Tentative Program

The Eighth International Symposium on Radiation Safety and Detection Technology

ISORD-8

Seongsan Ilchulbong

July 13 – 16, 2015
Lotte City Hotel Jeju,
Jeju-si, Seju 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-Youn Kim
Conference Chair
Korea Atomic Energy Research Institute
Conference Organization

Organize: Innovative Technology Center for Radiation Safety (iTRS)

Organizing Committee

Chairman
Kyo-You KIM
Korea Atomic Energy Research Institute

Vice Chairman
Hee-Seock LEE
Pohang Accelerator Laboratory

Secretary
Chang-Ho SHIN
Hanyang University

Korean Members
Kwang Pyo KIM
Kyung Hee University
Bong-Hwan KIM
Korea Atomic Energy Research Institute
Soonyoung KIM
RADCore, Co., Ltd
Eun-Hee KIM
Seoul National University
Jungho KIM
Korea Research Institute of Standards and Science
Chan Hyeong KIM
Hanyang University
Hee Geun KIM
Central Research Institute-Korea Hydro and Nuclear Co., Ltd
Hee Reyoung KIM
Ulsan National Institute of Science and Technology
Min BAEK
Nuclear Safety and Security Commission
Seung Haeng LEE
Korea Institute of Nuclear Safety
Young-Ouk LEE
Korea Atomic Energy Research Institute
Wonho LEE
Korea University
Sung-Joon YE
Seoul National University Hospital
Seungryong CHO
Korea Advanced Institute of Science and Technology
Byung-Il CHOI
Korea Radioactive Waste Agency
Jang Ho HA
Korea Atomic Energy Research Institute
Won Tae HWANG
Korea Atomic Energy Research Institute

Chinese Members
Ling CHEN
China Institute of Atomic Energy
Zhiping LUO
China Institute of Atomic Energy
Liye LIU
China Institute for Radiation Protection
Rui QIU
Tsinghua University
Detao XIAO
University of South China
Zhaorong SHANG
Nuclear and Radiation Safety Center, Ministry of Environmental Protection
Chaofeng CHEN
Suzhou Nuclear Power Research Institute

Japanese Members
Tetsuo IGUCHI
Nagoya University
Yoshihito NAMITO  High Energy Accelerator Research Organization
Chikara ITOH  Japan Atomic Energy Agency
Shinya HOHARA  Kinki University
Hideki TOMITA  Nagoya University
Hiroyuki TAKAHASHI  University of Tokyo
Kenji ISHIBASHI  Kyushu University

**Australian Members**
Uma RAJAPPA  Health Protection Unit, Queensland
Brad CASSELS  Department of Health, Victoria
Tony HOOKER  South Australian Environment Protection Authority

**Taiwanese Member**
Rong-Jiu SHEU  National Tsinghua University
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
Registration

The registration desk will be located on the 4th floor, Lotte City hotel Jeju. The symposium participants are expected 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

Registration Fee

- General Participants: KRW 450,000
- Student Participants: KRW 200,000
- Accompanying Person: KRW 70,000

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.
# Program Summary

## Monday, July 13

<table>
<thead>
<tr>
<th>Time</th>
<th>Room A</th>
<th>Room B</th>
<th>Room C</th>
</tr>
</thead>
<tbody>
<tr>
<td>15:00-18:00</td>
<td>Registration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17:00-18:30</td>
<td>Reception</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Tuesday, July 14

<table>
<thead>
<tr>
<th>Time</th>
<th>Room A</th>
<th>Room B</th>
<th>Room C</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:00-09:00</td>
<td>Registration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09:00-09:40</td>
<td>Opening Ceremony (Opening Remark, Welcome Speeches)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09:40-10:40</td>
<td>Invited Talk I, II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:40-11:00</td>
<td>Coffee Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:00-12:00</td>
<td>Invited Talk III, IV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:00-12:10</td>
<td>Group Photograph</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:10-13:40</td>
<td>Lunch</td>
<td>VIP Lunch</td>
<td></td>
</tr>
<tr>
<td>13:40-15:20</td>
<td>Special Session (Fukushima Session)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15:20-15:40</td>
<td>Coffee Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15:40-17:00</td>
<td>Session R1-(I)</td>
<td>Session R2-(I)</td>
<td></td>
</tr>
<tr>
<td>17:00-18:00</td>
<td>Session R1-(I)</td>
<td>Session R2-(I)</td>
<td></td>
</tr>
</tbody>
</table>

