

Contents

1 Theoretical Nuclear Physics

1-1	Progress of Theoretical Nuclear Research in 2016 at IMP	Zuo Wei (3)
1-2	Hypernucleus Production in Antiproton-nucleus Collisions	Feng Zhaoqing (4)
1-3	Nuclear Fragmentation Induced by Pions at the Δ -resonance Energies	Feng Zhaoqing (6)
1-4	Isospin Dynamics on Neck Fragmentation in Isotopic Nuclear Reactions	Feng Zhaoqing (8)
1-5	Constraining Nucleon High Momentum in Nuclei	Yong Gaochan (10)
1-6	Cross-checking the Symmetry Energy at High Densities	Yong Gaochan (11)
1-7	Hollow Nuclear Matter	Yong Gaochan (12)
1-8	Surface Density of Haloes	Lee Xiguo, et al. (14)
1-9	Higgs Portal Dark Matter Models	Lee Xiguo, et al. (15)
1-10	Pion-induced Production of the $Z_c(3900)$ off a Nuclear Target	He Jun (17)
1-11	Hadronic Molecular States from $K\bar{K}^*$ Interaction	He Jun (19)
1-12	$K^*\Lambda$ Photoproduction off a Neutron	He Jun (21)
1-13	Understanding Spin Parities of $P_c(4450)$ and $Y(4274)$ in Hadronic Molecular State Picture	He Jun (22)
1-14	Role of Nucleonic Fermi Surface Depletion in Neutron Star Cooling	Dong Jianmin, et al. (24)
1-15	Research Highlight at High Energy Nuclear Physics Group	Cao Xu, et al. (25)
1-16	Role of Nucleon Resonances in the $\pi N \rightarrow \eta' N$ Reaction	Cao Xu (26)
1-17	New Topological Structure in Skyrme Model	Zou Liping, et al. (27)
1-18	Photon Polarization Tensor in a Magnetized Plasma System	Chao Jingyi, et al. (29)

2 Experimental Nuclear Physics and Nuclear Chemistry

2-1	Research Progress of Nuclear Structure Research Group	Liu Minliang (33)
2-2	Lifetime Measurement of the Low-lying Excited States $7/2_1^+$ in ^{87}Zr	Qiang Yunhua, et al. (34)
2-3	Lifetime Measurement of the First $7/2^+$ State in ^{143}Eu Based on Gas-filled Spectroscopy	Guo Song, et al. (35)
2-4	AME2016 Atomic Mass Evaluation	Wang Meng, et al. (36)
2-5	Mass Measurements of Neutron-deficient Nuclides ^{79}Y , $^{81,82}\text{Zr}$, $^{83,84}\text{Nb}$	Xing Yuanming, et al. (36)
2-6	Mass Prediction of Neutron-deficient $N = Z$ Nuclides ^{78}Y , ^{80}Zr , ^{82}Nb and ^{84}Mo	Xing Yuanming, et al. (38)
2-7	Study of Zr-Nb Cycle in Astrophysical rp-process	Xing Yuanming, et al. (40)
2-8	Direct Mass Measurements of Short-Lived $A=2Z+3$ Nuclides at CSRe	Liu Junhao, et al. (41)
2-9	Data Acquisition System for Schottky Resonator at CSRe	Wang Qian, et al. (42)
2-10	Progress of the Nuclear Astrophysics Group in 2016	Tang Xiaodong (43)
2-11	Stellar β -decay Rate of ^{134}Cs	Li Kuoang, et al. (43)
2-12	Geant4 Simulation for the $^{14}\text{O}(\alpha, p)^{17}\text{F}$ Measurement Using Time Projection Chamber (TPC)	Hu Jun, et al. (44)
2-13	New Solution to Cosmological Lithium Problem	Hou Suqing, et al. (45)
2-14	Measurement of $^{12}\text{C}+^{13}\text{C}$ Fusion Cross Section around Coulomb Barrier Energies and Estimation of the Systematic Error of the Statistical Model	Chen Zhijun, et al. (47)
2-15	$^{16}\text{O}+^{40}\text{Ar}$ Experiment Using TPC at RIBLL1	Zhang Ningtao, et al. (48)
2-16	Experimental Study of $^{13}\text{N}(\alpha, p)^{16}\text{O}$ at the Stellar Energies	Lin Weiping, et al. (49)
2-17	Method for Determination of Deuterium Impurity in Helium Beam	Chen Han, et al. (50)
2-18	Research Progress in the Exotic Nuclei Group	Liu Zhong, et al. (52)
2-19	First Identification of the $\nu h_{11/2}$ band in ^{117}Ba	Ding Bing, et al. (53)
2-20	α -decay Studies of ^{220}Pa Using Digital Pulse Processing Technique	Huang Tianheng, et al. (55)
2-21	In-beam γ -ray Spectroscopy of Mn Isotopes around $N=40$	Liu Xiaoyu, et al. (57)
2-22	Fine Structure in the α Decay of ^{223}U	Sun Mingdao, et al. (58)
2-23	Study of the Octupole Deformation Properties in ^{224}U Using the RDT Method	Zhang Wenqiang, et al. (59)
2-24	Research Progress of Heavy Ion Reaction Group	Wang Jiansong, et al. (60)
2-25	Revisit of Density, Temperature, Symmetry Energy Determination Based on MFM Formalism	Liu Xingquan, et al. (61)
2-26	Experimental Measurement of ^{12}N , ^{13}O on $^{\text{nat}}\text{Pb}$ Elastic Scattering Above the Coulomb Barriers	Liu Xingquan, et al. (63)
2-27	Experimental Measurement of ^7Be , ^8B and ^9C on $^{\text{nat}}\text{Pb}$ Elastic Scattering Above the Coulomb Barriers	Yang Yanyun, et al. (64)
2-28	Charmonium Production from Two-photon Processes in Relativistic Heavy Ion Collisions	Yu Gongming, et al. (65)

2-29	Preparation of Uranium Monocarbide Powder by Carbothermic Reduction	Guo Hangxu, et al. (66)
2-30	Manufacturing of Uranium Microspheres Using Improved Internal Gelation Process	Li Sa, et al. (67)
2-31	An Improved Internal Gelation Process for Fabricating CeO ₂ Ceramic Microspheres as a Surrogate of PuO ₂ Nuclear Fuels	Tian Wei, et al. (68)
2-32	Release and Gathering of Semi-volatile Fission Products (Mo, Te) in the UO ₂ Simulated Fuel	Tan Cunmin, et al. (69)
2-33	Synthesis of Amidoximated Silica and Its Application for Uranium Adsorption from Saline Lake Brine	Yin Xiaojie, et al. (70)
2-34	Oxygen-content Controllable Graphene Oxide from Electron-beam Irradiated Graphite: Synthesis, Characterization, and Removal of Aqueous Lead (Pb(II))	Bai Jing, et al. (72)
2-35	An Solvent Extraction and Complexation Study on Americium(III) and Europium(III) with Tridentate N,N-diethyl-1, 10-Phenanthroline-2-Amide	Cao Shiwei, et al. (73)

