

Program NUTECH 2023

DAY 1

20.09.2023 (Wednesday)

Building A0, Room 31

8:00 Registration

09:00-11:00 Opening ceremony

Plenary session

Chair: Paweł Gajda

Ulrich W. Scherer

From TENORM to Superheavy Element Chemistry: Measurement of Alpha Emitters

Xavier Coqueret

Radiation-induced cross-linking polymerization: Recent developments for coating and composite applications

Suresh D. Pillai

Electron beam mediated thermally-enhanced radiolysis responsible for PFAS degradation in soils

11:00-11:30 COFFEE BREAK, second floor gallery

11:30-13:00 Plenary session (continuation)

Paul Wynne

International Trends in Irradiation Technologies and Markets

Jerzy Cetnar

High Temperature Reactors advantages and how to find them

Celina I Horak

IAEA perspective on radiation science and technology: current and future plans

Presentation by IRtech

13:00-14:30 LUNCH BREAK, Krakus Restaurant, ul. Reymonta 15 30-059 Kraków

14:30-16:00 Parallel sessions 1A-1C, rooms 31, 133, 213

Session 1A: Applications of nuclear techniques I – Radiation processing, room 31

Chairs: Rob Edgecock / Andrzej G. Chmielewski

Andrzej G. Chmielewski

Electron Accelerators for Radiation Processing - What are the Limits

Rob Edgecock

Removal of microplastics from sewage sludge

Wojciech Głuszewski

Comparison of gamma and e-beam radiation effects on polymer materials commonly used in medical devices

Daili A S Barreira

Environmental application of the nuclear techniques- Irradiation of vegetal resin for characterization and improvement purposes

Mahmoud G Hamed

Synthesis of Polymeric nanoparticles supported ecofriendly chitosan and its applications for safe treatment of radioactive waste containing ^{60}Co

Session 1B: Dosimetry and radiological protection, room 133

Chair: Ulrich W. Scherer

Lotte Ligaya S Schaap

Liquid Dosimeter with kGy Sensitivity for the Characterization of a New Module for Wastewater Treatment

Magdalena Michalska

Eye lens dosimetry as consequence of eye lens dose limit reduction. Analysis of Hp(3) measurements based on the experience of LADIS at the IFJ PAN

Tobias Teichmann

Dosimetry for Low Energy Electron Beam Applications at Fraunhofer FEP

Katarzyna Matusiak

Influence of the reader on the reading of thermoluminescent detectors

Wojciech Gieszczyk

The temperature-dependent luminescence emission of LiMgPO₄: Tm, Tb crystals for radiation measurements

Konrad Tudyka

Advancements and applications with the μ DOSE and μ DOSE+ Systems for Environmental Radioactivity and Dosimetry

Session 1C: Application of radiotracers, room 213

Chair: Thorsten Bruno Otto Jentsch

Thorsten Bruno Otto Jentsch

International Standardization of Basic Industrial Radiotracer and Radiation Applications – Current State

Tor Bjørnstad

Radiotracer-loaded nanoparticles as oil detectives

Jovan Thereska

Residence Time Distribution formulation and applications using radioactive tracers

Simon Y. Adzaklo

Effectiveness of radioactive tracer technology in characterising industrial process fluid dynamics

Sevilay Hacıyakupoglu

Determination of rare earth elements by neutron activation analysis to predict wildfire impact on soil

Eleftheria Ioannidou

Pb-210 and trace element concentrations in Helsinki urban air, Finland

16:00-16:30 COFFEE BREAK, second floor gallery

**19:30-23:30 GALA DINNER, “Restaurant Plac Nowy 1”,
plac Nowy 1, 31-056 Kraków**

DAY 2
21.09.2023 (Thursday)

09:00-11:00 Parallel sessions 2A-2B, rooms: 31, 133

Session 2A: Nuclear power plant safety, room 31

Chair: Mikołaj Oettingen

Mikołaj Oettingen

Isotopic changes in nuclear fuel during first cycle of APR1400 reactor

Sinan Özdür

ISO 19443 The new quality management standard for the nuclear supply chain

Bartłomiej Klis

Investigation of thermo-hydraulic and neutronics related effects following the voiding of the nuclear core during LOCA transients

Björn Svärd

How to use advanced simulations for the design of nuclear power plants

Juho-Antti Rissanen

Lifetime Extension of the Loviisa NPP in Finland

Session 2B: Applications of nuclear techniques II, room 133

Chair: Jovan Thereska

Ferenc Ditrói

Thin layer activation technology for wear measurement and visualization of the tracer distribution

Suleyman F Ozmen

Radioactivity Characteristics of West-Central Anatolia and Thrace Basin (Turkiye) lignites

Sevilay Hacıyakupoglu

Use of natural dolomite mineral as an adsorbent for cobalt-60 radionuclide from aqueous solutions

Nerantzis Athanasios Kazakis

Testing and applying optimal MODFLOW codes to study constructed wetlands hydrodynamics

Damir Bosnar

Double- and triple-coincidence positron annihilation lifetime spectroscopy based on fast pulse digitizers

Nick Petropoulos

Investigation of DIY plastic scintillators made from polyepoxydes and high loads of commercial liquid scintillation cocktails

11:00-11:30 COFFEE BREAK, second floor gallery

11:30-13:00 Parallel sessions 3A-3B, rooms: 31, 133

Session 3A: Radionuclides in the environment, room 133

Chair: Katarzyna Szarłowicz

Jacques Bezuidenhout

The Optimization and Testing of Gamma-Ray Detection Analyses

Rikus le Roux

The efficiency and spatial characterization of an Underwater Gamma-Ray Detection System (DUGS) for aquatic sediment

