



# Global 2015 Meeting Program (as of September 19th)

**PROGRAM AT A GLANCE** 

# Monday, September 21, 2015

09:15 - 10:45

**Opening Session** 

Christophe Béhar, GLOBAL General Chairman, Nuclear Energy Division Director, CEA, France Dominique Minière, Group Executive Vice President, Chief Operating Officer, EDF, France Philippe Knoche, Chief Executive Officer, AREVA, France Gerassimos Thomas, Deputy Director General, DG Energy, European Commission

#### 10:45 - 12:15

#### Panel 1 > How Can Nuclear Energy Help to Fight Climate Change?

Chaired by Christophe Béhar, GLOBAL General Chairman, Nuclear Energy Division Director, CEA, France

### Speakers:

Marco Baroni, Senior Analyst, International Energy Agency

Guillaume Dureau, Member of the Executive Board, Senior Executive Vice President Back-End, AREVA, France

Kirsty Gogan, Director, Energy For Humanity, USA

Takuya Hattori, Senior Adviser, JAIF, Japan

John Kelly, Deputy Assistant Secretary for Nuclear Reactor Technologies, US DOE, USA

Pan Jianming, Board Secretary, CNNC, China

Daniel Verwaerde, Chairman, CEA, France

# 12:15 - 13:30 > Welcome Cocktail & Exhibition Opening

### 13:45 - 15:15

# Panel 2 > Nuclear Energy Opportunities and Challenges

Moderated by Jean-Pol Poncelet, Executive Director, FORATOM

#### Speakers:

Soon Heung Chang, President, Handong University, Republic of Korea

Robin Grimes, Chief Scientific Counsellor, Foreign Office, UK

William Magwood, Director General, OECD/NEA

Vyascheslav Pershukov, Deputy Director General, ROSATOM, Russia

Phumzile Tshelane, Chief Executive Officer, NECSA, South Africa

Olivier Wantz, Member of the Executive Board, Senior Executive Vice President Mining and Front End, AREVA, France

## 15:15 - 15:30 > Coffee Break

**15:30 - 17:10 > Technical Sessions – Period 1** (Detailed Program hereafter)

17:10 - 17:20 > Coffee Break

17:20 - 19:00 > Technical Sessions - Period 2 (Detailed Program hereafter)



# Tuesday, September 22, 2015

#### 08:15 - 10:25

Plenary 1 > Sustainable Nuclear Energy Systems

Chaired by Yutaka Sagayama, Assistant to the President, JAEA, Japan

Co-chaired by Luc Van Den Durpel, Managing Director, Nuclear-21\_Net, Belgium

#### Speakers:

Christophe Behar, GLOBAL General Chairman, Nuclear Energy Division Director, CEA, France

John Kelly, Deputy Assistant Secretary for Nuclear Reactor Technologies, US DOE, USA

Michel Pays, Strategy and Risks Manager, EDF, France

Yutaka Sagayama, Assistant to the President, JAEA, Japan

Andrew Sowder, Principal Technical Leader, EPRI, USA

Richard Stainsby, Chief Technologist Fuel Cycle Solutions, NNL, UK

Vladimir Usanov, Chief Researcher, IPPE-Obninsk, Russia

Guoan Ye, Vice President, CIAE, China

#### 10:25 - 10:30

Presentation of GLOBAL 2017 by Dr Myung-Jae Song, President, KRS, Republic of Korea

10:30 - 11:00 > Coffee Break

11:00 - 13:00 > Technical Sessions - Period 3 (Detailed Program hereafter)

13:00 - 14:00 > Lunch Break

#### 14:00 - 15:30

Plenary 2 > Uranium: Needs and Resources

Chaired by Michel Pays, Strategy and Risks Manager, EDF, France

Co-chaired by Pierre Durante, Vice President Marketing and Strategy, Mining Front End Sales, AREVA, France

#### Speakers:

Mavag Chadraabal, Head of Nuclear Technology Department, Executive Office of Nuclear Energy Commission, Mongolia

Guerman Kornilov, Vice President Managing Director, Uranium One Holding, The Netherlands

Armand Laferrere, Senior Vice President, International Public Affairs, AREVA, France

Michel Pays, Strategy and Risks Manager, EDF, France

15:30 - 15:45 > Coffee Break

15:45 - 18:35 > Technical Sessions - Period 4 (Detailed Program hereafter)

19:30 - 22:30 > Conference Reception at the Eiffel Tower

# Wednesday, September 23, 2015

# 08:15 - 09:45

Panel 3 > Plutonium Management: Main Stakes and Options

Chaired by Hervé Bernard, Special Advisor to the CEA Chairman, France

#### Speakers:

Alexander Bychkov, Adviser of the Chief Executive Officer, ROSATOM, Russia

Philippe Gillet, Executive Vice President Sales Department, Back End Business Group, AREVA, France

John Herczeg, Deputy Assistant Secretary for Fuel Cycle Technologies, US DOE, USA

Yutaka Sagayama, Assistant to the President, JAEA, Japan

Fiona Rayment, Director for Fuel Cycle Solutions, NNL, UK



09:45 - 10:15 > Coffee Break

10:15 - 12:15 > Technical Sessions - Period 5 (Detailed Program hereafter)

12:15 - 13:30 > Lunch Break

13:30 - 15:00

Panel 4 > Back-end: What Are the Possible Breakthroughs?

Moderated by Jean-Paul Glatz, Director Nuclear Chemistry, JRC-ITU

Speakers:

Il Soon Hwang, Professor, Seoul National University, Republic of Korea

**Christophe Poinssot,** Head of Radiochemistry and Processes Department, Nuclear Energy Division, CEA, France **Terry Todd**, National Director, Material Recovery and Waste Forms Development, INL, USA

Guoan Ye, Vice President, CIAE, China

15:00 - 15:15 > Coffee Break

**15:15 - 16:55 > Technical Sessions – Period 6** (Detailed Program hereafter)

16:55 - 17:05 > Coffee Break

17:05 - 19:05 > Technical Sessions - Period 7 (Detailed Program hereafter)

### Thursday, September 24, 2015

08:15 - 10:00

Plenary 3 > High Level Waste Final Disposal

Chaired by Pierre-Marie Abadie, Chief Executive Officer, ANDRA, France

Speakers:

Pierre-Marie Abadie, Chief Executive Officer, ANDRA, France

Monica Hammarström, Chair of the IGD-TP, SKB, Sweden

Mikhail Siemann, Head of Division Radiological Protection and Radioactive Waste Management, OECD/ NEA

Myung-Jae Song, President KRS, Republic of Korea

Piet Zuidema, Director Science and Technology, NAGRA, Switzerland

10:00 - 10:15 > Coffee Break

10:15 - 13:05 > Technical Sessions - Period 8 (Detailed Program hereafter)

13:05 - 13:45 > Lunch Break

13:45 - 15:00

Panel 5 > Challenges for Education and Public Confidence

Chaired by Yves Bréchet, High Commissioner for Atomic Energy, France

Speakers:

Philip Beeley, Professor of Practice and Chair, Nuclear Engineering, Khalifa University, UAE

Yves Fanjas, Director of International Institute of Nuclear Energy, France

Michael Chudakov, Deputy Director General and Head of the Department of Nuclear Energy, IAEA

Dawn Vinall, Business Development Manager, National Skills Academy For Nuclear, UK

Grzegorz Wrochna, Director of the National Center for Nuclear Research, Poland



### 15:00 - 15:45

### Panel 6 > Fukushima, 4 Years Later

Chaired by **Bernard Boullis**, GLOBAL Technical Program Chair, Director Nuclear Fuel Cycle Back-End Programs, CEA, France

# Speakers:

Naohiro Masuda, Managing Executive Director, TEPCO, Japan

Kazuhiro Suzuki, Managing Director Nuclear Damage and Decommissioning Facilitation Corporation, Japan

# 15:45 - 16:00

# **Closing Session**

Bernard Boullis, GLOBAL Technical Program Chair, Director Nuclear Fuel Cycle Back-End Programs, CEA, France

# Friday, September 25, 2015

AREVA La Hague Plant - Technical Visit

ANDRA Underground Research Laboratory - Technical Visit



### Monday, September 21, 2015 · 15:30-1710

- (Room 1) 1a-1 Nuclear Energy Outlook-I
- (Room 3) 2a-1 Current Industrial Practices in Water-cooled
  Reactors
- (Room 2) 2d-1 Sodium-Cooled Fast Reactors-I
- (Room 7) 2g-1 Nuclear Fuel Cycle Simulation Codes
- (Room 6) 4e-1 Prototype and Industrial Plants: Industrial Feedback
- (Room 5) 4f.1-1 Partitioning and Transmutation: Fuels and Recycling Processes: FP Separation-I
- (Room 8) 5c.1 Strategic and Technical Development in D&D: D&D Programs & Regulatory Frameworks
- (Room 9) 5d-1 Experience in VLLW and LILW Disposal-I

# Monday, September 21, 2015 · 17:20-19:00

- (Room 1) 1a-2 Nuclear Energy Outlook-II
- (Room 3) 2a-2 Advanced Fuel Cycle Options for Thermal Neutron Reactor Systems
- (Room 2) 2d-2 Sodium-Cooled Fast Reactors-II
- (Room 7) 2g-2 Nuclear Reactor Physics and Fuel Cycle Analysis-I
- (Room 4) 4a-1 LWR Used Fuel Processing: Monitoring
- (Room 6) 4e-2 Prototype and Industrial Plants: Future Projects
- (Room 5) 4f.1-2 Partitioning and Transmutation: Fuels and Recycling Processes: FP Separation-II
- (Room 8) 5c.2-1 Strategic and Technical Development in D&D: Techniques and Processes – Characterization-I
- (Room 9) 5d-2 Experience in VLLW and LILW Disposal-II

# Tuesday, September 22, 2015 · 11:00-13:00

- (Room 1) 1c New Applications of Nuclear Energy
- (Room 3) 2b-1 Transient Scenario Analysis towards Sustainable Nuclear Energy Systems-I
- (Room 7) 3f Front-end Markets Updates, Prospects, Uranium Exploration and Mining
- (Room 4) 4a-2 LWR Used Fuel Processing: Separation Processes-
- (Room 5) 4f.1-3 Partitioning and Transmutation: Fuels and Recycling Processes: Separation-I
- (Room 6) 4f.2-1 Partitioning and Transmutation: Fuels and Recycling Processes: Transmutation Metallic Fuels
- (Room 8) 5b-1 Storage of Used Nuclear Fuel and Waste-I
- (Room 2) 5c.2-2 Strategic and Technical Development in D&D: Techniques and Processes – Characterization-II
- (Room 9) 6a-3 Safeguards

# Tuesday, September 22, 2015 · 15:45-18:35

- (Room 1) 1b Nuclear Energy and Energy Market Dynamics
- (Room 3) 2b-2 Transient Scenario Analysis towards Sustainable Nuclear Energy Systems-II
- (Room 4) 4a-3 LWR Used Fuel Processing: Waste & Contaminants
- (Room 7) 4b-1 Fuel Pyroprocessing: Processes
- (Room 5) 4f.1-4 Partitioning and Transmutation: Fuels and Recycling Processes: Separation-II
- (Room 6) 4f.2-2 Partitioning and Transmutation: Fuels and Recycling Processes: Transmutation Non-metallic
- (Room 8) 5b-2 Storage of Used Nuclear Fuel and Waste-II
- (Room 2) 5c.3-1 Strategic and Technical Development in D&D: Techniques and Processes – Decontamination-I
- (Room 9) 6a-1 Proliferation Resistance and Technical Aspects of Safeguards

### Wednesday, September 23, 2015 · 10:15-12:15

- (Room 1) 1d Natural Resources
- (Room 3) 2c Pu-management Options
- (Room 2) 2d-3 Non-SFR Gen-IV Reactor Designs
- (Room 7) 3e Nuclear Fuel Design and Fabrication
- (Room 4) 4a-4 LWR Used Fuel Processing: Dissolution
- (Room 6) 4b-2 Fuel Pyroprocessing: Analyses
- (Room 5) 4f.1-5 Partitioning and Transmutation: Fuels and Recycling Processes: Speciation
- (Room 8) 5b-3 Storage of Used Nuclear Fuel and Waste-III
- (Room 9) 5c.3-2 Strategic and Technical Development in D&D: Techniques and Processes – Decontamination-II [10:15-11:15]
- (Room 9) 5c.4 Strategic and Technical Development in D&D: Techniques and Processes - Cutting, Remote Handling, Simulation [11:15-12:15]

