



# ANIMMA 2015

Alexander Leon Battista, <http://i.imgur.com/photos/47873196@N05/8721767633>



The fourth international conference on **A**dvancements in **N**uclear  
**I**nstrumentation **M**easurement **M**ethods and their **A**pplications

Lisbon Congress Center  
20-24 April 2015

# CONFERENCE PROGRAMME [www.animma.com](http://www.animma.com)

ORGANIZED BY



## ANIMMA2015 | SPONSORS

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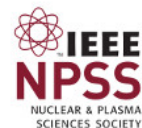


**A**  
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## ANIMMA2015 | INDUSTRIAL EXHIBITORS



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INNOVATION &  
MEASUREMENT  
SYSTEMS



**THERMOCOAX**





**Prof. Dr. Abdallah LYOUSSI | ANIMMA General Chairman**

Dear Colleagues and Friends,

Nuclear instrumentation and measurement are key aspects that contribute to the quality of scientific programmes in the fields of physics, energy, fuel cycle, waste management, safeguards and homeland security. Furthermore, measurements relying on nuclear physics now play an important role in various fields of application such as biology, medicine and the environment. Since the first edition in 2009 ANIMMA international conference becomes now a real opportunity to get together with colleagues, partners and friends to exchange ideas and share knowledge and experience in the nuclear instrumentation, measurement methods and nuclear experimental sciences in general.

The ANIMMA Conference has always strived to create a special meeting place shared by all those working in nuclear instrumentation and its applications, as we strongly believe that cross-border exchanges between scientists, engineers and industrialists can only lead to the most developed ideas, the best solutions and the most efficient collaborations and partnerships. ANIMMA continues to maintain a high level of scientific and technical quality by presenting not only the latest advances but also the state of the art in each field through the participation of international specialists and experts. It is an ideal meeting for scientists and engineers in the field of nuclear measurement, instrumentation in severe/harsh media, radiation instrumentation, software engineering, data acquisition analysis and treatment, and related applications to present their work and network with their colleagues from around the world.

ANIMMA 2015 is the fourth issue of a series of conferences and its scientific program includes:

- Short-courses initiative on Monday April 20<sup>th</sup>
- Workshops on Monday April 20<sup>th</sup>
- Each day at least a plenary lecture is programmed
- Intensive oral sessions for poster presentations everyday followed by plenary poster session.

There will be more than 300 presentations and posters, in addition to a permanent exhibition with over 15 stands for the industry and research laboratories. Overall the conference will boast high-quality scientific and technical presentations from a number of internationally-renowned experts. Enjoy your conference and your stay in Lisbon Capital of Portugal and on behalf ANIMMA committees I wish you a very fruitful meeting.

**Dr. Bruno Gonçalves | Chairman of the Steering Committee and of the Local Organizing Committee**

Dear Colleagues,

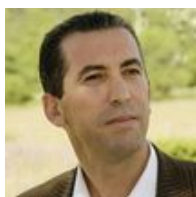


Welcome to ANIMMA2015. Hosting a conference which attracted around 350 participants was a challenge that I and my fellow members from the Local Organizing Committee took happily. The combination of a great scientific programme together with the beautiful environment of Lisbon will create opportunities for discussion, cross-fertilization and collaboration. I do feel that the conjugation between the ANIMMA2015 programme, Workshops and short-courses and the industrial exhibitions will contribute to reinforce the links between the scientific community and industry.

I do hope that the nice environment of the conference and the beautiful landscape of Tejo river allows you to reflect on the recent developments and prospects for the future. We have put together an attractive Social Programme to allow you to relax from the long days and engaging discussions. On Monday we welcome you to the conference Reception. Tuesday will give you the possibility to enjoy Fado, the traditional Portuguese song, with one of the most representative singers alive, Camané. On Thursday the conference dinner will give you a taste of Portuguese food. Thank you for participating! Do count with me and the rest of the LOC team to help making your participation at the ANIMMA2015 a very productive and joyful journey.



## ANIMMA2015 | CHAIRS and COMMITTEES



**Prof. Dr. Abdallah Lyoussi**  
General Chairman  
CEA, France



**Dr. Bruno Gonçalves**  
Steering Committee  
IPFN/IST, Portugal



**Prof. Michel Giot**  
Scientific Committee  
University of Louvain,  
Belgium



**Dr. Bruno Gonçalves**  
Organizing  
Committee  
IPFN/IST, Portugal



**Dr. Christelle Reynard-Carette**  
Workshops Organization  
Chair  
Aix-Marseille University,  
IM2NP, France



**Dr. Ludo Vermeeren**  
Short-Courses  
Organization Chair  
SCK-CEN, Belgium

## ANIMMA2015 | LOCAL ORGANIZING COMMITTEE



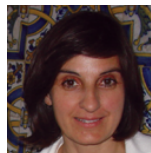
**B. Gonçalves | Chairman**  
IST, Lisboa, Portugal



**C. Freitas | Technical Support**  
IST, Lisboa, Portugal



**C. Silva | Vice-Chairman**  
IST, Lisboa, Portugal



**C. Nunes | Administrative Support**  
IST, Lisboa, Portugal



**A. Vale | Technical support**  
IST, Lisboa, Portugal



**B. Carvalho | Social events**  
IST, Lisboa, Portugal

## ANIMMA2015 | ORGANIZATION SUPPORT



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## ANIMMA2015 | WORKSHOPS



**Dr. Christelle Reynard-Carette, AMU, France | Workshop Sessions Chair**

Since 2013, ANIMMA conference proposes a day-session dedicated to scientific workshops on specific topics on instrumentation and measurement methods for/under extreme conditions. They are also intended to focus on new emerging techniques and technologies. For this 4<sup>th</sup> edition, three challenging topics will be developed:

- Radiation Effects in Electronics for Nuclear and Physics Instrumentation
- Monte Carlo Methods Applied to the Design of Nuclear Instrumentation and Radiation Detection Systems
- In-pile thermal measurements

These workshops will represent a real opportunity to exchange, discuss and perform skill cross-fertilizations.

Details and information: [www.animma.com](http://www.animma.com)

## ANIMMA2015 | SHORT COURSES



**Dr. Ludo Vermeeren, SCK•CEN, Belgium | Short-Courses Chair:**

### **Standard and state-of-the-art instrumentation for fission and fusion reactors**

After the successful short courses organized during ANIMMA2011 in Ghent and during ANIMMA2013 in Marseille, a new set of short courses will be offered during ANIMMA2015 (on Monday April 20, 2015). Some essential courses from the previous editions will be repeated: the general course on radiation detection and measurement methods by Prof. Abdallah Lyoussi, as well as the courses on self-powered neutron detectors by Dr. Ludo Vermeeren and on fast neutron detection by Prof. George Imel. A course on reactor dosimetry will be given this time by Dr. Jan Wagemans. But the main difference with the previous editions is the strong emphasis on instrumentation in nuclear fusion: besides a contribution by Prof. Jean-Marc Layet on plasma diagnostics, a course will also be offered by Dr. Andrea Murari from JET, with a lot of information from real applications of instrumentation in this advanced tokamak. At the end of this one-day course program, an optional examination with multiple-choice questions will be organized, allowing the students to acquire an ECTS certificate.

Details and information : [www.animma.com](http://www.animma.com)

## ANIMMA2015 | GENERAL INFORMATION

### SESSIONS

**Oral sessions** will take place in four different rooms:

- Auditorium I
- Room 5.A
- Room 5.B
- Room 5.C

The Auditorium I will also host the opening and closing sessions as well as all morning **Plenary Sessions**.

**Poster Exhibition** will take place on Hall 5.

**Intensive orals** will take place on Hall 4 (rooms 1.02-1.08).

### INDUSTRIAL EXHIBITION

It is held on Hall 4.

Coffee breaks and evening cocktails will also take place in the same area.

### LUNCH

Lunch breaks will take place at the conference center restaurant.

### SECRETARY OFFICE

The Secretary Office is located between Hall 4 and Hall 5 .

### SLIDE DESK

Slide desk is located close to Auditorium I in Foyer D. All presentation (in .ppt, .pptx or .pdf format) shall be delivered up to 2 hours before the session. For information regarding publication in IEEE Transactions please check the information available at the conference website or visit the IEEE booth.

### IEEE BOOTH

IEEE will have a booth at Hall 4 (together with the industrial Exhibition).










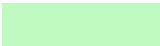



### LANGUAGE

The conference language is English.

### MORE INFORMATION

Available at conference website: [www.animma.com](http://www.animma.com)

## ANIMMA2015 | CONFERENCE TOPICS VS COLOR CODES

	Theme 1 – Fundamental Physics
	Theme 2 – Nuclear Power Reactors
	Theme 3 – Research Reactors
	Theme 4 – Nuclear Fuel Cycle
	Theme 5 – Safeguards, Homeland Security
	Theme 6 – Severe accident Monitoring
	Theme 7 – Environmental and Medical Sciences
	Theme 8 – Education, Training and Outreach
	Theme 9 – Fusion diagnostics and technology
	Theme 10 - Decommissioning , dismantling and Remote Handling
	Plenary Session
	Workshop
	Short Course



# MONDAY | 20<sup>TH</sup> APRIL

	Room 5.A	Room 5.B	Room 1.08	Room 5.C
08:30	<b>09:00-16:30   Workshop "Radiation Effects in Electronics for Nuclear and Physics Instrumentation"</b>  <b>Convenors</b>   Pr Jean-Luc Autran and Dr Jean-Luc Leray  <b>09:00   Short Overview of Radiation Effects of interest in Instrumentation Front-End and Ancillary Electronics</b> Jean-Luc Leray (CEA, France)  <b>09:45   Single Event Effects: the effects of Single particles on Electronics - Space, Aerospace and Ground</b> Jean-Luc Autran (Aix-Marseille University, IM2NP UMR CNRS 7334, France)	<b>09:15 - 13:30   Workshop "Monte Carlo Methods Applied to the Design of Nuclear Instrumentation and Radiation Detection Systems"</b>  <b>Convenors</b>   Pr Pedro Vaz, Raul Fernandes and Yuriy Romanets  <b>09:15   FLUKA Monte Carlo Code: Introduction and Radiation Detector Applications</b> Ruben Garcia (CERN, Switzerland)  <b>09:45   Use of GEANT4 for the design of radiation detection systems</b> GEANT4 team	<b>10:30 - 16:00   Workshop "In-pile Thermal Measurements"</b>  <b>Convenors</b>   Dr Christelle Reynard-Carette and Jean-François Villard	<b>08:30 - 18:00   Short courses "standard and state-of-the-art instrumentation for fission and fusion reactors"</b>  <b>Convenors</b>   Dr Ludo Vermeeren  <b>08:30   Short Course Module 1 : Radiation detection and measurement methods</b> A. Lyoussi, (CEA and INSTN, France)"
10:15	<b>Coffee Break @ Hall 4</b>  <b>10:30   The TID Total Integrated Dose effects</b> Philippe Paillet (CEA, France)  <b>11:00   The Total Dose issue in Remote Handling Electronics – from Fission to Fusion</b> Marco Van Uffelen (F4E)  <b>11:30   TID Effects in CMOS and SOI - HBD vs HBT – application to MGy Hardening of a CMOS Imager</b> Marc Gaillardin, (CEA, France) et Vincent Goiffon (ISAE, France)  <b>12:00-12:30   MGy tolerant IC design: from 0.7 µm to 40 nm CMOS</b> Paul Leroux (KUL, Belgium)	<b>10:30   Monte Carlo simulation with the PENELOPE code of radiation detection systems</b> L. Brualla (U. Essen, Deutschland)  <b>11:00   The Joint Research Centre of the European Commission: pushing Nuclear Security forward</b> C. Carrapiço (JRC-ISPRa)  <b>11:30   MC simulations for the testing of RN threat scenarios - the REWARD project</b> R. Luís (IST, Portugal)  <b>12:00   Monte-Carlo Simulations for the improvement of the design of an in-pile sensor dedicated to nuclear heating quantification.</b> H. Amharak (Aix-Marseille Université, IM2NP UMR7334, France)	<b>10:30   Introduction</b> Christelle Reynard-Carette (Aix-Marseille Université, IM2NP UMR7334, France) and Jean-François Villard (CEA/DEN/DER/SPEX/LDCI, France)  <b>10:40   Thermal Design and Local Power Measurements for In-core Experiments at the MIT Research Reactor</b> Gordon E Kohse (MIT, USA)  <b>11:15   Review and perspectives of in-pile temperature measurements</b> Jean-François Villard (CEA/DEN/DER/SPEX/LDCI, France)  <b>11:50   Is it possible to improve temperature measurement in the nuclear industry?</b> Mohamed Sadli, (Laboratoire commun de métrologie LNE-Cnam, Saint-Denis, France)	<b>10:30   Short Course Module 2: Counting neutrons in a nuclear reactor by reactor dosimetry</b> J. Wagemans, (SCK•CEN, Belgium)  <b>11:00   Short Course Module 3: Self-powered neutron detectors: principles and specific features</b> L. Vermeeren (SCK-CEN, Belgium)  <b>11:30   Short Course Module 4: Towards future nuclear systems: fast neutron detection</b> G. Imel, (Idaho State University, USA)
12:30	<b>Lunch Break</b>			

