

# Programme

21 – 25 April 2024

Warsaw, Poland



EUROPEAN NUCLEAR SOCIETY

Patronage



Minister of Science  
Republic of Poland

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**Sunday 21 April 2024**

**6.00 pm – 8.00 pm Pre-registration**

**6.30 pm – 8.30 pm Welcome Reception, sponsored by**



## Monday 22 April 2024

### **9.00 am – 10.30 am      Official Opening of the Conference** **50 Years of Nuclear Excellence for an ambitious Nuclear Power Programme**

Poland is entering the nuclear power industry with a number of plans in works on large-scale NPPs and on SMRs. In this session we will learn from key stakeholders of RTD, industry and the political environment, how Poland is progressing on its path to nuclear power.

With

**Najda-Jędrzejewska**, Deputy Director of Innovation and Development Department, Ministry of Science and Higher Education on behalf of **M. Mrówczyńska**, Vice Minister of Science and Higher Education, Poland

Prof. **K. Kurek**, Director General, NCBJ, Poland

**C. Landers**, Director, Office of Reactor Conversion and Uranium Supply, Acting Associate Assistant Deputy Administrator, DoE, US

Chaired by:

**S. Monti**, President of the European Nuclear Society and **S. van Dyck**, Chairman of the RRFM Programme Committee

### **Coffee break**

### **11.00 am – 1.00 pm      Plenary Session** **Advancing Nuclear Power Programmes: The Role of Research Reactors**

To stay in line with multiple development targets taken up by the global community, nuclear power and technologies require dynamic growth, both in number of new projects and their scientific advancement. Active and targeted R&D&I is essential to progress. In this session we will link the needs and expectations of the nuclear industry towards the community of research reactors.

#### **R&D&I contributions in the realization of nuclear power development**

S. Monti, European Nuclear Society

#### **Contributions of the French Research Reactors to NPP developments**

F. Gauché, Framatome/Cerca, France

**A Fuel and Reactor Developer's View on Yesterday's and Tomorrow's Needs of Research Reactors**

M. Limbäck, Westinghouse, Sweden

**Why research reactors matter to EDF**

A. Ambard, EDF, France

Chaired by:

**S. van Dyck**, Chairman of the RRFM Programme Committee

**Lunch break**

**2.00 pm – 3.30 pm Plenary Session**

**Advancing Nuclear Power Programmes: The Role of Education and Training**

**EC Programmes for Nuclear Education and Training**

R. Garbil, European Commission

**Developing the Nuclear Experts of Tomorrow**

F. Barton, Rolls Royce, United Kingdom

**Human resources development and education in Poland**

Ł. Wysocki, Ministry of Climate and Environment, Poland

Chaired by:

**S. van Dyck**, Chairman of the RRFM Programme Committee

**Coffee break**

**4.00 pm – 5.20 pm Parallel Sessions**

**Parallel session I: Part I – Research Reactors in support of GEN IV**

Chair: A. Pichlmaier, Technical University of Munich, Germany

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Extension of the code ATHLET and validation for the  
molten salt reactor

Li, T. (1)  
1 – Technical University of Munich, Germany

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## Parallel session I: Part II – Innovative Methods I

Chair: A. Pichlmaier, Technical University of Munich, Germany

IN CORE EPITHERMAL FLUX ADAPTOR DEDICATED TO JHR	Chabert, L. (1); Boyard, M. (1) 1 - Technicatome, France
Analysis of Neutron Kinetic Parameters for Two Region Kinetic Model	Kim, K.-O. (1); Yoo, H. J. (1); Park, B. W. (1) 1 - Korea Atomic Energy Research Institute, Korea, Republic of
High Flux Isotope Reactor Low-Enriched Uranium Conversion Overview	Sizemore, C. (1); Bacon, Z. (1); Bae, J. W. (1); Burg, K. (1); Chandler, D. (1); Fudurich, V. (1); Hartanto, D. (1); Lowe, C. (1); Smith, T. (1) 1 - Oak Ridge National Laboratory, United States

