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Proceedings***

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Summary

This document presents the Second ESNII biennial conference, which took place on 02-05 May 2017, hosted by SCK.CEN in Mol, Belgium.

The second ESNII Conference gave the opportunity to present and share information on the activities which were performed in ESNII Plus.

Approval

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1. The event

Following the 1st ESNII conference in March 2015 in Brussels, the second ESNII conference took place on 02-05 May 2017, in Mol, at SCK.CEN premises. This conference gathered 61 participants. Thirteen ESNII Plus-related research students also presented their work at this event.

1.1. Day 1

On 02 May 2017, the afternoon was composed of three sessions, as follows:

One session dedicated to the opening of the Conference, followed by the Views of the European Commission, and finally an overview of the ESNII Plus project.

- The second session aimed at giving an overview of the status of ESNII projects, in particular ASTRID, MYRRHA, ALFRED and ALLEGRO.
- The third session outlined the international dimension of ESNII Plus project

DAY 1 : May 2 nd , 2017			
1. Opening session			
1	13:30	Opening of the ESNII Conference	N. Camarcat (EDF)
2	13:40	Views of the European Commission DG Research and innovation	R. Garbil (EC, DG R&I)
3	14:05	The ESNII+ project	A. Vasile (CEA)
2. Status of ESNII Projects (organisation, planning, design, licensing, R&D challenges and recent developments)			
4	14:30	The ASTRID project	E. Abonneau (CEA)
5	15:00	The MYRRHA project	H. Aït Abderrahim (SCK•CEN)
	15:30	Coffee Break	
6	16:00	The ALFRED project	M. Frignani (ANSALDO)
7	16:30	The ALLEGRO project	L. Bělovský (UJV Rez)
3. International dimension Moderator : Richard Ivens (FORATOM)			
8	17:00	International dimension 1: status and synergies	C. Latgé (CEA)
9	17:15	International dimension 2 : panel discussion	Panelists : E. Abonneau, H. Aït Abderrahim, M. Frignani, L. Bělovský , A. Vasile
	18:00	End of first day	

1.2. Day 2

On 03 May 2017, the activities carried out and the results achieved within six work packages of the ESNII Plus project were explained, following the schedule below:

DAY 2 : May 3rd , 2017			
4. Progress status of the FP7- ESNII+ project			
10	09:00	'Structuring ESNII for HORIZON 2020' (WP1)	R. Stainsby (NNL)
11	09:45	'Strategic Roadmapping' (WP2)	P. Baeten (SCK•CEN)
	10:30	Coffee Break	
12	11:00	'Support to facilities development' (WP3)	Z. Hózer (MTA)
13	11:45	'Industrial perspectives' (WP4)	M. Frignani (ANSALDO)
	12:30	Lunch	
14	14:00	'Core Safety' (WP6)	K. Mikityuk (PSI)
	15:30	Coffee Break	
15	16:00	'Fuel Safety' (WP7)	N. Chauvin (CEA)
	17:30	End of second day	

In parallel to the ESNII Plus presentations mentioned above, four group visits of SCK.CEN research facilities were organised at 9:00, 11:00, 14:00 and 16:00 on that day. Twenty participants attended these group visits.

1.3. Day 3

On 04 May 2017, the morning session was dedicated to PhD students' presentations, while the afternoon session was focused on the progress and results of three other work packages of ESNII Plus project.

The first session was chaired by Christian Latgé (CEA), the leader for Dissemination and Education and Training. Thirteen PhD students for different ESNII Plus organisations presented their research work to the ESNII attendees.

The programme of the third day is shown below.

DAY 3 : May 4 th , 2017			
4. Selected PhD's works in the frame of the ESNII Chair : Christian Latgé (CEA)			
16	08:30	PhD students first 6 presentations*	
	10:00	Coffee Break	
17	10:30	PhD students second 6 presentations*	
	12:00	lunch	
5. Progress status of the FP7- ESNII+ project (cont.)			
18	13:30	'Education & Training and dissemination' (WP5)	C. Latgé (CEA)
19	14:15	'Seismic Studies' (WP8)	M. Forni (ENEA)
20	15:00	'Instrumentation for safety' (WP9)	M. Schyns (SCK•CEN)
	15:45	Coffee break	

The programme of the thirteen PhD students' presentations is also available below.

Time Schedule for PhD Session

	XFR	Title	Field	Name	Status	Organization	Country
08-30		Introduction		Christian Latgé	WP5 coordinator	CEA	France
08-40	SFR	Multi-physics models for improvement of safety assessments for innovative reactor designs	SFR Safety	Sara Silva-Pinto-Wahnon	PhD	JRC-Petten	Netherlands
08-55	SFR	Acoustical characterization of gas bubbles in Na.	SFR Instrumentation	Lilian D'Hondt	PhD	CEA	France
09-10	LFR	Numerical and experimental study of flow-blockage phenomena in heavy liquid metal cooled pin bundle	LFR Thermalhydraulics	Ranieri Marinari	PhD	UNIFI	Italy
09-25	SFR	Multi-scale modeling of the dynamic of SFR core, within the framework of AURN scenario	SFR Safety	Vilas Shinde	Post-doc	EDF	France
09-40	GFR	Nuclear fuel cycle simulations for GenIV fast reactors	GFR Fuel	Máté Halász	PhD	Budapest University of Technology	Hungary
09-55	LFR-ADS	Effect of oxygen concentration on corrosion of 316L austenitic stainless steel in contact with static liquid lead-bismuth eutectic	LFR Materials	Oksana Klok	PhD	SCK-CEN	Belgium
10-10	Coffee break						
10-30	SFR	Study of propagation and transmission of Lamb waves for NDE of SFR's internal structures	SFR Instrumentation	Pierre Kaufmann	PhD	CEA	France
10-45	SFR	Na spray fires modeling	SFR Safety	jean-baptiste Rabilloud	PhD	EDF	France

