

11:00 - 13:00 Arrival and Registration

13:00 - 14:00 Lunch

14:00 - 16:15 Plenary Session - 1

Hall A

Chairman: **Dr. Ilan Yaar**

14:00 **Greetings and Opening Remarks**

Prof. Yigal Ronen

Conference Chairman

Department of Nuclear Engineering, Ben Gurion University, Israel

Invited Lectures

14:15 **Challenges in Developing the Next Generation of Israeli Nuclear Scientists and Engineers**

S. Chorev

Israel Atomic Energy Commission, Israel

14:45 **Nuclear Energy and the Israel Electricity**

A. Lasker

Israel Electric Company, Israel

15:15 **The Israeli Future Energy Requirements and the Role of Nuclear Energy**

S. Wald

Ministry of National Infrastructures, Israel

15:45 **JRC Assessment on Feasibility of Next Generation Reactors**

M.A. Futterer¹, U. Blohm-Hieber², M. Deffrennes²

¹Institute for Energy, Joint Research Centre, European Commission, Petten, Netherlands, ²DG Transport and Energy, European Commission, Luxembourg

16:15 - 16:45 Coffee Break & Exhibition Visit

16:45 - 18:15 Plenary Session - 2

Hall A

Chairman: **Dr. Uzi German**

Invited Lectures

16:45 **Recent International Radiation Protection Developments**

A.J. Gonzalez

Argentine Nuclear Regulatory Authority, Buenos Aires, Argentina

17:15 **Progress with the Revision of the EURATOM Basic Safety Standards**

A. Janssens

Head, Radiation Protection Unit, European Commission, Luxembourg

17:45 **Nuclear Energy and Health, and the Benefits of Low-Dose Radiation Hormesis**

J. Cuttler¹, M. Pollycove²

¹Cuttler & Associates Inc, Mississauga, Canada, ²University of California, San Francisco, USA

19:00 - 20:30 Dinner (for hotel guests)

08:30 - 10:00 Registration

08:30 - 10:00 Plenary Session - 3

Hall A

Chairman: **Prof. Yigal Ronen**

Invited Lectures

08:30 **Advanced Nuclear Fuels**

V.V. Rondinella, R. Konings, J. Somers, D. Bottomley, S. Bremier, A. Kellerbauer, D. Manara, D. Papaioannou, D. Staicu, P. Van Uffelen, C.T. Walker, T. Wiss
Institute for Transuranium Elements (ITU), Germany

09:00 **Project for Renewable Energy Production: Joint Work of Nuclear Reactor and Plasma Based Installation for Gasification and Pyrolysis**

P. Rutberg
Institute for Electrophysics and Electric Power RAS, Saint-Petersburg, Russia

09:30 **The Physics of CANDU Reactors**

B. Rouben
12&1 Consulting, North York, ON, Canada

10:00 - 10:30 Coffee Break & Exhibition Visit

10:30 - 12:30 Parallel Sessions - 1

10:30 - 12:30 Session 1-1 Reactor Theory

Hall A

Chairman: **Prof. Alex Galperin**

10:30 **Implementation of Particle Swarm Algorithm for Optimizing Pebble-Bed Homogenous Th-U Fuel Composition**

B. Tavron², A. Galperin¹, E. Shwageraus¹
¹*Ben-Gurion University, Beer-Sheva, Israel*, ²*Israel Electric Corporation, Haifa, Israel*

10:45 **THERMO - Thermal-Hydraulic Feedback Module for BGCORE System**

Y. Shaposhnik¹, E. Shwageraus¹, A. Galperin¹, E. Elias²
¹*Ben-Gurion University of the Negev, Beer-Sheva, Israel*, ²*Technion – Israel Institute of Technology, Haifa, Israel*

11:00 **Evaluation of Reactivity Coefficients of Th-233U PWR Breeder**

D. Volaski, E. Shwageraus, A. Galperin
Ben-Gurion University of the Negev, Beer-Sheva, Israel

11:15 **Proliferation Resistance Fuel for CANDU Reactors**

D. Regev, Y. Ronen, M. Aboudy
Ben Gurion University of the Negev, Beer Sheva, Israel

11:30 **Safety Modeling and Simulation of Generation IV Reactor Concepts**

D. Saphier
Rehovot, Israel

11:45 **Improving Computational Efficiency of the BG-Core Code System**

D. Kotlyar, E. Shwageraus, A. Galperin
Ben-Gurion University of the Negev, Beer-Sheva, Israel

10:30 - 12:30 Session 1-1 Reactor Theory (Cont.)

