



## Programme

### Sunday 9 October 2016

- 15:00–18:00      ENS Career Advisory Service
- 17:00–19:30      Pre-registration
- 18:30–20:00      Welcome Reception

### Monday 10 October 2016

- 8:30–11:00      **Opening & Plenary Session I** (*Ballroom ABC*)

#### **Opening**

R. Schene, President of the European Nuclear Society  
Prof. F. Deconinck, Chair of the ENC 2016 Programme Committee  
E. Langegger, President ENS Young Generation  
Dr. A. Klein, President of the American Nuclear Society

#### **Welcome Address**

J. Sobolewski, Director, Polish Ministry of Energy

#### **Keynote speeches**

##### **Overview and outlook on nuclear energy production worldwide**

C. Xerri, Director, Division of Nuclear Fuel Cycle and Waste Technology, IAEA

##### **A roadmap for nuclear fission innovation**

D. Iracane, Deputy Director-General, OECD/NEA

##### **Industrial and Medical Applications using a Modern and Intense Neutron Source**

W. Petry, TU Munich, Germany



**Status of ITER at the transition to construction**

G. Janeschitz, Central Integration Office Deputy Head, ITER

11:00-11:30 Coffee break

11:30-12:30 **Plenary Session II: Panel Discussion**  
**Challenges and issues for nuclear new build**

*(Ballroom ABC)*

Moderator: J.-P. Poncelet, Secretary General ENS

12:30-13:30 Lunch break

13:30-15:30 **Plenary Session III: current and future reactor technologies** *(room: Ballroom ABC)*

Chair: F. Naredo, Westinghouse, Belgium; member of the ENS Board of Directors

**Challenges for long-term operations**

M. Debes, EDF, France

**How to resolve a "nuclear mystery" to safely restart two Nuclear Power Plants**

J. Van Vyve, ENGIE Electrabel, Belgium

**GENIV – European Fast Reactors**

H. Aït Abderrahim, SCK•CEN, Belgium

**A US/EU joint effort to demonstrate industrial high temperature nuclear cogeneration with HTGR technology**

D. Hittner, LGI Consulting, France

15:30-16:30 Coffee break &  
**Poster Session**



Mon 16:30-18:50 Parallel session

**Reactor Pressure Vessel Issues** (room: Ballroom AB)

Chair: L. Vanhoenacker, Tractebel Engineering, Belgium

Co-chair: R. Chaouadi, SCK•CEN, Belgium (tbc)

ENC2016-A0103	Inspection results from Reactor Pressure Vessel shells affected by hydrogen flaking	De Smet, M. (1); Dombret, P. (1); Pasquier, T. (2) 1 - Tractebel (Engie), Belgium 2 - Intercontrôle (Areva), France
ENC2016-A0141	Qualification of Ultrasonic Examination for Detection and Sizing of Hydrogen Flakes in Large Forgings	Moussebois, D. (1); Ancrenaz, P. (2) 1 - Engie Lab, Laborelec, Belgium 2 - Areva Intercontrôle, France
ENC2016-A0125	Doel3 and Tihange2 reactor pressure vessels indications – assessment of nature and potential evolution	De Vroey, S. (1); De Bruycker, E. (1); Stubbe, J. (2) 1 - Laborelec Engie Lab, Belgium 2 - Consultant Laborelec Engie Lab, Belgium
ENC2016-A0124	The role of the BR2 material test reactor in the materials properties in-support of the structural integrity assessment of flaked RPV shells	Chaouadi, R. (1); Van Walle, E. (1); Gérard, R. (2) 1 - SCK•CEN, Belgium 2 - Tactebel-ENGIE, Belgium
ENC2016-A0100	Material properties for Structural integrity Assessment of Reactor Pressure Vessel shells affected by hydrogen flaking	Gerard, R. (1); Chaouadi, R. (2) 1 - Tractebel ENGIE, Belgium 2 - SCK.CEN, Belgium
ENC2016-A0096	INTERACTION OF MULTIPLE QUASI-LAMINAR FLAWS: DEVELOPMENT AND VALIDATION OF SPECIFIC GROUPING RULES	Lacroix, V. (1); Dulieu, P. (1); Bogaert, A.-S. (1) 1 - Tractebel (ENGIE), Belgium
ENC2016-A0095	DOEL 3 AND TIHANGE 2 RPVS: FLAW ACCEPTABILITY ASSESSMENT – METHODOLOGY, RESULTS AND CONSERVATISMS	Lacroix, V. (1); Dulieu, P. (1); Auglaire, M. (1) 1 - Tractebel (ENGIE), Belgium

Mon 16:30-18:30 Parallel session

**Nuclear Fuel** (room: Ballroom C)

Chair: A. Borio Di Tigliole, IAEA

Co-chair: D. Kozak, Euratom Supply Agency, Luxembourg

ENC2016-A0023	THE EU MARKET OF NUCLEAR MATERIAL AND THE ROLE OF THE EURATOM SUPPLY AGENCY	Kozak, D. (1); Tsalas, S. (2) 1 - Euratom Supply Agency, Luxembourg 2 - European Commission, Luxembourg
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ENC2016-A0034	IMPLEMENTATION OF THE FIRST STEPS OF THE INTEGRAL TEST OF AMERICIUM RECYCLING IN THE ATALANTE FACILITY	Costenoble, S. (1); Bollesteros, M.-J. (1); Antegnard, F. (1); Calor, J.-N. (1); Vanel, V. (1); Montuir, M. (1); Sorel, C. (1); Espinoux, D. (1); Juvenelle, A. (1) 1 - CEA, Nuclear Energy Division, Radiochemistry and Process Department, Marcoule Research Centre, France
ENC2016-A0036	NEUTRONIC CHARACTERISTIC OF PWR CORE WITH ACCIDENT TOLERANT FUEL	Boettcher, A. (1); Marcinkowska, Z. (1) 1 - National Centre for Nuclear Research, Poland
ENC2016-A0072	Heat exchange modelling in uranium fuel assembly – operating pressure case	Wielgosz, M. (1); Kwiatkowski, T. (1); Prusiński, P. (1); Zgorzelski, D. (1) 1 - National Centre for Nuclear Research, Poland
ENC2016-A0178	Annealing Temperature Optimization of ALPE	Nam, Y. (1); Lee, H. (1); Im, C. (1); Woo, H. (1) 1 - KNFC, Korea Republic of

Mon 16:30-18:30 Parallel session

**Advanced Reactor Technologies I (room: Belweder A, 2<sup>nd</sup> floor)**

Chair: F. Roelofs, NRG, the Netherlands

Co-chair: K. Katovsky, Brno University of Technology, Czech Republic

<b>Keynote:</b> ENC2016-A0003	<b>Liquid Metal Thermal Hydraulics, State of the Art and Beyond: The SESAME Project</b>	<b>Roelofs, F.</b> (1); Shams, A. (1); Batta, A. (2); Moreau, V. (3); Di Piazza, I. (4); Gerschenfeld, A. (5); Planquart, P. (6); Tarantino, M. (4) 1 - NRG, Netherlands 2 - KIT, Germany 3 - CRS4, Italy 4 - ENEA, Italy 5 - CEA, France 6 - VKI, Belgium
ENC2016-A0112	Numerical simulations of selected experiments in the PLANDTL Test Facility using Direct Heat Exchange System	Gurgacz, S. (1); Bieder, U. (2); Gorsse, Y. (2); Swirski, K. (1); Niewinski, G. (1) 1 - Institute of Heat Engineering, Warsaw University of Technology, Poland 2 - Commissariat à l'énergie atomique et aux énergies alternatives, France
ENC2016-A0009	Neutron spectrum modulation for heterogeneous transmutation of minor actinides	Kooyman, T. (1); Buiron, L. (1); Fontaine, B. (1) 1 - CEA Cadarache DEN/DER/SPRC/LEDC, France
ENC2016-A0142	Reactivity monitoring and modelling of the neutron flux distribution in Accelerator Driven Systems (ADS)	Gajda, P. (1); Stanisiz, P. (1); Orliński, M. (1) 1 - AGH University of Science and Technology, Faculty of Energy and Fuels, Department of Nuclear Energy, Poland