# Wednesday, September 23, 2015 · 15:15-16:55

- (Room 2) 2d-4 Molten Salt Reactors
- (Room 1) 2g-3 Nuclear Reactor Physics and Fuel Cycle Analysis-II
- (Room 7) 3g Advances in Processes and Technologies
- (Room 4) 4a-5 LWR Used Fuel Processing: Separation Processes-
- (Room 3) 4b-3 Fuel Pyroprocessing: Technology
- (Room 6) 4d-1 Final Waste Conditioning: Effluent Conditioning
- (Room 5) 4f.1-6 Partitioning and Transmutation: Fuels and Recycling Processes: Partitioning Processes-I
- (Room 8) 5e-1 Progress in Geological Disposal from Siting to Industrial Implementation-I
- (Room 9) 6b Public Confidence

# Wednesday, September 23, 2015 · 17:05-19:05

- (Room 3) 2e-2 Accelerator-Driven Systems
- (Room 2) 2f-1 Thorium Fuel Cycles-I
- (Room 1) 2g-4 Nuclear Reactor Physics & Fuel Cycle Analysis-III
- (Room 7) 3c Uranium Ore Processing and Uranium Conversion
- (Room 4) 4c-1 Fast Neutron Reactor Fuel Manufacturing and Processing: Future Reprocessing
- (Room 6) 4d-2 Final Waste Conditioning: Cement
- (Room 5) 4f.1-7 Partitioning and Transmutation: Fuels and Recycling Processes: Partitioning Processes-II
- (Room 9) 5a Policies and Strategies in Radioactive Waste Management
- (Room 8) 5e-2 Progress in Geological Disposal from Siting to Industrial Implementation-II

# Thursday, September 24, 2015 · 10:15-13:05

- (Room 1) 1e Environmental and Health Impact
- (Room 3) 2e-1 Partitioning and Transmutation
- (Room 2) 2f-2 Thorium Fuel Cycles-II
- (Room 7) 4b-4 Fuel Pyroprocessing: Separation
- (Room 4) 4c-2 Fast Neutron Reactor Fuel Manufacturing and Processing: Future Fuels
- (Room 6) 4d-3 Final Waste Conditioning: Glass
- (Room 5) 4f.1-8 Partitioning and Transmutation: Fuels and Recycling Processes: Kinetics-modeling
- (Room 8) 5c.5 Strategic and Technical Development in D&D: Site and Building Rehabilitation [10:15-11:35]
- (Room 8) 5c.6 Strategic and Technical Development in D&D: Material Management Recycling and Reuse [11:45-13:05]
- (Room 9) 6c Human Capacity Building



# Monday, September 21, 2015 · 15:30-1710

#### 1a-1 Nuclear Energy Outlook-I

Monday, September 21, 2015 · 15:30-1710 (Room 1)

Session Chairs: KEPPLER Jan Horst (OECD NEA), DEVEZEAUX DE LAVERGNE Jean-guy (SFEN « Economic » Technical Expert Group)

- 15:30-15:50 [5007]-World Nuclear Association Nuclear Fuel Outlook to 2035, EMSLEY Ian (World Nuclear Association GB)
- 15:50-16:10 [5044]-Nuclear Power Fleet Replacement: An Opportunity for the French Energy Mix?, CANY Camille (CEA FR)
- 16:10-16:30 [5129]-The Future of Nuclear Power in China: Long-Term Scenarios, PALTSEV Sergey (MIT US)
- 16:30-16:50 [5115]-Medium-term Nuclear Industry Prospects Associated with Synergistic LWR/SFR System and Related Closed Nuclear Fuel Cycle, USANOV Vladimir (Rosatom RU)

#### 2a-1 Current Industrial Practices in Water-cooled Reactors

Monday, September 21, 2015 · 15:30-1710 (Room 3)

Session Chairs: REMPE Joy (Rempe and Associates)? LECARPENTIER David (EDF)

- 15:30-15:50 [5302]-On the Issues of Uranium Reprocessed from High Burnup Fuels, ARTISIUK Vladimir (Rosatom RU)
- 15:50-16:10 [5425]-Susquehanna Unit 1 EOC 16 Fuel Deposit Analysis/Characterization, POP Mike (AREVA US)
- 16:10-16:30 [5483]-AREVA "Sustainable Cycle Solutions", DREVON Caroline (AREVA FR)
- 16:30-16:50 [5507]-Recycling LWR RepU in PHWR: A Promising Solution, SENENTZ Gerald (AREVA FR)

#### 2d-1 Sodium-Cooled Fast Reactors-I

Monday, September 21, 2015 · 15:30-1710 (Room 2)

Session Chairs: YONG Yang (CIEA), GROUILLER Jean-Paul (CEA)

- 15:30-15:50 [5247]-Flop Casting of Nuclear Materials for Advanced Fuel Cycle Research, SWIFT Andrew (University of Nevada, Las Vegas US)
- 15:50-16:10 [5038]-Gas Tungsten Arc Welding Technique Developed for SFR Fuel Rod Fabrication, LEE Jung Won (KAERI KR)
- 16:10-16:30 [5342]-Analysis of Rare Earth Element Effect on Core Physics of KALIMER-600 TRU Burner, KIM Sang Ji (KAERI KR)
- 16:30-16:50 [5454]-Analytical Developments for High Precision Isotopic Measurements on Transmutation Targets in the Phenix Fast Neutron Reactor, VERCOUTER Thomas (CEA FR)

### 2g-1 Nuclear Fuel Cycle Simulation Codes

Monday, September 21, 2015 · 15:30-1710 (Room 7)

Session Chairs: TAIWO Temitope (ANL), CHABERT Christine (CEA)

- 15:30-15:50 [5232]-COSI6: A Tool for Nuclear Transition Scenarios Studies, ESCHBACH Romain (CEA FR)
- 15:50-16:10 [5229]-Cross Checking of the New Capabilities of the Fuel Cycle Scenario Code TR\_EVOL, ALVAREZ-VELARDE Francisco (CIEMAT ES)
- 16:10-16:30 [5061]-The Application of CYCLUS to Fuel Cycle Transition Analysis, FENG Bo (ANL US)
- 16:30-16:50 [5493]-Advanced Codes & Methods Supporting Improved Fuel Cycle Economy, THAREAU Sebastien (AREVA FR)
- 16:50-17:10 [5505]-Dynamic Analysis of Nuclear Energy System Strategies: DANESS v7, VAN DEN DURPEL Luc (Nuclear-21.Net BE)

#### 4e-1 Prototype and Industrial Plants: Industrial Feedback

Monday, September 21, 2015 · 15:30-1710 (Room 6)

Session Chairs: RAYMENT Fiona E. (National Nuclear Laboratory), DINH Binh (CEA)

- 15:30-15:50 [5393]-EDF Utility Experience Feedback in Used Fuel Reprocessing, PAUVERT Olivier (EDF FR)
- 15:50-16:10 [5440]-Overview on RRSF Reprocessing, from Spent Fuel Transportation to Vitrified Residues Storage, DOMINGO Xavier (AREVA FR)
- 16:10-16:30 [5439]-Status on Silicide Fuel Reprocessing at AREVA La Hague Plant (2015), VALERY Jean-François (AREVA FR)
- 16:30-16:50 [5492]-The La Hague Used Fuel Reprocessing Performance in 2014, GILLET Philippe (AREVA FR)

# 4f.1-1 Partitioning and Transmutation: Fuels and Recycling Processes: FP Separation-I

Monday, September 21, 2015 · 15:30-1710 (Room 5)

Session Chairs: EKBERG Christian (Chalmers University of Technology), BOURG Stéphane (CEA)

- 15:30-15:50 [5062]-A Study on Adsorption Properties of Ion-exchange Resins Bearing N,N,N-trimethylglycine to Rh(III), Ru(III) and Pd(II) for Developing Separation Techniques from High-level Liquid Waste, SUZUKI Tomoya (JAEA JP)
- 15:50-16:10 [5195]-Extraction of Molybdenum from CERMET Target Dissolution Solutions Using CYANEX® 600, GEIST Andreas (Karlsruhe Institute of Technology DE)
- 16:10-16:30 [5338]-Proposal and Feasibility of Liquid-Liquid Extraction with Polyethylene Glycol for Partitioning of Molybdenum and Ruthenium, ENOKIDA Youichi (Nagoya University JP)
- 16:30-16:50 [5387]-Development of Separation Process of PGMs and Mo from High-level Liquid Waste for the Stable Operation of Vitrification Process, TAKESHITA Kenji (Tokyo Institute of Technology JP)

# 5c.1 Strategic and Technical Development in D&D: D&D Programs & Regulatory Frameworks

Monday, September 21, 2015 · 15:30-1710 (Room 8)

Session Chairs: BOUCAU Joseph (Westinghouse), PIKETTY Laurence (CEA)

- 15:30-15:50 [5072]-Current Status of Decommissioning Activities in JAEA (Second Midterm Plan from FY2010 to FY2014),
  TACHIBANA Mitsuo (JAEA JP)
- 15:50-16:10 [5109]-Development of Experimental Irradiation Capabilities to Address a Variety of Challenges in Decommissioning and Disposal, LEAY Laura (*The University of Manchester GB*)
- 16:10-16:30 [5258]-The Challenge of Information Management during Decommissioning, LIDAR Per (Studsvik SE)
- 16:30-16:50 [5310]-Costs and Funding of Decommissioning Nuclear Power Reactors, ROTHWELL Geoffrey (OECD/NEA FR)

# 5d-1 Experience in VLLW and LILW Disposal-I

Monday, September 21, 2015 · 15:30-1710 (Room 9)

Session Chair: DUTZER Michel (ANDRA)

- 15:30-15:50 [5353]-Optimization of Waste Management in Decommissioning, HEDIN Gunnar (Westinghouse SE)
- 15:50-16:10 [5377]-Advances in the Design and Licensing Process of the National Repository for LILW Waste in Bulgaria, GONZALEZ Emliano (Westinghouse ES)
- 16:10-16:30 [5379]-Treatment of LLW Metals for Waste Minimization and Recycling, LARSSON Arne (Studsvik SE)
- 16:30-16:50 [5455]-Why Do Nuclear Waste Characterizations Require Intercomparisons Tests and New Standards?, FICHET Pascal (CEA FR)
- 16:50-17:10 [5467]-Challenges for the Long Term Management of Low Level and Very Low Level Wastes in France, DUTZER Michel (Andra FR)

# Monday, September 21, 2015 · 17:20-19:00

### 1a-2 Nuclear Energy Outlook-II

Monday, September 21, 2015 · 17:20-19:00 (Room 1)

Session Chairs: KEPPLER Jan Horst (OECD NEA), DEVEZEAUX DE LAVERGNE Jean-guy (SFEN « Economic » Technical Expert Group)

- 17:20-17:40 [5301]-Overview of the OECD Nuclear Energy Agengy Scientific Activities on the Nuclear Fuel Cycle, CORNET Stéphanie (OECD/NEA FR)
- 17:40-18:00 [5347]-Deployable Nuclear Fleet Based on Available Quantities of Uranium and Reactor Types The Case of Fast Reactors Started up with Enriched Uranium, BASCHWITZ Anne (CEA FR)
- 18:00-18:20 [5404]-Nuclear Power in the WEC Partitions: Jazz and Symphony, MONCOMBLE Jean Eudes (*Conseil Français de l'Energie FR*)
- 18:20-18:40 [5409]-Realising the Full Contribution of Nuclear Power to Combat Climate Change, KEPPLER Jan Horst (OECD/NEA FR)

### 2a-2 Advanced Fuel Cycle Options for Thermal Neutron Reactor Systems

Monday, September 21, 2015 · 17:20-19:00 (Room 3)

Session Chairs: MATHERS Dan (National Nuclear Laboratory), WESTLÉN Daniel (Vattenfall)

- 17:20-17:40 [5205]-Assessment of the Economics of SiC Clad Fuel in the EPR, GROVE Christopher (NNL GB)
- 17:40-18:00 [5374]-An Engineering Solution for Accident Tolerant LWR Fuel Assemblies, WELLS Alan (NEUCON TECHNOLOGY US)
- 18:00-18:20 [5048]-PWR Fuel Pin Diameter Optimisation Studies and Economic Analyses for Uranium Nitride Fuel, MATHERS Daniel (NNL GB)
- 18:20-18:40 [5218]-Core Design of Zero-Release LWR Using Coated Particle Fuel, SUZUKI Takaya (Tokyo City University JP)

#### 2d-2 Sodium-Cooled Fast Reactors-II

Monday, September 21, 2015 · 17:20-19:00 (Room 2)

