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The Brockhouse X-ray Diffraction and Scattering Sector at the Canadian Light Source

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The status of the construction of the Brockhouse X-Ray Diffraction and Scattering Sector, at the Canadian Light Source, will be discussed. The sector will be in operation in 2017 and will support a diverse, active and successful community of Canadian and international materials scientists. The instrumentation will meet their diverse needs by providing excellent performance over a broad x-ray energy range from 5 to 94 keV. To achieve this, three beamlines will be sourced by two complementary insertion devices: a small gap undulator and a small gap permanent magnet wiggler.

The undulator will source a high brilliance, low energy beamline (5-21 keV) that will be dedicated to diffraction, resonant and inelastic scattering and SAXS/WAXS experiments. The divergent x-ray beam produced by the wiggler will be divided by two side-bounce monochromators into two independent diffraction beamlines. One of them will be a low energy beamline (7-22 keV) and will be used for high-resolution powder diffraction, microcrystal crystallography and reciprocal space mapping. The second wiggler beamline will be a high energy one (20-94 keV) and will be dedicated to diffraction and scattering under extreme conditions and high-resolution pair distribution function measurements. Details of the performance and capabilities of each experimental end-station will be shown.

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