Page

C O N T E N T S

PREFACE

I . HIGHLIGHTS OF THE YEAR	
Persistence of the $Z = 28$ shell gap around ⁷⁸ Ni: first spectroscopy of ⁷⁹ Cu L. Olivier <i>et al.</i>	· 1
Decay properties of neutron-rich nuclei around mass $A = 100$ S. Nishimura <i>et al.</i>	- 2
Discovery of new isotopes ^{81, 82} Mo and ^{85, 86} Ru and a determination of the particle instability of ¹⁰³ Sb	. 3
Discovery of ⁷² Rb: A nuclear sandbank beyond the proton drip line H. Suzuki <i>et al.</i>	• 4
Determination of fusion barrier distributions from quasielastic scattering cross sections towards superheavy nuclei synthesis	. 5
Direct mass measurement of neutron-rich calcium isotopes, ^{55–57} Ca	· 6
Observation of new neutron-rich isotopes among flssion fragments from in-flight flssion of 345 MeV/nucleon ²³⁸ U: search for new isotopes conducted concurrently with decay measurement campaigns	. 7
Identication of New Neutron-rich Isotopes in the Rare-Earth Region Produced by 345 MeV/nucleon ²³⁸ U ······ N. Fukuda <i>et al.</i>	. 8
Direct mass measurement of a $T_{1/2} = 10$ ms nucleus with a relative precision of 10^{-7} level M. Wada <i>et al.</i>	. <u>ç</u>
Supernova equation of state based on realistic nuclear forces	· 10
Single electron yields of charm and bottom hadron decays in central Au+Au collisions at $\sqrt{s_{NN}} = 200 \text{ GeV} \cdots$ K. Nagashima <i>et al.</i>	· 11
Are two nucleons bound in lattice QCD for heavy quark masses? T. Iritani	· 12
Origin of the fake eigen energy of the two-baryon system in lattice QCD T. Iritani	· 13
$\Lambda_c \to N$ form factors from lattice QCD and phenomenology of $\Lambda_c \to n\ell^+ \nu_\ell$ and $\Lambda_c \to p \ \mu^+ \mu^-$ decays \cdots S. Meinel	· 14
Lattice QCD calculation of neutral <i>D</i> -meson mixing matrix elements E. Neil	• 15
A prototype novel laser-melting sampler for analyzing ice cores with high depth resolution and high throughput M. Maruyama <i>et al.</i>	• 16
Production of vanadium-ion beam from RIKEN 28 GHz SC-ECRIS ······ Y. Higurashi <i>et al.</i>	· 17
Doughnut-shaped gas cell for KEK Isotope Separation System ······ Y. Hirayama <i>et al.</i>	· 18
Development of an off-axis electron beam source for cold highly charged ion generation in a linear combined ion trap N. Kimura	· 19
TINA - a silicon tracker for transfer reactions P. Schrock <i>et al</i> .	· 20
Spot size estimation for laser aiming system of ion microbeam irradiation using a tapered glass capillary optics	· 21
Magnetic moments and ordered states in pyrochlore iridates Nd ₂ Ir ₂ O ₇ and Sm ₂ Ir ₂ O ₇ studied by muon-spin relaxation R. Asih and I. Watanabe	· 22

Effect of Fe substitution on Cu-spin dynamics in the electron-doped cuprates $Eu_{2-x}Ce_xCuO_{4+\alpha-\delta}$ Risdiana	23
One-pot three-component double-click method for synthesis of [⁶⁷ Cu]-labeled biomolecular radiotherapeutics K. Fujiki and K. Tanaka <i>et al.</i>	24
Cross section measurement to produce ⁹⁹ Mo through alpha-induced reactions on natural Zr	25
Analysis of carbon ion-induced mutations by exome sequencing of an unselected rice population	26
Effect of LET on mutational function revealed by whole-genome resequencing of <i>Arabidopsis</i> mutants	27

${\rm I\hspace{-0.5mm}I}$. RESEARCH ACTIVITIES I (Nuclear, Particle and Astro-Physics)