Session Chairs: YONG Yang (CIEA), TAKEDA Toshikazu (University of Fukui)

- 17:20-17:40 [5178]-Core Design Study on Actinide Burning Fast Reactors, OHKI Shigeo (JAEA JP)
- 17:40-18:00 [5084]-Modeling Lanthanide Transport in Metal Fuels with BISON, UNAL Cetin (LANL US)
- 18:00-18:20 [5162]-Asymptotic Analysis for FCMI Problem of Sodium Cooled Fast Reactor Fuels, KIM Hyung-Kyu (KAERI KR)
- 18:20-18:40 [5127]-Relevance of Passive Safety Testing at the Fast Flux Test Facility to Advanced Liquid Metal Reactors, WOOTAN David (PNNL US)
- 18:40-19:00 [5458]-Visualization Study of Ex-Pin Phenomena for SFR with Metal Fuel under Severe Accidents, HEO Hyo (UNIST KR)

# 2g-2 Nuclear Reactor Physics and Fuel Cycle Analysis-I

Monday, September 21, 2015 · 17:20-19:00 (Room 7)

Session Chairs: MASSARA Simone (OECD NEA), VAN DEN DURPEL Luc (Nuclear-21.Net)

17:20-17:40 [5220]-Analysis of Uncertainty Propagation in Scenario Studies: Surrogate Models Application to the French Historical PWR Fleet, KRIVTCHIK Guillaume (CEA - FR)



- 17:40-18:00 [5307]-A Method for Hedging Against Uncertainties in Nuclear Futures, PHATHANAPIROM Urairisa (University of Texas at Austin US)
- 18:00-18:20 [5187]-Multiobjective Optimization for Nuclear Fleet Evolution Scenarios Using COSI, FREYNET David (CEA FR)
- 18:20-18:40 [5160]-Integration of "Balance Model" into Software Package and Dynamic Modeling of Closed Nuclear Fuel Cycle Technologies Material Balance, TRETYAKOVA Svetlana (Bochvar Institute RU)

#### 4a-1 LWR Used Fuel Processing: Monitoring

Monday, September 21, 2015 · 17:20-19:00 (Room 4)

Session Chairs: ROUDIL Danièle (CEA), HERLET Nathalie (CEA)

- 17:20-17:40 [5146]-In-Line Near Real Time Monitoring of Fluid Streams in Separation Processes for Used Nuclear Fuel, NILSSON Mikael (University of California, Irvine US)
- 17:40-18:00 [5320]-A Preliminary Evaluation of Rotational Vol-oxidizer for Hot Cell Operation, KIM Young Hwan (KAERI KR)
- 18:00-18:20 [5364]-Radiological and Chemical Analysis of Medium and High Activity Samples: The Example of LAMM Laboratory in the ATALANTE Facility, RIVIER Cedric (CEA FR)
- 18:20-18:40 [5501]-Advances in Online Monitoring for Measurement within Nuclear Fuel Reprocessing Streams, BRYAN Samuel (PNNL US)

# **4e-2** Prototype and Industrial Plants: Future Projects

Monday, September 21, 2015 · 17:20-19:00 (Room 6)

Session Chairs: YE Guoan (CIAE), SENENTZ Gérald (AREVA)

- 17:20-17:40 [5078]-Experimental-Demonstration Centre as a Key Element of Creation of an Integrated Centre for NPP Spent Fuel Reprocessing at MCC (Zheleznogorsk, Russia), FEDOROV Yuriy (Khlopin Radium Institute RU)
- 17:40-18:00 [5386]-A Mock-up Test of Effectiveness of Combustibility for Organic Solvents and Electric Cables, and of the Fire Extinction at Early Stage in the Reprocessing Plant, TAIRA Masaharu (JNFL JP)
- 18:00-18:20 [5411]-From R&D to Industrialization: AREVA's Experience Illustrated through TCP Project, GOLLES Nicolas (AREVA FR)
- 18:20-18:40 [5438]-Update on the Polyvalent Fuel Treatment Facility (TCP): Shearing and Dissolution of Used Fuel at La Hague Facility, GILLET Philippe (AREVA FR)
- 18:40-19:00 [5448]-AFC, Facilities for the Future, FAVET Dominique (AREVA FR)

# 4f.1-2 Partitioning and Transmutation: Fuels and Recycling Processes: FP Separation-II

Monday, September 21, 2015 · 17:20-19:00 (Room 5)

Session Chairs: TAKESHITA Kenji (Tokyo Institute of Technology), BARRÉ Yves (CEA)

- 17:20-17:40 [5134]-Smart Hydrogel Microspheres Using Calixcrown Molecules as Cross-linking Units for Selective Uptake and Thermo-triggered Release of Cesium, YE Gang (Tsinghua University CN)
- 17:40-18:00 [5144]-1,3-Alternate Calix[4]arene-crown-6 Functionalized Core-Shell-Shell Magnetic Composite Microspheres for the Removal of Cesium from Strong HNO3 Media, YI Rong (Tsinghua University CN)
- 18:00-18:20 [5170]-Investigation on Selective Separation of Sr(II) from High Level Liquid Waste Using a Macroporous Silica-based Absorbent, KIM Seong-Yun (*Tohoku University KR*)
- 18:20-18:40 [5282]-Separation of Cs-137 and Sr-90 from Acidic Radioactive Wastes Using Liquid Membrane Based Eeparation Methods, MOHAPATRA Prasanta (Bhabha Atomic Research Centre IN)

#### 5c.2-1 Strategic and Technical Development in D&D: Techniques and Processes - Characterization-I

Monday, September 21, 2015 · 17:20-19:00 (Room 8)

Session Chair: IVANOV Oleg (Kurchatov Institute)

- 17:20-17:40 [5091]-Mobile Platform for Radiological Investigations of Soils under PETRUS Hot Cell in Fontenay-aux-Roses (Building 18), GOUDEAU Vincent (CEA FR)
- 17:40-18:00 [5102]-Radiological Mapping of Nuclear Facilities under Dismantlement Drawn up by Digital Autoradiography Technique, HAUDEBOURG Raphael (CEA FR)
- 18:00-18:20 [5120]-Development of Different Analytical Techniques to Investigate Radionuclides Difficult to Measure and to Improve Detection Limits, FICHET Pascal (CEA FR)
- 18:20-18:40 [5151]-Underwater Spectrometric Systems for Characterization of Radioactive Contamination, IVANOV Oleg (NRC Kurchatov Institute RU)
- 18:40-19:00 [5496]-Chooz-A Steam Generators Characterization, AITAMMAR Laurie (EDF FR)

#### 5d-2 Experience in VLLW and LILW Disposal-II

Monday, September 21, 2015 · 17:20-19:00 (Room 9)

Session Chair: BONHOMME Gaetan (Kurion)

- 17:20-17:40 [5266]-A Permanent Disposal Solution for Temporary or Failed Radioactive Waste Treatment Methods, BONHOMME Gaetan (Kurion US)
- 17:40-18:00 [5450]-Corrosion Monitoring in Mixture Cement Paste Bentonite, BATAILLON Christian (CEA FR)
- 18:00-18:20 [5476]-Study the Adsorption Parameters of Buffer/Backfill Materials for Radioactive Waste Disposal Sites, TU Yu Lin (National Cheng Kung University TW)



# Tuesday, September 22, 2015 · 11:00-13:00

#### 1c New Applications of Nuclear Energy

Tuesday, September 22, 2015 · 11:00-13:00 (Room 1)

Session Chairs: GOLAY Michael (MIT), SAFA Henri (I2EN)

- 11:00-11:20 [5023]-DEMOCRITOS: Preparing Demonstrators for High Power Nuclear Electric Space Propulsion, TINSLEY Tim (NNL GB)
- 11:20-11:40 [5276]-The US Nuclear Science User Facilities, KENNEDY Rory (INL US)
- 11:40-12:00 [5392]-Initial Economical Appraisal of Nuclear District Heating in France, JASSERAND Frédéric (CEA FR)
- 12:00-12:20 [5431]-Energetic and Economic Cost of Nuclear Heat Impact on the Cost of Desalination, DARDOUR Saied (CEA FR)
- 12:20-12:40 [5474]-Developing Timely, Desirable Future Low-Carbon Energy Economies, GOLAY Michael (MIT US)

#### 2b-1 Transient Scenario Analysis towards Sustainable Nuclear Energy Systems-I

Tuesday, September 22, 2015 · 11:00-13:00 (Room 3)

Session Chairs: WIGELAND Roald (INL), GARZENNE Claude (EDF)

- 11:00-11:20 [5012]-Moving from Closed to Open Fuel Cycle within the UK while Keeping Future Fuel Cycle Options Open, RAYMENT Fiona Elizabeth (NNL GB)
- 11:20-11:40 [5351]-Considerations on Industrial Feasibility for Scenarios with Progressive Deployment of Pu Multirecycling in SFR in the French Nuclear Power Fleet, CHABERT Christine (CEA FR)
- 11:40-12:00 [5503]-Globally Sustainable Nuclear Energy System with Regional Competitiveness, VAN DEN DURPEL Luc (Nuclear-21.Net BE)
- 12:00-12:20 [5114]-Transition Analysis of Promising U.S. Future Fuel Cycles Using ORION, SUNNY Eva (ORNL US)
- 12:20-12:40 [5060]-Analysis of Transition to Fuel Cycle Systems with Continuous Recycling in Fast and Thermal Reactors, FENG Bo (ANL US)

#### 3f Front-end Markets - Updates, Prospects, Uranium Exploration and Mining

Tuesday, September 22, 2015 · 11:00-13:00 (Room 7)

Session Chair: DURANTE Pierre (AREVA), DAPEI Dominique (EDF)

- 11:00-11:20 [5077]-Greenland, Denmark and the Pathway to Supplier Status, VESTERGAARD Cindy (Danish Institute for International Studies DK)
- 11:20-11:40 [5358]-EDF Nuclear Fuel Division Supplier to the French and the English Nuclear Fleet, COSTES Philippe (EDF FR)
- 11:40-12:00 [5443]-AREVA TN Experience with U308 Shipments to China, LALOY Vanessa (AREVA FR)
- 12:00-12:20 [5506]-Uranium Exploration in Mongolia: a Major Discovery in the Gobi Desert, LE GOUX Florent (AREVA FR)
- 12:20-12:40 [5210]-Fractal Dynamics of Granites Hydrothermal Uranium Metallogenesis from South China, LI Chunguang (University of South China CN)
- 12:40-13:00 [5215]-Geotectonic Characteristics of Meso-Cenozoic Sandstone Uranium Deposits in China, WANYU Tan (University of South China CN)

### 4a-2 LWR Used Fuel Processing: Separation Processes-I

Tuesday, September 22, 2015 · 11:00-13:00 (Room 4)

Session Chairs: LUMETTA Gregg J. (PNNL), BARON Pascal (CEA)

- 11:00-11:20 [5145]-Study on Performance of an Annular Centrifugal Contactor Using a Liquid-Fast-Separation Method, DUAN Wuhua (Tsinghua University CN)
- 11:20-11:40 [5150]-Investigation into the Radiolysis of PUREX Solvent Systems, HORNE Gregory (The University of Manchester GB)
- 11:40-12:00 [5464]-Recovery and Purification of Irradiated Uranium Using Selective Leaching and Ion Exchange in a Carbonate Medium, STASSEN Elizabeth (Necsa ZA)
- 12:00-12:20 [5026]-Extraction Behavior of Uranium(VI) by TBP Extractant in Room Temperature Ionic Liquid, KIM Ik-Soo (KAERI KR)

### 4f.1-3 Partitioning and Transmutation: Fuels and Recycling Processes: Separation-I

Tuesday, September 22, 2015 · 11:00-13:00 (Room 5)

Session Chairs: PAVIET Patricia (DOE), BERTRAND Murielle (CEA)

- 11:00-11:20 [5034]-Adsorbents Bearing Acidic/neutral Organophosphorus Ligands for the Adsorption of Some Actinides, CHEN Jing (Tsinghua University CN)
- 11:20-11:40 [5173]-Discussion on Applicability of Macroporous Silica-based Adsorbents to Multistep Partitioning Process of High Level Liquid Waste, ITO Tatsuya (*Tohoku University JP*)
- 11:40-12:00 [5219]-Separation of Americium and Curium by using Anion Exchange Resin supported in High Porous Silica Beads in Alcoholic Nitric Acid System, SUZUKI Tatsuya (Nagaoka University of Technology JP)
- 12:00-12:20 [5283]-Studies on Actinide Ion Uptake and Transport Using Polymer Inclusion Membranes Containing Multiple Diglycolamide-functionalized Extractants, MOHAPATRA Prasanta (Bhabha Atomic Research Centre IN)