## Parallel session II: Fuel Cycle I

Chair: S. van Dyck, SCK-CEN, Belgium

Microstructural Characterization of Selected Uranium-Silicide/Al and ZrN-Coated U-7Mo/Al Dispersion Mini-Plates Irradiated in the Advanced Test Reactor in the EMPIRE and GTL Experiments	Salvato, D. (1); Keiser, D. (1); Hanson, W. (1); Robinson, A. (1); Glagolenko, I. (1); Ye, B. (2); Jamison, L. (2); Hofman, G. (2) 1 - Idaho National Laboratory, United States 2 - Argonne National Laboratory, United States
Update on Fuel Qualification Efforts to Support US High Performance Research Reactor Conversions	Cole, J. (1); Glagolenko, I. (1); Marshall, M. (1); Marshall, T. (1); Giglio, J. (1); Robinson, A. (1); Hanson, W. (1); Jue, J.-F. (1); Keiser, D. (1); Schulthess, J. (1); Housley, G. (1); Crawford, A. (1); Henley, J. (1) 1 - Idaho National Laboratory, United States
High Flux Isotope Reactor Low-Enriched Uranium Conversion - Design and Fuel Qualification Overview	Nash, J. (1); Sizemore, C. (1); Chandler, D. (1); Bae, J. W. (1); Cook, D. (1); Smith, T. (1); Miller, C. (2); Shokes, T. (2); Cole, J. (2); Jamison, L. (3); Jaluvka, D. (3) 1 - Oak Ridge National Laboratory, United States 2 - Idaho National Laboratory, United States 3 - Argonne National Laboratory, United States
SHORTLISTING OF AN EFFICIENT DESIGN FOR THE CONTROLLED ASSEMBLY OF THE LVR-15 REACTOR	Romanello, V. (1); Dambrosio, A. (2); Hrehor, M. (1); Paglini, A. (1); Boyard, M. (3); Huet, F. (3) 1 - National Radiation Protection Institute (SURO), Czech Republic 2 - Research Centre Rez (CVR), Czech Republic 3 - TechnicAtome (TA), France

## Tuesday 23 April 2024

### 9.00am – 11.00am Parallel Sessions

#### Parallel session I: Decommissioning

Chair: I. Vidovszky, Centre for Energy Research (CER), Hungary

Development of a neutron-induced activation code for the estimation of activated concrete in the Petten High Flux Reactor	Chapman, A. (1) 1 - Nuclear Research & Consultancy Group, Netherlands
DOWN-BLENDING OF IRRADIATED GRAPHITE FUEL IN KAZAKHSTAN	Bateman, K. (1); Bolshinsky, I. (1); Hintz, W. (1); Batyrbekov, E. (2); Koyanbayev, Y. (2); Baklonova, Y. (2); Korovikov, A. (2) 1 - Idaho National Laboratory, United States 2 - National Nuclear Center of the Republic Kazakhstan, Kazakhstan
Ulysse research reactor dismantling operations performed by Orano DS	Prudhomme, F. (1) 1 - Orano DS, France
Activity characterization and waste management in the FiRI TRIGA decommissioning project	Räty, A. (1); Vento, S. (1) 1 - VTT Technical Research Centre of Finland, Finland
DISMANTLING OF THE FIR 1 TRIGA REACTOR IN ESPOO, FINLAND	Auterinen, I. (1); Airila, M. (1); Räty, A. (1); Kivelä, P. (1); Helin, J. (1); Oinonen, V. (2) 1 - VTT Technical Research Centre of Finland Ltd, Finland 2 - Fortum Power and Heat Ltd, Finland
FIR 1 research reactor dismantling and waste management – Utilising digital tools to ensure safe and efficient decommissioning	Kaisanlahti, M. (1); Oinonen, V. (1); Ketolainen, A. (1) 1 - Fortum Power and Heat Ltd., Finland