1. Nuclear Physics	
Single-neutron knockout from ²⁰ C and the structure of ¹⁹ C····· J.W. Hwang <i>et al</i> .	29
Observation of isoscalar and isovector dipole excitations in ²⁰ O	30
Neutron-neutron correlation in Borromean nucleus ¹¹ Li via the (p, pn) reaction \cdots Y. Kubota <i>et al.</i>	31
Differential cross section of proton elastic scattering from neutron-rich ⁶ He at 200 <i>A</i> MeV and high momentum transfers	32
Two methods for invariant mass reconstruction from events with multiple charged particles	33
Electric dipole responses of ⁵⁰ Ca and ⁵² Ca ······ Y. Togano <i>et al.</i>	34
Many-neutron systems: search for superheavy ⁷ H and its tetraneutron decay	35
Low-energy dipole response of the halo nuclei ^{6, 8} He C. Lehr and T. Aumann <i>et al.</i>	36
Investigation of the tetraneutron by quasi-free α -knockout from ⁸ He····· F. Schindler and T. Aumann <i>et al.</i>	37
Shell evolution at $N = 40$ towards ⁶⁰ Ca: Spectroscopy of ⁶² Ti····· M. L. Cortés <i>et al.</i>	38
Spectroscopy of Sc isotopes between the $N = 34$ and $N = 40$ subshell closures \cdots P. Koseoglou <i>et al.</i>	39
Production of very neutron-rich nuclei via two-proton knockout reaction with deuterium operation of MINOS M. Miwa <i>et al.</i>	40
Study on the impact parameter dependence on the trigger efficiency for the $S\pi RIT$ experiment	41
Status of collective flow analysis for SπRIT-TPC experiment	42
Gamma decay of unbound neutron-hole states in ¹³³ Sn V. Vaquero <i>et al</i> .	43
Shell evolution beyond $Z = 28$ and $N = 50$: spectroscopy of ^{81–84} Zn C.M. Shand and Zs. Podolyak <i>et al.</i>	44
Robustness of the $N = 34$ shell closure: First spectroscopy of ⁵² Ar H. N. Liu <i>et al.</i>	45
First Spectroscopic study of ⁵⁶ Ca S. Chen and F. Browne <i>et al</i> .	46
Triaxiality of neutron-rich ^{84,86,88} Ge from low-energy spectra M. Lettmann <i>et al.</i>	47

Precise measurement of the ⁴ He(⁸ He, ⁸ Be) reaction S. Masuoka <i>et al.</i>	48
Measurement of ^{77, 79} Se(d, p) ^{78, 80} Se reactions as a surrogate for ⁷⁹ Se(n , γ) ⁸⁰ Se reaction	49
Spallation reaction study of ¹³⁶ Xe on proton, deuteron and carbon X. Sun and H. Wang <i>et al.</i>	50
Measurements of new beta-delayed neutron emission properties around doubly magic ⁷⁸ Ni	51
Beta-neutron-gamma spectroscopy of beta-delayed neutron emitters around doubly-magic ⁷⁸ Ni	52
Measuring the β -decay properties of Na-Al species located at the neutron drip line P. V. Phong <i>et al.</i>	53
Measurement of β -delayed neutron emission probabilities for progenitors of the $A = 130$ r-process abundance peak J. Liu and V. H. Phong <i>et al.</i>	54
β -delayed neutron emission probabilities for understanding the formation of the r-process rare-earth peak G. G. Kiss <i>et al.</i>	55
Study of the superallowed $0^+ \rightarrow 0^+ \beta$ decay of ⁷⁰ Br····· A. I. Morales <i>et al.</i>	56
Results on ⁶⁴ As decay measured at BigRIPS B. Rubio	57
γ rays identified in the decay chain of ⁶⁴ Se measured with EURICA ······ P. Aguilera and F. Molina <i>et al.</i>	58
Isomer-decay spectroscopy of ⁶⁷ Fe and reaction-channel dependency of isomeric ratios from interactions in the MINOS proton target	59
Beta-decay half-lives of ⁷⁸ Kr fragments from Cu to Ge T. Goigoux <i>et al.</i>	60
Isomer spectroscopy of ^{92, 94} Se in the SEASTAR 2015 experiment C. Lizarazo <i>et al.</i>	61
γ -decaying isomers and isomeric ratios in the ¹⁰⁰ Sn region J. Park <i>et al.</i>	62
Coexisting Single-Particle and Collective Structures in ¹³⁷ Sb J. Keatings	63
Investigation of octupole correlations of neutron-rich $Z \sim 56$ isotopes by β - γ spectroscopy R. Yokoyama <i>et al.</i>	64
First result of elastic electron scattering from ¹³² Xe at the SCRIT facility K. Tsukada <i>et al.</i>	65
Complete set of deuteron analyzing powers from $\vec{d}p$ elastic scattering at 190 MeV/nucleon K. Sekiguchi <i>et al.</i>	66
Single-particle states and collective modes: magnetic moment of ^{75m} Cu	67
Track reconstruction of recoil particles in CAT-S at RIBF113: ¹³² Sn(d,d') measurement ····· S. Ota <i>et al</i> .	68
Atomic masses of intermediate-mass neutron-deficient nuclei with sub-ppm precision via multireflection time-of-flight mass spectrograph	69
Decay measurement of ²⁸³ Cn produced in the ²³⁸ U(⁴⁸ Ca,3n) reaction using GARIS-II D. Kaji <i>et al.</i>	70
Yield development of KEK isotope separation system Y.X. Watanabe <i>et al.</i>	71
The structure and decay of high- <i>K</i> isomers in ¹⁸⁷ Ta P.M. Walker <i>et al.</i>	72

