

EPRBioDose2024 Program

Day 1 (Wednesday, 25 September 2024)	
09:00-09:15	Opening remarks President Shinsaku FUKUDA (Hirosaki University, Japan) Director Shinji TOKONAMI (Hirosaki University, Japan)
09:15-10:15	L-1 Invited Lecture 1 Chair: Tomisato MIURA (Hirosaki University, Japan) Reconstruction of the radiation emergency medical system in Japan after the Fukushima Daiichi Nuclear Power Plant accident Osamu KURIHARA (National Institutes for Quantum Science and Technology, Japan)
Coffee break (10:15-10:45)	
10:45-12:00	Session 1: New methods and new uses for biodosimetry Chairs: Christophe BADIE (UK Health Security Agency, UK) Donovan ANDERSON (Hirosaki University, Japan) <p>OP-1-1 Mixed ex vivo internal irradiation of PBMCs with ²²³Ra and ¹⁷⁷Lu influences DNA damage repair Dr. Harry SCHERTHAN (Bundeswehr Institute of Radiobiology, Germany)</p> <p>OP-1-2 Improving identification of dicentric chromosomes using a high-speed C-banding technique Dr. Donovan ANDERSON (Hirosaki University, Japan)</p> <p>OP-1-3 Biological Effects of Ultra High Dose Rate (UHDR) Radiation in Human Lymphocytes Dr. Adayabalam BALAJEE (Oak Ridge Institute for Science and Education, USA)</p> <p>OP-1-4 Characterisation of radiation responsive genes and variants under different radiation qualities, doses, and dose rates Dr. Maria POLOZOVA (UK Health Security Agency, UK)</p>
Lunch (12:00-13:30)	
13:30-15:00	Round Table session When and how should we use biodosimetry for an unplanned radiation exposure in the short and long term? Moderators Matthias PORT (Bundeswehr Institute of Radiobiology, Germany) Donovan ANDERSON (Hirosaki University, Japan) <p>Senior Panelists Zhanat KENBAYEVA (WHO BioDoseNet) Jacob NADUPARAMBIL (The Ohio State University, USA) Harold SWARTZ (Geisel School of Medicine, Dartmouth College, USA) Merriline VEDAMONY (National Institutes of Allergy and Infectious Diseases, USA)</p> <p>Young Panelists Valerie Swee Ting GOH (SNRSI, National University of Singapore, Singapore) Mattia ROMEO (University of Palermo, Italy)</p>
Coffee break (15:00-15:30)	
15:30-17:30	PP-01 ~ 54 Poster presentation #1 <Core time> Odd: 15:30-16:30, Even: 16:30-17:30

