



# Programme

11 – 15 March 2018

Munich, Germany



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## Sunday 11 March 2018

**17:00 - 19:00 Pre-registration**

**18:00 – 19:30 Welcome Reception**

## Monday 12 March 2018

**Mo 9.00 – 10.00 Opening Plenary Session**

Chair: S. van Dyck, SCK-CEN, Belgium; Co-Chair: H. Gerstenberg, TU Munich, Germany

### **Welcome Adress**

Dr. Ludwig Spaenle, MdL, Bavarian State Minister for Education, Science and the Arts

### **History, Design and Applications of FRM II**

Dr. Anton Kastenmüller, Technical Director FRM II

### **The reactor production of no-carrier-added Lutetium-177 in the TBq range for radiotherapy**

Dr. Richard Henkelmann, Isotopes Technologies Munich, Managing Director itg

### **IAEA activities to support sustainable operation of and access to research reactors**

Prof. Dr. Andrea Borio di Tigliole, Section Head, Research Reactor Section, IAEA

**Mo 10.00 – 10.30 Coffee break**

**Mo 10.30 – 12.00 Plenary Session II**

### **EURATOM Research and Training and future perspectives**

Roger Garbil, European Commission, DG Research and Innovation, Euratom Fission Unit, Brussels, Belgium

### **Update on the DoE Convert and Remove program**

Brian Waud, NNSA, United States

**RRFM 2018 Student Competition**

**Mo 12.00 – 13.00 Lunch break**



**Mo 13.00 – 15.20 Parallel session: Research reactor fuel cycle I**

RRFM2018-A0050	BR2 FUEL EVOLUTION TOWARD SUSTAINABLE FUEL CYCLE	Kalcheva, S. (1); Van Dyck, S. (1); Van den Berghe, S. (1); Van den Branden, G. (1) 1 - SCK-CEN, BR2 Reactor, Belgium
RRFM2018-A0076	The H2020 European Project Fuel for REsearch Reactors – FOREVER: LEU fuels for medium and high power research reactors in Europe	Valance, S. (1); Breitzkreutz, H. (2); Calzavara, Y. (3); Hrehor, M. (4); Huet, F. (5); Jaroszewicz, J. (6); Palancher, H. (1); Stepnik, B. (7); Van den Berghe, S. (8) 1 - CEA, France 2 - TUM, Germany 3 - ILL, France 4 - CV Řež, Czech Republic 5 - TechnicAtome, France 6 - NCBJ, Poland 7 - AREVA NP, France 8 - SCK-CEN, Belgium
RRFM2018-A0120	Manufacturing of the SEMPER FIDELIS UMo irradiation experiment	Stepnik, B. (1); Grasse, M. (1); Rontard, C. (1); Geslin, D. (1); Guinard, Y. (1); Van den Berghe, S. (2); Leenaers, A. (2); Breitzkreutz, H. (3); Petry, W. (3); Palancher, H. (4); Hervieu, E. (4); Calzavara, Y. (5); Guyon, H. (5) 1 - AREVA NP - CERCA, France 2 - SCK-CEN, Belgium 3 - TUM, Germany 4 - CEA, France 5 - ILL, France
RRFM2018-A0110	EMPIrE - European Mini-Plate Irradiation Experiment in the Advanced Test Reactor (ATR)	Glagolenko, I. (1); Housley, G. (1); Nielsen, J. (1); Crawford, D. (1); Hawkes, B. (1); Wiest, J. (1); Moore, G. (1); Holdaway, K. (1) 1 - Idaho National Laboratory, United States
RRFM2018-A0131	Temperature effect on irradiation-induced U-Mo-Al interdiffusion	Ye, B. (1); Miao, Y. (1); Hofman, G. (1); Yacout, A. (1); Shi, J. (2); Breitzkreutz, H. (2); Salvato, D. (3); Leenaers, A. (3); Van den Berghe, S. (3) 1 - Argonne national laboratory, United States 2 - Technische Universität München, Germany 3 - SCK-CEN, Belgium

RRFM2018-A0073	Quantitatively Simulating Fission-enhanced Diffusion in U-Mo/Al Systems by Swift Heavy Ion Irradiation	Shi, J. (1); Breikreutz, H. (1); Petry, W. (1) 1 - Forschungs-Neutronenquelle Heinz Maier-Leibnitz (FRM II), Technische Universität München, Germany
RRFM2018-A0144	Advanced PIE of the SELENIUM 1a experiment	Leenaers, A. (1); Van den Berghe, S. (1) 1 - SCK•CEN, Belgium

### Mo 13.00 – 15.20 Parallel session: Innovative Methods I

RRFM2018-A0019	TRANSIENT CFD ANALYSIS OF THE FLOW INVERSION OF THE NUCLEAR RESEARCH REACTOR IEA-R1	Lymberis Scuro, N. (1); Angelo, E. (2); Angelo, G. (3); Ernesto Umbehaun, P. (1); Di Giovanni Santos, P. (1); Alves de Andrade, D. (1) 1 - Instituto de Pesquisas Energéticas e Nucleares (IPEN/CNEN), Brazil 2 - Universidade Presbiteriana Mackenzie, Brazil 3 - Centro Universitário FEI, Brazil
RRFM2018-A0045	Transmutation rates determination for the study of nuclear fuel composition under irradiation.	Cagnazzo, M. (1); Dal Cin, S. (1); Villa, M. (1); Boeck, H. (1) 1 - Technical University Vienna, Austria
RRFM2018-A0048	Comparative Study of Transient Analysis of Pakistan Research Reactor-1 (PARR-1) With High Density Fuel	Iqbal, M. (1); Muhammad, A. (1); Mahmood, T. (1) 1 - PINSTECH, Pakistan
RRFM2018-A0056	DETAILED BURNUP CALCULATIONS OF IRR1 FUEL STOCKPILE BASED ON ITS COMPREHENSIVE IRRADIATION HISTORY	Gilad, E. (1); Fridman, N. (1) 1 - Ben-Gurion University of the Negev, Israel
RRFM2018-A0058	Symmetrical Equilibrium Core Configuration Suggestion for Tehran Research Reactor	Keyvani Ghamsari, M. (1); Kardan, M. R. (1); Mirvakili, M. (1); Tehrani, N. (1) 1 - Atomic energy organization of IRAN-Nuclear Science and Technology Institute, Iran, Islamic Republic of
RRFM2018-A0068	ANALYSIS OF THE ROD-DROP EXPERIMENTS PERFORMED DURING THE CABRI COMMISSIONING TESTS	Maillot, M. (1); Truchet, G. (1); Hudelot, J.-P. (2); Lecerf, J. (2) 1 - CEA/DEN/DER/SPRC, France 2 - CEA/DEn/DER/SRES, France
RRFM2018-A0077	REFLECTOR FEEDBACK COEFFICIENT: NEUTRONIC CONSIDERATIONS IN MTR-TYPE RESEARCH REACTORS	Manificier, L. (1); Chabert, L. (1); Boyard, M. (1) 1 - TechnicAtome, France

