Final Program

The Eighth International Symposium on Radiation Safety and Detection Technology

ISORD-8

Seongsan Ilchulbong

July 14 – 17, 2015
Lotte City Hotel Jeju,
Jeju-si, Jeju Special Self-Governing Province, Korea

Innovative Technology Center for Radiation Safety (iTRS),
Hanyang University, Korea
Korean Association for Radiation Protection, Korea
Invitation

It is my great pleasure and honor to extend a warm invitation to you to attend the 8th International Symposium on Radiation Safety and Detection Technology (ISORD-8) to be held in Jeju Island, Korea from July 14 to 17, 2015. The objective of ISORD is to provide a forum in which participants exchange their views and information on radiation safety and detection technology, and also address general issues in radiation protection. The participants include international experts in the field such as scientists, medical doctors, and industrial engineers. Over the past 14 years, ISORD has been organized every two years in Korea, Japan, China, and Malaysia with over 300 participants from all around the world. ISORD-8 is the third symposium to be held in Korea. ISORD-8 will offer high quality technical activities including keynote speeches, research sessions, and poster sessions. I hope you join ISORD-8 in Jeju Island, which is listed as one of the world’s new 7 wonders of nature. It is also known as “Sam-Da-Do” which translates as “the island abundant with three things: stones, winds and women”. (Stones are the result of the volcanic eruptions; winds refer to typhoons; and the island used to have more women than men since men sailed out to sea.) Jeju has long been a popular honeymoon place for its temperate climate and fascinating scenery of Halla Mountain and the white sand beaches. I look forward to welcoming all participants of ISORD-8 and discussing radiation safety and detection technology. I hope you will enjoy your stay in Jeju Island, as well. Thank you!

Kyo-You Kim
Conference Chair
Korea Atomic Energy Research Institute
**Conference Organization**

**Organizer:** Innovative Technology Center for Radiation Safety (iTRS)  
Korean Association for Radiation Protection, Korea

### Organizing Committee

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<tr>
<th>Role</th>
<th>Name</th>
<th>Affiliation</th>
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<tr>
<td>Chair</td>
<td>Kyo-Youn KIM</td>
<td>Korea Atomic Energy Research Institute</td>
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<tr>
<td>Vice Chair</td>
<td>Hee-Seock LEE</td>
<td>Pohang Accelerator Laboratory</td>
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<td>Honorary Chairs</td>
<td>Takashi NAKAMURA</td>
<td>Tohoku University</td>
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<td>Jong Kyoung KIM</td>
<td>Korea Atomic Energy Research Institute/</td>
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<td>Senlin LIU</td>
<td>China Institute of Atomic Energy</td>
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<td>Secretary</td>
<td>Chang-ho SHIN</td>
<td>Hanyang University</td>
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<td>Korean Members</td>
<td>Kwang Pyo KIM</td>
<td>Kyung Hee University</td>
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<td>Korea Atomic Energy Research Institute</td>
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<td>Chan Hyeong KIM</td>
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<td>Nuclear Safety and Security Commission</td>
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<td>Seoul National University Hospital</td>
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<td>Detao XIAO</td>
<td>University of South China</td>
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<td>Zhaorong SHANG</td>
<td>Nuclear and Radiation Safety Center, Ministry of Environmental Protection</td>
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<td>Chaofeng CHEN</td>
<td>Suzhou Nuclear Power Research Institute</td>
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<td><strong>Japanese Members</strong></td>
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<td>Tetsuo IGUCHI</td>
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<td>Yoshihito NAMITO</td>
<td>High Energy Accelerator Research Organization</td>
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<td>Japan Atomic Energy Agency</td>
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<td>Shinya HOHARA</td>
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<td>Hiroyuki TAKAHASHI</td>
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<td>Kenji ISHIBASHI</td>
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<td><strong>Australian Members</strong></td>
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<tr>
<td>Uma RAJAPPA</td>
<td>Health Protection Unit, Queensland</td>
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<td>Brad CASSELS</td>
<td>Department of Health, Victoria</td>
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<td>Tony HOOKER</td>
<td>South Australian Environment Protection Authority</td>
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<td><strong>Taiwanese Member</strong></td>
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<td>Rong-Jiun SHEU</td>
<td>National Tsing Hua University</td>
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Supporting Organization

Ministry of Science, ICT and Future Planning, Korea
Nuclear Safety and Security Commission, Korea
Korea Atomic Energy Research Institute, Korea
Korea Institute of Nuclear Safety, Korea
Korean Nuclear Society, Korea
Pohang Accelerator Laboratory, Korea
Korea Radioactive Waste Agency, Korea
Japan Health Physics Society, Japan
Radiation Engineering Division of AESJ, Japan
Chinese Society of Radiation Protection, China
Australian Radiation Protection Society, Australia
Health Physics Society Taiwan Chapter, Taiwan
Malaysian Radiation Protection Association, Malaysia
General Information

Registration
The registration desk is on the 4th floor, Lotte City Hotel Jeju. All symposium participants are requested to register and collect the symposium materials at the registration desk. The registration desk will be open during the following hours:

- July 13, 2007 15:00 - 19:30
- July 14, 2007 08:00 - 18:00
- July 15, 2007 08:00 - 18:00
- July 16, 2007 08:00 - 11:00

The registration fee covers the welcome reception, and banquet in addition to the symposium materials, admission to the technical sessions, coffee, and a group photo.

Oral Presentation Guidelines
Twenty minutes including 5 min Q&A will be assigned for each oral presentation (thirty minutes for invited talks). A notebook PC and a beam projector will be prepared in the presentation room and, therefore, the presenter need to bring only the presentation file in a CD or in a memory stick. Before the session beginning, you need to copy your presentation file (e.g., MS PowerPoint file) to the notebook. We recommend that you check your presentation file in preview room.

Oral presenter are kindly requested to let the session chair know about his/her short curriculum vitae if you didn’t send to ISORD8 office in advance. The curriculum vitae will be used to introduce you in oral session by session chairs.

Poster Presentation Guidelines
The size of the poster should be 90 cm (W) x 120 cm (H). The poster should be posted before 15:00 on July 14th (Tue) and until a dinner on 15th (Wed). Unposted papers will not be accepted for full paper publication. All poster presenters are requested to be at the front of their own poster during the poster session, July 15th (Wed) 13:20 – 14:40 pm.
Satellite Meeting - Registration
This satellite meeting is free for attending. The registration sheet is prepared on the registration desk. All participants who want to attend, are kindly requested to fill his/her name into the sheet with a signature.

Technical Tour
The technical tour is canceled due to insufficient number of participants.

Sightseeing in Jeju
Two recommended tour programs were already announced at ISORD8 web pages. The reservation desk of a local travel company is located near the registration desk. You can get more information of sightseeing courses at the travel company desk and reserve your preferred tour directly. The advanced reservation is strongly recommended.

The biggest duty free shop, Lotte, is also available on the 1st, 2nd, and 3rd floor at the same venue hotel.
### Program Summary

#### Monday, July 13

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<td>17:00-18:30</td>
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#### Tuesday, July 14

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<td>08:00-09:00</td>
<td>Registration</td>
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<tr>
<td>09:00-09:40</td>
<td>Opening Ceremony (Opening Remark, Welcome Speeches)</td>
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<tr>
<td>09:40-10:40</td>
<td>Plenary Session I</td>
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<td>10:40-11:00</td>
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<td>11:00-12:00</td>
<td>Plenary Session II</td>
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<td>12:00-12:10</td>
<td>Group Photograph</td>
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<td>12:10-13:40</td>
<td>Lunch</td>
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<td>13:40-15:20</td>
<td>Special Session (Beyond Fukushima)</td>
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<td>15:20-15:40</td>
<td>Coffee Break</td>
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<td>15:40-16:40</td>
<td>Session R1-(I)</td>
<td>Session R2-(I)</td>
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<td>16:40-17:00</td>
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<td>Session R1-(I)</td>
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#### Wednesday, July 15

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<td>10:40-12:00</td>
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<td>13:20-14:20</td>
<td>Poster Standing Session (Hall)</td>
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<td>14:20-16:00</td>
<td>Session R1-(IV)</td>
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<td>16:00-16:20</td>
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<td>16:20-18:00</td>
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<td>19:00-20:30</td>
<td>Symposium Dinner (Room A+B+C)</td>
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<td>Session R5-(I)</td>
<td>Session R3-(II)</td>
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<td>10:20-10:40</td>
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<td>10:40-12:00</td>
<td>Session R5-(II)</td>
<td>Session R3-(III)</td>
<td>Session R4-(II)</td>
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<td>12:00-12:30</td>
<td>Closing Session</td>
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<td>12:30-18:00</td>
<td>Go To Technical Tour (Gyeongju and Pohang)</td>
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#### Friday, July 17