Nuclear spectroscopy of ^{196,197,198} Ir isotopes M. Mukai <i>et al.</i>	73
Ground-state electromagnetic moments of ²¹ O····· A. Gladkov <i>et al.</i>	74
β-NQR measurement of the ²³ Ne ground state H. Nishibata <i>et al.</i>	75
^{26m}Al proton resonant elastic scattering with CRIBD. Kahl and H. Shimizu <i>et al.</i>	76
Development of a high density ⁷ Be beam at CRIB ······ A. Inoue	77
Experimental setup of the ⁶ He(p, n) measurement at HIMAC and identification of the charge-exchange (p, n) reaction channel. M. Sasano <i>et al.</i>	78
RI beam production at BigRIPS in 2017 D.S. Ahn <i>et al.</i>	79
Observation of new neutron-rich Mn, Fe, Co, Ni, and Cu isotopes in the vicinity of ⁷⁸ Ni ······ T. Sumikama <i>et al.</i>	81
New isotope of ³⁹ Na and the neutron dripline of neon isotopes using a 345 MeV/nucleon ⁴⁸ Ca beam D.S. Ahn <i>et al.</i>	82
Exploration of the ⁶⁰ Ca region ····· O.B.Tarasov <i>et al</i> .	83
New isotope search conducted concurrently with BRIKEN campaign Y. Shimizu <i>et al.</i>	84
Production of neutron-rich nuclei in the vicinity of <i>N</i> = 126 by means of projectile fragmentation of 345 MeV/nucleon ²³⁸ U······ N. Fukuda <i>et al.</i>	85
Cross-section measurement of neutron-rich Pd isotopes produced from an RI beam of ¹³² Sn at 280 MeV/nucleon H. Suzuki <i>et al.</i>	86
2. Nuclear Physics (Theory)	
Mesic nuclei with a heavy antiquark ······ Y. Yamaguchi and S. Yasui	87
Interplay between isoscalar and isovector correlations in neutron-rich nuclei I. Hamamoto and H. Sagawa	88
New interpretation of pairing anti-halo effect K. Hagino and H. Sagawa	89
Role of deformation in odd-even staggering in reaction cross sections for ^{30,31,32} Ne and ^{36,37,38} Mg isotopes	90
Enhancement of pairing fluctuation in neutron-rich Mg isotopes studied by Skyrme QRPA calculation M. Yamagami	91
Testing constant-temperature approach for nuclear level density	92
Giant dipole resonance and shape transitions in hot and rotating ⁸⁸ Mo A. K. Rhine Kumar <i>et al.</i>	93
Level density and thermodynamics in hot rotating ⁹⁶ Tc nucleus ······ B. Dey <i>et al.</i>	94
Shell-model description of magnetic dipole bands in ¹⁰⁵ Sn M. Honma <i>et al.</i>	95
Effect of pairing on the wobbling motion in odd-A nuclei K. Sugawara-Tanabe and K. Tanabe	96
Application of a Coulomb energy density functional for atomic nuclei: Case studies of local density approximation and generalized gradient approximation T. Naito <i>et al.</i>	97