Ahmed A. Basfar

Treatment of Contaminated Ground Water from Uranium Using Adsorption Technology by Novel Mesoporous-silica Nanoparticles

Rawia A El Motaïum

The role of nuclear techniques in environmental and human health protection and the safe reuse of sewage water & sludge for sustainable agriculture

Grzegorz Ołoś

Terminological and methodological discrepancies concerning the radionuclides' effective, environmental and biological half-lives

Sylvia Wójcik

Preliminary studies on the radioactivity of ^{210}Po in selected tobacco products

Session 3B: Applications of nuclear techniques III, room 31

Chair: Andrzej G. Chmielewski

Patrick D. Brisset

Study of the wear of a 155mm gun using Thin Layer Activation Method

Tomasz Smoliński

INCT leak detection method for industrial application

Mohd Amirul Syafiq Mohd Yunos

Numerical Simulation of Calibration Map for Radioactive Particle Tracking Technique Using MCNPX Code

Suresh Pillai

Mobile Medium Energy eBeam Platform for Environmental Applications at Texas A&M University

Anna Rys

Chemical elements in air particulate matter samples from Krakow – determination from low atomic number using energy dispersive X-ray fluorescence spectrometer

Presentation by Canberra Packard

13:00-14:30 LUNCH BREAK, Krakus Restaurant, ul. Reymonta 15 30-059 Kraków

14:30-16:00 Parallel sessions 4A-4B, room 31, 133

Session 4A: Nuclear reactor technologies, room 133

Chair: Paweł Gajda

Anna Kawalec

Thorium fuel cycle research potential at AGH University of Krakow

Jacques Lechelle

Diffuse Scattering of aged (U, Pu, Am)O₂ single-crystals

Paweł Gajda

The role of nuclear power in future Polish low carbon grid

Michel Pasquet

High Temperature Reactor for Decarbonizing Energy-Intensive Industry: The European Project GEMINI for Zero Emission

Kamil Krzysztof Parkitny

Radioluminescence and radioisotope thermoelectric generator as a use of spent nuclear fuel

Session 4B: Nuclear materials and radiopharmaceutical production, room 31

Chair: Grażyna Zakrzewska - Kołtuniewicz

Geeva Prasanth Annamalaisamy

Synthesis of $^{103}/^{109}$ Palladium-Bipyridyl-Bisphosphonate complexes for the treatment of bone metastasis cancer

Emilia T. Majka

Synthesis of gold nanoparticles labeled with Auger electron emitters: $^{197}\text{Hg}/^{197\text{m}}\text{Hg}$ as potential therapeutic radiopharmaceuticals

Mohamed Ahmed Gizawy

Evaluation of radiochemical separation and quality control of N.C.A Sc-47 produced from neutron irradiated targets

Rafał Walczak

Noble metals nanoparticles labeled with Auger electron emitter ^{125}I for hepatocellular carcinoma therapy

Ewa Machalska

CPL Interference in ROA Spectra of Chiral Lanthanide Complexes with L- and D-Alanine

Bożena Sartowska

Protective layers of zirconium alloys used for claddings to improve the corrosion resistance – INCT study

16:00-17:30 Poster session (with a coffee break), second floor gallery

17:30-20:00 Kraków Guided Tour

DAY 3
22.09.2023 (Friday)

09:00-11:00 Parallel sessions 5A-5B, room 31, 133

Session 5A: Special session - the DEsire project, room 31

(Projekt DEsire - plan dekarbonizacji krajowego sektora energetycznego na drodze modernizacji z wykorzystaniem reaktorów jądrowych)

Chair: Tomasz Bury

Wojciech Kosman

Coal-to-Nuclear decarbonization pathway - a case study

Jakub Tuka

Analysis of Polish coal-fired power plants from perspective of modernization potential with nuclear reactors, including SMRs

Tomasz Bury

Environmental and safety aspects of introducing small modular reactors to industrial power and CHP stations

Agnieszka Miśkiewicz

Nuclear safety aspects of the decarbonization of energy sector in Poland through the use of nuclear reactors

Tomasz Smoliński

SMRs III & IV generation candidates for the decarbonization of energy sector in Poland

Grażyna Zakrzewska-Kołtuniewicz

The EURAD project as support for the action program for safe and sustainable management of radioactive waste and spent nuclear fuel in Poland

Dorota Homa

Plan of decarbonisation of the domestic coal power industry with the use of nuclear reactors - goals and objectives of the DEsire project

Session 5B: Applications of Nuclear Techniques IV, room 133

Chair: Suresh D. Pillai

Ivana Sandeva

Applicability of electron spin resonance for detection of free radicals in different cellulose containing food samples

Marzena Rugiel

The use of synchrotron X-ray fluorescence microscopy to assess the elemental composition of the brain of rats exposed to the ketogenic diet during prenatal life

Darkhan Sergazyuly Sairanbayev

Optimization of Conditions for Topaz Irradiation in the WWR-K Reactor

Nelson R Kiprono

Use of nuclear techniques for optimization of hydrometallurgical processes

Agnieszka Bolik

Updating the μ Rate application for trapped charge dating calculations

11.00-11.30 COFFEE BREAK, second floor gallery

11.30-12.30 Conference summary and closing ceremony, room 31

12.30-14.00 LUNCH, Krakus Restaurant, ul. Reymonta 15 30-059 Kraków