■ Public Beamlines

No.	Beamline name	Research areas
Experimental station/system Light source (energy range at sample position, etc.)		
1	**BL01B1 : XAFS**	Wide energy range (3.8-113 keV), XAFS of dilute systems and thin films, Time-resolved XAFS by quick scan (time-resolved QXAFS), Depth-resolved XAFS, XAFS at low and high temperatures, Simultaneous XAFS and XRD measurements, Simultaneous XAFS and IR measurements
	XAFS measurement system, Ionization chambers, Lytle detector, 19-element Ge solid-state detector, Conversion electron yield (CEY) detector, Two-dimensional X-ray detector PILATUS, Electric furnace (800 ℃), Cryostat (4 K), Gas supply and detoxifying system, Fourier transform infrared (FT-IR) spectrometer (4000cm-1～500cm-1), Bending magnet (3.8-113 keV)	
2	**BL02B1 : Single Crystal Structural Analysis**	Charge density study using high energy X-ray, In-situ single crystal experiments, Micro crystal structure analysis
	Large cylindrical imaging plate camera, hybrid photon counting detector, four-circle diffractometer. (Please contact the beamline scientist, if you submit the beamline proposal for the first time and want to use own experimental devices.) Bending magnet (8-115 keV)	
3	**BL02B2 : Powder Diffraction**	Charge density study from powder diffraction, Structural phase transition, *Ab initio* structure determination from powder diffraction, Crystal structure refinement by Rietveld method, *In situ* powder diffraction experiment under gas and vapor adsorption/desorption
	Automatic powder diffraction experiment (90 - 1100 K). Diffractometer for powder diffraction with MYTHEN micro-strip x-ray detector, Large Debye-Scherrer camera with imaging plate. Please contact to the responsible beamline scientist, if you want to do extremely low-temperature using cryostat (< 100 K), high temperature using furnace (<1300 K), and *In situ* powder X-ray diffraction experiment under gas and vapor adsorption/desorption. Bending magnet (12-37 keV)	
4	**BL04B1 : High Temperature and High Pressure Research**	X-ray diffraction measurements and radiography under extreme conditions using large-volume press
	Large-volume press (SPEED-1500, SPEED-Mk.II), AC/DC power supply for resistance heating, Energy-dispersive X-ray diffractometer, 2D X-ray CCD detector, High-speed CCD camera, Ultrasonic velocity measurement system, Bending magnet [white, 20-150 keV; Si(111), 30-60 keV]	

No.	Beamline name	Research areas
Experimental station/system Light source (energy range at sample position, etc.)		
5	**BL04B2 : High Energy X-ray Diffraction**	Structural analysis of glass, liquid, and amorphous materials, X-ray diffraction experiments under high pressure, Small-angle X-ray scattering of supercritical fluids
	X-ray PDF diffractometer and area flat panel detector for amorphous materials (Cryostat (20 K-RT), high-temperature furnace (~1,300 K), Aerodynamic levitation system (1,200~3,200 K)), Small-angle X-ray scattering diffractometer for supercritical fluids (To use the diffractometer, contact the Beamline Scientist before applying for beamtime.), Imaging plate diffractometer for diamond anvil cell, Bending magnet [Si(111), 37.8 and 113.4 keV; Si(220), 61.4 keV]	
6	**BL08W : High Energy Inelastic Scattering**	Magnetic Compton scattering, High-resolution Compton scattering, High-energy X-ray scattering, High-energy X-ray fluorescence analysis (XRF), Time-resolved pair distribution function analysis (PDF)
	Magnetic Compton scattering spectrometer, High-resolution Compton scattering spectrometer, High-energy X-ray fluorescence spectrometer, Flat area panel detector, Elliptical multipole wiggler (Station A, 110-300 keV; Station B, 100-120 keV)	
7	**BL09XU : Nuclear Resonant Scattering**	Lattice dynamics by nuclear resonant inelastic scattering, Synchrotron-radiation-based Mössbauer spectroscopy, Gamma-ray quasi-elastic scattering, Nuclear excitation, Coherent X-ray optics using nuclear resonant scattering, Polarization-dependent hard X-ray photoelectron spectroscopy using diamond phase retarder, Depth analysis of electron state, Materials science and applied materials science
	Nuclear inelastic scattering spectrometer: Time-domain Mössbauer spectrometer: Energy-domain Mössbauer spectrometer: Gamma-ray quasi-elastic scattering spectrometer : Cryostat, Furnace, Vacuum pump (Scroll pump and TMP), Velocity Transducer, Laser calibrator, ・In-vacuum undulator (4.91-100 keV) ・Spot size: ~Φ10 μm at14.4 keV Hard X-ray photoelectron spectrometer: High-energy-resolution photoelectron spectroscopy by hard X-ray excitation: Depth analysis of in-solid and interface electron states ・X-ray energy for excitation: Tunable energy range: 4.91keV～10keV ・Spot size: ~Φ10 μm ・Diamond circular polarization element: X-ray phase retarder (only operable at 8 keV) [Users who wish to use the tunable energy range should contact the Beamline Scientist (Yasui) before applying for beamtime.]	