### Mo 15.20 – 15.50 Coffee break



**Mo 15.50 – 18.10 Parallel session: Research reactor fuel cycle II**

RRFM2018-A0129	USHPRR Fuel Fabrication Pillar: Fabrication Status, Process Optimizations & Future Plans	Wight, J. (1) 1 - PNNL, United States
RRFM2018-A0093	Progress of the LEU U-Mo Fabrication at BWXT Nuclear Operations Group, Inc.	Johnson, R. (1); Mayfield, R. (1); Guthrow, J. (1); Argon, G. (1) 1 - BWXT Nuclear Operations Group, Inc., United States
RRFM2018-A0054	U.S. Progress in U-Mo Monolithic Fuel Qualification	Rabin, B. (1); Meyer, M. (1); Cole, J. (1); Glagolenko, I. (1); Jones, W. (1); Keiser, D. (1); Jue, J.-F. (1); Moore, G. (1); Ozaltun, H. (1); Rice, F. (1); Robinson, A. (1); Smith, J. (1); Wachs, D. (1); Williams, W. (1); Woolstenhulme, N. (1); Zhang, Y. (1); Hofman, G. (2); Kim, Y. S. (2); Ye, B. (2) 1 - Idaho National Laboratory, United States 2 - Argonne National Laboratory, United States
RRFM2018-A0036	AN INVESTIGATION OF U-MO MICROSTRUCTURAL DIFFERENCES AFTER IRRADIATION AT DIFFERENT FISSION RATES, TEMPERATURES, AND MO CONTENTS	Keiser, jr., D. (1); Jue, J.-F. (1); Miller, B. (1); He, L. (1); Bachhav, M. (1); Jadernas, D. (1); Madden, J. (1); Robinson, A. (1) 1 - Idaho National Laboratory, United States
RRFM2018-A0111	DEFLECTION OF PLATES BY FLOW CHANNEL DISPARITIES IN RESEARCH REACTOR FUEL	Bojanowksi, C. (1); Solbrekken, G. (2); Schienders, G. (2); Rivers, J. (2); Tentner, A. (1); Wilson, E. (1); Foyto, L. (2) 1 - Nuclear Engineering Division, Argonne National Laboratory, United States 2 - University of Missouri-Columbia, United States
RRFM2018-A0013	TRANSIENT ANALYSIS AND THERMAL HYDRAULIC SAFETY MARGINS FOR NIGERIA MNSR LEU CORE WITH 13% ENRICHMENT USING PARET/ANL CODE	Jonah, S. (1) 1 - Centre for Energy Research and Training, Ahmadu Bello University, Zaria, Nigeria



RRFM2018-A0138	Laser Shock Fresh Fuel Bond Strength Studies	Smith, J. (1); Scott, C. (1); Rabin, B. (1) 1 - Idaho National Laboratory, United States
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**Mo 15.50 – 18.10 Parallel session: Innovative Methods II**

RRFM2018-A0080	Development of a software-based system for modelling research reactors using heuristics	Koppers, V. (1) 1 - Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) gGmbH, Germany
RRFM2018-A0087	JHR CORE FEATURES BASED ON TRIPOLI-4® AND CODE COMPARISON WITH MCNP-6	Privas, E. (1); Couybes, J. (1); Chabert, L. (1); Manificier, L. (1) 1 - TechnicAtome, France
RRFM2018-A0089	BEST ESTIMATE PLUS UNCERTAINTY APPROACH IN THE DESIGN OF NUCLEAR RESEARCH REACTORS	Lupiano Contreras, J. (1); Doval, A. S. (1) 1 - INVAP S.E., Argentina
RRFM2018-A0102	Characterizing the Integral Effects of Irradiation on Plate-type Fuel via Coupled Co-Simulation	Herter, J. (1); Jones, W. (1); Nielsen, J. (1) 1 - Idaho National Laboratory, Experiment Analysis Department, Nuclear Science & Technology, United States
RRFM2018-A0105	QUALIFICATION OF BERYLLIUM POISONING MODELS FOR MARIA AND JULES HOROWITZ REACTORS	Wroblewska, M. (1); Boettcher, A. (1); Sireta, P. (2); Blaise, P. (2); Marcinkowska, Z. (1); Pytel, K. (1); Jagielski, J. (1) 1 - National Centre For Nuclear Research, Poland 2 - French Alternative Energies and Atomic Energy Commission Cadarache, France
RRFM2018-A0107	Transport - Monte Carlo Analysis of the IRR1 Neutron Camera Flux Enabling Reactor Core Layout Optimization	Steinitz, U. (1); Krakovich, A. (1); Neder, I. (1) 1 - Soreq Nuclear Research Center, Israel
RRFM2018-A0108	Measurements of IRR1 Fuel Depletion Validating Whole-Core Monte-Carlo Simulations of More Than Thirty Years of Operation	Krakovich, A. (1); Aviv, O. (1); Danon, L. (1); Ben-Meir, K. (1); Hazensprung, N. (1); Steinitz, U. (1); Neder, I. (1) 1 - Soreq Nuclear Research Center, Israel