ENC2016-A0078	HTRs: Recent UK Modelling Developments and Applications	Lindley, B. (1); Lillington, J. (1) Kotlyar, D. (2); Delaney, M. (1) 1 - Amec Foster Wheeler, United Kingdom 2- University of Cambridge, United Kingdom
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Mon 16:30-18:30 Parallel session

**Education, training and knowledge management I**

*(room: Belweder B, 2<sup>nd</sup> floor)*

Chair: P. Ravetto, Politecnico di Torino, Italy

Co-chair: S. San Antonio, Tecnatom, Spain

ENC2016-A0031	Awareness Training of Design Engineers	Schoenfelder, C. (1); Geisser, R. (2) 1 - Schoenfelder.Training, Germany 2 - AREVA GmbH, Germany
ENC2016 - A	Engaging people in turbulent environments	Unkrig E. (1); 1- AREVA GmbH, Germany
ENC2016-A0157	Development of training for Radiation Protection Experts with a view on mutual recognition and international mobility: results of the ENETRAP III 7FP project	Coeck, M. (1); Schmitt-Hannig, A. (2); Livolsi, P. (3); Stewart, J. (4); Trumm, S. (5); Marco, M. (6) 1 - SCK-CEN, Belgium 2 - BfS, Germany 3 - CEA-INSTN, France 4 - PHE, United Kingdom 5 - KIT, Germany 6 - CIEMAT, Spain
ENC2016-A0131	Benefits of Simulation Assisted Engineering	Gil, E. (1); Rey, P. (1) 1 - Tecnatom, Spain
ENC2016-A0066	IAEA SODIUM-COOLED FAST REACTOR BASIC PRINCIPLES SIMULATOR DEVELOPMENT FOR EDUCATIONAL PURPOSES	Batra, C. (1); Monti, S. (1); Painter, C. (1) 1 - International Atomic Energy Agency, Austria



## Tuesday 11 October 2016

Tue 8:30-10:30 Parallel session

### **Plant Operations** (*room: Ballroom AB*)

Chair: F. Ortega, Tecnatom, Spain

Co-chair: A. Duthou, Rolls-Royce, France

ENC2016-A0129	Regulatory approaches for safety systems licensing: focus on US NRC, France ASN and Finland STUK	Bach, J. (1); Palaric, J.-M. (1); Duthou, A. (1); 1 - Rolls-Royce, France
ENC2016-A0074	Design of Procedure Based Generic Task Database for HRA	Kim, S. (1); Kim, Y. (1); Choi, S. Y. (1); Park, J. (1); Jung, W. (1) 1 - Korea Atomic Energy Research Institute, Korea, Republic of
ENC2016-A0107	System and Software Design of the Plant Protection System using PLC	Sohn, S. (1); Park, C. (1); Choi, W. (1); Baek, S. (1) 1 - KEPCO E&C, Korea, Republic of
ENC2016-A0048	Ultrasonic tomography of composite materials for nuclear industry	Sedanova, E. (1); Zhvyrbliia, V. (1); Sednev, D. (1) 1 - National Research Tomsk Politechnic University, Russian Federation
ENC2016-A0132	Computerized Operation Support Systems: Challenges, Benefits and O&M Savings	Gil, E. (1); Ramos, M. (1); Fernández, S. (1); 1 - Tecnatom, Spain
ENC2016-A0126	Fire analysis with Fire Dynamics Simulator (FDS) software in NPP areas	Valls, J. (1); Zamora, I. (1); Colomer, C. (1); Hermosa, B. (1); Fradera, J. (1); Salellas, J. (1); Fabri, M (1); Salvat, J. (1); Martínez, E. (1); Machada, A. (2); 1 - IDOM , Spain 2 - Associació Nuclear Ascó-Vandellòs II (ANAV), Spain

Tue 8:30-10:30 Parallel session

### **Nuclear technology for industry and society**

*(room: Ballroom C)*

Chair: H. Gerstenberg, TU Munich, Germany

Co-chair: F. Deconinck, VUB, Belgium

ENC2016-A0021	SECURITY OF SUPPLY OF MEDICAL RADIOISOTOPES IN THE EU	Baranczyk, R. (1); Tsalas, S. (1) 1 - Euratom Supply Agency, Luxembourg
ENC2016-A0171	N.c.a. Lu-177 as a Pharmaceutical Drug Precursor: From Manufacture to New Cancer Treatment	Henkelmann, R. (1) 1 - Isotope Technologies Garching GmbH, Germany

ENC2016-A0038	A NEW SYSTEM FOR DISTINGUISHING THE STATIC AND DYNAMIC EXPOSURE FOR OCCUPATIONALLY EXPOSED WORKERS -ANALYSIS AND PRACTICE	Nalichowska, E. (1); Kopeć, R. (1); Kłosowski, M. (1) 1 - The H. Niewodniczanski Institute of Nuclear Physics Polish Academy of Sciences, Poland
ENC2016-A0060	EVOLUTION OF ENVIRONMENTAL POLLUTION IN THE CHERNOBYL AREA AND IN POLAND DURING 30 YEARS AFTER THE ACCIDENT	Isajenko, K. (1); Kireev, S. (2); Kuszneruk, K. (3); Pluta, J. (3); Rabinski, M. (4); Szurmanska, M. (3) 1 - Central Laboratory for Radiological Protection, Poland 2 - State Agency of Ukraine on Exclusion Zone Management, Ukraine 3 - Warsaw University of Technology, Faculty of Physics, Poland 4 - National Centre for Nuclear Research, Poland
ENC2016-A0118	Physiological loss of electrolytes in <i>Phragmites australis</i> (Cav.) Trin. ex Steud leaves under conditions of chronic radiation exposure	Ganzha, C. (1); Ganzha, D. (2) 1 - Institute of Hydrobiology of NAS of Ukraine, Ukraine 2 - Ivano-Frankivsk Department of the Ukrainian Geographical Society, Ukraine
ENC2016-A0170	NTD OF SILICON; HOW IS IT DONE AND WHAT ARE THE BENEFITS TO THE SOCIETY?	Hansen, M. G. (1) 1 - Topsil GlobalWafers A/S, Denmark

Tue 8:30-10:30 Parallel session

**Public Engagement** (*room:Belweder A, 2<sup>nd</sup> floor*)

Chair: S. San Antonio, Tecnatom, Spain

Co-chair: D. Hoffman, Excel Services Corporation, US

<b>Keynote</b>	<b>Informing state, regional and federal policymakers and lawmakers about the benefits of nuclear energy from the perspectives of energy, economy and environment</b>	<b>D. Hoffman,</b> Excel Services Corporation, US
ENC2016-A0008	CONSIDERING THE PAST : THE REORIENTATIONS OF THE FRENCH PUBLIC PERCEPTION BETWEEN THE 1970'S AND THE 1980'S	Jandot, A. (1) 1 - Blaise Pascal University, France
ENC2016-A0134	Engaging with society on nuclear energy matters – a public dialogue on the UK's 'Nuclear Energy and Society: a Concordat for Public Engagement'	Grundy, C. (1); Holmes, C. (1); Holmes, R. (1); Scott, J. (1); Bull, A. (1); Cormack, M. (1); 1 - National Nuclear Laboratory, United Kingdom
ENC2016-A0168	COMMUNICATION ABOUT IONISING RADIATION: FROM INFORMATION PROVISION TO STAKEHOLDER ENGAGEMENT	Perko, T. (1); Turcanu C. (1) 1 - SCK•CEN, Belgium