Day 2 (Thursday, 26 September 2024)	
08:20-09:00	<p>KL-1 Keynote Lecture 1 Chair: Ann FLOOD (Dartmouth College, USA) Review of application of EPR alanine dosimetry in medical applications Dr. Maurizio MARRALE (University of Palermo, Italy)</p>
09:00-10:15	<p>Session 2: Innovations in EPR Dosimetry and Dating Part 1 Chairs: Amber HARSHMAN (Oak Ridge National Laboratory, USA) Shin TOYODA (Okayama University of Science, Japan)</p> <p>OP-2-1 Variability of radiation doses reconstructed by EPR in teeth of former United States nuclear workers Dr. Alexander ROMANYUKHA (Armed Forces Radiobiology Research Institute, USA)</p> <p>OP-2-2 Accuracy Enhancement of L-band EPR Tooth Dosimetry: Comparison of Multiple Harmonic Analysis Methods Mr. Jeonghun OH (Seoul National University, South Korea)</p> <p>OP-2-3 ESR Studies of Carbonated Hydroxyapatite Irradiated by Electron beams and Gamma-rays for Dosimetry Dr. Hajime SEITO (National Institute for Quantum Science and Technology, Japan)</p> <p>OP-2-4 EPR investigation on the radiophotoluminescence centers in a recently developed Ag-doped alkali-phosphate glass Dr. Hiroshi YASUDA (Hiroshima University, Japan)</p>
Coffee break (10:15-10:45)	
10:45-12:00	<p>Session 3: Innovations in EPR Dosimetry and Dating Part 2 Chairs: Hasan TUNER (Balikesir University, Turkey) Ichiro YAMAGUCHI (National Institute of Public Health, Japan)</p> <p>OP-3-1 Behavior of a trapped charge at the E1' center to seismic fault slips with various frictional power densities Dr. Kiriha TANAKA (Japan Atomic Energy Agency, Japan)</p> <p>OP-3-2 Investigation on radiation-induced radicals in synthetic alkylamine silica clathrates for ESR dating of chibaite Mr. Shusuke ISOGAI (Kobe University, Japan)</p> <p>OP-3-3 ESR dating of barite taking into account the contribution from extinct ²²⁸Ra to the equivalent doses Shin TOYODA (Okayama University of Science, Japan)</p> <p>OP-3-4 Exposure doses estimation to uranium personnel of the mining enterprise and the population of Akmola region, Kazakhstan using tooth enamel EPR method Dr. Kassym ZHUMADILOV (L.N. Gumilyov Eurasian National University, Kazakhstan)</p>
Lunch (12:00-13:30)	
13:30-14:15	<p>KL-2 Keynote Lecture 2 Chair: François TROMPIER (Institut de Radioprotection et de Sûreté Nucléaire, France) On the importance of dosimetry in radiobiological studies Dr. Morgane Dos SANTOS (Institut de Radioprotection et de Sûreté Nucléaire (IRSN), France)</p>
Short break (14:15-14:30)	

<p>14:30- 15:45</p>	<p>Session 4: Radiation Exposure Assessment and Retrospective Dosimetry Chairs: <i>Stephen BARNARD (UK Health Security Agency, UK)</i> <i>Hiroshi YASUDA (Hiroshima University, Japan)</i></p> <p>OP-4-1 Biodosimetry plays a crucial role in meeting clinical requirements in cases of both low-level (accidental) and high-level (military/nuclear) radiation exposure scenarios <i>Dr. Matthias PORT (Bundeswehr Institute of Radiobiology, University of Ulm, Germany)</i></p> <p>OP-4-2 The micronuclei assay based on imaging flow cytometry for high-throughput radiation biodosimetry <i>Dr. Lee YOUNGHYUN (Soonchunhyang University, South Korea)</i></p> <p>OP-4-3 Dose estimation using ESR for wild Japanese macaque in contaminated area of Fukushima Prefecture <i>Dr. Toshitaka OKA (Japan Atomic Energy Agency, Japan)</i></p> <p>OP-4-4 Impact of the X-ray radiation quality on the radiological burn severity and on the in vivo bone response for retrospective dose estimation at different time points <i>Mr. Alban ROUSSEL (Institut de Radioprotection et de Sûreté Nucléaire, France)</i></p>
<p>15:45- 17:45</p>	<p>PP-01 ~ 54 Poster presentation #2 <Core time> Odd: 15:45-16:45, Even: 16:45-17:45</p>