#### Parallel session II: Safety and Security

Chair: E. Wilson, Argonne National Laboratory, US

BR2 FUEL ELEMENT HYDRAULIC ANALYSES FOR REACTOR CONVERSION	Lin, H.-C. (1); Garner, P. (1); Rykhlevskii, A. (1); Olson, A. (1); Licht, J. (1); Wols, F. (2) 1 - Argonne National Laboratory, United States 2 - SCK CEN, Belgium
Demonstration of the Coordinated Approach to the Proliferation Resistance Design of a Research Reactor Facility	Stratton, C. (1); Brown, A. (1); Jamison, L. (1); Elsayi, M. (1); Ozar, B. (1); Aliberti, G. (1); Hepler, K. (1); Maggos, L. (1); Servis, A. (1); Shahbazi, S. (1); Stevens, J. (1) 1 - Argonne National Laboratory, United States
INTEGRATED METHODOLOGY TO DEMONSTRATE NEW PROJECT CONSERVATIVE RADIOLOGICAL DESIGN	Meier, H. (1); Grey, B. (1); Montaña Rojas, M. (1) 1 - INVAP S. E., Argentina



Re-visiting Operational Limits and Conditions and Operating Procedures	Masriera, N. (1); Doval, A. (1); Lazarte, A. (1) 1 - INVAP SE, Argentina
SURVEY ON THE AWARENESS OF SAFETY CULTURE AMONG HANARO EMPLOYEE	Jung, H. S. (1); Hong, S. T. (1); Kim, H. K. (1); Han, J. S. (1) 1 - Korea Atomic Energy Research Institute, Korea, Republic of

## Coffee break

### 11.30am – 12.30pm Parallel Sessions

#### Parallel session I: Utilisation I

Chair: C. Rontard, Framatome, France

Hydraulic Analysis and Verification of MUSTANG-R BR2 Irradiation Test Facility for Research Reactor Fuel	Rossaert, B. (1); Wight, J. (1); Housley, G. (2); Marshall, T. (2); Hartman, H. (2) 1 - SCK CEN, Belgium 2 - INL, United States
STABLE ISOTOPES SUPPLY & EURYBIE PROJECT TO THE RESEARCH REACTORS COMMUNITY	Bigot, L. (1); Barithel, S. (1); Bertrand, P. (1); Lacroix, J.-N. (1); Vincent, J.-L. (1) 1 - ORANO CHEMISTRY AND ENRICHMENT, France
Decanning of nuclear power plant irradiated medical isotope Lu-177 at FRM II	Hutanu, V. (1); Bulla, S. (1); Bozhinov, A. (2); Kick, M. (3); Henkelmann, R. (2); Pichlmaier, A. (1) 1 - FRM II, Technical University Munich, Germany 2 - ITM Isotope Technologies Munich SE, Germany 3 - Metallbau Kick OHG, Germany

#### Parallel session II: Fuel Cycle II

Chair: B. Stepnik, Framatome, France

Detailed Design and Testing Facility Progress for USHPRR LEU Conversion	Wilson, E. (1); Hebden, A. (1); Yoon, D. (1); Bojanowski, C. (1); Mohamed, W. (1); Wang, G. (1); Jaluvka, D. (1); Anderson, K. (1); Jamison, L. (1); Cetinbas, C. F. (1); Legatt, M. (2); Weiss, A. (2); Howard, T. K. (2) 1 - Argonne National Laboratory, United States 2 - Oregon State University, United States
Jules Horowitz Reactor Fuel Element	Berthier, J. (1); Chauvin, J.-P. (1); Pillot, F. (1); Merle, J. (2) 1 - CEA, France 2 - Framatome CERCA, France

E-FUTURE III EXPERIMENT: DISPERSION UMo FUEL  
 IRRADIATION

Medyk, L. (1); Dion, A. (1); Stepnik, B. (1); Rontard, C. (1); Gauche, F. (1); Baumeister, B. (2); Petry, W. (2); Wight, J. (3); Holmstrom, S. (3); Leenaers, A. (3); Valance, S. (4); Federici, E. (4); Calzavara, Y. (5)  
 1 - FRAMATOME, France  
 2 - TUM, Germany  
 3 - SCK-CEN, Belgium  
 4 - CEA, France  
 5 - ILL, France