3 Atomic Physics

3-1	Probing the Geometry of Ar ₂ N ₂ Cluster by Heavy Ions Impact	Zhu Xiaolong, et al. (77)
3-2	Dielectronic Recombination of Be-like ⁴⁰ Ar ¹⁴⁺ at the CSRm	Huang Zhongkui, et al. (78)
3-3	Preparation for Laser Cooling of Relativistic Li-like ¹⁶ O ⁵⁺ Ion Beams at the CSRe	Wen Weiqiang, et al. (79)
3-4	Single Electron Capture in 30 keV and 100 keV He ⁺ -He Collisions	Guo Dalong, et al. (80)
3-5	Asymmetric Young's Double-slit Interference in Double Electron Capture by He ²⁺ from CO	Gao Yong, et al. (81)
3-6	A Novel Method by Employment of RF-buncher to Study Electron-ion Recombination at Ultra-low Collision Energy at CSRe	Xu Tianheng, et al. (82)
3-7	Observation of Indirect (e, 3e) of CO Induced by Electron Impact	Zhang Pengju, et al. (83)
3-8	Unambiguous Detection of Interatomic Coulombic Decay of Ne Dimer	Yan Shuncheng, et al. (83)
3-9	Calculations about the Production Rate of H- and Li-like Uranium for DR Experiments on HIAF	Wang Shuxing, et al. (84)
3-10	State-selective Spontaneous Evolution of Rydberg Atoms into an Ultracold Plasma	Zaheer U. Syed, et al. (85)
3-11	Dielectronic Recombination of ⁵⁶ Fe ¹⁷⁺ at the CSRm	Khan Nadir, et al. (86)
3-12	Progress of Atomic & Molecular Spectroscopy Group in 2016	Yu Deyang, et al. (87)
3-13	Guiding of Electron Beams by Macro-insulating Units	Zhang Mingwu, et al. (88)
3-14	Rearrangement in K α Hypersatellite Spectra of Argon Induced by Energetic Heavy Ions	Shao Caojie, et al. (89)
3-15	Fast Recoil-Ion Momentum Spectroscopy	Liu Junliang, et al. (90)
3-16	Development of a Momentum Computed Tomography for Sputtered Ions	Zhang Yuezhaoh, et al. (91)
3-17	Incident Ion Charge State Dependence of the Visible Light Emission of Xe ^{q+} Ions Bombarding Aluminum	Guo Yipan, et al. (93)
3-18	Research Activities Related to High Energy Density Physics	Cheng Rui, et al. (94)
3-19	Prospects of Warm Dense Matter generated by Intense Heavy Ion Beam at HIAF Facility	Cheng Rui, et al. (97)
3-20	Comparison of Grazing and Normal Incidences on the Shape of Nanostructures by Highly Charged Ions Impact on Single Crystal Surfaces	Wang Yuyu, et al. (98)
3-21	Secondary Electron and X Ray Emission from Tungsten Induced by Proton	Zhou Xianming, et al. (99)
3-22	Visible Light Emission from GaAs Surface Bombarded by Highly Charged Xe ^{q+} Ion	Xu Qiumei, et al. (100)
3-23	K-shell X-ray Production Cross Sections of Silicon Induced by Ne ⁷⁺ Ions Near Bohr Velocity	Lei Yu, et al. (101)
3-24	Energy Loss of Protons Beam with Different Energies in Hydrogen Plasma	Chen Yanhong, et al. (102)

4 Interdiscipline

4-1	Lattice Disorder Produced in GaN by He-ion Implantation	Li Bingsheng, et al. (105)
4-2	H-ion Irradiation-induced Annealing in He-ion Implanted 4H-SiC	Han Yi, et al. (108)
4-3	An Experimental Setup for High Temperature and High Pressure Fluid Flow Effects	Ma Zhiwei, et al. (110)
4-4	Vacancy Like Defects in WFeNi Alloys Induced with H Ion Irradiation at 600 °C	Cui Minghuan, et al. (112)
4-5	EBSD Analysis on Static LBE Corrosion of SIMP and T91 Steels	Zhang Hongpeng, et al. (114)
4-6	Characterization of Microstructure Evolution on SIMP and T91 Steel Irradiated with H and He-ions	Shen Tielong, et al. (116)
4-7	A Facility for Studying Corrosion in High Temperature and High Pressure Water Vapor	Liu Chao, et al. (117)
4-8	A Study of Precipitation in Martensite Steels Induced by Fe-Ion Irradiation at 300 °C	Fang Xuesong, et al. (118)
4-9	Modified Simulation Method for Delayed Gamma Spectra from Proton Irradiated W Target	Jin Jin, et al. (120)
4-10	A Study on Hydrogen-Helium Synergistic Effects in SIMP Steels	Jin Peng, et al. (122)
4-11	Study on Radiation Effect of SiC Fiber	Niu Lijuan, et al. (123)
4-12	Mechanical Properties of Monocrystalline Tungsten Simulated with Molecular Dynamics	Wang Dong, et al. (124)