12:20-12:40 [5281]-Novel Extractants for the Separations Relevant in the Back End of Nuclear Fuel Cycle, MOHAPATRA Prasanta (Bhabha Atomic Research Centre - IN)

#### 4f.2-1 Partitioning and Transmutation: Fuels and Recycling Processes: Transmutation - Metallic Fuels

Tuesday, September 22, 2015 · 11:00-13:00 (Room 6)

Session Chairs: D'AGATA Elio (European Commission), CHAUVIN Nathalie (CEA)

- 11:00-11:20 [5024]-Advances on Metallic Fuel Fabrication Modeling and Simulation, UNAL Cetin (LANL US)
- 11:20-11:40 [5216]-Demonstration of Minor Actinide Recycling with Metal Fuel (IV): Analyses of Post-Irradiation Examination Data of Minor Actinide-Bearing Metal Fuel, OGATA Takanari (CRIEPI JP)
- 11:40-12:00 [5239]-Demonstration of Minor Actinide Recycling with Metal Fuel (II): Post-Irradiation Examination Data of Minor Actinide-Bearing Metal Fuel, RONDINELLA Vincenzo (JRC-ITU DE)
- 12:00-12:20 [5241]-Development of Metallic Fuels for Actinide Transmutation, HAYES Steven (INL US)
- 12:20-12:40 [5242]-Demonstration of Minor Actinide Recycling with Metal Fuel (I): Overview of the METAPHIX PYRO Project, GLATZ Jean-Paul (JRC-ITU DE)
- 12:40-13:00 [5305]-Metal Fuel Development for Sodium-cooled Fast Reactor, LEE Chan Bock (KAERI KR)

#### 5b-1 Storage of Used Nuclear Fuel and Waste-I

Tuesday, September 22, 2015 · 11:00-13:00 (Room 8)

Session Chair: MOLINA Mariano (ENRESA)

- 11:00-11:20 [5100]-Interim Storage of Thermal Reactor Fuels Implications for the Back End of the Fuel Cycle in the UK, HAMBLEY David (NNL GB)
- 11:20-11:40 [5188]-Absorber Contents and Wall Thickness for Efficient Used Nuclear Fuel Storage, KIM Mijin (UNIST KR)
- 11:40-12:00 [5328]-Innovative Method Improving Used Fuel Storage and Transport Cask Performances, LÉGER Vincent (AREVA FR)
- 12:00-12:20 [5357]-Aging Management Solutions to Ensures Safety of Extended Dry Fuel Storage, ISSARD Hervé (AREVA US)
- 12:20-12:40 [5405]-Responsible Management for NPP Radioactive Waste from Production to Storage, PAGÈS Claude (EDF FR)

#### 5c.2-2 Strategic and Technical Development in D&D: Techniques and Processes - Characterization-II

Tuesday, September 22, 2015 · 11:00-13:00 (Room 2)

Session Chair: PLYS Martin G. (Fauske & Associates, LLC)

- 11:00-11:20 [5154]-Analytical Needs & Strategies Dedicated to Support Decommissioning Operators, GOUTELARD Florence (CEA FR)
- 11:20-11:40 [5190]-Mobile Laboratories: An Innovative and Efficient Solution for Radiological Characterization of Sites under or after Decommissioning, LETESSIER Patrice, GOUDEAU Vincent (EICHROM Laboratories FR)
- 11:40-12:00 [5231]-Validation of Activity Determination Codes and Nuclide Vectors by Using Results from Physical Waste Treatment and Laboratory Investigations, RUNEVALL Odd (Studsvik SE)
- 12:00-12:20 [5257]-Strategies for Optimisation of a Nuclear Facility Characterisation in a Waste and Materials End-state Perspective, LARSSON Arne (Studsvik SE)
- 12:20-12:40 [5428]-A Geostatistical Approach to Calculate Volumes of Contaminated Soil and Groundwater at Sellafield, DESNOYERS Yvon (*Geovariances FR*)
- 12:40-13:00 [5485]-Novel Real-time 3D Radiological Mapping Solution for ALARA Maximization, D&D Assessments and Radiological Management, MORICHI Massimo (AREVA FR)

# 6a-3 Safeguards

Tuesday, September 22, 2015 · 11:00-13:00 (Room 9)

**Session Chair:** DELAUNE Philippe (*CEA*)

- 11:00-11:20 [5293]-Light Water Small Modular Reactors: Non-proliferation and Security Aspects, DELPECH Marc (CEA FR)
- 11:20-11:40 [5442]-Concepts and Approaches for Advanced Safeguards and Security, MILLER Michael (LANL US)
- 11:40-12:00 [5459]-Safeguards Considerations for the Design of a Future Fast Neutron Sodium Cooled Reactor and Associated Fuel Cycle, CAZALET Jean (CEA FR)
- 12:00-12:20 [5460]-Status of the Gen-IV Proliferation Resistance and Physical Protection (PR&PP) Evaluation Methodology, CAZALET Jean (CEA FR)
- 12:20-12:40 [5089]-Generic Quantitative Process Monitoring and Accountability Methodology for Fuel Cycle Facilities, CIPITI Benjamin B (SNL US)

# Tuesday, September 22, 2015 · 15:45-18:35

# **1b Nuclear Energy and Energy Market Dynamics**

Tuesday, September 22, 2015 · 15:45-18:35 (Room 1)

Session Chairs: EMSLEY Ian Stewart (World Nuclear Association), JANNET Emeric (AREVA)

- 15:45-16:05 [5006]-The International Trade of Nuclear Power Plants: The Supply Side, LÉVÊQUE François (Mines-ParisTech FR)
- 16:05-16:25 [5042]-Promoting Nuclear Energy: Market Pricing or Regulated Tariffs?, PERCEBOIS Jacques (University of Montpellier (CREDEN) FR)



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16:25-16:45 [5200]-Uranium Resources, Scenarios, Nuclear and Energy Dynamics, BIDAUD Adrien (Grenoble Institute of Technology - FR)
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16:45-17:05 [5256]-Potential Benefits of Energy Storage Using Texas as Case Study, MORNEAU Rachel (University of Texas at Austin - US)

-----10 minute break-----

17:15-17:35 [5403]-The Market for Small Modular Reactors: An OECD/NEA Study, SOZONIUK Vladislav (OECD/NEA - FR)

17:35-17:55 [5468]-Investigation of Economics of Nuclear Fuel Cycle Options in the Republic of Korea Based on Once-through, CHO Seokki (KAIST - KR)

#### 2b-2 Transient Scenario Analysis towards Sustainable Nuclear Energy Systems-II

Tuesday, September 22, 2015 · 15:45-18:35 (Room 3)

Session Chairs: MOHAPATRA Prasanta Kumar (BARC), FAVET Dominique (AREVA)

15:45-16:05 [5182]-Progress and Status of the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO), PONOMAREV Anton (IAEA - RU)

16:05-16:25 [5212]-Quantitative and Economic Assessments of Nuclear Fuel Cycle Transition in China, GAO Ruxing (KAERI - KR)

16:25-16:45 [5504]-Transition Scenarios towards Sustained Pu-management in China, EVANS Cécile (AREVA - FR)

16:45-17:05 [5238]-Investigation of Benefits from U/TRU Recycle - Quantification and Comparison to U/Pu Recycle, WIGELAND Roald (INL - US)

-----10 minute break------

17:15-17:35 [5327]-Sodium Fast Reactor: An Asset for a PWR UOX/MOX Fleet, TIPHINE Marion (CEA - FR)

17:35-17:55 [5267]-An Approach for Assessing Development and Deployment Risks in the DOE Fuel Cycle Options Evaluation and Screening Study, WORRALL Andrew (ORNL - US)

#### 4a-3 LWR Used Fuel Processing: Waste & Contaminants

Tuesday, September 22, 2015 · 15:45-18:35 (Room 4)

Session Chairs: JUBIN Robert (ORNL), RABBE Catherine (CEA)

- 15:45-16:05 [5055]-Silver-mordenite for Radiologic Gas Capture from Complex Streams: Dual Catalytic CH3-I Decomposition and lodine Confinement, NENOFF Tina (SNL US)
- 16:05-16:25 [5073]-Experimental Study on Boiling Accident of High Active Liquid Waste in Reprocessing, UCHIYAMA Gunzo (JAEA JP)
- 16:25-16:45 [5080]-Advanced Methods of Ammonium Nitrate and Complexing Agents Decomposition for Radioactive Process Waste Treatment, SHADRIN Andrey (Khlopin Radium Institute RU)
- 16:45-17:05 [5164]-Study on Radioactive Material Transport Behavior from Boiling/drying out High Level Liquid Waste, ISHIO Takahiro (JNFL JP)

-----10 minute break-----

- 17:15-17:35 [5165]-Influence of Contaminants from Spent Fuel Pools at the Fukushima Daiichi Nuclear Power Station on the Reprocessing Process, AIHARA Haruka (*JAEA JP*)
- 17:35-17:55 [5197]-Investigation on Treatment for Fuel Debris after a Severe Accident Using Molybdate Melt, TAKAHASHI Yuya (Toshiba JP)
- 17:55-18:15 [5373]-Reaction Behavior of Uranium Oxides and Structural Materials at High Temperatures, AKIYAMA Daisuke (Tohoku University JP)
- 18:15-18:35 [5223]-Performance of Silver-Exchanged Mordenite for Iodine Capture under Vessel Off-Gas Conditions, JUBIN Robert (ORNL US)

#### 4b-1 Fuel Pyroprocessing: Processes

Tuesday, September 22, 2015 · 15:45-18:35 (Room 7)

Session Chairs: MIGUIRDITCHIAN Manuel (CEA), HWANG II Soon (Seoul National University)

- 15:45-16:05 [5172]-Demonstration of Minor Actinide Recycling with Metal Fuel: (V): Recovery of Minor Actinides from Irradiated Metal Fuels by Pyrometallurgical Process, IIZUKA Masatoshi (CRIEPI JP)
- 16:05-16:25 [5273]-Demonstration of Minor Actinide Recycling with Metal Fuel (VI): Electrorefining using Al cathode, SOUCEK Pavel (JRC-ITU DE)
- 16:25-16:45 [5274]-Potential Applications of the Pyrochemical DOS Process for the Recovery of Actinides, Developed by the CEA, within Reprocessing of Transmutation Fuel Targets, MENDES Eric (CEA FR)
- 16:45-17:05 [5388]-Assessment of Lab-scale High-throughput Electrorefiner with Respect to the Anode Surface Area and UCI3 Concentration in LiCl-KCl Eutectic Salt, PARK Sungbin (KAERI KR)

-----10 minute break------

- 17:15-17:35 [5446]-Recent Research Progress of Actinide and Lanthanide Chemistry in Molten Salt at Nuclear Chemistry Research
  Division, KAERI, BAE Sang-Eun (KAERI KR)
- 17:35-17:55 [5014]-Recovery of Uranium and Thorium from Molten Salts by Electrochemical Techniques, LONG Dewu (Shanghai Institute of Applied Physics CN)

# 4f.1-4 Partitioning and Transmutation: Fuels and Recycling Processes: Separation-II

Tuesday, September 22, 2015 · 15:45-18:35 (Room 5)

Session Chairs: MODOLO Giuseppe (Forschungszentrum Jülich GmbH), MARIE Cecile (CEA)



