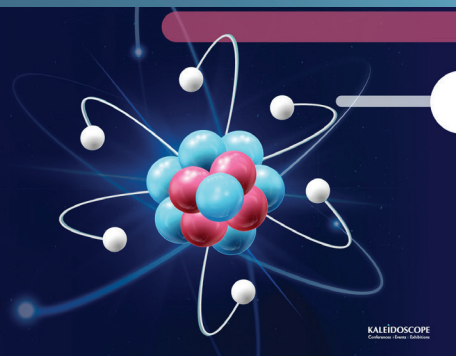


# The 31st Conference of the Nuclear Societies in Israel

## הכנס ה-31 של האגודות הגרעיניות בישראל

25-27 March 2025 | Hotel Botanica, Haifa



### Tuesday 25.3.2025

14:00–18:00 Registration Desk – Hotel Hall

18:00–20:00 Welcome Reception – Hotel Patio

### Wednesday 26.3.2025

08:00–09:00 Registration, Reception and Exhibition – Hotel Lobby

09:00–09:15 **Conference Opening – Botanica Garden Hall**

09:15–09:30 **Lior Arazí – Lecture in memory of Prof. Itzhak Kelson, z"l**

09:30–10:30 **Plenary Session 1 – Botanica Garden Hall**

**Moderators: Jean Koch and Erez Gilad**

09:30–10:00 ZOOM lecture – State of The Art in Internal Dosimetry  
**François Paquet**

10:00–10:30 Introduction to Fusion Energy and nT-Tao Compact Core Approach  
**Itay Gissis**

10:30–10:45 Coffee Break & Exhibition Viewing – Hotel Hall and Balcony

10:45–11:45 **Poster Session 1 – Botanica Garden Hall**

**Moderator: Chen Dubi**

11:45–13:00 **Session 1 – Nuclear Reactors 1**

**Moderator: Shai Kinast**

*Botanica Garden Hall*

**Session 2 – Radiation Protection**

**Moderator: Favel Gov**

*G Level*

11:45–12:00 Measurements of the Flux Trap Effect in MTR Fuel Using Gamma Spectroscopy  
**Izhar Neder**

12:00–12:15 Ito-Langevin Process for Neutron Noise  
**Guy Gabrieli**

12:15–12:30 The Two Point Feynman- $\alpha$  Theory: a Practical Point Of View on Ex-Corq Detectors  
**Chen Dubi**

12:30–12:45 Neutronic Experiments During the Commissioning of the ETRR-2: Benchmark Calculations Revisited with OpenMC Code  
**Yuri Khodorkovsky**

12:45–13:00 Catch 22 of Advanced Nuclear: Techno-Economics of SMRs and Gen IV Reactors  
**Danny Grossman**

Evaluation of Public Exposure to Ionizing Radiation: UNSCEAR 2025 Report  
**Mikhail Balonov**

The Linear No-Threshold Model and Alternative Risk Models: Implications, Debates and the Regulatory Challenge  
**Favel Gov**

Dose Calculation Model for Narrow Beam  
**Yael Fried**

FLUKA Evaluation of B4C Surface Coating for Minimizing Air Activation in the SARAF Phase II Target Room  
**Yevgeniya Korotinsky**

Deterministic Effects to the Skin from Ionizing Radiation – a Recent Data Review  
**Orit Shmuel**

