5.	Activities	Page 75
	5-1 Accelerators	
	Linac	82
	Synchrotron	102
	Storage ring	111
	5-2 Experimental facility	
	Insertion devices	153
	Front ends	162
	Detectors	173
	Optics	181
	5-3 Physical experiments	216
	5-4 Safety	240
	5-5 Others	243

## 5. Activities

Title 5-1 Accelerators	First Author	Page
Linac		
The Design of Communication Process for the SPring-8 Linac Control System	Itoh, Y.	82
The Design of Database for the SPring-8 Linac	Kuba, A.	83
Sequence Program of Programmable Controller for Linac Pre-injector	Kodera, M.	85
The SPring-8 Linac Control System Using Object Oriented Concept	Sakaki, H.	87
Design of Accelerator Operation Using FUZZY Control System	Sakaki, H.	88
RF System of the Spring-8 Linac	Suzuki, S.	89
Visualization Tool for Linac Control System	Taniuchi, T.	91
Studies of Pre-injector Linac	Hori, T.	93
Klystrons and Modulators for the SPring-8 Linac	Mizuno, A.	95
Positron Production and Focusing Section for the SPring-8 Linac	Mizuno, A.	97
Beam Monitors for the SPring-8 Linac	Yanagida, K.	99
High Current 1ns Pulsed Electron Gun	Yoshikawa, H.	100
Synchrotron		
Beam Position Monitor for the SPring-8 Synchrotron	Aoki, T.	102
Development of Septum Magnets for the SPring-8 Synchrotron	Abe, H.	104
Characteristics of RF Reference and Timing Signal Distribution for SPring-8	Suzuki, H.	105
Development of the Kicker Magnet for Beam Extraction	Tani, N.	107

Measurement of Magnetic Field Distribution of the Dipole, Quadrupole, Sextupole Magnets for the SPring-8 Synchrotron	Fukami, K.	109
Storage ring		
Mechanical Design of the Beam Diagnostics Straight Section on the SPring-8 Storage Ring	Shoji, M.	111
Vacuum Control System for the SPring-8 Storage Ring	Higashiura, T.	113
Creep of RF-contact Slide Finger Due to Baking	Watanabe, K.	114
Design of Vacuum Chambers for the Long Straight Cell	Sato, S.	116
Conceptual Design of the Injection Section Chambers	Bizen, T.	118
Deformation and Displacement of Vacuum System for One Unit Cell in the SPring-8 Storage Ring	Saeki, H.	120
Performance of the Heated-water Unit	Sakaue, H. A.	122
Pre-assembly and Vacuum Test for One Unit Cell of the SPring-8 Storage Ring Vacuum System	Ohkuma, H.	124
Photodesorption of Glid-Cop by High Energy Photon	Watanabe, K.	126
Application of Fast Pockels Cells to Beam Diagnostics on the SPring-8 Storage Ring	Tamura, K.	128
Emittance Reduction in Electron Storage Rings	Tanaka, H.	130
A Proposed Emittance Measurement with an X-ray Pinhole Array on the SPring-8 Storage Ring	Takano, S.	132
Analysis of Signals from Beam Position Monitor Pickups on the SPring-8 Storage Ring	Takano, S.	134
Calibration Procedures for Beam Position Monitors on the SPring-8 Storage Ring	Tamura, K.	136
Progress in Field Measurements of SPring-8 Storage Ring Magnets	Ohnishi, J.	138

Network for Beam about System	Ohshima, T.	140
Positioning the SPring-8 Magnets with the Laser Tracker	Zhang, C.	141
RF Noise and Longitudinal Emittance in an Electron Storage Ring	Daté, S.	143
508.58 MHz Non-stop Synchronous Counter as a Final Version	Kawashima, Y.	145
Design of RF Low Power System for the SPring-8 Storage Ring	Ohashi, Y.	147
Dependence of Higher-order Mode Frequencies on Temperature for a Bell-shaped Single Cell Cavity	Ego, H.	149
On the Possibility of Producing Low Energy Positrons with SR from a Superconducting Wiggler	Soutome, K.	151
5-2 Experimental facility		
Insertion devices		
Design of a Quasi-periodic Undulator	Hashimoto, S.	153
On Radiation Spectrum from a Quasi-periodic Undulator	Takao, M.	154
Figure-8 Undulator for VUV and Soft X-ray Region	Tanaka, T.	156
A New Concept for the Elliptical Multipole Wiggler at SPring-8	Marechal, X-M.	158
Use of the 30 m Straight Section in the SPring-8	Tanabe, T.	160
Front ends		
Development of the Beam Monitors	Shiwaku, H.	162
Heat Load Analysis of the Fixed Mask	Nakamura, A.	164
Effects of Bending Magnet Radiation on X-ray Beam Position Monitors	Sakae, H.	166
Thermal and Structural Analyses for Beryllium and Diamond Windows	Sakae, H.	168