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<td>09:00-12:00</td>
<td>Satellite Meeting: Effects of Low Doses of Radiation (Room C)</td>
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<td>09:00-18:00</td>
<td>Technical Tour (KORAD in Gyeongju and PAL in Pohang)</td>
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Session R1: Radiation Transport and Shielding  
Session R2: Radiation Detection and Sensor Technology  
Session R3: Radiation Dosimetry  
Session R4: Environmental Radiation Measurements and Assessments  
Session R5: Radiological Emergency Planning and Preparedness
Session R6: Radiological Risk Management
Session R7: Radioactive Waste and Current Radiological
Session R8: Education, Training and Policy in Radiation Safety
Program

Monday, July 13

15:00-17:00 Registration
17:00-18:30 Reception

Tuesday, July 14

08:00-9:00 Registration

Room A
09:00-09:40 Opening Ceremony
Opening Remarks:
Kyo-Youn KIM (Conference Chair, ISORD-8)
Welcome Address:
Takashi NAKAMURA (Fuji Electric Co., Ltd / Tohoku University, Japan)
Zhiping LUO (China Institute of Atomic Energy, China)
Jong Kyung KIM (Korea Atomic Energy Research Institute / Hanyang University, Korea)

09:40-12:00 Plenary Session
Chair: Kunwoo CHO (KINS)
I1 Analysis of Atmospheric Concentrations of FP Nuclides from NaI(Tl) Detector Pulse Height Distributions Routinely Measured at Environmental Monitoring Facilities
Hiromi YAMAZAWA, Nagoya University
I2 Development of Monte Carlo-Point Kernel Coupled System for Fast 3D Radiation Transport Calculation
Yuanjie BI, China Institute of Atomic Energy
10:40-11:00 Coffee Break
I3 IAEA Program in Radiation Safety and Monitoring
Pil-Soo HAHN, IAEA
I4 ICRP-110 Reference Phantoms Conversion Project
Chan Hyeong KIM, Hanyang University
12:00-12:10 Photograph
12:10-13:40 Lunch

13:40-15:20 Special Session (Beyond Fukushima)
Chair: Mamoru BABA (Tohoku University), Tae Woon KIM (KAERI)
FS1 Radiological Impact Assessment by the Radioactive Materials Released from the Fukushima Accident
Kyung-Suk SUH, Korea Atomic Energy Research Institute
FS2 Status of Radiation Dose and Contamination Due to the Fukushima Accident
Mamoru BABA, Tohoku University
FS3 Radioactive Noble Gases Monitoring in Korea: Effects of Fukushima Accident
Wanno LEE, Korea Atomic Energy Research Institute
FS4 Reduction of Outdoor and Indoor Ambient Equivalent Dose after Decontamination in the Fukushima Evacuation Zones
Hiroko YOSHIDA-OHUCHI, Tohoku University
FS5 Evaluation of In-Plant Fission Product Behaviors on Fukushima Daiichi Accident
Tae Woon KIM, Korea Atomic Energy Research Institute
15:20-15:40 Coffee Break

15:40-16:40 Radiation Transport and Shielding (I)
Chair: Kazuyoshi MASUMOTO (KEK), Jong Woon KIM (KAERI)
R1-O-1 A Preliminary Study on Activation Analysis of ISOL Target Instruments for RAON Accelerator
Jae Yong LEE, Song Hyun KIM, Do Hyun KIM, and Chang Ho SHIN, Hanyang University
R1-O-2 Research on Shielding Performance Measurements of Spent Fuel Transportation Package
Hongchao SUN, Guoqiang LI, Xuexin WANG, Dajie ZHUANG, Shutang SUN, China Institute for Radiation Protection, Shanxi Taiyuan
R1-O-3 Measurements of Secondary Neutrons Spectra from 50 MeV/u 238U Beams with the Beryllium Stripper
Joo-Hee OH, Nam-Suk JUNG, Leila MOKHTARI ORANI, Hee-Seock LEE, PAL/POSTECH, Noriaki NAKAO, Shimizu Corporation, Yoshitomo UWAMINO, RIKEN, Seung-Kook KO, University of Ulsan
16:40-17:00 Coffee Break

17:00-18:00 Radiation Transport and Shielding (I)
Chair: Kazuyoshi MASUMOTO (KEK), Jong Woon KIM (KAERI)
R1-O-4 A Verification on Response Accuracy in Using Fission Matrix Based Monte Carlo Simulation Method
Myeong Hyun WOO, Song Hyun KIM, Gwang Min SUN, Korea Atomic Energy Research Institute, Chang Ho SHIN, Hanyang University

R1-O-5 A High Efficiency Transport Method for Monte Carlo Calculation of Maze and Duct Shielding
Xin WANG, Junli LI, Rui QIU, Tsinghua University, Zhen WU, Chunyan LI, Nuctech Company Limited

R1-O-6 Verification of Multi-response CADIS Method for Variance Reduction of Monte Carlo Calculations
Do Hyun KIM, Song Hyun KIM, and Chang Ho SHIN, Hanyang University

Room B
15:40-16:40 Radiation Detection and Sensor Technology (I)
Chair: Isao Murata (Osaka University), Jang Ho HA (KAERI)

R2-O-1 Feasibility of CNR improvement in a sparse-view cone-beam computed tomography using an anti-scatter grid
Sanghoon CHO, and Seungryong CHO, KAIST

R2-O-2 Research of the Emergency Warning Instrument Related to Radiation Sources Location
Linsheng JIA, Jiangang ZHANG, Rongyao TANG, Baowei CHEN, China Institute for Radiation Protection

R2-O-3 Standardization of 68Ge/68Ga Based on Electron Capture Events by 4πβ (LS)-γ Coincidence Counting
Agung AGUSBUDIMAN, Korea University of Science and Technology (UST), Kyeong Beom LEE, Jong Man LEE, Korea University of Science and Technology (UST), Korea Research Institute of Standards and Science (KRISS)

16:40-17:00 Coffee Break

17:00-18:00 Radiation Detection and Sensor Technology

(l) Chair: Isao Murata (Osaka University), Jang Ho HA (KAERI)

R2-O-4 CAMs Testing Study
Fu SHEN, Pingping XI, Dan MEN, Zhilong ZHANG, CuiMing FU, Zhenyong LU, Yi YANG, Tao MA, Liu YANG, China Institute for Radiation Protection

R2-O-5 Comparison of CdTe and Si-PIN X-ray Sensor for X-ray Fluorescence Application
Hyojeong CHOI, Sungkyunkwan University, Young Soo KIM, Han Soo KIM, Dong Jin KIM, Jang Ho HA, Korea Atomic Energy Research Institute, Jong Seo CHAI, Sungkyunkwan
Development of Light-weight Neutron Survey Meter
Tomoya NUNOMIYA, Shigeru ABE, Takahiro AMANO, Fuji Electric Co., Ltd., Takashi NAKAMURA, Fuji Electric Co., Ltd / Tohoku University

Wednesday, July 15

Room A
08:40-10:20 Radiation Transport and Shielding (II)
Chair: Kenji ISHIBASHI (Kyushu University), Cheol Woo LEE (KAERI)

R1-O-7 A Study on Activation Characteristics as Target Properties for Cold Neutron Activation Analysis
Jong Woo KIM, Song Hyun KIM, Chang Ho SHIN, Hanyang University, Gwang Min SUN, Korea Atomic Energy Research Institute

R1-O-8 Availability Analysis and Ruggedized Model of Image Sensors in Accident of Nuclear Power Plant
Shu Liang ZOU, Shoulong XU, University of South

R1-O-9 Detail Analysis of the KAERI nTOF Facility
Jong Woon KIM and Young-Ouk LEE, Korea Atomic Energy Research Institute

R1-O-10 Measurement of Neutron Production Double-differential Cross-sections on Carbon Bombarded with 430 MeV / nucleon Carbon Ions
Yutaro ITASHIKI, Youichi IMAHAYASHI, Nobuhiro SHIGYO, Yusuuke UOZUMI, Kyushu University, Daiki SATOH, Japan Atomic Energy Agency, Tsuyoshi KAJIMOTO, Hiroshima University, Toshiya SANAMI, High Energy Accelerator Research Organization, Yusuuke KOBA, Naruhiro MATSUFUJI, National Institute of Radiological Sciences