4-13	First-principles Investigation of Helium Adsorptions at Grain Boundaries in Tungsten	He Wenhao, et al. (125)
4-14	First-principles Investigation of Helium Segregations at Grain Boundaries in Tungsten	He Wenhao, et al. (126)
4-15	Progress of Materials Research in 2016	Liu Jie (127)
4-16	Raman Investigation of Phonon Deformation in InP and GaN Induced by Swift Heavy Ions and Highly Charged Ions	Hu Peipei, et al. (129)
4-17	Molecular Dynamics Simulation Studies of Crater Formation at the Surface of Gold Nanowire	Liu Wenqiang, et al. (130)
4-18	Stability of Swift Heavy Ions Induced Latent Tracks in Muscovite Mica under TEM Observations	Zhang Shengxia, et al. (131)
4-19	Temperature-dependent Magnetic Properties of $\text{Co}_x\text{Ni}_{1-x}$ Alloy Nanotubes	Chen Yonghui, et al. (132)
4-20	STM Study of HOPG Irradiated by Highly Charged Ions	Zeng Jian, et al. (133)
4-21	Investigation of Heavy Ion Flux Effect on Multi-bit Upset in Bulk-Si SRAMs	Luo Jie, et al. (135)
4-22	Anomalous Annealing of Floating Gate Errors due to High LET Heavy Ion Irradiation	Yin Yanan, et al. (136)
4-23	Radiation Effects Study of High-k HfO_2 Gate Device	Li Zongzhen, et al. (137)
4-24	Main Work Outline of the Irradiation Technique Group in 2016	Sun Youmei, et al. (138)
4-25	Tuning the Coercivity of Cu/Ni Multilayer Nanowire Arrays by Tailoring Multiple Parameters	Yao Huijun, et al. (138)
4-26	Theoretical Calculation of the Coercivity of Cu/Ni Multilayer Nanowire Arrays	Yao Huijun, et al. (141)
4-27	Study the Rectification Effect of Single Graphene/PET Nanopore	Yao Huijun, et al. (143)
4-28	Surface Modification and Damage of MeV-Energy Heavy Ion Irradiation on Gold Nanowires	Cheng Yaxiong, et al. (144)
4-29	Damage Effects of CVD Single-layer MoS_2 Irradiated by Heavy Ions	Wu Yang, et al. (146)
4-30	Research Progress of Group of Energy Materials in 2016	Zhang Chonghong, et al. (148)
4-31	Annealing Behavior of Ag Nanoparticles in Silica with and without Defects	Yang Yitao, et al. (149)
4-32	Damage Effects of Mechanical Properties of Silicon Carbide Fiber Irradiated by Electron Beams	Zhang Liqing, et al. (150)
4-33	Irradiation Hardening of V-4Cr-4Ti and V-5Cr-5Ti alloys Due to Helium Implantation and Displacement Damage	Yan Tingxing, et al. (151)
4-34	Progress of Ion Beam Breeding Research at IMP in 2016	Zhou Libin, et al. (153)
4-35	Identification of Mutant Gene Induced by Carbon Ion Beams in <i>Arabidopsis</i> by Whole Genome Re-sequencing and Rough Map-based Cloning	Du Yan, et al. (153)
4-36	Photosynthetic Response in <i>Scenedesmus quadricauda</i> after Carbon-ion Irradiation	Wang Jie, et al. (154)
4-37	DNA Damage in Bone Marrow Mononuclear Cells of Mice Detected by Two Dimensional Comet Assay	Wang Zhuanzi, et al. (155)
4-38	DNA Damage in Bone Marrow Mononuclear Cells of Mice Following Total Body Irradiation with Carbon Ions	Wang Zhuanzi, et al. (156)
4-39	Identification of Flavonoids and Expression of Anthocyanin Biosynthetic Genes in Leaf Color Mutant Induced by Carbon Ion Beam in Wandering Jew(<i>Tradescantia fluminensis</i>)	Liu Ruiyuan, et al. (158)
4-40	Effect of Carbon Sources on the Biomass Accumulation of <i>Saccharomyces cerevisiae</i>	Li Longqing, et al. (158)
4-41	Effect of Carbon Ion Beam Irradiation on Arsenic Tolerance in <i>Acidithiobacillus ferrooxidans</i>	Yan Qian, et al. (159)
4-42	Study on the Mechanism of Flower Pigment Mutation Induced by Carbon Ions in Geranium (<i>Pelargonium × hortorum</i>)	Yu Lixia, et al. (160)
4-43	Effect of Aeration Rate on Cellulase Production of <i>Aspergillus niger</i> and Mixed Fermentation with <i>Trichoderma reesei</i> ..	Dong Miaoyin, et al. (161)
4-44	Phenotype Screening of <i>Arabidopsis thaliana</i> Irradiated by Carbon Ion Beams Based on High-throughput Imaging Technique	Mu Jinhu, et al. (162)
4-45	Retrospect and Prospect of Several Interesting Work of Heavy-ion Irradiation Drug	Liang Jianping, et al. (163)
4-46	An Experimental Design for Optimization in Some Data Matrices for the Mutant Metabolism Process	Zhou Xiang, et al. (166)
4-47	Progress in PET Probes for BNCT	Chen Weiqiang, et al. (170)
4-48	Respiratory Motion Management with Audio-visual Biofeedback for Synchrotron-based Scanned Heavy-ion Beam Delivery	He Pengbo, et al. (171)
4-49	Inhibiting Mitochondrial Fission Changed the Mitochondrial Responses in MDA-MB-231 Cells after Carbon Ion Irradiation	Jin Xiaodong, et al. (174)
4-50	Melatonin Alleviates X-ray Radiation Induced Olfactory Bulb Injure	Ye Fei, et al. (175)
4-51	Sensitizing Glioma Cells to Heavy Ions by Genistein is Related to the Expression of DNA-PKcs	Liu Xiongxiang, et al. (176)
4-52	Control of Alternative Splicing of <i>Caspase-9</i> Enhances the Radiosensitivity of Cancer Cells to Ionizing Radiations	Li Ping, et al. (177)
4-53	Metformin Enhances the Different Radiosensitivity of Human NSCLC Cancer Cells to X-rays	Zhao Ting, et al. (177)
4-54	Inhibiting Autophagy Enhances the Anti-tumor Effect of High-LET Carbon Ions via Promoting ER Stress-related Apoptosis	Zheng Xiaogang, et al. (179)
4-55	Biological Effects of Iron Ion Radiation in Mice	Zhang Hong (179)
4-56	Combination Effects of Curcumin and Radiation on the Angiogenesis of Tumor	Liu Yang, et al. (182)
4-57	Increase in Expression of Indoleamine 2,3-dioxygenase in Iron-ion Irradiation-induced Bone Marrow Dendritic Cells Damage in Mice	Xie Yi, et al. (183)
4-58	Role of Diallyl Disulfide in Carbon Ion Beams-induced Cancer Cell Apoptosis	Di Cuixia, et al. (184)
4-59	Endothelium-independent Vasorelaxant Effect of 20(S)-protopanaxadiol on Isolated Rat Thoracic Aorta	Gan Lu, et al. (185)