13:00–13:45	Lunch Break & Exhibition Viewing – Hotel Restaurant	
13:45–15:15	<b>Session 3 – Thermo-Hydraulics</b> <b>Moderator: Alex Rashkovan</b> <i>Botanica Garden Hall</i>	<b>Session 4 – Radiation Protection and Environmental Risk Assessment</b> <b>Moderator: Lior Epstien</b> <i>G Level</i>
13:45–14:00	The Study of Transient Heat Transfer Mechanisms and Two-phase Flow During Post Flow Instability Dryout Accident <b>Yosef Aharon</b>	Radiation Protection Aspects and Optimization of Spent Nuclear Fuel Transportation for Research Reactors <b>Roy Gross</b>
14:00–14:15	Numerical Study of Flow, Heat Transfer and Nucleate Boiling over a Wavy Wall <b>Einan Tal</b>	Patient and Medical Team Doses from Embedded Radioactive Fragments in Radiological Dispersal Device Scenarios <b>Rachel Hen Shukrun</b>
14:15–14:30	Characterization of Heat Transfer and Friction Coefficients in a Closed Loop Thermosyphon Flow <b>David Saban</b>	Tungsten Based Materials Selection for Shielding and Balancing in the Medical and Nuclear Fields <b>Dov Chaia</b>
14:30–14:45	Experiments and Modeling of Cooling Circles and Cooling Tower for Nuclear Reactors <b>Zohar Sahray</b>	Seismic Analysis of Non Structural Components Based on Observation Data <b>Stav Kontarovich</b>
14:45–15:00	Metal Ignition in Nuclear Fuel Channel <b>Elias Ezra</b>	Define Yamin Plain Wind Velocity Persistence and Long Term Correlations <b>Shay Moshel</b>
15:00–15:15	Three-dimensional Vortex and Gas Entrainment Numerical Analysis in Rotating Liquid Flow with a Free Surface <b>Shay-David Amar</b>	Advanced Nuclear Siting- New Opportunities in the Israeli Case Study <b>Ami Nagler</b>
15:15–15:30	Coffee Break & Exhibition Viewing – Hotel Hall and Balcony	
15:30–17:00	<b>Session 5 – Simulation &amp; Numerical Methods</b> <b>Moderator: Erez Gilad</b> <i>Botanica Garden Hall</i>	<b>Session 6 – Radiation Detection &amp; Measurements 1</b> <b>Moderator: Alon Osovitsky</b> <i>G Level</i>
15:30–15:45	Benchmarking of the SPERT-III E-core experiment with the Monte Carlo codes TRIPOLI-4, TRIPOLI-5 and OpenMC <b>Shai Kinast</b>	Low Level Activity Measurements of Am-241 in Environmental and Biological Liquid Samples Utilizing Liquid Scintillation Counter <b>Shai Cohen</b>
15:45–16:00	Simulating the Impact of Electrostatic Fields on Electron Beam Additive Manufacturing Processes <b>Itzhak Orion</b>	A System for the Detection and Quantification of Effluent Releases of Positron-Emitting Isotopes <b>Dimitry Ginzburg</b>
16:00–16:15	Development and Benchmarking of a Relativistic Point Detector in OpenMC <b>Itay Horin</b>	Advanced High-Sensitivity Multi-Layer Neutron Detectors Utilizing LiFZnS (Ag) Scintillators for Homeland Security Applications <b>Ilan Cohen Zada</b>
16:15–16:30	Comparison of Moment Closure and SDE Approximations of the Logistic Model <b>Eshed Magali</b>	Subdividing Scintillator-based Compton Cameras with Constant Readout Channels for Improved Spatial Resolution <b>Zohar Davidov</b>

16:30–16:45	Development of a 2D PWR Diffusion Model with Thermal Coupling for Control Optimization <b>Yuval Ben Galim</b>	Optimization of Light-Cone Geometry for Scintillation Light Collection to Silicon Photomultipliers in Fast Neutron Multiplicity Counting <b>Michael Faziev</b>
16:45–17:00	Reactor Optimization by Reinforced Learning <b>Deborah Schwarcz</b>	Optimizing Silicon Passivated Implanted Planar detector for Alpha detection – Resolution Investigation <b>Eliran Evenstein</b>
17:00–17:15	Israel Nuclear Society (INS) General meeting – Botanica Garden Hall	
19:30–21:30	Dinner , Hotel Rooftop – Floor number 3	

## Thursday 27.3.2025

08:00–09:00	Registration, Reception and Exhibition – Hotel Lobby	
09:00–10:30	<b>Plenary Session 2 – Botanica Garden Hall</b>	
	<b>Moderators: Gustavo Haquin and Ilan Yaar</b>	
09:00–09:30	The Proton Radius Puzzle – Status and Perspectives <b>Guy Ron</b>	
09:30–10:00	Applying Nuclear Physics to Discover Atmospheric <sup>14</sup> C Concentration Variations through the Archaeological Record: The Babylonian Destruction of Jerusalem <b>Elisabetta Boaretto</b>	
10:00–10:30	The Israel Institute for Fusion Research <b>Noaz Nissim</b>	
10:30–10:45	Coffee Break & Exhibition Viewing – Hotel Hall and Balcony	
10:45–11:45	<b>Poster Session 2 – Botanica Garden Hall</b>	
	<b>Moderator: Chen Dubi</b>	
11:45–13:00	<b>Session 7 – Chemistry, Materials Science &amp; Nuclear Forensics</b>	<b>Session 8 – Safe Management of Radioactive Waste</b>
	<b>Moderator: Erez Cohen</b>	<b>Moderator: Ofra Klein Ben David</b>
	<i>Botanica Garden Hall</i>	<i>G Level</i>
11:45–12:00	Active Neutron Multiplicity Counting With A Non-Poissonian Interrogation Source <b>Chen Dubi</b>	Shallow Radioactive Waste Repositories and Surface Processes – importance and relevance <b>Noa Balaban</b>
12:00–12:15	Methods in Metallurgical–Mechanical Integrity Assessment of Irradiated Aluminum Reactor Components <b>Nissim Navi</b>	Challenges and Solutions for a Type-A Radioactive Waste Package Based on a Case Study <b>Irada Brandys</b>
12:15–12:30	Aerogel Spacer in Fission Tracks Detector From Star to Super-star Image Processing <b>Itzhak Halevy</b>	Thermal Model of Geological Disposal Concept for Radioactive Sealed Sources <b>Raz Chricker</b>
12:30–12:45	Resonant Raman Scattering in F–electron, Fluorite-Type Oxides <b>Tsachi Livneh</b>	Borehole Disposal of Radioactive Waste in Israel – Characterization program and Borehole <b>Ofra Klein-Bendavid</b>