Joint project for large-scale nuclear structure calculations in 2017 · · N. Shimizu <i>et al.</i>) 8
3. Nuclear Data		
Proton- and deuteron-induced reactions on ¹⁰⁷ Pd and ⁹³ Zr at 20–30 M. Dozono <i>et al.</i>	/leV/nucleon ····· 9) 9
Measurement of isotopic production cross sections of proton- and d at 200 MeV/nucleon S. Kawase <i>et al.</i>	euteron-induced spallation reactions on ⁹³ Zr 10)0
Measurement of double-differential neutron yields for 345 MeV/nu K. Sugihara <i>et al.</i>	cleon 238 U incidence on Cu····· 10)1
Construction of implantation beam line for the verification test of ¹⁰ Y. Miyake <i>et al.</i>	⁷ Pd transmutation 10)2
A study of additional uncertainties from fit boundaries using a new M. Rosenbusch <i>et al</i> .	code for multi-reflection time-of-flight data 10)3
EXFOR Compilation of RIBF data in 2017 D. Ichinkhorloo <i>et al.</i>)4
Monte-Carlo simulation of transmutation based on experimental nu S. Ebata <i>et al.</i>	clear data)5
4. Hadron Physics		
Final result of nuclear dependence on A_N for forward neutron produ at $\sqrt{s_{NN}} = 200 \text{ GeV} \cdots$ M. Kim <i>et al.</i>	ction in polarized <i>p</i> +A collisions)7
Coulomb-nuclear interference effects on forward π^0 production in p G. Mitsuka	olarized-proton–nucleus collisions)8
Preparatory work toward measurement of the azimuthal anisotropy at $\sqrt{s_{NN}} = 200 \text{ GeV} \cdots$ Y. Ueda <i>et al.</i>	of heavy quark electrons in Au+Au collisions)9
Study of azimuthal anisotropy of charged particles in Au+Au collisi R. Nishitani	ions at $\sqrt{s_{NN}} = 200 \text{ GeV}$ at RHIC-PHENIX	10
Single transverse spin asymmetry (A_N) in polarized $p + Au$ collision Y. H. Yoo <i>et al</i> .	s at $\sqrt{s_{NN}} = 200 \text{ GeV}$ 11	11
Operation summary of the RHICf experimet J. S. Park		12
RHICf-STAR common operation in $\sqrt{s} = 510$ GeV proton-proton c M. Ueno <i>et al</i> .	ollisions····· 11	13
Beam polarization monitor in $\sqrt{s} = 510$ GeV polarized proton-proto M. H. Kim	on collisions at the RHICf experiment 11	14
DAQ performances of the RHICf operation in 2017 H. Menjo <i>et al.</i>		15
Fragmentation function measurements in Belle R. Seidl <i>et al.</i>		16
Status of measurements of Drell–Yan process at FNAL SeaQuest… K. Nakano <i>et al.</i>		17
Design of the innermost layer module of the silicon tracking detectory. Yamaguchi <i>et al.</i>	or for the sPHENIX experiment	18
5. Hadron Physics (Theory)		
Covariant calculation of quark distribution functions in ρ^+ -meson \cdots Y. Ninomiya <i>et al.</i>		19
ΣN and ΛN interactions from 2 + 1 flavor lattice QCD with almost p H. Nemura <i>et al.</i>	physical masses	20
<i>P</i> -wave $\pi\pi$ scattering and the ρ resonance from lattice QCD C. Alexandrou <i>et al.</i>		21

Computing the nucleon charge and axial radii directly at $Q^2 = 0$ in lattice QCD N. Hasan <i>et al.</i>	122
6. Particle Physics	
Phenomenology of $\Lambda_b \to \Lambda_c \tau \overline{\nu}$ using lattice QCD calculations A. Datta <i>et al.</i>	123
A pilot study of proton decay matrix elements at physical quark mass Y. Aoki <i>et al.</i>	124
Unified scenario for composite right-handed neutrinos and dark matter E. Rinaldi <i>et al.</i>	125
Empirical formulae of the masses of elementary particles Y. Akiba	126
Exact algebraic separability criterion for two-qubit systems K. Fujikawa and C. H. Oh	127
Conformal Quantum Mechanics and Sine-Square Deformation T. Tada	128
7. Astrophysics and Astro-Glaciology	
Measurements of nitric acid formation in humidified air by proton irradiation Y. Nakai <i>et al.</i>	129
8. Accelerator	
Cooling down test of prototype accelerator system based on SC-QWR K. Ozeki <i>et al.</i>	131
Transfer of GARIS-II and charge-state multiplier (CSM) cavities Y. Watanabe <i>et al</i> .	132
Magnet power supplies for GARIS-II	133
Residual Gas Effect in LEBT on the Transverse Emittance of Multiply-Charged Heavy Ion Beams Extracted from ECRIS T. Nagatomo <i>et al.</i>	134
An innovative method for ¹² C ⁴⁺ suppression in ¹⁸ O ⁶⁺ beam production in an electron cyclotron resonance ion source H. Muto <i>et al.</i>	135
Renewal of control system and driving mechanism of cavity tuning devices for RILAC Rebuncher	136
Installation of new central region for energy upgrade at RIKEN AVF cyclotron J. Ohnishi <i>et al.</i>	137
Improvement of injection beam-orbit analysis of AVF cyclotron Y. Kotaka <i>et al.</i>	138
Radiation monitoring for cycrotrons in RIBF M. Nakamura <i>et al</i> .	139
Update plan of the existing beam interlock system for the RIBF M. Komiyama <i>et al.</i>	140
Upgrade of server systems for RIBF control	141
Maintenance of vacuum equipment of accelerators S. Watanabe <i>et al.</i>	142
Operation report 2017 for Nishina and RIBF water-cooling systems	143
Measurement of electron density and temperature in plasma window with diameter of 10 mm	144
9. Instrumentation	
Pulse-shape data taking with double-sided strip silicon detector	145