4-60	Study on Protein Marker of Hepatotoxicity Induced by Iron Ion Radiation in Mice	Li Hongyan, et al. (186)
4-61	Effects of CORM-3 on Developmental Toxicity Induced by Ionizing Radiation in Zebrafish Embryos	Zhou Rong, et al. (187)
4-62	Apoptosis in Zebrafish (<i>Danio rerio</i>) Embryos Induced by ⁵⁶ Fe Ion Radiation	Si Jing, et al. (188)
4-63	Suppression of Radiation-induced Migration of Non-small Cell Lung Cancer through Inhibition of Nrf2-Notch Axis	Zhao Qiuyue, et al. (189)
4-64	Selective ATP Hydrolysis Inhibition in F1Fo ATP Synthase Enhances Radiosensitivity of Non-small-cell Lung Cancer Cells (A549)	Wang Yupei, et al. (190)
4-65	Researches on Assessment, Protection and Mechanisms of Ionizing Radiation in Department of Space Radiobiology	Wang Jufang (191)
4-66	Carbon-Ion Irradiation is More Efficient to Eliminate Glioma Stem Cells	Ding Nan, et al. (192)
4-67	<i>miR</i> -300 Modulates the Cellular Radiosensitivity Through Targeting <i>p53</i> in Human Non-small Cell Lung Cancer A549 Cells	He Jinpeng, et al. (193)
4-68	An Integrative Model of miRNAs and mRNAs Expression Signature for Patients of Breast Invasive Carcinoma with Radiotherapy Prognosis	Bing Zhitong, et al. (195)
4-69	Report of the ICNMTA 2016 Conference and the Progress of Heavy Ion Microbeam Group	Du Guanghua, et al. (196)
4-70	Efficiency of Dyes in STORM Influences the Result of Dual Color Experiment	Wu Ruqun, et al. (197)
4-71	Influence of Phototoxicity of the Live Cell Imaging System at IMP Microbeam Facility	Liu Wenjing, et al. (198)
4-72	Interpretation of the Rectification of Single Conical Nanopores	Wei Junzhe, et al. (199)
4-73	Current Hysteresis and Potential Energy Barrier Breakdown in Nanopores	Li Yaning, et al. (201)

5 Nuclear Technology, Nuclear Energy and Nuclear Data

5-1	Research Progress in the Group of RIB Physics in 2016	Sun Zhiyu, et al. (205)
5-2	Pattern Recognition Algorithm for MWDCs in ETF	Sun Yazhou, et al. (206)
5-3	Test of CSR External Target Facility using ⁴⁰ Ar at 320 MeV/u	Wang Shitao, et al. (207)
5-4	Effect of Different Connection Modes of Multiple Silicon Photomultipliers on the Output Signal Shapes	Zhang Xueheng, et al. (208)
5-5	LPT's Multi-reflection Time-of-flight Mass Spectrometer/Separator	Tian Yulin, et al. (210)
5-6	Fabrication of New p-type Silicon Strip Detectors with Deep p ⁺ Diffusion Structure	Wang Xiuhua, et al. (211)
5-7	Progress on Study of the CsI(Tl) Crystal Array	Shi Guozhu, et al. (212)
5-8	Recent Progress of High Energy Electron Radiography Research Platform in Lanzhou	Cao Shuchun, et al. (213)
5-9	Progress of High Energy Electron Radiography Experiment Designed by IMP&THU&ANL	Zhu Yunliang, et al. (214)
5-10	Position Response of a LC Delay-line MWPC Detector	Hu Rongjiang, et al. (215)
5-11	Progress Report on Nuclear Electronics in 2016	Su Hong (217)
5-12	TPC Readout System Based on AGET and μ TCA	Pu Tianlei, et al. (218)
5-13	A Design of Current to Frequency Converter for Dose Monitoring in Heavy Ion Therapy	Wang Yanan, et al. (220)
5-14	Development of the Readout Electronics System for the Prototype of TOF-PET	Yang Haibo, et al. (221)
5-15	Progress in System of Heat Transfer for ADS Spallation Target Annual Report	Duan Jizheng (222)
5-16	R&D of the First Principle Prototype of the Granular Flow Spallation Target for ADS	Sun Jianrong, et al. (223)
5-17	Granular Waterfall Target for a Muon-Decay Neutrino Beam Facility	Cai Hanjie, et al. (224)
5-18	Study Progress of Reactor Physics Group	Gu Long, et al. (225)
5-19	CAD Modeling Study for Accelerator Driven System Simulation	Li Jinyang, et al. (228)
5-20	Seismic Analysis of ADS Zero-power Facilities with Finite Element Model	Liu Lu, et al. (229)
5-21	Effects of Turbulent Intermittency on Fluctuation of Thermal Parameters in a Heated Channel	Feng Li, et al. (231)
5-22	Conceptual Design of Subcritical Reactor for China Initiative Accelerator Driven System CiADS	Peng Tianji (233)
5-23	Reactor Neutronic Core Design of CIADS	Yu Rui, et al. (235)
5-24	Simulation Analysis of Condensation Heat Transfer Inside C-type Tubes Based on RELAP5/MOD3.2	Tian Wangsheng (236)
5-25	Research Activities of Nuclear Data Research Group in 2016	Chen Zhiqiang (237)
5-26	Measurement of Leakage Neutron Spectra from ²³⁸ U Slabs with D-T Neutrons and Validation of Nuclear Evaluation Data Libraries	Sun Qi, et al. (238)
5-27	Study of Energy Spectra of Light Charged Particles from ¹² C + ¹² C at 95 AMeV with Moving Source Model	Tian Guoyu, et al. (238)
5-28	Study of Light Charged Particles Production in ¹² C + ¹² C at 95 AMeV with AMD-FM Model	Tian Guoyu, et al. (240)

6 Accelerator and the Others

6-1	Operation Status of HIRFL In 2016	Yuan Youjin, et al. (243)
6-2	New RF System for RFQ Accelerator of C-ADS Injector II	Sun Liepeng, et al. (244)