R1-O-11 Comparison of MCNPX Physics Model Options in the Calculation of reaction on Carbon with 600-MeV/nucleon Proton and 290-MeV/nucleon Oxygen ions
Arim LEE, Donghyun KIM, Nam-Suk JUNG, Joo-Hee OH, Leila MOKHTARI ORANJ, Hee-Seock LEE, PAL/POSTECH

10:20-10:40 Coffee Break

10:40-12:00 Radiation Transport and Shielding (III)
Chair: Liye LIU (China Institute for Radiation Protection), Song Hyun KIM (Hanyang University)

R1-O-12 Gas and water activation by electron accelerators for medical use -Reevaluation of photon
activation yields of 11C, 13N and 15O -


R1-O-13 Verification on Real Uncertainty Estimation Method Based on Union Tally for Monte Carlo Particle Transport in Residual Radiation Analyses
Gi Yeong HAN, Song Hyun KIM, Do Hyun KIM, Chang Ho SHIN, Hanyang University

R1-O-14 A Study on UF6 Transportation Accident Scenarios and Diffusion Model
Shutang SUN, Guoqiang LI, Di ZHOU, Hongchao SUN, Feng YAN, Jianguang ZHANG, China Institute for Radiation Protection

R1-O-15 Verification of Proton Beam Intensity at 100-MeV KOMAC Accelerator Facility
Leila MOKTARI ORANJ, Nam-Suk JUNG, Joo-Hee OH, Dong-Hyun KIM, Hee-Seock LEE, PAL/POSTECH

12:00-13:20 Lunch
13:20-14:20 Poster Session

14:20-16:00 Radiation Transport and Shielding (IV)
Chair: Yuanjie BI (China Institute of Atomic Energy), Kwang Pyo Kim (Kyanghee University)

R1-O-16 Activation Analysis in the accelerator components at RAON
Sangjin LEE, Suna KIM, Sangbin LEE, Shinwoo NAM, Institute for Basic Science

R1-O-17 Characterization of Hundreds of MeV 7Li(p,n) Quasi-monoenergetic Neutron Source at RCNP using a Proton Recoil Telescope
Masayuki HAGIWARA, Yosuke IWAMOTO, Japan Atomic Energy Agency, Hiroshi IWASE, Hiroshi YASHIMA, Kyoto University, Daiki SATOH, Japan Atomic Energy Agency, Tetsuro MATSUMOTO, Akihiko MASUDA, National Institute of Advanced Industrial Science and Technology, Yoshihiro NAKANE, Japan Atomic Energy Agency, Atsushi TAMII, Tatsushi SHIMA, Kichiji HATANAKA, Osaka University, Takashi NAKAMURA, National Institute of Advanced Industrial Science and Technology

R1-O-18 A Proposal on Evaluation Method of Neutron Absorption Performance to Substitute Conventional Neutron Attenuation Test
Song Hyun KIM, Jae Hyun KIM, Chang Ho SHIN, Hanyang University, Jung Hun CHOE, In-Hak CHO, Hwan Seo PARK, Korea Atomic Energy Research Institute, Hyun Seo PARK, Jung Ho KIM and Yoon Ho KIM, Korea Research Institute of Standards and Science

R1-O-19 Shielding Performance Measurements and Assessments on FCTC10 Container for Cobalt-60 Transport in Irradiation Industry
Dajie ZHUANG, Guoqiang LI, Guoqing ZHANG, Xiaowei LUO, China Institute for Radiation Protection

R1-O-20  A Preliminary Radiation Shielding Analysis for 500W Radioisotope Thermophotovoltaic (RTPV) System
Seong Jae CHEON, Ser Gi HONG, Kyung Hee University

16:00-16:20  Coffee Break

16:20-18:00 Radiation Transport and Shielding (V) and Radiological Risk Management (I)
Chair: Rong Jiu SHEU (National Tsing Hua University, Taiwan), Kyung-O KIM (KAERI)

R1-O-21  A Development of Underground Cavities Inspection System Using Cf-252 Neutron Source
Che Wook YIM, Song Hyun KIM, Do Hyun KIM, Chang Ho SHIN, Hanyang University

R1-O-22  Measurement of gamma-ray yield from thick carbon target irradiated by 5 and 9-MeV deuterons
Shouhei ARAKI, Kazuhiro KONDO, Tadahiro KIN, Yukinobu WATANABE, Nobuhiro SHIGYO, Kenshi SAGARA, Kyushu University

R6-O-1  Fission Product Yields Determination in the 12 MeV Bremsstrahlung Induced Fission of 232Th
H. NAIK, Bhabha Atomic Research Centre, G.N. KIM, Kyungpook National University, R. SCHWENGNER, R. JOHN, R. MASSAVCZYK, A. JUNGHANS, Institute of Radiation Physics, A. GOSWAMI, Bhabha Atomic Research Centre

R6-O-2  Glutathione for Protection Against Ionizing Radiation
Muhammad B. GUSAU, A.D NDAWASHI, National Institute of Radiation Protection and Research (NIRPR)

Room B

08:40-10:20 Radiation Detection and Sensor Technology (II)
Chair: Zhiping LUO (China Institute of Atomic Energy), Jung Ho KIM (Korea Research Institute of Standards and Science)

R2-O-7  Development of the Gamma Ray Tracking System in KRISS
Jubong HAN, K. B. LEE, KRISS, Jong-Man LEE, S. H. LEE, Tae Soon PARK, J. S. OH, UST

R2-O-8  Design and Implementation of a Long Distance Wireless Electronic Personal Dosimeter
Bao-wei CHEN, Wei-min XIE, Zhong-jian Yang, Lin-sheng JIA, China Institute for Radiation Protection

R2-O-9  Characterizations of Thallium bromide single crystals grown by Vertical Bridgman method for room temperature semiconductor gamma-ray radiation detector application
Dong Jin KIM, Joon-Ho OH, Han Soo KIM, Young Soo KIM, Manhee JEONG, Woo Jin JO, 
*Korea Atomic Energy Research Institute*, Hyojeong Choi, *Korea Atomic Energy Research 
Institute*, Sungkyunkwan University, Jong Guk KIM, Seung Hee LEE, Jang Ho HA, 
*Korea Atomic Energy Research Institute*

**R2-O-10 Overview of New Important Approaches in Gamma Spectrum Analysis Algorithms**
Ri ZHAO, *Tsinghua University, China Institute for Radiation Protection*, Liye LIU, *China 
Institute for Radiation Protection*, Junli LI, *Tsinghua University*

**R2-O-11 Charged Particle Spectroscopy Utilizing CdTe Nanocrystal Assembly Formed by Layer-
by-Layer Deposition Method**
Geehyun KIM, *Sejong University*, Yunlong ZHOU, Nikolas A. KOTOV, Mark D. HAMMIG, 
*University of Michigan*

10:20-10:40 Coffee Break

**10:40-12:00 Radiation Detection and Sensor Technology (III)**
Chair: Hongchao PANG (*China Institute of Atomic Energy*), Manhee JEONG (KAERI)

**R2-O-12 Preliminary research of CZT Based PET System development in KAERI**
Woo Jin JO, Manhee JEONG, Han Soo KIM, *Korea Atomic Energy Research Institute*, Sang 
Yeol KIM, *Notice Co.*, Jang Ho HA, *Korea Atomic Energy Research Institute*

**R2-O-13 Development and experimental test of neutron flux intensity monitor between ten and 
several hundred keV for BNCT**
Xingcai GUAN, *Lanzhou University*, Masanobu MANABE, Fuminobu SATO, Isao MURATA, 
*Osaka University*, Tieshan WANG, *Lanzhou University*

**R2-O-14 Spectrum measurement of high power and high energy (6 and 9 MeV) pulsed X-ray source 
for industrial use**
Hiroyuki Takagi, *Hitachi, Ltd., Osaka University*, Isao Murata, *Osaka University*

**R2-O-15 Development of Gamma Vertex Imaging (GVI) System for Proton Dose Monitoring**
Han Rim LEE, Jong Hoon PARK, Sung Hun KIM, Chan Hyeong KIM, *Hanyang University*, 
Won Gyun JUNG, *Korea Institute of Radiological & Medical Sciences*

12:00-13:20 Lunch

13:20-14:20 Poster Session (Hall on 4th floor)

**14:20-16:00 Radiation Detection and Sensor Technology (IV)**
Chair: Ri ZHAO (*Tsinghua University/ China Institute for Radiation Protection*), Won Ho LEE 
(Korea University)