## Wednesday, July 15

<table>
<thead>
<tr>
<th>Time</th>
<th>Room A</th>
<th>Room B</th>
<th>Room C</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:40-10:20</td>
<td>Session R1-(II)</td>
<td>Session R2-(II)</td>
<td></td>
</tr>
<tr>
<td>10:20-10:40</td>
<td>Coffee Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:40-12:00</td>
<td>Session R1-(III)</td>
<td>Session R2-(III)</td>
<td></td>
</tr>
<tr>
<td>12:00-13:20</td>
<td>Lunch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13:20-14:20</td>
<td>Poster (Hall)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14:20-16:00</td>
<td>Session R1-(IV)</td>
<td>Session R2-(IV)</td>
<td></td>
</tr>
<tr>
<td>16:00-16:20</td>
<td>Coffee Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16:20-18:00</td>
<td>Session R1-(V)</td>
<td>Session R3-(I)</td>
<td></td>
</tr>
<tr>
<td>18:00</td>
<td>Dinner</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Thursday, July 16

<table>
<thead>
<tr>
<th>Time</th>
<th>Room A</th>
<th>Room B</th>
<th>Room C</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00-10:20</td>
<td>Session R5-(I)</td>
<td>Session R3-(II)</td>
<td>Session R4-(I)</td>
</tr>
<tr>
<td>10:20-10:40</td>
<td>Coffee Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:40-12:00</td>
<td>Session R5-(II)</td>
<td>Session R3-(III)</td>
<td>Session R4-(II)</td>
</tr>
<tr>
<td>12:00-12:30</td>
<td>Closing Session</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:30-18:00</td>
<td>Go To Technical Tour (Gyeongju and Pohang)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Friday, July 17

<table>
<thead>
<tr>
<th>Time</th>
<th>Room A</th>
</tr>
</thead>
<tbody>
<tr>
<td>09:00-12:00</td>
<td>Satellite Meeting: Effects of Low Doses of Radiation (Jeju)</td>
</tr>
<tr>
<td>09:00-18:00</td>
<td>Technical Tour (Gyeongju and Pohang)</td>
</tr>
</tbody>
</table>

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
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:
Jong Kyung Kim (Korea Atomic Energy Research Institute / Hanyang University, Korea)
Takashi Nakamura (Fuji Electric Co., Ltd / Tohoku University, Japan)
Zhiping Luo (China Institute of Atomic Energy, China)

09:40-12:00 Invited Talks
Chair: Kunwoo Cho (Korea Institute of Nuclear Safety)
11 Analysis of Atmospheric Concentrations of FP Nuclides from NaI(Tl) Detector Pulse Height Distributions Routinely Measured at Environmental Monitoring Facilities
Prof. Hiromi Yamazawa, Nagoya University, Japan
12 Development of Monte Carlo-Point Kernel coupled system for fast 3D radiation transport calculation
Yuanjie Bi, China Institute of Atomic Energy, China

10:40-11:00 Coffee Break
13 Radiation Safety as One of the Key Element of the Peaceful Use of the Ionizing Radiation
IAEA Program in Radiation Safety and Monitoring
Dr. Pil-Soo Hahn, IAEA, South Korea
14 ICRP-110 Reference Phantoms Conversion Project
Prof. Chan Hyeong KIM, Hanyang University, South Korea
12:00-12:10 Photograph
12:10-13:40 Lunch

13:40-15:20 Special Session (Fukushima Session)