ENC2016-A0039	What if energy comes from the rainbow? Learning from activist and social movements: communication and public engagement for nuclear	Melgar Higuero, S. (1) 1 - Loughborough University London, United Kingdom
ENC2016-A0194	Marketing and Communications: Strategy Development and Implementation	Eastup, T. (1) 1 - Nuclear Institute, United Kingdom

Tue 8:30-10:30      Parallel session  
**Education, training and knowledge management II**  
*(room:Belweder B, 2<sup>nd</sup> floor)*  
 Chair: E. Unkrig, AREVA GmbH, Germany  
 Co-chair: M. Coeck, SCK•CEN, Belgium

ENC2016-A0004	Status and Developments of Human Resource Requirements in the Nuclear Industry	Roelofs, F. (1); Flore, M. (2) 1 - NRG, Netherlands 2 - JRC, Netherlands
ENC2016-A0133	Virtual Reality Simulator (360° VRS)	Delgado, J.L. (1); Fernández, P. (1); Barambones, V. (1); Ruíz, F. J. (1) 1 - Tecnatom, Spain
ENC2016-A0146	A Broad Range of Training and Learning Tools for NPP Operators and Support Staff	Chatlani, M. (1); Gagnon, B. (1); 1 - L-3 MAPPS, Canada
ENC2016-A0156	Competence building in nuclear by the SCK•CEN Academy for Nuclear Science and Technology	Coeck, M. (1) 1 - SCK-CEN, Belgium
ENC2016-A0160	The Czech Nuclear Society activities for attracting nuclear career, knowledge management and education of high school and university students	Katovsky, K. (1); Pavkova, Z. (2); Kriz, Z. (3) 1 - Czech Nuclear Society and Brno University of Technology, Czech Republic 2 - Czech Nuclear Society and CEZ, a.s., Czech Republic 3 - Czech Nuclear Society and Research Centre Rez, Czech Republic
ENC2016 - A	Nuclear education and training in EURATOM Research and Training Programmes	Gadomska, M. (1); 1- European Commission

10:30-11:00      Coffee break





11:00–12:30

**Plenary Session IV: Basic Nuclear Science & Applications for Industry and Society**

(room: Ballroom AB)

Chair: A. Klein, President of the American Nuclear Society

**The Nucleus: one hundred years of surprises and benefits to society**

MJ Borge, CERN, Switzerland

**The European Spallation Source Project**

G. Muhrer, the European Spallation Source Project, Sweden

**Reshaping Nuclear Research: Lessons Learned from Integration of Social Sciences and Humanities in SCK•CEN**

C. Turcanu, SCK•CEN, Belgium

12:30-13:30

Lunch break

13:30–15:30

**Plenary Session V: Life Sciences**

(room: Ballroom AB)

Chair: F. Deconinck, VUB, Belgium

**The Good and Bad Radiation**

M. Waligorski, Institute of Nuclear Physics of the Polish Academy of Sciences (IFJ PAN) ,Maria Skłodowska-Curie Memorial Institute of Oncology (COOK), Poland

**Long term health effects 30 years after Chernobyl - separating fact from fiction**

G. Thomas, Imperial College London, UK

**Recent evolution of nuclear applications in healthcare**

R. Zimmermann, Chrysalium Consulting – Lalaye, France

**The Dutch DIVA project**

R. Schram, NRG, the Netherlands

15:30-16:00

Coffee break



Tue 16:00-17:40 Parallel session

**Fuel II (room: Ballroom AB)**

Chair: K. Katovsky, Brno University of Technology, Czech Republic  
 Co-chair: C. Bolesch, Swiss Federal Institute of Technology Zurich (ETHZ), Switzerland

ENC2016-A0082	Generic dryout studies to predict the effect of functional spacer in a BWR fuel lattice	Prasser, H.-M. (1); Bolesch, C. (1); Cramer, K. (2); Saxena, A. (1); Zboray, R. (2) 1 - Swiss Federal Institute of Technology Zurich (ETHZ), Switzerland 2 - Paul Scherrer Institute (PSI), Switzerland
ENC2016-A0111	Monte Carlo modeling of PWR fuel assembly with thorium fuel	Oettingen, M. (1); Stanisz, P. (1); 1 - AGH University of Science and Technology, Faculty of Energy and Fuels, Department of Nuclear Energy, Poland
ENC2016-A0119	Simulated Transient (TOP and LOF) Behaviors of Fuel Cladding of SFR	Shin, S. H. (1); Kim, J. H. (1); Kim, J.-H. (1); Ryu, W. S. (1); Park, S. G. (1); Kim, S. H. (1) 1 - Korea Atomic Energy Research Institute (KAERI), Korea, Republic of
ENC2016-A0135	METHODOLOGY TO CHARACTERIZE THE STRUCTURAL INTEGRITY ON PHWR FUEL PELLETS	Medina, J. P. (1); Medina, M. E. (1); Alvarez, L. (1) 1 - National Commission on Atomic Energy (CNEA), Argentina
ENC2016-A0149	ANICCA CODE AND THE BELGIAN NUCLEAR FUEL CYCLE.	Merino, I. (1); Messaoudi, N. (1); Van den Eynde, G. (1) 1 - SCK/CEN, Belgium

Tue 16:00-17:40 Parallel session

**Advanced Reactor Technologies II (room: Ballroom C)**

Chair: R. Stainsby, NNL, UK  
 Co-chair: T. Schulenberg, KIT, Germany

<b>Keynote</b> ENC2016-A0143	<b>Reactor and Power Conversion System Options for Nuclear Electric Spacecraft Propulsion</b>	<b>Stainsby, R.</b> (1); Gregg, R. (2) 1 - National Nuclear Laboratory, Chadwick House, United Kingdom 2 - National Nuclear Laboratory, Preston Laboratory, United Kingdom
ENC2016-A0020	Code Development and Simulation of the Supercritical CO <sub>2</sub> Heat Removal System	Venker, J. (1); Starflinger, J. (2); Schaffrath, A. (3) 1 - TÜV SÜD Energietechnik GmbH Baden-Württemberg, Germany 2 - University of Stuttgart, Institute of Nuclear Technology and Energy Systems, Germany 3 - Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) GmbH, Germany

ENC2016-A0154	ALLEGRO core calculations	Pónya, P. (1); Czifrus, S. (1) 1 - Institute of Nuclear Techniques, Budapest University of Technology, Hungary
ENC2016-A0016	Lifting Force of the In-vessel CEDM	Park, J. (1); Jang, Y. (1); Lee, M. (1); Cho, Y. (1); Kim, H. (1); Maeng, C. (1) 1 - KEPCO E&C, Korea, Republic of