6-3	Progress of LLRF Control System for CiADS Injector	Gao Zheng, et al. (246)
6-4	Beam Commissioning Activities of High Power Superconducting Linac for China ADS	Wang Zhijun, et al. (247)
6-5	Operation of HWRs for C-ADS Injector	Yue Weiming, et al. (250)
6-6	Nb/Cu SRF Cavity R&D Activity at IMP	Tan Teng, et al. (251)
6-7	Progress of the China Material Irradiation Facility RFQ	Dou Weiping, et al. (252)
6-8	Electropolishing of Niobium from Choline Chloride Based Ionic Liquid	Chu Qingwei, et al. (254)
6-9	Status of the Electropolishing System at IMPCAS	Li Lu, et al. (255)
6-10	Evaluation of Power Loss on the NC QWR Cavity of a New Room-temperature Test Stand for Couplers	Chen Long, et al. (256)
6-11	SRF Power Input Coupler for HWR010 at IMP	Li Yongming, et al. (257)
6-12	Design of a Double Spoke Cavity for CADS	Jiang Tiancai, et al. (258)
6-13	25 MeV High Energy Beam Transport Line for CADS Demo Facility	Jia Huan, et al. (259)
6-14	Report on the Improvement of MPS in ADS Linear Accelerator	Wang Jing, et al. (262)
6-15	Plasma Discharge for In-situ Cleaning of SRF Cavities	Wu Andong, et al. (264)
6-16	Summary of Ion Source Group Work in 2016	Sun Liangting, et al. (265)
6-17	Research Status of Laser Ion Sources at IMP	Zhao Huanyu, et al. (267)
6-18	Status Report of On-line Ion Sources in 2016	Feng Yucheng, et al. (268)
6-19	On-Line Operation and Machine Study of LECR4	Qian Cheng, et al. (269)
6-20	Development of SECRAL II Ion Source at IMP in 2016	Guo Junwei, et al. (270)
6-21	Progress of Power Supply System in 2016	Gao Daqing, et al. (272)
6-22	Mechanical Design and Processing Progress of LEAF-RFQ	Jin Xiaofeng, et al. (273)
6-23	Design of Circulating Cooling Water System for LEAF	Zhu Tieming, et al. (275)
6-24	State Report of 320 kV High-voltage Platform in 2016	Li Jinyu, et al. (276)
6-25	Cryogenic System at IMP in 2016	Zhang Junhui, et al. (277)
6-26	Work Summary of Vacuum Group in 2016	Meng Jun (278)
6-27	Device Design and Experimental Research of Desorption Yields of Oxygen-Free Copper	Xie Wenjun, et al. (279)
6-28	Vacuum System Predesign of Beam Lines and Terminals in HIAF Project	Chai Zhen, et al. (281)
6-29	Design of Ceramic Vacuum Chamber	Yang Weishun (283)
6-30	Work Progress of Slow Control Group in 2016	Wang Yanyu (283)
6-31	Upgraded Control Software for Electronic Cooler of CSRm	Su Jianjun, et al. (284)
6-32	Realization of Limit Position Protection Function Using PLC Program in Motion Control Area	Zhang Jianchuan, et al. (286)
6-33	Design of a Portable Multi Parameter Cosmic Ray Detector	Yin Jun, et al. (287)
6-34	Radiation Dose Monitor System and Gate Controller Designed for Personal Safety in HIRFL-CSR	Zhou Detai, et al. (288)
6-35	Design of Digital and Analog Mixed Controller Based on MSP430F149	Ni fafu, et al. (289)
6-36	Progress of Control Group in 2016	Zhang Wei, et al. (291)
6-37	Hardware & Software Upgrade of RIBLL2	Zhou Yunbin, et al. (292)
6-38	New Control System for 320 kV Platform	Chang Jianjun, et al. (293)
6-39	Upgrade the Control Sub-system of Power Supply for HIRFL-CSR	An Shi, et al. (293)
6-40	Technological Remolding of HIRFL-CSRm Power Supply Monitoring System	Ge Liang, et al. (295)
6-41	Design and Implementation of Power Supply Control Program	Ma Tao, et al. (296)
6-42	Design and Implementation of EMAIL and IP Management System	Yuan Chao, et al. (297)
6-43	Radiation Safety Report of HIRFL in 2016	Su Youwu, et al. (299)
6-44	Studying of Residual Activity Induced by 300 MeV/u Carbon Ion in Copper Target	Xu Junkui, et al. (300)
6-45	Summary of RF Group in 2016	Xu Zhe (302)
6-46	Research on the Characteristics of Magnetic Alloy Ring Cores	Liang Lu, et al. (302)
6-47	Design and Test of Automatic Tuning System for SSC-LINAC RFQ	Cong Yan, et al. (304)

Appendices

1.	International Scientific Exchanges in 2016	(309)
2.	Publications	(322)
3.	The Theses of Doctorate In 2016	(331)
4.	The Theses of Master In 2016	(333)

目 录

1 理论核物理

1-1	2016年近代物理所核理论研究进展	左 维 (3)
1-2	反质子与原子核碰撞中超核产生研究	冯兆庆 (4)
1-3	Δ 能区 π 介子引起的核反应中原子核碎裂研究	冯兆庆 (6)
1-4	同位素核反应研究颈部碎裂中同位旋动力学机制	冯兆庆 (8)
1-5	原子核中核子动量的约束	雍高产 (10)
1-6	高密对称能的双观测量约束	雍高产 (11)
1-7	中空核物质	雍高产 (12)
1-8	暗物质晕的面密度	李希国等 (14)
1-9	Higgs桥门暗物质模型	李希国等 (15)
1-10	$Z_c(3900)$ 的原子核靶 π 介子致产生	何 军 (17)
1-11	KK^* 相互作用及相关的强子分子态	何 军 (19)
1-12	$K^{*0}\Lambda$ 的中子靶光致产生	何 军 (21)
1-13	强子分子态图像下理解 $P_c(4450)$ 和 $Y(4274)$ 的自旋宇称	何 军 (22)
1-14	核子费米面排空效应在中子星冷却中的作用	董建敏等 (24)
1-15	高能核物理组研究进展	曹 须等 (25)
1-16	$\pi N \rightarrow \eta' N$ 反应中核子共振态的作用	曹 须 (26)
1-17	Skyrme模型中的新拓扑物理研究	邹丽萍等 (27)
1-18	磁等离子体中的光子极化张量	巢静宜等 (29)