11-00	LFR	Nucleation, growth and deposition of lead oxide from LBE.	LFR Technology Coolant chemistry	Kristof Gladinez	PhD	SCK-Mol	Belgium
11-15	GFR	Technologies and materials for advanced gas-cooled nuclear reactors (removal of activity from primary GFR coolant)	GFR Technology Coolant chemistry	Martin Janak	PhD	University of Chemistry and Technology, Prague	Czech Republik
11-30	SFR	Influence of microstructure of Y dopped Thoria in Na with view to develop electrochemical Oxygen-meter	SFR Instrumentation	Yanis Hacene-cherkaski	PhD	CEA	France
11-45	LFR	Alumina forming construction materials for LFR's	LFR Materials	Peter Dömstedt,	PhD	KTH	Sweden
12-00	GFR	ALLEGRO core optimisation calculations	GFR Fuel	Petra Ponya	PhD	Budapest University of Technology	Hungary
12-15		Discussion	All				
12-45	End of the Session						

1.4. Day 4

On 05 May 2017, the Joint programming workshop was chaired by Peter Baeten (SCK.CEN) and included three presentations, as follows:

- First one given by Roger Garbil of the European Commission
- The second one on JPNM and ESNII coordination by Lorenzo Malerba (SCK.CEN)
- The third one on the EERA JPNM and the ESNII cross-cutting topics by Karl-Frederik Nilsson (JRC)

DAY 4 : May 5 th , 2017			
7. Joint programming workshop Chair : Peter Baeten (SCK•CEN)			
	09:00	Presentation of on-going and new HORIZON-2020 projects	R. Garbil (EC, DG R&I)
	09:30	JPNM and ESNII coordination	L. Malerba (SCK•CEN)
	10:00	EERA JPNM & ESNII cross cutting topics: 60-years design life, HLM compatibility and MOX licensing	K.-F. Nilsson (JRC-IET & ITU)
	10:30	Coffee Break	
	11:00	Open discussion	
8. Closing session			
	12:00	Conclusions of the ESNII conference 2017	A. Vasile (CEA)
	13:00	Lunch	
		End of ESNII Conference 2017	

The conclusion was provided by the ESNII Plus coordinator, Alfredo Vasile (CEA).

2. Presentations

All presentations given at the second ESNII Biennial Conference are available online at:

<https://app.lgi-consulting.org/ecm/esniiplus-ecm-folder-3427>

3. List of participants

First Name	Last Name	Company
John	Lillington	Amec Foster Wheeler
Richard	Stainsby	National Nuclear Laboratory
Tewfik	Hamidouche	SCK-CEN
Noel	Camarcat	EDF
Peter	Dörmstedt	KTH
Margot	Degrève	SCK•CEN
Karl-Fredrik	Nilsson	JRC
Evi	Wouters	SCK•CEN
Hamid	Aït Abderrahim	SCK-CEN
Hubert	Bairiot	Nuclear Fuel Experts
Kristof	Gladinez	SCK-CEN
Roger	Garbil	European Commission
Jean	Snoeck	Tractebel
Jean-Baptiste	Rabilloud	EDF R&D
Lynda	Porcheron	EDF R&D
Richard	Ivens	FORATOM
Antonin	Krasa	SCK-CEN
Titus	Tielens	PALLAS
Guido	Vittiglio	sckcen
Tom	Clarijs	SCK•CEN
Marin	Constantin	RATEN ICN
Nele	Kesteloot	SCK•CEN
Vilas	Shinde	French National Center for Scientific Research (CNRS)
Griet	Vanderperren	SCK•CEN
Michele	Frignani	Ansaldo Nucleare
Antonio	Naviglio	Sapienza University of Rome
Mirela	Nitoi	RATEN ICN
Pietro	Agostini	ENEA
Sergio	Balassone	Tractebel Engie
Konstantin	Mikityuk	Paul Scherrer Institut
Oksana	Klok	SCK.CEN
Franck	Gabriel	CEA
Giacomo	Grasso	ENEA
Ranieri	Marinari	University of Pisa -DICI
Georges	Van Goethem	Royal Academy of Overseas Sciences of Belgium
Máté Gergely	Halász	Budapest University of Technology and Economics, Institute of Nuclear Techniques
Yanis	Cherkaski	CEA
Bernard	Carlucci	AREVA NP
Petra	Pónya	Budapest university of Technology
Pierre	Kauffmann	CEA
Eric	Abonneau	CEA
Martin	Janák	UCT Prague
Ladislav	Belovsky	ÚJV Řež, a. s.
Zoltán	Hózer	Hungarian Academy of Sciences Centre for Energy Research (MTA EK)
Lilian	d'Hondt	CEA
Ben	Lindley	Amec Foster Wheeler
Nathalie	Chauvin	CEA
Christian	Latgé	CEA
Carine	Van Reybroeck	SCK-CEN
Jacques	Pirson	Tractebel
Didier	Haas	NC2
Alfredo	Vasile	CEA
Sara	Silva Pinto Wahnon	European Commission Joint Research Centre
Florentino	Cepeda	Deloitte
Jesús	Rubio Conde	Deloitte Advisory, S.L.
Zoltan	Perko	TU Delft
Lorenzo	Malerba	SCK-CEN
Anatoly	Kochetkov	SCK-CEN
Peter	Baeten	SCK-CEN
Marc	Schyns	SCK•CEN
Patricia	Ho-Hune	LGI Consulting