## MONDAY | 20<sup>TH</sup> APRIL

13:30	09:00-16:30   Workshop "Radiation Effects in Electronics for Nuclear and Physics Instrumentation"	10:30 - 16:00   Workshop "In-pile Thermal Measurements"	08:30 - 18:00   Short courses "standard and state-of-the-art instrumentation for fission and fusion reactors"
	<p><b>13:30   Optical Fibers in Fission and Fusion other related topics</b> Sylvain Girard (Laboratoire Hubert Curien, St-Etienne University, France)</p> <p><b>14:00   Silicon-Carbide based Thermal Neutron Detectors and their Applications</b> L. Ottaviani (Aix-Marseille Université, IM2NP UMR7334, France), V. Vervisch, F. Issa, R. Ferrone, S. Biondo, W. Vervisch, D.Szalkai, A. Klix, M. Lazar, L. Vermeeren, A. Kuznetsov, A. Hallén, A. Lyoussi</p>	<p><b>13:35   Differential Calorimeter and single-cell calorimeter: A comparison from calibration to in-pile measurements.</b> Julie Brun (Aix-Marseille Université, IM2NP UMR7334, France) and Mikolaj Tarchalski (NCBJ, Poland)</p> <p><b>14:10   Discussions</b> All</p>	<p><b>13:30   Short Course Module 5: Advanced diagnostics concepts for fusion reactors</b> J.-M. Layet, (Aix-Marseille University, France)"</p>
14:30	Coffee Break @ Hall 4		
14:45	<p><b>14:45   Radiation Hardness Assurance for LHC systems: testing and modeling</b> Rubén García Alía, Markus Brugger, Julien Mekki, Slawosz Uznanski (CERN, Switzerland)</p> <p><b>15:15   Radiation reliability of power electronics at ground level</b> Antoine Touboul (IES, Université Montpellier-2, France)</p> <p><b>15:45   Radiation Hardening Electronics Approach for ITER Subsystems – From Radiation Hardening to COTS electronics</b> Martin Dentan (ITER Organization)</p> <p><b>16:15   Concluding remarks</b> Jean-Luc Leray (CEA, France)</p> <p><b>16:30   End of the workshop</b></p>	<p><b>14:45   Nuclear Heating Measurements inside the OSIRIS Reactor. Different Types of Calorimeter. Advantages and Drawbacks</b> Hubert CA, RCREFF (CEA/DEN/DRSN/SIREN/LASPI), France</p> <p><b>15:20   Discussions and conclusions</b> All</p>	<p><b>14:45   Short Course Module 6: How to Characterise a Reactor Relevant Fusion Plasma</b> A.Murari (JET, UK)</p> <p><b>16:00   Optional Examination</b></p> <p><b>18:00   Proclamation</b></p>
18:20	Welcome cocktail @ Hall 4		

## TUESDAY | 21<sup>ST</sup> APRIL

	Auditorium I	Room 5.A	Room 5.B	Room 5.C
08:40	<b>OPENING CEREMONY</b> <b>Chairs</b>   Prof. Abdallah Lyoussi, CEA, France <b>General Introduction</b> Prof. Abdallah Lyoussi, ANIMMA General Chair <b>CEA Representative talk</b> Dr. Christian Bonnet, Director of CEA Cadarache Research Center, France <b>SCK.CEN Representative talk</b> Prof. Hamid Aït Abderrahim, Deputy Director of SCK.CEN, Belgium <b>AMU Representative talk</b> Prof. Mossadek Talby, President Deputy representative, France <b>IST representative talk</b> Prof. Arlindo Oliveira, President of IST, Portugal <b>Scientific Programme Overview</b> Prof. Michel Giot, Scientific Committee Chair <b>Publication Procedures and Rules</b> Dr. Patrick Le Dû, IEEE representative <b>ANIMMA 2015 Organization and Practical Information</b> Dr. Bruno Soares Gonçalves, President of IPFN & Steering Committee			
10:20	<b>Coffee Break @ Hall 4</b>			
10:40	<b>Chairs</b>   Prof. Yvan Bruynseraede (KULeuven) & Prof. Michel Giot (UCLouvain)			
10:40	<b>Nuclear Energy of Tomorrow in a Carbon Free Economy, The role of Gen.IV reactors and contribution of the «MYRRHA» project</b> Prof. Dr. Hamid Aït Abderrahim, Deputy General Director of SCK-CEN and General Director of MYRRHA Project			
11:20	<b>A quest of half a century</b> Prof. Em. Walter Van Doninck (Vice President of the CERN Council, Professor at VUB)			



## TUESDAY | 21<sup>ST</sup> APRIL

12:00	<b>Oral Session 9.1</b> <b>Fusion diagnostics and technology</b> <b>Chairs</b>   Dr. Bruno Soares Gonçalves (IST/IPFN) & Prof. Jean-Marc Layet (AMU)	<b>Oral Session 2.1</b> <b>Nuclear Power Reactors</b> <b>Chairs</b>   Prof. Gordon Kohse (MIT) & Dr. Patrick Blaise (CEA)	<b>Oral Session 3.1</b> <b>Research Reactors</b> <b>Chairs</b>   Dr. Ludo Vermeeren (SCK-CEN) & Dr. Gilles Bignan (CEA)	<b>Oral Session 5.1</b> <b>Safeguards, Homeland Security</b> <b>Chairs</b>   Prof. Kenan Ünlü (PSU) & Dr. Paolo Mutti (ILL)
12:00	<b>INV #158 - Upgrades of Diagnostic Techniques and Technologies for JET next D-T Campaigns.</b> Andrea Murari, Consorzio RFX	<b>#176 - Preliminary Design of Critical Function Monitoring System of PGSFR</b> Seung-Hwan SEONG, Korea Atomic Energy Research Institute	<b>INV #103 - Acoustic sensors for fission gas characterization: R&amp;D skills devoted to innovative instrumentation in MTR, non-destructive devices in hot lab facilities and measurements of LWR rods in nuclear plants</b> J.Y. Ferrandis, IES University Montpellier/CNRS	<b>#372 - Performance of an RPM based on Gd-lined plastic scintillator for neutron and gamma detection</b> Erica Fanchini for the INFN/ANN and SCINTILLA groups, INFN
12:20		<b>#199 - A Defense in Depth Approach for Nuclear Power Plant Accident Management</b> Hwai-Pwu Chou, National Tsing Hua University, Taiwan		<b>#360 - Performance of Large Neutron Detectors Containing Lithium-Gadolinium-Borate Scintillator</b> David M. Slaughter, MSI/Photogenics
12:40	<b>Lunch Break</b>			
14:00	<b>Oral Session 9.1</b> <b>Fusion diagnostics and technology</b> <b>Chairs</b>   Dr. Bruno Soares Gonçalves (IST/IPFN) & Prof. Jean-Marc Layet (AMU)	<b>Oral Session 2.1</b> <b>Nuclear Power Reactors</b> <b>Chairs</b>   Prof. Gordon Kohse (MIT) & Dr. Patrick Blaise (CEA)	<b>Oral Session 3.1</b> <b>Research Reactors</b> <b>Chairs</b>   Dr. Ludo Vermeeren (SCK-CEN) & Dr. Gilles Bignan (CEA)	<b>Oral Session 5.1</b> <b>Safeguards, Homeland Security</b> <b>Chairs</b>   Prof. Kenan Ünlü (PSU) & Dr. Paolo Mutti (ILL)
14:00	<b>#245 - Development of high-availability ATCA/PCIe data acquisition instrumentation</b> Miguel Correia, Instituto de Plasmas e Fusão Nuclear IST-UL	<b>INV #33 - Critical Review of Gamma Spectrometry Detections Approaches for In-Plant Surface Deposition Monitoring</b> Carola Gregorich, Electric Power Research Institute	<b>#318 - SAKE 1 Experiment - Fibre Optic Compaction Measurement and Fibre Bragg Gratings Testing under High Fast Neutrons Fluence</b> L Remy, Alternative Energies and Atomic Energy Commission (CEA), DEN, DPC, SEARS, Surface Engineering and lasers laboratory	<b>INV #42 - Current status on plastic scintillators modifications</b> Matthieu Hamel, CEA LIST

## TUESDAY | 21<sup>ST</sup> APRIL

	Oral Session 9.1 Fusion diagnostics and technology	Oral Session 2.1 Nuclear Power Reactors	Oral Session 3.1 Research Reactors	Oral Session 5.1 Safeguards, Homeland Security
14:20	<b>#274 - Proton recoil telescope based on diamond detectors for measurement of fusion neutrons.</b> M. Osipenko, INFN		<b>#358 - Updated Results of Ultrasonic Transducer Irradiation Test</b> Joshua Daw, Idaho National Laboratory	
14:40	<b>#283 - Detection of 14 MeV neutrons in high temperature environment up to 500 °C using 4HSiC based diode detector</b> D. Szalkai, Karlsruhe Institute of Technology	<b>#128 - In-Containment Signal Acquisition and Data Transmission via Power Lines within High Dose Areas of Nuclear Power Plants</b> Steffen Mueller, University of Erlangen-Nuremberg	<b>#341 - Experimental and numerical validation of an ultrasonic visualization system for nuclear reactor application</b> Nicolas Van de Wyer, Von Karman Institute for Fluid Dynamics	<b>#192 - Development of new Polysiloxane Based Liquid Scintillators</b> M. Dalla Palma, University of Trento
15:00	<b>INV #339 – Neutronics instrumentation development at KIT for the European ITER TBM</b> A. Klix, Karlsruhe Institute of Technology	<b>#90 - Study of guided wave transmission through complex junction in sodium cooled reactor</b> Q. Elie, CEA LIST	<b>INV #270 - Overview of the ultrasonic instrumentation research in the MYRRHA project</b> M. Dierckx, SCK-CEN	<b>#147 - Detection of gamma-neutron radiation by novel solid-state scintillation detectors</b> V. Ryzhikov, Institute for Scintillation Materials
15:20				<b>#118 - Gadolinium-loaded plastic scintillators for thermal neutron detection and counting using compensation</b> Jonathan Dumazert, CEA LIST
15:40	<b>Coffee Break @ Hall 4</b>			
16:00	Intensive Oral Sessions @ Hall 4 (see details below)			
18:00	<b>Cocktail Dinner   Hall 4</b>			
19:00	<b>Musical show @ Auditorium</b>			

## TUESDAY | 21<sup>ST</sup> APRIL - INTENSIVE ORAL SESSIONS / POSTERS

	Room 1.02	Room 1.03	Room 1.04	Room 1.05	Room 1.06	Room 1.07	Room 1.08
16:00	<b>Intensive Oral Session PS1.1</b> <b>Fundamental physics</b> <b>Chairs</b>   Dr. Cinzia Da Via (CERN) & Prof. Yvan Bruynseraede (KULeuven)  #376 #304 #144 #55	<b>Intensive Oral Session PS2.1</b> <b>Nuclear Power Reactors</b> <b>Chairs</b>   Prof. Gordon Kohse (MIT) & Dr. Patrick Blaise (CEA)  #180 #104 #53	<b>Intensive Oral Session PS3.1</b> <b>Research Reactors</b> <b>Chairs</b>   Dr. Ludo Vermeeren (SCK-CEN) & Prof. José Marques (IST)  #83 #35 #123 #19	<b>Intensive Oral Session PS4.1</b> <b>Nuclear Fuel Cycle</b> <b>Chairs</b>   Dr. Daniel Parat (CEA) & Dr. Richard Stain & sby (NNL)  #323 #87 #102 #337	<b>Intensive Oral Session PS5.1</b> <b>Safeguards, Homeland Security</b> <b>Chairs</b>   Prof. Igor Jovanovic (PSU)  #7 #18 #38 #57	<b>Intensive Oral Session PS7.1</b> <b>Environmental and Medical Sciences</b> <b>Chairs</b>   Prof. Abdelmjid Nourredine (IPHC) & Dr. William Russ (Canberra)  #50 #246 #333 #170	<b>Intensive Oral Session PS1.1</b> <b>Fundamental physics</b> <b>Chairs</b>   Dr. Patrick Le Dû (IEEE)  #353 #348 #169 #298
16:40	<b>Extension of the discussion in front of the posters</b>						
17:00	<b>Intensive Oral Session PS1.1</b> <b>Fundamental physics</b> <b>Chairs</b>   Dr. Cinzia Da Via (CERN) & Prof. Yvan Bruynseraede (KULeuven)  #239 #220 #218 #231	<b>Intensive Oral Session PS2.1</b> <b>Nuclear Power Reactors</b> <b>Chairs</b>   Prof. Gordon Kohse (MIT) & Dr. Patrick Blaise (CEA)  #48 #210	<b>Intensive Oral Session PS3.1</b> <b>Research Reactors</b> <b>Chairs</b>   Dr. Ludo Vermeeren (SCK-CEN) & Prof. José Marques (IST)  #271 #247 #113 #100 #200	<b>Intensive Oral Session PS4.1</b> <b>Nuclear Fuel Cycle</b> <b>Chairs</b>   Dr. Daniel Parat (CEA) & Dr. Richard Stainsby (NNL)  #47 #46 #115 #237	<b>Intensive Oral Session PS5.1</b> <b>Safeguards, Homeland Security</b> <b>Chairs</b>   Prof. Igor Jovanovic (PSU) " #25 #91 #111 #120	<b>Intensive Oral Session PS7.1</b> <b>Environmental and Medical Sciences</b> <b>Chairs</b>   Prof. Abdelmjid Nourredine (IPHC) & Dr. William Russ (Canberra)  #161	<b>Intensive Oral Session PS1.1</b> <b>Fundamental physics</b> <b>Chairs</b>   Dr. Patrick Le Dû (IEEE)  #207 #149 #66 #345
17:40	<b>Extension of the discussion in front of the posters</b>						
18:20	<b>Poster Exhibition around a cocktail dinner</b>						



