

## Track 1

09:30 *Welcome & introduction*

### Session 1 | Nuclear materials Chair: Marc Verwerft

09:40 Introduction

09:45 **Mr Tymofii Khvan**

*Nano-indentation for sub-miniaturized testing of irradiated materials: FEM analysis and experiments*  
SCK CEN mentors: Dmitry Terentyev & Giovanni Bonny  
Promoter: Ludovic Noels (ULiège)

10:00 **Mr Aidar Zakirov**

*Effect of Cu, P, Ni and Mn content, individually and synergistically, on the microstructure of irradiated chemically-tailored RPV steels*  
SCK CEN mentors: Erich Stergar & Rachid Chaouadi  
Promoters: Philippe Pareige (University of Rouen Normandie) & Jacques Pascal (UCL)

10:15 **Mr Aäron Penders**

*Microstructural investigation of irradiation assisted stress corrosion cracking mechanism based on focused ion beam analysis of tested and industrial specimens*  
SCK CEN mentors: Milan Konstantinovic & Rik-Wouter Bosch  
Promoter: Nick Schryvers (UAntwerpen)

10:30 **Ms Camille Courilleau**

*Fundamental understanding of the sensitivity of radiation hardening to nickel content and temperature in RPV materials*  
SCK CEN mentors: Rachid Chaouadi & Nicolas Castin  
Promoters: Philippe Pareige & Bertrand Radiguet (University of Rouen Normandie)

10:45 **Mr Meng Li**

*Experimental and numerical investigations on the miniaturization for fracture toughness characterization of RPV materials*  
SCK CEN mentors: Inge Uytendhouwen & Marlies Lambrecht  
Promoters: Thomas Pardoën (UCL) & Ludovic Noels (ULiège)

11:00 **Mr Selim Uygur**

*Phase stability and oxidation behavior of high Pu content fast reactor MOX fuel*  
SCK CEN mentors: Rémi Delville & Gregory Leinders  
Promoter: Jef Vleugels (KU Leuven)

11:15 Q&A

11:25 End session 1

Session 2 | Radiochemistry

Chair: Thomas Cardinaels

12:05 Introduction

12:05 **Mr Hongshan Zhu**

*Inorganic sorption materials tailored for 225Ra/225Ac and 225Ac/213Bi radionuclide generators for biomedical applications*

SCK CEN mentors: Stephan Heinitz & Thomas Cardinaels

Promoters: Koen Binnemans & Thomas Cardinaels (KU Leuven)

12:20 **Mr Stephen Ahenkorah**

*Development of 225Ac- and 213Bi-labelled somatostatin analogues with improved tumour to kidney ratio for the treatment of neuroendocrine tumours*

SCK CEN mentor: Maarten Ooms

Promoters: Guy Bormans, Thomas Cardinaels & Christophe Deroose (KU Leuven)

12:35 **Mr Irwin Cassells**

*Development of 161Tb-labelled nanobodies for the treatment of colorectal cancer*

SCK CEN mentor: Maarten Ooms

Promoters: Guy Bormans, Thomas Cardinaels & Frederik Cleeren (KU Leuven)

12:50 Q&A

13:00 End session 2

Session 3 | Nuclear technology

Chair: Rafaël Fernandez

13:15 Introduction

13:20 **Mr Christophe Corazza**

*Aerosol formation, transport and deposition in lead based fast reactors*

SCK CEN mentors: Kris Rosseel & Alexander Aerts

Promoter: Maria Rosaria Vetrano (KU Leuven)

13:35 **Ms Amke Lescur**

*The influence of heavy liquid metal environment on mechanical and corrosion properties of austenitic stainless steel welds*

SCK CEN mentors: Jun Lim & Erich Stergar

Promoters: Roumen Petrov & Stijn Hertelé (UGent)

13:50 **Mr Benji Leenders**

*Improving the extraction of radioactive isotopes from MYRRHA linac targets by molecular sidebands*

SCK CEN mentors: Donald Hougbo & Alexander Aerts

Promoter: Stefaan Cottenier (UGent)

14:05 Q&A

14:15 End session 3

Session 4 | Waste & disposal

Chair: Christophe Bruggeman

14:30 Introduction

14:35 **Mr Ygee Larion**

*Reduced order modelling techniques for coupled geomechanics problems*

SCK CEN mentors: Suresh Seetharam & Guangjing Chen

Promoter: Thierry Massart (ULB)

14:50 **Mr Jesus Casillas**

*Joint inversion of physical and chemical state variable data within a multi-model subsurface hydrology framework*

SCK CEN mentors: Bart Rogiers & Koen Beerten

NIRAS/ONDRAF mentor: Laurent Wouters

Promoter: Kristine Walraevens (UGent)

15:05 **Ms May Awarkeh**

*Investigation of the long-term behavior of Boom Clay*

SCK CEN mentors: Arnaud Dizier & Li Yu

NIRAS/ONDRAF mentor : Séverine Levasseur

Promoter : Yuyun Cui (Ecole des Ponts Paris Tech)