Hall A

12:00 Economic Analysis of Power Plant

A. Perelman, I. Perelman

Ben-Gurion University of the Negev, Beer Sheva, Israel

10:30 - 12:30 Session 1-2 Medical Physics I

Hall B

Chairman: **Dr. Itzhak Orion**

10:30 Protection of the Patient Against Ionizing Radiation in Medical Imaging in Israel - Measurement of the Radiation Dose and Assessment of the Risk in Mammography Screening for Early Detection of Cancer of the Breast, in Israel - Preliminary Results

A. Broisman^{1,2}, T. Schlesinger¹, Z. Alfassi²

¹*Ariel University Center of Samaria, Ariel, Israel*, ²*Ben-Gurion University of the Negev, Beer Sheva, Israel*

10:45 Dose Dependence on Shape in Photon Source Brachytherapy

E. Damri^{1,2}, I. Orion¹

¹*Ben-Gurion University of the Negev, Beer-Sheva, Israel*, ²*Nuclear Research Center - Negev, Beer-Sheva, Israel*

11:00 Simulations of Ru-106 Ophthalmic Applicators Using the EGS5

E. Rubin, I. Orion

Ben-Gurion University of the Negev, Beer-Sheva, Israel

11:15 Dose Comparison between TPS Calculation Based on AAA Algorithm and In Vivo Measurements, In and Out of Radiation Therapy Field

M. Ben Ayun, D. Alezra, R. Dadush

Sheba Medical Center, Ramat Gan, Israel

11:30 Lung SBRT

D. Schifter, V. Soyfer, S. Alani, N. Shtraus

Tel Aviv Medical Center, Tel Aviv, Israel

11:45 High Radiation Exposures of the Physicians in the Electrophysiology Unit- Hospital Study Case

S. Haruz-Waschitz¹, A. Ben-Shlomo², E. Jacobovich³

¹*Asaf-Harofeh Medical Center, Zrifin*, ²*Nuclear Research Center - Soreq, Yavne*,
³*Medtechnica Ltd, Petach – Tikva, Israel*

12:00 The Tumor Untethering Phenomenon Behooves Daily Cone Beam CT Verification

N. Shtraus, D. Shifter, S. Alani, B. Corn, D. Matsevski, K. Mizrahi, L. Krolik, V. Soyfer

Tel Aviv Medical Center, Tel Aviv, Israel

12:15 Radiosurgical Treatment Planning of AVM Following Embolization With Onyx: A Cautionary Note

N. Shtraus, S. Alani, D. Shifter, B. Corn, S. Mimon, A. Kanner

Tel Aviv Medical Center, Tel Aviv, Israel

10:30 - 12:30 Session 1-3 Radiation Detectors

Hall C

Chairman: **Dr. Omer Pelled**

- 10:30 **Advanced Monitoring In Mixed Radiation Area AMIRA**
W. Buerkin¹, R. Dielmann¹, Workgroup², Workgroup³
¹*Saphymo GmbH, Frankfurt am Main*, ²*Strahlenbiologisches Institut, Munich University, Munich*, ³*University des Saarlandes, Saarbruecken, Germany*
- 10:45 **A New Ge Spectrometer in the ILL09 Radionuclide Laboratory at Soreq Nuclear Research Centre**
Y. Nir-El, Z. Yungreiss, G. Haquin, I. Eliahu, D. Katz
Nuclear Research Center - Soreq, Yavne, Israel
- 11:00 **High Spatial Resolution Fast-Neutron Imaging Detectors for Pulsed Fast-Neutron Transmission Spectroscopy**
I. Mor¹, D. Vartsky¹, V. Dangendorf², D. Bar¹, G. Feldman¹, M. Goldberg¹, K. Tittelmeier², B. Bromberger², Y. Cohen¹, Z. Vagish¹, D. Katz¹, E. Sayag¹
¹*Nuclear Research Center - Soreq, Yavne, Israel*, ²*Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany*
- 11:15 **Comprehensive Study of the Silicon Photomultiplier Properties as a Novel Alternative for Radiation Detector Light Sensor**
A. Osovizky¹, D. Ginzburg¹, N. Kopeika², M. Ghelman³, I. Cohen-Zada¹, V. Pushkarsky¹, E. Marcus³, A. Manor¹, E. Gonen³, T. Mazor³, Y. Kadmon³, Y. Cohen³
¹*Rotem Industries Ltd, Beer-Sheva*, ²*Ben-Gurion University of the Negev, Beer-Sheva*, ³*Nuclear Research Center - Negev, Beer-Sheva, Israel*
- 11:30 **Generic Database Development for Gamma Ray Spectra Analysis**
A. Osovizky¹, V. Pushkarsky¹, V. Bronfenmakher¹, D. Khankin², G. Shilon², S. Mark², D. Ginzburg¹, T. Mazor³, S. Levinson³, U. Wengrowicz³, Y. Kadmon³, Y. Cohen³
¹*Rotem Industries Ltd, Beer-Sheva, Israel*, ²*Shamoon College of Engineering, Beer-Sheva, Israel*, ³*Nuclear Research Center-Negev, Beer-Sheva, Israel*
- 11:45 **Development of Sub-mW Silicon Photomultiplier Based Portable Spectroscopy Device**
M. Ghelman¹, A. Osovizky², D. Ginzburg², R. Seif¹, M. Sheinfeld¹, E. Gonen¹, T. Mazora¹, Y. Cohen¹
¹*Nuclear Research Center - Negev, Beer-Sheva*, ²*Rotem Industries Ltd, Beer-Sheva, Israel*
- 12:00 **Portable Radionuclide Identifier for Emergency Response and Remediation**
J.H. McQuaid
Berkeley Nucleonics Corporation, San Rafael, USA, Represented by Itec Ltd, Israel
- 12:30 - 13:30 Lunch
- 13:30 - 15:00 Parallel Sessions - 2
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13:30 - 15:00 Session 2-1 Reactor Technology Hall A