## Tuesday 13 March 2018

### **Tu 9.00 – 10.40 Parallel Session: Research reactor fuel cycle III**

RRFM2018-A0147	issue of novel trends in fuel alloying to reduce interaction	Savchenko, A. (1) 1 - A.A. Bochvar Institute (VNIINM), Russian Federation
RRFM2018-A0124	MEASUREMENTS OF THE THERMAL CONDUCTIVITY OF SPENT DISPERSION AND MONOLITHIC U-MO FUELS	Huber, T. (1); Breikreutz, H. (1); Reiter, C. (1); Petry, W. (1); Burkes, D. (2); Casella, A. (2); Schulthess, J. (3) 1 - Technische Universität München, Germany 2 - Pacific Northwest National Laboratory, United States 3 - Idaho National Laboratory, United States
RRFM2018-A0132	Preliminary Safety Analysis Report for Conversion of the MIT Research Reactor (MITR) to Low Enriched Uranium Fuel	Hu, L.-W. (1); Sun, K. (1); Dave, A. (1); Wilson, E. (2); Heltemes, T. (2) 1 - MIT Nuclear Reactor Laboratory, United States 2 - Argonne National Laboratory, United States
RRFM2018-A0130	Preliminary Safety Analysis Report for Conversion of the University of Missouri-Columbia Research Reactor to Low-Enriched Uranium Fuel	Foyto, L. (1); Kutikkad, K. (1); Peters, N. (1); Mckibben, J. (1); Stillman, J. (2); Feldman, E. (2); Heltemes, T. (2); Jaluvka, D. (2) 1 - University of Missouri-Columbia Research Reactor, United States 2 - Argonne National Laboratory, United States
RRFM2018-A0136	Y-12 NATIONAL SECURITY COMPLEX U-MO FABRICATION PROCESS IMPROVEMENTS	Longmire, H. (1); Hackett, G. (1); Henkel, J. (1); Henkel, M. (1); Hoppe, P. (1) 1 - Y-12 National Security Complex, United States

### **Tu 9.00 – 10.40 Parallel Session: Utilisation I**

RRFM2018-A0007	THE BRAZILIAN TRIGA IPR-R1 RESEARCH REACTOR: PERSPECTIVES OF UTILIZATION FOR INDUSTRY AND SOCIETY	Leal, A. S. (1) 1 - Centre of Development of Nuclear Technology (CDTN), Brazil
RRFM2018-A0018	The CEA scientific and technical offer as a designated ICERR (International Center based on Research Reactor) by the IAEA: first feedback with the prime Affiliates	Bignan, G. (1); Blanc, J.-Y. (1); Chaix, P. (1) 1 - CEA, France





RRFM2018-A0030	EFFECTIVE UTILIZATION OF THE WWR-SM RESEARCH REACTOR, UZBEKISTAN	Yuldashev, B. (1); Baytelesov, S. (1); Kungurov, F. (1) 1 - Institute of Nuclear Physics of Academy of Sciences of the Republic of Uzbekistan, Uzbekistan
RRFM2018-A0031	Tehran research reactor training program	Hosnirokh, A. (1) 1 - Reactor and safety school- Institute of science and technology-Atomic Energy Organization Of Iran, Iran, Islamic Republic of
RRFM2018-A0035	Quantitative Analysis by Prompt Gamma Activation Analysis (PGAA) of Hydrogen Embrittled Materials used in Subsea Oil & Gas Components under Cathodic Protection	Artnak, E. (1); Lu, Y. (2); Hall, L. (1); Landsberger, S. (1); Amaya, H. (2); Reyes, T. (2); Bayrak, M. (1) 1 - University of Texas, United States 2 - Schlumberger, United States

## Tu 10.40 – 11.00 Coffee break

## Tu 11.00 – 12.40 Parallel Session: Research reactor fuel cycle IV

RRFM2018-A0009	OXIDATION STUDIES OF MTR FUEL PLATES IN REACTOR CONDITIONS	Valdez Tordoya, D. (1); Haddad Andalaf, R. (1) 1 - CNEA, Argentina
RRFM2018-A0017	Plan of transportation and storage strategy for fuels of TRR due to pool steel lining repair	Keyvani Ghamsari, M. (1); Kardan, M. R. (1); Rokrok, B. (1) 1 - Atomic energy organization of IRAN- Nuclear Science and Technology Institute, Iran, Islamic Republic of
RRFM2018-A0020	CORROSION SURVEILLANCE PROGRAM OF SPENT MTR-TYPE FUEL ELEMENTS IN WET STORAGE SITES IN ARGENTINA.	Linardi, E. (1); Haddad Andalaf, R. (1) 1 - CNEA, Argentina
RRFM2018-A0023	Research Reactor Silicide Fuel Reprocessing At La Hague Plant	Valery, J.-F. (1); Vo Van, V. (1); Talbi, A. (1); Lavalette, C. (1); Halle, L. (1); Pechard, C. (2); Renault, X. (2) 1 - New AREVA, Courbevoie, France 2 - New AREVA La Hague, Beaumont-Hague, France
RRFM2018-A0049	HEU Removal from Poland	Bolshinsky, I. (1); Moses, S. (1); Krzysztozek, G. (2); Cholerzynski, A. (3); Tyacke, M. (1) 1 - Idaho National Laboratory, United States 2 - NCBJ/Maria, Poland 3 - ZUOP, Poland