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15:45-16:05 [5083]-Oxidation and Extraction of Americium(VI) from Lanthanides, TODD Terry (INL - US)
16:05-16:25 [5123]-New Mixed-Donor Extractants for Minor-Actinide Separation, MOYER Bruce (ORNL - US)
16:25-16:45 [5139]-Separation of Americium from Lanthanides in a Formate Buffer Solution Using Purified Cyanex 301, XU Chao
            (Tsinghua University - CN)
16:45-17:05 [5400]-TODGA Degradation Compounds: Properties and Effects on Extraction Systems, NÚÑEZ Ana (CIEMAT - ES)
4f.2-2 Partitioning and Transmutation: Fuels and Recycling Processes: Transmutation - Non-metallic Fuels
Tuesday, September 22, 2015 · 15:45-18:35 (Room 6)
Session Chair: SOMERS Joseph (European Commission), TOURON Emmanuel (CEA)
15:45-16:05 [5031]-Comprehension of the Densification Mechanisms of a Co-converted (U,Am)O2 Powder, RAMOND Laure (CEA -
16:05-16:25 [5058]-Outcomes of the FP-7 Project PELGRIMM Investigating Pelletized and Sphere-packed Oxide Fuels for Minor-
            Actinides Transmutation in a Sodium Fast Reactor, DELAGE Fabienne (CEA - FR)
16:25-16:45 [5059]-Post-Irradiation Examination Results for MgO-CERCER Am-bearing Fuels Irradiated in PHENIX within the Frame
            of the FUTURIX-FTA Experiment, LOUBET Laurent (CEA - FR)
16:45-17:05 [5246]-Innovative Oxide Precursor Synthesis Dedicated to Dustless Process for Americium Bearing Blanket
            Fabrication, CAISSO Marie (CEA - FR)
-----10 minute break-
17:15-17:35 [5268]-Overview of the FUTURIX-FTA Irradiation Experiment in the Phénix Reactor, CHICHESTER Heather (INL - US)
17:35-17:55 [5295]-State-Of-The-Art on Innovative Fuels, an OECD/NEA Report, CHAUVIN Nathalie (CEA - FR)
17:55-18:15 [5329]-Application of Weak Acid Resin Process to the Production of Spherical and Calibrated Oxide Precursor Bearing
            Uranium and Americium: Overview of 10 Years Research at CEA, PICART Sebastien (CEA - FR)
18:15-18:35 [5384]-Development of Nitride Fuel Cycle Technology for Transmutation of Minor Actinides, HAYASHI Hirokazu (JAEA -
            JP)
5b-2 Storage of Used Nuclear Fuel and Waste-II
Tuesday, September 22, 2015 · 15:45-18:35 (Room 8)
Session Chairs: KIM Chang-Lak (KINGS), FELIX Bernard (ANDRA)
15:45-16:05 [5314]-Innovative Solutions for Waste Management: Optimization of Waste Packages for the Long Term Disposal,
            LAMOUROUX Christine (AREVA - FR)
16:05-16:25 [5318]-TN® MW: A New Cask Family Dedicated to Nuclear Wastes Transport and Storage, DUMONT Bruno (AREVA -
16:25-16:45 [5381]-Residual Water during Drying of Damaged Spent Nuclear Fuel and Debris, PLYS Martin (Fauske & Associates, LLC
            - US)
16:45-17:05 [5396]-Site Radwaste Treatment Facility (SRTF) Sanmen - Lessons Learned, LOHMANN Peter (Westinghouse - DE)
   ----10 minute break-
17:15-17:35 [5413]-Safe Solutions for Dry Storage of Defective Fuel Rods, VO VAN Vanessa (AREVA - FR)
17:35-17:55 [5452]-Boric Acid Attack of the Reinforced Concrete Used in Spent Fuel Pool, LAURE Chomat (CEA - FR)
5c.3-1 Strategic and Technical Development in D&D: Techniques and Processes – Decontamination-I
Tuesday, September 22, 2015 · 15:45-18:35 (Room 2)
Session Chairs: TACHIBANA Mitsuo (JAEA), BLET Vincent (CEA)
15:45-16:05 [5029]-Development of Ion Specific Media and Modular Processing Systems to Treat Sr-Contaminated Water at
            Fukushima Daiichi Nuclear Power Plant, SIMPSON Brett (Kurion - US)
16:05-16:25 [5113]-Highly Selective Removal of Cesium in a Column Process Utilizing Newly Developed Silica Support Loaded with
            Copper-potassium Hexacyanoferrate, BARRÉ Yves (CEA - FR)
16:25-16:45 [5176]-Removal of 137Cs from Contaminated Soil Using Extraction Process in Supercritical CO2 Medium, LEYBROS
            Antoine (CEA - FR)
16:45-17:05 [5208]-Comparative Study of Sr Adsorbents for Radioactive Contaminated Water on Severe Accident, TAKAHATAKE
            Youko (JAEA - JP)
-----10 minute break--
17:15-17:35 [5408]-Technologies Applying to D&D, MOGGIA Fabrice (AREVA - FR)
17:35-17:55 [5490]-Decontamination Techniques of Metal Ions in Soil by Supercritical Fluid with Synthetic Ligands, PARK Jihye
            (Kyung Hee University - KR)
17:55-18:15 [5497]-Transport of French PWR Steam Generators to Very Low Level Waste Disposal, BRASCH-SERRES Aurélie (EDF -
18:15-18:35 [5015]-Distribution Behavior of Actinoids (U,Am,Np) into Various Zeolites, MIMURA Hitoshi (Tohoku University – JP)
6a-1 Proliferation Resistance and Technical Aspects of Safeguards
Tuesday, September 22, 2015 · 15:45-18:35 (Room 9)
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Session Chairs DELAUNE Philippe (CEA)

15:45-16:05 [5252]-Proliferation Resistance, Physical Protection and Safety after Fukushima, PILAT Joseph (LANL - US)

16:05-16:25 [5253]-Revisiting Proliferation Resisitance, PILAT Joseph (LANL - US)

- 16:25-16:45 [5270]-Security and Nonproliferation Assessment of Breed-and-Burn Systems, LYMAN Edwin (*Union of Concerned Scientists US*)
- 16:45-17:05 [5298]-Study on Cyber Attack Resistance to Devices Related to Nuclear Non-Proliferation Inspection, TANAKA Masaru (Nagoya University JP)

-----10 minute break------

- 17:15-17:35 [5126]-Elemental Detection of Cerium and Gadolinium in Aqueous Aerosols via Laser-Induced Breakdown Spectroscopy, WILLIAMS Ammon (Virginia Commonwealth University US)
- 17:35-17:55 [5395]-Multi-Isotope Process (MIP) Monitor Deployment at H-Canyon, MEIER David (PNNL US)

## Wednesday, September 23, 2015 · 10:15-12:15

#### **1d Natural Resources**

Wednesday, September 23, 2015 · 10:15-12:15 (Room 1)

Session Chairs: GRANCEA Luninita (OECD NEA), GABRIEL Sophie (CEA)

- 10:15-10:35 [5025]-Extraction of Uranium from Sea Water: A Few Facts, GABRIEL Sophie (CEA FR)
- 10:35-10:55 [5056]-Uranium and Thorium Production Projections in Turkey, UZMEN Reşat (AMR METALURJI A.S. TR)
- 10:55-11:15 [5184]-Uranium in Greenland, THRANE Kristine (Geological Survey of Denmark and Greenland DK)
- 11:15-11:35 [5309]-Statistical Model of Global Uranium Resources and Long-term Availability, MONNET Antoine (CEA FR)
- 11:35-11:55 [5312]-Uranium Mining in 50 years, POLAK Christian (AREVA FR)

#### **2c Pu-management Options**

Wednesday, September 23, 2015 · 10:15-12:15 (Room 3)

Session Chair: STAINSBY Richard (NNL), EVANS Cécile (AREVA)

- 10:15-10:35 [5326]-Simulations of Progressive Potential Scenarios of Pu Multirecycling in SFR and Associated Phase-out in the French Nuclear Power Fleet, TIPHINE Marion (CEA FR)
- 10:35-10:55 [5140]-Plutonium Use in Fuel Cycle Options for Russia, SHADRIN Andrei (Bochvar Institute RU)
- 10:55-11:15 [5453]-TOP MOX: A Pu-Management Solution, BREITENSTEIN Peter (AREVA FR)
- 11:15-11:35 [5201]-Physical and Economical Aspects of Pu Multiple Recycling on the Basis of REMIX Reprocessing Technology in Thermal Reactors, TEPLOV Pavel (NRC Kurchatov Institute RU)
- 11:35-11:55 [5480]-CONVERT: A Full Life Cycle Solution for UK Pu Stockpile, FAVET Dominique (AREVA FR)
- 11:55-12:15 [5382]-Comparative Study of Plutonium and Minor Actinide Transmutation Scenario, NISHIHARA Kenji (JAEA JP)

# 2d-3 Non-SFR Gen-IV Reactor Designs

Wednesday, September 23, 2015 · 10:15-12:15 (Room 2)

Session Chairs: KIM Sang Ji (KAERI), VAN DEN DURPEL Luc (Nuclear-21.Net)

- 10:15-10:35 [5488]-Evolution of the Canadian SCWR Fuel-assembly Concept and Assessment of the 64 Element Assembly for Thermalhydraulic Performance, NAVA DOMINGUEZ Armando (Canadian Nuclear Laboratories CA)
- 10:35-10:55 [5254]-**Transient Processes in the Nuclear-Burning-Wave Reactor,** FOMIN Sergii (*NSC "Kharkov Institute of Physics and Technology" UA*)
- 10:55-11:15 [5421]-Non-proliferation Features of SVBR-100 Fuel Cycle Based on Reprocessed Uranium, ARTISIUK Vladimir (Rosatom RU)
- 11:15-11:35 [5435]-Lead-Cooled Fast-Neutron Reactor (BREST): Approaches to the Closed NFC, LEMEKHOV Vadim (JSC "NIKIET" RU)
- 11:35-11:55 [5426]-Conceptual Study of a Plutonium Burner High Temperature Gas-cooled Reactor with High Nuclear Proliferation Resistance, GOTO Minoru (JAEA JP)
- 11:55-12:15 [5243]-The Revolver Reactor Feasibility Study, MORNEAU Rachel (University of Texas at Austin US)

# **3e Nuclear Fuel Design and Fabrication**

Wednesday, September 23, 2015 · 10:15-12:15 (Room 7)

Session Chair: MOLLARD Pierre (AREVA)

- 10:15-10:35 [5272]-Synthesis of Accident Tolerant Nitride Fuels, JAQUES Brian (Boise State University US)
- 10:35-10:55 [5441]-Thermodynamics Analysis of the Current Defluoration Process of UF6 and its Application for Efficient Recycling of Fluorine in the French Nuclear Fuel Cycle, BORGARD Jean-Marc (CEA FR)
- 10:55-11:15 [5444]-AREVA Next Generation Fuel A Step forward in Fuel Performance and Fuel Cycle Economy, MOLLARD Pierre
- 11:15-11:35 [5463]-AREVA Developments of Fuels with Enhanced Accident Tolerance, BISCHOFF Jeremy (AREVA FR)
- 11:35-11:55 [5478]-In-situ Control of the Operating Conditions of Oxide Nuclear Fuels Using Oxygen Buffer Systems, PENNISI Vanessa (CEA FR)
- 11:55-12:15 [5494]-OECD Nuclear Energy Agency's Collaborative Activities on Nuclear Materials Research, MASSARA Simone (OECD/NEA FR)

#### 4a-4 LWR Used Fuel Processing: Dissolution

Wednesday, September 23, 2015 · 10:15-12:15 (Room 4)

Session Chairs: JUBIN Robert T. (ORNL), GRANDJEAN Stéphane (CEA)

- 10:15-10:35 [5131]-Radiolysis of Nitric Acid Solution for the Volatility Condition of Nitrous Acid, WATANABE Daisuke (Hitachi JP)
- 10:35-10:55 [5167]-Effect of Nitrous Ion on Oxidation of Oxidizing-metallic Ion in Nitric Acid Solution, IRISAWA Eriko (JAEA JP)
- 10:55-11:15 [5209]-Chemical Composition of Insoluble Residue Generated at the Rokkasho Reprocessing Plant, YAMAGISHI Isao (JAEA - JP)
- 11:15-11:35 [5265]-Corrosion of Zirconium in the Context of the Spent Nuclear Fuel Reprocessing Plant, GWINNER Benoit (CEA FR)
- 11:35-11:55 [5317]-Advances in Heterogeneous Autocatalytic Reactions Applied to Uranium Dissolution, MAGNALDO Alastair (CEA
- 11:55-12:15 [5473]-Carbon 14 Distribution during Spent Fuel Dissolution Application to an UOx3, CROZET Marielle (CEA FR)

#### 4b-2 Fuel Pyroprocessing: Analyses

Wednesday, September 23, 2015 · 10:15-12:15 (Room 6)

Session Chairs: SOUCEK Pavel (EC-JRC -ITU), VERCOUTER Thomas (CEA)

- 10:15-10:35 [5068]-Validation of a Computer Model to Support Pyroprocessing Technology Development, JUNG Young-Eun (KAIST
- 10:35-10:55 [5124]-Measurement of Cerium in Molten Salt Aerosol via Laser-Induced Breakdown Spectroscopy, WILLIAMS Ammon (Virginia Commonwealth University - US)
- 10:55-11:15 [5226]-Quantitative Analysis of Molten Salt by Laser-induced Breakdown Spectroscopy, YOO Bung-Uk (Chungnam
- 11:15-11:35 [5375]-Multiphase Flow Simulation of Immiscible Liquids in a Molten LiCl-KCI/Cd System, KIM Kwangrag (KAERI KR)
- 11:35-11:55 [5445]-Spectroelectrochemical Studies on U, Np, and Lanthanide Ions in Molten Salt, PARK Tae-Hong (KAERI KR)