Chairman: **Prof. Ezra Elias**

13:30 **Two-Phase Critical Flow Homogeneous Equilibrium Model (HEM) Validation**

E. Elias, D. Hasan, Y. Nekhamkin, E. Wacholder

Technion - Israel Institute of Technology, Haifa, Israel

13:45 **The Impact of a Water Anomaly on PWRs**

A. Weiss, Y. Ronen

Ben-Gurion University of the Negev, Beer Sheva, Israel

14:00 **Estimation of Water Resources Requirements for Cooling Nuclear Power Plant Located in the Negev Area**

B. Tavron

Israel Electric Corporation, Haifa, Israel

14:15 **The Influence of Additives on the Trigger Mechanism for Vapor Explosion**

K. Soffer, R. Freud, R. Harari, E. Sher

Ben-Gurion University of the Negev, Beer-sheva, Israel

14:30 **Experimental Analysis of Heat Transfer Enhancement in Annular Channel as a Component of HTR Heat Exchanger**

J. Aharon¹, I. Hochbaum¹, A. Rashkovan¹, G. Ziskind²

¹ *Nuclear Research Center - Negev*, ² *Ben Gurion University of the Negev, Beer Sheva, Israel*

13:30 - 15:00 Session 2-2 Medical Physics II Hall B

Chairman: **Dr. Sergio Faermann**

13:30 **Comparison of Different Type of Wedges in Breast Treatments**

M. Sharon, S. Daniel, R. Bar-Deroma

Rambam Health Care Center, Haifa, Israel

13:45 **Electron vs Photon Irradiation in Breast Cancer Treatment**

V. Bakouche, S. Daniel, R. Bar-Deroma

Rambam Health Care Center, Haifa, Israel

14:00 **Radiation Protection in Radiotherapy – The Situation in Israel**

R. Bar-Deroma, E. Kuptzov

Rambam Health Care Center, Haifa, Israel

14:15 **Volumetric Modulated Arc Therapy, Rapid Arc: Initial Experience**

D. Alezra, M. Ben-Ayun, S. Dubinski, L. Tsvang, T. Rabin, I. Gluk, Z. Symon, R. Pfeffer

Sheba Medical Center, Tel-Hashomer, Israel

14:30 **Evaluation of Anisotropic Analytical Algorithm (AAA) for Dose Volume Calculation in Patients Treated for Chest Region**