## TUESDAY | 21<sup>ST</sup> APRIL - INTENSIVE ORAL SESSIONS / POSTERS

Room 1.02	Intensive Oral Session PS1.1 . Fundamental physics
16:00 -	#376 - Pile-up noise studies in the ATLAS TileCal calorimeter, Juan Pedro Araque Espinosa for the ATLAS Collaboration, CERN
17:40	#304 - Firmware development for the ATLAS TileCal sROD, Pablo Moreno Marti for the ATLAS collaboration, CERN
	#144 - Adaptive Linear Predictor FIR Filter based on the Cyclone V FPGA with HPS to Reduce Narrow Band RFI in AERA Radio Detection of Cosmic Rays, Zbigniew Szadkowski, University of Lodz
	#55 - Digital signal processing for the ATLAS/LUCID detector, Sykora Tomas for the ATLAS collaboration, IPNP MFF UK, Prague
	#239 - Research and Development of Scintillation fiber Trackers, A.Kobayashi , Graduate School of Science,Chiba Univ., Japan
	#220 - Estimation of position resolution for DOI-PET detector using 0.2 mm WLS fibers, N. Kaneko, Graduate school of science, Chiba university, Japan
	#218 - Development of a Clear Fiber Cherenkov Counter, N. Kaneko, Graduate school of science, Chiba university, Japan
	#231 - Testing small-strip, Thin Gap Chambers (sTGC) with small angle wire edges for the ATLAS New Small Wheel Muon Spectrometer upgrade at the LHC, Itamar Roth, Weizmann Institute of Science
Room 1.03	Intensive Oral Session PS2.1 - Nuclear Power Reactors
16:00 -	#180 - Subassembly identification by ultrasound to prevent fuel handling error in Sodium Fast Reactors, Kevin Paumel, CEA
17:40	#104 - API-MS for Argon on line monitoring in ASTRID, Doizi, CEA, DENSDANS/DPC/SECR/LRMO
	#53 - Implementation and Analysis for APR1400 Soft Control System, Jin Woong Lee, KEPSCO E&C
	#48 - Ultrasonic imaging in liquid sodium, E. Lubeigt, CEA
	#210 - Feasibility study of Self Powered Neutron Detectors in Fast Reactors for detecting local change in neutron spectrum, V. Verma, Uppsala University, Sweden
Room 1.04	Intensive Oral Session PS3.1 - Research Reactors
16:00 -	#83 - The Acoustic Emission signal acquired by the microphones placed in the CABRI test device along the fourteen last R.I.A. experiments: an example of reproducible research in nuclear science, Laurent Pantera, CEA
17:40	#35 - Development and applications of retroreflective surfaces for ultrasound in LBE., Willem Leysen, SCK.CEN
	#123 - Thick Films acoustic sensors devoted to MTR environment measurements, F. Very, IES University Montpellier/CNRS
	#19 - Development of oxygen sensors for use in liquid metal, R. Van Nieuwenhove, Institutt for Energiteknikk
	#271 - Nuclear heating measurements by in-pile calorimetry: prospective works for a microsensor design, C. Reynard-Carette, Aix-Marseille University/IM2NP
	#247 - Study of the influence of heat sources on the out-of-pile calibration curve of calorimetric cells used for nuclear energy deposition quantification, C. De Vita, Aix Marseille Université/IM2NP UMR 7334/France
	#113 - Multi-step Monte Carlo calculations applied to nuclear reactor instrumentation - source definition and renormalization to physical values, Vladimir Radulovic,

## TUESDAY | 21<sup>ST</sup> APRIL - INTENSIVE ORAL SESSIONS / POSTERS

CEA

#100 - Control of vacuum induction brazing system for sealing of instrumentation feedthrough, Sung Ho Ahn, Korea Atomic Energy Research Institute

#200 – An intelligent scanning algorithm for lost fuel rod recovery in the MYRRHA lower plenum, Wouter De Cock, SCK-CEN

Room	Intensive Oral Session PS4.1 - Nuclear Fuel Cycle
1.05	
16:00 -	#323 - Performance Evaluation of an Intelligent Sensor Platform for Radiation Monitoring Applications, Dante Nakazawa, Canberra Industries
17:40	#87 - HPGe detector shielding optimization with MCNPX for the MEDINA PGNA cell, T. Nicol, CEA, DEN, Cadarache, Nuclear Measurement Laboratory
	#102 - FaNGaS: a New Instrument for Fast Neutron Gamma Spectroscopy at FRM II Research Reactor at Garching, T. Randriamalala, IEK-6, Forschungszentrum Juelich GmbH, Germany
	#337 - Intrinsic Efficiency Calibration Considering Geometric Factors in Gamma-ray Computed Tomography for Radioactive Waste Assay, Zhe Liu, China Institute of Atomic Energy
	#47 – The determination of uncertainties of PWR spent fuel radionuclide inventory based on data of real operational history, Ivan Fast, Forschungszentrum Jülich GmbH, IEK-6
	#46 - The use of gamma spectrometry in the determination of fission products migration in irradiated fuel, Laurent LOUBET, CEA/DEN/DEC/SA3C/LEGEND
	#115 - Performance Study of an aSi Flat Panel Detector for Fast Neutron Imaging of Nuclear Waste, M. Schumann, Forschungszentrum Jülich GmbH
	#237 - Bare Fiber Bragg Gratings embedded into concrete buffer Supercontainer concept for nuclear waste storage, Damien Kinet, UMONS

Room	Intensive Oral Session PS5.1 - Safeguards, Homeland Security
1.06	
16:00 -	#7 - Performance of Boron-10 based Neutron Coincidence Counters, Mathieu BOUCHER, GE Reuter-Stokes
17:40	#18 - Commissioning and field tests of a van-mounted system for the detection of radioactive sources and Special Nuclear Material, D. Cester, Dipartimento di Fisica ed Astronomia UNI Padova, CAEN
	#38 - Expected total counts for the Self-Interrogation Neutron Resonance Densitometry measurements of spent nuclear fuel, Riccardo Rossa, SCK-CEN, ULB
	#57 - Multi-Element CZT Array for Nuclear Safeguards Application, Sung-Woo Kwak, Jung-Ki Shin, KINAC
	#25 - Construction and characterization of the detection modules for the Muon Portal Project, F.Riggi for the Muon Portal Collaboration, Dept. of Physics and Astronomy, Univ. of Catania
	"#91 – Detection of special nuclear materials tagged neutrons, Bertrand Pérot, CEA DEN Cadarache"
	#111 - Nuclear signal simulation applied to gas ionizing chambers, R. Coulon, CEA
	#120 - A robust hypothesis test for the sensitive detection of radiation moving sources using temporal correlation, Jonathan Dumazert, CEA/DRT/LIST/DM2I/LCAE

## TUESDAY | 21<sup>ST</sup> APRIL - INTENSIVE ORAL SESSIONS / POSTERS

Room 1.07		Intensive Oral Session PS7.1 - Environmental and Medical Sciences
16:00 -		#50 – Skin dosimetry in breast teletherapy on a phantom anthropomorphic and anthropometric phantom, Luciana Batista Nogueira, UFMG
17:40		#246 - Dosimetric Comparison in breast radiotherapy of 4 MV and 6 MV on Physical chest simulator, Sabrina Donato da Silva, Federal University of Minas Gerais
		#333 – A new cubic phantom for PET /CT dosimetry: Experimental and Monte-Carlo characterization, Divanizia N Souza, Universidade Federal de Sergipe
		#170 - Evaluation of the radiation doses in newborn patients submitted to CT examinations, Ana Paula Perini, Universidade Federal de Uberlândia
		#161 - Study of the Melting Latent Heat of Semicrystalline PVDF applied to High Gamma Dose Dosimetry, Adriana de Souza Medeiros Batista, Universidade Federal de Minas Gerais

Room 1.08		Intensive Oral Session PS1.1 - Fundamental physics
16:00 -		#353 - Characteristics of SiC neutron sensor spectrum unfolding process based on Bayesian inference, Jerzy Cetnar, AGH-UST
17:40		#348 - Intelligent uranium fission converter for neutron production on the periphery of the nuclear reactor core (MARIA reactor in Swierk – Poland), M.A. Gryzinski, National Centre for Nuclear Research, Poland
		#169 - Investigation of the response of a neutron-handmonitor dedicated to the powder diffractometer at CENM-Maamora, M.Y.MESSOUS, CNESTEN
		#298 - Characterization of over 700 large area photomultipliers for the KM3NeT-Italia towers, E.Leonora on behalf of KM3NeT-Italia project, INFN-sezione di Catania
		#207 - The overvoltage protection module for the power supply system for the pixel detector at Belle II experiment at KEK., Bartlomiej Kisielewski, Institute of Nuclear Physics PAN, Krakow, Poland
		#149 - Single-crystal CVD diamond detector for low-energy charged particles with energies ranging from 100 keV to 2 MeV, Yuki Sato, The Institute of Physical and Chemical Research
		#66 - Influence of Infrared Stimulation on Spectroscopy Characteristics of Coplanar-Grid CdZnTe detectors, V. Ivanov, ZRF RITEC SIA
		#345 - A new set-up for in-situ probing of radiation effects in materials and electronic devices, M. Peres, IST, Portugal





## WEDNESDAY | 22<sup>ND</sup> APRIL

	Auditorium I	Room 5.A	Room 5.B	Room 5.C
08:40	<b>Chairs</b>   Prof. Abdallah Lyoussi (CEA) <b>The Roles and Developments needed in the ITER Fusion Device</b> Dr. Michael Walsh and the ITER Team, Head of the Diagnostics Division, ITER Organization			
09:20	<b>Oral Session 1.1</b> <b>Fundamental Physics</b> <b>Chairs</b>   Dr. Cinzia Da Via (CERN) & Prof. Mossadek Talby (IN2P3/CPPM)	<b>Oral Session 2.2</b> <b>Nuclear Power Reactors</b> <b>Chairs</b>   Prof. George Imel (INL) & Dr. Gilles Bignan (CEA)	<b>Oral Session 7.1</b> <b>Environmental and Medical Sciences</b> <b>Chairs</b>   Prof. Abdelmjid Nourredine (IPHC) & Dr. Gabriela Llosa (IFIC-Valencia)	<b>Oral Session 3.2</b> <b>Research Reactors</b> <b>Chairs</b>   Dr. Jean-Pierre Chauvin (CEA) & Dr. Hoan-Sung Jung (KAERI)
09:20	<b>#178 - The ATLAS Tile Calorimeter</b> Ana Henriques, ATLAS collaboration, CERN	<b>INV #44 - In Service Inspection and Repair of Sodium cooled ASTRID Prototype</b> F. Baqué, CEA, AREVA, EDF	<b>#224 - Study of the absorbance spectra of Fricke Xylenol-Orange gel dosimeters</b> G. Gambarini, Università degli Studi di Milano, Milan, Italy	<b>#INV 378 - On use of ZPR research reactors and associated instrumentation and measurement methods for reactor physics studies.</b> J-P. Chauvin, CEA/DEN/CAD/DER/SPE <sub>x</sub> , Cadarache
09:40	<b>#54 - The new ATLAS/LUCID detector</b> Marco Bruschi, CERN		<b>#227 - Study of Fricke-gel dosimeter calibration for attaining precise measurements of the absorbed dose</b> G. M. Liosi, Politecnico di Milano, Milan, Italy	
10:00	<b>#31 - ATLAS Jet Trigger Update for the LHC Run II</b> Ademar Tavares Delgado, ATLAS collaboration, SLAC National Accelerator Laboratory"	<b>#215 - Practical Acoustic Thermometry with Twin-Tube Sensors</b> M. de Podesta, National Physical Laboratory, UK	<b>#157 - A Novel Front-End ASIC With Post Digital Filtering and Calibration for CZT-Based PET Detector</b> W. Gao, Northwestern Polytechnical University/IPHC	<b>#313 - The FREYA project at VENUS-F - the next step towards MYRRHA</b> J. Wagemans, SCK-CEN, Belgium