15:20 Q&A

15:30 End session 4

15:30 Closure of track 1

Track 2

09:30 Welcome & introduction

Session 1 | Medical applications

Chair: Dennis Elema

09:40 Introduction

09:45 **Ms Magy Sallam**

*Cardiovascular dysfunction after cancer radiation therapy: search for biomarkers and study of the underlying physiological mechanisms*

SCK CEN mentors: An Aerts & Rafi Benotmane

Promoter: Pieter-Jan Guns (UAntwerpen)

10:00 **Ms Shari Wouters**

*Harnessing a therapeutic microbiome as an alleviating strategy for dysbiosis and recurrence in colorectal cancer patients undergoing radiotherapy*

SCK CEN mentors: Mohamed Mysara Ahmed & Mieke Verslegers

Promoters: Samir Kumar-Singh & Surbhi Malhotra (UAntwerpen)

10:15 **Ms Gunjan Kayal**

*Clinical dosimetry in molecular radiotherapy*

SCK CEN mentors: Lara Struelens & Clarita Vargas Saldarriaga

Promoter: Manuel Bardiès (UToulouse)

10:30	<p><b>Ms Dayana Castillo</b>  <i>Dosimetry aspects of recoiling daughter nuclides of 225-Actinium in Targeted Alpha Therapy</i>            SCK CEN mentors: Marijke De Saint-Hubert &amp; Maarten Ooms            Promoter: Michel Koole (KU Leuven)</p>
10:45	<p><b>Ms Racell Nabha</b>  <i>Assessment of relative biological effectiveness of clinical and secondary irradiation in proton therapy by microdosimetric measurements and simulations</i>            SCK CEN mentors: Olivier Van Hoey &amp; Rafi Benotmane            Promoter: Edmond Sterpin (KU Leuven)</p>
11:00	<p><b>Ms Nathalie Heynickx</b>  <i>Study of the radiobiological basis of therapeutic and toxic responses of prostate cancer radiation therapy</i>            SCK CEN mentor: An Aerts            Promoter: Sarah Baatout (UGent)</p>
11:15	<p><b>Ms Lorain Geenen</b>  <i>Study of the radiobiological basis of the therapeutic and cytotoxic responses of targeted radionuclide therapy using Lu177-DOTATATE and Ac225-DOTATATE</i>            SCK CEN mentors: An Aerts &amp; Sarah Baatout            Promoter: Marion De Jong (Erasmus University Rotterdam)</p>
11:30	Q&A
11:45	End session 1

Session 2   Social sciences & humanities	
Chair: Catrinel Turcanu	
12:00	Introduction
12:05	<p><b>Mr Hein Brookhuis</b>  <i>New big science in Belgium. Transformation and adaptation of SCK CEN 1991-2022.</i>            SCK CEN mentors: Robbe Geysmans &amp; Gaston Meskens            Promoter: Geert Vanpaemel (KU Leuven)</p>
12:20	<p><b>Ms Ferdiana Hoti</b>  <i>Communication of uncertainties related to radiological risk situations</i>            SCK CEN mentors: Tanja Perko &amp; Bieke Abelshausen            Promoters: Peter Thijssen (UAntwerpen) &amp; Ortwin Renn (University of Stuttgart)</p>
12:35	Q&A
12:45	End session 2

Session 3 | Radiation protection

Chair: Filip Vanhavere

13:00 Introduction

13:05 **Mr Paulus Laanen**

*Do plants adapt to chronic low-dose gamma exposure? A mechanistic study comparing plants exposed under field and lab conditions on (epi) genetic, biochemical and population level.*

SCK CEN mentors: Nele Horemans & Eline Saenen

Promoter: Ann Cuypers (UHasselt)

13:20 **Ms Amber Mertens**

*Unravelling uranium uptake mechanisms in Arabidopsis thaliana*

SCK CEN mentors: Eline Saenen & Nele Horemans

Promoter: Ann Cuypers (UHasselt)

13:35 **Mr Floris Abrams**

*Combining machine learning and operations research methods for optimizing remediation efforts in response to large-scale nuclear emergencies affecting food and agriculture*

SCK CEN mentors: Lieve Sweeck & Johan Camps

Promoter: Jos Van Orshoven (KU Leuven)

13:50 **Ms Isabelle Van Dyck**

*Application of Lemna minor in site remediation strategies*

SCK CEN mentors: Nathalie Vanhoudt & Jordi Vives I Batlle

Promoter: Jaco Vangronsveld (UHasselt)

14:05 **Mr Stef Geelen**

*Improving radiological monitoring using drones*

SCK CEN mentors: Johan Camps & Tim Vidmar

Promoter: Wouter Schroeyers (UHasselt)

14:20 **Ms Inés Llopart**

*Development of novel assays for 'difficult-to-measure' radionuclides in materials produced during nuclear decommissioning activities*

SCK CEN mentors: Mirela Vasile & Andrew Dobney

Promoter: Martine Leermakers (VUB)

14:35 **Ms Eline Radstake**

*Unraveling non-cancer effects of spaceflight: how are the brain and skin affected in astronauts?*

SCK CEN mentor: Mieke Verslegers

Promoter: Sarah Baatout (UGent)

14:50 Q&A

15:00 End session 3

15:00 Closure of track 2