12:45–13:00	Order-Disorder Transitions in Cerium and Praseodymium Hydrides, Manifested in Temperature-Dependent Raman Scattering Spectroscopy <b>Shahar Aziza</b>	Geopolymers as Immobilization Matrices for Cs-bearing Zeolites <b>Yarden Lior-Shain</b>
13:00–13:15	<b>Award for Outstanding Student Lectures – Botanica Garden Hall</b>	
13:15–14:00	Lunch Break & Exhibition Viewing – Hotel Restaurant	
14:00–15:15	<b>Session 9 – Nuclear Reactors 2</b> <b>Moderator: Izhar Neder</b> <i>Botanica Garden Hall</i>	<b>Session 10 – Radiation Detection &amp; Measurements 2</b> <b>Moderator: Adi Abraham</b> <i>G Level</i>
14:00–14:15	Importance-Guided Evolutionary Optimization for Nuclear Reactor Core Fuel Management <b>Erez Gilad</b>	Improving Performance of PIPS Detectors using Advanced Characterization Techniques <b>Ohad Westreich</b>
14:15–14:30	Advancements in Cross-Section Homogenization for Rotating Control Drums in Microreactors <b>Erez Gilad</b>	Directional Detection of Multiple Gamma Sources Using Mutual Shielding of Scintillators <b>Nadav Ben David</b>
14:30–14:45	Energy Deposition Post-Shutdown in various components of the OPAL Reactor core <b>Nir Kastin</b>	MAXIMA-I A Coincidence System for Nuclear Decay Investigations <b>Sagi Nissim</b>
14:45–15:00	Temperature Measurement Using Fiber Bragg Gratings for a Nuclear Reactor Application <b>Shlomi Schneider</b>	Whole Body Counter Model Validation Using Monte Carlo Simulations <b>Lior Epstein</b>
15:00–15:15	Mathematical Foundation of the IFP Method <b>Ben Hatzofe</b>	Fast Neutron Detector Using ${}^4\text{He}$ <b>Amir Broide</b>
15:15–15:30	Coffee Break & Exhibition Viewing – Hotel Hall and Balcony	
15:30–16:30	<b>Session 11 – Nuclear Physics</b> <b>Moderator: Guy Ron</b> <i>Botanica Garden Hall</i>	<b>Session 12 – Radiation Therapy &amp; Alpha DaRT</b> <b>Moderators: Lior Arazi and Ilan Yaar</b> <i>G Level</i>
15:30–15:45	Structural Evolution of Even-Even and Odd-Mass Atomic Nuclei <b>Noam Gavrielov</b>	The Effect of Broad Nucleus Size Distributions in Diffusing Alpha-emitters Radiation Therapy <b>Yevgeniya Korotinsky</b>
15:45–16:00	Precision Measurement of the Charge Radius of Be-9 Through Muonic X-Ray Spectroscopy <b>Ofir Eizenberg</b>	Measurements of the Effective Diffusion Length of Ra-224 Decay Products in Healthy Tissues in Diffusing Alpha-Emitters Radiation Therapy <b>Lior Epstein</b>
16:00–16:15	The NEXT Search for Neutrinoless Double Beta Decay: Status and Prospects <b>Lior Arazi</b>	Combining Alpha-DaRT with Convection Enhanced Delivery for Improved Tumor Dose Coverage <b>Lior Epstein</b>
16:15–16:30	Advances in Topological Analysis for Background Reduction in Gaseous Time Projection Chamber Event Processing <b>Adam Redwine</b>	

