

## Poster Presentation

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### *Improvement and Upgrade of Small-Angle X-ray Scattering Beamlines at the Photon Factory*

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Three small-angle X-ray scattering (SAXS) beamlines, BL-6A, BL-10C and new BL-15A2 are available at the Japanese synchrotron facility, Photon Factory (PF). We are recently improving and upgrading the SAXS beamlines at the PF in order to support new measurements and construct a high-throughput experimental system. BL-6A is a bending magnet beamline and the wavelength is fixed at 1.5 angstrom. This beamline had two detectors, PILAUS 300K (Dectris) for SAXS/GI-SAXS and PILATUS 100K (Dectris) for WAXD experiment, respectively, and the simultaneous measurement using these detectors are available. We installed a new experimental stage and replaced PILATUS 300K with PILATUS3 1M in this March. Therefore, the range of an applicable camera length spread to 0.25 ~ 2.5 m, and the detectable angle area expanded in the small-angle region. BL-10A is also a bending magnet beamline and the wavelength has been fixed at 1.488 angstrom. We replaced almost all the optical and experimental components of this beamline with new ones in this March. A fixed-exit double-crystal monochromator, a focusing mirror and a mirror bender were newly installed in this beamline. We will be able to change the energy from 6 to 14 keV. Although the photon flux at the sample position will not change after this upgrade, the area of the beam at the focal point will decrease to 40 % on the basis of the raytracing calculation. The camera length spread from 2 m to 3m in a new experimental stage with the camera tube. PILATUS3 2M and 200K (Dectris) were also installed as a detector. The commissioning will be started from this May, and the beamline will be re-opened from this June. In order to control all new devices and make the user-operation easier, we newly developed GUI software for the beamline control and the experiment. We are also developing the solution sample mixer and changer at BL-15A2 for the high-throughput Bio-SAXS measurement. We will present the current status of these beamline refurbishment.

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