R. Ben-Hur, J. Menhel

Rabin Medical Center, Petach-Tikva, Israel

13:30 - 15:00 Session 2-2 Medical Physics II (Cont.) Hall B

14:45 **Rapid Arc Techniques and Prostate Cancer Treatment**

L. Tsvang, S. Dubinsky, D. Alezra, Z. Symon

The Chaim Sheba Medical Center, Ramat Gan, Israel

13:30 - 15:00 Session 2-3 Risk Assessment Hall C

Chairman: **Mr. Yshai Levanon**

13:30 **Cloud Rise Model for a "Dirty Bomb" Event**

A. Sharon, D. Sattinger, I. Halevy, R. Neuman, A. Ashkenazi, I. Yaar

Nuclear Research Center Negev, Beer-Sheva, Israel

13:45 **Cloud Rise Model for an Explosion Inside a Building**

A. Sharon, D. Sattinger, I. Halevy, R. Neuman, A. Ashkenazi, I. Yaar

Nuclear Research Center - Negev, Beer Sheva, Israel

14:00 **Green Field-II (GF-II) Task Plan For 2010-11**

I. Yaar, A. Sharon, D. Sattinger, A. Ashkenazi

Nuclear Research Center - Negev, Beer-Sheva, Israel

14:15 **Dispersion Test in the IDF Test Facility, Task Plan for 2010-11**

D. Satinger, A. Sharon, A. Ashkenazi, I. Yaar

Nuclear Research Center - Negev, Beer-Sheva, Israel

14:30 **Kalman Filter Algorithm for Source Term Reconstruction**

D. Sattinger, A. Sharon, I. Yaar

Nuclear Research Center - Negev, Beer-Sheva, Israel

14:45 **Elements of Integrated Risk Management and Emergency Preparedness**

P. Dickstein

Nuclear Research Center - Soreq, Yavne, Israel

15:00 - 15:30 Coffee Break & Exhibition Visit

15:30 - 17:30 Parallel Sessions - 3

15:30 - 17:30 Session 3-1 Dosimetry Hall A

Chairman: **Prof. Zeev B. Alfassi**

15:30 **Characterization of Peaks 7 and 8 Irregularities in the High Temperature Thermoluminescence in LiF:Mg,Ti (TLD-100)**

H. Datz^{1,2}, Y. Horowitz², L. Oster³, M. Margaliot¹

¹ Nuclear Research Center - Soreq, Yavne, ² Ben Gurion University of the Negev,

³ Sami Shamoon College of Engineering, Beer-Sheva, Israel

15:45 **Physical Separation of the HTTL and Dosimetric Peaks in the Glow-Curve of LiF:Mg,Ti.**

B. Magoz¹, A. Abraham², M. Weinstein², U. German², Z. Alfassi¹

¹ Ben Gurion University of the Negev, ² Nuclear Research Centre - Negev, Beer Sheva, Israel

15:30 - 17:30 Session 3-1 Dosimetry (Cont.)

Hall A

- 16:00 **An Application for Analyzing LiF:Mg,Ti Glow Curves**
A. Abraham¹, B. Magoz², M. Wienstein¹, O. Pelled¹, U. German¹, Z.B. Alfassi²
¹ Nuclear Research Centre - Negev, ² Ben Gurion University of the Negev, Beer Sheva, Israel
- 16:15 **Thermal Behavior of a TLD Detector Due to Heating by Jet Impingement**
R. Rozenfeld¹, T. Bar-Kohany¹, M. Weinstein², A. Abraham², U. German², Z.B. Alfassi¹, G. Ziskind¹
¹ Ben-Gurion University of the Negev, ² Nuclear Research Center - Negev, Beer-Sheva, Israel
- 16:30 **Clinical Electron Beam Dosimetry with TLD100**
S. Daniel, R. Bar-Deroma
Rambam Health Care Center, Haifa, Israel
- 16:45 **Effect of Acute HTO Exposure on 3H Binding to Histones and DNA**
R. Gonen¹, U. German¹, E. Priel², B.Z. Alfassi²
¹ Nuclear Research Center - Negev, ² Ben Gurion University of the Negev, Beer Sheva, Israel
- 17:00 **The Characteristics of "Reference Man"**
T. Kravchik, U. German
Nuclear Research Centre - Negev, Beer Sheva, Israel
- 17:15 **The Effect of Particle Size Distribution on The Internal Dose from Inhaled Radionuclides**
N. Dukhan, T. Kravchik, U. German
Nuclear Research Centre - Negev, Beer Sheva, Israel

15:30 - 17:30 Session 3-2 Medical Physics III

Hall B

Chairman: **Dr. David Silverman**

- 15:30 **A Genetic Optimizer for Biological Treatment Planning of Salvage Brachytherapy Implants for Prostate**
D. Silvern¹, M. Zaider²
¹ Rabin Medical Center, Petah Tikva, Israel, ² Memorial Sloan-Kettering Cancer Center, New York, U.S.A
- 15:45 **Evaluation of Neutron Contamination Doses in a Medical Linear Accelerator**
S. Faermann
Soroka University Medical Center, Beer Sheva, Israel
- 16:00 **Trends in the Use of Medical CT in Israel and Estimation of the Diagnostic X-Ray Collective Dose in 2008**
A. Ben-Shlomo¹, G. Bartal², A. Krabel³
¹ Nuclear Research Centre - Soreq, Yavne, ² Meir Medical Center, Kfar-Saba, ³ The Ministry of Health, Israel

15:30 - 17:30 Session 3-2 Medical Physics III (Cont.)