## WEDNESDAY | 22<sup>ND</sup> APRIL

10:20	<b>Coffee Break @ Hall4</b>			
10:40	<b>Oral Session 1.1 Fundamental Physics</b>	<b>Oral Session 2.2 Nuclear Power Reactors</b>	<b>Oral Session 7.1 Environmental and Medical Sciences</b>	<b>Oral Session 3.2 Research Reactors</b>
	<b>Chairs</b>   Dr. Cinzia Da Via (CERN) & Prof. Mossadek Talby (IN2P3/CPPM)	<b>Chairs</b>   Prof. George Imel (INL) & Dr. Gilles Bignan (CEA)	<b>Chairs</b>   Prof. Abdelmjid Nourredine (IPHC) & Dr. Gabriela Llosa (IFIC-Valencia)	<b>Chairs</b>   Dr. Jean-Pierre Chauvin (CEA) & Dr. Hoan-Sung Jung (KAERI)
10:40	<b>INV #203 - Fully depleted CMOS pixel sensor development and potential applications</b> J.Baudot, IPHC - Strasbourg	<b>#202 - Quantitative void fraction detection with an eddy current flowmeter for 4th generation Sodium cooled Fast Reactor</b> M. Kumar, CEA, Cadarache; IMFT, Toulouse	<b>INV #96 - Results from the Commissioning of a Multi-Modal Endoscope for Ultrasound and Time of Flight PET</b> Ricardo Bugalho on behalf of the EndoTOFPET-US Collaboration, LIP, Lisbon	<b>#295 - Effective delayed neutron fraction measurement in the critical VENUS-F reactor using noise techniques</b> X. Doligez, CNRS/IN2P3/IPNO
11:00		<b>#189 - Passive acoustic leak detection for sodium cooled fast reactors using hidden Markov models</b> Anders Riber Marklund, KTH, CEA		<b>#255 - Estimation of MINERVE kinetic parameters from pile noise measurements using various data processing methods</b> Benoit Geslot, CEA, DEN, DER/SPEX, Cadarache
11:20	<b>#122 - A position sensitive Recoil Proton Telescope for energy and fluence measurement of fast neutron fields</b> Mario Bachaalany, Neutron dosimetry, IRSN	<b>#89 - Liquid sodium testing of in-house phased array EMAT transducer for L-wave applications</b> F. Le Bourdais, CEA non destructive testing department	<b>INV #32 - Intraoperative Beta-Detecting Probe For Radio-Guided Surgery in Tumor Resection</b> Faccini, R., INFN sezione di Roma, Univ Di Roma "La Sapienza", CLNS	<b>#82 - The 14 MeV Neutron Irradiation Facility in MARIA Reactor</b> R. Prokopowicz, National Centre for Nuclear Research, Poland
11:40	<b>#279 - Characterization of silicon 3D pixel detectors for the ATLAS Forward Physics experiment</b> I. Lopez Paz, IFAE	<b>#392 - Progress in the development of the neutron flux monitoring system of the French GEN-IV SFR: simulations and experimental validations</b> C. Jammes, CEA/DEN/CAD/DER/SPEX		<b>#140 - Study of the Open Loop and Closed Loop Oscillator Techniques</b> G. Imel, Idaho State University

## WEDNESDAY | 22<sup>ND</sup> APRIL

	Oral Session 1.1 Fundamental Physics	Oral Session 2.2 Nuclear Power Reactors	Oral Session 7.1 Environmental and Medical Sciences	Oral Session 3.2 Research Reactors
12:00	<b>#165 - Cryogenic readout techniques for Germanium detectors</b> S. Riboldi, Università degli Studi di Milano/INFN Milano	<b>#80 - Development of a practical Johnson noise thermometer for long-term measurements in harsh environments</b> Jonathan Pearce, Laboratory, Metrosol Ltd	<b>#329 - A Prototype Pb-212 Medical Dose Calibrator</b> W.R. Russ, CANBERRA Industries, Inc.	<b>#382 – EXCALIBUR @ CALIBAN: a neutron transmission experiment for <sup>238</sup>U(n,n<sub>continuum</sub>) gamma nuclear data validation</b> Stéphane Cathalau, Commissariat à l'Energie Atomique
12:20	<b>#150 - 4H-SiC Neutron sensors based on ion implanted 10B Neutron converter layer</b> F.Issa, University of Aix-Marseille		<b>#79 - Using Radiochromic Films to Characterize the Dispersion of ZrO<sub>2</sub> Nanosized Grain Clusters in Protective Polymer Composites</b> C. C. P. Fontainha, UFMG	<b>#275 - Irradiation of electronic components and circuits at the Portuguese Research Reactor: Lessons learned</b> J.G. Marques, C2TN, Instituto Superior Tecnico
12:40	<b>Lunch Break</b>			
14:00	Oral Session 1.1 Fundamental physics	Oral Session 8.1 Education, Training and Outreach	Oral Session 7.1 Environmental and Medical Sciences	Oral Session 3.2 Research Reactors
	<b>Chairs</b>   Dr. Laurent Francis (UCLouvain) & Dr. Paolo Mutti (ILL)	<b>Chairs</b>   Dr. Michel Carette (AMU) & Prof. José Marques (IST)	<b>Chairs</b>   Prof. Frank Deconinck (VUB) & Dr. Patrick Le Dû (IEEE)	<b>Chairs</b>   Prof. Rudi Van Nieuwenhove (HRP) & Dr. Hubert Carcreff (CEA)
14:00	<b>#97 - Implementation of an Ultrasonic Instrument for Simultaneous Mixture and Flow Analysis of Binary Gas Systems</b> B. Pearson, University of Oklahoma	<b>#294 - Integrative Curriculum Development in Nuclear Education and Research Vertical Enhancement Program</b> Stephen U. Egarievwe, Alabama A&M University	<b>INV #117 – Characterization of large area ZnS(Ag) detector for gross Alpha and Beta activity measurements in tap water plants</b> M. Lunardon, Università degli Studi di Padova	<b>INV #357 - JHR Project: a future Material Testing Reactor working as an International user Facility: The key-role of instrumentation in support to the development of modern experimental capacity</b> G. Bignan, CEA/DEN/CAD/DER; France
14:20	<b>INV #78 - GRAPhEME, a setup to measure (n, xn gamma) reaction cross sections</b> Greg Henning, IPHC/CNRS	<b>#292 - Nuclear Security Education Program at the Pennsylvania State University</b> Kenan Ünlü, Pennsylvania State University USA		

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	Oral Session 1.1 Fundamental physics	Oral Session 8.1 Education, Training and Outreach	Oral Session 7.1 Environmental and Medical Sciences	Oral Session 3.2 Research Reactors
14:40		<b>#351 - The Fukushima nuclear disaster and its effects on media framing of fission and fusion energy technologies</b> Luisa Schmidt, ICS-Ulisboa	<b>#81 - FPGA-based prototype of portable environmental radiation monitor</b> Aziz Benahmed, Electronic and Nuclear Instrumentation Laboratory	<b>#242 - Development and experimental qualification of a calculation scheme for the evaluation of gamma heating in experimental reactors. Application to MARIA and Jules Horowitz (JHR) MTR Reactors</b> M. Tarchalski, NCBJ
15:00	<b>#282 - Preparatory study of photomultiplier tubes of 3-inch and 10-inch diameter for the KM3NeT neutrino telescope</b> V.Giordano on behalf of the KM3NeT Collaboration, INFN-Catania		<b>#13 - New Advanced Source Identification Algorithm (ASIA-NEW) for radiation monitors with plastic detectors</b> Andrei Stavrov, Rapiscan Systems	<b>#60 - Methodology comparison for gamma-heating calculations in material-testing reactors</b> Matthieu Lemaire, CEA Cadarache
15:20	<b>#156 - Test beam results of micro channel plates in "ionisation mode" for the detection of single charged particle and electromagnetic showers</b> L.Brianza, CERN			<b>#374 - The MELODIE experiment, an advanced device for the study of the irradiation creep of LWR cladding with full online capabilities</b> P. Guimbal, CEA, DEN, DER, Jules Horowitz Reactor
15:40	<b>Coffee Break @ Hall 4</b>			
16:00	Intensive Oral Sessions @ Hall 4 (see details below)			
18:00	<b>Cocktail Dinner   Hall 4</b>			

	Room 1.02	Room 1.03	Room 1.04	Room 1.05	Room 1.06	Room 1.07	Room 1.08
16:00	<b>Intensive Oral Sessions PS1.2 Fundamental physics</b>	<b>Intensive Oral Sessions PS3.2 Research Reactors</b>	<b>Intensive Oral Sessions PS3.2 Research Reactors</b>	<b>Intensive Oral Sessions PS7.2 Environmental and Medical Sciences</b>	<b>Intensive Oral Sessions PS5.2 Safeguards, Homeland Security</b>	<b>Intensive Oral Sessions PS7.2 Environmental and Medical Sciences</b>	<b>Intensive Oral Sessions PS5.2 Safeguards, Homeland Security</b>
	<b>Chairs</b>   Dr. Laurent Ottaviani (AMU) & Dr. Nicolas Claire (AMU)	<b>Chairs</b>   Dr. Hubert Carcreff (CEA) & Prof. Rudi Van Nieuwenhove (HRP)	<b>Chairs</b>   Dr. Jean-Yves Ferrandis (Univ. Montpellier) & Dr. Ludo Vermeeren (SCK-CEN)	<b>Chairs</b>   Dr. Gabriela Llosa (Univ. Valencia) & Prof. Frank Deconinck (VUB)	<b>Chairs</b>   Prof.Kenan Ünlü (PSU) & Prof. Michel Giot (UCLouvain)	<b>Chairs</b>   Dr. Patrick Le Dû (IEEE)	<b>Chairs</b>   Prof. Abdallah Lyoussi (CEA)
	#366	#92	#211	#222	#336	#310	#213
	#346	#305	#36	#223	#187	#330	#219
	#52	#312	#173	#285	#319	#347	#301
	#254	#129	#264	#320		#267	#194
16:40	Extension of the discussion in front of the posters						
17:00	<b>Intensive Oral Sessions PS1.2 Fundamental physics</b>	<b>I Intensive Oral Sessions PS3.2 Research Reactors</b>	<b>Intensive Oral Sessions PS3.2 Research Reactors</b>	<b>Intensive Oral Sessions PS7.2 Environmental and Medical Sciences</b>	<b>Intensive Oral Sessions PS5.2 Safeguards, Homeland Security</b>	<b>Intensive Oral Sessions PS7.2 Environmental and Medical Sciences</b>	<b>Intensive Oral Sessions PS5.2 Safeguards, Homeland Security</b>
	<b>Chairs</b>   Dr. Laurent Ottaviani (AMU) & Dr. Nicolas Claire (AMU)	<b>Chairs</b>   Dr. Hubert Carcreff (CEA) & Prof. Rudi Van Nieuwenhove (HRP)	<b>Chairs</b>   Dr. Jean-Yves Ferrandis (Univ. Montpellier) & Dr. Ludo Vermeeren (SCK-CEN)	<b>Chairs</b>   Dr. Gabriela Llosa (Univ. Valencia) & Prof. Frank Deconinck (VUB)	<b>Chairs</b>   Prof.Kenan Ünlü (PSU) & Prof. Michel Giot (UCLouvain)	<b>Chairs</b>   Dr. Patrick Le Dû (IEEE)	<b>Chairs</b>   Prof. Abdallah Lyoussi (CEA)
	#240	#184	#143	#10	#303	#164	#175
	#380	#314	#350	#154	#317	#183	#191
	#381	#71	#56	#23	#214	#206	#177
		#181	#11	#367	#316	#235	#383
		#62		#17		#385	
17:40	Extension of the discussion in front of the posters						
18:20	Poster Exhibition around a cocktail dinner						



## WEDNESDAY | 22<sup>ND</sup> APRIL - INTENSIVE ORAL SESSIONS / POSTERS

Room 1.02	Intensive Oral Session PS1.2 - Fundamental physics
16:00 -	#366 - Plasma/Wall interaction of an insulated material by laser-induced fluorescence diagnostic, N. Claire, Aix-Marseille University, PIIM Laboratory
17:40	#346 - The Dresden Felsenkeller shallow-underground accelerator laboratory for nuclear astrophysics – Status and first physics program, Ch. Ilgner, Helmholtz-Zentrum Dresden-Rossendorf, Institute of Radiation Physics, Dresden, Germany, on behalf of the Nuclear Astrophysics group, Helmholtz-Zentrum Dresden-Rossendorf, Germany
	#52 - 6LiF:ZnS(Ag) Neutrons Scintillator Detector Configuration for Optimal Readout, Y. Yehuda-Zada, Nuclear Research Center Negev, Israel
	#254 - HiRadMat at CERN SPS - A test facility with high intensity beam pulses to material samples, N. Charitonidis, CERN
	#240 - A SIMPLE Bubble Chamber for Dark Matter Searches: Testing and Development, A. R. Ramos, C2TN - Instituto Superior Técnico
	#380 - Thomson Parabola Spectrometer: a powerful tool to get on-line plasma information, C. Altana, Laboratori Nazionali del Sud of INFN, Italy
	#381 - First results of the silicon telescope using an 'artificial retina' for fast track finding, N.Neri, INFN Milano
Room 1.03	Intensive Oral Session PS3.2 - Research Reactors
16:00 -	#92 - A proposal for a Subcritical Reactivity Meter based on Gandini and Salvatores' point kinetics equations for multiplying subcritical systems, L.N.Pinto, IPEN – Nuclear and Energy Research Institute
17:40	#305 - Reactivity measurements using the Zolotukhin-Mogilner Method, Alves, L., Universidade de São Paulo
	#312 - Kinetic parameters of the GUINEVERE reference configuration in VENUS reactor obtained from a pile noise experiment using Rossi-a and Feynman-a methods, Benoit Geslot, CEA, DEN, DER/SPEX
	#129 - Delayed Neutron Fraction and Prompt Decay Constant Measurement in the MINERVE Reactor using the PSI Instrumentation, Gregory Perret, Paul Scherrer Institut
	#184 - Measurement of neutron spectra in the experimental reactor LR-0, Vaclav Prenosil, Faculty of Informatics, Masaryk University
	#314 - A simple way to overcome the shortage of 3He detectors in the IPEN/MB-01, Eduardo Gonnelli, Nuclear and Energy Research Institute - IPEN/CNEN
	#71 - Measuring Eigenvalue of a Subcritical System by a Intense Pulsed Neutron Source, LI Zhong-bao, Institute of Nuclear Physics and Chemistry, China
	#181 - A Multipurpose Fast Neutron Beam Capability at the MASURCA Facility, L. Dioni, Aix-Marseille University
Room 1.04	Intensive Oral Session PS3.2 - Research Reactors
16:00 -	#211 - YAP:Ce scintillator characteristics for neutron detection, L. Viererbl, Research Centre Rez Ltd., Czech Republic
17:40	#36 - Simulation study of a “fission electron-collection” neutron detector, Wang Dong, Institute of Nuclear Physics and Chemistry
	#173 - Optimum Filter-Based Discrimination of Neutrons and Gamma Rays, Moslem Amiri, Masaryk University
	#264 - Development of a CMOS Oscillator Chain for Particle Detection based on SOI technology, K. Coulié-Castellani, IM2NP - Aix-Marseille University