Stress Test of digital DAQ system for PANDORA J. GAO <i>et al.</i>	146
Development of a high resolution neutron detector HIME ····· A. T. Saito	147
Development and test of the dual-gain ASIC preamplifier boards for the GLAST silicon-strip detectors V. Panin <i>et al.</i>	148
A silicon vertex tracker for the 8 He(p , $p\alpha$)4 n reaction F. Dufter <i>et al.</i>	149
First implementation of the new segmented implantation detector for decay studies with BRIKEN array R. Grzywacz	150
Preparation of the VANDLE array for beta decay studies at RIBF S. Go <i>et al.</i>	151
Timing performance of a mirror-type MCP detector use for mass measurements at the Rare RI Ring	152
Delay-line Anode for MCP-based Position Sensitive Detector at Rare RI Ring H. F. Li <i>et al.</i>	153
Improvement of detection efficiency of time-of-flight detector with large effective area	154
Performance test of low-pressure MWDC for missing mass spectroscopy at BigRIPS T. Nishi <i>et al.</i>	155
Development of the gaseous Xe scintillation detector J. Zenihiro <i>et al.</i>	156
Development of α-ToF detector for correlation measurement of atomic masses and decay properties of superheavy nuclides T. Niwase <i>et al.</i>	157
DALI2+ at the RIKEN Nishina Center RIBF I. Murray <i>et al.</i>	158
Improvement of the maintenance environment for Ge detectors	159
Overview of silicon strip sensor detector development for sPHENIX experiment I. Nakagawa <i>et al.</i>	160
Development of long multi-layered flexible cable of silicon sensor detector for sPHENIX experiment	161
Research and development of very long and dense data bus for sPHENIX INTT detector T. Hachiya <i>et al.</i>	162
Commissioning of the OEDO beamline S. Michimasa <i>et al.</i>	163
Optimization of sextupole magnets in the BigRIPS fragment separator for a high-purity RI beam T. Sumikama <i>et al.</i>	164
Improvement of transmission efficiency for the rare-RI ring Y. Yamaguchi <i>et al.</i>	165
Investigation of transmission efficiency loss at Rare-RI Ring S. Naimi and Y. Yamaguchi <i>et al.</i>	166
Isochronous condition in Rare RI Ring Y. Abe <i>et al.</i>	167
Present status of data analysis of commissioning experiment using exotic nuclei D. Nagae <i>et al.</i>	168
The progress of on-line commissioning study on parasitic production of low-energy RI-beam system (PALIS) at BigRIPS T. Sonoda	169
Improved wide bandwidth mass analysis with MRTOF-MS P. Schury and M. Wada <i>et al.</i>	170