No.	Beamline name	Research areas
Experimental station/system Light source (energy range at sample position, etc.)		
8	**BL10XU : High Pressure Research**	Structural analysis and phase transitions of crystals under ultrahigh pressure (DAC experiment), Earth and planetary science
	Ultrahigh-pressure diamond anvil cell (350 GPa), Imaging plate diffractometer, x-ray Flat panel detector, Ionization chamber, Liquid-nitrogen-cooled double-crystal monochromator Si(111) (~37 keV) or Si(220) (~61 keV), x-ray focusing lens, Pressure measurement system by ruby fluorescence method, Raman spectroscopy system (for pressure measurement), High-pressure cryostat (200 GPa, 10-300 K), Laser heating system (300 GPa, 3,000 K; Users who wish to use the system should contact the Beamline Scientist before applying for beamtime), In-vacuum undulator (6-61 keV)	
9	**BL13XU : Surface and Interface Structures**	Atomic-scale structural analysis of crystal surfaces and interfaces, ultrathin films, and nanostructures, *In situ* structural analysis of nanostructures grown at vacuum/solid and liquid/solid interfaces, Analysis of local structures using microbeam
	Experimental hutch 1: Multi-axis diffractometer, Precision mount, Refractive-lens-focused microbeam optics Experimental hutch 2: Devices brought in by users, etc. Experimental hutch 3: Surface diffractometer, Refractive-lens-focused optics, Ultrahigh-vacuum chamber for preparing sample surface Experimental hutch 4: Zone-plate-focused microbeam diffraction system Standard optics [Si(111) spectroscopic crystal] Si PIN photodiode detector, Scintillation detector, Si drift detector, Imaging plate, Ionization chamber, Pixel-array 2D detector (HyPix) The first-time users of BL13XU or users who are planning to use a measurement method different from the conventional one, are urged to contact the Beamline Scientist [for general inquiries about BL13XU: Dr. Tajiri (tajiri@spring8.or.jp), for zone-plate diffraction system: Dr. Imai (imai@spring8.or.jp)] before applying for a beamtime. In-vacuum undulator (6-50 keV)	
10	**BL14B2 : Engineering Science Research II**	X-ray imaging, XAFS in a wide energy range (5-72 keV), XAFS of dilute systems and thin films, Time-resolved XAFS by quick scan (Time-resolved QXAFS)
	X-ray imaging camera,XAFS measurement system, Ionization chamber, 19-element Ge solid-state detector (SSD), Lytle detector, Conversion electron yield (CEY) detector, Cryostat (10 K-RT), High-temperature cell for transmission (RT-1,000 ℃), High-temperature cell for fluorescence (RT-800 ℃), Gas supply and exhaust system [Users who wish to use the system should contact the Beamline Scientist (Honma) before applying for beamtime.], Bending magnet (5-72 keV)	

