

Poster Presentation

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The Coherent X-ray Scattering Beamline at Taiwan Photon Source

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The coherent X-ray scattering beamline is one of the phase I beamlines designed for the Taiwan Photon Source, a new 3 GeV ring under construction at the National Synchrotron Radiation Research Center in Taiwan. By using a pair of 2m-long in-vacuum undulators, this beamline will provide a highly coherent beam for X-ray photon correlation spectroscopy principally; moreover, it will share a part of beamtime for small-angle X-ray scattering (SAXS) experiments with similar setup of the beamline. The operating photon energy is designed within the range of 5-20 keV. In vertical direction, the beam spot size at sample position is 1 μm with focusing mirror and by using 1D compound refractive lenses (CRLs) the beam spot size is 10 μm . The horizontal beam spot size is in the range of 1 to 10 μm with a two-stage focusing design. The vertical and horizontal transverse coherence lengths of the 10 μm^2 beam spot size at the photon energy of 5 KeV are 212 and 6 μm at sample position respectively. Beside XPCS the beamline configuration can cope with the requirements of most SAXS experiments, including anomalous measurements and micro-beam mapping. In addition, the increasing biological SAXS demand is also considered and the on-line fast performance liquid chromatography (FPLC) will be enclosed for biological users.

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