## Tu 11.00 – 12.40 Parallel Session: Utilisation II

RRFM2018-A0037	CNS In-Pool Assembly Mechanical Design for OYSTER Project	Choi, J. (1); Ryu, J. (1); Gommers, R. (2); Molag, A. (2) 1 - Korea Atomic Energy Research Institute, Korea, Republic of 2 - Reactor Institute Delft, Delft University of Technology, Netherlands
RRFM2018-A0141	STATUS AND SCIENTIFIC USE OF THE TRIGA RESEARCH REACTOR AT THE UNIVERSITY OF MAINZ	Riemer, J. (1); Eberhardt, K. (1); Geppert, C. (1); Gorges, C. (1); Karpuk, S. (1) 1 - Institut für Kernchemie, Johannes Gutenberg-Universität Mainz, Germany
RRFM2018-A0055	Modeling of Adsorption Isotherms of iodine by ion exchange resins	Kamel, N. (1); Shehata, M. (2); Farahat, N. (1) 1 - Nuclear Research center, Egyptian Atomic Energy Authority, Egypt 2 - Chemistry department, faculty of science, Cairo University, Egypt
RRFM2018-A0062	New fuel in MARIA research reactor, providing better conditions for irradiation in the fast neutron spectrum.	Lipka, M. (1) 1 - National Centre for Nuclear Research, Poland
RRFM2018-A0069	RADIATION RESISTANCE OF ELASTOMERIC AND LUBRICATING MATERIALS IN TRIGA MARK II REACTOR MIXED NEUTRON AND GAMMA IRRADIATION FACILITY	Ferrari, M. (1); Zenoni, A. (1); Bignotti, F. (1); Donzella, A. (1); Donzella, G. (1); Paderno, D. (1); Pandini, S. (1); Villa, V. (1); Hartl, M. (2); Lee, Y. (2); Sjögreen, K. (2); Andrighetto, A. (3); Ballan, M. (3); Borgna, F. (3); Corradetti, S. (3); D'agostini, F. (3); Manzolaro, M. (3); Monetti, A. (3); Rossignoli, M. (3); Scarpa, D. (3); Salvini, A. (4); Zelaschi, F. (4) 1 - Department of Mechanical and Industrial Engineering, University of Brescia, Italy 2 - European Spallation Source ERIC, Lund, Sweden 3 - National Laboratories of Legnaro (LNL) of INFN, Legnaro, Italy 4 - Laboratory of Applied Nuclear Energy (LENA), University of Pavia, Italy
RRFM2018-A0074	The IAEA e-learning course on Neutron Activation Analysis	Bode, P. (1); Landsberger, S. (2); Ridikas, D. (3); Pessoa Barradas, N. (3) 1 - NUQAM Consultancy, Netherlands 2 - University of Texas, United States 3 - International Atomic Energy Agency, Austria



**Tu 12.40 – 13.30 Lunch break**

**Tu 13.30 – 14.30 Plenary Session: Poster Session**

**Tu 14.30 – 16.30 Parallel Session: Research reactor operation & maintenance and ageing management**

RRFM2018-A0008	Implementation of Verification and Validation for Replacement of HANARO Control Computer	Kim, H. K. (1); Lee, M. W. (1); Choi, Y. S. (1); Yim, Y. T. (1); Jung, H. S. (1) 1 - Korea Atomic Energy Research Institute, Korea, Republic of
RRFM2018-A0041	IMPROVEMENT OF THE THERMAL POWER MEASUREMENT METHOD AT THE HOR.	Winkelman, A. (1) 1 - Technical University Delft, Netherlands
RRFM2018-A0051	MODERNIZATION AND REFURBISHMENT OF INSTRUMENTATION AND CONTROL SYSTEM OF TEHRAN RESEARCH REACTOR (TRR)	Tajbakhsh, A. H. (1); Ezati, A. (1) 1 - Atomic Energy Organization of IRAN-Reactor and Nuclear Safety Research School, Iran, Islamic Republic of
RRFM2018-A0071	Inspection, Repair and Test of Pool Steel Lining in Tehran Research Reactor in the Framework of Aging Management Program	Kardan, M. R. (1); Ezati, A. (1); Mirvakili, S. M. (1); Hossnirokh, A. (1); Hadadi, M. (1); Tajbakhsh, A. H. (1); Keyvani, M. (1); Rokrok, B. (1); Salartash, R. (1) 1 - Reactor and nuclear safety research school, NSTRI, Tehran, Iran, Islamic Republic of
RRFM2018-A0088	Decontamination of pool lining and radiation facilities of Tehran Research Reactor during steel lining repairing	Salartash, R. (1) 1 - Tehran Research Reactor, Nuclear Science and Technology Research Institute, Iran, Islamic Republic of
RRFM2018-A0114	Challenges for the Radiation Protection Department in the Scientific Environment of a Research Reactor like FRM II	Schmidt, M. (1); Jeschke, F. (1); Kaleve, M. (1); Wolff, S. (1); Gerstenberg, H. (1); Krapf, E. (1) 1 - ZWE FRM II, Technische Universität München, Germany
RRFM2018-A0146	TRIGA Fuel Fabrication Facility Upgrade – Current Status and Restart Plan	Veca, A. (1); Morrell, D. (2); Herenstein, J. (3) 1 - General Atomics Corp., United States 2 - Idaho National Laboratory, United States 3 - AREVA - NP, France



## Tu 14.30 – 16.30 Utilisation III

RRFM2018-A0070	Feasibility study for production of Sc-47 from neutron irradiated Ca target for cancer theranostics applications	Gizawy, M. (1); Aydia, M. (1); Mohamed, N. (2); Soliman, M. (2); Shams El-Din, H. (1) 1 - Radioisotopes Production Facility (RPF), Egyptian Second Research Reactor (ETRR-2), Egyptian Atomic Energy Authority, Egypt 2 - Egyptian Second Research Reactor (ETRR-2), Egyptian Atomic Energy Authority, Egypt
RRFM2018-A0075	Proficiency Testing by Interlaboratory Comparison performed in 2010-2017 for Neutron Activation Analysis	Bode, P. (1); Ridikas, D. (2); Pessoa Barradas, N. (2) 1 - NUQAM Consultancy, Netherlands 2 - International Atomic Energy Agency, Austria
RRFM2018-A0086	BENCHMARK EXPERIMENTS AT THE JSI TRIGA REACTOR	Snoj, L. (1); Štancar, Ž. (1); Radulović, V. (1); Kaiba, T. (1); Lengar, I. (1); Merljak, V. (1); Trkov, A. (2); Pungercič, A. (1); Pungercič, I. V. (1); Žerovnik, G. (1) 1 - Jozef Stefan Institute, Slovenia 2 - IAEA, Austria
RRFM2018-A0090	Radiopharmaceutical Production Through the Utilization of TRIGA Nuclear Research Reactor. Dodaro, O.Aronica, G.Giorgiantoni, M.Olivetti, F.Pisacane, ENEA	Dodaro, A. (1); Aronica, O. (1); Giorgiantoni, G. (1); Olivetti, M. (1); Pisacane, F. (1) 1 - ENEA Italian National Agency for New Technologies, Energy and Sustainable Economic Development, Italy
RRFM2018-A0096	Analysis of the JSI TRIGA Pulse Experiments	Pungercič, A. (1); Vavtar, I. (1); Snoj, L. (1) 1 - Jozef Stefan Institute, Reactor Physics Department, Slovenia
RRFM2018-A0100	Strategic Thinking for a SLOWPOKE Facility	Chilian, C. (1) 1 - Polytechnique Montreal, Canada

