

Contents

	page
1. Overview of the SPring-8 Project	1
2. Facilities	
2-1 Accelerators	
Accelerator Division -General- Operation	8 9
Linac	12
Synchrotron and Storage Ring	14
Control System	17
Beam Dynamics	20
2-2 Experimental Facilities	
Experimental Facilities -General- Beamline Development	23
Insertion Devices	26
Front End	31
Transport Channel and Optics	33
SPring-8 Detector Projects	35
Information Network System	39
Public Beamlines	
XAFS (BL01B1)	42
Crystal Structure Analysis (BL02B1)	44
Powder Diffraction (BL02B2)	47
High Temperature Research (BL04B1)	49
High Energy X-ray Diffraction (BL04B2)	51
High Energy Inelastic Scattering (BL08W)	53
Nuclear Resonant Scattering (BL09XU)	54
Extremely Dense State Research (BL10XU)	56
Medical and Imaging I (BL20B2)	58
Soft X-ray Spectroscopy of Solid (BL25SU)	60
Soft X-ray Photochemistry (BL27SU)	62
White Beam X-ray Diffraction (BL28B2)	63
High Resolution Inelastic Scattering (BL35XU)	65

Physicochemical Analysis (BL39XU)		67
High Flux (BL40XU)		69
Structural Biology II (BL40B2)		70
Structural Biology I (BL41XU)		71
JAERI Beamlines		
JAERI Beamline I (BL23SU)		73
JAERI Beamline II (BL14B1)		75
JAERI Beamline III (BL11XU)		77
RIKEN Beamlines (BL45XU, BL44B2, BL29XU, BL19LXU)		79
R & D Beamline		
R & D I (BL47XU)		83
R & D II (BL46XU)		85
Contract Beamlines		
Hyogo (BL24XU)		87
Industrial Consortium ID (BL16XU)		89
Industrial Consortium BM (BL16B2)		90
WEBRAM (BL15XU)		92
Laser-Electron Photon (BL33LEP)		95
Macromolecular Assemblies (BL44XU)		99
2-3 Safety Office		101
2-4 Utility Management		102
3. Activities		
3-1 Accelerators		
<i>Linac</i>		
Status of Alignment for the Linac	A. MIZUNO	105
RF Gun Study in the SPring-8 Linac	A. MIZUNO	107
New Transport Line for 1GeV Linac (2)	S. SUZUKI	110
Stability Evaluation of the 1GeV Electron Beam by a Particle-dynamics Code	T. ASAKA	113
The Improvement of the Electron Gun for the SPring-8 Linac	T. KOBAYASHI	116
<i>Synchrotron</i>		
Integration of the Synchrotron Control System to the SPring-8 Control System	N. HOSODA	118
<i>Storage Ring</i>		
Excitation of Betatron Oscillation under Finite Chromaticity	T. NAKAMURA	121

Energy Spread Measurement of the SPring-8 Storage Ring with Chromatic Sideband Peak Height of Betatron Oscillation Spectrum	T. NAKAMURA	124
Measurement of Electron Beam Oscillation in SPring-8 Storage Ring	T. OHSHIMA	127
Effect of Temperature Variation to the Beam Stability of the SPring-8 Storage Ring	K. TSUMAKI	129
Energy, Energy Loss and Energy Fluctuation of Electron Beam of the SPring-8 Storage Ring	K. TSUMAKI	132
Improvement of BPM Signal Processing Electronics Circuits for COD Measurement	S. SASAKI	134
Beam-based Measurement of BPM Offsets	K. SOUTOME	137
Lattice Design of SPring-8 Storage Ring with Four Magnet-free Long Straight Sections	H. TANAKA	140
Orbit Stabilization in SPring-8 Storage Ring	H. TANAKA	143
Development of a Fast Light Shutter for Beam Diagnostics	K. TAMURA	146
<i>Others</i>		
Elevation Changes of the New SUBARU Ring Magnets	S. MATSUI	148
About Realignment of New SUBARU Ring and Its Transport Line	C. ZHANG	151
Preliminary Simulation of Low Energy Positrons Behavior in Matter with Code Named LEPRE	J. SCHIMIZU	154

3-2 Experimental Facilities

Insertion Device

Control System for an APPLE Type Undulator	Y. HIRAMATSU	157
Dynamic Measurement of Magnet Array Phase Position in an APPLE Type Undulator	Y. HIRAMATSU	160

Front End

Ring Current and Filling Pattern Dependence of X-ray Beam Position Monitors	H. AOYAGI	163
Development of Enhanced Heat Transfer Coolant Channels for the SPring-8 Front End Components	T. MOCHIZUKI	164
The Development of Volumetric Heating Technique	S. TAKAHASHI	167
Observation of Photon Beam Oscillation by XBPM	T. KUDO	169

Detectors

On-Beamline Calibration of the MCCDX System	M. SUZUKI	171
A High Gain MSGC with a Capillary Plate	H. TOYOKAWA	174
Development of CCD-based High Resolution Imaging Detectors	N. YAGI	177
Measurement of Phosphor Persistence in X-ray Image Intensifiers	N. YAGI	178

The Behavior of Ionization Chambers and the Criterion of High Applied Voltage under the High Current Storage Ring Operation	K. SATO	179
Development of a Position Sensitive Ionization Chamber with Backgammon Electrodes as a Beam Position Monitor for SR Experiments	K. SATO	181
<i>Optics</i>		
Report on Installing Sagittal Focus Bender in Bending Magnet Beamline	Y. YONEDA	183
<i>Others</i>		
Wide Range X-ray Diffraction Station BL40B2	H. MORIYAMA	185
3-3 List of Synchrotron Radiation Experiments		186
4. Publication		
List of Symposia and Others		199
The First SPring-8 Symposium		201
The Second SPring-8 Symposium		202
SRMS-2		203
List of Publications		204
Appendices		
1. Committees		210
2. Structure of Organization		215
3. Scientific Staff		216
Erratum		221
Other Individual Activities at SPring-8^(**)		
Time-resolved X-ray Diffraction with Rotating Nanocrystal	Y. C. SASAKI	
Structure Analysis of Blastcidin S Deaminase by MAD	M. YAMAMOTO	
Determination of Photon-beam Axis at BL27SU	T. TANAKA	
<i>In situ</i> Structural Study of Electrochemically Deposited Pd Layers on Au(111) by Surface X-ray Scattering Measurements	T. KONDO	
X-ray Diffuse Scattering of the Halogen-bridged Mixed-valence Diplatinum(II,III) Complex, Pt ₂ (EtCS ₂) ₄ I	K. TORIUMI	
SiO ₂ Etching Induced by Soft X-ray from Figure-8 Undulator	O. MAIDA	
The Potentials of Synchrotron Small Angle X-ray Scattering to Study Complex Adsorption and Swelling Processes in Latexes	J. BOLZE	
Phase Behaviour of Lipid Bilayers formed by mixtures of DMPC and DHPC studied by Small Angle X-ray Scattering	J. BOLZE	
Effect of High Energy Ion-irradiation on Defect Structure in Pure	H. YUYA	
(**) These papers appear only on the Web page.		