Hall B

- 16:15 **Comparison of Lung Dose Restrictions Using Eclipse AAA and PB Algorithm**
J. Feldman, A. Wygoda, G. Zada, A. Meirrovitz
Hadassah Medical Centre, Jerusalem, Israel
- 16:30 **How We Can Use Our Equipment More Effectively and Avoid Purchasing Unnecessary Software Just Because the Vendors Promote Them**
J. Menhel
Rabin Medical Center, Petah-Tikva, Israel
- 16:45 **Analysis of Accuracy in Setup of Prostate Patients With The Aid of KV Orthogonal Portals Based on Gold Seeds**
H. Allon
Rabin Medical Center, Petach Tikva, Israel
- 17:00 **An Imaging Process for Early Detection of Colorectal Cancer Using a Radioactive Source – Radiation Protection Considerations**
L. Cahana¹, T. Schlesinger², J. Koch¹
¹ *Nuclear Research Center - Soreq, Yavne,* ² *Ariel University Center of Samaria, Ariel, Israel*
- 17:15 **Hybrid Breast Radiotherapy Planning Techniques Combining Conventional Tang. with RapidArc and IMRT Beams**
S. Dubinski, M. Ben David, V. Pyatigorskaya, H. Granot, M. Ben Ayun, L. Tzvang, D. Alezra
The Chaim Sheba Medical Center, Ramat-Gan, Israel

15:30 - 17:30 Session 3-3 Homeland Security

Hall C

Chairman: **Dr. Yair Yariv**

15:30 **Homeland Security Comprehensive Discussion: The Threat, International Standards and Solutions**

A. Osovizky¹, D. Ginzburg¹, A. Manor¹, I. Cohen-Zada¹, M. Ghelman², E. Marcus², M. Ellenbogen¹, U. Wangrovich², T. Mazor², Y. Cohen²

¹ Rotem Industries Ltd, Beer-Sheva, Israel, ² Nuclear Research Center - Negev, Beer-Sheva, Israel

15:45 **Identification and Quantification of an Unknown Shielded Radioactive Source**

Y. Nir-El, Y. Shamai, Z. Yungreiss, G. Haquin

Nuclear Research Center - Soreq, Yavne, Israel

16:00 **Synthetic Gamma-ray Spectra Generation for Homeland Security Application**

S. Levinson¹, B. Sarusi¹, A. Osovitzki², V. Pushkarski², U. German¹, E. Marcus¹, Y. Cohen¹, I. Belaish¹

¹ Nuclear Research Center - Negev, Beer - Sheva, ² Rotem Industries Ltd, Mishor Yamin, Israel

16:15 **Homeland Security - Masking of Special Nuclear Materials (SNM) by Natural Occurring Radioactive Materials**

B. Sarusi¹, S. Levinson¹, A. Osovitzki², V. Pushkarski², U. German¹, T. Mazor¹, Y. Choen¹, I. Belaish¹

¹ Nuclear Research Center - Negev, Beer-Sheva, Israel, ² Rotem Industries Ltd, Mishor Yamin, Israel

16:30 **Spectroscopic Personal Radiation Device (SPRD) for Detection and Identification of Illicit Trafficking**

A. Manor¹, A. Osovizky¹, E. Marcus², D. Ginzburg¹, I. Cohen-Zada¹, M. Ellenbogen¹, V. Pushkarski¹, U. Wangrovich², R. Seif², Y. Kadmon², T. Mazor², Y. Cohen²

¹ Rotem Industries Ltd, Beer-Sheva, Israel, ² Nuclear Research Center - Negev, Beer-Sheva, Israel

16:45 **Nuclear Nonproliferation Treaty Amendment: Nuclear Weapon Capable States**

M. Eddy

University of Michigan, Ann Arbor, USA

17:30 - 18:30 General Gathering of the Israel Society for Medical Physics

Hall B

19:00 - 20:00 Dinner (for hotel guests)

21:00 - 22:30 Get Together

08:00 - 10:00 Registration

09:00 - 10:30 Parallel Sessions - 4

09:00 - 10:30 Session 4-1 NORM in Buildings and the Environment I

Hall A

Chairman: **Prof. Konstantin Kovler**

09:00 **International Approach to Legal Control on NORM and of Radioactivity in Building Materials**

A. Janssens

Radiation Protection Unit, European Commission, Luxembourg

09:15 **The Radiological Principles of the Israeli Standard 5098**

G. Haquin¹, K. Kovler², O. Pelled³, S. Rozenberg⁴, N. Lavi⁵, Y. Sikuler⁶, A. Roitgur⁷

¹ Nuclear Research Center - Soreq, Yavne, ² Technion - Israel Institute of Technology, Haifa, ³ Nuclear Research Center- Negev, Beer Sheva, ⁴ Public Representative to the Expert Committee, Carmiel, ⁵ Public Representative to the Expert Committee, Petach Tikva, ⁶ Hanson Israel Ltd, Tel Aviv, Israel, ⁷ Standard Institute of Israel, Tel Aviv, Israel