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, South Korea

FS2 Status of Radiation Dose and Contamination Due to the Fukushima Accident
Prof. Mamoru Baba, Tohoku University, Japan

FS3 Radioactive Noble Gases Monitoring in Korea: Effects of Fukushima Accident
Wanno LEE, Korea Atomic Energy Research Institute, South Korea

FS2 Reduction of Outdoor and Indoor Ambient Equivalent Dose after Decontamination in the Fukushima Evacuation Zones
Hiroko Yoshida-Ohuch, Tohoku University, Japan

FS5 Evaluation of In-Plant Fission Product Behaviors on Fukushima Daiichi Accident
Tae Woon Kim, Korea Atomic Energy Research Institute, South Korea

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
Sun Hongchao, Li Guoqiang, Wang Xuexin, Zhuang Dajie, Sun Shutang, 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, University Of Ulsan, Leila MOKHTARI ORANJ, Hee-Seock LEE, POSTECH, Noriaki NAKAO, Shimizu Corporation, Yoshitomo UWAMINO, RIKEN Nishina Center, 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: Hiroyuki Takagi (Hitachi Ltd. / 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
Jia Linsheng, Zhang Jianguang, Tang Rongyao, Chen Baowei, 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 (I)

Chair: Hiroyuki Takagi (Hitachi Ltd. / Osaka University), Jang Ho Ha(KAERI)

R2-O-4 CAMs Testing Study
Fu Shen, Pingping Xi, Dan Men, Zhihong Zhang, CuiMing Fu, Zhenyong Lu, Yi Yang, Tao Ma and 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, Korea Atomic Energy Research Institute, Young Soo Kim, Han Soo Kim, Dong Jin Kim and Jang Ho Ha, Korea Atomic Energy Research Institute, Jong Seo Chai, Sungkyunkwan University

R2-O-6 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

19:00-21:00 Banquet

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
Zou Shu Liang, Xu ShouLong, 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, Yusuke Uozumi, Kyushu University, Daiki Satoh, Japan Atomic Energy Agency, Tsuyoshi Kajimoto, Hiroshima University, Toshiya Sanami, High Energy Accelerator Research Organization, Yusuke 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, POSTECH

10:20-10:40 Coffee Break
10:40-12:00 Radiation Transport and Shielding (III)

Chair: LIU Liye (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 -  
Kazuyoshi MASUMOTO, Hiroshi MATSUMURA, High Energy Accelerator Research Organization, Kazuaki KOSAKO, Shimizu Corporation, Kotaro BESSHO, Akihiro TOYODA, High Energy Accelerator Research Organization

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, and 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, and Jiangang 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 and Hee-Seock LEE, POSTECH

11:00-11:20 Coffee Break

12:00-13:20 Lunch

14:20-16:00 Radiation Transport and Shielding (IV)

Chair: BI Yuanjie (China Institute of Atomic Energy), Kwang Pyo Kim (Kyunhee University)

R1-O-16 Activation Analysis in the accelerator components at RAON  
Sangjin Lee, Suna Kim, Sangbin Lee and 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
Zhuang Dajie, Li Guoqiang, Zhangguoqing, Luo Xiaowei, China Institute for Radiation Protection

R1-O-20 A Preliminary Radiation Shielding Analysis for 500W Radioisotope Thermophotovoltaic (RTPV) System
Seong Jae Cheon and 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 Jiun 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, and 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, and 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, and A. Goswami1, 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: LUO Zhiping (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, KRISX, 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
CHEN Bao-wei, XIE Wei-min, Yang Zhong-jian, JIA Lin-sheng, 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, and Jang Ho Ha, Korea Atomic Energy Research Institute

**R2-O-10** Overview of New Important Approaches in Gamma Spectrum Analysis Algorithms
Zhao Ri, Tsinghua University, China Institute for Radiation Protection, Liu Liye, China Institute for Radiation Protection, Li Junli, 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, and Mark D. Hammig, University of Michigan

