Radiation in the environment – scientific achievements and challenges for the society

16-17 April 2018

The symposium will bring together scientists working in the broad field of environmental radioactivity, in particular among the Consortium of Radiation Safety Research (Cores, see www.cores.fi), as well as stakeholders and end-users of the research. The symposium will honor the long and esteemed career of Prof. Jukka Lehto in radiochemistry.

The topics for the symposium cover analytical radiochemistry and various aspects of environmental radiation and radioecological research, ranging from radioactive fallout and deposition of nuclear waste to naturally occurring radioactive materials (NORM) and radon, modelling of transfer of radioactive substances in the environment as well as the effects of environmental radiation exposure on man and the biota.

Late registration (without presentation):

There is no registration fee but registrations are required by 28 March, 2018 via the link: https://elomake.helsinki.fi/lomakkeet/86863/lomake.html

In case you have already registered on the first call, no additional registration for the symposium is needed.

In connection of the symposium, a Symposium Banquet and the 50th anniversary of Finnish Radiochemists society will be held on Monday 16th of April 6 p.m. in Unioninkadun juhlahuoneisto, Unioninkatu 33, Helsinki. Registration for the banquet is required by 28 March, 2018 via the link:

https://elomake.helsinki.fi/lomakkeet/86831/lomake.html

The fee for the Banquet is 40 eur and is paid via bank transfer on account FI75 1494 3500 0203 96 by 28 March, 2018. Please add on the payment notification your name, institution and text "Banquet 2018". For more information contact: merja.lusa@helsinki.fi

Proceedings

The proceedings of the symposium will be published in STUK-A Report series. Extended abstracts (4-6 A4 pages) of oral presentations and posters should be submitted by 30 March 2018 to sisko.salomaa@stuk.fi.

Programme

Monday 16 April:

Session 1: Analytics and metrology Chair: Dr. Merja Lusa	
10:00 - 10:10	Welcome and introduction *Dr. Merja Lusa, University of Helsinki*
10:10 - 10:20	Welcome address by Cores Chair *Prof. Filip Tuomisto, Aalto University*
10:20 - 10:50	The Honorary Lecture *Prof. Jukka Lehto, University of Helsinki*
10:50 - 11:20	European Radioecology ALLIANCE - the Strategic Research Agenda and associated topical roadmaps *Dr. Maarit Muikku, STUK- Radiation and Nuclear Safety Authority*
11:20 - 11:50	National programme and consortium for radiation safety research (Cores) *Prof. Sisko Salomaa, University of Eastern Finland, and STUK*
11:50 - 12:20	MetroNORM - Metrology for processing materials with high natural radioactivity *Dr. Roy Pöllänen, STUK- Radiation and Nuclear Safety Authority*
12:20 - 13:20	**Lunch**
Session 2: Radioactive substances in geosphere Chair: Dr. Nina Huittinen	
13:20 - 13:50	Radionuclides in porous bedrock -deposition of spent nuclear fuel *Dr. Maikki Siitari-Kauppi, University of Helsinki*
13:50 - 14:10	Mobilization of radionuclides and trace metals in tailings from Rautavaara mine *Mila Pelkonen, University of Helsinki*
14:10 - 14:40	Progress and implications: 20 years of increased system understanding *Dr. Richard Andrew Klos, Aleksandria Sciences UK*
14:40 - 15:20	**Coffee and posters 1**
Session 3: Transfer of radionuclides in the environment Chair: Prof. Jukka Juutilainen	
15:20 - 15:50	Sensitivity analysis of radionuclide transport in biosphere analysis *Dr. Jari Turunen, Tampere University of Technology*
15:50 - 16:20	Finnish technologies for monitoring of the Comprehensive Nuclear-Test-Ban Treaty *Dr. Jarmo Ala-Heikkilä, Aalto University*
16:20 - 16:40	Serpent Monte Carlo code for radiation transport applications *Prof. Jaakko Leppänen, VTT*
16:40 - 17:00	Biosphere modelling in safety assessments *Ari Ikonen, Envirocase Ltd.*

Tuesday 17 April:

Session 4: Uptake of radionuclides in biosphere Chair: Dr. Kaisa Vaaramaa	
09:00 - 9:30	Non-linear transfer of elements into organisms *Prof. Jukka Juutilainen, University of Eastern Finland*
09:30 - 10:00	Cm complexation with aqueous phosphates at elevated temperatures *Dr. Nina Huittinen, Helmholtz-Zentrum-Dresden-Rossendorf*
10:00 - 10:30	Bacterial selenium oxyanion reduction – effects on bacteria-plant interactions *Dr. Merja Lusa, University of Helsinki*
10:30 – 11:00	Radioactivity in the ashes from biomass-fired power plants in Finland, 2016 case study, *Dr. Antti Kallio, STUK- Radiation and Nuclear Safety Authority*
11:00 - 11:50	Coffee and posters 2
Session 5: Effects on humans and biota Chair: Prof. Sisko Salomaa	
11:50 - 12:20	Radiation exposure and childhood leukemia *Prof. Anssi Auvinen, University of Tampere*
12:20 - 12:40	The effects of ionizing radiation on wild rodent population in Chernobyl exclusion zone *Kati Kivisaari, University of Jyväskylä*
12:40 - 13:00	Microcosms for testing of individual stressors and environmental samples *Dr. Jarkko Akkanen, University of Eastern Finland*
Closing remarks Prof. Sisko Salomaa	

POSTERS, SESSION 1 and 2

Aro, Lasse et al.: Natural Resources Institute Finland; Radioactivity on peatlands of various uses and development stages

Bomberg, Malin et al.: VTT; Deep subsurface life in the Olkiluoto radioactive waste repository environment

Holmgren, Olli et al.: STUK- Radiation and Nuclear Safety Authority, Radon concentrations in Finnish houses built in 2013 – 2015

Hölttä, Pirkko et al.: University of Helsinki, Muddusjärvi field course

Kangasniemi, Ville et al.: EnviroCase, Ltd., On conceptual and modelling uncertainties in biota dose assessments of releases from nuclear waste repositories and other nuclear facilities

Knuutinen, Jenna et al.: University of Helsinki, Uptake of Nickel in boreal heterotrophic *Pseudomonas* and *Burkholderia* strains

Lahdenperä, Anne-Maj et al.: A-insinöörit, In situ K_d values at the Olkiluoto Island and in the Reference area

Majlesi, Soroush et al. University of Eastern Finland: Fate of Radionuclide ^{14}C In Soil-Plant-Atmosphere Continuum: Uptake of Soil ^{14}C Into Plants

Salomaa, Sisko et al.: University of Eastern Finland, European joint programming for radiation protection research

Seppälä, Anniina Marja et al.: VTT, Molecular modelling approach to the separation of rare earth elements using phyllosilicates

Turtiainen, Tuukka et al.: STUK- Radiation and Nuclear Safety Authority, What is the optimum season and length for radon measurement in Finnish homes

Vaaramaa, Kaisa et al.: STUK- Radiation and Nuclear Safety Authority, C-14 content in vegetation in Finland