Day 3 (Friday, 27 September 2024)	
08:20-09:00	<p>KL-3 Keynote Lecture 3 Chair: <i>Ruth WILKINS (Health Canada, Canada)</i> An Overview of Radiation Biodosimetry Approaches: Current Perspectives and Future Applications <i>Dr. Merriline VEDAMONY (National Institutes of Allergy and Infectious Diseases, USA)</i></p>
09:00-10:15	<p>Session 5: Radiation Emergency Triage and Response Chairs: <i>Adayabalam BALAJEE, (Oak Ridge Institute for Science and Education, USA)</i> <i>Yu ABE (Nagasaki University, Nagasaki, Japan)</i></p> <p>OP-5-1 New emergency organization using triage-mode biological dosimetry for deployment during a radiological event <i>Dr. Juan MARTINEZ (Institut de Radioprotection et de Sûreté Nucléaire, France)</i></p> <p>OP-5-2 Emergency dosimetry and population triage: what do we need and what can we do <i>Dr. François TROMPIER (Institut de Radioprotection et de Sûreté Nucléaire, France)</i></p> <p>OP-5-3 Development and Capabilities of a Novel Point-of-Care Biodosimetry Device for Radiological Emergency Triage <i>Dr. Stanislav POLOZOV (UK Health Security Agency, UK)</i></p> <p>OP-5-4 Matching biodosimetry techniques to the goals for medical care following a large-scale radiation event <i>Dr. Harold M SWARTZ (Dartmouth College Geisel School of Medicine, USA)</i></p>
Coffee break (10:15-10:45)	
10:45-12:00	<p>Session 6: Artificial Intelligence and Automation in Dosimetry Chairs: <i>Andrzej WOJCIK (Stockholm University, Sweden)</i> <i>Yohei FUJISHIMA (Hirosaki University, Japan)</i></p> <p>OP-6-1 Towards Automated Aberration Detection: First Results with a DNN-Based Approach Realized Using Metafer <i>Dr. Andreas Brown (MetaSystems Hard & Software GmbH, Germany)</i></p> <p>OP-6-2 Artificial Intelligence-Driven Advancements in Biological Dosimetry <i>Dr. Prakash HANDE (National University of Singapore, Singapore)</i></p> <p>OP-6-3 Development of prototype models using deep learning and FISH techniques for chromosomal aberration detection <i>Dr. Kotaro ISHII (National Institutes for Quantum Science and Technology, Japan)</i></p> <p>OP-6-4 MaksChroms - Chromosome recognition open-source software with CNNs for the dicentric chromosome assay in biological dosimetry <i>Dr. Beata BRZOZOWSKA (University of Warsaw, Poland)</i></p>
Lunch (12:00-13:00)	
13:00-17:00	<p>Excursion (Guided Hirosaki City Tour)</p> <ul style="list-style-type: none"> • Hirosaki Castle Park • Tsugaru-han Neputa Village • Hirosaki City Apple Park
18:00-20:00	<p>Banquet and Award Ceremony Venue: Hirosaki Park Hotel (Address: 126, Dote-machi, Hirosaki)</p>

Day 4 (Saturday, 28 September 2024)	
09:00-09:45	IL-2 Invited Lecture 2 Chair: <i>Harold SWARTZ (Dartmouth College Geisel School of Medicine, USA)</i> The Place of Electron Spin Resonance (ESR) Dating among Modern Dating Methods <i>Dr. Anne SKINNER (Williams College, USA)</i>
09:45-10:45	IABERD General Assembly
Short break (10:45-11:00)	
11:00-12:15	Session 7: New Techniques in EPR and Biodosimetry Chairs: <i>Stephen PECOSKIE (Canadian Nuclear Laboratories, Canada)</i> <i>Toshitaka OKA (Japan Atomic Energy Agency, Japan)</i> OP-7-1 Using multiparameter imaging flow cytometry for the detection of radiation-induced damage in human lymphocytes <i>Dr. Ruth WILKINS (Health Canada, Canada)</i> OP-7-2 Circulating cell-free DNA (cfDNA) concentration in plasma is a quantitative measure of radiation toxicity that incorporates dose and exposure inhomogeneity <i>Dr. Steven SWARTS (University of Florida College of Medicine, USA)</i> OP-7-3 Advanced Technical Developments for <i>in vivo</i> Diagnostic Magnetic Resonance Experiments <i>Dr. Jason SIDABRAS (Medical College of Wisconsin, USA)</i> OP-7-4 Alanine/EPR dosimetry for proton and carbon ion beams used for hadrontherapy <i>Mr. Mattia ROMEO (University of Palermo, Italy)</i>
12:15-12:30	Closing remarks <i>Tomisato MIURA (Hiroshima University, Japan)</i>

Poster session

All posters should be displayed on the morning of Day 1, September 25th. Posters can be removed after the closing remarks on Saturday 28th, Day 4. Below is the information for the poster session. The session is divided into two core times, allowing each presenter to present twice.