## Tu 16.30 – 16.50 Coffee break

## Tu 17.00 – 18.40 Parallel Session: Fuel Cycle V

RRFM2018-A0059	Shipment of Spent Nuclear Fuel from Ghana to China by Air	Dewes, J. (1); Aboh, K. (2); Odoi, H. (2); Bolshinsky, I. (3); Tozser, S. (3) 1 - Savannah River National Laboratory, United States 2 - Ghana Atomic Energy Commission, Ghana 3 - Idaho National Laboratory, United States
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RRFM2018-A0116	Preparations for the First Spent Fuel Disposal from FRM II	Gerstenberg, H. (1); Kastenmueller, A. (1); Kudejova, P. (1); Pichlmaier, A. (1); Schmidt, M. (1) 1 - Technical University of Munich, Germany
RRFM2018-A0128	Research Reactor Spent Fuel Treatment Processes and Licensing	Morlaes, I. (1); Valery, J.-F. (1); Talbi, A. (1); Vo Van, V. (1); Stachetti, L. (2) 1 - NEW AREVA - AREVA NC, France 2 - NEW AREVA - AREVA TN, France
RRFM2018-A0061	NEW DUAL-PURPOSE CASK CASTOR® MTR 3 FOR DISPOSAL OF SPENT FUEL FROM RESEARCH REACTORS	Synder, L. (1) 1 - GNS Gesellschaft für Nuklear Services mbH, Germany
RRFM2018-A0032	HYDROTALCITE COATINGS FOR CORROSION PROTECTION OF SPENT ALUMINIUM-CLAD RR FUEL DURING WET STORAGE	Fernandes, S. (1); Correa, O. (1); De Souza, J. (1); Ramanathan, L. (1); Antunes, R. (2); Oliveira, M. (3) 1 - Instituto de Pesquisas Energéticas e Nucleares- IPEN, Brazil 2 - Engineering, Modeling and Applied Social Sciences Center (CECS), Federal University of ABC, Brazil 3 - Electrocell Ind. Com. Equip. Elet. LTDA, CIETEC, Brazil

### Tu 16.50 – 18.10 Parallel Session: Safety & Security

RRFM2018-A0065	Kurchatov Institute's Critical Assemblies	Gagarinskiy, A. (1) 1 - National Research Centre Kurchatov Institute, Russian Federation
RRFM2018-A0135	Primary Loop Pump Transient Simulation of Second Egyptian Research Reactor	Elkhatib, H. (1) 1 - Egyptian Atomic Energy Authority, Egypt
RRFM2018-A0038	Management of Domestic Nuclear Information for NNFL Development	Kraikaew, J.(1); Changkrueng, K. (1); Srijittawa, L. (1); Phaukkachane, P. (1); Thong-in, S. (1); Mungpayaban, H. (1) 1 - Regulatory Technical Support Division, Office of Atoms for Peace, Thailand
RRFM2018-A0044	Impact of Electric Power Disturbances on Physical Protection System Equipment and Solution Techniques in Nuclear Facilities	Hassan, H. (1) 1 - Egyptian Atomic Energy Authority, Egypt
RRFM2018-A0109	OVERVIEW OF THE IAEA COORDINATION RESEARCH PROJECT ON NUCLEAR SECURITY FOR RESEARCH REACTORS AND ASSOCIATED FACILITIES	Shull, D. (1) 1 - International Atomic Energy Agency, Austria



**Tu 19.30 – 22.30 Conference Dinner**

## Wednesday 14 March 2018

### **We 9.00 – 10.40 Parallel Session: Safety I**

RRFM2018-A0001	Influence of double-ended guillotine break on safety analysis of research reactors with narrow rectangular fuel channels	Rawashdeh, A. (1) 1 - Jordan Atomic Energy Commission, Jordan Research and Training Reactor, Jordan
RRFM2018-A0026	Enhancing Tehran Research Reactor Safety by Utilization of a Core Differential Pressure Measuring System	Abedi, E. (1); Mirvakili, S. M. (1); Davari, A. (1) 1 - Nuclear Science and Technology Research Institute (NSTRI), Iran, Islamic Republic of
RRFM2018-A0040	Graded Approach to Safety Regulation of Russian Nuclear Research Facilities: Present and Future	Sapozhnikov, A. (1) 1 - Federal Environmental, Industrial and Nuclear Supervision Service of Russia, Russian Federation
RRFM2018-A0042	VALIDATION OF THE HOR OSCAR4/MCNP MODEL FOR USE IN SAFETY STUDIES	Winkelman, A. (1); Van der Marck, S. (2) 1 - Technical University Delft, Netherlands 2 - Nuclear Research and Consultancy Group, Netherlands
RRFM2018-A0043	3 D Crash Calculation of Stack and Reactor Building of HTTR	Ono, M. (1); Fujiwara, Y. (1); Matsumoto, T. (2); Taki, N. (2); Iigaki, K. (1) 1 - Japan Atomic Energy Agency, Japan 2 - ESI Japan, Japan

### **We 9.00 – 10.40 Parallel Session: Decommissioning I**

RRFM2018-A0029	DECOMMISSIONING ACTIVITIES FOR FOTON IIN-3M RESEARCH REACTOR, UZBEKISTAN	Baytelesov, S. (1); Yuldashev, B. (1); Kungurov, F. (1); Maksumov, N. (1) 1 - Institute of Nuclear Physics, Uzbekistan
RRFM2018-A0039	Decommissioning Plan of JRR-4	Ishikuro, Y. (1); Hirane, N. (1); Kato, T. (1) 1 - Japan Atomic Energy Agency, Japan
RRFM2018-A0046	Decommissioning CONSORT – Reactor Tank Internal Support Structures	Chambers, T. (1); Phillips, H. (1) 1 - Imperial College, United Kingdom
RRFM2018-A0053	Radiochemical characterization of a waste stream at the Petten's High Flux Reactor: The case of Ion Exchange Resins	Ménard, G. (1); Haass, P. (1); Tomasberger, T. (1) 1 - Nuclear Research and Consultancy Group (NRG), Netherlands