Tue 16:00-17:40 Parallel session

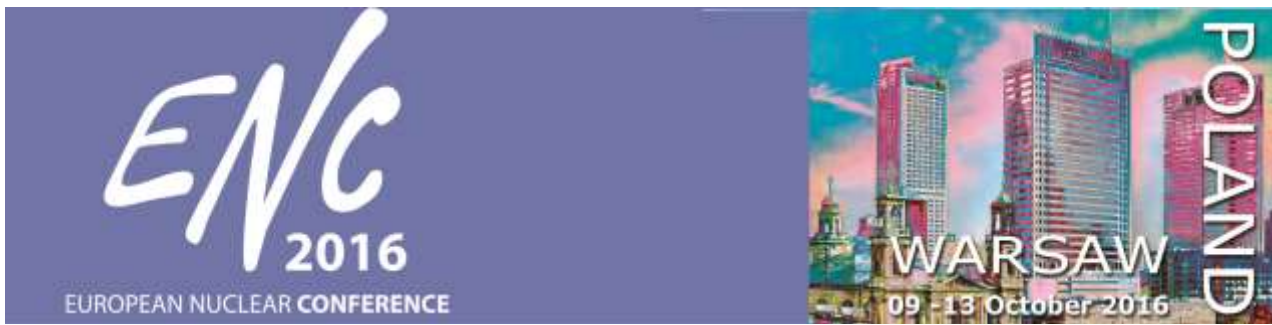
**Education, training and knowledge management –  
E&T EU success stories, challenges and future perspectives**

*(room: Belweder A, 2<sup>nd</sup> floor)*

Chair: R. Garbil, European Commission

Co-chair: M. Flore, European Commission – JRC IET

	Introduction by the chairman: E&T Euratom Success stories and perspectives	Garbil, R. (1) 1 - European Commission
ENC2016-A0092	EHRO-N Post-Fukushima Education & Training Trends Analysis for the European Nuclear Energy Sector	Flore, M. (1) 1 - European Commission - JRC IET, Netherlands
ENC2016-A0155	The European Nuclear Education Network: towards harmonisation of Education, Training, and Transfer of Knowledge	Cizelj, L. (1); Tuomisto, F. (2); Bazargan-Sabet, B. (3); Decobert, V. (4); Anzieu, P. (5); Coeck, M. (6); Kropik, M. (7); Eaton, M. (8); Cortes, G. (9); Dieguez-Porras, P. (10) 1 - Jožef Stefan Institute, Slovenia 2 - Aalto University, Finland 3 - Universite de Lorraine, France 4 - Westinghouse, Belgium 5 - CEA-INSTN, France 6 - SCK-CEN, Belgium 7 - Czech Technical University in Prague, Czech Republic 8 - Imperial College London, United Kingdom 9 - Universidad Politecnica de Cataluna, Spain 10 - ENEN Association, France
	IAEA Capacity Building Initiative including E&T and IAEA Euratom/IAEA E&T on-going mapping initiative	Moracho, M. (1); Mallik, S. (1) 1 - IAEA



## 10<sup>th</sup> ENEN PhD Event & Prize 2016

In the framework of ENC 2016, the European Nuclear Education Network (**ENEN**) Association, in cooperation with the Joint Research Centre of the European Commission, is organizing the 10th ENEN PhD Prize 2016.

The objectives of the ENEN PhD Event are:

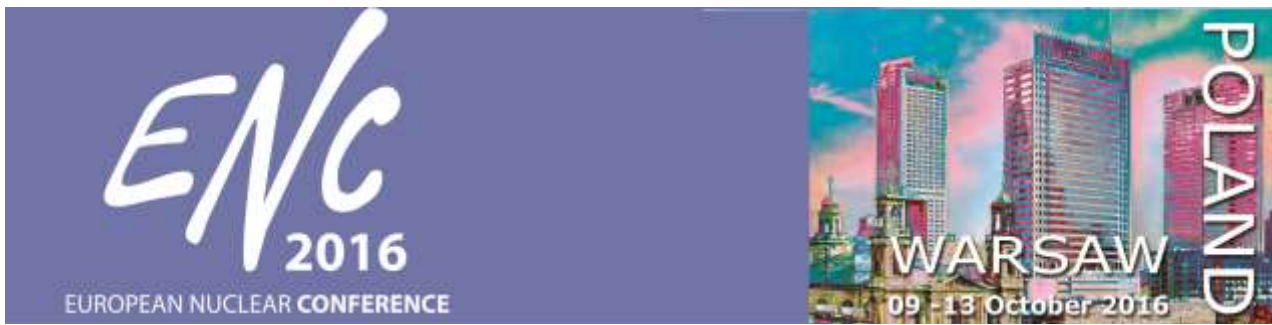
- to provide a forum for PhD students to present their research work to their fellows and colleagues in a friendly but competitive spirit,
- to promote the research work of PhD students in the nuclear fields, in particular experimental work,
- to set up a bridge between PhD students and professionals in the nuclear field.

Participating PhD students are either studying or working at the ENEN Members in any nuclear field, or completed their PhD studies at an ENEN Member after the application deadline of the previous ENEN PhD Event, i.e. 16 February 2015.

At this event 12 PhD students will present their research work. They have been nominated by ENEN Members and selected by the ENEN PhD Prize Jury.

All presentations will be judged by the Jury members on the submitted paper as well as on the quality of their presentation and on the clarity in the discussion while answering the questions and discussions. Three best presentations will be awarded the ENEN Prize.

The Award Ceremony of the ENEN prize will be held during the closing session of the ENC 2016 conference on Wednesday 12<sup>th</sup> October.



Tue 8:30-10:30 Parallel session



**10<sup>th</sup> ENEN PhD Event I** (room: Saski, 2<sup>nd</sup> floor)

Participating PhD students present their work

ENC2016-A0173	Water Leak Sealing by Molten Metal Injection – experimental and numerical study	Secareanu, R.-C. (1); Mereu, R. (2); Takahashi, M. (3); Prisecaru, I. (1) 1 - University "Politehnica" Bucharest, Romania 2 - Politecnico di Milano, Italy 3 - Tokyo Institute of Technology, Japan
ENC2016-A0181	Solid state ionic devices for lead-alloy cooled nuclear reactors	Manfredi, G. (1); Lim, J. (1); Aerts, A. (1); Herman-Buess, C. (2) 1 - ANS-Chemistry and Conditioning Program group, SCK•CEN (Belgian nuclear research centre) , Belgium 2 - Chimie Analytique et Chimie des Interfaces (Fac. des Sciences), ULB (Université Libre de Bruxelles), Belgium
ENC2016-A0182	IMPROVEMENT OF THE CONTROL-ORIENTED MODELLING OF THE GEN-IV LEAD-COOLED FAST REACTOR: DEVELOPMENT OF REDUCED ORDER METHODS	Lorenzi, S. (1); Cammi, A. (1); Luzzi, L. (1); Rozza, G. (2) 1 - Politecnico di Milano – Department of Energy, Italy 2 - SISSA, International School for Advanced Studies, Mathematics Area, mathLab, Italy
ENC2016-A0183	OXIDATION OF CARBIDES INCLUDING CARBIDE NUCLEAR FUELS	Gasparrini, C. (1); Lee, W. E. (1); Podor, R. (2); Horlait, D. (3) 1 - Centre for Nuclear Engineering (CNE) & Department of Materials, Imperial College London, United Kingdom 2 - Institut de Chimie Séparative de Marcoule (ICSM), UMR 5257 CEA/CNRS/UM/ENSCM, France 3 - CNRS, Centre d'Études Nucléaires de Bordeaux-Gradignan, UMR 5797, France