**R2-O-16 Measuring Thermo-luminescence Efficiency of CTLD1000 Detectors to Different Energy**
**Photons**

Wei Min XIE, Bao Wei CHEN, Yi HAN, Zhong Jian YANG, *China Institute for Radiation Protection*

**R2-O-17 Developing uranium isotopic analysis code in Hypergam platform**


**R2-O-18 Measurements of Sea-Level Cosmic-Ray Neutron Spectra in Taiwan using Standard Bonner Spheres and High-Sensitivity Bonner Cylinders**

Kuo-Wei LEE, *Institute of Nuclear Engineering and Science*, Institute of Nuclear Energy Research, Rong-Jiun SHEU, *Institute of Nuclear Engineering and Science*, National Tsing Hua University

**R2-O-19 Development of Nuclear Material Monitoring System Based on Compton Imaging Technology**


**R2-O-20 Calculation of Low-Energy Reactor Neutrino Spectra**

Eka Sapt RYANA, Shoya SUDA, Kenji ISHIBASHI, Hideaki MATSUURA, *Kyushu University*

**16:00-16:20 Coffee Break**

**16:20-18:00 Radiation Detection and Sensor Technology (V) and Radiation Dosimetry (I)**

**Chair:** Rui QIU (Tsinghua University), Jang-Lyul KIM (KAERI)

**R2-O-21 Optical characterizations of TlBr single crystals for radiation detection applications**


**R2-O-22 Application of the point kernel method to estimate the internal contamination of pipes in nuclear reactors**

Sanqiang XIA, Liye LIU, Qinjian CAO, Yu WANG, Hua LI, Ri ZHAO, Wanchun XIONG, *China Institute for Radiation Protection*

**R3-O-1 The study of gamma knife dosimetry using Monte Carlo code MCNP**

Jinsen GUO, Yuanjie BI, Zhiping LUO, Ling CHEN, *China Institute of Atomic Energy*
R3-O-2 Monte Carlo Calculation for Dose Estimation in Mammography Based on a 3D Detailed Breast Model
Wenjing WANG, Rui QIU, Li REN, Huan LIU, Junli LI, Tsinghua University.

R3-O-3 Probabilistic Internal Dose Assessments Using Monte Carlo and Bayesian Approach
Siwan NOH, Jai-Ki LEE, Hanyang University, Jong-II LEE, Jang-Lyul KIM, Korea Atomic Energy Research Institute

19:00-21:00 Symposium Dinner (Room A + B +C)

Thursday, July 16

Room A
09:00-10:20 Radiological Emergency Planning and Preparedness (I)
Chair: Tetsuo IGUCHI (Nagoya University), Seung Yeong JUNG (Korea Institute for Nuclear Safety)
R5-O-1 Development of Nuclear Robot of KAERI in Radiation Field
Young CHOI, Y. S. CHOI, S. H. KIM, Kyungmin JEONG, Korea Atomic Energy Research Institute
R5-O-2 Development of Integrated Nuclear Emergency Command and Decision Support System for Nuclear Power Plant
Yapeng YANG, Jiangang ZHANG, Zongyang FENG, Linsheng JIA, Xiaoxiao XU, Rongyao TANG, China Institute for Radiation Protection
R5-O-3 The Nuclide Recognizing Prompt Environmental Radiation Distribution Monitoring System for Radiation Emergency Response
Uk Jae LEE, Hee Reyoun KIM, Ulsan National Institute of Science and Technology
R5-O-4 Current Issues of Applying State of the Art Techniques for Performing Level 3 PSA with MACCS2 Code in Korea
Kiwhan CHUNG, Gun Hyo JUNG, So Eun SHIN, Yong Suk LEE, Future & Challenge Technology Co. Ltd.
10:20-10:40 Coffee Break

10:40-12:00 Radiological Emergency Planning and Preparedness (II)
Chair: Tomoya NUNOMIYA (Fuji Electric Co., Ltd.), Jeong-in KIM (Radiation Health Institute, KHNP)
R5-O-5  Air Leakage Analysis of Research Reactor HANARO Building in Typhoon Condition for the Nuclear Emergency Preparedness
Goan-Yup LEE, Hae-Choi LEE, Bong-Suk KIM, Jong-Su KIM, Pyung-Kyu CHOI, Korea Atomic Energy Research Institute

R5-O-6  PWR Source Term Estimation Code Programming
Zongyang FENG, Jiangang ZHANG, Rongyao TANG, Renze WANG, Dajie ZHUANG, Feng YAN, China Institute for Radiation Protection

R5-O-7  Optimization of in-vivo monitoring program for radiation emergency response
Wi-Ho HA, Korea Institute of Radiological and Medical Sciences/Hanyang University, Jaeryong YOO, Seokwon YOON, Min-Jeong PAK, Korea Institute of Radiological and Medical Sciences, Jong Kyung KIM, Hanyang University, Korea Atomic Energy Research Institute, Seung-Sook LEE, Korea Institute of Radiological and Medical Sciences

R5-O-8  An Improvement of Estimation Method of Source Term to the Environment for Interfacing System LOCA for typical PWR using MELCOR code
Seok-Jung HAN, Tae-Woon KIM, Kwang-II AHN, Korea Atomic Energy Research Institute

Room B
09:00-10:20 Radiation Dosimetry (II)
Chair: Hiroko YOSHIDA-OHUCHI (Tohoku University), Chan Hyeong KIM (Hanyang University)

R3-O-4  Research of New Gamma-Ray Buildup Factor Data and Its Influence Factors for Point Kernel Calculations
Hua LI, China Institute for Radiation Protection, Tsinghua University, Liye LIU, Sanqiang XIA, Yuan ZHAO, Qinjian CAO, China Institute for Radiation Protection, Junli LI, Tsinghua University

R3-O-5  Calculating Radiation Imaging Dose Using Monte Carlo Simulation For Image-guided Radiation Therapy
Kihong SON, Seungryong CHO, Hoyoen LEE, Korea Advanced Institute of Science and Technology, Youngih HAN, Sang Gyu JU, Jinsung KIM, Samsung Medical Center Sungkyunkwan University

R3-O-6  Microwave Dielectric Absorption Spectroscopy Aiming at Novel Dosimetry Using DNAs
Yoshinobu IZUMI, Makoto HIRAYAMA, Youichirou MATUO, University of Fukui, Takeyoshi SUNAGAWA, Fukui University of Technology

R3-O-7  Characteristics of Bremsstrahlung X-rays emitted from the Laser Produced Plasmas and Spectral Tomographic Analysis
Yong-Joo RHEE, Sung-Mo NAM, Jae-Min HAN, Duck-Hee KWON, Korea Atomic Energy
10:20-10:40 Coffee Break

10:40-12:00 Radiation Dosimetry (III)

Chair: FY HSU (National Tsing Hua University, Taiwan), Bong Hwan KIM (KAERI)

R3-O-8 Introduction to Individual Dose Measuring Methods for Nuclear Industry Workers in China
Hongjuan PAN, China Institute for Radiation Protection

R3-O-9 Absolute Measurement of Absorbed Dose to Water for 60Co Gamma-rays using Fricke Dosimeter and its Medical Application to Gamma Knife Radiosurgery Facilities
Se Woon OH, Korea University of Science and Technology (UST)/ Korea Research Institute of Standards and Science, Hyun-Tai CHUNG, Seoul National University Hospital, Jae Pil CHUNG, Korea University of Science and Technology (UST)/ Korea Research Institute of Standards and Science, Young Min SEONG, Kook Jin CHUN, Korea Research Institute of Standards and Science

R3-O-10 Basic characteristics of nanoDot OSL dosimeter for diagnostic X-ray
Tohru OKAZAKI, Nagase Landauer, LTD., Hiroaki HAYASHI, Hiroki OKINO, Kazuki TAKEGAMI, Natsumi KIMOTO, Itsumi MAEHATA, Tokushima University, Ikuo KOBAYASHI, Nagase Landauer, LTD.