No.	Beamline name	Research areas
Experimental station/system Light source (energy range at sample position, etc.)		
11	**BL19B2 : Engineering Science Research I**	Residual stress measurement, Structural analysis of thin film, surface and interface, Powder X-ray diffraction, X-ray topography, Ultrasmall-angle X-ray scattering
	Versatile High-throughput diffractometer (powder diffractometer), 8-axis diffractometer for general diffraction experiment, Small-angle X-ray scattering (SAXS) camera with a camera length of 0.7 - 40 m. For powder diffraction and SAXS experiment, fully-automated sample changers are available.	
12	**BL20XU : Medical and Imaging II**	X-ray imaging: X-ray microbeam/scanning microscopy, Projection micro-CT, High-energy x-ray nano-CT(15, 20, 30, 37.7 keV), Phase-contrast and refraction-contrast micro-CT, X-ray diffraction tomography (XRD-CT), X-ray holography, Coherent X-ray optics, Research and development of X-ray optics (including focusing/imaging optics) and optical elements Ultrasmall-angle scattering
	High-precision diffractometer for various types of imaging, Liquid-nitrogen-cooled Si(111) double-crystal monochromator (7.62-37.7 keV) or Si(220) double-crystal monochromator (~61 keV), Middle-length undulator beamline (245 m), Beam size: 1.4 mm(H) x 0.7 mm(V) at 1st experimental hutch and 4 mm(H) x 2 mm(V) at 2nd experimental hutch, High-resolution X-ray imaging detectors (resolution ~1μm), Large view field X-ray imaging detectors (resolution ~10μm), Phase-contrast CT and absorption micro-CT (Users who wish to use these systems should contact the Beamline Scientist beforehand.), Clean booth for preparing samples (experimental hall of the Storage Ring building), Imaging intensifier (Be window, 4-inch type), In-vacuum planar undulator (7.62-61 keV)	
13	**BL20B2 : Medical and Imaging II**	Micro-radiography, micro-angiography, micro-tomography, and refraction-contrast imaging are the mainly used techniques. BL20B2 is also applicable to small-animal experiments for medical research. Research and development of basic techniques for evaluation of optical devices and X-ray imaging
	General-purpose diffractometer, High-resolution image detector (resolution, ~10 μm), Large-area image detector (field of view, 12 cm square), Medium-length beamline (215 m), Maximum beam size [experimental hutches 2 and 3, 300 mm(H) × 15 mm(V); experimental hutch 1, 60 mm(H) × 4 mm(V)], Bending magnet (8-113 keV)	

No.	Beamline name	Research areas
Experimental station/system Light source (energy range at sample position, etc.)		
14	**BL25SU : Soft X-ray Spectroscopy of Solid**	Research on electron states by photoemission spectroscopy (PES), Research on electronic band structures by angle-resolved photoemission spectroscopy (ARPES), Study of magnetic states by magnetic circular dichroism (MCD) of soft X-ray absorption, Analysis of surface atomic arrangement by photoelectron diffraction (PED).
	A branch: Two-dimensional display-type angle-resolved photoelectron analyzer (2D-PES), Retarding field analzer (RFA), Soft X-ray PES B branch: MCD measurement system, Twin helical undulator(※) (A branch, 0.12-2 keV; B branch, 0.2-2 keV) Contact the Beamline Scientist of BL25SU before applying for beamtime for cases (1)-(3) below. (1) When you use 2D-PES (2) When you use RFA (3) When you wish to carry out experiments using carry-in devices （※）Due to a trouble in the twin helical undulators, either of the undulators is temporally operated until the repairment is completed. Ask the beamline scientist for details.	
15	**BL27SU : Soft X-ray Photochemistry**	Soft X-ray photoabsorption spectroscopy of dilute samples in partial fluorescence yield mode, Surface and interface analysis using depth-resolved Soft X-ray photoabsorption spectroscopy, Soft X-ray photoabsorption spectroscopy under ambient atmospheric pressure, Spectroscopy using soft X-ray microbeam, Observation of electron state in solids by soft X-ray emission spectroscopy
	B branch: High-energy soft X-ray beam (2.1-3.3 keV) using Si(111) crystal monochromator -Soft X-ray photoabsorption spectrometer (electron yield mode and partial fluorescence yield mode) -X-ray fluorescence analyzer -Scanning soft X-ray microspectroscopy C Branch: Low-energy soft X-ray beam (0.17-2.2 keV) using grating monochromator -Soft X-ray photoabsorption spectrometer (electron yield mode and partial fluorescence yield mode) -Soft X-ray photoabsorption spectroscopy under ambient atmospheric pressure (Users who wish to use the system should contact the Beamline Scientist (Nitta) before applying for beamtime.) - Soft X-ray emission spectrometer	

