

RRFM

EUROPEAN RESEARCH
REACTOR CONFERENCE **2018**



Programme

11 – 15 March 2018

Munich, Germany



ENS CONFERENCE

Organised in cooperation with





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Sunday 11 March 2018

17:00 - 19:00 Pre-registration

18:00 – 19:30 Welcome Reception

The RRFM 2018 Welcome Reception is sponsored by



ROSATOM

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

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Mo 10.30 – 12.00 Plenary Session II

Chair: S. van Dyck, SCK-CEN, Belgium; Co-Chair: H. Böck, TU Vienna, Austria

EURATOM Research and Training and future perspectives

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

HEU Minimization: The Evolving U.S. role in Converting Civilian Research Reactors from HEU to LEU fuel

Brian Waud, NNSA, United States

RRFM 2018 Student Competition

RRFM2018-A0047	SURROGATE-BASED OPTIMIZATION MODEL OF BEST-REPRESENTATIVITY SODIUM FAST REACTOR SEVERE CORE ACCIDENT REACTIVITY EFFECTS IN THE ZEPHYR CRITICAL FACILITY	Margulis, M. (1); Blaise, P. (1); Gilad, E. (2) 1 - DEN-DER/SPESI, CEA Cadarache, France 2 - The Unit of Nuclear Engineering, Ben-Gurion University of the Negev, Israel
RRFM2018-A0097	Steady state simulation of RMB Multipurpose Brazilian Reactor with Serpent nuclear code	M. Vidal, G. A. (1); S. Vieira, T. A. (2); Vasconcelos, V. (1); Campagnoli Santos, A. A. (1); Campolina, D. (1) 1 - CDTN, Brazil 2 - UFMG, Brazil
RRFM2018-A0101	Burnup Calculations of the TRIGA Research Reactor using deterministic and stochastic codes	Pungerčič, A. (1); Čalić, D. (1); Snoj, L. (1) 1 - Jozef Stefan Institute, Reactor Physics Department, Slovenia
RRFM2018-A0117	Measurement of spectral averaged cross sections in special core in LR-0 reactor	Košťál, M. (1); Schulc, M. (1); Šimon, J. (1); Burianová, N. (1); Rypar, V. (1) 1 - Research Centre Rez, Czech Republic
RRFM2018-A0123	Manufacturing Processes for Inert Monolithic Mini-Size Fuel Foils with Thickness Gradient	Baumeister, B. (1); Schwarz, C. (1); Steyer, C. (1); Breitreutz, H. (1); Petry, W. (1) 1 - Forschungs-Neutronenquelle Heinz Maier-Leibnitz (FRM II), Germany
RRFM2018-A0139	Microstructure and thermal analysis of U-Mn alloys	Cea, A. (1); Leenaers, A. (1); Pardoën, T. (2) 1 - Nuclear Materials Science Institute, SCK•CEN, Belgium 2 - Institute of Mechanics, Materials and Civil Engineering, Université catholique de Louvain, Belgium

Mo 12.00 – 13.00 Lunch break

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Mo 13.00 – 15.00 Parallel session: Research reactor fuel cycle I

Chair: A. Leenaers, SCK-CEN

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); Breitskreutz, 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 - Framatome, 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); Breitskreutz, H. (3); Petry, W. (3); Palancher, H. (4); Hervieu, E. (4); Calzavara, Y. (5); Guyon, H. (5) 1 - Framatome - 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); Shi, J. (2); Breitskreutz, H. (2); Salvato, D. (3); Leenaers, A. (3); Van den Berghe, S. (3); Bergeron, A. (1) 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); Breitskreutz, H. (1); Petry, W. (1) 1 - Forschungs-Neutronenquelle Heinz Maier-Leibnitz (FRM II), Technische Universität München, Germany

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Mo 13.00 – 15.00 Parallel session: Innovative Methods I