Room C

09:00-10:20 Environmental Radiation Measurement and Assessment (I)

Chair: Jinfeng LI (China Institute of Atomic Energy), Moon Hee HAN (KAERI)

R4-O-1 Radiological Consequence Analysis of LOCA for Kori Nuclear Power Plant Unit 2 Applying RG 1.183
Sang Joon YOON, Chan Su JANG, Jae Don CHOI, and Chang Sok CHO, KEPCO Nuclear Fuel

R4-O-2 A Simple radon exhalation rate detecting system
Zhiqiang LI, University of South China / Hengyang Normal University, Detao XIAO, Guizhi ZHAO, University of South China

R4-O-3 Experience in Radiological Environmental Impact Assessment of a Foreign Nuclear Facility
Moon Hee HAN, Hae Sun JEONG, Hyo Joon JEONG, A Reum KIL, Eun Han KIM, Won Tae HWANG, Korea Atomic Energy Research Institute

R4-O-4 Measurements of Cs-134 and Cs-137 in Fukushima Area Using Gamma-Ray Imaging Spectrometer named Polaris-H
10:20-10:40 Coffee Break

10:20-12:00 Environmental Radiation Measurement and Assessment (II)
Chair: Hiromi YAMAZAWA (Nagoya University), Won Tae HWAN G (KAERI)
R4-O-5 HYPERGAM ver. 3.0: General Purpose Software for Gamma-ray Spectrum Analysis
Gwang Min SUN, Byun Gun. PARK, Korea Atomic Energy Research Institute, Chang Su. PARK, Korea Institute of Nuclear Safety, Heedong CHOI, Seoul National University

R4-O-6 Assessment of terrestrial gamma radiation of Jeonnam and Jeonbuk province in Korea
E.R. LEE, Korea University of Science and Technology, B.U. CHANG, Y.J. KIM, Korea University of Science and Technology, Korea Institute of Nuclear Safety, and K.P. Lee, RadSearch Company

R4-O-7 Radon emissions from an iron and steel plant in China
Jinfeng LI, Chunhong WANG, Ziyong JIANG, China Institute of Atomic Energy, Zhijun HUANG, China Institute of Atomic Energy, University of South China, Baoyin WEN, Chuangao WANG, Yanqi ZHANG, Xiaoyun LI, Xingming TU, Xutao XU, Shuguo HOU, Ling CHEN, China Institute of Atomic Energy

12:00-12:30 Closing Session (Room A+B+C)

Friday, July 17

09:00-12:00 Satellite Meeting (Room C)
Chair: Jin Kyu KIM (KAERI/University of Science and Technology), Seon Young NAM (Korea Hydro & Nuclear Power Co., LTD.)

S-01 Biological Effects of Low Dose Radiation and On-going Challenges
Jin Kyu KIM, Korea Atomic Energy Research Institute, University of Science and Technology (UST), Yun Jong LEE, Jin-Hong KIM, Korea Atomic Energy Research Institute

S-02 Current Status of Research on the Biological Effect of Low-dose Ionizing Radiation in Korea
Seon Young NAM, Korea Hydro & Nuclear Power Co., LTD.

PANEL DISCUSSION
Poster Session (Hall)

R1 Radiation Transport and Shielding

R1-P-1 A Study on Photo Neutron Effect in Fuel Failure Detection System
Ji Sung PARK, Gyuhong ROH, Byungchul LEE, Korea Atomic Energy Research Institute

R1-P-2 The Performance Test of Anti-scattering X-ray Grid with Inclined Shielding Material by MCNP Code Simulation
Jun Woo Bae, Hee Reyong KIM, Ulsan National Institute of Science and Technology

R1-P-3 Current Status of ACE Format Libraries for MCNP at Nuclear Data Center of KAERI
Do Heon KIM, Choong-Sup GIL, Young-Ouk LEE, Korea Atomic Energy Research Institute

R1-P-4 Estimation of Tritium Activity in the Heavy Water Reflector of the Research Reactor
Gyuhong ROH, Ji Sung PARK Byungchul LEE, Korea Atomic Energy Research Institute

R1-P-5 Quantitative Evaluation of Radiation Dose for Depleted Uranium in PRIDE
Il Je CHO, Korea Atomic Energy Research Institute, Kyoung Yong NOH, Soon Young KIM, RADCORE, Co., Ltd., Yong Soo KIM, Hanyang Normal University

R1-P-6 Comparison of Photon Compton Broadening with mcplib04 and mcplib84
Kyung-O KIM, Gyuhong ROH, Byungchul LEE, Korea Atomic Energy Research Institute

R1-P-7 Neutron Activation Analysis for collimation system in RAON NSF Using Monte Carlo Simulation
Eunjoong LEE, KAIST, Sung-Chul YANG, Cheol Woo LEE, Korea Atomic Energy Research Institute

R1-P-8 A Preliminary Shielding Analysis for Neutron Beam Dump in RAON Neutron Science Facility
Sung-Chul YANG, Cheol Woo LEE, Eunjoong Lee, Young-Ouk Lee, Korea Atomic Energy Research Institute, and J.C. Kim, Institute for Basic Science

R1-P-9 The Fission Products Inventory Evaluation of a Fuel Assembly with Gadolinium Burnable Poison using TRITON in SCALE 6.1
Jae Hoon Song, Ha young Kim and Kyo Youn Kim, Korea Atomic Energy Research Institute

R1-P-10 Activation Evaluation of the 13 MeV Cyclotron Facility
Jaeho LEE, Siwan NOH, Jae-Ki LEE, Hanyang University, Han-Ki JANG, Tae-Jin PARK, Korean Association for Radiation Application, In-Su JUNG, Korea Institute of Radiological & Medical Sciences

R1-P-11 Evaluation of Shutdown dose distribution inside IFF facility of RAON Heavy-ion Accelerator Complex in Korea
Cheol Woo LEE, Korea Atomic Energy Research Institute / Hanyang University, Young-Ouk LEE, Korea Atomic Energy Research Institute, Jong Won KIM, Mijung KIM, Institute for Basic
Science

R1-P-12 Difference of the neutron radiography image for the various boron-concrete
Koichi OKUNO, Hazama-Ando Corporation

R1-P-13 A proposal of activation reduction for concrete wall in a cyclotron vault
Masaaki KUMAGAI, Yasuhiro SODEYAMA, Yukio SAKAMOTO, Akihiro TOYODA,
Hiroshi MATSUMURA, Takaaki EBARA, Daichi YAMASHITA, Kazuyoshi. MASUMOTO,
High Energy Accelerator Research Organization

R1-P-14 1GeV Proton-induced Activation Analysis on the concrete shielding of RAON Accelerator
Tunnel
Suna KIM, Konyang University, Sangbin LEE, Shinwoo NAM, Sangjin LEE, Institute for Basic
Science Bo Sun KANG, Konyang University

R2 Radiation Detection and Sensor Technology

R2-P-1 Development of Directional Detector with Array of BGO Scintillator Rods for Energetic
Radiation Bursts Associated with Thundercloud Activity
Tetsuo IGUCHI, Yasuhiro ARIMOTO, Tone TAKAHASHI, Jun KAWARABAYASHI, Hideki
TOMITA, Nagoya University, Tatsuo TORII, Japan Atomic Energy Agency

R2-P-2 The APP development of smart phone for radiation dose monitoring
Jin-Woo LEE, Korea Atomic Energy Research Institute, Chonbuk National University, Yun-
Jong LEE,, Korea Atomic Energy Research Institute, Gyo-Seong JEONG, Korea Atomic Energy
Research Institute, Chonbuk National University, Jong-Il KIM, Chonbuk National University

R2-P-3 Analysis of Zr-95 and Nb-95 in Domestic PWRs Using CZT Detector and Monte Carlo
Method
Seo Kon KANG, Byoung il LEE, Jeong In KIM, Korea Hydro & Nuclear Power, Co., LTD

R2-P-4 Application of In-situ CdZnTe Detectors to Radioactivity Analysis for PWR Reactor
Coolant System during Refueling Outage Period
Jeong In KIM, Seo Kon KANG Byoung Il LEE, Korea Hydro & Nuclear Power, Co., LTD

R2-P-5 Influence of Fiber Re-coating and Packaging on the Radiation Sensitivity of Fiber Bragg
Grating Written in Ge-doped Fibers
Jong Yeol KIM, Nam Ho LEE, Hyun Kyu JUNG, Korea Atomic Energy Research Institute

R2-P-6 Recognition, Distance Measurement, and Display of the Location of a Radiation Source
in 3 Dimensions
Nam Ho LEE, Young Gwan HWANG, Korea Atomic Energy Research Institute, Soon Yong
PARK, Kyungbook National University, Ken Euk YOUK, Serve Bot Inc.