No.	Beamline name	Research areas
Experimental station/system Light source (energy range at sample position, etc.)		
16	**BL28B2 : White Beam X-ray Diffraction**	White X-ray diffraction: X-ray topography, Energy-dispersive strain measurement Time-resolved energy-dispersive XAFS (DXAFS) for studies of chemical and/or physical reaction process Biomedical application: Studies related to radiation therapy and biomedical imaging High energy (~200 keV) X-ray microtomography
	White X-ray topography system, Energy-dispersive XAFS system, Experimental system for biomedical application experiments, Multipurpose diffractometer Bending magnet (White, ≥5 keV)	
17	**BL35XU : High Resolution Inelastic Scattering**	Dynamics of phonons, glass transition, and liquids, Dynamics in materials including atomic diffusion, X-ray inelastic scattering
	X-ray inelastic scattering (~1 to 100 nm-1, 12 analyzers), In-vacuum undulator (15.816, 17.794, 21.747, and 25.702 keV, Resolution: 6.0, 3.0, 1.5, 0.9 meV*) *Users who wish to use 15.816 or 25.702 keV should contact the Beamline Scientist before applying for beamtime.	
18	**BL37XU : Trace Element Analysis**	X-ray microbeam/nano-beam spectrochemical analysis, X-ray spectroscopic imaging, Ultratrace-element analysis, High-energy X-ray fluorescence analysis Projection/scanning/imaging XAFS microscopy, High brightness XAFS, Coherent diffraction imaging XAFS microscopy
	XAFS measurement system, Scanning X-ray microscope, Imaging X-ray microscope, X-ray tomography system, Multipurpose diffractometer, X-ray fluorescence analyzer, Bend crystal Laue analyzer, X-ray shutter Ionization chamber, PIN photodiode, 1-element Ge solid-state detector, 4-element Si drift detector, Indirect conversion X-ray image detector (High speed CMOS camera), Flat-panel detector, 2D pixel array detector In-vacuum undulator, Liquid-nitrogen-cooled double-crystal monochromator (Si(111): 4.5~37.7 keV, Si(511): 12~113 keV), Higher harmonics rejection mirrors (Pt/Rh coated, bent flat mirror for horizontal forcusing) Beam size: 2 mm(H)×0.7 mm(V), 100 nm(H)×100 nm(V) (W.D. = 100 mm, 5~55 keV), 500 nm(H)×300 nm(V) (W.D. = 300 mm, 5~30 keV)	

No.	Beamline name	Research areas
Experimental station/system Light source (energy range at sample position, etc.)		
19	**BL39XU : Magnetic Materials**	X-ray magnetic circular dichroism (XMCD) spectroscopy and element-specific magnetometry (ESM), X-ray emission spectroscopy (XES) and its magnetic circular dichroism, XMCD magnetic imaging and local ESM using micro/nanobeam, XAFS microscopy and local ESM, XAFS and XMCD at high pressure, X-ray spectroscopy using variable X-ray polarization (horizontally/perpendicularly linear or circular)
	Diamond circular polarization element (X-ray phase retarder, operable at 5-23 keV) XMCD spectrometer + Magnetic field generator [electromagnet (2 T), superconducting magnet (7 T, 2 K)] 4-axis X-ray diffractometer (Huber 424 + 511.1)(*), X-ray emission spectrometer(*,**) Cryogenic device [helium-flow cryostat (11-330 K), superconducting magnet (2-300 K), pulse-tube-type cryostat (4-300 K)(*)] High-pressure generator (DAC, atmospheric pressure-100 GPa at RT, atmospheric pressure-20 GPa at low temperature)(*) KB focusing mirror for high-pressure XMCD (beam size, 2(vertical) x 9(horizontal)μm; W.D.=400 mm; 5-10 keV)(*) KB focusing mirror for microscopic XMCD and XAFS (beam size, □100-300 nm; W.D.= 80 mm; 5-15 keV)(*) (*)Users who wish to use these devices should contact the Beamline Scientist before applying for beamtime. (**)Some energy ranges are not available.	
20	**BL40XU : High Flux**	Fast time-resolved X-ray diffraction and scattering experiments, X-ray photon correlation spectroscopy, X-ray fluorescence analysis, Microbeam X-ray diffraction and scattering experiments, Time-resolved quick XAFS (Time-resolved QXAFS), Micro-crystallography
	Experimental hutch 1: X-ray shutters, Cooled CCD camera (Hamamatsu C4742-98), Fast CMOS video camera (Hamamatsu Orca-Flash 4.0, Photron AX200), Flat-panel detector(Hamamatsu C9728DK-10), Pilatus 100K, Eiger2 S 500K, X-ray image intensifier (4 inches), YAG laser, Small-angle scattering vacuum path (maximum sample/detector distance, 3.5 m), Pinhole optics (typically ≧5 μm, 2μm in special cases) Experimental hutch 2: Precision diffractometer, Zone-plate-focusing optics, femtosecond-laser system, EIGER 1M *Helical undulator (8-17 keV) *Beam size at sample: 250 μm (H) x 40 μm (V) *Flux: 10^15 photons/s (12 keV) *Quasi-monochromatic beams (Δλ/λ=2%) without the need of a monochromator	