10:20-10:40 Coffee Break

---

10:40-12:00 Radiation Detection and Sensor Technology (III)

**Chair:** PANG Hongchao(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. Kyunggi Jisik Sanup Anayang Center, and 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, and 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, and Won Gyun JUNG, Korea Institute of Radiological & Medical Sciences
12:00-13:20 Lunch

14:20-16:00 Radiation Detection and Sensor Technology (IV)
Chair: ZHAO Ri (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, and Zhong Jian YANG, China Institute for Radiation Protection
R2-O-17 Developing uranium isotopic analysis code in Hypergam platform
H.D. Choi, Seoul National University, J.H. Kim, Seoul National University, Korea Atomic Energy Research Institute, and J.H. Park, Korea Atomic Energy Research Institute
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, and 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
Young-su KIM, Jae Hyeon KIM, Hyun Su LEE, Han Rim LEE, Jong Hoon PARK, Hanyang University, Jin Hyung PARK, Institute for Basic Science, Chaehun LEE, Se-Hawn PARK, Korea Atomic Energy Research Institute, and Chan Hyeong KIM, Hanyang University
R2-O-20 Calculation of Low-Energy Reactor Neutrino Spectra
Eka Saptas RIYANA, Shoya SUDA, Kenji ISHIBASHI, and 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: QIU Rui (Tsinghua University), Jang-Lyul Kim (KAERI)
R2-O-21 Optical characterizations of TIBr single crystals for radiation detection applications
Joon-Ho Oh, Dong Jin Kim, Han Soo Kim, Young Soo Kim, Manhee Jeong, Korea Atomic Energy Research Institute, Tae Jung Kim, Han Gyeol Park, Young Dong Kim, Kyung Hee University, Dongjun Kim3, Kyoung-Kook Kim, Korea Polytechnic University, and Jang Ho Ha, Korea Atomic Energy Research Institute
R2-O-22  Application of the point kernel method to estimate the internal contamination of pipes in nuclear reactors
Xia Sanqiang, Liu Liye, Cao Qinjian, Wang Yu, Li Hua, Zhao Ri, and Xiong Wanchun, 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, and 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, Ministry of Education, Key Laboratory of High Energy Radiation Imaging Fundamental Science for National Defense

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

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, and 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, Jianguang ZHANG, Zongyang FENG, Linsheng JIA, Xiaoxiao XU, and 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 Reyoung 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, and 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
Lee, Goan-Yup, Lee, Hae-Choi, Kim, Bong-Suk, Kim, Jong-Su, Choi, Pyung-Kyu, Korea Atomic Energy Research Institute

R5-O-6 PWR Source Term Estimation Code Programming
FENG Zongyang, ZHANG Jiangang, TANG Rongyao, WANG Renze, ZHUANG Dajie, and YAN Feng, 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, and 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-Il AHN, Korea Atomic Energy Research Institute

12:00-12:30 Closing Session

Room B
09:00-10:20 Radiation Dosimetry (II)
Chair: Hiromi Yamazawa (Nagoya 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
Li Hua, China Institute for Radiation Protection, Tsinghua University, Liu Liye, Xia Sanqiang, Zhao Yuan, Cao Qinjian, China Institute for Radiation Protection, and Li Junli, Tsinghua University

R3-O-5 Calculating Radiation Imaging Dose Using Monte Carlo Simulation For Image-guided Radiation Therapy
Kihong Son, Seungryong Cho, Hoyoern Lee, Korea Advanced Institute of Science and Technology, Youngih Han, Sang Gyu Ju, and Jinsung Kim, Samsung Medical Center Sungkyunkwan University

R3-O-6 Microwave Dielectric Absorption Spectroscopy Aiming at Novel Dosimetry Using DNAs
Yoshinobu IZUMI, Makoto HIRAYAMA, Youichiro MATUO, University of Fukui, and 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 Research Institute, Yan ZHANG, Neng HUA, kun LI, Jian-Qiang ZHU, Shanghai Institute of Optics and fine Mechanics, and Young-Ouk LEE, Korea Atomic Energy Research Institute

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
Pan Hongjuan, 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, Korea Research Institute of Standards and Science, Kook Jin Chun, Korea University of Science and Technology (UST), 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, and Ikuo KOBAYASHI, Nagase Landauer, LTD.