## WEDNESDAY | 22<sup>ND</sup> APRIL - INTENSIVE ORAL SESSIONS / POSTERS

#143 - IEA-R1 Nuclear Research Reactor: 58 years of operating experience and utilization for research, teaching and radioisotopes production, José Patricio Náhuel Cárdenas, INSTITUTO DE PESQUISAS ENERGETICAS E NUCLEARES

#350 - Recent upgrades and new scientific infrastructure of research MARIA research reactor, Otwock-Swierk, Poland, M. Gryzinski, NCBJ

#56 - Dynamic simulation platform to verify the performance of the reactor regulating system for a research reactor, Jong-Bok Lee, Korea Atomic Energy Research Institute

#11 - Response Time Consideration for Digitalized Safety Instrumentation applied to Research Reactor, SangHoon Bae, Korea Atomic Energy Research Institute

#62 - A complete dosimetry experimental program in support to the CABRI core characterization and to the power calibration, JP. Hudelot, CEA Cadarache

Room 1.05	Intensive Oral Session PS7.2 - Environmental and Medical Sciences
16:00 -	#222 - Real-time 90Sr Counter, H. ITO, Graduate School of Science, Chiba Univ.,Japan
17:40	#223 - Estimation of time resolution for DOI-PET detector using 0.2 mm WLS fibers, A. Kobayashi, Graduate School of Science, Chiba Univ.,Japan
	#285 - Evaluation of imaging quality for flat-panel detector based low dose C-arm CT system, Chang-Woo Seo, Korea Electrotechnology Research Institute
	#320 - Simulation of multi-photon emission isotopes using time-resolved SimSET multiple photon history generator, Chih-Chieh Chiang, National Tsing-Hua University, Hsinchu, Taiwan
	#10 - Preliminary Study of Nuclear Fuel Organ Testing Based on Coded Source Neutron Imaging, Sheng Wang, Institute of Nuclear Physics and Chemistry, China
	#154 - A nanostructured ZnO film as diagnostic X-ray sensor, Luiz Antonio Pereira dos Santos, PhD, CNEN/CRCN-NE
	#23 - Comparison of dose measurements in CT using a novel semiconductor detector and a small ion chamber, Cinthia M M Paschoal, Universidade Estadual Vale do Acaraú
	#367 - Beam hardening correction using iterative total variation (ITV)-based algorithm in CBCT reconstruction, Chang-Woo Seo, Korea Electrotechnology Research Institute

Room 1.06	Intensive Oral Session PS5.2 - Safeguards, Homeland Security
16:00 -	#336 - PRD3000: A novel Personnel Radiation Detector with Radiation Exposure Monitoring, A. Fallu-Labruyere, Mirion Technologies (MGPI) SA
17:40	#187 - A Novel Digital Pulse Processing Architecture for Nuclear Instrumentation, Yoann Moline, CEA
	#319 - A Generic Isotope Identification Approach for nuclear instrumentation, Gwenolé Corre, CEA, LIST
	#303 - Counting neutrons from the spontaneous fission of 238U using scintillation detectors and mixed field analysers, Gamage Kelum, Lancaster University, United Kingdom
	#317 - An online change of activity detection method in energy spectrum for early robot intervention, Karim Boudergui, CEA LIST/DRT/DM2I/LCAE
	#214 - Towards quantitative gamma-spectrometry of nuclear material under conditions of limited information about assayed objects, S. Yoon, International Atomic Energy Agency

## WEDNESDAY | 22<sup>ND</sup> APRIL - INTENSIVE ORAL SESSIONS / POSTERS

#316 - Neutron detection with large Plastic scintillators for RPM applications, G. Corre, CEA, LIST

#17 - Real breakthrough in detection of radioactive sources by portal monitors with plastic detectors and New Advanced Source Identification Algorithm (ASIA-New), A. Stavrov, Rapiscan Systems Inc

### Room 1.07 Intensive Oral Session PS7.2 - Environmental and Medical Sciences

- 16:00 - #310 - A Monte Carlo studies of the entrance foil material in a target assembly for FDG production, A.Merouani, faculty of science Rabat
- 17:40 #330 – An evaluation of bipolar junction transistors as dosimeter for megavoltage electron beams, Divanizia do Nascimento Souza, Universidade Federal de Sergipe
- #347 - Multipurpose epithermal neutron beam on new research station at MARIA research reactor in Swierk-Poland, M.A. Gryzinski, National Centre for Nuclear Research, Poland
- #267 - Study of two different radioactive sources for prostate brachytherapy treatment, Lucio Pereira Neves, Universidade Federal de Uberlândia
- #164 - High Energy Performance Tests of Large Volume LaBr<sub>3</sub>: Ce Detector, Naqvi A. A., Physics Department, King Fahd University of Petrol
- #183 – Ultra low level neutron measurements using superheated droplet detectors, A.C. Fernandes, Centro de Ciências e Tecnologias Nucleares
- #206 - Electrically-cooled HPGe detector for advanced x-ray spectroscopy and imaging, V. Marian, Canberra France
- #235 - Theoretical consideration of the energy resolution of planar HPGe detectors for low energy X-rays, Victor V. Samedov, National Research Nuclear University MEPhI

### Room 1.08 Intensive Oral Session PS5.2 - Safeguards, Homeland Security

- 16:00 - #213 - Evaluation of a UNCL design using B-10Plus+\* Neutron Proportional Counters, S. Yoon, International Atomic Energy Agency
- 17:40 #219 - Integrated X-ray detection system for determination of nuclear material concentration, Seunghoon Park, KINAC
- #301 - EURATOM safeguards efforts in the development of spent fuel verification methods by non-destructive assay, L. Matloch, EURATOM
- #194 - A Prototype Large Area Detector Module for Muon Scattering Tomography, C. A. Steer, AWE
- #175 - Neutron/Gamma-Ray Discrimination through Measures of Fit, Moslem Amiri, Masaryk University
- #191 - Additive Manufacturing Materials Study for Gaseous Radiation Detection, C. A. Steer, AWE
- #177 - Development and evaluation of a portable CZT coded aperture gamma-camera, G. Montémont, CEA, LETI, Minatec Campus
- #383 - Measuring the density of different materials by using the collimated fast neutron beam, Sudac, D., Rudjer Boskovic Institute, Bijenicka 54
- #385 - Development of the QA/QC procedures for a neutron interrogation system, Obhodas, J., Sudac, D., Ruder Boskovic Institute

## THURSDAY | 23<sup>RD</sup> APRIL

	Auditorium I	Room 5.A	Room 5.B	Room 5.C
08:40	<b>Chairs</b>   Prof. Frank Deconinck (VUB) <b>Multimodality imaging based on radiopharmaceuticals - The new standard of the diagnosis in nuclear medicine</b> Prof. Alain Prigent, Head of the Biophysics and Nuclear Medicine Department, Bicêtre Hospital, APHP			
09:20	<b>Oral Session 1.2</b> <b>Fundamental Physics</b> <b>Chairs</b>   Prof. Kajfasz Eric (IN2P3/CPPM) & Prof. Michael Walsh (ITER)	<b>Oral Session 5.2</b> <b>Safeguards, Homeland Security</b> <b>Chairs</b>   Prof. Vladivoj Valkovic (ACTDOO) & Dr. Howard Menlove LANL	<b>Oral Session 7.2</b> <b>Environmental and Medical Sciences</b> <b>Chairs</b>   Prof. Frank Deconinck (VUB) Dr. Jochen Krimmer (IPNL)	<b>Oral Session 3.3</b> <b>Research Reactors</b> <b>Chairs</b>   Dr. Christelle Reynard Carette (AMU) & Dr. Mohamed Sadli (CNAM)
09:20	<b>#152 - A new gamma-ray detector, 3-dimension, scanning table for pulse shape analysis</b> M. Ginsz, IPHC-Strasbourg	<b>INV #278 - A New Method to Measure Both the Absolute and the Relative Content of the 240Pu and the 239Pu in FBR MOX Fuel Assemblies</b> Howard Menlove, Los Alamos National Lab	<b>#225 - Study on corrections of dose images obtained with gafchromic EBT3 films for measurements in phantoms irradiated with proton beams</b> G. Gambarini, Università degli Studi di Milano, Milan, Italy	<b>INV #268 - Advanced instrumentation and analysis for in-pile thermal and nuclear measurements: from out-of-pile studies to irradiation campaigns.</b> C. Reynard-Carette, Aix-Marseille University/IM2NP
09:40	<b>#142 - First results from the spectral DCT trigger implemented in the Cyclone V Front-End Board used for a detection of very inclined showers in the Pierre Auger surface detector Engineering Array</b> Zbigniew Szadkowski, University of Lodz		<b>#162 - Prompt Gamma Timing Range Verification for Scattered Proton Beams</b> T. Kormoll, OncoRay, TU Dresden	
10:00	<b>#88 - Radiation Tolerant Electronics and Digital Processing for the Phase-1 Read-out Upgrade of the ATLAS Liquid Argon Calorimeters</b> Adriana Milic for Atlas Liquid Argon	<b>#252 - Spent Fuel Assay with an Ultra-High Rate HPGe Spectrometer</b> James Fast, Pacific Northwest National laboratory		<b>#138 - First In-Core Simultaneous Measurements of Nuclear Heating and Thermal Neutron Flux Obtained with the Innovative Mobile Calorimeter CALMOS inside the OSIRIS Reactor</b>

# THURSDAY | 23<sup>RD</sup> APRIL

Calorimeter Group, TU Dresden

H.Carcreff,  
CEA/DEN/DANS/DRSN/SIREN

10:20	<b>Coffee Break @ Hall4</b>			
10:40	<b>Oral Session 1.2 Fundamental Physics</b>	<b>Oral Session 5.2 Safeguards, Homeland Security</b>	<b>Oral Session 7.2 Environmental and Medical Sciences</b>	<b>Oral Session 3.3 Research Reactors</b>
	<b>Chairs</b>   Prof. Kajfasz Eric (IN2P3/CPPM) & Prof. Michael Walsh (ITER)	<b>Chairs</b>   Prof. Vladivoj Valkovic (ACTDOO) & Dr. Howard Menlove LANL	<b>Chairs</b>   Prof. Frank Deconinck (VUB) Dr. Jochen Krimmer (IPNL)	<b>Chairs</b>   Dr. Christelle Reynard Carette (AMU) & Dr. Mohamed Sadli (CNAM)
10:40	<b>INV #277 - Construction and Design of a full size sTGC prototype for the ATLAS New Small Wheel upgrade</b> Heberth Torres for ATLAS Muon Collaboration	<b>INV #230 - Measurement of the Fast Neutron Response for He-4 Scintillation Detectors Using a Coincidence Scattering Method</b> R.P. Kelley, University of Florida	<b>INV #302 - Prompt-gamma detection towards absorbed energy monitoring during hadrontherapy</b> J. Krimmer, IPNL Lyon	<b>#99 - Development of a new technique for the determination of neutron spectra within the energy of 1 keV-1 MeV by means of reactor dosimetry</b> V. Sergeyevea, CEA Cadarache
11:00				<b>#39 - Neutron spectrometer based on diamond detectors for fast reactors</b> M.Osipenko, INFN, Italy
11:20	<b>#243 - Design and Construction of Large Size Micromegas Chambers for the ATLAS Upgrade of the Muon Spectrometer</b> Fabien Jeanneau, CEA Saclay	<b>#281 - Methodology and Software for Gross Defect Detection of Spent Nuclear Fuel at the Atucha-I Reactor</b> Shivakumar Sitaraman, Lawrence Livermore National Laboratory	<b>INV #172 - Studies of a Proton Phase Beam Monitor for Range Verification in Proton Therapy</b> T. Werner, Technische Universität Dresden, Oncoray, Germany	<b>#300 - Diamond as a solid state micro-fission chamber for thermal neutron detection at the VR-1 research reactor</b> François Foulon, CEA/INSTN
11:40	<b>#182 - Study of the performance of the Micromegas chambers for the ATLAS Muon Spectrometer Upgrade</b> Marco Vanadia for ATLAS Muon collaboration, Sapienza Università di Roma and INFN Roma	<b>#280 - Partial Defect Verification of Spent Fuel Assemblies by PDET: Principle and Field Testing in Interim Spent Fuel Storage Facility (CLAB) in Sweden</b> Shivakumar Sitaraman, Lawrence Livermore National Laboratory		<b>#151 - SiC-based neutron detector in quasi-realistic working conditions: efficiency and stability at room temperature and high temperatures under fast neutron irradiations</b> L. Ottaviani, IM2NP- Aix-Marseille University