No.	Beamline name	Research areas
Experimental station/system Light source (energy range at sample position, etc.)		
21	**BL40B2 : Structural Biology II**	Small-angle X-ray scattering (SAXS)
	Small-angle scattering camera [Vaccum path length, 250, 500, 1000, 1500, 2000, 3000, 4000, 6000(*) mm] Pixel array detector (Pilatus3S 2M, Pilatus100KS and Eiger2 S 500K Dectris Ltd., ModuPIX ADVACAM) Imaging plate ditector (R-AXIS VII(*), Rigaku Corporation) X-ray imaging intensifier(*) (XII, 4 inch window) By the imaging camera for XII, CCD (C4742-98, Hamamatsu Photonics K.K.) or CMOS(C11440-22C, Hamamatsu Photonics K.K.) can be selected. Flat-panel detector (C9728DK-10, Hamamatsu Photonics K.K., for wide angle) Sample-environment equipment: Temperature control (HCS302 and TS62, Instec Inc., Mechanical characterisation system(*) (10073A, Linkam), DSC(*) (FP84HT, Mettler-Toledo International Inc.), DSC(*) (Rigaku Corporation)), Nitrogen gas generator (maximum flow rate: 5 L/min) Bending magnet (6.5-17.5 keV) (*)Users who wish to use these devices should contact the beamline scientist before applying for beamtime.	
22	**BL41XU : Structural Biology I**	Macromolecular crystallography, Micro-crystallography,Ultra-high resolution structural analysis
	Diffractometer for macromolecular crystallography In-vacuum undulator (normal mode, 6.5-17.7 keV; *high-energy mode, 19-35 keV) Beam size (at sample position): 4(H) × 5(V) μm2 ~ 22(H) × 45(V) μm2 (normal mode), 30 × 30 μm2 ~ 300 × 300 μm2 (high energy mode) Hybrid photon counting detector EIGER X 16M (for normal mode) Cryo-cooler (N_2 gas, ≥100 K; He gas, ≥20 K) Peltier-cooled silicon drift detector SPring-8 precise automatic cryo-sample exchanger (SPACE) *Users who wish to use the high-energy mode should contact the Beamline Scientist before applying for beamtime. Please check the following Web-site before using the beamline. http://bioxtal.spring8.or.jp/en/BL/BLmain_en.html	