Chair: A. Röhrmoser, TU Munich, Germany

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-A0080	Development of a software-based system for modelling research reactors using heuristics	Koppers, V. (1); Koch, M. K. (2) 1 - Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) gGmbH, Germany 2 - Ruhr-Universität Bochum (RUB), Germany
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-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 15.00 – 15.20 Coffee break

Mo 15.20 – 16.20 Plenary Session: Poster Session

Mo 16.20 – 18.00 Parallel session: Research reactor fuel cycle II

Chair: B. Stepnik, FRAMATOME, CERCA, France

RRFM2018-A0144	Advanced PIE of the SELENIUM 1a experiment	Leenaers, A. (1); Van den Berghe, S. (1); Van Eyken, J. (1); Jeong, Y. J. (2); Kim, S. (. H.). (2); Park, J. M. (2) 1 - SCK•CEN, Belgium 2 - KAERI, Korea, Republic of
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RRFM2018-A0129	USHPRR Fuel Fabrication Pillar: Fabrication Status, Process Optimizations & Future Plans	Wight, J. (1); Joshi, V. (1); Lavender, C. (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

Mo 16.20 – 18.00 Parallel session: Utilisation I

Chair : A. Douvneau, TechnicAtome, France

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-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-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
RRFM2018-A0100	Strategic Thinking for a SLOWPOKE Facility	Chilian, C. (1) 1 - Polytechnique Montreal, Canada
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

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Tuesday 13 March 2018

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

Chair: T. Hanlon, IAEA

RRFM2018-A0111	DEFLECTION OF PLATES BY FLOW CHANNEL DISPARITIES IN RESEARCH REACTOR FUEL	Bojanowski, 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); Cole, J. (1) 1 - Idaho National Laboratory, United States
RRFM2018-A0147	The issue of novel trends in fuel alloying to reduce interaction	Savchenko, A. (1) 1 - A.A. Bochvar Institute (VNIINM), Russian Federation

Tu 9.00 – 10.40 Parallel Session: Innovative Methods II

Chair: G. Hofman, Argonne National Laboratory, United States

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); Herzog, H. (2) 1 - Technische Universität Wien, Austria 2 - University of Vienna, Austria
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

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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); Hazenshrung, N. (1); Steinitz, U. (1); Neder, I. (1) 1 - Soreq Nuclear Research Center, Israel

Tu 10.40 – 11.10 Coffee break

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Tu 11.10 – 12.50 Parallel Session: Research reactor fuel cycle IV

Chair: B. Waud, NNSA, United States

RRFM2018-A0124	MEASUREMENTS OF THE THERMAL CONDUCTIVITY OF SPENT DISPERSION AND MONOLITHIC U-MO FUELS	Huber, T. (1); Breitreutz, H. (1); Reiter, C. (1); Petry, W. (1); Burkes, D. (2); Casella, A. (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	Transitional Cores and Fuel Cycle Analyses in support of MIT Reactor Low Enriched Uranium Fuel Conversion	Hu, L.-W. (1); Sun, K. (1); Dave, A. (1); Wilson, E. (2); Heltemes, T. (2); Pham, S. (2); Jaluvka, D. (2) 1 - MIT Nuclear Reactor Laboratory, United States 2 - Argonne National Laboratory, United States

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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-A0009	OXIDATION STUDIES OF MTR FUEL PLATES IN REACTOR CONDITIONS	Valdez Tordoya, D. (1); Haddad Andalaf, R. (1) 1 - CNEA, Argentina
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

Tu 11.10 – 12.50 Parallel Session: Utilisation II

Chair : H. Gerstenberg, TU Munich, Germany

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 THE TRIGA MARK II REACTOR MIXED NEUTRON AND GAMMA IRRADIATION FACILITY	Ferrari, M. (1); Zenoni, A. (1); Battini, D. (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); Sjögren, 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

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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); Goričanec, T. (1); Lengar, I. (1); Merljak, V. (1); Trkov, A. (1); Žerovnik, G. (1); Barbot, L. (2); Fourmentel, D. (2); Destouches, C. (2); Villard, J.-F. (2) 1 - Jozef Stefan Institute, Slovenia 2 - CEA, DEN, DER, Instrumentation Sensors and Dosimetry Laboratory, France
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