# 4f.1-5 Partitioning and Transmutation: Fuels and Recycling Processes: Speciation

Wednesday, September 23, 2015 · 10:15-12:15 (Room 5)

Session Chairs: NASH Kenneth L. (Washington State University), LAMOUROUX Christine (AREVA)

- 10:15-10:35 [5168]-Complexation and Extraction Studies of High Valency Actinides by Schiff Base Ligands, NILSSON Mikael (University of California, Irvine - US)
- 10:35-10:55 [5179]-Complex Structure of An and Ln Complexes with Modified Diglycolamides in Solution and Solid State Using Different Speciation Techniques, WILDEN Andreas (Forschungszentrum Jülich GmbH - DE)
- 10:55-11:15 [5352]-The Challenges of Chemical Metrology in the Fuel Cycle and the Role of CETAMA, ROUDIL Daniele (CEA FR)
- 11:15-11:35 [5359]-Speciation and Thermodynamics Data to Better Describe the Efficiency of Actinides Separation by N,Ndialkylamides, CHARBONNEL Marie-Christine (CEA - FR)
- 11:35-11:55 [5415]-Trans-Lanthanide Comparison of Metal Organic Complexes in Actinide Lanthanide Partitioning System, GULLEKSON Brian (Oregon State University - US)

#### 5b-3 Storage of Used Nuclear Fuel and Waste-III

Wednesday, September 23, 2015 · 10:15-12:15 (Room 8)

Session Chair: VO VAN Vanessa (AREVA)

- 10:15-10:35 [5011]-Update on the Waste Control Specialists (WCS) Plans for Consolidated Interim Storage of Used Nuclear Fuel, VALENZANO Mike (AREVA - US)
- 10:35-10:55 [5097]-Stabilization Technique and Non-destructive Neutron Inspection System of Irradiated Metal Uranium Fuel, HUANG Shangfeng (Institute of Nuclear Energy Research - TW)
- 10:55-11:15 [5099]-Dry Storage of Irradiated Stainless Steel Clad Fuel, HAMBLEY David (NNL GB)
- 11:15-11:35 [5322]-The Study for Applying Spent Fuel Pool Island (SFPI) during Decommissioning in Korea, BAIK Jun-Ki (Kepco International Nuclear Graduate School - KR)
- 11:35-11:55 [5325]-Alpha Radiolysis Induced by Plutonium Dioxide: Radiolysis of Water Sorbed on Plutonium Dioxide and Effect of Alpha Radiolysis due to Plutonium Dioxide on Plastic Materials, VENAULT Laurent (CEA - FR)
- 11:55-12:15 [5303]-Essential Components to Sustainable Spent Fuel Management: Dry Storage and Transportation, ISSARD Hervé (AREVA - FR)

# 5c.3-2 Strategic and Technical Development in D&D: Techniques and Processes - Decontamination-II

Wednesday, September 23, 2015 · 10:15-11:15 (Room 9)

Session Chairs: BONNET Nicephore (Kurion), VENAULT Laurent (CEA)

- 10:15-10:35 [5206]-Degradation of Cobalt(II)-EDTA Complex using TiO2-based Photocatalysis and H2O2/UV Process: Application to the Nuclear Field, LEPEYTRE Célia (CEA - FR)
- 10:35-10:55 [5244]-U(VI) Extraction Using Novel Betainium-type Ionic Liquids for Repeatable Decontamination, MORI Takahiro (Tokyo Institute of Technology - JP)
- 10:55-11:15 [5461]-Kurion Modular Detritiation System for Robust, Large-Scale and Economical Light Water Detritiation, BONNET Nicephore (Kurion - US)

5c.4 Strategic and Technical Development in D&D: Techniques and Processes - Cutting, Remote Handling, Simulation Wednesday, September 23, 2015 · 11:15-12:15 (Room 9)



Session Chairs: BOUCAU Joseph (Westinghouse), LAURENT Gerard (EDF)

- 11:15-11:35 [5010]-Analysis of the Behavior of Radioactive Cesium in Incinerators during Garbage, SUGITSUE Noritake (JAEA JP)
- 11:35-11:55 [5133]-Visualization Framework to Display the Space Dose Rate on the CAD-based Dismantling Process Simulation, LEE Jonghwan (KAERI KR)
- 11:55-12:15 [5335]-Lessons Learned from Reactor Internals Segmentation Projects, KREITMAN Paul (Westinghouse US)

# Wednesday, September 23, 2015 · 15:15-16:55

#### 2d-4 Molten Salt Reactors

Wednesday, September 23, 2015 · 15:15-16:55 (Room 2)

Session Chairs: SHISHIDO Hiroki (Tohoku Univertsity), LECARPENTIER David (EDF)

- 15:15-15:35 [5336]-**U-Pu Fast Molten Salt Reactor and Its Fuel Cycle**, PONOMAREV Leonid (*A.A.Bochvar High Technology Institute of Inorganic Materials RU*)
- 15:35-15:55 [5420]-Study on the Thorium-based Breeder with Molten Fluoride Salt Blanket in the Nuclear Hot Spring, XIA Bing (Tsinghua University CN)
- 15:55-16:15 [5147]-Evaporation Behavior of Volatile Fission Products in FLiNaK Salt, TAIRA Masami (University of Fukui JP)
- 16:15-16:35 [5233]-Thermodynamic Characterization of the Molten Salt Reactor Fuel, CAPELLI Elisa (JRC-ITU DE)
- 16:35-16:55 [5513]-The Risk-Rewards Structure of Using Spent Nuclear Fuel in Molten Salt Reactor, DU Zhuoqi (Technical University of Munich CN)

#### 2g-3 Nuclear Reactor Physics and Fuel Cycle Analysis-II

Wednesday, September 23, 2015 · 15:15-16:55 (Room 1)

Session Chairs: ARIE Kazuo (Toshiba Corporation), FAVET Dominique (AREVA)

- 15:15-15:35 [5471]-Analysis of Fission Yields Uncertainty Propagation in PWR Fuel Decay Heat, LECARPENTIER David (EDF FR)
- 15:35-15:55 [5261]-TRIAD, an Innovative Visualization Tool for Criticality-Safety and Shielding Studies, MARCHAUD Gilles (Independent FR)
- 15:55-16:15 [5088]-Mean Cross Section Prediction in PWR-MOX Using Neural Network, LENIAU Baptiste (CNRS FR)
- 16:15-16:35 [5020]-The NRNU MEPhI Activities in the Development and Application of Advanced Tools for Innovative Nuclear Energy Systems Sustainability Assessments, KOROVIN Yurij (National Research Nuclear University MEPhI RU)

# 3g Advances in Processes and Technologies

Wednesday, September 23, 2015 · 15:15-16:55 (Room 7)

Session Chair: MOLLARD Pierre (AREVA)

- 15:15-15:35 [5004]-Application and Structure Improvement of Reciprocating Plate Extraction Column for Natural Uranium Industry, WANG Xue Jun (*Tsinghua University CN*)
- 15:35-15:55 [5434]-Lock-in Thermography for Characterization of Nuclear Materials, SEMEROK Alexandre (CEA FR)
- 15:55-16:15 [5499]-Novel Filtration Solutions Specific to the Nuclear Industry, CHADWICK Chris (Porvair Filtration Group GB)
- 16:15-16:35 [5156]-Sensitivity of Seawater Uranium Cost to System and Design Parameters, FLICKER Margaret Elise (University of Texas at Austin US)

#### 4a-5 LWR Used Fuel Processing: Separation Processes-II

Wednesday, September 23, 2015 · 15:15-16:55 (Room 4)

Session Chairs: HORNE Gregory (The University of Manchester), DINH Binh (CEA)

- 15:15-15:35 [5074]-A Study on the Application of N,N-dialkylamides as Extractants for U and Pu by Continuous Counter-current Extractors, BAN Yasutoshi (*JAEA JP*)
- 15:35-15:55 [5095]-Application of Turbidity Measurement for Evaluation of Two-phase Separation in N,N-dialkylamides-nitric Acid Systems, TSUTSUI Nao (*JAEA JP*)
- 15:55-16:15 [5330]-Kinetics Extraction of Uranium(VI) and Plutonium(IV) by N,N-dialkylamides, LÉLIAS-VANDERPERRE Anne (CEA FR)
- 16:15-16:35 [5401]-Mechanism of Nitric Acid Reduction and Kinetic Modelling, BALBAUD-CELERIER Fanny (CEA FR)

#### 4b-3 Fuel Pyroprocessing: Technology

Wednesday, September 23, 2015 · 15:15-16:55 (Room 3)

Session Chairs: IIZUKA Masatoshi (CRIEPI), RAQUET Olivier (CEA)

- 15:15-15:35 [5039]-High-corrosion-resistant Materials in LiCl-KCl Melts for Pyrochemical Reprocessing, WANG Ning (China Academy of Engineering Physics CN)
- 15:35-15:55 [5125]-Measurements of CeCl3 Properties on Liquid Cadmium Cathode (LCC) in LiCI-KCI Eutectic Salt as a Basic Safeguarding Application in Pyroprocessing Technology, YOON Dalsung (Virginia Commonwealth University KR)
- 15:55-16:15 [5153]-An Experimental Equipment that Removes the Graphite Matrix in HTGR Spherical Fuel Elements Using Electrochemical Intercalation Method, WANG Shuwei (*Tsinghua University CN*)
- 16:15-16:35 [5183]-Evaluation on Wastes and Products Generated from Pyroprocessing, LEE Hyojik (KAERI KR)

16:35-16:55 [5447]-An Innovative Anode Concept for Improving Anodic Dissolution Rate of Nitride Fuel in Electrorefining Process, SATO Takumi (JAEA - JP)

#### 4d-1 Final Waste Conditioning: Effluent Conditioning

Wednesday, September 23, 2015 · 15:15-16:55 (Room 6)

Session Chairs: SUDREAU Francois (CEA), BLET Vincent (CEA)

- 15:15-15:35 [5161]-Thermal Decomposition Analysis of Simulated High-level Liquid Waste in Cold-cap, KAWAI Kota (*Tokyo Institute of Technology JP*)
- 15:35-15:55 [5204]-Waste Homogenisation Tank: Experimental Validation of a Numerical Study, MACQUERON Corentin (AREVA FR)
- 15:55-16:15 [5321]-Innovative Plasma Routes for Liquid Radwaste Processing, LEMONT Florent (CEA FR)
- 16:15-16:35 [5225]-Initial Evaluation of a Hot Isostatic Pressed Waste Form from Iodine-Loaded Silver-Exchanged Mordenite, JUBIN Robert (ORNL US)

#### 4f.1-6 Partitioning and Transmutation: Fuels and Recycling Processes: Partitioning Processes-I

Wednesday, September 23, 2015 · 15:15-16:55 (Room 5)

Session Chairs: MOYER Bruce A. (ORNL), MIGUIRDITCHIAN Manuel (CEA)

- 15:15-15:35 [5035]-Concept for the Single Cycle Process Based on Mutual Separation by Reverse Extraction of Actinides and Fission Products, SASAKI Yuji (JAEA JP)
- 15:35-15:55 [5069]-The TRU-SANEX Process One Reprocessing Option for a Closed Fuel Cycle, SARSFIELD Mark (NNL GB)
- 15:55-16:15 [5082]-The United States Material Recovery and Waste Form Development Program, PAVIET Patricia (U.S. Department of Energy US)
- 16:15-16:35 [5101]-Development of a Selective Americium Separation Process Using TPAEN as a Water-soluble Stripping Agent, MARIE Cécile (CEA FR)
- 16:35-16:55 [5340]-SACSESS, A European Project on the Optimization of Safe Actinide Separation Processes, BOURG Stéphane (CEA FR)

### 5e-1 Progress in Geological Disposal from Siting to Industrial Implementation-I

Wednesday, September 23, 2015 · 15:15-16:55 (Room 8)

Session Chairs: VON BERLEPSCH Thilo (DBE TECHNOLOGY GmbH), LABALETTE Thibaud (ANDRA)