No.	Beamline name	Research areas
Experimental station/system Light source (energy range at sample position, etc.)		
23	**BL43IR : Infrared Materials Science**	Infrared microspectroscopy
	Wavenumber range: 100-20,000 cm-1 High-spatial-resolution microscope: Objectives (x36(NA=0.5, WD=10mm), x15(NA=0.4, WD=24mm), x20(ATR)), Cryostat (4.2K～400K), Temperature controlled stage (-190～600℃) Long-working-distance microscope: Objective (x8(NA=0.5, WD=50mm), Diamond anvil cell+Cryostat (0.4mm culet/30GPa, 10～400K), Cryostat (4.2～400K) Magneto-optical microscope: Objective (x16(NA=0.3, WD=40mm), Magnetic field 14T, Cryostat (4.2～300K)	
24	**BL45XU : Structural Biology III**	Macromolecular crystallography, Micro-crystallography, Automation & High throughput data collection for protein crystallography
	Diffractometer for macromolecular crystallography In-vacuum undulator (6.5-16.0 keV) Beam size (at sample position): 5(H) × 5(V) μm2 ~ 50(H) × 50(V) μm2 Hybrid photon counting detector PILATUS 6M Cryo-cooler (N_2 gas, ≥100 K) SPring-8 precise automatic cryo-sample exchanger (SPACE) Please check the following Web-site before using the beamline. http://bioxtal.spring8.or.jp/en/BL/BLmain_en.html	
25	**BL46XU : Engineering Science Research III**	Structural characterization of thin film by X-ray diffraction and X-ray reflectivity measurement, Residual stress measurement, Time-resolved X-ray diffraction, Hard X-ray photoemission spectroscopy, X-ray imaging
	In-vacuum undulator (6-37 keV) 8-axis X-ray diffractometer (HUBER) with C-type χ cradle: Small-angle X-ray diffraction/scattering, Reflectivity measurement, Residual stress measurement, General X-ray diffraction/scattering measurements Hard X-ray photoemission spectroscopy system (Scienta Omicron R4000 and FOCUS HV-CSA 300/15)	

No.	Beamline name	Research areas
Experimental station/system Light source (energy range at sample position, etc.)		
26	**BL47XU : HAXPES・μCT**	X-ray optics, Planetary science, Materials science, Applied materials science
	In-vacuum undulator (5.2-37.7 keV, horizontal polarization) High-spatial-resolution micro-tomography system, Hard X-ray microbeam/scanning microscopy experiment Hard X-ray photoelectron spectroscopy system: High-energy-resolution photoelectron spectroscopy by hard X-ray excitation: Depth analysis of in-solid and interface electron states ・X-ray energy for excitation: 6, 8, or 10 keV ・Spot size: Φ40 or Φ1 μm ・Temperature range of sample: ~40-600 K (liquid He flow is used for cooling) [Users who wish to use the Φ1 μm focusing and/or mapping of photoelectron should contact the Beamline Scientist before applying for beamtime.]	

■RIKEN Beamlines

No.	Beamline name	Research areas
Experimental station/system Light source (energy range at sample position, etc.)		
27	**BL05XU : R&D-ID**	Strucutural analysis by small and wide angle X-ray scattering
	Photon energy: 7~15 keV Photon flux < 1×1013 photons/s (12.4 keV) Sample-to-detector distance: ~10 cm - 4 m For other conditions and facilities, contact the Beamline Scientist beforehand.	

No.	Beamline name	Research areas
Experimental station/system Light source (energy range at sample position, etc.)		
28	**BL17SU : RIKEN Coherent Soft X-ray Spectroscopy**	>Spectroscopic photoemission low-energy electron microscope --- Ac station Observation of fine structures (a few tens of nanometer) and electronic/magnetic states in various modes (e.g., imaging, diffraction, and dispersion modes) >Versatile photoemission electron microscope --- Bc station Electronic/magnetic states imaging (resolving power: better than 100 nm) and its time-resolved measurements
	Multi-polarization undulator, Energy range for A and B branches (250 - 2,000 eV), Energy resolution (E/dE ~10,000), Beam size at sample position [~30 μm(H) × 4 μm(V)] Before applying for public use of BL17SU, contact the following persons in charge of respective equipment. Spectroscopic photoemission low-energy electron microscope, versatile photoemission electron microscope: Ohkochi (o-taku@spring8.or.jp) at JASRI Free space where users can bring their systems: Oura (oura@spring8.or.jp) at RIKEN	
29	**BL19LXU : RIKEN SR Physics**	Research on physical science requiring ultrahigh-brilliance X-ray beam from long undulator
	Experimental station/system: 5(W) × 3.4(D) × 4.5(H) m3 open hutch, Optical bench, PIN photodiode, Scintillation counter, Ionization chamber, Stepping motor drivers and controllers, NIM Bin power supply, Counter, Trigger signal synchronized with RF of storage ring Light source (energy range at sample position, etc.): In-vacuum undulator (7.1-18 keV, 22-51 keV, flux of ~1014 photons/s at 12.4 keV) For other conditions and facilities, contact the Beamline Scientist beforehand.	
30	**BL26B1/B2 : RIKEN Structural Genomics I & II**	Structural biology research based on single-crystal X-ray diffraction
	Area detector [Dectris EIGER4M (BL26B1), Rayonix MX225HS (BL26B2)], Goniometer with horizontal spindle axis, Blowing cryo-cooler (95 K-RT), Sample changer SPACE, Bending magnet (6.5-15.5 keV) Please check the following Web-site before using the beamline. http://bioxtal.spring8.or.jp/en/BL/BLmain_en.html	