R2-P-7 The Study for Visualization and Distribution Measurements of Radiation Source Using
Stereo Gamma Detector
Young-Gwan HWANG, Nam-Ho LEE, Korea Atomic Energy Research Institute, Song Keun YOUNG, HKC Co., Ltd, Pathum RATHNAYAKA, Seung-Hae BAEK, Soon-Yong PARK, Kyungpook National University

R2-P-8 Analysis of the transient radiation effects on Pulse Signal Processing IC
Sang Hun JEONG, Nam Ho LEE, Yeong Gwan HWANG, Jong Yeol KIM, Min Woong LEE, Korea Atomic Energy Research Institute

R2-P-9 A Versatile Luminescence Apparatus for Investigating the Physical Properties of Dosimetry Materials
Chang Young PARK, Ki Soo CHUNG, Gyeongsang National University, In Su CHANG, Jung Il LEE, Jang Lyul KIM, Korea Atomic Energy Research Institute

R2-P-10 Experiment of Neutron Flux Intensity Monitor with GaN developed for BNCT
Masanobu MANABE, Yusuke KASHIWAGI, Osaka University, Xingcai GUAN, Osaka University / Lanzhou University, Fuminobu SATO, Osaka University, Tieshan WANG, Lanzhou University, Isao MURATA, Osaka University

R2-P-11 Cross Talk Experiment and its Analysis for Array-type CdTe Detector for BNCT-SPECT
Masanobu MANABE, Nobuhide SARAUE, Fuminobu SATO, Isao MURATA, Osaka University

R2-P-12 LET Distribution Measurement with a TEPC during Radiotherapy by TrueBeam Linac
Sungwhwan KIM, Cheongju University, Uk-Won NAM, Jae Jin LEE, Jeonghyun PYO, Bong-Kon MOON, Won-Kee PARK, Korea Astronomy and Space Science Institute, Yeonsu KIM, Geum Mun Baek KIM, Asan Medical Center, Oh-nam Yang, Mokpo Science University

R2-P-13 Applications of Cosmic Ray Muon Tomography for Material Deformation Nondestructive
Hengguan YI, Zhi ZENG, Ming ZENG, Xuewu WANG, Jianping CHENG, Tsinghua University

R2-P-14 Development of Position-sensing Coplanar Grid CdZnTe Detector
B. J. KIM, Korea Research Institute of Standards and Science / University of Science & Technology(UST), K. B. LEE, J. M. LEE, T. S. PARK, Korea Research Institute of Standards and Science

R2-P-15 Precise Calibration using Battery-resistor Circuit for the Traceability of IMC
Young Jin PARK, J.M Lee, T.S PARK, K.B.Lee, Joo Bong HAN, Byung Joo KIM, University of Science & Technology(UST) / Korea Research Institute of Standards and Science

R2-P-16 Establishment of Performance Testing Scheme for Hand-Held Radionuclide Identifier
Tae Hyoung KIM, Sang In KIM, Insu CHANG, Jang Lyul KIM, Bong Hwan KIM, Korea Atomic Energy Research Institute

R2-P-17 Study on Electrochemical Analysis of the Neutrino Detector Using Biological Product
Shoya SUDA, Kenji ISHIBASHI, Eka Sapta RIYANA, Kyushu University, Yani Nur AIDA, Syarif Hidayatullah State Islamic University, Shohei NAKAMURA, Infrastructure System
Company, Yoichi IMAHAYASHI, Mitsubishi Electric

R2-P-18 Characteristics of Radiation-Resistant Real-Time Neutron Monitor for Accelerator-Based BNCT
Takemi NAKAMURA, Kaoru SAKASAI, Hiroshi NAKASHIMA, Japan Atomic Energy Agency Hiroaki KUMADA, University of Tsukuba

R2-P-19 Study of Spatial Resolution in the X-ray Non-destructive Inspection
Giyoon KIM, Hyunnam KIM, Hoyeon LEE, Sunhee WI, Donguk KANG, Myungsoo KIM, Kyungtaek LIM, Eunjung LEE, Chankyu KIM, Gyuseong CHO, Korea Advanced Institute of Science and Technology

R2-P-20 A Study on X-ray Source Spectrum Reconstruction Method Using Laplace Transform and Attenuation Curves
Seongjin MAENG, Ji hye SEO, Dahye KWON, Ho Kyung HWANG, Sang Hoon LEE, Kyungpook National University

R2-P-21 Design of a Collimator in a High Energy Gamma Camera Using Monte Carlo Simulation
Kyeongjin PARK, Jieun CHANG, Jaewook KIM, Dahee LEE, Yewon KIM, Kyung Taek LIM, Chankyu KIM, Gyuseong CHO, Korea Advanced Institute of Science and Technology

R2-P-22 The Research on the Method of Radon Continuous Measurement
Lu Zhen GUO, Ling CHEN, Zhi Ping LUO, China Institute of Atomic Energy

R2-P-23 Fabrication and Evaluation of a Flexible B4C Film with Large Area for Multi-cylinder type Neutron Detector
Jongyul KIM, Chang Hui LIM, Myung Kook MOON, Sang Jin CHO, Korea Atomic Energy Research Institute

R2-P-24 Development of a 2π Geometry CsI(Tl)/PIN Photodiode Detector for Radon Detection by Using a Charcoal Canister
Han Soo KIM, Dong Jin KIM, Manhee JEONG, Young Soo KIM, Joon-ho OH, Woo Jin CHO, Korea Atomic Energy Research Institute, Hyojeong CHOI, Korea Atomic Energy Research Institute, Sungkyunkwan University, Cheol Ho LEE, Hanyang University, Seung Yeon CHO, Yonsei University, Jang Ho HA, Korea Atomic Energy Research Institute

R2-P-25 Study on Electrochemical Analysis of the Neutrino Detector Using Biological Product
Shoya SUDA, Kenji ISHIBASHI, Eka Sapta RIYANA, Kyushu University, Yani Nur AIDA, Syarif Hidayatullah State Islamic University, Shohei NAKAMURA, Infrastructure System Company, Yoichi IMAHAYASHI, Mitsubishi Electric

R2-P-26 Development of Signal Processing System for Gamma-ray Imager with Stacked Scintillation Detectors Sensitive in All Directions
Eiji TAKADA, Daiki MATSUI, Toyama College, Hiroaki SUGANO, Yuta FUWA, Tone TAKAHASHI, Nagoya University, Jun KAWARABAYASHI, Tokyo City University, Hideki
TOMITA, Tetsuo IGUCHI, Nagoya University

R2-P-27 Calculation of Energy Response Compensation for Gamma Dosimeters
Jin Yu LI, Wei Min XIE, Zhong Jian YANG, Bao Wei CHEN, China Institute for Radiation Protection

R2-P-28 Research of the THGEM-based position-sensitive surface contamination survey meter
Hongchao PANG, Jinfeng HUANG, Zhiping LUO, China Institute of Atomic Energy

R2-P-29 Establishment of Performance Testing Scheme for Radiation Detection Portal Monitors at Workplace
Sang In KIM, Insu CHANG, Jang Lyul KIM, and Bong Hwan KIM, Korea Atomic Energy Research Institute

R2-P-30 The Capability Study of Multi-function Dose Rate Meter Basing on Hemisphere CdZnTe
Ying WANG, Wenjun XIONG, Zhiping LUO, Jizeng MA, Ling CHEN, China Institute of Atomic Energy

R2-P-31 Neutron Position sensitive scintillation detector using crossed wavelength shifting fiber and Si-photomultiplier readout array
Yang LIU, Zhe LIU, Luzhen GUO, Lin CHEN, Zhiping LUO, China institute of atomic energy

R2-P-32 Performance evaluation of high-resolution photon counting gamma camera system with pixel-matched parallel-hole collimator using Monte Carlo simulation
Youngjin LEE, Eulji University, Woo-Ho SHIN, Korea Association for Radiation Application, Hee-Joung KIM, Yonsei University

R2-P-33 Development and Performance of a Hand-Held CZT Detector for In-Situ Measurements at the Emergency Responses
Young-Yong JI, Kun Ho CHUNG1, Chang-Jong KIM, Korea Atomic Energy Research Institute, Yoon JIN, Satrec Initiative, Wanno LEE, Mun Ja KANG, Korea Atomic Energy Research Institute and Sang Tae PARK, Kongju National University

R2-P-34 Upgrade of Neutron Energy Spectrometer Using Onion-like Single Bonner Sphere
T. MIZUKOSHI, K. WATANABE, A. YAMAZAKI, A. URITANI, T. IGUCHI, Nagoya University, T. OGATA, T. MURAMATSU, Mitsubishi Heavy Industries LTD.