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REACTOR CONFERENCE 2018



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RRFM2018-A0064	ESTIMATING THE RADIOACTIVE INVENTORY OF THE CONCRETE GROUND PLATE AND THE GRAPHITE REFLECTOR AT THE TRIGA VIENNA	Stummer, T. (1); Villa, M. (1); Böck, H. (1) 1 - Technical University Vienna - Atominstitut, Austria
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## We 10.40 – 11.00 Coffee break

## We 11.00 – 13.00 Parallel Session: Safety II

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RRFM2018-A0052	ESTABLISH AND IMPLEMENTATION AN INTEGRATED MANAGEMENT SYSTEM IN TEHRAN RESEARCH REACTOR.	Abbasi Siar, F. (1); Kardan, M. R. (1); Ezzati, A. (1) 1 - Nuclear Science and Technology Institute, Reactor and Nuclear Safety school, Iran, Islamic Republic of
RRFM2018-A0057	LESSON LEARNED FROM EVENT REPORTS FOR HANARO RESEARCH REACTOR IN KOREA	Lee, H.-K. (1); Shin, G. (1) 1 - Korea Institute of Nuclear Safety, Korea, Republic of
RRFM2018-A0081	Enhancement of research reactors safety regulations system	Sapozhnikov, A. (1); Polyakov, D. (1); Kuryndin, A. (2); Kirkin, A. (2); Karyakin, M. (2) 1 - Federal Environmental, Industrial and Nuclear Supervision Service, Russian Federation 2 - Scientific and Engineering Centre for Nuclear and Radiation Safety, Russian Federation
RRFM2018-A0104	On the Reassessment of Safety Assessment Reports and the Restart of University Research Reactors	Unesaki, H. (1); Misawa, T. (1); Nakajima, K. (1); Kamae, K. (1); Uebayashi, H. (1); Hori, J.-I. (1); Yamamoto, T. (1) 1 - Kyoto University Research Reactor Institute, Japan
RRFM2018-A0112	Safety Assessment of the RSK for the German Research Reactors after Fukushima with Special Emphasis on Measures Applicable for the FRM II	Pichlmaier, A. (1); Kastenmüller, A. (1); Schätzlein, R. (1) 1 - Technische Universität München, ZWE FRM II, Germany
RRFM2018-A0125	Simulation of Consequences of Severe Accidents for TRIGA MARK II Reactor in Vienna with RODOS	Langegger, E. (1); Böck, H. (1) 1 - TU Wien, Austria

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## We 11.00 – 13.00 Parallel Session: Decommissioning II

RRFM2018-A0066	Reuse of recycled aggregates resulted from decommissioning of the VVR-S nuclear research reactor from Magurele	Gurau, D. (1); Stanga, D. (1); Zorliu, A. (1); Deju, R. (1) 1 - Horia Hulubei National Institute for Physics and Nuclear Engineering, Romania
RRFM2018-A0083	Strategies of radiological characterization for materials resulted from the decommissioning of the VVR-S nuclear research reactor from Romania	Gurau, D. (1); Stanga, D. (1) 1 - Horia Hulubei National Institute for Physics and Nuclear Engineering, Romania
RRFM2018-A0094	The TN®MW, a new optimized cask for Research Reactors' waste management.	Talbi, A. (1); Boogaerts, A. (2); Hervé, C. (1); Ghobriani, M. (1); Valery, J.-F. (1); Vo Van, V. (1); Grandhomme, C. (3); Kerr, B. (3) 1 - NEW AREVA, France 2 - Institute for Radioelements, Belgium 3 - NEW AREVA, AREVA TN, France
RRFM2018-A0106	CHALLENGES FOR DECOMMISSIONING OF RESEARCH REACTORS AND COST ESTIMATION	Corica, D. (1); Gui, P. (1); Pilorusso, D. (1); Troiani, F. (1) 1 - SOGIN S.p.A., Italy
RRFM2018-A0113	DECOMMISSIONING OF GERMANY'S FIRST NUCLEAR REACTOR	Lichnovsky, U. (1); Pichlmaier, A. (1); Kastenmüller, A. (1) 1 - FRM II, Technische Universität München, Germany

## We 13.00 – 13.40 Lunch break

## We 13.40 – 15.00 New Projects I

RRFM2018-A0027	Initial Operation Experience and Near Future Utilization Plans at the Jordan Research and Training Reactor	Farouki, I. (1); Hamdan, K. (1); Jun, B.-J. (1); Alkhafaji, S. (1) 1 - Jordan Atomic Energy Commission, Jordan
RRFM2018-A0034	Feasibility Study for Categorisation of Demonstration Reactor as a Research Reactor	Shin, G. S. (1) 1 - KINS, Korea, Republic of
RRFM2018-A0072	Neutronics Experiment Results in Commissioning Stage B of JRTR	Kim, K.-O. (1); Jun, B. J. (1); Lee, B. (1); Park, S.-J. (1); Park, J. S. (1); Kim, H.-S. (1); Yoo, H. J. (1); Roh, G. (1); Kim, Y.-K. (1) 1 - Korea Atomic Energy Research Institute, Korea, Republic of
RRFM2018-A0092	EXPERIMENTAL LOAD: CORE & REACTOR BLOCK DESIGN AND SAFETY	Boyard, M. (1); Bernard, C. (1); Manificier, L. (1); Bouteiller, J.-Y. (1); Roux, L. (1) 1 - TechnicAtome, France