No.	Beamline name	Research areas
Experimental station/system Light source (energy range at sample position, etc.)		
31	**BL29XU : RIKEN Coherent X-ray Optics**	Research on physical science using long beamline and coherent X-ray beam
	Experimental station/system: Open hutches with size of 5(W) × 3(D) × 3.3(H) m3 [EH1], 10(W) × 4.25(D) × 4.5(H) m3 [EH2], 8(W) × 4(D) × 3.3(H) m3 [EH3], and 6(W) × 3(D) × 3.3(H) m3 [EH4], Optical benches, PIN photodiodes, Scintillation counters, Ionization chambers, Stepping motor drivers and controllers, NIM Bin, Power supply, Counter, Visible-conversion X-ray camera, Trigger signal synchronized with RF of storage ring Light source (energy range at sample position, etc.): In-vacuum undulator (1st order harmonics : 5-19 keV, 3rd order harmonics : 15-56 keV, flux of ~6 × 1013 photons/s at 10 keV), silicon monochromator(111 plane)(4.4 ~ 37.8 keV) For other conditions and facilities, contact the Beamline Scientist beforehand.	
32	**BL32XU : RIKEN Targeted Proteins**	Structural biology, X-ray crystallography for biopolymer, Micro-crystallography for ultrafine proteins
	Experimental station/system: EEM focusing mirror unit, Ultralow-eccentricity high-precision goniometer, Ultralow-temperature He blower, Hybrid photon counting detector (DECTRIS EIGER X 9M), Large-volume sample mounting robot with applicability to Hampton pins Light source (energy range at sample position, etc.): [Light source] Hybrid undulator [Beam size at sample position] 1×1-10×10 μm2 [Flux of 1 μm beam] 7 × 1010 photons/s at 12.4 keV [Energy range] 9-18 keV (If you prefer to use lower energy X-ray than 9 keV, please contact us) Please check the following Web-site before using the beamline. http://bioxtal.spring8.or.jp/en/BL/BLmain_en.html	

No.	Beamline name	Research areas
Experimental station/system Light source (energy range at sample position, etc.)		
33	**BL36XU : RIKEN Materials ScienceII**	Time-resolved QXAFS using tapered-Undulator beam, full-field/scanning XAFS imaging, XES, simultaneous time-resolved QXAFS/XRD, ambient pressure HAXPES, pink beam experiment
	[Energy region] 4.5-35 keV, [beam size] 40μm(V)×500 μm(H), 100 nm(V)×100 nm(H), [time resolution] QXAFS(20 ms). [light source and optics] In-vacuum tapered undulator, channel-cut crystal monochromators (Si(111), Si(220)), Rh/Pt coated vertical/horizontal focusing mirrors, Rh/Pt coated KB mirrors(4.5-35 keV). [Measurement system] Transmission XAFS measurement system, 25-element Ge detector, 4-element SDD, PILATUS 300KW, 4-element Merlin detector, indirect X-ray image detector, ambient-pressure HAXPES. [Sample condition contorolling equipement] Reaction gas supply and removal equipment, cryostat (4K-RT), high-temperature gas cell (RT-1000K), fuel cell and power generation equipment. For other conditions and facilities, contact the Beamline Scientist beforehand.	
34	**BL38B1 : RIKEN Structural Biology I**	Small Angle X-ray Scattering
35	**BL43LXU : RIKEN Quantum NanoDynamics**	meV Scale IXS for atomic and electronic dyanmics
	Energy: 14.4-26 keV (Fundamental), meV Spectrometer for atomic dynamics and 30 meV spectrometer for eletronic dynamics	
36	**BL44B2 : RIKEN Materials Science**	Structural analysis of periodic and aperiodic systems by total scattering
	Wavelength: 0.41～0.8 Å Instrument: Two-axis powder diffractometer (2θ range: 0.5～153°, 2θstep: 0.01°) Temperature: -180～800℃	