**Lunch break**

**1.30 pm – 3.00 pm      Plenary Session**  
**Student Competition & Poster Session**

**Student Competition**

Chair: S. van Dyck, SCK-CEN, Belgium; J. Najder, ENS, Belgium

Sensitivity analysis for radionuclide production data in nuclear reactors	Ule Duque, G. (1); Margulis, M. (1) Capponi, L. (2) 1 - Nuclear Futures Institute, Bangor University, United Kingdom 2 - National Nuclear Laboratory, United Kingdom
Neutronic experiments at VENUS-F in support of lead cooled SMR deployment	Di Croce, F. (1); Grimaldi, F. (1); Krása, A.(1); Labeau, P.-E. (2); Wagemans, J. (1); Vittiglio, G. (1); 1 - SCK CEN, Belgium 2 - Université libre de Bruxelles, Belgium
Simulation, sensitivity, and uncertainty analysis of siphon-breaker experiments with the code CATHARE-3	Zhang, Z. (1); Ghione, A. (2); Gomez Garcia-Torano, I. (2) 1 - Institut National des Sciences Appliquées de Lyon, France 2 - Commissariat à l'énergie atomique et aux énergies alternatives (CEA), France
Insider Threat in the Nuclear Industry - The Safe & Sustained Operation of Nuclear Reactors and Nuclear Research Intellectual Property Increasingly at Risk	Crowe, A. (1) 1 - Carleton University, Canada
Effect of high temperatures and ion irradiation on select MAX phases	Vukšić, M. (1); Prof. Marrow, J. (1) 1 - University of Oxford, United Kingdom
Industrial PhD regarding graphite, and assistance in the Neutron Irradiation as a Function of Temperature – Experiment (NIFT-E) project.	Edwards, N. (1); Prof. Jones, A. (1); Tzelepi, N. (2) 1 - University of Manchester, United Kingdom 2 - National Nuclear Laboratory, United Kingdom

Sustainable use of sealed sources through recovery of radioactive materials in a nuclear research reactor	Caldeira, S. (1); Prof. Campolina, D. (1); Prof. Menezes, M.A. (1) 1 - Nuclear Technology Development Center (CDTN), Brazil
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## Poster Session

Improving to the neutron fluence rate monitor measurement system at the Advanced Test Reactor	Reichenberger, M. (1); McCary, K. (1) 1 - Idaho National Laboratory, United States
Measurement of the Neutron Fluence-Rates in the Advanced Test Reactor	McCary, K. (1); Reichenberger, M. (1) 1 - Idaho National Laboratory, United States
Neutron diffraction studies of an influence of weld residual stresses on fatigue strength of high-strength steels welds	Mikula, P. (1); Vrána, M. (1); Miklos, M. (1); Mráz, L. (2) 1 - Nuclear Physics Institute ASCR, Czech Republic 2 - Welding Research Institute – Industrial Institute SR, Slovakia
A qualified seal design as part of a safe spent fuel transport and storage cask containment	Rolle, A. (1); Wille, F. (1) 1 - Bundesanstalt für Materialforschung und -prüfung (BAM), Germany
Presentation of MAIA MTR fuel performance code	Marois, G. (1) 1 - The French Alternative Energies and Atomic Energy Commission (CEA), France
Path to effective reactor power monitoring: equipment, qualification, operation	Güldner, I. (1); Liebhart, E. (1) 1 - Mirion Technologies (MGPI H&B) GmbH, Germany
Development and implementation of thermoanalytical characterization methods for dispersion MTR fuels at SCK CEN	Mai, T. (1); Leenaers, A. (1); Wight, J. (1) 1 - SCK CEN, Belgium
MARIA reactor as a tool for neutron irradiation and nuclear fuel testing.	Madejowski, G. (1) 1 - National Centre for Nuclear Research, Poland
Involute Working Group: Updates from HFIR on Verification and Validation of CFD to support LEU Fuel Conversion	Jain, P. (1); Borowiec, K. (1); Popov, E. (1); Sizemore, C. (1) 1 - Oak Ridge National Laboratory, United States
Development Status of High-density Atomized U3Si2 Fuel Plates in KAERI	Cho, T. W. (1); Jeong, Y. J. (1); Park, D. J. (1); Park, J. M. (1); Wight, J. (2); Acevedo, B. (2) 1 - Korea Atomic Energy Research Institute (KAERI), Korea, Republic of 2 - Belgian Nuclear Research Centre (SCK CEN), Belgium
Czech concept of the Deep Geological Repository and the research activities at the Bukov URF	Golubko, A. (1) 1 - Správa úložišť radioaktivních odpadů (SÚRAO), Czech Republic

