

CONTENTS

Preface	v
Opening Address <i>H. Ejiri</i>	ix
Welcome Greetings <i>J. Kanamori</i>	xi
Research and Development for Multi-GeV High-Performance Accelerator at RCNP <i>K. Sato</i>	1
The Development of Colliders <i>A.M. Sessler</i>	8
Recent Trends in Lattice Design <i>B. Autin</i>	16
Nonlinear Beam Dynamics in Storage Rings <i>S. Y. Lee</i>	25
Prevention of Emittance Growth in Space Charge Dominated Beams <i>Y. K. Batygin</i>	33
First Operation of the Liquid-Helium-Free Superconducting Electron Cooler at the TARN II Storage Ring <i>T. Tanabe, I. Katayama, S. Ono, K. Chida, T. Watanabe, Y. Arakaki, K. Noda, T. Honma, Y. Haruyama, M. Saito, T. Odagiri and K. Hosono</i>	41
Medium Energy Electron Cooling of Ion Beams <i>J.A. MacLachlan</i>	47
Experience with Stochastic Cooling of Particle Beams <i>F. Caspers</i>	54
Cooled Heavy Ion Beams in the ESR: Diagnosis and Applications <i>B. Franzke, K. Beckert, W. Bourgeois, F. Nolden, H. Reich, A. Schwinn, M. Steckl and T. Winkler</i>	61
The Accelerator Complex of the Japanese Hadron Facility <i>Y. Mori and Y. Yamazaki</i>	68
The HIRFL-CSR Project in Lanzhou <i>J. W. Xia, W. Gu, Y.N. Rao, Y. J. Yuan, M. T. Song, B. W. Wei, Y. Yano, A. Goto, T. Katayama and S. Watanabe</i>	79

The Superconducting Ring Cyclotrons for RIKEN RI Beam Factory <i>A. Goto, T. Kubo, H. Okuno, T. Kawaguchi, T. Mitsumoto, T. Tominaka, S. Fujishima, J.-W Kim, K. Ikegami, N. Sakamoto, S. Yokouchi, T. Morikawa, Y. Tanaka and Y. Yano</i>	87
Electron and RI Beam Collision Experiments at MUSES Project <i>T. Katayama, YI Batygin, N. Inabe, K. Ohtomo, T. Ohkawa, M. Takanaka, M. Wakasugi, S. Watanabe, Y. Yano and K. Yoshida</i>	96
Performance and Perspectives on CELSIUS <i>D. Reistad</i>	106
The CRYSTAL Storage Ring: Design and Perspectives <i>L. Tecchio, G. Bisoffi, G. Ciullo, A. Dainelli, M.F. Moisio, A. Pisent, M. Poggi, A. Atutov, R. Calabrese, V. Guidi, P. Lenisa, E. Mariotti, L. Moi, A. Burov, N.S. Dikansky, D. V. Pestrikov, V. V. Parkhomchuk V. T. Clauser, G. Lamanna, Stagno, V. Variale, G. Di Massa, M.R. Masullo and V. G. Vaccaro</i>	116
Superconducting Accelerator Magnets <i>S. Wolff</i>	121
Internal Targets <i>C. Ekström</i>	129
Toward an Ultimate Synchrotron Power Supply <i>M. Kumada</i>	137
1.2 GeV Stretcher-Booster Ring Project at Tohoku University <i>T. Tamae</i>	145
New SUBARU — Isochronous Ring <i>A. Ando</i>	151
A 2-TeV Muon Collider Ring Lattice <i>A. Garren and C. Johnstone</i>	158
The Heavy Ion Storage Ring TSR and the High Current Injector at MPI Heidelberg <i>M. Grieser, F. Albrecht, G. Barking, M. Beutelspacher, R. Cee, R. Grimm, R. von Hahn, L. Knoll, J. Linkemann, M. Madert, H.-J. Miesner, R. Repnow, Dl Schwalm, Kl Tetzlaff, Rl Wester and A. Wolf</i>	163