12:00-12:30 Closing Session

Room C

09:00-10:20 Environmental Radiation Measurement and Assessment (I)
Chair: LI Jinfeng (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
Li Zhiqiang, University of South China, Hengyang Normal University, Xiao Detao, and Zhao
Guizhi, 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, and 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
Jae Cheon KIM, Gi Dong Kim, Sun-Chan JEONG, Institute for Basic Science, Ki-Hyun KIM, Sejong University, Kayden Kim, CGITEC, Genichiro WAKABAYASHI, Shinya HOHARA, and Hirokuni YAMANISHI, Kinki University.

10:20-10:40 Coffee Break

10:20-12:00 Environmental Radiation Measurement and Assessment (II)
Chair: Hiroko Yoshida-Ohuch (Tohoku University), Won Tae Hwang (KAERI)

R3-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

R3-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

R3-O-7 Radon emissions from an iron and steel plant in China
Jinfeng Li, Chunhong Wang, Ziying Jiang, China Institute of Atomic Energy, Zhijun Huang, China Institute of Atomic Energy, University of South China, Baoying Wen, Chuangao Wang, Yanqi Zhang, Xiaoyun Li, Xingming Tu, Xutao Xu, Shuguou Hou, and Ling Chen, China Institute of Atomic Energy

12:00-12:30 Closing Session

Friday, July 17

09:00-12:00 Satellite Meeting
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

R1 Radiation Transport and Shielding

R1-P-1 A Study on Photo Neutron Effect in Fuel Failure Detection System
Ji Sung Park, Gyuhong Roh, and 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, and Hee Reyoung 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, and 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 and 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., and Yong Soo KIM, Hanyang Normal University

R1-P-6 Comparison of Photon Compton Broadening with mcplib04 and mcplib84
Kyung-O KIM, Gyuhong ROH, and 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, Jai-Ki Lee, Hanyang University, Han-Ki Jang, and 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
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 and 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 and 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, and Ken Euk YOUK, ServeBot 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, and 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 II LEE and 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
Sunghwan 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
Yi Hengguan, Zeng Zhi, Zeng Ming, Wang Xuewu, and Cheng Jianping, High Energy 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, and 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, and 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,
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 and Hiroaki Kumada, University of Tsukuba

R2-P-19 Study of Spatial Resolution in the X-ray Non-destructive Inspection
Giyoon Kim, Hyunnam Kim, Hyeon Lee, Sunhee Wi, Donguk Kang, Myungsoo Kim, Kyungtaek Lim, Eunju Lee, Chankyu Kim, and 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, Jihye Seo, Dahye Kwon, Ho Kyung HWANG, and 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, Daeehe Lee, Yewon Kim, Kyung Taek Lim, Chanryu Kim, Gyuseong Cho, Korea Advanced Institute of Science and Technology

R2-P-22 The research on the method of radon continuous measurement
Guo Lu Zhen, Chen Ling, Luo Zhi Ping, 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, and 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 and 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
R2-P-27 Calculation of Energy Response Compensation for Gamma Dosimeters
LI Jin Yu, XIE Wei Min, Yang Zhong Jian, CHEN Bao Wei, 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, Korea Advanced Institute of Science and Technology

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
Wang Ying, Xiong Wenjun, Luo Zhiping, Ma Jizeng, Chen Ling, China Institute of Atomic Energy