**We 15.00 – 15.15 Coffee break**

**We 15.15 – 16.35 New Projects II**

RRFM2018-A0126	JULES HOROWITZ REACTOR PROJECT: PREPARATION OF THE COMMISSIONING PHASE AND NORMAL OPERATION	Marcille, O. (1); Bravo, X. (1); Bignan, G. (1); Pillot, F. (1); Fabre, J. L. (1); Fardeau, A. (1) 1 - French Alternative Energies and Atomic Energy Commission (CEA) - Nuclear Energy Division, France
RRFM2018-A0127	EXPERIMENTAL DEVICES IN JULES HOROWITZ REACTOR AND FIRST ORIENTATIONS FOR THE EXPERIMENTAL PROGRAMS	Gonnier, C. (1); Pillot, F. (1); Bignan, G. (1); Maugard, B. (1) 1 - CEA, France
	CONSTRUCTION OF CENTER OF NUCLEAR RESEARCH AND TECHNOLOGIES IN BOLIVIA	Vysotskiy, D. (1) 1- ROSATOM, Russian Federation
	MYRRHA Project Status at end-2017 and New Implementation Plan	N.N. (1) 1- SCK-CEN

**We 16.35 – 17.00 Plenary Session: Closing**

**Thursday 15 March 2018**

**Technical Tours**

## Poster

RRFM2018-A0002	Utilisation of the Thermal Neutron Beam at Research Reactors for Testing Steel Materials Used for the Construction of their Key Components	Mraz, L. (1); Hervochoes, C. (2); Vrana, M. (2); Mikula, P. (2); Kotora, J. (3) 1 - Welding Research Institute - Industrial Institute SR, Slovakia 2 - Nuclear Physics Institute ASCR, Czech Republic 3 - SES Tlmače, Slovak Republic, Slovakia
RRFM2018-A0004	MANUFACTURING LOW ENRICHED METALLIC URANIUM BY MAGNESIOTHERMIC REDUCTION FROM UF <sub>4</sub>	Durazzo, M. (1); Saliba-Silva, A. M. (1); Martins, I. C. (1); Urano de Carvalho, E. F. (1); Riella, H. G. (2) 1 - Nuclear and Energy Research Institute - IPEN/CNEN-SP, Brazil 2 - Chemical Engineering Department, Santa Catarina Federal University, Brazil
RRFM2018-A0010	AGEING MANAGEMENT PROGRAM AT THE TRIGA RC-1 RESEARCH REACTOR	Carta, M. (1); Falconi, L. (1); Fabrizio, V. (1); Palomba, M. (1); Santoro, E. (1) 1 - ENEA, Italy
RRFM2018-A0011	RSV TAPIRO RESEARCH REACTOR MAINTENANCE PROGRAM	Carta, M. (1); Falconi, L. (1); Santagata, A. (1); Cesaroni, M. (1); Ratto, A. (1); Bianchi, B. (1); Ricci, P. (1) 1 - ENEA, Italy
RRFM2018-A0012	A PRELIMINARY STUDY FOR THE UTILIZATION OF THE TRIGA RC-1 RESEARCH REACTOR AS A FACILITY FOR RADIATION DAMAGE	Carta, M. (1); Falconi, L. (1); Fabrizio, V. (1); Palomba, M. (1); Santoro, E. (1) 1 - ENEA, Italy
RRFM2018-A0014	Effect of Reactor Operator Intervention during Unprotected LOFA in a Typical MTR	Ali, A. (1) 1 - Egyptian Atomic Energy Authority, Egypt
RRFM2018-A0015	Thermal Hydraulic Analysis of Unprotected LOFA in a Typical MTR Reactor	Ali, A. (1) 1 - Egyptian Atomic Energy Authority, Egypt
RRFM2018-A0016	The Experiment Research of Ghana MNSR With LEU Core	Li, Y. (1); Peng, D. (1); Hong, J. (1); Lu, J. (1); Wu, X. (1); Hao, Q. (1); Pan, L. (1) 1 - China Institute of Atomic Energy, China
RRFM2018-A0022	COMPARISON OF MEASURED AND CALCULATED HYDRAULIC PARAMETERS FOR RECH-1 CHILEAN REACTOR FUEL ELEMENT	Gutiérrez ulloa, C. R. (1); Olivares salinas, L. U. (1); Manríquez alegría, E. B. (2) 1 - Chilean Commission of Nuclear Energy , Chile 2 - University of Chile , Chile
RRFM2018-A0024	Assessment of safety aspects of performing fuel irradiation experiments in TRR core	Safaei Arshi, S. (1); Mirvakili, S. M. (1); Khalafi, H. (1) 1 - Nuclear Science and Technology Research

		Institute (NSTRI), Iran, Islamic Republic of
RRFM2018-A0060	RELIABILITY ANALYSIS OF PRIMARY PUMP JE01-AP01 AT RSG-GAS: A CASE STUDY OF MAINTENANCE MANAGEMENT SYSTEM	Busono, P. (1) 1 - National Nuclear Energy Agency, Indonesia
RRFM2018-A0063	Criticality Experiments on U-H <sub>2</sub> O Lattices with 19.75% Enriched UZrCN Fuel	Sikorin, S. (1); Mandzik, S. (1); Kuzmin, A. (1); Polazau, S. (1); Hryharovich, T. (1) 1 - The Joint Institute for Power and Nuclear Research – Sosny of the National Academy of Science of Belarus, Belarus
RRFM2018-A0067	New neutron shielding materials	Garnier, T. (1); Matar, M. (1); Filère, C. (1) 1 - ROBATEL Industries, France
RRFM2018-A0078	CHARACTERISATION OF MOROCCAN TRIGA MARK 2 REACTOR NEUTRON BEAMS USING NEUTRON ACTIVATION DETECTORS, MCNPX AND SAND II CODE	Amsil, H. (1); Embarch, K. (1); Bounouira, H. (1); Bounakhla, M. (1); Laraki, K. (1); Marah, H. (1); Chetaine, A. (2); Viererbl, L. (3); Iahodova, Z. (3) 1 - Nuclear center of Energy, Science and Nuclear Techniques, Morocco 2 - Nuclear Physics Laboratory, Faculty of Science, Mohammed V University, Rabat, Morocco 3 - Research Centre Rez, Ltd, Czech Republic
RRFM2018-A0079	Optimization of a new cuboid nuclear fuel concept for long life SMR	Amsil, H. (1); Chetain, A. (2); Benchrif, A. (1); Charouq, S. (2); Lebied, O. (2) 1 - Nuclear Center of Energy Science and Nuclear Techniques, Morocco 2 - Nuclear Physics Laboratory, Faculty of Science, Mohammed V University, Rabat, Morocco
RRFM2018-A0082	Concept for developing a research reactor analysis simulator based on German reference reactor	Koppers, V. (1); Cuesta Morales, A. (1) 1 - Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) gGmbH, Germany
RRFM2018-A0084	Characterization of EMPIRE and SEMPER FIDELIS plates with PVD-coated U(Mo) particles, before irradiation	Iltis, X. (1); Tarsien, N. (1); Palancher, H. (1); Vanni, F. (2); Stepnik, B. (2); Van den Berghe, S. (3); Leenaers, A. (3); Glagolenko, I. (4); Keiser, D. (4) 1 - CEA, DEN, DEC, France 2 - AREVA NP, CERCA, SPL, France 3 - Nuclear Material Science Institute, SCK-CEN, Belgium 4 - Nuclear Fuels and Materials Division, Idaho National Laboratory, United States
RRFM2018-A0085	Engineering Design for In-Pile Tests in Research Reactor and Investigations in Fast Critical Assembly of UZrCN LEU Fuel	Sikorin, S. (1); Kuzmin, A. (1); Mandzik, S. (1); Polazau, S. (1); Hryharovich, T. (1); Tukhvatulin, S.