Surface temperature measurements of the high power beam dump of the BigRIPS separator	171
Thermo-mechanical calculations of the high power beam dump of the BigRIPS separator	172
Present status of the beam transport line from SRC to BigRIPS	173
Present status of ERIS at the SCRIT electron scattering facility T. Ohnishi <i>et al.</i>	174
Progress in the dc-to-pulse converter FRAC M. Wakasugi <i>et al.</i>	175
Improvements on the racetrack microtron at SCRIT	176
Electron energy stabilization at the electron gun in RTM M. Watanabe <i>et al.</i>	177
High pressure cold gas target system with large capacity for low-energy beam at RIBF R. Nakajima and S. Koyama	178
Resonance ionization spectroscopy of Nb utilizing a narrowband injection-locked Titanium:Sapphire laser M. Reponen <i>et al.</i>	179
Development of co-located ¹²⁹ Xe and ¹³¹ Xe nuclear spin masers with external feedback scheme T. Sato <i>et al.</i>	180
Searching optimum measurement conditions of the laser-microwave double resonance for the atoms stopped in superfluid helium	181
Optimizing the conditions to measure the hyperfine splitting in the μ p ground state ····· A. Vacchi, K. Ishida and E. Mocc	182
Neutron spin filter with dynamic nuclear polarization using photo-excited triplet electron for T-violation search in a compound nucleus S. Takada <i>et al.</i>	183
Trigger selector system for BigRIPS DAQ H. Baba <i>et al.</i>	184
Beam preparation for industrial utilization of Ar, Kr, Xe, and Au beams	185
Evaluation of radioactivity in semiconductor samples by Kr-ion beam irradiation T. Kambara and A. Yoshida	186
Computing and network environment at the RIKEN Nishina Center	187
CCJ operations in 2017 S. Yokkaichi <i>et al.</i>	188

II. RESEARCH ACTIVITIES II (Material Science and Biology)

1. Atomic and Solid State Physics (Ion)
Anomalous peak effect in 122-type iron-based superconductors T. Tamegai <i>et al.</i>
Evolution of Kr precipitates in Kr-implanted Al as observed by the channelling method
Magnetism of the antiferromagnetic spin-3/2 dimer compound CrVMoO ₇ having an antiferromagnetically ordered state
Investigation of single-event effect observed in GaN-HEMT····· Y. Nakada <i>et al</i> .
Profile measurements of laser beam for the aiming system of ion microbeam irradiation with glass capillaries K. Hirose <i>et al.</i>

2. Atomic and Solid State Physics (Muon)	
First measurement of magnetic correlations in T*-214 cuprate K. M. Suzuki <i>et al.</i>	195
Nano-size effect on Néel temperature and magnetic ordering of La_2CuO_4 S. Winarsih <i>et al.</i>	196
Effect of Supercell Calculation on Muon Sites in La ₂ CuO ₄ ····· M. R. Ramadhan <i>et al.</i>	197
Modulated Kubo-Toyabe functions to study fluctuated weak magnetism and muon diffusion at pseudogap state of underdoped La _{2-x} Sr _x CuO ₄ M. D. Umar	198
Study of Implanted Muons in YBa ₂ Cu ₃ O ₆ I. Ramli <i>et al.</i>	199
μ SR study of FeSe _{1-x} S _x around nematic critical point ······ Y. Tanabe <i>et al</i> .	200
Caged-type superconductor $Sc_5Ru_6Sn_{18}$ probed by μSR L. J. Chang <i>et al.</i>	201
Spin fragmentation in Nd ₂ Ir ₂ O ₇ and its carrier-doped dependence R. Asih and I. Watanabe	202
Spin dynamics in the $S = 1/2$ zigzag spin chain magnets $K_2CuCl_2SO_4$ and $Na_2CuCl_2SO_4$ M. Fujihala <i>et al.</i>	203
Study of Magnetic Ordering by <i>p</i> -orbital in RbO ₂ using μ SR F. Astuti	204
Muon spin relaxation study on the new organic spin liquid material λ -(STF) ₂ GaCl ₄ ····· T. Minamidate <i>et al.</i>	205
Superconducting gap symmetry in organic superconductor λ -(BETS) ₂ GaCl ₄ studied by μ SR with DFT······ D. P. Sari <i>et al.</i>	206
Effect of light irradiation on charge carrier dynamics in active layer hybrid solar cells L. Safriani	207
Electron Transport Studies in Biological Molecules with respect to Ageing Science H. Rozak and I. Watanabe	208
Approach to determination of muon stopping sites in proteins	209
Time dependence of dipole width obtained by zero-field µSR for Al and Al-0.5 at.%Si	210
μ SR investigation of atomic structure and photocatalytic properties of defects in rutile TiO ₂ crystal ······· H. Ariga-Miwa <i>et al</i> .	211
Observation of Li in graphite by muonic x-rays I. Umegaki <i>et al.</i>	212
Development of the in-situ electronic-field-application μ SR technique and test application to multiferroic systems R. Asih and I. Watanabe	213
Development of an intense mid-infrared coherent light source for muonic hydrogen spectroscopy	214
3. Radiochemistry and Nuclear Chemistry	
Solid-liquid extraction of Mo and W by Aliquat 336 from HCl solutions toward extraction chromatography experiments of Sg	215
Reversed-phase chromatography for element 105, Db with Aliquat 336 resin from 2.7 M and 27 M HF solutions D. Sato <i>et al.</i>	216
Solvent extraction of Rf in the Aliquat 336/HCl system using flow-type extraction apparatus	217