09:30 **Radon – An Updated Assessment of the Risks of Residential Exposure According to UNSCEAR, WHO and ICRP**

J. Koch

Nuclear Research Center - Soreq, Yavne, Israel

09:45 **Organization of Control of Radioactivity in Building Materials Using Scintillation Gamma Spectrometers**

S. Antropov¹, N. Antropova¹, V. Bozhko¹, F. Vaitehovich¹, V. Yarina²

¹ The "Amplituda" Research Center, Moscow, Russia, ² National Research Institute for Physic Technical and Radio Engineering Measurements, Moscow, Russia

10:00 **Analysis of Radiation Control in Construction in Russia**

A. Tsapalov

The "Amplituda" Research Center, Moscow, Russia

10:15 **Determination of Radionuclide Content of Building Materials by Means of Scintillation Spectrometry**

K. Kovler¹, Z. Priluzky¹, S. Antropov², N. Antropova², V. Bozhko², Z. Alfassi³, N. Lavi³

¹ Technion - Israel Institute of Technology, Haifa, Israel, ² "Amplituda" Research Center, Moscow, Russia, ³ Ben Gurion University of the Negev, Beer Sheva, Israel

09:00 - 10:30 Session 4-2 Material Physics I

Hall B

Chairman: **Dr. Guy Makov**

09:00 **Neutron Diffraction Study of Local Structure of Levantine Middle Bronze Age Cast Axes**

E.N. Caspi¹, S. Shalev^{2,3}, S. Shilstein³, A.M. Paradowska⁴, W. Kockelmann⁴, Y. Levy⁵
¹ Nuclear Research Centre – Negev, Beer-Sheva, Israel, ² University of Haifa, Haifa, Israel, ³ Weizmann Institute of Science, Rehovot, Israel, ⁴ ISIS Facility, Chilton Didcot, UK, ⁵ Israel Antiquity Authority, Jerusalem, Israel

09:15 **Development and Preparation of Sources for Controlled Release of Alpha-Emitting Isotopes**

M. Schmidt, L. Arazi, I. Kelson
Tel Aviv University, Tel Aviv, Israel

09:30 **On the Correlation Between Structure and Sound Velocity in Elemental Liquid Antimony and Bismuth - A Neutron Diffraction Study**

Y. Greenberg^{1,2}, E. Yahel², E. Caspi², B. Brigitte³, M. Dariel¹, G. Makov^{1,2}
¹ Ben Gurion University of the Negev, ² Nuclear Research Center - Negev, Beer-Sheva, Israel, ³ CEA/Saclay, Gif-sur-Yvette Cedex, France

09:45 **Carbon Enhanced Hydrogen Attack on an Oxidized U-0.1Wt%Cr Surface**

N. Shamir, D. Schweke, T. Livneh, S. Zalkund
Nuclear Research Centre - Negev, Beer-Sheva, Israel

10:00 **In-situ Monitoring of the Oxidation Kinetics of U-0.1%wtCr using Reflectance Measurements**

D. Schweke, Z. Chernia, H. Maimon, T. Livneh
Nuclear Research Center - Negev, Beer Sheva, Israel

10:15 **Thermal Neutron Scattering**

O. Rivin
Nuclear Research Center - Negev, Beer Sheva, Israel

09:00 - 10:30 Session 4-3 Radiation Measurements

Hall C

Chairman: **Dr. Yaacov Laichter**

- 09:00 **Development and Application of Marinelli Beaker Standards for Monitoring Radioactivity in Environmental Samples by Gamma-Ray Spectrometry**
N. Lavi¹, H. Nasser¹, Z.B. Alfassi²
¹ Ministry of the Environment, Jerusalem, ² Ben Gurion University of the Negev, Beer Sheva, Israel
- 09:15 **Airborne Tritium Sampling by Silica Gel Adsorption**
T. Kravchik, S. Oved, N. Yair, N. Vainblat, U. German
Nuclear Research Centre - Negev, Beer Sheva, Israel
- 09:30 **Analysis of Steel by Passive and Active Gamma-Ray Spectrometry**
Y. Nir-El, Z. Yungreiss
Nuclear Research Center - Soreq, Yavne, Israel
- 09:45 **Measurement of Neutron Fluxes at Proximity to a (d,t) Neutron Generator**
Y. Nir-El, M. Stern, L. Weissman, T.Y. Hirsh
Nuclear Research Center - Soreq, Yavne, Israel
- 10:00 **An Effective Color Quench Correction Method for Cerenkov Counting**
S. Tsroya¹, O. Pelled¹, U. German¹, R. Marco¹, E. Katorza¹, S. Oved¹, Z.B. Alfassi²
¹ Nuclear Research Center Negev, Beer-Sheva, Israel, ² Ben-Gurion University of the Negev, Beer-Sheva, Israel
- 10:15 **Ten Years of Annual Proficiency Test Exercise (PTE) Participation of the Israel Radionuclide Laboratory (RL09)**
G. Haquin, Y. Nir-el, Z. Yungreiss
Nuclear Research Center - Soreq, Yavne, Israel
- 10:30 - 11:00 Coffee Break & Exhibition Visit
- 11:00 - 13:00 Parallel Sessions - 5