## 3.00 pm – 4.40 pm Parallel Sessions

### Parallel session I: Utilisation II

Chair: C. Kaaijk, TU Delft Reactor Institute, The Netherlands

New automated pneumatic irradiation facilities for TU Delft Reactor Institute	Rutten, M. (1); Verleg, M. (1); Kadathanad, S. (1); Blaauw, M. (1); Scharff, D. (1); Barendse, M. (1); Slinger, R. (1); Kaaijk, C. (1) 1 - TU Delft Reactor Institute, Netherlands
Triggering human resources development and education in Poland with novel small training nuclear reactor design	Lipka, M. (1); Gajda, P. (2); Rajewski, A. (1) 1 - Nuclear PL, Poland 2 - AGH University of Kraków, Poland
MOBIL-APP: International mobility program in the field of nuclear instrumentation with a strong link between education and research.	Reynard-Carette, C. (1); Volte, A. (1); Carette, M. (1); Lyoussi, A. (2); Radulovic, V. (3); Kohse, G. (4) 1 - Aix-Marseille University, France 2 - CEA, France 3 - JSI, Slovenia 4 - NRL, MIT, United States
Experimental characterization of a new calorimeter prototype for measurement of low nuclear heating rate during an irradiation campaign in the research reactor of the Jožef Stefan Institute (JSI)	Volte, A. (1); Carette, M. (1); Jean-laurent, H.-O. (1); Dérivieux, F. (1); Valero, V. (1); Radulović, V. (2); Lyoussi, A. (3); Reynard-Carette, C. (1) 1 - Aix Marseille Univ, Université de Toulon, CNRS, IM2NP, France 2 - Reactor Physics Division, Jožef Stefan Institute, Ljubljana, Slovenia 3 - CEA/DES/RESNE/DER, Section of Experimental Physics, Safety Tests and Instrumentation, France
Gamma-spectroscopy and neutron activation analysis at FRM II	Li, X. (1); Geppert, C. (2); Hutanu, V. (1); Jeschke, F. (1); Kramer, J. (2); Pichlmaier, A. (1) 1 - FRM II, Technical University of Munich, Germany 2 - Research reactor TRIGA Mainz, University of Mainz, Germany

### Parallel session II: Fuel Cycle III

Chair: L. Jamison, Argonne National Laboratory, United States

Project Overview and Technical Studies of the Low-Enrichment Conversion Project at UTR-KINKI	Tabuchi, M. (1); Wakabayashi, G. (1); Sugiura, N. (1); Shiga, H. (1); Hohara, S. (1); Yamanishi, H. (1); Pyeon, C. H. (2); Stratton, C. (3); Morman, J. (3); Stevens, J. (3); Heltemes, T. (3) 1 - Kindai University, Japan 2 - Kyoto University, Japan 3 - Argonne National Laboratory, United States
UMo monolithic plate manufacturing in Europe	Buniazet, Z. (1); Grasse, M. (1); Rontard, C. (1); Gauche, F. (1); Stepnik, B. (1); Buducan, K. (2); Baumeister, B. (2); Petry, W. (2) 1 - FRAMATOME, France 2 - TUM, Germany