## THURSDAY | 23<sup>RD</sup> APRIL

	Oral Session 1.2 Fundamental Physics	Oral Session 5.2 Safeguards, Homeland Security	Oral Session 7.2 Environmental and Medical Sciences	Oral Session 3.3 Research Reactors
12:00		<b>#287 - Precision X-ray Measurement of the Position Sensitivity of Graphene Field Effect Transistors</b> I. Jovanovic, Pennsylvania State University	<b>#195 - Geant4 simulation for a study of a possible use of carbon ions pencil beam for the treatment of ocular melanomas with the active scanning system at CNAO Centre</b> Aurora Tamborini, INFN Section of Pavia - University of Pavia	<b>#290 - Implementation of a Readout Circuit on SOI Technology for the Signal Conditioning of a Neutron Detector in Harsh Environment</b> S. Ben Krit, Institut Matériaux Microélectronique et Nanosciences
12:20		<b>#233 - Extra-light gamma-ray imager for safeguards and homeland security</b> Oleg Ivanov, Kurchatov Institute	<b>#260 - Characterization of a three layer Compton telescope for hadron therapy dose monitoring</b> G. Llosá, IFIC-Valencia	<b>#159 - Recent development of the Multi-Grid detector for large area neutron scattering instruments</b> Bruno Guérard on behalf of the ILL-ESS-LiU collaboration in the CRISP project, ILL
12:40	<b>Lunch Break</b>			
14:00	Oral Session 1.2 Fundamental physics	Oral Session 5.2 Safeguards, Homeland Security	Oral Session 7.2 Environmental and Medical Sciences	Oral Session 3.3 Research Reactors
	<b>Chairs</b>   Dr. Jan Heyse (JRC – IRMM Geel) & Dr. Jean-Luc Leray (CEA)	<b>Chairs</b>   Prof. Kenan Ünlü (PSU) & Dr. Bertrand Perot (CEA)	<b>Chairs</b>   Prof. Francesco Prudenizano (Politecnico di Bari) & Prof. Riccardo Faccini (Università di Roma)	<b>Chairs</b>   Dr. Jan Wagemans (SCK-CEN) & Dr. Jean-François Villard (CEA)
14:00	<b>INV #134 - A Cylindrical GEM Detector with Analog Readout for the BESIII Experiment</b> G. Cibinetto et al. (BESIII CGEM group), INFN Ferrara	<b>INV #148 - Historical building stability monitoring by means of a cosmic ray tracking system</b> A. Zenoni, Università di Brescia	<b>#27 – role of chemical substitution in the photoluminescence of tungstate based materials</b> J.R. Gavarrí, University of Toulon, IM2NP	<b>#244 – Alternative process for manufacturing of thin layers of Boron for neutron measurement</b> Grégoire AUGÉ, Onet Technologies



## THURSDAY | 23<sup>RD</sup> APRIL

	Oral Session 1.2 Fundamental physics	Oral Session 5.2 Safeguards, Homeland Security	Oral Session 7.2 Environmental and Medical Sciences	Oral Session 3.3 Research Reactors
14:20			#116 – Monitoring gross Alpha and Beta activity in liquids by using ZnS(Ag) scintillation detectors M. Lunardon, Università degli Studi di Padova	#43 - Optimization of 6LiF:ZnS(Ag) Scintillator Light Yield Using Geant4 Y. Yehuda-Zada, Nuclear Research Center Negev, Beer-Sheva Israel
14:40	#343 - Investigations on MGy ionizing dose effects in thin oxides of micro-electronic devices P. Paillet, CEA	#384 - Container inspection in the port container terminal by using 14 MeV neutrons Vladivoj Valkovic, Kvinticka 62, Zagreb, Croatia	#332 - Characteristic performance evaluation of a new SAGE Well detector for small and large sample geometries Dr. Bill Russ, CANBERRA Industries inc.	#127 – Neutron and Gamma sensitivities of self-powered detectors: Monte-Carlo modelling Ludo Vermeeren, SCK-CEN
15:00	INV #249 - A Low-Power and In Situ Annealing Mitigation Technique for Fast Neutrons Irradiation of Integrated Temperature Sensing Diodes Laurent A. Francis, UC Louvain	#234 - Data Fusion for a Vision-Radiological System for Source Tracking and Discovery Andreas Enqvist, University of Florida	INV #212 - Design of Linear Accelerator (LINAC) tanks for Proton Therapy via Particle Swarm Optimization (PSO) and Genetic Algorithm (GA) approaches O. Losito, Politecnico di Bari	#186 - Calculation to Experiment Comparison of SPND Signals in Various Nuclear Reactor Environments L. Barbot, CEA, DEN, DER, LDCI
15:20		#49 - Nuclear Counting Filter Based on a Centered Skellam Test and a Double Exponential Smoothing R. Coulon, CEA, LIST		#261 - Dose measurements at epithermal beams of research reactors with Fricke gel and thermoluminescence detectors G. Gambarini, Università degli Studi di Milano, Milan, Italy"
15:40	Coffee Break @ Hall 4			
16:00	Intensive Oral Sessions @ Hall 4 (see details below)			
18:00	Cocktail Dinner   Hall 4			

THURSDAY | 23<sup>RD</sup> APRIL - INTENSIVE ORAL SESSIONS / POSTERS

	Room 1.02	Room 1.03	Room 1.04	Room 1.05	Room 1.06	Room 1.07	Room 1.08
16:00	<div>Intensive Oral Sessions PS8.1 Education, training and outreach</div>	<div>Intensive Oral Sessions PS7.3 Environmental and Medical Sciences</div>	<div>Intensive Oral Sessions PS3.3 Research Reactors</div>	<div>Intensive Oral Sessions PS6.1 Severe Accident Monitoring</div>	<div>Intensive Oral Sessions PS9.1 Fusion diagnostics and technology</div>	<div>Intensive Oral Sessions PS10.1 Decommissioning , dismantling and Remote Handling</div>	<div>Intensive Oral Sessions PS7.3 Environmental and Medical Sciences</div>
	<div>Chairs   Prof. Antonio Falcão (IST/C2TN) &amp; Dr. Nicolas Claire (AMU)</div>	<div>Chairs   Prof. Marcello Lunardon (Univ. Padova) &amp; Prof. Alain Prigent (APHP)</div>	<div>Chairs   Dr. Mohamed Sadli (CNAM) &amp; Dr. Christelle Reynard Carette (AMU)</div>	<div>Chairs   Dr. Patrice Mégret (Univ. Mons)</div>	<div>Chairs   Dr. Bruno Gonçalves (IST/IPFN)</div>	<div>Chairs   Dr. Frazier Bronson (Canberra)</div>	<div>Chairs   Dr.Thomas Kormoll (TU Dresden)</div>
	#64	#269	#232	#93	#390	#193	#238
	#355	#356	#331	#130	#139	#167	#262
	#321	#135	#273	#221	#126	#95	#311
	#309	#136	#259	#284	#197	#45	#320
16:40	Extension of the discussion in front of the posters						
17:00	<div>Intensive Oral Sessions PS8.1 Education, training and outreach</div>	<div>Intensive Oral Sessions PS7.3 Environmental and Medical Sciences</div>	<div>Intensive Oral Sessions PS3.3 Research Reactors</div>	<div>Intensive Oral Sessions PS6.1 Severe Accident Monitoring</div>	<div>Intensive Oral Sessions PS9.1 Fusion diagnostics and technology</div>	<div>Intensive Oral Sessions PS10.1 Decommissioning , dismantling and Remote Handling</div>	<div>Intensive Oral Sessions PS7.3 Environmental and Medical Sciences</div>
	<div>Chairs   Prof. Antonio Falcão (IST/C2TN) &amp; Dr. Nicolas Claire (AMU)</div>	<div>Chairs   Prof. Marcello Lunardon (Univ. Padova) &amp; Prof. Alain Prigent (APHP)</div>	<div>Chairs   Dr. Mohamed Sadli (CNAM) &amp; Dr. Christelle Reynard Carette (AMU)</div>	<div>Chairs   Dr. Patrice Mégret (Univ. Mons)</div>	<div>Chairs   Dr. Bruno Gonçalves (IST/IPFN)</div>	<div>Chairs   Roger Abou Khalil</div>	<div>Chairs   Dr.Thomas Kormoll (TU Dresden)</div>
	#328	#153	#155	#124	#196	#30	#9
	#94	#265	#286	#105	#324	#28	#63
	#24	#334	#34	#77	#109	#391	#188
	#166		#257	#250			
	#393		#208				
17:40	Extension of the discussion in front of the posters						
19:00	Gala Dinner						

## THURSDAY | 23<sup>RD</sup> APRIL - INTENSIVE ORAL SESSIONS / POSTERS

Room 1.02	Intensive Oral Sessions PS8.1 - Education, training and outreach
16:00 - 17:40	<p>#64 - Study of influence of plastic scintillators thicknesses to detect Beta particles and Gamma radiation by means of spectral analysis of <sup>90</sup>Sr/<sup>90</sup>Y and <sup>137</sup>Cs sources, José Patricio Náhuel Cárdenas, INSTITUTO DE PESQUISAS ENERGETICAS E NUCLEARES</p> <p>#355 - Current Status of Human Resource Training Program for Fostering RI-Biomics Professionals, Dong-Eun Lee, Advanced Radiation Technology Institute, KAERI</p> <p>#321 - Media analysis of the representations of fusion and other future energy technologies, Ana Delicado, Institute of Social Sciences, University of Lisbon</p> <p>#309 - A low cost network of spectrometer radiation detectors based on the ArduSiPM a compact transportable Software/Hardware Data Acquisition system with Arduino DUE, Valerio Bocci, INFN Roma</p> <p>#328 - A generic communication protocol for remote laboratories: an implementation on e-lab, R.B.Henriques, IPFN-IST</p> <p>#94 - Development of Data Acquisition System for Nuclear Thermal hydraulic out-of-pile facility using the Graphical Programming Methods, Youcef BOUAICHAOU, Birine Nuclear Research Center/CRNB/ COMENA/ALGERI</p> <p>#24 - Karlsruhe Nuclide Chart - Edition 2015, Zsolt Soti, Karlsruhe, Germany, Joint Research Centre of European Commission</p> <p>#166 - Contributions of the SCK•CEN Academy to education and training in nuclear science and technology, Ludo Vermeeren, SCK-CEN, Belgian Nuclear Research Centre</p> <p>#393 - Training courses on neutron detection systems on the ISIS research reactor: on-site and through internet training, B. Lescop, National (CEA), Saclay Research Center, CEA / INSTN</p>
Room 1.03	Intensive Oral Session PS7.3 - Environmental and Medical Sciences
16:00 - 17:40	<p>#269 - Investigation of P(VDF-TrFE)/ZrO<sub>2</sub>-MMA polymer composites applied to radiation shielding, C. C . P. Fontainha, UFMG</p> <p>#356 - An Efficient and Straightforward Method for Radiolabeling of Nanoparticles with <sup>64</sup>Cu via Click Chemistry, Dong-Eun Lee, Advanced Radiation Technology Institute, KAERI</p> <p>#135 - Equipment for the Continuous Measurement and Identification of Gamma Radioactivity on Aerosols, de Blas, Alfredo, Professor of the Tehcnical University of Catalonia</p> <p>#136 - A new Code for Spectrometric Analysis for Environmental Radiological Surveillance on Monitors focused on Gamma Radioactivity on Aerosols, de Blas, Alfredo, Professor of the Tehcnical University of Catalonia</p> <p>#153 – Prompt Gamma ray analysis of soil samples, Naqvi A. A, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia, Department of Physics, KFUPM, Saudi Arabia</p> <p>#265 - Radiation Measurement Systems and Experiences in Japan after the Fukushima Accident, Frazier Bronson, Canberra</p> <p>#334 - Performance of a GM tube based environmental dose rate monitor operating in the Time-To-Count mode, Nakazawa, D, CANBERRA , CANBERRA Industries</p>

## THURSDAY | 23<sup>RD</sup> APRIL - INTENSIVE ORAL SESSIONS / POSTERS

Room 1.04	Intensive Oral Session PS3.3 - Research Reactors
16:00 -	#232 - Characterization of cartridge filters from the IEA-R1 Nuclear Reactor, Costa, Priscila, Nuclear and Energy Research Institute
17:40	#331 - Management of Ir-192 Disused Sealed Sources with Long-Lived Radioactive Contaminants, José Claudio Dellamano, Nuclear and Energy Research Institute - IPEN
	#273 - Nuclear research reactor IEA-R1 – A study of the preparing for decommissioning, Valdir Maciel Lopes, IPEN/CNEN-SAO PAULO, BRAZIL
	#259 - Neutron activation of natural materials in a PWR spectrum: feedback on 116mIn relative gamma emission intensities and half-life, A. Gruel, B., CEA Cadarache
	#155 - Precise control of neutron irradiation fluence in the neutron transmutation doping in HANARO using SPND, Myong-Seop Kim, KOREA ATOMIC ENERGY RESEARCH INSTITUTE
	#286 - Verification and Validation of Neutronic/Thermalhydraulic 3D-Time Dependent Model for Treatment of Super-critical States of Light water Research Reactors Accidents, S. M. Khaled, University of Tabuk, Saudi Arabia
	#34 - Thermocouples Performance During Out-of-Pile Thermocouple Advanced Gas Reactor Mock-up Testing: Metallurgical Analysis, Michele Scervini, University of Cambridge-Department of Materials Science and Metallurgy
	#257 - Optimization of Neutron Spectrum in Northwest Beam Tube of Tehran Research Reactor for BNCT, by MCNP, M. Zamani, Iranian Radiation Protection Department, AEOI
	#208 - Thermal Neutron Filter Design for the Neutron Radiography Facility at the LVR-15 Reactor, Jaroslav Soltes, Research Centre Rez Ltd.