- 15:15-15:35 [5053]-Cigéo: The French Geological Disposal Project, OUZOUNIAN Gerald (Andra FR)
- 15:35-15:55 [5138]-Managing the Cigéo Design: A Challenge and an Opportunity, MUSCETTI Roberto (INGEROP IT)
- 15:55-16:15 [5279]-DOPAS Full-Scale Demonstration of Plugs and Seals, VUORIO Marja (Posiva Oy FI)
- 16:15-16:35 [5289]-Developing Resilient Concepts for Geological Disposal of Waste in Japan, UMEKI Hiroyuki (NUMO JP)
- 16:35-16:55 [5290]-Assuring Operational Safety of a Japanese Geological Repository, SUZUKI Satoru (NUMO JP)

#### **6b Public Confidence**

Wednesday, September 23, 2015 · 15:15-16:55 (Room 9)

Session Chair: FAUDON Valérie (SFEN)

- 15:15-15:35 [5022]-Updates on the Responsible Science Program & the "Culture of Nuclear Non-Proliferation" and Curriculum Expansion including the Soft Sciences, KOROVIN Yurij (National Research Nuclear University MEPhl RU)
- 15:35-15:55 [5045]-Knowledge Management Insights from Yucca Mountain, MCMAHON Kevin (SNL US)
- 15:55-16:15 [5323]-The Nuclear Power Problem: Junior High School Dialogue and Summit for Final Disposal of HLW, SAWADA Tetsuo (*Tokyo Institute of Technology JP*)
- 16:15-16:35 [5356]-A Global Acceptance Model Developed by AREVA TN, MONOT Bernard (AREVA FR)

# Wednesday, September 23, 2015 · 17:05-19:05

### 2e-2 Accelerator-Driven Systems

Wednesday, September 23, 2015 · 17:05-19:05 (Room 3)

Session Chairs: BAETEN Peter (SCK.CEN), VAN DEN DURPEL Luc (Nuclear-21.Net)

- 17:05-17:25 [5104]-Transmutation of Minor Actinides and Long-lived Fission Products in a Generic Accelerator-driven System (ADS), FRIEß Friederike (IANUS DE)
- 17:25-17:45 [5185]-Designing of a Fusion Blanket System Using Molten Salt Flinabe for Transmutation of Minor Actinides, SHISHIDO Hiroki (*Tohoku University JP*)
- 17:45-18:05 [5271]-Current Activities for Research and Development on Accelerator-Driven System in JAEA, SUGAWARA Takanori (JAFA JP)
- 18:05-18:25 [5380]-Current Status and Future Plan of Research and Development on Partitioning and Transmutation Based on Double-strata Concept in JAEA, TSUJIMOTO Kazufumi (JAEA JP)
- 18:25-18:45 [5081]-MgO Effect on an ADS Neutronic Parameters, THIOLLIÈRE Nicolas (CNRS FR)

#### 2f-1 Thorium Fuel Cycles-I

Wednesday, September 23, 2015 · 17:05-19:05 (Room 2)

Session Chairs: SHWAGERAUS Eugene (Cambridge University), CORNET Stéphanie (OECD NEA)

- 17:05-17:25 [5486]-Perspectives on the Use of Thorium in the Nuclear Fuel Cycle, MICHEL-SENDIS Franco (OECD/NEA FR)
- 17:25-17:45 [5414]-Analysis of Multi-Stage Thorium Fuel Cycles for Improved Resource Utilization and Plutonium Inventory Management, KRAHN Steven (Vanderbilt University US)
- 17:45-18:05 [5319]-Checkerboard Heterogeneous Uranium-Thorium Seed-Blanket Cores for Pressure-Tube Heavy Water Reactors, MCDONALD Michael (Canadian Nuclear Laboratories CA)
- 18:05-18:25 [5407]-Innovative Thorium Fuel Cycles in a Generation IV Very High Temperature Hybrid System, RODRIGUEZ GARCIA Lorena Pilar (Higher Institute of Technologies and Applied Sciences (InSTEC) CU)
- 18:25-18:45 [5192]-Assessment of the Thorium Fuel Cycle in the Nuclear Belgian Fleet, MERINO Ivan (SCK+CEN BE)

#### 2g-4 Nuclear Reactor Physics and Fuel Cycle Analysis-III

Wednesday, September 23, 2015 · 17:05-19:05 (Room 1)

Session Chairs: REMPE Joy (Rempe and Associates), OHKI Shigeo (JAEA)

- 17:05-17:25 [5278]-Analysis of the Trapu and Doublon Irradiations in Phenix for the Experimental Validation of the Darwin Package for Fast Reactors, LEBRAT Jean Francois (CEA FR)
- 17:25-17:45 [5122]-Calculations of Curium Isotope Impurities in Production of 144Ce with High Specific Activity for Artificial Sources of Antineutrino, SALDIKOV Ivan (National Research Nuclear University MEPhI RU)
- 17:45-18:05 [5135]-Preparation of Data to Estimate the Efficiency of Waste Transmutation in Innovative NPPs, KOROVIN Yurij (Obninsk Institute for Nuclear Power Engineering NRNU MEPhI RU)
- 18:05-18:25 [5119]-Contribution of Neutron Capturing Reactions in Precision Calculations of Total Energy Release in Nuclear Reactors, BAHDANOVICH Rynat (National Research Nuclear University MEPhl RU)

## **3c Uranium Ore Processing and Uranium Conversion**

Wednesday, September 23, 2015 · 17:05-19:05 (Room 7)

Session Chair: POLAK Christian C. (AREVA Mines)

- 17:05-17:25 [5285]-New Process for the Selective Extraction of Uranium from Phosphoric Ores: From Molecule Design to Laboratory Platform Tests, BERNIER Gilles (CEA FR)
- 17:25-17:45 [5470]-Uranium Extraction in Ionic Liquids: Aggregation Effects on Mechanisms, SUKBAATAR Tamir (CEA FR)
- 17:45-18:05 [5511]-Study of Uranium Peroxide Precipitation: Thermodynamic and Kinetic Approaches, BERTRAND Murielle (CEA FR)
- 18:05-18:25 [5475]-A Review of the Denitration Routes in the Conversion Industry, MOREL Bertrand (AREVA FR)
- 18:25-18:45 [5222]-A Comparative Study on Uranium Recovery from Central Anatolia Region Uranium Ores, MURAT Alkan (MTA Mineral Research & Exploration General Directorate TR)

## 4c-1 Fast Neutron Reactor Fuel Manufacturing and Processing: Future Reprocessing

Wednesday, September 23, 2015 · 17:05-19:05 (Room 4)

Session Chairs: TODD Terry (INL), MASSON Michel (CEA)

- 17:05-17:25 [5313]-CEA's R&D on Advanced Fuel Treatment with Multi-recycling of Plutonium and Uranium, GRANDJEAN Stéphane (CEA FR)
- 17:25-17:45 [5106]-Code Concept for Engineering Optimization and Diagnostics of Fast Reactors Spent Nuclear Fuel Reprocessing Mixed Technology, LIVENTSOV Sergey (National Research Tomsk Polytechnic University RU)
- 17:45-18:05 [5311]-Studies on the Disintegration Mechanism of Spherical Fuel Elements for HTGR, WEN Mingfen (*Tsinghua University CN*)
- 18:05-18:25 [5484]-Oxygen Self-diffusion in Polycrystalline U0.55Pu0.45O2 Mixed Oxide, VAUCHY Romain (CEA FR)
- 18:25-18:45 [5103]-A New Approach to the Carbide Fuel Reprocessing, FEDOROV Yuriy (Khlopin Radium Institute RU)

# 4d-2 Final Waste Conditioning: Cement

Wednesday, September 23, 2015 · 17:05-19:05 (Room 6)

Session Chair: TRONCHE Eric (CEA)

- 17:05-17:25 [5063]-Waste Embedding in Cement-based Matrices: Process Modelling for Reliability Improvement, GIRARDIN Pascal (CEA FR)
- 17:25-17:45 [5275]-Up-Scaling Methodology to Provide Knowledge for a Process Book: Application to a Cementation Process., TRONCHE Eric (CEA FR)
- 17:45-18:05 [5037]-New Binders, New Trends, New Potentialities in Waste Cementation, LAMBERTIN David (CEA FR)

# 4f.1-7 Partitioning and Transmutation: Fuels and Recycling Processes: Partitioning Processes-II

Wednesday, September 23, 2015 · 17:05-19:05 (Room 5)

Session Chairs: SASAKI Yuji (JAEA), BOURG Stéphane (CEA)

- 17:05-17:25 [5117]-ALSEP Process Development: Centrifugal Contactor Testing and Speciation Studies, GELIS Artem (ANL US)
- 17:25-17:45 [5128]-Improving TALSPEAK Separations: New Knowledge Leading to Alternate Extractants, Holdback Reagents, and Buffers, NASH Kenneth (Washington State University US)



- 17:45-18:05 [5234]-Separation of Americium from a Concentrated Raffinate by Liquid-Liquid Extraction: Hot Tests in ATALANTE Facility, VANEL Vincent (CEA FR)
- 18:05-18:25 [5299]-Operating Experience of Reprocessing of High Burn up and Short Cooled Fast Reactor Spent Fuel at CORAL, VADIVELRAJAN Vijayakumar (Indira Gandhi Centre for Atomic Research IN)

#### 5a Policies and Strategies in Radioactive Waste Management

Wednesday, September 23, 2015 · 17:05-19:05 (Room 9)

Session Chairs: GARAMSZEGHY Miklos (Mike) (NWMO), UMEKI Hiroyuki (NUMO)

- 17:05-17:25 [5028]-Update on the United States Department of Energy's Used Fuel Disposition R&D Campaign, MCMAHON Kevin (SNL US)
- 17:25-17:45 [5052]-The French Radioactive Waste Disposal System: Communication and Dialogue, OUZOUNIAN Gerald (Andra FR)
- 17:45-18:05 [5316]-French Atomic & Alternative Energies Commission Decommissioning Policy and Strategies: What is at stake & Feedback Experience, PIKETTY Laurence (CEA FR)
- 18:05-18:25 [5343]-Ambitioning a Zero Radioactive Waste Future for Nuclear Energy, ROMARY Jean-Michel (AREVA FR)
- 18:25-18:45 [5449]-Swedish Decommissioning and Waste Management Plans and Financing, WESTLÉN Daniel (Vattenfall SE)

#### 5e-2 Progress in Geological Disposal from Siting to Industrial Implementation-II

Wednesday, September 23, 2015 · 17:05-19:05 (Room 8)

Session Chair: DUMONT Jean-Noël (ANDRA)

- 17:05-17:25 [5294]-The NUMO 2015 Safety Case, FUJIYAMA Tetsuo (NUMO JP)
- 17:25-17:45 [5291]-Advances in Scenario Development for a Deep Geological Repository in Japan, INAGAKI Manabu (NUMO JP)
- 17:45-18:05 [5292]-Challenges for the Next Generation of Radionuclide Transport Models, INAGAKI Manabu (NUMO JP)
- 18:05-18:25 [5466]-Andra's Current Actions and Prospects for Long-Term Memory Preservation of Radioactive Waste Repositories, DUMONT Jean-Noël (Andra FR)

# Thursday, September 24, 2015 · 10:15-13:05

# 1e Environmental and Health Impact

Thursday, September 24, 2015 · 10:15-13:05 (Room 1)

Session Chairs: POINSSOT Christophe (CEA), SEROND Ana-Paula (AREVA)

- 10:15-10:35 [5269]-Resource Intensities of the Back End of the Nuclear Fuel Cycle, PHATHANAPIROM Urairisa (*University of Texas at Austin US*)
- 10:35-10:55 [5287]-Health Effects of Low Dose Exposures to External Ionizing Radiation in the French Cohort of Nuclear Workers CEA-AREVA-EDF, LEURAUD Klervi (IRSN FR)
- 10:55-11:15 [5288]-Environmental Management throughout the Mining Cycle: A Proactive and Integrated Approach, LACROIX Emilie (AREVA FR)
- 11:15-11:35 [5331]-The Cost of Nuclear Accidents: What Results for What Issues?, DEVEZEAUX DE LAVERGNE Jean-Guy (CEA FR)
  ------10 minute break------
- 11:45-12:05 [5334]-NELCAS, An Efficient and Relevant Tool to Assess Key Environmental Indicators for Nuclear Energy, POINSSOT Christophe (CEA FR)
- 12:05-12:25 [5333]-Recycling the Actinides, A Beneficial Contribution to the Overall Environmental Footprint of Nuclear Energy Systems, POINSSOT Christophe (CEA FR)
- 12:25-12:45 [5398]-Evolution of Uranium Mining Practices: An Overview, GRANCEA Luminita (OECD/NEA FR)

#### 2e-1 Partitioning and Transmutation

Thursday, September 24, 2015 · 10:15-13:05 (Room 3)