Anion and cation exchanges of Zr, Hf, and Th in H_2SO_4 for chemical study of Rf \cdots 218 T. Yokokita *et al.*

	Solvent extraction behavior of Zr and Hf with 2-furoyltrifluoroacetone as model experiments for rutherfordium (element 104) K. Ooe <i>et al.</i>	219
	Activation cross sections of α -induced reactions on ^{nat} In for ^{117m} Sn production M. Aikawa <i>et al.</i>	220
	Prodution cross sections of ¹⁶⁹ Yb and ^{167,168,170} Tm isotopes in deuteron-induced reactions on ¹⁶⁹ Tm	221
	Production cross sections of ${}^{177g}Lu$ in α -induced reactions on ${}^{nat}Yb$ M. Saito <i>et al.</i>	222
	Activation cross sections of alpha-induced reactions on natural tungsten for ¹⁸⁶ Re and ¹⁸⁸ Re production	223
	Measurement of excitation functions of the ${}^{206/207/208}$ Pb $({}^{11}$ B, $x){}^{212}$ Fr reactions Y. Komori <i>et al.</i>	224
	Improved method for preparation of no-carrier added ²⁸ Mg tracer ······ H. Kikunaga <i>et al.</i>	225
	Production of no-carrier-added barium tracer of ^{135m} Ba····· S. Yano <i>et al.</i>	226
	Trial of astatine separation using column chromatography H. Ikeda <i>et al</i> .	227
	Wet chemistry processes utilized in development of ²¹¹ Rn/ ²¹¹ At generator for targeted alpha therapy	228
	Development of Np standard material for accelerator mass spectrometry A. Yokoyama <i>et al.</i>	229
	⁹⁹ Ru Mössbauer spectroscopy of Na-ion batteries of Na ₂ RuO ₃ (IV)	230
	Fractionation of Zr-Hf in ferromanganese crusts J. Inagaki <i>et al.</i>	231
	Desorption of ⁸⁸ Zr from soil with artificial digestive juices T. Kubota <i>et al.</i>	232
4	. Radiation Chemistry and Biology	
	Recruitment of Rad51 and phosphorylated DNA-PKcs after heavy-ion irradiation of human normal fibroblast M. Izumi <i>et al.</i>	233
	Low-dose high-LET heavy ion-induced bystander signaling (IV) M. Tomita <i>et al.</i>	234
	Results of whole-genome analysis of mahogany mutant	235
	Chromosomal rearrangement induced by high-LET heavy-ion-beam irradiation in <i>Parachlorella kessleri</i>	236
	Trials of mutation detection programs to detect structural variations induced by heavy-ion beams in rice R. Morita <i>et al.</i>	237
	Comparison of LET effect of heavy-ion beam irradiation in rice	238
	Relationship between early-flowering mutation and LET-Gy combination of ion beam irradiation in durum wheat K. Murai <i>et al.</i>	239
	Analysis of DNA damage response in <i>Cyrtanthus</i> pollen after Ar-ion beam irradiation T. Hirano <i>et al.</i>	240
	Isolation of C ₄ <i>Flaveria bidentis</i> mutants with reduced quenching of chlorophyll fluorescence from heavy-ion-beam-mutagenized M ₂ population	241
	Development of flower color mutations from the light-yellow mutant of spray-mum 'Southern Chelsea' by heavy-ion beam re-irradiation M. Tamari <i>et al.</i>	242

Effects of heavy-ion-beam irradiation on survival in Eisenia arborea	243
Argon-ion-beam mutagenesis of the plant-symbiotic edible mushroom <i>Tricholoma matsutake</i>	244
Current status of development of ion microbeam device with tapered glass capillary for biological use T. Ikeda <i>et al.</i>	245