IMPACT OF THE INCLUSION OF THORIUM IN MTR FUEL DESIGNS – AN APPLICATION TO SAFARI-1 ASSESSED WITH OSCAR-5	Maraire, W. (1); Prinsloo, R. (1); Van Niekerk, F. (2); Du toit, M. (2); Chinaka, E. (1) 1 - South African Nuclear Energy Corporation SOC Ltd (Necsa), South Africa 2 - North-West University, Faculty of Engineering Potchefstroom Campus, South Africa
SIMULATION OF INTERACTION LAYER GROWTH IN COATED U-Mo/Al DISPERSION FUELS	Ye, B. (1); Mei, Z.-G. (1); Hofman, G. (1); Kim, Y. S. (1); Shu, S. (1); Jamison, L. (1); Yacout, A. (1); Ann, L. (2); Hanson, W. (3); Salvato, D. (3); Robinson, A. (3); Keiser, D. (3); Iltis, X. (4); Lorenzo, D. (4); Marois, G. (4) 1 - Argonne National Laboratory, United States 2 - SCK CEN, Belgium 3 - Idaho National Laboratory, United States 4 - CEA, France
UNCERTAINTY OF BLISTER DETECTION TEMPERATURES AND OPTIMIZATION OF TEMPERATURE STEPS IN BLISTER TESTING	Vanoppen, S. (1); Holmstrom, S. (2); Wight, J. (2) 1 - University of Gent, Belgium 2 - SCK CEN, Belgium

## Coffee break

## 5.00 pm – 6.00 pm      Parallel Sessions

### Parallel session I: Innovative Methods II

Chair: B. Ozar, Argonne National Laboratory, US

PREDICTING CRITICAL HEAT FLUX IN RECTANGULAR CHANNELS: WHICH CORRELATION TO TRUST?	De Kock, I. (1); Bertocchi, F. (1); Vega, C. (2) 1 - Nuclear Research and Consultancy Group, Netherlands 2 - PALLAS, Netherlands
A practical modelling approach towards flow instability assessment in the field of research reactors	Du, Z. (1); Mateos Canals, I. (1) 1 - Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) gGmbH, Germany
Uncertainty treatment in the thermal-hydraulic design of Research Reactors	Grinovero, G. S. (1); Nasso, M. G. (1); Doval, A. (1); Lupiano Contreras, J. (1) 1 - INVAP SE, Argentina

### Parallel session II: Fuel Cycle IV

Chair: B. Ye, Argonne National Laboratory, United States

STUDY OF CLASSICAL PIE METHODOLOGIES FOR BURNUP AND THEIR COMPARABILITY	Holmstrom, S. (1); Parthoens, Y. (1); Sikik, E. (1); Adriaensen, L. (1); Leeanaers, A. (1); Vanhove, N. (1); Castin, N. (1) 1 - SCK CEN, Belgium
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Recent Characterization of Legacy U3Si2 Dispersion Mini-plates	Hanson, W. (1); Robinson, A. (1); Bachhav, M. (1); Salvato, D. (1); Matos, M. (1); Garcia, R. (1); Teng, F. (1); Trowbridge, T. (1); Burns, J. (1); Jue, J.-F. (1); Keiser jr., D. (1); Giglio, J. (1); Cole, J. (1) 1 - Idaho National Laboratory, United States
Nano-indentation Analysis of Neutron Irradiated U-Mo/Al Dispersion Fuels: Unveiling the Evolution of Al Matrix Mechanical Properties	Salvato, D. (1); Teng, F. (1); Hanson, W. A. (1); Keiser, D. D. (1); Robinson, A. B. (1); Glagolenko, I. Y. (1); Ye, B. (2); Jamison, L. M. (2); Hofman, G. L. (2); Yacout, A. M. (2); Van Renterghem, W. (3); Leenaers, A. (3) 1 - Idaho National Laboratory, United states 2 - Argonne National Laboratory, United states 3 - SCK CEN, Belgium

## Conference Dinner

The RRFM 2024 conference dinner will take place at Forteca Kręglliccy, also known as Fort Legionów, a part of the ancient Warsaw Citadel Fortifications.

Address: Zakroczymska 12, 00-225 Warsaw.

The dinner will start at **7.30pm**. Buses will leave from the conference hotel at 7pm. The return transfer is expected at around 11pm.