		(2); Galev, I. (2); Bakhin, A. (2); Izhutov, A. (3); Alekseev, V. (3); Keiser, D. (4); Bolshinsky, I. (4); Gohar, Y. (5) 1 - Joint Institute for Power and Nuclear Research – Sosny, Belarus 2 - Scientific Research Institute Scientific Industrial Association "LUCH", Russian Federation 3 - State Scientific Center - Research Institute of Atomic Reactors, Russian Federation 4 - Idaho National Laboratory, United States 5 - Argonne National Laboratory, United States
RRFM2018-A0095	Update of neutronic analysis of KUCA Dry core using LEU fuel	Aliberti, G. (1); Sano, T. (2); Morman, J. A. (1); Stevens, J. G. (1); Unesaki, H. (2); Misawa, T. (2); Stepnik, B. (3) 1 - Argonne National Laboratory, United States 2 - Kyoto University Research Reactor Institute, Japan 3 - AREVA - NP, France
RRFM2018-A0098	TRACKING MICROBIOLOGICALLY INDUCED CORROSION IN AN MTR SPENT FUEL ELEMENTS STORAGE POOL	Linardi, E. (1); Oppedo, O. (1); Flores, M. (1); Ratner, M. (1); Forte Giacobone, A. (1) 1 - Comisión Nacional de Energía Atómica, Argentina
RRFM2018-A0115	IT security at the German research reactor FRM II based on the German IT security guideline SEWD-IT	Baun, M. (1); Brosche, R. (1); Kastenmüller, A. (1) 1 - Technische Universität München, ZWE FRM II, Germany
RRFM2018-A0118	Preliminary modelling results of the UMO dispersed fuel plate hot-rolling manufacturing process	Allenou, J. (1); Stepnik, B. (1); Bourdat, G. (1); Rontard, C. (1); Gaillac, A. (2); Pigeat, X. (2); Le Millier, M. (2) 1 - AREVA NP - CERCA, France 2 - AREVA NP - Component Research Center, France
RRFM2018-A0119	Preliminary Uranium manufacturing studies of the KUCA LEU conversion fuels	Stepnik, B. (1); Coullomb, C. (1); Allenou, J. (1); Rontard, C. (1); Unesaki, H. (2); Morman, J. (3); Stevens, J. (3) 1 - AREVA NP - CERCA, France 2 - KURRI, Japan 3 - ANL, United States
RRFM2018-A0121	Characterization of the LEU UMO mini-plates used in EMPIRE irradiation experiment	Vanni, F. (1); Stepnik, B. (1); Tougait, O. (2); Housaer, F. (2); Palancher, H. (3); Iltis, X. (3); Glagolenko, I. (4); Schultness, J. (4); Hammond, M. (4); Keiser, D. (4); Yacout, A. (5); Van den

		Berghe, S. (6); Leenaers, A. (6) 1 - AREVA NP - CERCA, France 2 - UCCS - Université de Lille 1, France 3 - CEA, France 4 - INL, United States 5 - ANL, United States 6 - SCK-CEN, Belgium
RRFM2018-A0122	High Temperature Option for the TUM PVD Zr Coating Process for Monolithic U-Mo Fuel Foils	Lo Muzio, S. (1); Baumeister, B. (1); Steyer, C. (1); Schwarz, C. (1); Breitzkreutz, H. (1); Petry, W. (1) 1 - Forschungs-Neutronenquelle Heinz Maier-Leibnitz (FRM II), Germany
RRFM2018-A0134	99Mo /99mTc Generator Based on Alumina 99Mo-Molybdate (VI) Gel of High Radionuclidic Purity	Fasih, T. (1) 1 - EAEA, Egypt
RRFM2018-A0140	STATISTICAL STUDY OF U-Mo-Zry-4 MINIPLATES FABRICATION PROCESS	López, M. (1); Picchetti, B. (1); Taboada, H. H. (1)  1 - Comisión Nacional de Energía Atómica, Argentina
RRFM2018-A0142	Safety and Security of Energy Supply to Support the Physical Protection of Nuclear Facilities	Fadl, O. F. (1)  1 - Egyptian Atomic Energy Authority (EAEA), Egypt
RRFM2018-A0143	The porosity formation effect on irradiated UO <sub>2</sub> fuel thermal conductivity in high burnup structure	Roustaei, B. (1); Kazeminejad, H. (1); Khakshournia, S. (1)  1 - Nuclear Science and Technology Research Institute (NSTRI), Iran, Islamic Republic of
RRFM2018-A0148	CALCULATING THE NUCLIDE INVENTORY OF FIR 1 TRIGA REACTOR FUEL	Räty, A. (1); Häkkinen, S. (1); Auterinen, I. (1)  1 - VTT Technical Research Centre of Finland Ltd, Finland

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11 - 15 March 2018