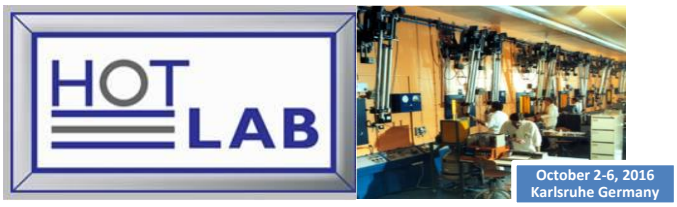

Annual meeting hot laboratories and remote handling

HOTLAB 2016

2-6 October 2016, Karlsruhe, Germany

Conference Program

Sunday, 2 October 2016

16:00 – 19:00	Conference Registration	Leonardo Foyer
18:00 – 20:00	Welcome Reception	Leonardo Restaurant

Monday, 3 October 2016

8:00 – 9:00	Conference Registration	Leonardo Foyer

53rd Annual meeting hot laboratories and remote handling - HOTLAB 2016 All conference sessions will take place in the combined conference rooms Durlach + Daxlanden, located on the ground floor of Leonardo Hotel		
9:00	Welcome, Opening of the Meeting and General Information	Vincenzo Rondinella JRC Karlsruhe
Special post-Fukushima session Session Chairs: Vincenzo Rondinella, Kazuo Minato		
9:30 – 9:50	***Fuk1*** – Approach to estimating fuel debris properties generated in Fukushima Daiichi NPS	Tadahiro Washiya JAEA
9:50 – 10:10	***Fuk2*** – Application of Material Properties Data to Decommissioning Strategy / Problems facing Decommissioning in Fukushima Daiichi NPS	David Bottomley JRC Karlsruhe
10:10 – 10:30	***Fuk3*** – PIE results and interpretation on fission products (FPs) and fuel behaviour after the Vercors 2, 3 and 5 tests performed in the frame of severe accidents.	A. De Bremaecker SCK•CEN-Mol
10:30 – 10:50	**COFFEE BREAK**	
10:50 – 11:10	***Fuk4*** – Development of advanced PIE technique for fuel debris using X-Ray Computer Tomography	Kozo Katsuyama JAEA
11:10 – 11:30	***Fuk5*** – New LOCA test equipment at Studsvik Hot Cells	Daniele Minghetti Studsvik Nuclear AB
11:30 – 11:50	***Fuk6*** – Experimental setup for fuel fragmentation studies	Niklas Snis Studsvik Nuclear AB
11:50 – 12:10	***Fuk7*** – Radiation hardness testing of an organic liquid scintillation detector for use in high dose rate accident response scenarios	Ashley R. Jones Lancaster University
12:10 – 12:30	***Fuk8*** – Progress on the Development of the Analysis and Research Laboratory for Decommissioning of Fukushima Daiichi Nuclear Power Station	Takuya Toyokawa JAEA
12:30 – 14:00	**LUNCH BREAK**	

Monday, 3 October 2016 – continued

Infrastructure, refurbishments, new installations/nuclearization – session 1 Session Chairs: Mikhail Veshchunov, Marieno Kater		
14:00 – 14:20	***Inf1*** – Infrastructure developments at the JRC Karlsruhe site	Jean-Paul Glatz JRC Karlsruhe
14:20 – 14:40	***Inf2*** – UKAEA Materials Research Facility, a new easy access hot-cell and analysis facility	Monica Jong UKAEA
14:40 – 15:00	***Inf3*** – The Changing Future of Analytical Chemistry at Sellafield	Andrew G. Lee Sellafield Ltd
15:00 – 15:20	***Inf4*** – New Hot Cell Laboratory and Post Irradiation Examination Research Project on HTR Spherical Fuel Element in INET	Hongsheng Zhao INET, Tsinghua Univers.
15:20 – 15:40	**COFFEE BREAK**	
15:40 – 16:00	***Inf5*** – Engineering aspects of hot cells and in-cell equipment	Kamlesh M. Pandit Bhabha ARC, Mumbai
16:00 – 16:20	***Inf6*** – The Transformation to Canadian Nuclear Laboratories and the Vision for its Shielded Facilities	Jim MacMillan Canadian Nuclear Lab.
16:20 – 16:40	***Inf7*** – Hot Cell Facility in Research Centre Rez, Test of Biological Shielding and Commissioning	Ondrej Srba Research Centre Rez
16:40 – 17:00	***Inf8*** – An update of the major refurbishment of the NNL Windscale Laboratory Hotcell facility and the challenges of maintaining operations during a major refurbishment	Des Wright NNL, U.K.
17:00	End of 1st day's sessions	

Monday, 3 October 2016 – Conference Dinner

18:40	Leave for Conference dinner by bus	Front of Leonardo
19:00 – 22:00	Welcome Speech by the Director of JRC Karlsruhe – Dr Maria Betti Conference dinner	Hoepfner Burghof
22:00	Leave from Conference dinner by bus	Hoepfner Burghof