## Poster Session 1

<b>Mor Ben Lulu</b>	Validation of a MnO <sub>2</sub> -Based Method for Simultaneous Detection and Quantification of Low Concentrations of Pb-210 and Ra-226 in Drinking Water Using Gamma Spectroscopy
<b>Sutanu Bhattacharya</b>	Neutron-Induced Reactions in a High Density Plasma at National Ignition Facility
<b>Irada Brandys</b>	Adaptive Real-Time Protective System for Critical Facilities and Infrastructures Against Blast Wave Loading
<b>Raz Chriker</b>	Development and Constructing a Thermal Conductive Measuring System for Soil Samples
<b>Hanan Datz</b>	Quick Sort Triage Critical Mission: Detecting Internal Exposure in Mass Radiological Emergency
<b>Yael Fried</b>	Radiological incidents and accidents involving mobile high activity sources
<b>Nir Pour</b>	Preliminary Study on the Colorization of Neutron-Induced Tracks in CR-39 Detectors
<b>Yossi Salomon</b>	Safety Critical Software Design Modular Architecture for Enhanced Reliability
<b>Yossi Salomon</b>	Outsourced Software Development: Strategic Risk Reduction for Software Systems
<b>Daniel Satingher</b>	Entangled charge carriers in LiF;Mg,Ti Traps/Luminescence Centers (TCs/LCs) – A Theoretical Approach
<b>Yaniv Shaposhnik</b>	The Ed Scale for Maintenance: A Comprehensive Framework for Evaluating and Prioritizing Maintenance Needs in Research Reactors
<b>Igal M. Shohet</b>	Resistance and Risk Assessment of Tunnelled Smr Npp Exposed to Earth Penetrating Weapons' Hits in a Multi-Year Perspective
<b>Rachel Hen Shukrun</b>	Artifact Removal in Medical Imaging of Embedded Fragments Containing Different Radioactive Materials
<b>Yeshayahu Weiss</b>	Characteristics of the mechanisms in vertically counter-current liquid-gas flow, subjected to wall heat flux boundary condition
<b>Shahar segal</b>	Alpha particle identification using polymer detector
<b>Yevgeniya Korotinsky</b>	The Integration of Blender 3D Mesh Modeling and FLUKA Flair through Voxelization
<b>Raphael Gonen</b>	Electrodeposition and the problematic use of H <sub>2</sub> SO <sub>4</sub> and HNO <sub>3</sub> , the traditional ingredients of electrolyte solutions
<b>Doron Bitton</b>	Experimental study of Critical Heat Flux temperature due to a rapid heating process at constant pressure

## Poster Session 2

<b>Rami Babayew</b>	Fission Tracks Pattern Analysis and Properties Reconstruction: Advancing Nuclear Forensics using Classic Image Processing Algorithms
<b>Mor Ben Lulu</b>	A Combined Gamma Spectrometry and Proportional Counting Method for Sr-90 Quantification in a Mixed Sample: An ALMERA Proficiency Test Case Study
<b>Mor Ben Lulu</b>	Manual Correction of Gamma Contributions in Liquid Scintillation Counting: A Case Study with Quantulus GCT 6220
<b>Mor Ben Lulu</b>	PROCORAD Proficiency Tests A 10Year Review of Performance in Gamma-Emitter Detection and Quantification
<b>Savion Braunstein</b>	The Effect of Matrix Composition on Solidification Rate and Heat Generation of Geopolymers
<b>Noam Elgad</b>	Utilization of Deep Learning for Star Segmentation and Classification using Semi-Automated Adaptive Threshold methodology
<b>Shahar Kravchik Valdarsky</b>	High Complexity Maintenance Activities of the IRR2
<b>Sagi Nissim</b>	MAXIMA-II - A versatile Detection System for Trace-Level Radiation Analysis
<b>Yaron Perets</b>	Disposal of Nuclear Waste in Space Using Electromagnetic Accelerator Launchers
<b>Nir Pour</b>	Implementation of the DXT-RAD Dosimeter in the External Dosimetry Lab at SNRC
<b>Ophir Ruimi</b>	The Plasma Window for Enhanced Particle Beam Transmission from Vacuum to Atmosphere
<b>Oriya Sabag</b>	Comparison Between Semi-Insulating GaAs Alpha Radiation Detector with Schottky Anode Contact and P+ Anode Contact Layer Grown by MOCVD
<b>Ronen Yavor</b>	Cubic Ellipsoid Nuclear Model - a Link between Nuclear Structure and Atomic Properties
<b>Rinat Levy</b>	Maximum storage time period of urine samples for ICP-MS uranium analysis
<b>Mor Ben Lulu</b>	Addressing Challenges in Low-Energy Gamma Radiation Quantification for Almera Environmental Samples
<b>Galit Bar</b>	A New Adhesive Material Resistant to Ionizing Radiation