Slow Beam Extraction at HIMAC Synchrotron <i>K. Noda, A. Itano, H. Ogawa, M. Kanazawa, M. Kumada, E. Takada, M. Torikoshi, S. Minohara, S. Sato, S. Yamada, N. Araki, M. Tadokoro, K. Hiramoto and K. Sato</i>	171
Performance of the KEK 12 GeV-PS and Upgrade <i>H. Sato</i>	179
LISS: A 20 GeV Synchrotron/Storage Ring for Spin Physics <i>P. Schwandt</i>	185
The RHIC Project - Design, Status, Challenges, and Perspectives <i>J. Weil and M. Harrison</i>	198
Recent Performance of the RCNP Cyclotron <i>T. Saito, K. Sato, I. Miura, T. Yamazaki, T. Itahashi, A. Shimizu, K. Hatanaka, K. Takahisa, K. Tamura, S. Ano, M. Uraki, M. Kibayashi and H. Tamura</i>	207
Heavy-Ion Acceleration Experiments on RFQ Linac <i>N. Hayashizaki, T. Hattori, K. Sasa, T. Ito, T. Yoshida, K. Isokawa and S. Majima</i>	210
Negative Momentum Compaction Factor Experiment on the UVSOR Storage Ring <i>M. Hosaka, H. Hama, J. Yamazaki, K. Kimura and T. Kinoshita</i>	214
Microwave Instability at Transition Crossing in the KEK-PS <i>K. Takayama, D. Arakawa, J. Kishiro, K. Koba, T. Toyama and M. Yoshii</i>	218
New Devices for Generating a High Magnetic Field with a Fast Rise and Long Flat Top <i>T. Kawakubo and S. Murasugi</i>	223
Flying Wire Monitor at the KEK-PS <i>K. Koba, D. Arakawa, S. Igarashi, J. Kishiro, K. Mikawa, H. Sato, M. Shirakata, T. Toyama, M. Uota and M. Yoshii</i>	227
A Prototype Non-Resonant RF Cavity for a Medical Synchrotron <i>T. Nagayama, H. Harada and Y. Kijima</i>	230

Tuning-Free Ferrite-Loaded RF Accelerating Cavity Using Bridged-T Type All-Pass Network	234
<i>M. Yamamoto, T. Rizawa, T. Saito, H. Tamura, M. Uraki, Y. Morii, T. Yamazaki, K. Hosono, A. Shimizu, K. Hatanaka, T. Itahashi, K. Takahisa, K. Tamura, I. Miura and K. Sato</i>	
Fast Betatron Tune Controller for Circulating Beam in a Synchrotron	238
<i>T. Endo, K. Hatanaka, K. Sato, T. Saito, H. Tamura, S. Ano, I. Miura, K. Noda, M. Kanazawa, S. Yamada, H. Inoue, O. Takeda and M. Mizobata</i>	
A Flat-Top System for the RCNP AVF Cyclotron	242
<i>S. Ariyoshi, T. Saito, I. Miura, K. Sato, T. Itahashi, K. Tamura, M. Uraki and H. Tamura</i>	
Design of a Cryogenic Current Measuring Device for Low-Intensity Beams at the TARN II Storage Ring	247
<i>T. Tanabe, S. Ono, T. Watanabe, K. Hatanaka and Y. Sasaki</i>	
Nondestructive DC Beam Current Monitor with Nano-Ampere Resolution	249
<i>Y. Sasaki, K. Hatanaka, K. Sato, T. Tanabe, S. Ono, K. Noda, K. Shinada, Y. Yamada and K. Nakano</i>	
Fundamental Restriction to the Isochronous Ring FEL	252
<i>Y. Shoji, A. Ando, H. Tanaka, M. Takao and K. Soutome</i>	
Suppression Mechanisms of Microwave Instability in Quasi-Isochronous Ring	256
<i>Y. Shoji and A. Ando</i>	
Emissance Optimization of New SUBARU	260
<i>Y. Shoji, A. Ando and K. Soutome</i>	
Sextupole Correction Families of New SUBARU	265
<i>Y. Shoji, A. Ando, K. Soutome and K. Yoshida</i>	
Design Study on a Cooler-Synchrotron at RCNP	269
<i>K. Hatanaka, K. Sato, T. Saito, S. Ano, S. Ariyoshi, T. Endo, T. Itahashi, M. Kibayashi, I. Miura, Y. Sasaki, A. Shimizu, K. Takahisa, H. Tamura, K. Tamura, M. Uraki, M. Yamamoto, T. Yamazaki, A. Okada, H. Inoue and K. Hosono</i>	
Spin Dynamics Study for RHIC Polarization: Tracking Many Many Particles	272
<i>H. Wu, T. Katayama and A. Luccio</i>	

Performance of the Test Power Supply for Synchrotron Magnets <i>J. Matsui, K. Sato, K. Hatanaka, Y. Takahashi, A. Teramoto, I. Uchiki and K. Sako</i>	278
Program	283
List of Participants	287