Finite Element Analysis of XY-slits for the Front End of the SPring-8 Undulator Beamline	Oura, M.	170
Polyimide Film Window Installed to Defend a SR Beam Line for Radioactive Materials from an Accidental Vacuum-break	Yokoya, A.	172
Detectors		
A New Readout System of Imaging Plate Utilizing Line-shaped Laser Beam and Change-coupled Device	Kamiya, N.	173
Recent Status of Imaging Micro-strip Gas Chamber	Tanimori, T.	174
Development of High Spatial Resolution Imaging Plate Detector	Yamamoto, M.	176
Performance of a Proportional Scintillation X-ray Imaging Chamber	Suzuki, M.	178
Optics		
Investigation of In-plane Structures of Single d-spacing Multilayers	Kohmura, Y.	181
Reflectivity Measurements of a Multilayer Mirror at 110 keV	Kimura, H.	183
A Large Ellipsoidal Mirror for Energy Tunable X-ray Micro Analyses	Hayakawa, S.	185
Surface Roughness Measurements of X-ray Mirrors	Arakawa, E.	186
Thermal and Figure Analyses of Premirrors for an Undulator Beamline	Uruga, T.	188
Ultra-precision Grinding of CVD-SiC Mirrors Using Electrolytic In-Process Dressing (ELID)	Ohmori, H.	189
Performance of the Original SiC Grating with Varied Line Spacings, Spin-LEED Analyzer and Circular Polarization of Photoelectron Diffraction from Si(001)	Taniguchi, M.	191
Development of Focusing Mirror for Small-angle X-ray Scattering Optics	Inoko, Y.	192

Development and Surface Evaluation of Large SiC X-ray Mirrors for High Brilliance Synchrotron Radiation	Yamaoka, H.	194
Reactive Ion-beam Etched SiC Gratings	Ishiguro, E.	196
Diamond Crystal Monochromator in a SPring-8 Undulator Beamline	Yamaoka, H.	198
First High Heat Load Experience with a Cryogenically Cooled Diamond X-ray Monochromator Crystal	Yamaoka, H.	200
Performance of a Bender for a Water-cooled Monochromator Crystal at a High Power Wiggler Beamline of the ESRF	Yamaoka, H.	202
Experimental Results from a Water-cooled Monochromator with Micro-channels on an ESRF Wiggler Beamline	Yamaoka, H.	204
Water-cooled Silicon Crystal with Pin-post Cells	Kuroda, M.	205
Refractive Lens and Zone Plate for Focusing X-ray	Suehiro, S.	207
Design of a V-shaped Crystal Monochromator	Hashimoto, S.	208
Performance of the JEBIS for Heat Load Test on SR Optical Elements	Hashimoto, S.	210
Development of a Simulation Code Combining Takagi-Taupin Equation and Distortion Data by ANSYS	Ohtomo, K.	212
Hard X-ray Interaction with Material (Development of Computation Code OEHL)	Tong, X-M.	214
5-3 Physical experiments		
First Test of Photoionization of Multi-charged Ions and PHOton Beam Ion Source (PHOBIS) with the RIKEN EBIS (REBIS)	Kravis, S.D.	216
Photoionization of Ions in the 4d Excitation Region	Koizumi, T.	218
Ion Storage in Kingdon Trap	Sekioka, T.	220
The Idea of Gradient-monochromator for High Energy X-ray Structure Analysis	Noda, Y.	222

Trapping of Multiply Charged Ions	Sakurai, M.	223
Radiation Shielding Design for the SPring-8	Sasamoto, N.	225
EXAFS Spectrum near the Ta-K Edge of KTaO <sub>3</sub>	Nishihata, Y.	227
Electronic and Atomic Structures of Surfaces and Interfaces in Semiconductor Hetero-systems	Iwami, M.	229
Development of Cryo-cooling System for Cryogenic Protein Crystallography at the RIKEN Beam Line	Nakasako, M.	230
Development of the Program System for Protein Crystallography	Tanaka, N.	231
Low Temperature Apparatus for Protein Crystals in Bio-crystallography (MIR-OAS) Beamline	Miki, K.	233
New Concept for a Synchrotron Radiation Diffractometer	Hashimoto, S.	234
Feasibility of Rapid and Sensitive XAFS Using Tunable X-ray Undulators	Oyanagi, H.	235
Structure of \( \beta \)-phase AuCuZn <sub>2</sub> Alloy under High Pressure	Makita, T.	237
Monochromatic X-ray CT Using Fluorescent X-rays Generated by Synchrotron Radiation	Uyama, C.	238
5-4 Safety		
Radiation Exposure Due to Synchrotron Radiation within Beamline Experimental Hutch	Asano, Y.	240
Absorbed Dose within Si Crystal Due to 40 keV Synchrotron Radiation with Linear Polarization	Asano, Y.	241
Development of Shielding Design Code for Synchrotron Radiation Beamline	Asano, Y.	242
5-5 Others		
Second Stage of the Preliminary Network for SPring-8	Takebe, H.	243