Room 1.05	Intensive Oral Sessions PS6.1 - Severe Accident Monitoring
16:00 -	#93 - Increasing of MERARG Experimental Performances: Online fission gas release measurement by mass spectrometry, Y. PONTILLON, CEA.
17:40	#130 - Implementation of a new gamma spectrometry detector on the MERARG loop : Application to the volatile fission products release measurement., S. Bernard, CEA, DEN, DEC/SA3C/LAMIR
	#221 - Response Time Analysis and Test of Protection System Instrument Channels for APR1400 and OPR1000, Chang Jae Lee, KEPCO Engineering & Construction (KEPCO E&C)
	#284 - Upgrade of High-Energy X-Ray real-time radioscopy for KROTOS experiment, N. Estre, CEA
	#124 - Measurements of SNAC2 criticality dosimeters placed in different configurations around the PROSPERO reactor and comparison with TRIPOLI-4 calculations, Laurent Chambru, CEA
	#105 - Qualitative and quantitative validation of the SINBAD code on complex HPGe gamma-ray spectra, Emmanuel Rohée, CEA/DRT/LIST
	#77 - Design and Measurement of a Low-Noise 64-Channels Front-End Readout ASIC for CdZnTe Detectors, Bo Gan, Northwestern Polytechnical University
	"#250 - Wireless and chipless passive radiation sensors for high dose monitoring, P. Pons, CNRS, LAAS, Univ de Toulouse, LAAS

## THURSDAY | 23<sup>RD</sup> APRIL - INTENSIVE ORAL SESSIONS / POSTERS

Room 1.06	Intensive Oral Sessions PS9.1 - Fusion diagnostics and technology
16:00 - 17:40	<p>#390 - Assessment and performance optimization of the Collective Thomson Scattering first mirror, R. Santos, Instituto de Plasmas e Fusão Nuclear</p> <p>#139 - Fusion Power measurement at ITER, L. Bertalot, ITER Organization</p> <p>#126 - Preliminary Engineering Assessment of the HCLL and HCPB Neutron Activation System, P. Calderoni, Fusion for Energy (F4E)</p> <p>#197 - FPGA remote update for nuclear environments, Ana Fernandes, Instituto de Plasmas e Fusão Nuclear, IST</p> <p>#196 - Test results of an ITER relevant FPGA when irradiated with neutrons, Antonio J. N. Batista, Instituto Superior Tecnico - IPFN</p> <p>#324 - Nominal Device Support for ATCA Shelf Manager, Bruno Santos, Instituto de Plasmas e Fusão Nuclear, IST</p> <p>#109 - Digital approach to high rate Gamma-ray spectrometry, I.Zychor, Narodowe Centrum Badan Jadrowych, twock-Poland"</p>
Room 1.07	Intensive Oral Sessions PS10.1 - Decommissioning , dismantling and Remote Handling
16:00 - 17:40	<p>#193 - Tritium measurement system qualification issues on dismantling site, Benoit Pigeon, Commissariat à l'énergie atomique (CEA)</p> <p>#167 - Monte-Carlo simulations of the photoneutron activation for medical LINAC, F. Begin, Institut Pluridisciplinaire Hubert Curien</p> <p>#95 - Human machine interface to manually drive rhombic like vehicles such as transport casks in ITER, Alberto Vale, Instituto de Plasmas e Fusão Nuclear - IST</p> <p>#45 - Characterizations of the radioactive waste by the remotely-controlled collimated spectrometric system, V.E.Stepanov, NRC Kurchatov Institute, Moscow, Russia</p> <p>#30 - Nuclear Fuel Traces Definition in Storage Ponds of Research VVR-2 and OR Reactors in NRC "Kurchatov Institute"., Alexey Stepanov, NRC "Kurchatov Institute"</p> <p>#28 - Hexagonal Uniformly Redundant Arrays (HURAs) for Scintillator Based Coded Aperture Neutron Imaging, Kelum A.A. Gamage, Lancaster University</p> <p>#391 - A MGy radiation-hardened sensor instrumentation link for nuclear reactor monitoring and remote handling, Jens Verbeeck, LRD-MAGyICS</p>
Room 1.08	Intensive Oral Sessions PS7.3 - Environmental and Medical Sciences
16:00 - 17:40	<p>#238 - Polybutadiene and Styrene-Butadiene rubbers for high-dose dosimetry, Lucas N. Oliveira, INSTITUTO FEDERAL DE GOIÁS - IFG</p> <p>#262 - Evaluate an impact of incident alpha particle and gamma ray on human blood components: A comparison study, Asaad H. Ismail, University of Salahaddin-Erbil</p> <p>#311 - Measurement of the stopping power of water for carbon ions using inverted Doppler shift attenuation, J.M. Rahm, Physikalisch-Technische Bundesanstalt</p> <p>#20 - The development of remote wireless radiation dose monitoring system, Jin-woo Lee, KAERI (Korea Atomic Energy Research Institute)</p> <p>#9 - Investigation of the initial and volume recombination losses in gamma versatile cylindrical ionization chamber VGIC developed for gamma ray dosimetry, M.Fares, CRNB</p> <p>#63 - Evaluation of a measurement system for Uranium electrodeposition control to radiopharmaceuticals production, Tufic Madi Filho, Comissão Nacional de Energia Nuclear - Instituto d</p> <p>#188 - Inside Marginal Adaptation of Crowns by X-ray Micro-Computed Tomography, I. Lima, Federal Univesity of Rio de Janeiro</p>

# FRIDAY | 24<sup>TH</sup> APRIL

	Auditorium I	Room 5.A	Room 5.B	Room 5.C
08:40	<b>Chairs   Dr. Richard Stainsby (NNL)</b> <b>Novel real-time 3D radiological mapping solution for ALARA maximization, D&amp;D assessments and radiological management</b> Roger ABOU KHALIL and Philippe DUBART (Areva)			
09:20	<b>Oral Session 10.1</b> <b>Decommissioning , dismantling and Remote Handling</b> <b>Chairs   Frazier BRONSON</b> (Canberra) & Dr. E. Mauerhofer (Fz-Julich)	<b>Oral Session 1.3</b> <b>Fundamental physics</b> <b>Chairs   Dr. Bruno Guerard (ILL) &amp; Prof. Victor Samedov (MEPhI)</b>	<b>Oral Session 6.1</b> <b>Severe Accident Monitoring</b> <b>Chairs   Dr. Mathias Laurie (ITU) &amp; Dr. Patrice Mégret (Univ. Mons)</b>	<b>Oral Session 3.4</b> <b>Research Reactors</b> <b>Chairs   Dr. Christophe Destouches (CEA) &amp; Prof. José Marques (IST)</b>
09:20	<b>#373 - Optimized maximum likelihood expectation-maximization algorithms applied to localization and identification of radioactive sources</b> H. Lemaire, French Atomic Energy Commission	<b>INV #379 - The K identification system in the NA62 experiment at CERN</b> Angela Romano on behalf of the NA62 collaboration, University of Birmingham	<b>INV #58 - On-line Fission Products measurements during a PWR severe accident: the French DECA-PF project</b> G. Ducros, CEA	<b>#209 - Irradiation campaign in EOLE reactor facility of fibre Bragg grating sensors dedicated to the online temperature measurement in critical reactor facilities (SOMETIME project)</b> G. Cheymol, CEA/DEN/CAD/DER/SPEX
09:40	<b>#289 - Robot for Investigations and Assessments of Nuclear Areas</b> Daniel Kanaan, AREVA			<b>#352 - Calculation of neutron and gamma fluxes in support to the interpretation of measuring devices irradiated in the core periphery of the OSIRIS Material Testing Reactor</b> Fadhel Malouch, CEA
10:00	<b>#297 - Characterization of melted fuel by neutron resonance spectroscopy</b> J. Heyse, EC-JRC-IRMM	<b>#21 - Energy Reconstruction using Artificial Neural Networks and different analytic methods in a Highly Granularity Semi-Digital Hadronic Calorimeter</b> Sameh Mannai, Université Catholique de Louvain. Belgium	<b>#41 - On-line measurements of RuO4 during a PWR severe accident</b> Sébastien Reymond-Laruinaz, CEA	<b>#121 - Joint Tests at INL and CEA of a Transient Hot Wire Needle Probe for In-Pile Thermal Conductivity Measurement</b> J.F. Villard, CEA
10:20	<b>Coffee Break @ Hall4</b>			



# FRIDAY | 24<sup>TH</sup> APRIL

10:40	Oral Session 10.1 Decommissioning, Dismantling and Remote Handling	Oral Session 4.1 Nuclear Fuel Cycle	Oral Session 6.1 Severe Accident Monitoring	Oral Session 3.4 Research Reactors
	<b>Chairs</b>   Roger ABOU KHALIL & Dr. E. Mauerhofer (Fz-Julich)	<b>Chairs</b>   Dr. Richard Stainsby (NNL) & Dr. Daniel Parrat (CEA)	<b>Chairs</b>   Dr. Mathias Laurie (ITU) & Dr. Patrice Mégret (Univ. Mons)	<b>Chairs</b>   Dr. Christophe Destouches (CEA) & Prof. José Marques (IST)
10:40	<b>#266 - Design and Validation Testing of TruckScan to Assay Large Sacks of Fukushima Radioactive Debris on a Truck</b> Frazier Bronson, Canberra	<b>INV #327 - Status of the nuclear measurement stations for the process control of spent fuel reprocessing at AREVA NC/La Hague</b> Cyrille Eleon, CEA	<b>#185 - On-line measurement of gaseous iodine during a PWR severe accident</b> I.Haykal, CEA,DEN,Département de Physico-chimie,CEA Saclay	<b>INV #342 - Further Development of Crack Growth Detection Techniques for US Test and Research Reactors</b> Gordon Kohse, MIT Nuclear Reactor Laboratory
11:00	<b>INV #59 - Digital Autoradiography as a novel complementary technique for the investigation of radioactive contamination in nuclear facilities under dismantlement</b> R. Haudebourg, CEA (Commissariat à l'Energie Atomique)		<b>#107 - Vulnerability of OFDR-based distributed sensors to radiations</b> S. Rizzolo, Laboratoire Hubert Curien, Saint Etienne	
11:20		<b>#190 – Prompt and delayed inelastic scattering reactions from fission neutron PGAA – first results of FANGAS</b> M. Rossbach, Forschungszentrum Jülich GmbH, Germany	<b>#293 - Analytics of Radioactive Materials Released in the Fukushima Daiichi Nuclear Accident</b> Stephen U. Egarievwe, Alabama A&M University	<b>#308 - Delayed Gamma Measurements in Different Nuclear Research Reactors Bringing Out the Importance of the Delayed Contribution in Gamma Flux Calculations</b> V Radulovic, CEA
11:40	<b>#291 - Performance of a Low Activity Beta-Sensitive Sr90 Water Monitor for Fukushima</b> Ilie, G., CANBERRA Industries	<b>#258 - High frequency acoustic microscopy for the determination of porosity and Young's modulus in high burn-up uranium dioxide nuclear fuel</b> M. Marchetti, European Commission, Joint Research Centre, ITU	<b>#198 – Artificial neural network-based monitoring of the fuel assembly temperature sensor and FPGA implementation</b> Mekki. H, CRNB	<b>#137 - New fixed-point mini-cell to investigate thermocouple drift in a high-temperature environment under neutron irradiation</b> M. Laurie, EC-JRC-ITU
	Oral Session 10.1	Oral Session 5.2	Oral Session 7.2	Oral Session 3.3