Odd-numbered presenters (PP-01, PP-03, etc.) should be present from 15:30-16:30 on Day 1 and 15:45-16:45 on Day 2. Even-numbered presenters (PP-02, PP-04, etc.) should be present from 16:30-17:30 on Day 1 and 16:45-17:45 on Day 2. Please stand by your poster during your designated times.

Poster ID	Title	Presenter (First, last name; affiliation)
PP-01	Pilot molecular epidemiology study on former Sellafield worker samples	Jayne MOQUET (UK Health Security Agency, Radiation, Chemical and Environmental Hazards Division, United Kingdom)
PP-02	Transcriptional radiation response signature of human skin	Lourdes CRUZ-GARCIA (UK Health Security Agency, United Kingdom)
PP-03	Analysis of dosimetric parameters reporting in biological dosimetry publications: strengths and weaknesses	Morgane Dos SANTOS (Institut de Radioprotection et de Sureté Nucléaire, France)
PP-04	Expertise in biological dose assessment of Korea Institute of Radiological and Medical Sciences	Ki Moon SEONG (Korea Institute of Radiological & Medical Sciences, South Korea)
PP-05	Role of sample transport temperature, transit time and time point of analysis on gene expression-based biodosimetry	Lourdes CRUZ-GARCIA (UK Health Security Agency, United Kingdom)
PP-06	In Vitro Study of Radiosensitivity in Colorectal Cancer Cell Lines Associated with Lynch Syndrome	Mingzhu SUN (UK Health Security Agency, United Kingdom)
PP-07	CONFOUNDING INFLUENCE OF INTER- AND INTRA-INDIVIDUAL VARIATION IN γH2AX FOCI FOR BIOLOGICAL DOSIMETRY ESTIMATES	Danny FREESTONE (UK Health Security Agency, United Kingdom)
PP-08	Characterisation of radiation responsive genes and variants under different radiation qualities, doses, and dose rates	Dr. Maria POLOZOVA (UK Health Security Agency, United Kingdom)
PP-09	Chromosomal aberrations, neutrophil-to-lymphocyte ratio, and committed effective dose in radioiodine-treated hyperthyroid patients	Tomisato MIURA (Institute of Radiation Emergency Medicine, Hirosaki University, Japan)
PP-10	The use of long-term stored frozen-thawed culture medium for cytogenetic biodosimetry in radiation emergency	Valerie S. T. GOH (National University of Singapore, Singapore)
PP-11	Individual Variability in Radiotherapy-Induced Translocation Frequency in Peripheral Blood Mononuclear Cells of Cancer Patients	Prabodha Kumar MEHER (Stockholm University, Sweden)
PP-12	Attempt to perform biodosimetry using imaging flow cytometry for triage in Japan	Ryo NAKAYAMA (Fukushima Medical University School of Medicine, Japan)
PP-13	Background Frequency of Chromosome Aberrations in Young Japanese and the Influence of Confounding Factors	Yu ABE (Nagasaki University, Japan)
PP-14	Method improvement in the yield of metaphase cell in biological dosimetry	Hyo Jin YOON (Korea Institute of Radiological & Medical Sciences, South Korea)
PP-15	Radiation Dose Dependent Metabolites in Urine for the Lethal/Sublethal Range	Satoru MONZEN (Hirosaki University Graduate School of Health Sciences, Japan)
PP-16	A miRNA based fingerstick blood test for rapid evaluation of radiation sickness	Jacob NADUPARAMBIL (The Ohio State University College of Medicine, Columbus, Ohio, US, United States)
PP-17	Improving identification of dicentric chromosomes using a high-speed C-banding technique	Donovan ANDERSON (Hirosaki University, Japan)