2 实验核物理与核化学

2-1	核结构组研究进展	柳敏良 (33)
2-2	^{87}Zr 低位激发态 $7/2_1^+$ 寿命测量	强赞华等 (34)
2-3	基于充气谱仪的 ^{143}Eu 激发态寿命测量	郭 松等 (35)
2-4	原子质量评估AME2016	王 猛等 (36)
2-5	缺中子核素 ^{79}Y , $^{81,82}\text{Zr}$ 及 $^{83,84}\text{Nb}$ 的质量测量	刑元明等 (36)
2-6	$N = Z$ 缺中子核素 ^{78}Y , ^{80}Zr , ^{82}Nb 和 ^{84}Mo 的质量预测	刑元明等 (38)
2-7	核天体rp过程中的Zr-Nb循环研究	刑元明等 (40)
2-8	储存环上 $A=2Z+3$ 短寿命核素质量的精确测量	刘君豪等 (41)
2-9	CSRe上肖特基探针的数据获取系统	王 茜等 (42)
2-10	2016年核天体物理组的科研进展	唐晓东 (43)
2-11	^{134}Cs 在星体环境下的 β 衰变率	李阔昂等 (43)
2-12	利用TPC对 $^{14}\text{O}(\alpha, p)^{17}\text{F}$ 反应测量的Geant4模拟	胡 钧等 (44)
2-13	宇宙锂问题新解	侯素青等 (45)
2-14	$^{12}\text{C}+^{13}\text{C}$ 在库仑位垒以下能区的熔合截面测量与统计模型系统误差的估计	陈治均等 (47)
2-15	使用TPC的 $^{16}\text{O}+^{40}\text{Ar}$ 熔合截面测量实验	张宁涛等 (48)
2-16	天体物理能区 $^{13}\text{N}(\alpha, p)^{16}\text{O}$ 反应的实验研究	林炜平等 (49)
2-17	氦束流中的氙杂质分析方法	陈 涵等 (50)
2-18	奇异核组研究进展	刘 忠等 (52)
2-19	首次鉴别 ^{117}Ba 的 $\nu h_{11/2}$ 带	丁 兵等 (53)
2-20	利用数字化波形采集技术研究 ^{220}Pa 的 α 衰变	黄天衡等 (55)
2-21	中子数40附近镭同位素在束伽玛谱学研究	刘小雨等 (57)
2-22	^{223}U 的 α 衰变精细结构	孙明道等 (58)
2-23	利用反冲衰变标记法来研究 ^{224}U 的八极形变性质	张文强等 (59)
2-24	重离子核反应组研究进展	王建松等 (60)
2-25	基于MFM模型提取发射源密度、温度及对称能	刘星泉等 (61)
2-26	高于库仑位垒能区的 ^{12}N 和 ^{13}O 在 ^{208}Pb 靶上的弹性散射实验测量	刘星泉等 (63)
2-27	高于库仑位垒能区的 ^7Be 、 ^8B 和 ^9C 在 ^{208}Pb 靶上的弹性散射实验测量	杨彦云等 (64)
2-28	相对论重离子碰撞中粲偶素的双光子产生过程	余功明等 (65)
2-29	碳热还原法制备碳化铀粉末	郭航旭等 (66)
2-30	改进内凝胶法合成含铀微球	李 飒等 (67)

2-31	利用改进的溶胶凝胶法制备模拟核燃料CeO ₂ 小球的研究	田 伟等 (68)
2-32	UO ₂ 模拟芯块中半挥发裂变产物(Mo, Te)的去除与沉积	谈存敏等 (69)
2-33	胍胺基介孔硅的合成及其在盐湖提铀中的应用	殷小杰等 (70)
2-34	氧含量可控氧化石墨烯的制备及其对溶液中铅的吸附研究	白 静等 (72)
2-35	三齿配体N,N-二乙基-1,10,菲咯林2-酰胺对Am(III)和Eu(III)的萃取性能及配位化学	曹石巍等 (73)

3 原子物理

3-1	用重离子碰撞研究Ar ₂ N ₂ 团簇的几何构型	朱小龙等 (77)
3-2	基于CSRm开展的类铍 ⁴⁰ Ar ¹⁴⁺ 双电子复合实验研究	黄忠魁等 (78)
3-3	CSRm上激光冷却相对论能量 ¹⁶ O ⁵⁺ 离子束实验准备	汶伟强等 (79)
3-4	30 keV和100 keV He ⁺ 碰撞He单电子俘获	郭大龙等 (80)
3-5	He ²⁺ 与CO双俘获碰撞反应中不对称杨氏双缝干涉研究	高 永等 (81)
3-6	在CSRm上利用射频聚束器开展低能电子离子复合实验的一种新方法	徐天衡等 (82)
3-7	电子与CO分子碰撞中的非直接的(e,3e)过程观测	张鹏举等 (83)
3-8	Ne二聚体中原子间库仑衰变的直接探测	闫顺成等 (83)
3-9	HIAF上的DR实验类氢和类锂离子产额计算	汪书兴等 (84)
3-10	态选择里德堡原子向超冷等离子体演化	Zaheer U. Syed等 (85)
3-11	CSRm上 ⁵⁶ Fe ¹⁷⁺ 离子的双电子复合谱学	Khan Nadir等 (86)
3-12	2016年原子分子谱学组工作进展	于得洋等 (87)
3-13	宏观绝缘体平行板对电子束的导向效应研究	张明武等 (88)
3-14	高能离子-氩原子碰撞中超伴线谱中的空穴重组	邵曹杰等 (89)
3-15	快反冲离子动量谱仪	刘俊亮等 (90)
3-16	用于测量溅射离子的动量CT研制	张月昭等 (91)
3-17	Xe ^{q+} 离子与Al靶相互作用过程中可见光发射的电荷态依赖性研究	郭义盼等 (93)
3-18	围绕HEDP展开的系列研究活动	程 锐等 (94)
3-19	基于HIAF装置离子束驱动产生的温稠密物质研究前景	程 锐等 (97)
3-20	高电荷态离子不同辐照角度下单晶表面纳米结构形状的比较	王瑜玉等 (98)
3-21	质子诱导钨靶的二次电子和X射线发射	周贤明等 (99)
3-22	高电荷态Xe ^{q+} 离子轰击GaAs表面引起可见光发射研究	徐秋梅等 (100)
3-23	近玻尔速度的Ne ⁷⁺ 离子诱导的Si的K壳层X射线的产生截面	雷 瑜等 (101)
3-24	不同能量的质子束在氢等离子体中的能损	陈燕红等 (102)

4 交叉学科

4-1	氦离子注入GaN晶体损伤效应的研究	李炳生等 (105)
4-2	H辐照注入He单晶4H-SiC退火效应研究	韩 驿等 (108)
4-3	高温高压水气流体效应测试设备	马志伟等 (110)
4-4	600℃下H离子辐照WFeNi合金引起的空位型缺陷	崔明焕等 (112)
4-5	SIMP钢和T91钢静态LBE腐蚀的EBSD分析	张宏鹏等 (114)
4-6	H和He离子辐照SIMP和T91钢的微观结构演化表征	申铁龙等 (116)
4-7	高温高压水气腐蚀实验研究装置	刘 超等 (117)
4-8	铁离子辐照马氏体钢辐照析出行为研究	方雪松等 (118)
4-9	衰变光谱模拟方法的改进研究	金 锦等 (120)
4-10	SIMP钢中的H/He协同作用效应研究	金 鹏等 (122)
4-11	SiC纤维辐照研究	牛丽娟等 (123)
4-12	单晶钨力学性能的计算机模拟	王 栋等 (124)
4-13	钨晶界上氦原子溶解行为的第一性原理研究	何文豪等 (125)
4-14	钨晶界上氦原子偏聚行为的第一性原理研究	何文豪等 (126)
4-15	近代物理研究所2016年材料研究进展	刘 杰 (127)
4-16	快重离子及高电荷态离子辐照引起InP和GaN材料拉曼声子模式的修正	胡培培等 (129)
4-17	金纳米线表面凹坑形成的分子动力学模拟研究	刘文强等 (130)
4-18	白云母中快重离子辐照产生的潜径迹在TEM观测下的演化	张胜霞等 (131)