Tu 12.50 – 13.50 Lunch break

Tu 13.50 – 15.50 Parallel Session: Research reactor fuel cycle V

Chair: I. Morlaes, Orano, France

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 - Orano, France 2 - Orano La 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
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
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

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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 - Orano, France 2 - Orano TN, France
RRFM2018-A0061	NEW DUAL-PURPOSE CASK CASTOR® MTR 3 FOR DISPOSAL OF SPENT FUEL FROM RESEARCH REACTORS	Synder, L. (1); Heß, C. (1); Graf, J. M. (1) 1 - GNS Gesellschaft für Nuklear Services mbH, Germany

Tu 13.50 – 15.50 Parallel Session: Safety and Security

Chair: J. Estrade, Institut Laue Langevin, France

RRFM2018-A0065	Kurchatov Institute's Critical Assemblies	Gagarinskiy, A. (1) 1 - National Research Centre Kurchatov Institute, Russian Federation
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-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
RRFM2018-A0153	IMPLEMENTATION OF FUNCTION RESTORATION GUIDELINES AT THE HFR IN PETTEN	Slootman, M. (1); Van Zanten, T. (1) 1 - NRG, Netherlands
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 an Consultancy Group, Netherlands

Tu 15.50 – 16.20 Coffee break

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Tu 16.20 – 17.40 Parallel Session: Research reactor operation & maintenance and ageing management

Chair: C. Kaaijk, TU Delft, The Netherlands

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-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 - Framatome, France

Tu 16.20 – 17.40 Parallel Session: Utilisation III

Chair : M. Cagnazzo, TU Vienna, Austria

RRFM2018-A0090	Radiopharmaceutical Production Through the Utilization of TRIGA Nuclear Research Reactor.	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	Pungerčič, A. (1); Vavtar, I. (1); Snoj, L. (1) 1 - Jozef Stefan Institute, Reactor Physics Department, Slovenia
RRFM2018-A0157	Overview and Status of the US Nuclear Science User Facilities (NSUF)	Kennedy, R. (1) 1 - Idaho National Laboratory, United States

Tu 19.30 – 22.30 Conference Dinner

The drinks will be on Framatome!



Wednesday 14 March 2018

We 9.20 – 11.00 Parallel Session: Decommissioning and dismantling of research reactors and waste management

Chair: J.F. Valéry, Orano, France

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
RRFM2018-A0064	ESTIMATING THE RADIOACTIVE WASTE VOLUME OF THE CONCRETE GROUND PLATE AT THE TRIGA VIENNA	Stummer, T. (1); Villa, M. (1); Böck, H. (1) 1 - Technical University Vienna - Atominstitut, Austria
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

We 9.20 – 11.00 Parallel Session: Research Reactor Safety

Chair: A. Yacout, Argonne National Laboratory; United States

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
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 in Japan	Unesaki, H. (1); Misawa, T. (1); Nakajima, K. (1); Kamae, K. (1); Uebayashi, H. (1); Hori, J.-I. (1); Yamamoto, T. (1); Shiga, H. (1) 1 - Kyoto University Research Reactor Institute, Japan

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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); Gerstenberg, H. (1); Kastenmüller, A. (1); Krokowski, C. (1); Lichnovsky, U. (1); Schätzlein, R. (1); Schmidt, M. (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); Villa, M. (1) 1 - TU Wien, Austria

We 11.00 – 11.30 Coffee break

We 11.30 – 12.30 Parallel Session: Decommissioning and dismantling of research reactors and waste management

Chair: H. Phillips, Imperial College, UK

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 - Orano, France 2 - Institute for Radioelements, Belgium 3 - Orano TN, France
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 11.30 – 12.30 Parallel Session: New Projects

Chair: A. Winkelman, TU Delft, The Netherlands

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-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

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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
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We 12.30 – 13.30 Lunch break