R2-P-35 Performance Test of a Portable Alpha-Particle Spectrometer
Sung-Woo KWAK, Seunghoon PARK, Jung-Ki SHIN, and Heejun CHUNG, Korea Institute of Nuclear Non-proliferation and Control

R2-P-36 Development of Scintillator Stucked Gamma-Camera Sensitive for all Directions
Jun KAWARABAYASHI, Tokyo City University, Hiroaki SUGANO, Yuta FUWA, Tone TAKAHASHI, Hideki TOMITA, Nagoya University, Tetsuo IGUCHI, Tokyo City University, Daiki MATSUI, Eiji TAKADA, National Institute of Technology

R2-P-37 Quenching Effect in an Optical fiber type small size dosimeter irradiated with 290 MeV/u
carbon ions
Yuho HIRATA, Kenichi WATANABE, Akira URITANI, Atsushi YAMAZAKI, Nagoya University, Yusuke KOBAYASHI, Naruhiro MATSUFUJI, NIRS

**R2-P-38 Frisch-grid CZT Detector Based Compact Spectroscopy System Development**
Manhee JEONG, Woo Jin JO, Han Soo KIM, Korea Atomic Energy Research Institute, Sang Yeol KIM, Notice Co., Jang Ho HA, Korea Atomic Energy Research Institute

**R2-P-39 The Optimization and Improvement of the Beta Surface Contamination Position Resolution Detector Based on the Fiber and Plastic Scintillator**
Yantao QU, Hui WANG, Yang LIU, China Institute of Atomic Energy

**R2-P-40 Activation analysis of KIRAMS-13 cyclotron**
Cheol Ki JEONG, Goung Jin LEE, Chosun University

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**R3 Radiation Dosimetry**

**R3-P-1 Uncertainty of the I-131 Inhalation Dose Coefficient for Workers**
Mee-ryeong KIM, Tae-Eun Kwon, Siwan Noh, Jaik Lee, Hanyang University

**R3-P-2 Effective Dose Scaling Factors for Inhalation Dose Assessment Considering Radioactivity Distribution in NORM Aerosol**
Cheol Kyu CHO, Yong Gun KIM, Si Young KIM, Kyung Hee University, Jae Kook LEE, Korea Institute of Nuclear Safety, Kwang Pyo KIM, Kyung Hee University

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Hyungjoon YU, Hongsuk KIM, Korea Institute of Nuclear Safety, Jaik Lee, Hanyang University

**R3-P-4 Dose Reconstruction Using Electronic Components from Cars and Electronic Home Appliances**
Jungil LEE, Insu CHANG, Jang-Lyul KIM, and Bong-Hwan KIM, Korea Atomic Energy Research Institute

**R3-P-5 Retrospective Accident Dosimetry Using Optically Stimulated Luminescence from Integrated Circuit (IC) Chips of Mobile Phones**
Jungil LEE, Insu CHANG, Jang-Lyul KIM, Bong-Hwan KIM, Korea Atomic Energy Research Institute

**R3-P-6 Thermoluminescence Characteristics of Electronic Components for Dose Reconstruction**
Insu CHANG, Jungil LEE, Sang In KIM, Jang Lyul KIM, Korea Atomic Energy Research Institute

**R3-P-7 Evaluation of Gamma-ray Dose Rates on the Upper Core Structure of the Experimental**
Fast Reactor Joyo
Chikara ITO, Takahiro YAMAMOTO, Shigetaka MAEDA, Hideaki ITOH, Takashi SEKINE,
Japan Atomic Energy Agency

R3-P-8 SAAD-PSL method for fast assessment of retrospective dosimetry with core-disc samples using building materials
M.J. Kim, Y.J. Lee, Neosiskorea Co. Ltd, J.I. Lee, J.L. Kim, Korea Atomic Energy Research Institute, D.G. Hong, Kangwon National University

R3-P-9 Evaluation of DNA damage using Microwave Dielectric Absorption Spectroscopy
Makoto HIRAYAMA, Youichirou MATUO, University of Fukui, Takeyoshi SUNAGAWA, Fukui University of Technology, and Yoshinobu IZUMI, University of Fukui

R3-P-10 Textural Features on the Fluence Map to Estimate the Complexity of VMAT Delivery
So-Yeon PARK, Jong Min PARK, Joel CARLSON, Sung-Joon YE, Seoul National University Hospital

R3-P-11 Comparison of Monte Carlo Simulations for Scattered Angle Distribution in Proton Therapy

R3-P-12 Preliminary Evaluation of the Activity Concentration Limit for Consumer Goods Containing NORM
Mee JANG, Kun Ho CHUNG, Young Yong NI, Jong Myung LIM, Mun Ja KANG Guen Sik CHOI, Korea Atomic Energy Research Institute

R3-P-13 Development of the Graphite-Moderated Neutron Calibration Fields using 241Am-Be sources in JAEA-FRS
Sho NISHINO, Yoshihiko TANIMURA, Japan Atomic Energy Agency, Yoshiaki EBATA, Institute of Radiation Measurements, Michio YOSHIZAWA, Japan Atomic Energy Agency

R3-P-14 Radiation Dose Estimation by Means of the Molecular Dosimetry in the Cultured Cells
Jin Kyu KIM, Korea Atomic Energy Research Institute, University of Science and Technology, Mi Youg KANG, Korea Atomic Energy Research Institute, Remigius Ambrose KAWALA, University of Science and Technology, Tae Ho RYU, , Jin-Hong KIM, Korea Atomic Energy Research Institute, Jacobus P. SLABBERT, Medical Directorate, iThemba LABS

R3-P-15 A MCNPX Simulation Method For 3d Scanned Model Of Object With Free Curved Surfaces
Ji Seok KIM, Gwang Min SUN, Ha Ni BAEK, Korea Atomic Energy Research Institution

R3-P-16 China Reference Adult Male Physical Phantoms for In-vivo Monitoring Equipment
R4 Environmental Radiation Measurement and Assessment

R4-P-1 Attachment Behavior of Fission Products on Solution Aerosol
Koichi TAKAMIYA, Toru TANAKA, Shinnosuke NITTA, Satoshi ITOSU, Shun SEKIMOTO, Yuichi OKI, Tsutomu OHTSUKI, Research Reactor Institute, Kyoto University

R4-P-2 Sensitivity Analysis on Impact Parameters for Dose Assessment at Radioactive Contaminated Zone
A Ra GO, Min Jun KIM, Si Young KIM, Kwang Pyo KIM, Kyunghee University, Yongin, Korea

R4-P-3 Investigation of Indoor Radon Distribution Dongguk University in Gyeongju, Korea
Han Young JOO, Rinah KIM, Chan Hee PARK, Joo Hyun MOON, Department of Nuclear Energy System engineering, Dongguk University

R4-P-4 Radiological Risk Estimation Caused by a Terrorism Event for the Water Resource in Korea
Hyojoon JEONG, Haesun JEONG, Wontae HWANG, Eunhan KIM, and Moonhee HAN, Korea Atomic Energy Research Institute

R4-P-5 Uptake of Cesium from Solutions by Aquatic Plants
Byung-Ho KIM, Kwang-Muk LIM, In JUN, Yong-Ho CHOI, Dong-Kwon KEUM, Korea Atomic Energy Research Institute

R4-P-6 Investigation of 210Po in arable soils and plants in the southwestern region of Cameroon by alpha spectrometry
S. MVONDO, P. ELE-ABIAMA, G. H. BEN-BOLIE, P. OWONO-ATEBA, University of Yaounde I

R4-P-7 Simultaneous Analysis of 89Sr and 90Sr in Radioactive Wastewater using Sr-resin and LSC
Hyuncheol KIM, Korea Atomic Energy Research Institute, Yoonhee JUNG, Korea Atomic Energy Research Institute / Korea University of Science and Technology, Kun Ho CHUNG, Korea Atomic Energy Research Institute.

R4-P-8 90Sr ANALYSIS IN SOIL BY LIQUID SCINTILLATION COUNTER
Yoonhee JUNG, Korea University of Science and Technology, Korea Atomic Energy Research Institute, Hyuncheol KIM, Kun Ho CHUNG, Korea Atomic Energy Research Institute.

