Steve Collins[a], [a]*Diamond Light source, Rutherford Appleton Laboratory, Chilton-Didcot, OX11 0QX, United Kingdom.* E-mail: Alessandro.Bombardi@diamond.ac.uk

Diamond Light Source will offer a unique opportunity to the research community for X-ray diffraction studies of materials. I16 will be a highly versatile facility for a wide range of science applications. One of the most important of these is the study of bulk and nano-structured magnetic materials. Here, one typically requires high flux, energy tuneability, polarisation selection and analysis, and controllable sample variables, such as temperature and magnetic field. Therefore the beamline will allow to cover very general scattering investigation.

The optical layout of the beamline is presented as well as the large multi axis K-diffractometer equipped with an in-house designed polarization and high-resolution analyser and automatically changeable detectors.

Keywords: synchrotron x-ray diffraction, synchrotron instrumentation, magnetic x-ray scattering