## Wednesday 24 April 2024

### 9.00 am – 10.00 am Parallel Sessions

#### Parallel session I: Utilisation III

Chair: M. Lipka, Nuclear PL, Poland

INSTRUMENTATION FOR IN-CORE REAL-TIME MECHANICAL TESTING OF STRUCTURAL MATERIALS (INCREASE) PROJECT	Wilding, M. (1) 1 - Idaho National Laboratory, United States
Corrosion studies of irradiated titanium beryllide	Shaimerdenov, A. (1); Askerbekov, S. (1); Akhanov, A. (1); Kulsartov, T. (2); Sairanbayev, D. (1); Udartsev, S. (3) 1 - The Institute of Nuclear Physics, Kazakhstan 2 - Satbayev University, Kazakhstan 3 - Ulba Metallurgical Plant, Kazakhstan
DEVELOPMENT, OPERATION AND LESSONS LEARNED OF THE OKAP RIG FOR FUEL CLADDING IRRADIATION IN LVR-15 REACTOR	Miklos, M. (1); Melichar, T. (1); Soltes, J. (1); Milcak, J. (1) 1 - Centrum výzkumu Řež, Czech Republic

#### Parallel session II: Operation and Maintenance

Chair: C. Rontard, Framatome, France

FRM II: Update on the status and outlook	Pichlmaier, A. (1); Schätzlein, R. (1); Jeschke, F. (1) 1 - Technical University of Munich, Germany
Revitalization of the Training Program at a 250kW TRIGA Reactor for Increased Student Success	Johnson, A. (1); Gilde, L. (1) 1 - University of Maryland, United States
Analysis of metallic seals ageing behavior in assembly design phases	Ledrappier, F. (1); Allegre, L. (1); Juliaa, J.-F. (1); Bommenel, A. (2) 1 - Laboratoire d'Étanchéité MAESTRAL - TECHNETICS Group, France 2 - TECHNETICS Group France, France

### Coffee break

## 10.30 am – 12.00 pm Parallel Sessions

### Parallel session I: Innovative Methods III

Chair: L. Chabert, TechnicAtome, France

APPLICATION OF OSCAR-5 CORE OPTIMIZATION CAPABILITIES TO SAFARI-1 AND MNR CORE DESIGNS	Prinsloo, R. (1); Bokov, P. (1); Mudau, R. (1) 1 - South African Nuclear Energy Corporation SOC Ltd (Necsa), South Africa
Estimation of gamma heat deposition in fuel and non-fuel materials in support of irradiation of medical radioisotopes in BR2 reactor	Alhassan, E. (1); Sikik, E. (1); Newman, G. (1); Wols, F. (1); Van Dyck, S. (1); Van den Branden, G. (1) 1 - Belgian Nuclear Research center (SCK CEN), Belgium
Measurements of the Flux Trap Effect in MTR Fuel Using Gamma Spectroscopy	Neder, I. (1); Abuzlf, H. (2); Gabrieli, G. (1); Steinitz, U. (1); Yungrais, Z. (1); Aviv, O. (1); Barda, K. (1); Iluz, I. (1); Krakovich, A. (1); Gilad, E. (2) 1 - Soreq Nuclear Research Center, Israel 2 - Ben-Gurion University, Israel
EVALUATION OF HEAT TRANSFER MODELING OF INVOLUTE FUEL ELEMENTS USING STAR-CCM+	Bojanowski, C. (1); Bergeron, A. (1); Licht, J. (1) 1 - Argonne National Laboratory, United States