10:30-11:00 Coffee break

Tue 11:00-13:00 Parallel Session



**10<sup>th</sup> ENEN PhD Event II** (room: Saski, 2<sup>nd</sup> floor)

Participating PhD students present their work

ENC2016-A0184	LIFE-TIME PREDICTIONS ACCURACY OF THERMALLY FATIGUED PIPES UNDER TURBULENTLY MIXING FLUIDS	Costa, O. (1); Cizelj, L. (1) 1 - Reactor engineering division, Jožef Stefan Institute, Slovenia
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ENC2016-A0185	Evaporation of polonium from lead-bismuth eutectic nuclear coolant	Gonzalez Prieto, B. (1); Lim, J. (1); Rosseel, K. (1); Aerts, A. (1); Martens, J. A. (2); Neuhausen, J. (3) 1 - ANS-Chemistry and Conditioning Programme group, SCK•CEN (Belgian Nuclear Research Centre), Belgium 2 - Centre for Surface Chemistry and Catalysis, KU Leuven, Belgium 3 - Laboratory for Radio- and Environmental Chemistry, Paul Scherrer Institute, Switzerland
ENC2016-A0186	Impinging jets – a potential cooling method for plasma-facing components in DEMO fusion reactor	Draksler, M. (1); Cizelj, L. (1); Končar, B. (1) 1 - Reactor Engineering Division, Jožef Stefan Institute, Slovenia
ENC2016-A0187	MODELLING OF TURBULENT FLOW IN A FUEL ASSEMBLY OF PRESSURIZED WATER REACTOR	Mikuž, B. (1); Tiselj, I. (1) 1 - Reactor Engineering Division, Jožef Stefan Institute, Slovenia

13:00-14:00 Lunch break



Tue 14:00-16:00 Parallel session

**10<sup>th</sup> ENEN PhD Event III** (room: Saski, 2<sup>nd</sup> floor)

Participating PhD students present their work

ENC2016-A0188	INVESTIGATIONS OF VERY HIGH BURNUP UO <sub>2</sub> FUELS IN LIGHT WATER REACTORS	Cappia, F. (1); Tijero Cavia J.I. (2); Macián-Juan, R. (2); Rondinella, V. V. (1) 1 - European Commission, Joint Research Centre, Institute for Transuranium Elements, Germany 2 - Technische Universität München, Department of Nuclear Engineering, Germany
ENC2016-A0189	THE APPLICATION OF ISOGOMETRIC ANALYSIS TO THE FIRST-ORDER FORM OF THE NEUTRON TRANSPORT EQUATION WITH DISCRETE ORDINATE (SN) ANGULAR DISCRETISATION	Owens, A. R. (1) 1 - Nuclear Engineering Group, Department of Mechanical Engineering, Imperial College London, United Kingdom
ENC2016-A0190	NEUTRONICS METHODS FOR THE MULTIPHYSICS ANALYSIS OF INNOVATIVE NUCLEAR FISSION SYSTEMS	Caron, D. (1); Dulla, S. (1); Ravetto, P. (1); Savoldi, L. (1); Zanino, R. (1) 1 - NEMO Group, Dipartimento Energia, Politecnico di Torino, Italy

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2016

EUROPEAN NUCLEAR CONFERENCE



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ENC2016-A0191	OBJECT KINETIC MONTE CARLO MODELS FOR THE MICROSTRUCTURE EVOLUTION OF NEUTRON-IRRADIATED REACTOR PRESSURE VESSEL STEELS AND FERRITIC/MARTENSITIC ALLOYS	Chiapetto, M. (1); Malberba, L. (1); Becquart, C. (2) 1 - SCK•CEN, Nuclear Materials Science Institute, Belgium 2 - Unité Matériaux Et Transformations (UMET), Université de Lille 1, France
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### **Tu 19.30 Conference Dinner in the 'Forteca'**

The ENC 2016 Conference Dinner will take place on Tuesday 11 October 2016 in the 'Forteca', a former fortress which is located in the beautiful park of Traugutt. The fortress was built between 1852 and 1854 on the southern foreland of the Warsaw Citadel. Its task was to guard the citadel from the side of New Town and also to defend the seasonal bridge over the Vistula River. It kept its role of control of the Vistula river bank for many years until it was privatised in 1999.

Buses will leave at 19.00 from the Hotel Sofitel Victoria

Return expected as from 22:00 on



## Wednesday 12 October 2016

Wed 8:30-10:30 Parallel session

### Current Reactor Technologies & New Build

(room: Ballroom AB)

Chair: J. Danielsson, GE Hitachi Nuclear Energy, Sweden

Co-chair: M. El-Hawary, CNSC, Canada

ENC2016-A0005	NUGENIA Association and its project portfolio	Al-Mazouzi, A. (1) 1 - NUGENIA Association, Belgium
ENC2016-A0022	Full Scale Experiments to Confirm Integrity of Overheated Fuel Channels for CANDU Reactors	Viktorov, A. (1); El-Hawary, M. (1); Tanase, A. (1) 1 - Canadian Nuclear Safety Commission (CNSC), Canada
ENC2016-A0025	Risk Analysis of NPP Construction Schedule Delay by FAHP-RII Methodology	Roh, M.-S. (1); Nageib, Z. A. (1) 1 - KEPCO International Nuclear Graduate School, Korea, Republic of
ENC2016-A0085	THE EUROPEAN UTILITY REQUIREMENTS FOR ADVANCED LIGHT WATER REACTORS - RECENT ACHIEVEMENTS AND NEW CHALLENGES	Vielletoile, E. (1); Ferraro, G. (1); Jacquart, G. (1); Vanhoenacker, L. (2) 1 - EDF, DIPNN/SEPTEN, France - for EUR Organisation, France 2 - ENGIE, TRACTEBEL, Belgium - for EUR organisation, Belgium
ENC2016-A0145	Analysis of Reactor Physical Parameters for Jordan Research and Training Reactor Initial Core Using MCNP6 Computational Model	Jaradat, M. K. (1); Park, C. J. (2); Alkhafaji, S. (1) 1 - Jordan Atomic Energy Commission, Engineering Department, Research Reactor Project / JRTR, Jordan 2 - Sejong University, Seoul, Korea, Republic of





Wed 8:30-10:30 Parallel session

**Waste management, dismantling and decommissioning I**

(room: Ballroom C)

Chair: K. Büttner, Nukem Technologies Engineering Services GmbH, Germany

Co-chair: E. Langegger, Nuclear Engineering Seibersdorf GmbH, Austria

ENC2016-A0007	Characterization of radioactive waste drums by auto-radiographic method	Sokcic-Kostic, M. (1); Klein, C. (1); Langer, F. (1); Schultheis, R. (1); Baumann, R. (2) 1 - NUKEM Technologies Engineering Services GmbH, Germany 2 - Siemens AG , Power and Gas Division, Germany
ENC2016-A0097	EVALUATION OF THE CONCRETE PROTECTION ACTIVITY PROFILE OF THE VVR-S RN FROM IFIN-HH	Gurau, D. (1); Deju, R. (1); Stanga, D. (1); Zorliu, A. (1); Stoian, I. (1); Dragusin, M. (1); 1 - Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering, Romania
ENC2016-A0059	WASTE MANAGEMENT OF THE LFR RESEARCH REACTOR CURRENTLY IN DECOMMISSIONING	De Vos, R. (1) 1 - NRG, Netherlands
ENC2016-A0106	PROJECT & RADIOACTIVE WASTE MANAGEMENT FOR SAFETY, COST EFFECTIVE AND ENVIRONMENTALLY FRIENDLY DECOMMISSIONING PROCESS OF UNITS 1-4 AT KOZLODUY NUCLEAR POWER PLANT - BULGARIA	Dishkova, D. (1) 1 - State enterprise "Radioactive waste", Bulgaria
ENC2016-A0006	RADIOACTIVE WASTE, IT'S THERE, SO WE MUST TAKE RESPONSIBILITY FOR IT	Abadie, P.-M. (1); Launeau, F. (1); Ouzounian, G. (1) 1 - ANDRA, France
ENC2016-A0164	SLOVAK NATIONAL POLICY AND NATIONAL PROGRAM IN DECOMMISSIONING AND SPENT FUEL MANAGEMENT	Slugen, V. (1) 1 - National Nuclear Fund of Slovak Republic, Slovakia

Wed 8:50-10:30 Parallel session

**High Temperature Reactors & Co-generation**

(room: Belweder A, 2<sup>nd</sup> floor)