R2-P-31 Neutron Position sensitive scintillation detector using crossed wavelength shifting fiber and Si-photomultiplier readout array
LIU Yang, LIU Zhe, GUO Luzhen, CHEN Lin, LUO Zhiping, 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, and 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, Hiraoki SUGANO, Yuta FUWA, Tone TAKAHASHI, Hideki TOMITA, Nagoya University, Tetsuo IGUCHI, Tokyo City University,
Daiki MATSUI and 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 KOBA, 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. Kyunggi Jisik Sanup Anayang Center, and 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**
Qu Yantao, Wang Hui, Liu Yang, China Institute of Atomic Energy

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

**R3 Radiation Dosimetry**

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

**R3-P-2 Effective Dose Scaling Factors for Inhalation Dose Assessment Considering Radioactivity Distribution in NORM Aerosol**
Cheol Kyu Choi, Yong Gun Kim, Si Young Kim, Kyung Hee University, Jae Kook Lee, Korea Institute of Nuclear Safety, Kwang Pyo Kim1, Kyung Hee University

**R3-P-3 Probabilistic Assessment of Internal Dose to the Public due to Normal Operation of Nuclear Power Plant**
Hyungjoon YU, Hongsuk KIM, Korea Institute of Nuclear Safety, and Jaiki 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, and 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 and Takashi SEKINE, Japan Atomic Energy Agency

R3-P-8 SAAD-POSL method for fast assessment of retrospective dosimetry with core-disc samples using building materials

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 Texture 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, 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 Ji, Jong Myung Lim, Mun Ja Kang and 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, and Michio Yoshizawa, Japan Atomic Energy Agency

R3-P-14 Radiation Dose Estimation by Means of the Molecular Dosimetry in the Cultured Cells

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
XIONG Wanchun, XIAO Yunshi, China Institute for Radiation Protection, CAO Qingjian, China Institute of Atomic Energy, LIU Liye, ZHAO Ri, WEI Xiaofeng, XIA Sanqiang, LI Hua, ZHAO Yuan, PAN Hongjuan, WANG Yu, MA Ruwei, China Institute for Radiation Protection

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
Mvondo S, Nuclear Physics Laboratory, Faculty of Sciences, University of Yaounde I, National Radiation Protection Agency-Cameroon, Ele-Abiama P, Nuclear Physics Laboratory, Faculty of Sciences, University of Yaounde I, Nuclear Technology Section, Energy Research Laboratory, Institute of geological and Mining Research, Ben-Bolie G H, Owono-Ateba P, Nuclear Physics Laboratory, Faculty of Sciences, 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,
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 and 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, Department of Nuclear & Energy Engineering, Jeju National University, and Chung Hun HAN, Institute for Nuclear Science and Technology, 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 and 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 and 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, Institute for Nuclear Science and Technology, Youn Hyun Park, Young Gyu LEE and Jae Woo PARK, Department of Nuclear & Energy Engineering, Jeju National University

R4-P-17 Trend analysis gamma exposure rate and temperature after precipitation
Ho Kyung HWANG, Seongjin MAENG, School of Architectural, Civil, Environmental and Energy Engineering, Kyungpook National University, Sang Hoon LEE, School of Energy
Meng Dan, Zhang Zhitong, Shen Fu, Fu Cuiming, Lu Zhengyong, 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 JONG, Hyo Joon JONG, 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 Xianing 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
Yong-Ho CHOI, Kwang-Muk LIM, In JUN, Byung-Ho KIM, Dong-Kwon KEUM, Korea Atomic Energy Research Institute

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, Nuclear Science and Technology Development Center, National Tsing Hua University, Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan, Y.T. Chen, J.H. Chao, Nuclear Science and Technology Development Center, 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, 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
WANG Renze, ZHANG Jiangang, ZHUANG Dajie, and FENG Zongyang, 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, and 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, and 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, Advanced Science Research Center, Okayama University, Toru TANAKA, Graduate School of Engineering, Kyoto University, Koichi TAKAMIYA, Yoshihiro ISHI, Yasutoshi KURIYAMA, Tomonori UESUGI, Masaaki SAKAMOTO, and Tsutomu OHTSUKE, 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