Poster ID	Title	Presenter (First, last name; affiliation)
PP-18	Biological Effects of Ultra High Dose Rate (UHDR) Radiation in Human Lymphocytes	Adayabalam BALAJEE (Oak Ridge Institute for Science and Education, United States)
PP-19	Determination of the dosimetric features and EPR spectral stability of sorbitol	Hasan TUNER (University of Balikesir, Turkey)
PP-20	Development and Capabilities of a Novel Point-of-Care Biodosimetry Device for Radiological Emergency Triage	Dr. Stanislav POLOZOV (UK Health Security Agency, UK)
PP-21	Effects of Age, Gender, and Other Individual Factors on Fingernail ESR/EPR Signals	Samayeh AZARIASL (Hiroshima University, Japan)
PP-22	Absorbed dose distribution inside the tooth for irradiation of different energy photons	Ichiro YAMAGUCHI (National Institute of Public Health, Japan)
PP-23	Development of a disposable dosimeter using ESR	Yoshimasa KITAMURA (Nuclear Science and Engineering Center, Japan Atomic Energy Agency, Japan)
PP-24	Dosimetric properties evaluation for EPR dosimetry using smartwatch touch screen glass in radiological accidents	Jae Seok KIM (National Radiation Emergency Medical Center, South Korea)
PP-25	Al(PO ₃) ₃ concentration dependence of the dosimetric properties in Ag-doped NaPO ₃ -Al(PO ₃) ₃ glasses	Hiroki KAWAMOTO (Tohoku University, Japan)
PP-26	Wearable Resonator for In-Vivo Electron Paramagnetic Resonance Tooth Dosimetry	Chang Uk KOO (Seoul National University, South Korea)
PP-27	Analysis of electron spin resonance spectrum of gamma-ray irradiated tooth enamel	Takuma YAMASHITA (Tohoku University, Japan)
PP-28	Dose response and thermal stability of the radiation-induced radicals in melanophlogite	Atsushi TANI (Kobe University, Japan)
PP-29	Analysis by ESR of quartz in tephritic sedimentary sequence at Kamiyoshida, Rokunohe, Aomori, Japan, indicating temporal variation during 20-100 ka of aeolian dust from China	Karen OKADA (Okayama University of Science, Japan)
PP-30	DNA double strand break and dicentric chromosome analysis in endovascular surgeons of the Heidelberg Univ. Hospital	Harry SCHERTHAN (Bundeswehr Institute of Radiobiology, Germany)
PP-31	Preliminary study on estimating radiation exposure of the large Japanese field mice inhabiting radiation contaminated area in Japan using Electron Spin Resonance	Hiroko ISHINIWA (Fukushima University, Japan)
PP-32	Occupational radiation received by UK orthopaedic surgeons and possible risk to workers	Hannah MANCEY (UK Health Security Agency, United Kingdom)
PP-33	Investigation of ESR measurement conditions for tooth enamel of Japanese macaques	Teppei HAYASHI (Tohoku University, Japan)
PP-34	An interlaboratory comparison on EPR on tooth enamel within the WG 10 of the EURADOS group: preliminary data analysis	François TROMPIER (IRSN, France)
PP-35	Performance of EPR alanine dosimeter for criticality accident dosimetry	François TROMPIER (IRSN, France)
PP-36	Novel Approach for Emergency dosimetry: Investigations of screen protectors of smartphones by EPR spectroscopy	François TROMPIER (IRSN, France)
PP-37	Risk assessment using rodents in the drained Cooling Pond of the Chernobyl Nuclear Power Plant	Olena BURDO (National Academy of Science of Ukraine, Ukraine)
PP-38	Assessment of Potential Radiation Exposure for Owners of Rescued Dogs and Cats Adopted from Chernobyl and Fukushima	Amber HARSHMAN (Oak Ridge National Laboratory, United States)
PP-39	An Overview of the NIAID/Radiation and Nuclear Countermeasures Program and L'Institut de Radioprotection	Merriline SATYAMITRA (National Institutes of Allergy and Infectious Diseases, United States)