Chair: G. Wrochna, NCBJ, Poland

Co-chair: D. Hittner, LGI Consulting, France

ENC2016-A0030	OXIDATION BEHAVIOR OF NICKEL-BASED SUPERALLOYS IN HIGH-TEMPERATURE HELIUM ENVIRONMENTS	Chuang, F. (1); Yeh, T. (1); Wang, M. (2) 1 - Dept. of Engineering and System Science, National Tsing Hua University, Taiwan 2 - Nuclear Science and Technology Development Center, National Tsing Hua University, Taiwan
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ENC2016-A0063	USE OF HEAVY REFLECTOR FOR A GAS-COOLED FAST REACTOR	Choi, H. (1) 1 - General Atomics, United States
ENC2016-A0113	A Gas-Cooled Fast Reactor for a Spacecraft Nuclear Electric Propulsion System Based on an Uprated OPUS Reactor	Gregg, R. (1); Stainsby, R. (2) 1 - National Nuclear Laboratory, Preston Laboratory, United Kingdom 2 - National Nuclear Laboratory, United Kingdom
ENC2016-A0148	Optimization based efficiency assessment of a partial cogeneration for NPP -method and Northern Poland case study	Duzinkiewicz, K. (1); Reński, A. (1); Hirsch, P. (1); Puchalski, B. (1); Grochowski, M. (1); Piotrowski, R. (1); Rutkowski, T. (1) 1 - Gdansk University of Technology, Poland
ENC2016-A0158	The Dual Fluid Reactor - A comparison between uranium salt and metallic fuels	Czerski, K. (1) 1 - University of Szczecin, Poland

Wed 8:50-10:30 Parallel session

**Safety and Security I** (room: *Belweder B, 2<sup>nd</sup> floor*)

Chair: L. Cizelj, Jožef Stefan Institute, Slovenia

Co-chair: G. Jimenez, Universidad Politecnica de Madrid, Spain

ENC2016-A0026	ANALYSIS OF THE RE-CRITICALITY POTENTIAL DURING THE EARLY IN-VESSEL PHASE OF A STATION BLACKOUT IN A BWR REACTOR	Darnowski, P. (1); Potapczyk, K. (1); Niewiński, G. (1); Gatkowski, M. (1) 1 - Institute of Heat Engineering, Warsaw University of Technology, Poland
ENC2016-A0029	Passive safety systems for plant life-time extension and nuclear new build	Pöhlmann, M. (1); 1 - AREVA GmbH, Germany
ENC2016-A0044	Safety and security technical interference at nuclear facilities	Pushenko, P. (1); Sednev, D. (1) 1 - National Research Tomsk Polytechnic University, Russian Federation
ENC2016-A0054	Ultrasonic signal processing in order to improve the quality of assessment of nuclear industry`s components	Abramets, V. (1); Salchak, Y. (1); Sednev, D. (1); Lider, A. (1) 1 - National Research Tomsk Polytechnic University, Russian Federation
ENC2016-A0069	Modelling of the severe accident in-vessel progression issues - focusing effect and core support plate damage for high power PWR.	Skrzypek, M. (1); Skrzypek, E. (1) 1 - National Center for Nuclear Research, Poland

10:30-11:00 Coffee break



Wed 11:00-12:20 Parallel session

**Education, training and knowledge management IV –  
Creating opportunities for the Young Generation**

*(room: Ballroom AB)*

Chair: FJ Elorza, Universidad Politécnica Madrid, Spain

Co-chair: N.N.

Stakeholders all over Europe are joining forces to create and offer a set of attractive theoretical and practical learning opportunities for the young generation. A presentation on European learning initiatives for nuclear decommissioning will be followed by an open discussion on opportunities and challenges to facilitate access to infrastructure, training and collaborative projects for the young generation.

Wed 11:00-12:20 Parallel session

**Waste management, dismantling and decommissioning II**

*(Room: Ballroom C)*

Chair: V. Slugen, Slovak University of Technology, Slovakia

Co-chair: M. Sokcic-Kostic, Nukem Technologies Engineering Services GmbH, Germany

ENC2016-A0027	DEVELOPMENT OF QUIVERS FOR DAMAGED FUEL RODS –DISPOSAL IN CASTOR® V CASKS	Cebula, W. (1); Bannani, A. (1); Funke, T. (1); Di Paola, O. (1); Hueggenberg, R. (1) 1 - GNS Gesellschaft für Nuklear-Service mbH, Germany
ENC2016-A0028	DRY STORAGE OF ENCAPSULATED DEFECTIVE FUEL RODS AT DOEL 1&2 IN BELGIUM, CHALLENGES AND PROGRESS	Boogaerts, A. (1); Suls, I. (2); Vo Van, V. (3); Allimann, N. (3); Muenchow, K. (4) 1 - Synatom, Belgium 2 - Electrabel, Belgium 3 - AREVA NC, France 4 - AREVA GmbH, Germany
ENC2016-A0065	PRE-DECOMMISSIONING OF L-54M REACTOR: TOPSOIL CHARACTERISATION OF IMPACTED ZONE AND SURROUNDING AREAS	Codispoti, L. S. A. (1); Mossini, E. (1); Giola, M. (1); Macerata, E. (1); Mariani, M. (1); Castelli, L. (1); Garlati, L. (1); Porta, A. (1); Campi, F. (1) 1 - Politecnico di Milano, Italy




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ENC2016-A0012	Assessment of particulate emissions, mass loss and gross adhesion, when laser cutting 304 stainless steel for decommissioning applications.	Hilton, P. (1); Nguyen, T.-A. (2) 1 - TWI Ltd, United Kingdom 2 - Ecole des Mines Nantes, France
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Wed 11:00-12:20 Parallel session

**Advanced Reactor Technologies III**

*(room: Belweder A, 2<sup>nd</sup> floor)*

Chair: F. Tuomisto, Aalto University, Finland

Co-chair: C. Reynard-Carette, Aix-Marseille University Laboratory, France

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ENC2016-A0064	Corrosion behavior of Ni- and Mo based alloys in High Temperature Molten Salt Environments	Lin, P. H. (1); Yeh, T. K. (1); Wang, M. Y. (2); Patterson, E. (3); Harrison, M. (4) 1 - Dept. of Engineering and System Science, National Tsing Hua University, Taiwan 2 - Nuclear Science Technology and Development Center, National Tsing Hua University, Taiwan 3 - School of Engineering, University of Liverpool, United Kingdom 4 - National Nuclear Laboratory, United Kingdom
ENC2016-A0138	NUCLEAR HEATING AXIAL PROFILES OBTAINED INSIDE MARIA REACTOR CHANNEL BY MEANS OF SINGLE-CELL AND DIFFERENTIAL CALORIMETERS.	Reynard-Carette, C. (1); Brun, J. (1); Carette, M. (1); Pytel, K. (2); Prokopowicz, R. (2); Tarchalski, M. (2); Jagielski, J. (2); Lyoussi, A. (3); Fourmentel, D. (3); Barbot, L. (3); Villard, J.-F. (3) 1 - Aix-Marseille University Laboratory IM2NP UMR 7334, France 2 - NCBJ (National Centre for Nuclear Research), Poland 3 - CEA, France
ENC2016-A0161	Comparison of calculations with multi-instrumental prompt and delayed nuclear heating measurements in the MARIA reactor	Tarchalski, M. (1); Pytel, K. (1); Lyoussi, A. (2); Reynard-Carette, C. (3); Jagielski, J. (1); Sireta, P. (2); Brun, J. (3); Wróblewska, M. (1); Luks, A. (1); Prokopowicz, R. (1); Barbot, L. (2); Fourmentel, D. (2); Villard, J.-F. (2); Carette, M. (3) 1 - National Centre for Nuclear Research, Poland 2 - French Alternative Energies and Atomic Energy Commission, France 3 - Aix-Marseille University, France