11:00 - 13:00 Session 5-1 NORM in Buildings and the Environment II

Hall A

Chairman: **Dr. Yair Shamai**

- 11:00 **Natural Radiation in Austria**
H. Friedmann
University of Vienna, Vienna, Austria
- 11:15 **Measurement of the Radon Emanation of Building Materials by Activated Charcoal**
V. Steiner
Ministry of Environmental Protection, Jerusalem, Israel
- 11:30 **Measurement of the Radon Emanation from Building Blocks and Walls**
V. Steiner
Ministry of Environmental Protection, Jerusalem, Israel
- 11:45 **Measurement of Radon Emanation in Construction Materials**
N. Lavi¹, V. Steiner¹, Z.B. Alfassi²
¹*Ministry of Environmental Protection, Jerusalem,* ²*Ben Gurion University of the Negev, Beer Sheva, Israel*
- 12:00 **Rn-222 Diffusion Through Sandy Soil - Laboratory Experiment**
Y. Shitrit¹, A. Dody¹, Z. Berant¹, Z. Alfassi², D. Sattinger¹
¹*Nuclear Research Center - Negev,* ²*Ben Gurion University of the Negev, Beer Sheva, Israel*
- 12:15 **Measurement of Radon Diffusion Lengths in Thin Membranes**
A. Malki¹, N. Lavi², M. Moinester¹, H. Nassar², E. Neeman³, E. Piasetzky¹, V. Steiner²
¹*Tel Aviv University, Tel Aviv,* ²*Ministry of Environmental Protection, Jerusalem,*
³*System Advanced Laboratories, Yavne, Israel*
- 12:30 **Exposure of Workers and of Members of the Public to Ionizing Radiation Due to Coal Ash Handling and Coal Ash Utilization in Israel**
T. Schlesinger
Ariel University of Samaria, Ariel, Israel
- 12:45 **Acceleration of Biological Soil Crust Growth Over a Top Layer of Waste Disposal Site - Laboratory Experiments**
R. Hakmon¹, A. Dody¹, E. Zaady², B. Asaf¹
¹*Nuclear Research Center - Negev, Beer Sheva,* ²*Gilat Research Center, Gilat, Israel*

11:00 - 13:00 Session 5-2 Material Physics II
Prof. Itzhak Yaacov

Hall B

- 11:00 **Hyperfine Interaction Indicating Invar System in Pd-Fe under High-Pressure**
M.L. Winterrose¹, J.A. Munoz¹, L. Mauger¹, M.S. Lucas¹, P. Chow², Y. Xiao², J. Hu³,
I. Halevy¹, B. Fultz¹
¹ *W. M. Keck Laboratory, Pasadena, USA, on leave from NRCN Israel,* ² *Carnegie Institution of Washington, Argonne, IL, USA,* ³ *University of Chicago, Upton, NY, USA*
- 11:15 **Positron Annihilation Lifetime Spectroscopy**
O. Chen, A. Ocherashvily, S. May-Tal Beck, I. Israelashvily, A. Back, H. Etedgui
Nuclear Research Center - Negev, Beer Sheva, Israel
- 11:30 **MCNP Simulations of Electron Transport Through Polystyrene and Polyimide**
A. Givon¹, E. Tiferet², I. Yaar², I. Orion¹
¹ *Ben-Gurion University of the Negev, Beer-Sheva, Israel,* ² *Nuclear Research Center - Negev, Beer-Sheva, Israel*
- 11:45 **Yttrium Substitution in MTiO₃ (M = Ca, Sr, Ba and M = Ca + Sr + Ba) Perovskites and Implication for Incorporation of Fission Products into Ceramic Waste Forms**
N. Navi^{1,2,3}, J. Zabicky⁴, G. Kimmel⁴, E. Goncharov⁴, S. Ushakov¹, R. Shneck^{2,5},
M. Mintz^{2,3}, A. Navrotsky¹
¹ *Peter A. Rock Thermochemistry Laboratory and NEAT ORU, University of California at Davis, Davis, USA,* ² *Department of Nuclear Engineering, Ben-Gurion University of the Negev,* ³ *Nuclear Research Center–Negev (NRCN),* ⁴ *Institutes for Applied Research, Ben-Gurion University of the Negev,* ⁵ *Department of Materials Engineering, Ben-Gurion University of the Negev, Beer-Sheva, Israel*
- 12:00 **The Effect of High Salt Concentration on the Integrity of Silica-Fume Blended Cementitious Matrices for Waste Immobilization Applications**
G. Bar-Nes^{1,2}, Y. Peled¹, M. Arbel-Haddad¹, Y. Zeiri^{1,3}, A. Katz²
¹ *Nuclear Research Center - Negev, Beer-Sheva,* ² *Technion - Israel Institute of Technology, Haifa,* ³ *Ben-Gurion University of the Negev, Beer-Sheva, Israel*
- 12:15 **Magnetic Properties of the two New Actinides Compounds: Np₂Co₁₇ and Np₂Ni₁₇**
I. Halevy, G. Kimmel, I. Yaar, J. Gal
Nuclear Research Center - Negev, Beer Sheva, Israel
- 12:30 **Fly Ash – A Potential Scrubber for Low Activity Radioactive Wastes: Simulations Studies**
H. Cohen¹, G. Segev^{1,2}, R. Nir Liberman¹, E. Elish³, C. Sebag³, E.J.C. Borojovich³
¹ *Ariel University Center of Samaria, Ariel,* ² *Israel Atomic Energy Commission, Tel Aviv,* ³ *Nuclear Research Center - Negev, Beer-Sheva, Israel*