We 13.30 – 14.50 New Projects II

Chair: G. Bignan, CEA, France

	CONSTRUCTION OF CENTER OF NUCLEAR RESEARCH AND TECHNOLOGIES IN BOLIVIA	Kuatbekov, R. (1); Caceres Choque, L.F. (2) 1- ROSATOM, Russian Federation 2 - Agencia Boliviana de Energia Nuclear
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
RRFM2018-A0126	JULES HOROWITZ REACTOR PROJECT: PREPARATION OF THE COMMISSIONING PHASE AND NORMAL OPERATION	Marcille, O. (1); Bignan, G. (1); Pillot, F. (1); Fabre, J. L. (1); Fardeau, A. (1); Vallée, R. (1) 1 - French Alternative Energies and Atomic Energy Commission (CEA) - Nuclear Energy Division, France
RRFM2018-A0150	MYRRHA Project Status at end-2017 and New Implementation Plan - MYRRHA various neutron sources and their application for fuel & material R&D	Aït Abderrahim, H. (1); Baeten, P. (1); Van den Eynde, G. (1); Vandeplassche, D. (1); Angulo Pérez, C. (1); Popescu, L. (1); Terentyev, D. (1); Stankovskiy, A. (1) 1 - SCK-CEN, Belgium

We 14.50 – 15.30 Plenary Session: Closing

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

Announcement of the RRFM 2018 Student Competition
Announcement of the winner of the Best Poster Award

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); Katora, 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 UF4	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-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-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-A0063	Criticality Experiments on U-H ₂ O Lattices with 19.75% Enriched UZrCN Fuel	Sikorin, S. (1); Mandzik, S. (1); Kuzmin, A. (1); Polazau, S. (1); Hryharovich, T. (1); Razmyslovich, Y. (1); Urbanovich, A. (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

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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); Lahodova, 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); Lebled, O. (2); Shaita, A. (2); Jalil, A. (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); Palancher, H. (1); Vanni, F. (2); Allenou, J. (2); Stepnik, B. (2); Leenaers, A. (3); Van den Berghe, S. (3); Keiser, D. (4); Glagolenko, I. (4) 1 - CEA, DEN, DEC, Cadarache, F-13108 Saint-Paul-Lez-Durance, France 2 - FRAMATOME, CERCA, 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

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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 - Framatome, France
RRFM2018-A0098	TRACKING MICROBIOLOGICALLY INDUCED CORROSION IN AN MTR SPENT FUEL ELEMENTS STORAGE POOL	Linardi, E. (1); Oppezzo, 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 - Framatome - CERCA, France 2 - Framatome - 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 - Framatome - 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); Palanchar, 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 - Framatome - 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

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RRFM2018-A0143	The porosity formation effect on irradiated UO ₂ fuel thermal conductivity in high burnup structure	Roostaii, 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
RRFM2018-A0149	Study of models for high burn behavior of uranium-7% gadolinium fuel rods for pressurized light water reactors	Mattos, C. E. (1); Teixeira e Silva, A. (1); Urano de Carvalho, E. (1) 1 - Nuclear and Energy Research Institute - IPEN/CNEN-SP, Brazil
RRFM2018-A0156	Characterizing the Fracture Toughness Properties of Aluminum I-rod Removed from the Nuclear Universal Reactor	Bach, M. (1) 1 - Canadian Nuclear Laboratories, Canada
RRFM2018-A0158	Hafnium data for description of criticality of FRM II reactor control and safety rods	Roehrmoser, A. (1) 1 - TU Munich, Germany
RRFM2018-A0	DEFINING CRITERIA FOR THE STABILITY UNDER FABRICATION OF γ -UMo NUCLEAR FUEL ALLOYS BY DIFFERENTIAL THERMAL ANALYSIS	Branco Vaz de Oliveira, F. (1); Durazzo, M. (1) ; Fontenelle Urano de Carvalho, E. (1) ; Gracher Riella, H. (2) 1 - Nuclear and Energy Research Institute - IPEN/CNEN-SP, Brazil 2 - Santa Catarina Federal University Florianópolis – SC, Brazil

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