Poster ID	Title	Presenter (First, last name; affiliation)
	et de Sûreté Nucléaire Radiation Dosimetry Harmonization Efforts	
PP-40	Harmonizing the CBMN Assay Across Japan	<i>Lobna ALKEBSI (National Institutes for Quantum Science and Technology, Japan)</i>
PP-41	The improvement of biodosimetry performance by phytohemagglutinin pretreatment in the event of delayed shipment	<i>Younghyun LEE (Soonchunhyang University, South Korea)</i>
PP-42	Improvement of culture and harvest method in dicentric chromosome assay for on-site cytogenetic biodosimetry	<i>Thanh Mai TRAN (Dalat Nuclear Research Institute, Vietnam)</i>
PP-43	Activities of the Korea biological dosimetry network (K-BioDos) for collaborative response to mass radiation incidents in South Korea	<i>Yanghee LEE (Korea Institute of Radiological & Medical Sciences, South Korea)</i>
PP-44	A deltaCq-based Method for Triage during RN Incidents	<i>Shyue Wei PANG (DSO National Laboratories, Singapore)</i>
PP-45	Image selection is critical in the dicentric chromosome assay in cytogenetic biodosimetry	<i>Ayaka OKIMOTO (Department of Medical Technology, School of Health Sciences, Hirosaki University, Japan)</i>
PP-46	Dose-effect relationships of dicentric formation determined by fully- & semi-automated dicentric evaluation using different DCScore classifiers after 3 h or 24 h colcemid treatment	<i>Matthias PORT (Bundeswehr Institute of Radiobiology affiliated to the University of Ulm, Germany)</i>
PP-47	Contribution of the RENE network to radiological or nuclear emergency preparedness	<i>Matthias PORT (Bundeswehr Institute of Radiobiology affiliated to the University of Ulm, Germany)</i>
PP-48	Feasibility study for the development of automated analysis of cytokinesis-block micronucleus assay in cytogenetic dosimetry using AI-based object detection techniques	<i>Yohei FUJISHIMA (Hirosaki University, Japan)</i>
PP-49	Application of Artificial Intelligence to Metaphase Finder and Automated Chromosome Aberration Finding	<i>Akira FURUKAWA (National Institutes for Quantum Science and Technology, Japan)</i>
PP-50	Establishment and Validation of the Dose-response Calibration Curve for Semi-automatic Analysis of Dicentric Chromosome	<i>Qian-qian MENG (China Institute for Radiation Protection, China)</i>
PP-51	Intra-Experimental and Inter-Donor Variations in the Dose Response Curve for Unstable Chromosome Aberrations Induced by 6 MV Linear Accelerator Photons	<i>Volodymyr VINNIKOV (National Academy of Medical Science of Ukraine, Ukraine)</i>
PP-52	Study of possibilities of using complex methodology on the base of EPR for dating by temporary layers on archaeological artifacts	<i>Tatyana SEREDAVINA (Institute of Physics and Technology, Kazakhstan)</i>
PP-53	EPR researches of dose loads in dosimetric materials exposed in model experiments at the level of high mountain station of cosmic rays	<i>Tatyana SEREDAVINA (Institute of Physics and Technology, Kazakhstan)</i>
PP-54	EPR dosimetry of irradiated teeth – dependence on dose and type of radiation	<i>Tamar SANIKIDZE (Tbilisi State Medical University, Georgia)</i>

Round Table session

The Round Table Session will feature a unique discussion centered on the theme:

"When and how should we use biodosimetry for unplanned radiation exposure in the short and long term?"

Moderators will guide the discussion and pose questions to the panelists. Both senior and young panelists will provide short presentations sharing their thoughts on the theme. The remainder of the session will be opened to the audience for an interactive discussion, aiming to collectively answer the theme question.

Moderators

Matthias PORT (Bundeswehr Institute of Radiobiology, Germany)

Donovan ANDERSON (Hirosaki University, Japan)

Senior Panelists

Zhanat KENBAYEVA (WHO BioDoseNet)

Jacob NADUPARAMBIL (The Ohio State University, United States)

Harold SWARTZ (Geisel School of Medicine, Dartmouth College, United States)

Merriline VEDAMONY (National Institutes of Allergy and Infectious Diseases, United States)

Young Panelists

Valerie Swee Ting GOH (SNRSI, National University of Singapore, Singapore)

Mattia ROMEO (University of Palermo, Italy)