

Design of Initial Phase Beamlines at the Korea Fourth-Generation Storage Ring (Korea-4GSR)

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Ten beamlines are proposed for the initial phase of operations at the new synchrotron facility of the Korea fourth-generation storage ring (Korea-4GSR). The beamlines include: ID03 Coherent X-ray Diffraction *for* Bragg coherent diffraction imaging and real-time micro X-ray diffraction; ID04 Coherent Small Angle X-ray Scattering *for* micro small- and wide-angle X-ray scattering (SAXS/WAXS) and X-ray photon correlation spectroscopy; ID10 Nanoprobe *for* multi-modal nanoprobe scanning with a sub-50 nm monochromatic X-ray probe; BM10 High Energy Microscopy *for* phase contrast imaging at 70-100 keV; ID21 BioPharma-BioSAXS *for* high-throughput solution SAXS; ID22 Bio Nano Crystallography *for* macromolecular crystallography of challenging biomolecules; ID23 Real-time X-ray Absorption Spectroscopy (XAS) *for* in-situ/operando XAS measurements and X-ray emission spectroscopy; ID24 Material Structure Analysis *for* high resolution powder diffraction and XAS; ID25 NanoARPES *for* nano- and micro-scale angle-resolved photoemission spectroscopy; and ID26 Soft X-ray Nanoprobe *for* X-ray photoelectron spectroscopy (XPS) and XAS using soft to tender X-rays. The beamlines are designed to extend and complement the capabilities of the existing beamlines at Pohang Light Source-II. This paper discusses their designs, performance estimation, and potential research applications.

Paper submission Plan

Yes

Best Presentation

No

Contribution track

ICABU WG3. Beamline and Instrumentation

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