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Wed 11:00-12:20 Parallel session

**Safety and Security II** (room Belweder B, 2<sup>nd</sup> floor)

Chair: G. Jimenez, Universidad Politecnica de Madrid, Spain

Co-chair: M. Murdoch, University of Liverpool, United Kingdom (tbc)

ENC2016-A0136	DEVELOPMENT OF ALMARAZ NPP AND TRILLO NPP CONTAINMENT GOTHIC 3D MODELS FOR THERMAL-HYDRAULIC ANALYSIS	Jimenez, G. (1); Bocanegra, R. (1); Fernandez-Cosials, K. (1); Barreira, P. (2); Rey, L. (3); Posada, J. M. (4); Martinez-Murillo, J. C. (4) 1 - Universidad Politecnica de Madrid, Spain 2 - Gas Natural Fenosa Engineering, Spain 3 - Iberdrola Ingenieria y Construcción, Spain 4 - Almaraz Trillo Nuclear Power Plants (CNAT), Spain
ENC2016-A0144	ASSESSING the AFRICAN NUCLEAR PATHWAY: A THREAT ANALYSIS	Wilcox, B. J. (1); Georgievich, D. D. (1) 1 - Tomsk Polytechnic University, Russian Federation
ENC2016-A0153	Remote Reactor Monitoring for Safeguards and Nuclear Data Using Anti-Neutrinos	Murdoch, M. (1); Carroll, J. (1); Coleman, J. (1); Lockwood, M. (1); Metelko, C. (1); Schnellbach, Y.-J. (1); Touramanis, C. (1) 1 - University of Liverpool, United Kingdom
ENC2016-A0192	Safety Culture training and assessment tools using the "Socrates Method"	Playbell, I. (1) 1 - Idom Merebrook, United Kingdom

12:20-13:15 Lunch break



13:15–15:15

**Plenary Session VI: Preparing for the future**

*(room: Ballroom AB)*

Chair: E. Langedger, President of ENS Young Generation

**Overview of advanced fuel cycle perspective for France**

E. Touron, CEA, France

**Advancing Advanced Reactors: Preparing for the Future**

A. Klein, Oregon State University & ANS President, US

**Advantages of fast breeder reactors**

S. Starostin, JSC CONCERN ROSENERGOATOM, Russian Federation

**Managing Safety Knowledge and Safety Culture**

F J. Guerra, Tecnatom, Spain

15:15–15:45

**Conference closing** *(room: Ballroom AB)*

Chair: R. Schene, President of the European Nuclear Society

**Award and of the ENEN PhD Prize 2016**

**Thursday 13 October 2016**

Thu 8:00-15:30 Technical Tour to the National Centre for Nuclear Research in Otwock-Świerk (upon pre-registration)



## Poster

Poster will be on display during the entire duration of the conference. A Poster Session on Monday 10 October from 15.30 – 16.30 allows for Q&A to authors.

### Education, training and knowledge management

ENC2016-A0061	"EXCLUSION ZONE" AT THE CHERNOBYL AREA AS AN INTERNATIONAL TRAINING CENTER	Akulinin, S. (1); Isajenko, K. (2); Kireev, S. (3); Mielczarek, P. (4); Pluta, J. (5); Rabinski, M. (6); Reikhtman, Y. (3) 1 - Chernobyl External Service, Ukraine 2 - Central Laboratory for Radiological Protection, Poland 3 - State Agency of Ukraine on Exclusion Zone Management, Ukraine 4 - Strefazero.org, Poland 5 - Warsaw University of Technology, Faculty of Physics, Poland 6 - National Centre for Nuclear Research, Poland
ENC2016-A0159	Nuclear education programme development as the response to the NPP personnel retirement	Katovsky, K. (1); Matejkova, J. (1); Zeman, M. (1); Svoboda, J. (1); Varmuza, J. (1); Foral, S. (1); Novotny, F. (1) 1 - Brno University of Technology, Czech Republic
ENC2016-A0163	EUROPEAN DECOMMISSIONING ACADEMY (EDA)	Slugen, V. (1); Hornáček, M. (1) 1 - Institute of Nuclear and Physical Engineering, Slovak University of Technology in Bratislava, Slovakia

### Safety and security

ENC2016-A0010	Signal Noise Filtering Techniques in Radiation Detection Applications for Neutron Gamma Pulse Shape Discrimination	Akurugoda Gamage, K. (1); Ohren-Evans, L. (1); Cieslak, M. (1); 1 - Department of Engineering, Lancaster University, United Kingdom
ENC2016-A0051	MODELLING OF THE START-UP PERIOD OF A PASSIVE CATALYTIC RECOMBINER	Rozeń, A. (1) 1 - Warsaw University of Technology, Poland
ENC2016-A0071	In Vessel Corium Propagation Sensitivity Study Of Reactor Pressure Vessel Rupture Time With PROCOR Platform	Skrzypek, M. (1); Skrzypek, E. (1); Saas, L. (2); Le Tellier, R. (2) 1 - National Center for Nuclear Research, Poland 2 - CEA Cadarache DEN/DTN/SMTA/LPMA, France
ENC2016-A0123	Dynamic Analysis of the Dry Storage Facility Subjected to Aircraft Impact	Lee, H. S. (1); Lee, Y. S. (2) 1 - Korea Atomic Energy Research Institute, Korea, Republic of 2 - Chungnam National University, Korea, Republic of



## Waste management, dismantling and decommissioning

ENC2016-A0139	Treatment of radioactive wastewater by hybrid methods	Abramowska, A. (1); Gajda, D. (1); Kiegiel, K. (1); Miśkiewicz, A. (1); Zakrzewska-Kołtuniewicz, G. (1) 1 - Institute of Nuclear Chemistry and Technology, Warsaw, Poland
ENC2016-A0179	Radiological Assessment of Postulated Initiating Event's Scenarios for the Decommissioning of Commercial PWR Type Nuclear Power Plant	Lee, K. (1); Kang, S. (1) 1 - KEPCO-E&C, Korea, Republic of

## Nuclear Fuel

ENC2016-A0047	DEVELOPMENT OF A TRANSPORT PACKAGE FOR FRESH RESEARCH REACTOR FUEL	Lee, J.-C. (1); Choi, W.S. (1); Bang, K.S. (1); Yu, S.H. (1); Park, J.S. (1); Yang, Y.Y. (1) 1 - Korea Atomic Energy Research Institute (KAERI), Korea, Republic of
ENC2016-A0052	Influence of entrainment and deposition model on critical heat flux prediction by CATHARE-3 system code.	Spirzewski, M. (1); Machtyl, T. (1) 1 - National Centre for Nuclear Research, Poland
ENC2016-A0075	Possibility of uranium recovery from Polish unconventional resources	Gajda, D. (1); Kiegiel, K. (1); Miśkiewicz, A. (1); Abramowska, A. (1); Chajduk, E. (1); Wołkiewicz, S. (2); Koniecznyńska, M. (2); Zakrzewska-kołtuniewicz, G. (1) 1 - Institute of Nuclear Chemistry and Technology, Poland 2 - Polish Geological Institute - National Research Institute, Poland
ENC2016-A0105	The effect of additives on UO <sub>2</sub> grain enlargement for PCI retention by varying fabrication processes	Lee, S. J. (1); Jung, T.S. (1); Na, Y.S. (1); Lim, K.Y. (1); Yang, K.Y. (2); 1 - KEPCO NF, Korea, Republic of 2 - KAERI, Korea, Republic of
ENC2016-A0176	EXPERIMENTAL ANALYSIS OF THE HYDROGEN EMBRITTLEMENT OF URANIUM-MOLYBDENUM NUCLEAR FUELS	Branco Vaz de Oliveira, F. (1); Alves de Andrade, D. (1) 1 - Nuclear and Energy Research Institute - IPEN-CNEN/SP, Brazil