4-19	CO _x Ni _{1-x} 纳米管阵列磁性温度相关性的研究	陈永辉等 (132)
4-20	高电荷态离子辐照后的高定向热解石墨的扫描隧道显微镜研究	曾健等 (133)
4-21	离子注量率对体硅SRAM存储器单粒子多位翻转效应的影响研究	罗捷等 (135)
4-22	高LET重离子辐照引起的浮栅单元错误的异常退火	殷亚楠等 (136)
4-23	高KHfO ₂ 栅极器件辐照效应研究	李宗臻等 (137)
4-24	辐照技术组2016主要工作进展	孙友梅等 (138)
4-25	多参数调控Cu/Ni多层纳米线矫顽力	姚会军等 (138)
4-26	Cu/Ni多层纳米线阵列矫顽力理论计算	姚会军等 (141)
4-27	单个石墨烯/PET纳米孔的整流效应研究	姚会军等 (143)
4-28	MeV能量重离子辐照金纳米线的表面修饰和损伤研究	程亚雄等 (144)
4-29	CVD法单层MoS ₂ 在 ²⁰⁹ Bi离子辐照下的损伤效应研究	吴杨等 (146)
4-30	2016年能源材料研究组研究进展	张崇宏等 (148)
4-31	在有/无缺陷存在下Ag纳米颗粒的退火行为研究	杨义涛等 (149)
4-32	电子束引起碳化硅纤维力学性能损伤效应研究	张丽卿等 (150)
4-33	两类钒基合金的辐照硬化研究	颜廷星等 (151)
4-34	近代物理研究所重离子束育种2016年研究进展	周利斌等 (153)
4-35	基因组重测序联合粗定位鉴定碳离子束诱导的拟南芥表型关联基因	杜艳等 (153)
4-36	碳离子束对四尾栅藻光合特性的辐照效应研究	王洁等 (154)
4-37	双向彗星电泳检测小鼠骨髓单核细胞DNA损伤	王转子等 (155)
4-38	碳离子辐射对小鼠骨髓单核细胞DNA损伤	王转子等 (156)
4-39	碳离子诱导的白花紫露草叶色突变体花青素成分及代谢相关基因的研究	刘瑞媛等 (158)
4-40	碳源对面包酵母生物量积累的影响	李垄清等 (158)
4-41	重离子辐照对嗜酸氧化亚铁硫杆菌的影响	剡倩等 (159)
4-42	碳离子诱导的天竺葵花色突变机理的研究	余丽霞等 (160)
4-43	通气量对绿色本霉和黑曲霉混合发酵产纤维素酶的影响	董妙音等 (161)
4-44	基于高通量成像技术的重离子束辐射诱变拟南芥表型组学筛选研究	穆金虎等 (162)
4-45	重离子辐照药物研究中几项有趣工作的回顾与展望	周翔等 (163)
4-46	突变体生理代谢过程多变量实验研究中设计矩阵的优化	周翔等 (166)
4-47	硼中子俘获治疗中的PET探针进展	陈卫强等 (170)
4-48	同步加速器主动式束流配送方式下靶区运动补偿方法研究	贺鹏博等 (171)
4-49	抑制线粒体分裂改变了重离子辐照后细胞的线粒体应答	金晓东等 (174)
4-50	褪黑素减缓X射线辐射导致的嗅球损伤	叶飞等 (175)
4-51	金雀异黄酮对胶质瘤细胞的重离子辐射增敏作用与DNA-PKcs的表达相关	刘雄雄等 (176)
4-52	Caspase-9选择性剪切的控制能增强癌细胞对电离辐射的敏感性	李萍等 (177)
4-53	二甲双胍对不同基因背景的非小细胞肺癌的辐射增敏效果不同	赵婷等 (177)
4-54	抑制自噬促进内质网应激相关的凋亡增强高LET碳离子的抑癌效应	郑小刚等 (179)
4-55	铁离子辐射小鼠的生物学效应研究	张红 (179)
4-56	姜黄素联合辐射对肿瘤血管新生的抑制作用	刘阳等 (182)
4-57	铁离子辐射诱导小鼠骨髓树突状免疫细胞IDO1蛋白表达研究	谢漪等 (183)
4-58	DADS在重离子诱导的癌细胞凋亡中的作用研究	狄翠霞等 (184)
4-59	20(S)-原人参皂苷对大鼠离体血管环非内皮依赖性舒张的影响	甘露等 (185)
4-60	铁离子辐射引起小鼠肝脏毒性的血清蛋白标志物研究	李鸿岩等 (186)
4-61	CORM-3对电离辐射诱导的胚胎发育损伤的保护作用	周蓉等 (187)
4-62	铁离子辐射诱导的斑马鱼胚胎细胞凋亡	司婧等 (188)
4-63	下调Nrf2-Notch1可降低非小细胞肺癌的侵袭转移	赵邱越等 (189)
4-64	选择性抑制ATP合酶的ATP水解活性增强非小细胞肺癌辐射敏感性	王玉佩等 (190)
4-65	空间辐射生物室的辐射评估、辐射防护等研究进展	王菊芳 (191)
4-66	碳离子束可有效杀伤胶质瘤肿瘤干细胞	丁楠等 (192)
4-67	miR-300靶向p53调控非小细胞肺癌A549细胞的辐射敏感性	何进鹏等 (193)
4-68	基于弹性网络COX回归计算基因表达标志物预测乳腺癌病人放疗后生存预后基因	邴志铜等 (195)
4-69	ICNMTA2016会议和微束研究进展	杜广华等 (196)
4-70	STORM实验中染料性能对双色标记结果的影响	吴汝群等 (197)
4-71	近代物理研究所微束终端活细胞成像系统光毒性的影响	刘文静等 (198)

4-72	单锥形纳米孔道整流效应解释	魏俊喆等 (199)
4-73	纳米孔道内电流的滞变和势垒的击穿	李亚宁等 (201)