R4-P-9 Measurement for the Dose-rates of the Cosmic-ray neutron on the Ground in Taiwan
Chin-Yi FANG, Ren-Jer LIU, Pei-Huo LIN, Ming-Chi HORNG, Radiation Monitoring Center, AEC
R4-P-10 Measurements of Cosmic-ray Induced Neutrons using a Bonner Sphere Spectrometer
Jungho KIM, Hyeonseo PARK, Korea Research Institute of Standards and Science

R4-P-11 Investigation on Natural Penetrating Radiation Level along the Qinghai-Tibet Railway
Guowen ZHENG, Yantao QU, Chuangao WANG, China Institute of Atomic Energy

R4-P-12 Distribution of 90Sr activities in coastal Ecklonia cava of Jeju Island in Korea
Young Gyu LEE, Youn Hyun Park, Jae Woo PARK, Chung Hun HAN, Jeju National University

R4-P-13 A Valence Control Method Based on a NaNO2-Aided Hydrogen Peroxide Treatment for Determination of Plutonium in Soil Samples
Chi-Chang LIU, Wen-Hsien TSAI, Chia-Yin PAN, Ming-Chi HORNG, Wen-Hsi LIU, Radiation Monitoring Center, AEC

R4-P-14 The assessment of exposure dose to the residents after decommissioning of Kori Nuclear Power Plant Unit 2 site with residual radioactivity analysis using RESRAD code
Chang Gyu KANG, Pusan National University, Jeong ho KIM, Pusan National University, Korea Atomic Energy Research Institute, Seokyoung AHN, Pusan National University, Won Tae HWANG, Korea Atomic Energy Research Institute, Seung Wook LEE, Pusan National University

R4-P-15 Assessment of Atmospheric Dispersion Based on Source Terms Due to Release to the Environment in Reference Nuclear Plant of Korea
Joo Yeon KIM, Han Ki JANG, Tai-Jin PARK, Korean Association for Radiation Application

R4-P-16 Distribution of 90Sr activities in the environmental radiation samples of Jeju island, Korea
Chung Hun HAN, Youn Hyun Park, Young Gyu LEE, Jae Woo PARK, Jeju National University

R4-P-17 Trend analysis gamma exposure rate and temperature after precipitation
Ho Kyung HWANG, Seongjin MAENG, Sang Hoon LEE, Kyungpook National University

Dan MENG, Zhilong ZHANG, Fu SHEN, Cuiming FU, Zhengyong LU, China Institute for Radiation Protection

R4-P-19 Development of an Accident Consequence Assessment Code for Evaluating Site Suitability of PWR and PHWR Under the Framework of Korean Technical Standards
Won Tae HWANG, Hae Sun JEONG, Hyo Joon JEONG, A Reum KIL, Eun Han KIM, and Moon Hee HAN, Korea Atomic Energy Research Institute

R4-P-20 Investigation of 222Rn Released from Water and Dose Estimation at Hot Springs in Xianning City of China
Weifu LIU, Haitao LIAO, Xiaoyun LI, Ziyang JIANG, China Institute of Atomic Energy

R4-P-21 Concentration Ratios of Radionuclides for Terrestrial Wildlife around the Gyeongju Nuclear Site
R5 Radiological Emergency Planning and Preparedness

R5-P-1 Education and Training program for enhancing the first response capability in radiological emergency in Korea
Jeong-wan KWON, Hong-suk KIM, Chang-il CHOI, Ah-reum KIM, Korea Institute of Nuclear Safety

R5-P-2 Educational Program for Radiation Emergency Medicine
Yoko SAITO, Toshiya NAKAMURA, Mayumi URUSHIZAKA, Yu KITAJIMA, Cheko ITAKI, Masahiro HOSODA, Shingo TERASHIMA, Yoichiro HOSOKAWA, Hirosaki University Graduate School of Health Sciences

R5-P-3 Radioactivity Analysis of Nasal Smear Samples and Internal Dose Assessment in Radiation Emergency
Seokwon Yoon, Wi-Ho HA, Jae Ryong Yoo, Seung-Sook Lee, Korea Institute of Radiological and Medical Sciences

R5-P-4 Enhancing Radiation Protection against Station Black-Out (SBO) in Nuclear Power Plants
In Young JEON and Ki In KIM, Korea Institute of Nuclear Safety

R6 Radiological Risk Management

R6-P-1 Risk analysis and action plan for operating 30-MeV cyclotron
Gyo-Seong JEONG, Jin-Woo LEE, KAERI (Korea Atomic Energy Research Institute), Chonbuk National University, Yun-Jong LEE, KAERI (Korea Atomic Energy Research Institute), Jong-II KIM, Chonbuk National University, Soo-il LEE, SAE-AN Engineering Co.

R6-P-2 Dose inspection and risk estimation on radiation safety for the uses of X-ray equipment with nominal voltage between 30 to 50 kV
F.Y. HSU, Y.T. CHEN, J.H. CHAO, National Tsing Hua University

R6-P-3 Dosimetric Impact of Roll-rotational Setup Uncertainties on Stereotactic Body Radiation Therapy for Lung Cancer
Jaegi LEE, Seoul National University, Jong Min PARK, Seoul National University Hospital, Hyunseok LEE, Hwiyoung KIM, Seoul National University, Hak Jae KIM, Sung-Joon YE, Seoul National University Hospital

R6-P-4 A Methodology for Estimating the Uncertainty in Model Parameters Applying the Robust Bayesian Inferences
Joo Yeon KIM, Sol Ah JANG, Je Ho Min and Tai-jin PARK, Korean Association for Radiation Application

R6-P-5 Initiating Events Study of the First Extraction Cycle Process in a Model Reprocessing
Plant
Renze WANG, Jiangang ZHANG, Dajie ZHUANG, Zongyang FENG, China Institute for Radiation Protection

R6-P-6 Development of a Fission Product Transport Module Predicting Radiological Materials During Severe Accidents in a Nuclear Power Plant
Hyung Seok KANG, Bo Wook RHEE, Dong Ha KIM, Korea Atomic Energy Research Institute

R7 Radioactive Waste and Current Radiological Issues

R7-P-1 Case Study on Failure of N-16 Leak Monitoring at Hanbit Nuclear Power Plant Unit 3
Bo Kyun SEO, Jong Kyung KIM, Hanyang University

R7-P-2 Size Measurement of Radioactive Aerosol Particles in Intense Radiation Fields Using Wire Screens and Imaging Plates
Yuichi OKI, Naoyuki OSADA, Okayama University, Toru TANAKA, Kyoto University, Koichi TAKAMIYA, Yoshihiro ISHI, Yasutoshi KURIYAMA, Tomonori UESUGI, Masaaki SAKAMOTO, and Tsutomu OHTSUKI, Kyoto University Research Reactor Institute

R7-P-3 Structural Evaluation under Off-normal and Accident Conditions for A Canister Loaded Concrete Storage Cask of Spent Fuels
Tae-Chul MOON, Chang-Yeal BAEG, Chun-Hyung CHO, Korea Radioactive Waste Agency

R7-P-4 Criticality Safety Analysis on the Major Influence for Applied with Burn-up Credit on Dual-Purpose metal Cask
Tae-man KIM, Ji-young KU, Ho-seog DHo, Chun-hyung CHO, Korea Radioactive Waste Agency

R7-P-5 Application of In Situ Measurement for Site Remediation and Final Status Survey of Decommissioning KRR Site
Sang Bum HONG, Yong Suk CHOI, Jong Soo NAM, Bum Kyung SEO, Jei Kwon MOON, Korea Atomic Energy Research Institute

R8 Education, Training and Policy in Radiation Safety

R8-P-1 A Study on Applicable Curriculum Development for Undergraduate Student in Radiation Fusion Technology
Woo Ho SHIN, Korean Association for Radiation Application, Young Jin LEE, Eulji University, Sang Bok LEE, Yu Sun YEOM, Korean Association for Radiation Application

R8-P-2 The Development of Educational Aids for the Training of Human Resources to Promote the Radiation Industry
Sang-Bok LEE, Woo-Ho SHIN, Yu-Sun YEOM, Korean Association for Radiation Application

R8-P-3 An Analysis on Current Status of Radioisotope Supplement and Demand in Korea
R8-P-4  Development of Simulated Radiation Exposure Devices for Nuclear Forensics Exercise
Seungmin LEE, Sangjun LEE, Hobin LIM, *Korea Institute of Nuclear Nonproliferation and control*

R8-P-5  A Discussion for Alteration of the Radiation Issues Based on the Clipping Analyses of Radiation Articles Reported in Korea
Tai-jin PARK, Dol-mi YOUN, Joo Yeon KIM, Yu Kyung KIM, Ji Yup YOO, *Korean Association for Radiation Application*

R8-P-6  Comparative Evaluation of 10 Different Instant Coffees as Raw Materials of Educational Radiation Sources
Conference Venue (4F)

Poster Session

Poster Session

Poster Session

Crystal Ballroom

Room A

Room B

Room C

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