## Poster Plant operations

ENC2016-A0062	Evaluation of reverse flow through closing check valve.	Kim, J.-H. (1); Lee, S. (1) 1 - Korea Institute of Nuclear Safety, Korea, Republic of
ENC2016-A0151	Investigation of primary coolant corrosion product activity at Slovak NPPs during refueling period	Smiesko, I. (1); Skorvaga, I. (1); Nad, A. (1); Marcinsky, P. (2); Husarcik, P. (2) 1 - Slovenske elektrarne NPP Bohunice, Slovakia 2 - Slovenske elektrarne NPP Mochovce, Slovakia





## Poster Current reactor technologies and new build

ENC2016-A0017	Numerical Simulation of the RCP Pressure Wave Propagation in the Reactor Vessel Downcomer for Part-Loop Operations	Jeong, D. H. (1); Jung, B. R. (1); Jang, H. C. (1); Yune, S. J. (1); Park, S. C. (1) 1 - KEPCO E&C, Korea, Republic of
ENC2016-A0114	Assessment of Regional Capabilities for new reactors Development through an Integrated Approach – evaluation of Polish contribution to ALFRED demonstrator	Kiegiel, K. (1); Zakrzewska-Kołtuniewicz, G. (1); Wołoszczuk, K. (2); Krajewski, P. (2); Diaconu, D. (3); Poumandere, M. (4); Mays, C. (4) 1 - Institute of Nuclear Chemistry and Technology, Poland 2 - Central Laboratory for Radiological Protection, Poland 3 - Institute for Nuclear Research, Romania 4 - Institut Symlog de France, France
ENC2016-A0128	Major I&C safety systems modernization and new build: requirements, stakes and projects deployment.	Palaric, J.-M. (1); Duthou, A. (1) 1 - Rolls-Royce, France

## Poster Life science applications

ENC2016-A0011	PRODUCTION OF AND RESEARCH ON MEDICAL RADIOISOTOPES AT THE HEAVY ION LABORATORY, UNIVERSITY OF WARSAW	Sitarz, M. (1),(2); Szkliniarz, K. (3); Jastrzebski, J. (1); Choinski, J. (1); Jakubowski, A. (1); Stolarz, A. (1); Trzcińska, A. (1); Zipper, W. (3) 1 - Heavy Ion Laboratory, University of Warsaw, Poland 2 - Faculty of Physics, University of Warsaw, Poland 3 - Institute of Physics, Department of Nuclear Physics, University of Silesia, Poland
ENC2016-A0094	DENTAL X-RAY EXAMINATIONS MODELLING FOR ASSESSMENT OF RADIATION DOSES TO PATIENTS	Makarevich, K. (1); Minenko, V. (2); Kutsen, S. (2) 1 - Belarusian State University, Belarus 2 - Research Institute for Nuclear Problems of Belarusian State University, Belarus
ENC2016-A0110	Improvement of the procedure for <sup>238</sup> Pu and <sup>239/240</sup> Pu determination in water samples based on HASL-300 methodology	Saez Muñoz, M. (1); Ortiz, J. (1); Ballesteros, L. (1); Carlos, S. (2); Martorell, S. (1) 1 - Laboratorio de Radiactividad Ambiental - Universitat Politècnica de València, Spain 2 - MEDASEGI Research Group - Universitat Politècnica de València, Spain



ENC2016-A0117	Nanostructured Al-Si-N based coatings as promising materials for radiation protection	Shymanski, V. (1); Uglov, V. (1); Kvasov, N. (1); Remnev, G. (2); Musil, J. (3) 1 - Belarusian State University, Belarus 2 - Tomsk Polytechnic University, Russian Federation 3 - University of West Bohemia Pilsen, Czech Republic
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### Poster Advanced Reactor Technologies

ENC2016-A0040	A study of HTR-10 burnup characteristics based on concurrent axial and radial fuel movements in refueling simulation	Wu, S.-R. (1); Wu, S.-C. (1); Chao, D.-S. (2); Liang, J.-H. (1) 1 - Institute of Nuclear Engineering and Science, National Tsing Hua University, Taiwan 2 - Nuclear Science and Technology Development Center, National Tsing Hua University, Taiwan
ENC2016-A0077	Neutronic safety analysis of HTR-10 reactor using two different models with regular and random distribution of pebbles in the core in SCALE/KENO-VI code	Koszuk, L. (1); Klisinska, M. (1) 1 - National Centre for Nuclear Research, Poland
ENC2016-A0121	Dynamic Behavior Analysis OF Fuel Assembly for Sodium-Cooled Fast Reactor under Seismic loading	Lee, H. S. (1); Yoon, K. H. (1); Kim, H. K. (1); Cheon, J. S. (1); Lee, C. B. (1) 1 - Korea Atomic Energy Research Institute, Korea, Republic of
ENC2016-A0122	Structural integrity of Fuel Assembly for Sodium-cooled Fast Reactor at Drop Accident	Lee, H. S. (1); Yoon, K. H. (1); Kim, H. K. (1); Cheon, J. S. (1); Lee, C. B. (1) 1 - Korea Atomic Energy Research Institute, Korea, Republic of
ENC2016-A0033	Modelling of different cogeneration technologies in a power generating unit with PWR reactor in the context of a future Polish nuclear power station	Tomków, Ł. (1); Cholewiński, M. (1) 1 - Wrocław University of Technology, Faculty of Mechanical and Power Engineering, Poland

### Poster Nuclear science applications for industry and society

ENC2016-A0035	Applications of ELI-NP brilliant gamma beams	Iancu, V. (1); Suliman, G. (1); Turturica, G. V. (1); Iovea, M. (2); Daito, I. (3); Ohgaki, H. (3); Ur, C. A. (1); Balabanski, D. L. (1) 1 - Extreme Light Infrastructure – Nuclear Physics/IFIN-HH, Romania 2 - Accent Pro2000, Romania 3 - The Institute for Advanced Energy Kyoto University, Japan
ENC2016-A0067	Pulse shape discrimination characteristics of stilbene crystal, EJ-299-33 and 6Li loaded plastic scintillators for a high resolution coded-aperture neutron imager	Cieslak, M. (1); Gamage, K. (1) 1 - Lancaster University, United Kingdom

# ENC 2016

EUROPEAN NUCLEAR CONFERENCE



ENC2016-A0098	THE SUPPORT OFFERED BY THE ROMANIAN RADIONUCLIDES METROLOGY LABORATORY TO THE NATIONAL FOOD SAFETY CHAIN	Ioan, M.-R. (1); Antohe, A. (1); Luca, A. (1); Sahagia, M. (1) 1 - Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering (IFIN-HH), Romania
ENC2016-A0099	Interlaboratory comparison of methods for the determination of the activity of tritiated - water	Antohe, A. (1); Ioan, M.-R. (1); Sahagia, M. (1); Luca, A. (1); Postolache, C. (1); Simion, C. A. (1); Tugulan, L. C. (1) 1 - "Horia Hulubei" National Institute of R&D for Physics and Nuclear Engineering, (IFIN-HH), Romania
ENC2016-A0169	Dynamic Meshing Strategies to Describe a Pressure Build-up Response due to Check Valve Closure	Kim, N. (1); Cheong, A. (1) 1 - Korea Institute of Nuclear Safety, Korea, Republic of