

VIII-I. SUMMARY OF RESEARCH ACTIVITIES

VIII-I-1. MEETINGS AND SEMINARS

Specialists' Meetings Held in the FY 2008

1. Comprehensive Research with respect to Thermal-, Fast-Neutron Therapy and Light Ion Therapy
2. Specialist Research Meeting on "Restart of the Operation of KUR and Neutron Activation Analysis"
3. Abnormal Protein Aggregation and the Folding Diseases, and Their Protection and Repair System
4. Proceedings of the 2nd Specialist Research Meeting on MIEZE/N(R)SE Spectroscopy
5. Non-targeted Effects of Radiation
6. Chemistry and Technology of Actinide Elements
7. New Concept of Radiation Dose and Biological Effect
8. Positron Beam Techniques for Sciences and Engineering
9. Condensed Matter Physics Research Using Short-Lived Nuclei and Radiations (I)
10. Neutron Imaging
11. Radioactive Waste Management

Workshops Organized in the FY 2008

1. Development and Application of Accelerator Neutron Source in KURRI
2. Proceedings of the Workshop on the Development and Applications of Devices for Neutrons II
3. Development and Installation of an Irradiation Facility with Improved Control Capabilities and Study of Materials Irradiation Effects
4. Accelerator Driven Subcritical Reactor

Special Meeting Held in the FY 2008

Meeting on the Future Project of the Kyoto University Research Reactor Institute

VIII-I-2. COLLABORATION RESEARCH AND VISITING SCIENTISTS

Visiting Scientists

The number of project researches	9
(The number of allotted research subject)	(67)
The number of general joint researches	46
The total man-days of visiting scientists	2566

VIII-I-3. EXPERIMENTAL RESEARCH

VIII-I-3-1. LIST OF PROJECT RESEARCH

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| [Project 1] | Project Research on Study of Microstructural Evolution and Physicality Changes in Irradiated Solid Materials |
| [Project 2] | Study on Nuclear Data for MA and LLFP Nuclides |
| [Project 3] | Biological Effects of Low Dose Radiation |
| [Project 4] | Fundamental and Developmental Research on Physical and Chemical Characteristics of Actinides |
| [Project 5] | Project Research on Material Science Using Short-Lived Nuclei and Radiations |
| [Project 6] | Project Research on the Abnormal Aggregation of proteins by UV and Gamma ray-irradiation and Study of Repair Mechanism |
| [Project 7] | Neutron Activation Analysis Using HANARO |
| [Project 8] | Development of Neutron Optical Devices and Its Application to New Neutron Spectrometer and Imaging |

VIII-I-3-2. LIST OF COLLABORATION RESEARCH

1. *Slow Neutron Physics and Neutron Scattering*

- CO1-1 Development of the CCD-based UCN Detector with Fine Spatial Resolution (20016)
- CO1-2 Thickness of Adsorbed Layer on Metal Surfaces Measured by X-Ray and Neutron Reflectometry (20017)
- CO1-3 Development of Cold Neutron Interferometer for Pulsed Source (20024)
- CO1-4 Preparation of Hydrogen Storage Alloy Membrane and Analysis of the Surface Structure by X-ray Reflectivity (20030)
- CO1-5 Development of Spin Flip Chopper System with High S/N Ratio for Pulsed Neutron Beam (20034)

2. *Nuclear Physics and Nuclear Data*

- CO2-1 Study on Precise Epi-thermal Neutron Measurement Using a Photonuclear Reaction Neutron Source with KURRI-LINAC (20019)

3. *Reactor Physics and Reactor Engineering*

- CO3-1 Heat Transfer Enhancement in Reflooding Process on SUS304 Rod with Film-coated Surface (20031)
- CO3-2 Development of Subcriticality Measurement for Accelerator-Driven Reactor (III) (CA20103)
- CO3-3 Reactor Noise Analysis based on Time-Series Data with High Time Resolution (CA20105)
- CO3-4 Nuclear Materials Identification by Neutron Noise Analysis Metho (CA20106)
- CO3-5 Quantification of Neutron and γ Ray Fields for Subcriticality Determination (CA20107)

4. *Material Science and Radiation Effects*

- CO4-1 Effects of Side Chain Substituents for Hydrogen Atom Encapsulated in Silsesquioxanes by γ -Ray Irradiation (20008)
- CO4-2 Coherent Excitation of Superionic Conduction (20011)
- CO4-3 Low Ferequency Excitation in Maleic Acid Disodium/Acrylamide Gel (20012)
- CO4-4 Study on Annihilation Behavior of Defects Produced in γ -ray-irradiated Li_2TiO_3 (20013)
- CO4-5 Absorption Spectroscopy with the Coherent THz Radiation from Linac Electron Beams (20014)
- CO4-6 Generation of Linearly Polarized Coherent Transition Radiation (20015)
- CO4-7 Complex Structure of Ions Coordinated with Hydrophilic Polymer. 9: (20018)
- CO4-8 Effect of Concentration of HNO_3 on Stability of Pyrrolidone Precipitants against γ -Irradiation under Heating (20020)
- CO4-9 Effects of UV Irradiation on ESR and Optical Properties of Cu(II) Ions in Organic Solid Solutions Containing CuCl at 77 K (20021)
- CO4-10 Spatial Resolution and Spectrum of a Scanning Near-Field THz-wave Microscopy with Coherent Transition Radiation (20023)

5. *Geochemistry and Environmental Science*

- CO5-1 Study of Earth and Planetary Matters by Thermoluminescence (20001)
- CO5-2 Generation of Low-Energy Photon Using KURRI-LINAC (20003)
- CO5-3 Luminescence Characteristics of Lake Sediment (20004)
- CO5-4 Analysis of Rare Earth Elements in Ivory Samples (20010)
- CO5-5 Investigation for Environmental Radioactivity in Relic Obtained from Salt-production Site, Aichi, Japan (20029)

7. *Neutron Capture Therapy*

- CO7-1 The Effect of Post-irradiation Tumor Oxygenation Status on Recovery from Radiation-induced Damage *in vivo*, Referring to That in Quiescent Cell Population (20007)

8. *Neutron Radiography and Radiation Application*

CO8-1 Transmission Electron Images Using ^{204}Tl (20005)

10. *Health Physics and Waste Management*

CO10-1 Aerosol Size Measurement in Accelerator Rooms in the Presence of Radioactive Gas (20026)

CO10-2 Evaluation of Production and Behavior of Tritium in Facility (20027)

CO10-3 Estimation of Internal Dose Distribution in Worker's Body Due to Leaking External Radiation in the Case of Critical Situation (CA20102)

11. *Accelerator Physics*

CO11-1 First Experiment of Terahertz-wave Spectrophotometry by Compton Backscattering Using KURRI-LINAC (20032)

12. *Others*

CO12-1 New Project for Improving the Utilization Activity on KUR and HL in KURRI under Strategic Promotion Program for Basic Nuclear Research (20033)

VIII-I-3-3. LIST OF ORIGINAL RESEARCH

OR1 Hexamethylenetetramine as a Combined Agent with γ -ray Irradiation and Cisplatin Treatment *in vivo*, Compared with Tirapazamine

OR2 A Feasibility Study on Multi Prompt-Gamma-Ray Telescope System for BNCT

OR3 Assessment of Environmental and Social Impacts Originating from the Use of Nuclear Energy