11:00 - 13:00 Session 5-3 Accelerators
Chairman: **Dr. Ami Nagler**

Hall C

11:00 **Toward Nuclear Energy Oriented Research at SARAF**

L. Weissman

Nuclear Research Center - Soreq, Yavne, Israel

11:15 **Damage of HAVAR Foil By Protons And Deuterons**

Y. Eisen¹, S. Haroush^{1,2}, I. Silverman¹, D. Moreno¹

¹ *Nuclear Research Center - Soreq, Yavne,* ² *Nuclear Research Center - Negev, Beer Sheva, Israel*

11:30 **Unfolding the Spectra of ISOLDE Spallation Source**

T.Y. Hirsh^{1,2}, B. Dan², M. Hass¹, D. Pierre⁴, K. Vivek¹, S. Kuljeet¹, S. Thierry³,
V. Sergey^{1,2}

¹ *Weizmann Institute of Science, Rehovot, Israel,* ² *Nuclear Research Center - Soreq, Yavne, Israel,* ³ *ISOLDE, CERN, Geneva, Switzerland,* ⁴ *Ganil, Caen, France*

11:45 **A Novel Method for Fundamental Interactions Studies with Electrostatic Ion Beam Trap**

S. Vaintraub^{1,2}, M. Hass¹, O. Aviv¹, O. Heber¹, I. Mardor²

¹ *Weizmann Institute of Science, Rehovot,* ² *Nuclear Research Center - Soreq, Yavne, Israel*

12:00 **Towards Production of 30-keV Neutrons With a Liquid-Lithium Target and Measurement of the $^{209}\text{Bi}(n,\gamma)^{210\text{m,g}}\text{Bi}$ Cross Section**

G. Feinberg^{1,2}, D. Berkovits², Y. Eisen², M. Friedman¹, G. Giorginis³, F. Hamsch³,
M. Paul¹, A. Plompen³, P. Rullhusen³, A. Shor²

¹ *The Hebrew University, Jerusalem, Israel,* ² *Nuclear Research Center - Soreq, Yavne, Israel,* ³ *EC-JRC-IRMM, Geel B, Belgium*

12:15 **High-Power Liquid-Lithium Target for Accelerator-Based Boron Neutron Capture Therapy (BNCT)**

S. Halfon^{1,2}, M. Paul², A. Arenshtam¹, D. Berkovits¹, D. Kijel¹, G. Feinberg^{1,2},
A. Nagler¹, I. Silverman¹

¹ *Nuclear Research Center - Soreq, Yavne,* ² *The Hebrew University, Jerusalem, Israel*

12:30 **Design of X-Y Wire Scanners for SARAF Beam Line**

I. Eliyahu, L. Weissman, A. Abramson, A. Grin, I. Gertz, A. Perry, D. Berkovits

Nuclear Research Center - Soreq, Yavne, Israel

12:45 **Light Ion Induced Nuclear Reactions Close to the Coulomb Barrier**

P. Toernstroem, O. Forstner, H. Friedmann, P. Hille, J. Kuehtreiber, A. Pavlik, A. Priller
University of Vienna, Vienna, Austria

13:00 - 14:00 Lunch