**Session Chairs:** TAIWO Temitope (*ANL*), SATURNIN Anne (*CEA*)

- 10:15-10:35 [5092]-Development of a Fast Reactor for Minor Actinides Transmutation (1) Overview and Method Development, TAKEDA Toshikazu (*University of Fukui JP*)
- 10:35-10:55 [5105]-Development of a Fast Reactor for Minor Actinides Transmutation (2) Study on the MA Transmutation Core Concepts, FUJIMURA Koji (Hitachi JP)
- 10:55-11:15 [5094]-Development of a Fast Reactor for Minor Actinides (MAs) Transmutation (3) Evaluation of Measurement Data with MA Transmutation, SUGINO Kazuteru (JAEA JP)
- 11:15-11:35 [5096]-Innovative TRU Burning Fast Reactor Cycle Using Uranium-free TRU Metal Fuel (1) Overview and Progress of Core Design Study, ARIE Kazuo (*Toshiba JP*)
- -----10 minute break-----
- 11:45-12:05 [5093]-Innovative TRU Burning Fast Reactor Cycle Using Uranium-free TRU Metal Fuel (2) Fundamental Properties of Uranium-free TRU-Zr Metal Fuel, ARITA Yuji (University of Fukui JP)
- 12:05-12:25 [5383]-Enhancing MA Transmutation by Irradiation of (MA, Zr)Hx in FBR Blanket Region, KONASHI Kenji (*Tohoku University JP*)
- 12:25-12:45 [5203]-Sensitivity Analysis of Minor Actinides Transmutation to Physical and Technological Parameters, TIMOTHÉE Kooyman (CEA FR)

12:45-13:05 [5136]-Analyses of the Performance of the ASTRID-like TRU Burners in Regional Scenario Studies, VEZZONI Barbara (Karlsruhe Institute of Technology - DE)

#### 2f-2 Thorium Fuel Cycles-II

Thursday, September 24, 2015 · 10:15-13:05 (Room 2)

Session Chairs: MICHEL-SENDIS Franco (OECD NEA), KRAHN Steven (Vanderbilt University)

- 10:15-10:35 [5142]-Fuel Cycle Analysis of Advanced Burner Reactors with Breed-and-Burn Thorium Blanket, GORMAN Phillip (University of California, Berkeley US)
- 10:35-10:55 [5163]-The Fuel Self-sufficient RBWR-SS Core Designs, GORMAN Phillip (University of California, Berkeley US)
- 10:55-11:15 [5171]-An Investigation of the Feasibility of Net-Breeding Thorium Cycles in Pressure-Tube Heavy Water Reactors, GOLESORKHI Sourena (*University of Ontario Institute of Technology CA*)
- 11:15-11:35 [5141]-Comparison of Reduced-moderation Boiling Water Reactor and Sodium-cooled Fast Reactor Technologies, GORMAN Phillip (University of California, Berkeley US)

-----10 minute break-----

- 11:45-12:05 [5214]-Three Component U-Pu-Th Fuel for Plutonium Irradiation in Heavy Water Reactors, PEEL Ross (The University of Sheffield GB)
- 12:05-12:25 [5371]-A Comparative Neutronic Analysis of the Sodium Cooled Fast TRU Burning Cores Using Uranium and Thorium Metallic Fuels, YOU Wuseung (Kyung Hee University KR)

#### 4b-4 Fuel Pyroprocessing: Separation

Thursday, September 24, 2015 · 10:15-13:05 (Room 7)

Session Chairs: GLATZ Jean-Paul (JRC-ITU), MENDEZ Eric (CEA)

- 10:15-10:35 [5047]-Electrochemical Extraction of Lutetium and Magnesium by Co-reduction in Molten LiCl-KCl, JIANG Tao (China Academy of Engineering Physics CN)
- 10:35-10:55 [5066]-Electrochemistry and Electrocrystallization of Yttrium on Mo Substrate in LiCl–KCl Eutectic Salt, PESIC Batric (University of Idaho US)
- 10:55-11:15 [5196]-Thermo-Mechanical Properties and Loss of TRU Elements on the Crucible Used in Electrowinning Process in Pyroprocessing, KIM Daeyoung (Chungnam National University KR)
- 11:15-11:35 [5207]-Behavior of Impurities during Purification of LiCl by Zone Refining, SHIM Moonsoo (Chungnam National University KR)

-----10 minute break-----

- 11:45-12:05 [5337]-Electrochemical Properties and Extraction of Cerium(III) in 1-butyl-3-methylimidazolium Chloride and 1-butyl-3-methylimidazolium Tetrafluoroborate Ionic Liquid with Different Electrode, ZHANG Meng (Harbin Engineering University CN)
- 12:05-12:25 [5332]-Electrochemical Extraction of Samarium at Various Cathodes from LiCl–KCl Molten Salt, ZHANG Meng (Harbin Engineering University CN)
- 12:25-12:45 [5432]-Extraction Behavior of Nd(III) and Sm(III) to 1-alkyl-3-methylimidazolium nonafluorobutanesulfonate, ASANUMA Noriko (*Tokai University JP*)

# 4c-2 Fast Neutron Reactor Fuel Manufacturing and Processing: Future Fuels

Thursday, September 24, 2015 · 10:15-13:05 (Room 4)

Session Chairs: RONDINELLA Vincenzo (EC-JRC-ITU), ROYET Vincent (CEA)

- 10:15-10:35 [5221]-MARINE: Irradiation of Sphere-Pac Fuel and Pellets of UO2-x Containing 13% Americium, D'AGATA Elio (JRC-IET NL)
- 10:35-10:55 [5263]-Diffusion Studies of U-Zr Alloys with Fe Alloys at 650C and 700 C, KOURY Daniel (University of Nevada, Las Vegas US)
- 10:55-11:15 [5315]-Preparation and Safety Testing of Fast Reactor Fuels and Targets, SOMERS Joseph (JRC-ITU DE)
- 11:15-11:35 [5433]-The ASGARD Project: Conversion, Manufacture and Dissolution of Advanced Fuels, EKBERG Christian (*Chalmers University of Technology SE*)
- 11:35-11:55 [5451]-DFT-GGA Predictions of Thermodynamic Parameters in Solid Phase for Binary Compounds of Actinides and Fission Products, CERINI Marta (*Politecnico di Milano IT*)

# 4d-3 Final Waste Conditioning: Glass

Thursday, September 24, 2015 · 10:15-13:05 (Room 6)

Session Chairs: MIURA Yoshiyuki (JNFL), LEMONT Florent (CEA)

- 10:15-10:35 [5054]-Low Temperature Glass Composite Material (GCM) Waste Form for Radiological Iodine Captured by Ag-Zeolites: Optimization and Durability, NENOFF Tina (SNL - US)
- 10:35-10:55 [5166]-Effect of the Glass Structure on the Leachability of Borosilicate Glass for HLW Vitrification, SAWADA Kayo (Nagoya University JP)
- 10:55-11:15 [5186]-Formation of Crystalline Phases of Platinoids in Vitrification Process, USAMI Tsuyoshi (CRIEPI JP)
- 11:15-11:35 [5191]-Study for Generation of Yellow Phase Using Small-Scale Joule Heating Melter, URUGA Kazuyoshi (CRIEPI JP)

-----10 minute break-----

11:45-12:05 [5193]-Full-Scale Inactive Test of the Advanced Melter in RRP, KOMAMINE Satoshi (JNFL - JP)

- 12:05-12:25 [5345]-Cold Crucible Deployment in La Hague Facility: The Feedback from the First Four Years of Operation, DIDIERLAURENT Régis (AREVA FR)
- 12:25-12:45 [5348]-New Operation Records for La Hague R7/T7 Vitrification Facilities: A Success of a Continuous Improvement Program, GARCIA Aurelien (AREVA FR)

### 4f.1-8 Partitioning and Transmutation: Fuels and Recycling Processes: Kinetics-modeling

Thursday, September 24, 2015 · 10:15-13:05 (Room 5)

Session Chairs: GEIST Andreas (Karlsruhe Institute of Technology), CHARBONNEL Marie-Christine (CEA)

- 10:15-10:35 [5067]-Kinetics Challenges Associated with Minor Actinide Separations Using 2-Ethylhexylphosphonic Acid Mono-2-ethylhexyl Ester, LUMETTA Gregg (PNNL US)
- 10:35-10:55 [5090]-Actinide and Lanthanide Solvent Extraction Kinetic Rates via Microfluidics, GELIS Artem (ANL US)
- 10:55-11:15 [5116]-Solvent Extraction Modeling in Nuclear Fuel Cycle Reprocessing: Speciation of Fission Products with Monoamides, MOEYAERT Pauline (CEA FR)
- 11:15-11:35 [5199]-Dissolution Behavior of MgO- and Mo-Based Inert Matrix Fuel for the Transmutation of Plutonium and Minor Actinides, MODOLO Giuseppe (Forschungszentrum Jülich GmbH DE)

-----10 minute break------

- 11:45-12:05 [5360]-Insights into Lanthanide-HEH[EHP] Exchange Dynamics in Advanced TALSPEAK Systems, KRAHN Elizabeth (Washington State University US)
- 12:05-12:25 [5368]-PAREX a Numeric Code for Plant Operation Aid, DINH Binh (CEA FR)
- 12:25-12:45 [5423]-Molecular Dynamics Simulations and Experimental Studies of Tri-n-butyl Phosphate for Liquid-Liquid Extraction, NGUYEN Hung (*University of California, Irvine US*)

#### 5c.5 Strategic and Technical Development in D&D: Site and Building Rehabilitation

Thursday, September 24, 2015 · 10:15-11:35 (Room 8)

Session Chairs: LARSSON Arne (STUDSVIK), PELLENZ Gilles (EDF)

- 10:15-10:35 [5079]-Possibilities of Soil Remediation and Experiences at Application Using a Belt Conveyor System, LANGER Felix (NUKEM Technologies Engineering Services DE)
- 10:35-10:55 [5149]-Procedure of Regulatory Clearance for Metal Radwastes at KAERI, SHIN Ki-Baek (KAERI KR)
- 10:55-11:15 [5189]-Waste Retrieval Technologies New Approaches Demonstrated at Selected Projects, SOKCIC-KOSTIC Marina (NUKEM Technologies Engineering Services DE)
- 11:15-11:35 [5344]-Nuclear Energy Agency Task Group: Sustainable Strategies for Site Remediation at Nuclear Sites, DECUNG Fabien (EDF FR)

# 5c.6 Strategic and Technical Development in D&D: Material Management Recycling and Reuse

Thursday, September 24, 2015 · 11:45-13:05 (Room 8)

Session Chair: LARSSON Arne (STUDSVIK)

- 11:45-12:05 [5041]-Development of Fuel Debris Treatment Technology by the Fluorination Method, FUKASAWA Tetsuo (Hitachi JP)
- 12:05-12:25 [5260]-SO.G.I.N Caorso NPP Experience in Management of Materials Deriving from Dismantling of Turbine Systems and of the Off Gas Building, ROMANI Sabrina (SO.G.I.N IT)
- 12:25-12:45 [5296]-Demonstration of a 100 g-scale System for Zirconium Recovery from Used Nuclear Fuel Cladding Hull Waste, JEON Min Ku (KAERI KR)
- 12:45-13:05 [5370]-Fluorination Behavior of Uranium and Iron Oides by Fluorine, SATO Nobuaki (Tohoku University JP)

### **6c Human Capacity Building**

Thursday, September 24, 2015 · 10:15-13:05 (Room 9)

Session Chair: BEELEY Philip (Khalifa University)

- 10:15-10:35 [5324]-HRD Issues in Support the Fuel Cycle Development in Embarking States, ARTISIUK Vladimir (Rosatom RU)
- 10:35-10:55 [5495]-Training the 21st Century Nuclear Workforce at South Florida's Public Research University, KAVALLIERATOS Konstantinos (Florida International University US)
- 10:55-11:15 [5500]-Building and Sustaining a Competent Nuclear Workforce A Perspective from a Global Nuclear Recruiter, THOMAS Callum (*Thomas Thor Associates GB*)
- 11:15-11:35 [5086]-Capacity Building Activities for Introducing Nuclear Power in a Mix Energy System, BOUHELAL Oum Keltoum (Higher National School of Mines of Rabat MA)

-----10 minute break-----

- 11:45-12:05 [5070]-An Investigation of Multi-culture Effects on an Insider Threat in Nuclear Power Development, SUH Young A
- 12:05-12:25 [5498]-The French Offer in Human Capacity Building, NAVON-GROSS Audrey (I2EN FR)