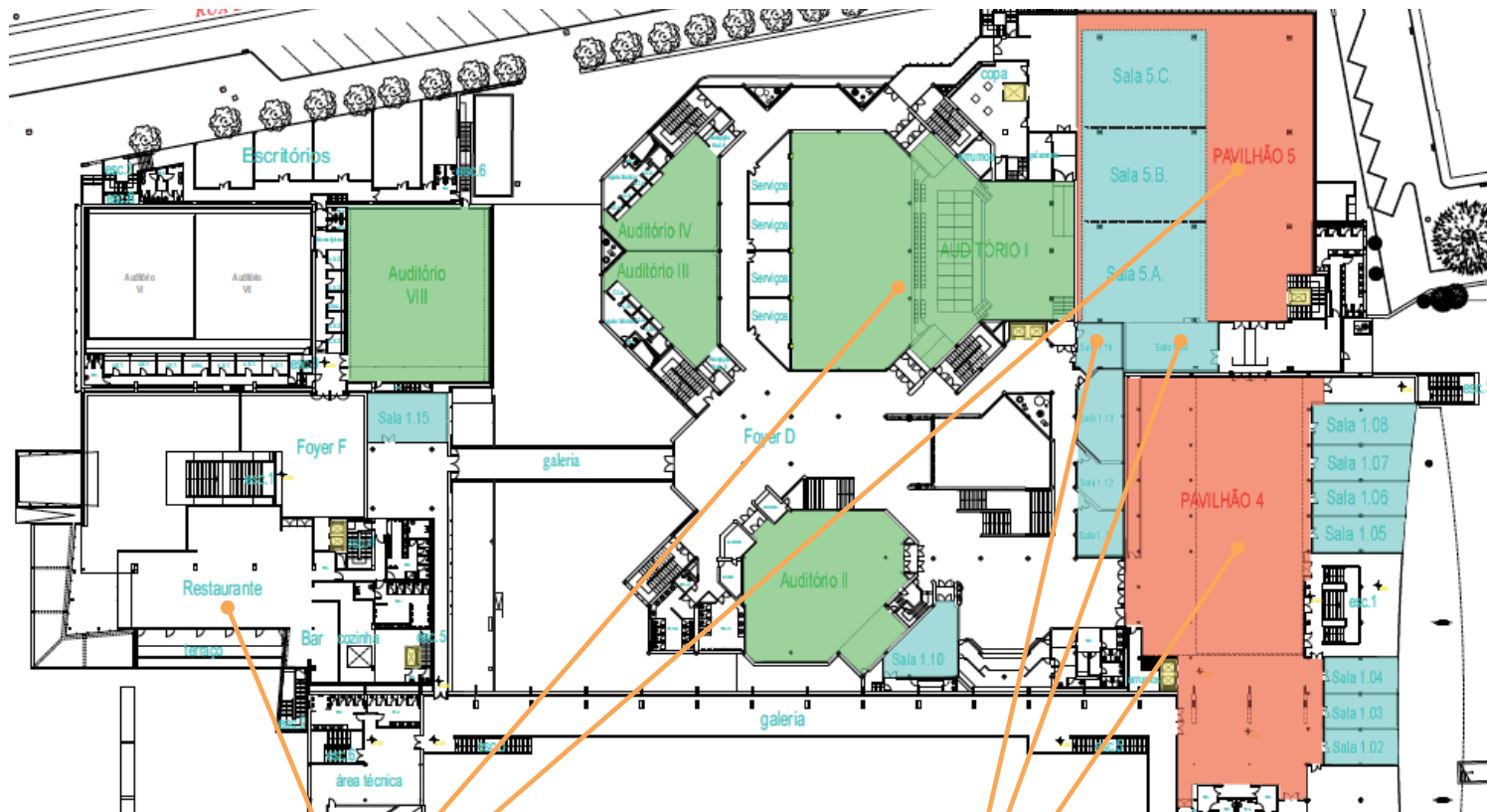
## FRIDAY | 24<sup>TH</sup> APRIL

	Decommissioning, Dismantling and Remote Handling	Nuclear Power Reactors	Environmental and Medical Sciences	Research Reactors
12:00	<b>#125 - Characterising Encapsulated Nuclear Waste using Cosmic-ray Muon Tomography</b> Ramsey. Jebali, University of Glasgow"	<b>#201 - Extreme Spectroscopy: In situ nuclear materials behavior from optical data</b> G. Guimbretière, CNRS (CEMHTI)	<b>INV #368 - Response of the REWARD detection system to the presence of a Radiological Dispersal Device</b> R. Luís, Instituto Superior Técnico - Campus Tecnológico e Nuclear, Portugal	<b>#51 - Summary of Thermocouple Performance During Advanced Gas Reactor Fuel Irradiation Experiments in the Advanced Test Reactor and Out-of-Pile Thermocouple Testing in Support of Such Experiments</b> Joe Palmer, Idaho National Laboratory, University of Cambridge – Department of Materials Science and Metallurgy
12:20	<b>#326 - Novel HPGe Probe solution for Harsh Environments</b> V. Marian, Canberra France			<b>#84 - Monte-Carlo Simulations of the Nuclear Energy Deposition Inside the CARMEN-1P Differential Calorimeter Irradiated into OSIRIS Reactor</b> H. Amharrak, Aix Marseille Université, CNRS
12:40	<b>Lunch Break</b>			
14:00	<b>Oral Session 10.1 Decommissioning, dismantling and Remote Handling</b> <b>Chairs</b>   Dr. Roger Abou-Khalil (AREVA) & Prof. Sylvain Girard (Univ. Saint-Etienne)	<b>Oral Session 4.1 Nuclear Fuel Cycle</b> <b>Chairs</b>   Dr. Richard Stainsby (NNL) & Dr. Daniel Parrat (CEA)	<b>Oral Session 1.3 Fundamental physics</b> <b>Chairs</b>   Dr. Bruno Guerard (ILL) & Prof. Victor Samedov (MEPhI)	<b>Oral Session 1.3 Research Reactors</b> <b>Chairs</b>   Dr. Christophe Destouches (CEA) & Prof. José Marques (IST)
14:00	<b>#146 - Multi-MGy Radiation Hardened Camera for Nuclear Facilities</b> Sylvain Girard, Université de Saint-Etienne	<b>#114 - Thermal neutron die-away-time studies for P&amp;DGNAA of radioactive waste drums at the MEDINA facility</b> Frank Mildenerger, Forschungszentrum Jülich GmbH	<b>#272 - Optimization of Thermal Neutron Converter in SiC Sensors for Spectral Radiation Measurements</b> Igor Krolkowski, AGH University of Science and Technology	<b>#253 - Comparison of Calibration of Sensors used for the Quantification of Nuclear Energy Rate Deposition</b> J. Brun, Aix Marseille Université, IM2NP UMR
14:20	<b>#322 - Underwater</b>	<b>#108 - Passive neutron</b>	<b>INV #112 - Neutron fluence and</b>	<b>#338 - Electric Power quality</b>

## FRIDAY | 24<sup>TH</sup> APRIL

	<p>characterization of control rods for waste disposal using <b>SMOPY</b> K.Amgarou, CANBERRA France</p>	<p>coincidence counting with plastic scintillators for the characterization of radioactive waste drums B.Simony, CEA,DEN,Cadarache,Nuclear Measurement Laboratory</p>	<p>energy reconstruction with the IRSN recoil detector <math>\mu</math>-TPC at 27 keV, 144 keV and 565 keV D.Maire, IRSN</p>	<p>Analysis in research reactor: Impacts on nuclear safety assessment and electrical distribution reliability Touati Said, Nuclear Research Centre of Birine, Algeria</p>
14:40	<p><b>INV #288 - In-Situ laboratory for nuclear characterization on D&amp;D sites</b> Franck Mitifiot, AREVA</p>	<p><b>#86 - First Industrial Tests of a Drum Monitor Matrix Correction for the Fissile Mass Measurement in Large Volume Historic Metallic Residues with the Differential Die-away Technique</b> R. Antoni, CEA,DEN</p>		<p><b>Oral Session 5.3 - Safeguards, Homeland Security</b></p>
15:00			<p><b>#65 - Neutron counting with cameras</b> P. Van Esch, Institut Laue Langevin</p>	<p><b>#306 - Scintilla European project, the successful research results</b> G. Sannie, CEA LIST</p>
15:20				<p><b>#299 - Study of different filtering techniques applied on spectra from airborne gamma spectrometry</b> E. Wilhelm, CEA</p>
15:40 - 16:30	<p><b>CONCLUSION PANELS AWARDS CEREMONY</b></p>			

## ANIMMA2015 | BUILDING PLAN



Restaurant  
Auditorium I  
Hall 5

- Room 5.A-5.C
- Poster Exhibition

Slide Desk  
Secretary Office  
Hall 4

- Industrial Exhibition
- Intensive Orals
- Coffee Breaks
- Cocktails

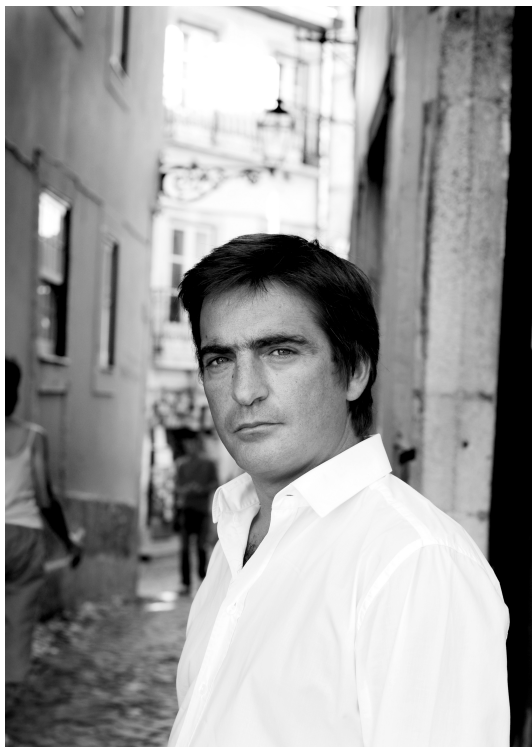
## ANIMMA2015 | INDUSTRIAL EXHIBITION @ Hall 4



	4.20
	4.17-4.19
	4.12
	4.7-4.8, 4.13
	4.2
	4.9
	4.15
	4.16
	4.11
	4.3
	4.14
	4.1



## MUSICAL SHOW



*Photo credits: Augusto Brázio*

*A major star...one of his generations leading fado singers -  
The New York Times  
Camané is The Prince of Fado - World Music Central*

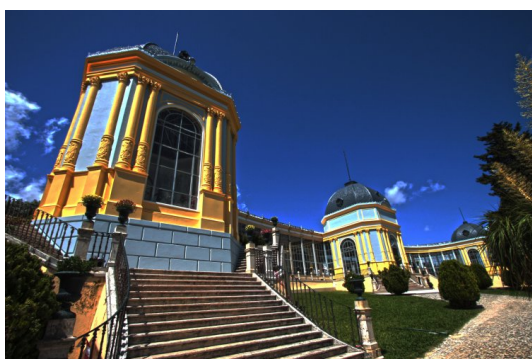
Proclaimed as "The greatest Fadista since Amalia Rodrigues and Maria da Fe", **Camané** is a musical adventurer and a guardian of the Portuguese national soul.

Camane is one of Portugal's greatest proponents and interpreters of Fado, the passionate and melancholic music originally sung by early 19<sup>th</sup> century sailors and mates in the brothels and bars of Lisbon. The most prominent male singer of the genre whose popularity has surged with the emergence of contemporary artists the likes of Mísia, Ana Moura and Mariza. Camané established his bona fides singing in Fado clubs and theatrical revues in his late teens. With the esteemed singer-songwriter José Maria Branco as his producer, he captured the improvisational energy of the Fado club on his 1995 acclaimed debut recording *Uma Noite de Fados* [A Night of Fados (EMI)].

Since, his beautiful, infallible and understated voice, along with his daring and charismatic interpretations of Fado have earned him plaudits from a wide spectrum of critics and fans around the world, having sold thousands of albums and on constant tour in Europe. Reviewing his 2011 North American debut performance, New York Times critic Jon Pareles wrote, "Camané sang about separation, sorrows, haunting eyes and sad memories, along with some rarer lighter moments. And he sang about fade itself, as a calling and a burden, though he carried them suavely, in long lines that crested and eased back with nuanced theatricality".

A major star in Portugal, with six platinum albums, his success has contributed greatly to the creation of a new golden era of Portuguese music both abroad and within his native land.

## CONFERENCE GALA DINNER



The Conference Dinner will be held on April 23<sup>th</sup> at 8 p.m. in the exhibition palace of the Lisbon Institute of Agronomy.

This iron and glass palace was built for the 3<sup>rd</sup> Agricultural Exhibition in Lisbon in 1884. It is currently used for social and cultural events and includes a garden with a romantic fountain and a magnificent view over the river Tagus.

The exhibition palace is located in a former Royal Hunting Reserve and is one of the most beautiful botanical parks in Lisbon. The park with about 100 hectares is surrounded by a wall that has protected over the years of urban development temptations, has many green spaces and infrastructure open to the public, including a botanical reserve internationally recognized for its unique forest of wild olive trees.



### CONFERENCE LOCATION



The conference will take place in the Lisbon Congress Centre, which the address is the following:

#### **Lisboa Congress Centre**

Praça das Indústrias  
1300-307 Lisboa - Portugal

Phone: +351 21 3601400

Fax: +351 213601499

Email: lisboacc@aip.pt

Webpage: <http://www.lisboacc.pt/irj/portal/lisboacc?lang=en>

GPS Coordinates:

Latitude: 38.700583°

Longitude: -9.182639°

### GETTING TO THE CONFERENCE LOCATION

From the airport you can easily reach the city centre and the congress centre either by taxi or public transportation.



#### **Taxi**

From the airport, the transfer by taxi takes approximately 15 minutes depending on the traffic and costs around €15. Taxis are always available in front of the airport building.



#### **Bus and Tram**

From the airport, you can reach the city centre by taking the Aerobus shuttle service, which leaves every 20 minutes between 7:00 and 9:00 and stops at many hotels until it reaches Cais do Sodré (downtown Lisbon).

Travel from Cais do Sodré (following busses and tram) to the Lisbon Congress Centre (station name: R. Junqueira/Centro de Congressos):

- Bus 732: Marquês Pombal/Outurela
- Tram 15E: Algés/Praça da Figueira



The following busses are also available from the station R. Junqueira/Centro Congressos:

- Bus 714: Praça da Figueira / Outurela
- Bus 727: Estação Roma-Areeiro / Restelo - Av. Descobertas
- Bus 751: Estação Campolide / Linda-a-Velha
- Bus 756: Olaias / R. Junqueira

Detailed information is available at:

- [www.carris.pt](http://www.carris.pt) for busses and trams
- [www.metrolisboa.pt](http://www.metrolisboa.pt) for metros.



### **Train**

From Santa Apolónia terminal station, take the blue Metro line to Baixa-Chiado station, and then change into the green Metro line to terminus Cais do Sodré.

From Gare do Oriente, take the red Metro line to the station Alameda and then change in the green Metro line to the terminus, Cais do Sodré.

From here several busses and a tram are going to the Lisboa Congress Centre (see "Busses and trams" above).



**ipfn**  
INSTITUTO DE PLASMAS  
E FUSÃO NUCLEAR

April, 2015