### Parallel session II: Operation & Maintenance II

Chair: P. Chakrov, IAEA

Development of a Reactor Monitoring Programme for in-line reactor fuel reliability assessment, using gamma-ray spectrometry analysis of primary coolant water	Meulenbelt, I. (1); Davis, L. (1) 1 - Nuclear Research & Consultancy Group (NRG), Netherlands
Insights from the most current projects of renewal of I&C systems of research reactors and their use for further improvement of services for RR operators.	Juříček, V. (1); Sikora, J. (2); Reisner, L. (2) 1 - Centrum výzkumu Řež, Czech Republic 2 - CTU in Prague, Czech Republic
STATUS OF HANARO AND REGULATORY ISSUES	Shin, J. (1); Kim, M. (1); Han, J. (1); In, W. (1) 1 - KAERI (Korea Atomic Energy Research Institute), Korea, Republic of
Improvement of electrical system facilities in HANARO	Doo, S. (1); Sung, W. (1); Choi, Y. (1); Shin, J. (1) 1 - Korea Atomic Energy Research Institute, Korea, Republic of

## Lunch break



## 1.00 pm – 2.00 pm Parallel Sessions

### Parallel session I: New Build Projects

Chair: H. Meier, INVAP, Argentina

Jules Horowitz Reactor (JHR) project: a future Material Test Reactor in support to nuclear industry, regulators and R&D institutes: status and update of the project as of early 2024 following the 2023 French Nuclear Policy council decision and setting-up of « pre-JHR » phase before start-up of the reactor	G. Bignan (1), F. Carle(1), JP Chauvin (1), F. Pillot (1), L. Ferry (1), 1 – CEA, France
Progress in the design and construction of the PALLAS reactor	Offerein, J. (1); Schram, R. (1); Wouters, O. (2); Klaassen, F. (2) 1 – NRG, The Netherlands 2 – PALLAS reactor, The Netherlands
UTILIZATION NEEDS OF THE NIGERIA MULTIPURPOSE RESEARCH REACTOR (NIRR-2)	Karniliyus. J.S. (1); Olubiyi, S.A. (1) 1 – Ahmadu Bello University, Zaria, Nigeria

### Parallel session II: Fuel Cycle V

Chair: J. Nash, Oak Ridge National Laboratory, United States

THERMAL CONDUCTIVITY MEASUREMENT OF U-Mo/Al INTERACTION LAYER GENERATED FROM IN-PILE IRRADIATION USING THE SUSPENDED BRIDGE METHOD	Shu, S. (1); Miao, Y. (1); Ye, B. (1); Mouche, P. (1); Yacout, A. (1); Salvato, D. (2); Hanson, W. (2); Robinson, A. (2); Keiser, D. (2) 1 – Argonne National Laboratory, United States 2 – Idaho national laboratory, United States
Thermo-physical property characterization of irradiated U3Si2 mini-plates from the GTL experiment	Pavlov, T. (1); Salvato, D. (1); Hisle, E. (1); Tsai, C. (1); Poudel, N. (1); Hanson, W. (1); Ye, B. (2); Kim, Y. S. (2); Hofman, G. (2); Jamison, L. (2); Yacout, A. (2); Robinson, A. (3); Giglio, J. (3); Cole, J. (3) 1 – Idaho National Laboratory, United States 2 – Argonne National Laboratory, United States 3 – Idaho National Laboratory, United States
Fuel overview of MARIA research reactor (NCBJ Swierk – Poland)	Stepnik, B. (1); Merle, J. (1); Rontard, C. (1); Nowakowski, P. (2); Celinska, A. (2) 1 – Framatome, France 2 – NCBJ, Poland

## 2.00 pm – 2.30 pm Plenary Session: Closing

Closing of Technical Sessions and announcement of the winner of the RRFM 2024 Student Competition and the RRFM 2024 Poster Competition.

## **Thursday 25 April 2024**

### **Technical Tour**

Delegates who already registered will have the possibility to participate in the RRFM technical tour and visit the National Centre For Nuclear Research (Narodowe Centrum Badań Jądrowych – NCBJ).

During the day, delegates will visit:

- **MARIA Research Reactor**
- **Radioisotope Centre POLATOM**
- **Materials Research Laboratory**

### **Schedule**

8 AM – Bus departure from the hotel

By 5 PM – Bus return to the hotel \*

*\* On its way back from Otwock/Świerk to Warsaw, the bus will pass by the Warsaw Chopin Airport (WAW), so as to drop off participants who will have their flights back in the late afternoon.*

**Notes**