$\mathbbm{W}.$ Operation records

Program Advisory Committee meetings for nuclear physics and for materials and life experiments K. Yoneda <i>et al.</i>	247
Beam-time statistics of RIBF experiments	248
Electric power condition of Wako campus in 2017 E. Ikezawa <i>et al.</i>	249
Operation report on the ring cyclotrons in the RIBF accelerator complex M. Nishimura <i>et al.</i>	250
RILAC operation E. Ikezawa <i>et al.</i>	251
Operation report on the RIKEN AVF cyclotron for 2017 R. Koyama <i>et al.</i>	252
Present status of the liquid-helium supply and recovery system T. Dantsuka	253
Operation of the BigRIPS cryogenic plant K. Kusaka <i>et al.</i>	254
Radiation safety management at RIBF K. Tanaka <i>et al</i> .	255
Operation of the Pelletron tandem accelerator T. Ikeda <i>et al.</i>	257
Operation of fee-based activities by the industrial cooperation team	258

V. EVENTS

ImPACT-OEDO workshop H. Otsu <i>et al.</i>	259
Nishina School 2017 T. Motobayashi and H. Ueno	260
IUPAP Meetings and Nuclear Science Symposium at Nihon-Bashi	261
International conference on nuclear physics at storage rings (STORI2017) M. Wakasugi	262
International symposium on RI beam physics in the 21st century: 10th anniversary of RIBF T. Isobe <i>et al.</i>	263

$\mathbb{V}\!\mathrm{I}.$ ORGANIZATION AND ACTIVITIES OF RIKEN NISHINA CENTER

(Activities, Members, Publications & Presentations)

1. Organization ·····	265
2. Finances	266
3. Staffing	266
4. Research publication	267
5. Management ·····	268
6. International Collaboration	273

7. Awards ·····	275
8. Brief overview of the RI Beam Factory	276
Theoretical Research Division	
Quantum Hadron Physics Laboratory	278
Strangeness Nuclear Physics Laboratory	283
Sub Nuclear System Research Division	
Radiation Laboratory	286
Advanced Meson Science Laboratory	291
RIKEN BNL Research Center	297
Theory Group	298
Computing Group	300
Experimental Group	307
RIKEN Facility Office at RAL	311
RIBF Research Division	
Radioactive Isotope Physics Laboratory	315
Spin isospin Laboratory	324
Nuclear Spectroscopy Laboratory	330
High Energy Astrophysics Laboratory	335
Astro-Glaciology Research Unit	339
Research Group for Superheavy Element ·····	342
Superheavy Element Production Team	345
Superheavy Element Device Development Team	347
Nuclear Transmutation Data Research Group	349
Fast RI Data Team	350
Slow RI Data Team ·····	352
Muon Data Team ·····	353
High-Intensity Accelerator R&D Group	355
High-Gradient Cavity R&D Team	356
High-Power Target R&D Team ·····	358
Accelerator Group	359
Accelerator R&D Team ·····	360
Ion Source Team ·····	362
RILAC Team ·····	363
Cyclotron Team ·····	364
Beam Dynamics & Diagnostics Team	366
Cryogenic Technology Team	368
Infrastructure Management Team ······	369
Instrumentation Development Group ·····	370
SLOWRI Team ·····	371
Rare RI-ring Team	375
SCRIT Team	378
Research Instruments Group	381
BigRIPS Team	382
SAMURAI Team	387

Detector Team ·····	392
Accelerator Applications Research Group	394
Ion Beam Breeding Team ·····	395
RI Applications Team ·····	399
User Liaison and Industrial Cooperation Group	405
RIBF User Liaison Team (User Support Office)	406
Industrial Cooperation Team	407
Safety Management Group	409
Partner Institutions	411
Center for Nuclear Study, Graduate School of Science, The University of Tokyo	412
Center for Radioactive Ion Beam Sciences, Institute of Natural Science and Technology, Niigata University	424
Wako Nuclear Science Center, IPNS (Institute of Particle and Nuclear Studies),	
KEK (High Energy Accelerator Research Organization)	427
Events (April 2017 - March 2018)	430
Press Releases (April 2017 - March 2018)	431
₩. LIST OF PREPRINTS	
List of Preprints (April 2017 - March 2018)·····	433
W. LIST OF SYMPOSIA, WORKSHOPS & SEMINARS	

List of Symposia & Workshops (April 2017 - March 2018) ·····	437
List of Seminars (April 2017 - March 2018)	438