5 核技术、核能及核数据

5-1	次级束物理研究组2016年度工作进展	孙志宇等 (205)
5-2	外靶漂移室径迹识别算法	孙亚洲等 (206)
5-3	利用320 MeV/u的 ⁴⁰ Ar测试CSR外靶实验终端探测器性能	王世陶等 (207)
5-4	不同SiPM连接方式对输出信号形状的影响研究	章学恒等 (208)
5-5	LPT上的多反射飞行时间质量分析器	田玉林等 (210)
5-6	新型p ⁺ 深层扩散结构硅条探测器的研制	王秀华等 (211)
5-7	CsI(Tl)晶体在成像领域的应用	石国柱等 (212)
5-8	兰州高能电子成像研究平台研究进展	曹树春等 (213)
5-9	高能电子成像实验最近成果	朱云亮等 (214)
5-10	采用LC延迟线读出的MWPC的位置响应	胡荣江等 (215)
5-11	2016年核电子学进展报告	苏 弘 (217)
5-12	基于AGET芯片与μTCA的TPC探测器读出系统	蒲天磊等 (218)
5-13	适用于重离子治癌监测的电流-频率转换电路	王亚楠等 (220)
5-14	用于TOF-PET样机的读出电子学系统设计	杨海波等 (221)
5-15	ADS散裂靶系中热系统研究进展年报	段济正 (222)
5-16	首台ADS颗粒流散裂靶原理样机的研发	孙建荣等 (223)
5-17	基于缪子衰变的中微子束流装置的颗粒瀑布靶	蔡汉杰等 (224)
5-18	反应堆物理室研究进展	顾 龙等 (225)
5-19	基于模拟ADS的CAD模型研究	李金阳等 (228)
5-20	零功率装置抗震力学分析	刘 璐等 (229)
5-21	湍流间歇对加热通道中热工参数波动的影响	冯 丽等 (231)
5-22	CIADS次临界反应堆概念设计	彭天骥 (233)
5-23	CIADS反应堆中子学设计	于 锐等 (235)
5-24	基于RELAP5/MOD3.2的C型管内冷凝换热模拟分析	田旺盛 (236)
5-25	2016年核数据研究室工作进展	陈志强 (237)
5-26	D-T中子源轰击 ²³⁸ U平板泄露中子谱的测量以及核评价数据库检验	孙 琪等 (238)
5-27	利用运动源模型研究95 A MeV ¹² C + ¹² C反应中的轻带电粒子能谱	田国玉等 (238)
5-28	利用AMD-FM模型研究95 A MeV ¹² C + ¹² C反应中轻粒子产生机制	田国玉等 (240)

6 加速器及其他

6-1	2016年度HIRFL加速器运行状态	原有进等 (243)
6-2	CADS注入器II的RFQ新的射频系统	孙列鹏等 (244)
6-3	CIADS注入器低电平控制系统进展	高 郑等 (246)
6-4	中国ADS高功率超导直线加速器的束流调试	王志军等 (247)
6-5	CADS注入器半波长超导腔运行	岳伟明等 (250)
6-6	近代物理研究Nb/Cu超导腔进展	谭 腾等 (251)
6-7	CMIF RFQ加速器进展	窦为平等 (252)
6-8	氯化胆碱基离子液体中电化学抛光铌	初青伟等 (254)
6-9	近代物理研究所电化学抛光系统实验进展	李 璐等 (255)
6-10	基于QWR腔体的新型耦合器常温测试平台能量损失计算	陈 龙等 (256)
6-11	近代物理研究所HWR010射频超导功率输入耦合器	李永明等 (257)
6-12	CADS双间隙Spoke腔设计	蒋天才等 (258)
6-13	CADS验证装置25 MeV高能传输线	贾 欢等 (259)
6-14	直线加速器MPS系统进展报告	王 晶等 (262)
6-15	射频超导腔等离子体清洗进展	吴安东等 (264)
6-16	离子源室2016年度工作总结	孙良亭等 (265)
6-17	近代物理研究所激光离子源研究进展	赵环昱等 (267)

6-18	2016年在线离子源的运行报告	冯玉成等 (268)
6-19	LECR4离子源在线运行及机器研究	钱程等 (269)
6-20	备用超导源SECRAL II 研发	郭俊伟等 (270)
6-21	电源系统2016年进展	高大庆等 (272)
6-22	LEAF-RFQ机械结构设计及加工进展	金晓凤等 (273)
6-23	LEAF循环冷却水系统设计	朱铁明等 (275)
6-24	2016年320 kV高压平台运行情况	李锦钰等 (276)
6-25	2016年近代物理研究所低温系统	张军辉等 (277)
6-26	2016年真空技术室工作总结	蒙峻 (278)
6-27	无氧铜解析率测试装置设计及实验研究	谢文君等 (279)
6-28	HIAF项目束线和终端真空系统初步设计	柴振等 (281)
6-29	陶瓷真空室的设计	杨伟顺 (283)
6-30	2016年加速器慢控组工作总结	王彦瑜 (283)
6-31	CSRm电子冷却软件的升级改造	宿建军等 (284)
6-32	用PLC实现在运动控制中的限位保护功能	张建川等 (286)
6-33	便携式多参数次级宇宙射线探测仪研制	尹俊等 (287)
6-34	HIRFL-CSR辐射剂量监测系统和门禁控制器设计	周德泰等 (288)
6-35	基于MSP430F149的数字模拟混合控制器设计	倪发福等 (289)
6-36	控制系统2016年进展	张玮等 (291)
6-37	RIBLL2硬件&软件系统升级	周云斌等 (292)
6-38	320 kV 平台新控制系统	常建军等 (293)
6-39	HIRFL-CSR 电源控制系统升级改造	安石等 (293)
6-40	HIRFL-CSRm 电源监测系统改造	葛良等 (295)
6-41	电源控制程序的设计与实现	马涛等 (296)
6-42	近代物理研究所邮箱和IP管理系统	袁超等 (297)
6-43	HIRFL2016年辐射安全报告	苏有武等 (299)
6-44	300 MeV/u 碳离子轰击铜靶后感生放射性研究	徐俊奎等 (300)
6-45	2016高频室工作总结	许哲 (302)
6-46	磁合金环性能的研究	梁路等 (302)
6-47	SSC直线加速器RFQ腔体调谐系统研制及测试	从岩等 (304)

附 录

1.	2016年国际学术交流	(309)
2.	发表文章	(322)
3.	2016年博士论文	(331)
4.	2016年硕士论文	(333)