Tuesday, 4 October 2016

Infrastructure, refurbishments, new installations/nuclearization – session 2 Session Chairs: Justin Dexter, Paul Thijssen		
8:30 – 8:50	***Inf9*** – IAEA activities in the area of Nuclear Power Reactor Fuel Engineering	Mikhail S. Veshchunov IAEA
8:50 – 9:10	***Inf10*** – Overview and Status of the U.S. Nuclear Science User Facilities (NSUF)	Rory Kennedy Idaho National Lab.
9:10 – 9:30	***Inf11*** – Progress in Bringing the McMaster University CANS Post-Irradiation Examination Facility into Service	John Luxat McMaster University
9:30 – 9:50	***Inf12*** – New analysis capabilities with versatile FIB/SEM adapted for use in a nuclear environment	Thierry Blay CEA Cadarache
9:50 – 10:10	***Inf13*** – Irradiation-Assisted Stress Corrosion Cracking Testing Laboratory at INL	Sebastien Teysseyre Idaho National Lab.
Commercial session Session Chairs: John P. Buckle, Ann Leenaers		
10:10 – 10:30	***Com1*** – Servicing and repair of key equipment when suppliers disappear or stop offering support	Hubert Hafen Wälischmiller Engineering
10:30 – 10:50	**COFFEE BREAK**	
10:50 – 11:10	***Com2*** – Renewal of Hot Cell 6 at PSI	Frank Scheuermann NUKEM

Tuesday, 4 October 2016 – continued

Commercial session – continued Session Chair: John P. Buckle, Ann Leenaers		
11:10 – 11:30	***Com3*** – Diverse Solutions for Common Demands – A Tale of Two Facilities	Paul Waller Aquila Nuclear Engineering
11:30 – 11:50	***Com4*** – Analytical Instrumentation for HOTLAB facilities	Mona Pierrette Moret CAMECA
Transportation issues session Session Chairs: Jean-Paul Glatz, Des Wright		
11:50 – 12:10	***Tran1*** – Transport of Small Quantities of Irradiated Materials: Flying Pig Concept Update	Fabien Hue AREVA TN
12:10 – 12:30	***Tran2*** – Brazed and welded cans for transport and storage of damaged fuel rods	Pierre Lefebvre DAHER Nuclear Techn.
12:30 – 12:50	***Tran3*** – Recent Experience in the Shipment of Sensitive Nuclear Material using INF class Vessels	Paul Harding INS, France
12:50 – 14:20	**LUNCH BREAK**	
14:20 – 15:40 15:20	**POSTER Session** Session Chairs: Ann Leenaers, Rory Kennedy COFFEE will be served during Poster Session starting from 15:20	Room Daxlanden
Remote handling session Session Chair: Hubert Hafen, Niklas Snis		
15:40 – 16:00	***Rem1*** – Development of an Electromechanical Press for Hot Cell Nuclear Fuel Fabrication	Jean-Philippe Bayle CEA Marcoule
16:00 – 16:20	***Rem2*** – Remote handling applied to a facility upgrade at CERN during long shutdown in 2013-2014	Sven De Man CERN
Post-Irradiation Examination – session 1 Session Chairs: , Didier Gavillet , Adam Robinson		
16:20 – 16:40	***PIE1*** – Overview of the Experimental Capabilities of NRG's Hot Cell Laboratory in Petten, The Netherlands	Sander Van Til NRG
16:40 – 17:00	***PIE2*** – Post-Irradiation Examination capability at UKAEA's Materials Research Facility	Monica Jong UKAEA
17:00 – 17:20	***PIE3*** – Design and Development of remotely operable equipments and tools for hot cell applications	A. Vijayaragavan IGCAR
17:20 – 17:40	***PIE4*** – Non-Destructive and Destructive Testing for the 25 Sister Rods in the High Burnup Dry Storage Cask Research and Development Project	Bruce Bevard ORNL
17:40	End of 2nd day's sessions	

Wednesday, 5 October 2016

Post-Irradiation Examination – session 2 Session Chairs: Yury Goncharenko, Kamlesh M Pandit		
9:00 – 9:20	***PIE5*** – Highlights and Recent Changes to Fuel Post Irradiation Examination Activities at Canadian Nuclear Laboratories (Non-Destructive Visual Examination and Fuel Chemical Burnup)	Jeffrey Armstrong Canadian Nuclear Lab.
9:20 – 9:40	***PIE6*** – Non-Destructive Dimensional Analyses at INL's Hot Fuel Examination Facility	Walter Williams Idaho National Lab.
9:40 – 10:00	***PIE7*** – Non destructive test nuclear fuel U_3Si_2/al 4,8 g U/cm^3 post irradiation with 60% burn up research reactor	Helmi Fauzi BATAN
10:00 – 10:20	***PIE8*** – Development of X-ray system for irradiated fuel in Hotcell	Young-jun Kim KAERI
10:20 – 10:40	**COFFEE BREAK**	

Wednesday, 5 October 2016 – continued

Post-Irradiation Examination – session 2 – continued Session Chair: Yury Goncharenko, Kamlesh M Pandit		
10:40 – 11:00	***PIE9*** – Fracture Mechanics Tests on CANDU Pressure Tubes Samples	Silviu Ionescu ICN Pitesti, Romania
11:00 – 11:20	***PIE10*** – Development of crush test system for irradiated spacer grid	Sung Geun Kim KAERI
11:20 – 11:40	***PIE11*** – High frequency acoustic microscopy imaging of Pellet/Cladding interface in nuclear fuel rods	Hajar Saikouk Montpellier University
11:40 – 12:00	***PIE12*** – Hot Cell System for Determining Fission Gas Retention in Metallic Fuels	David Sell Idaho National Lab.
12:00 – 14:00	**LUNCH BREAK**	
Post-Irradiation Examination – session 3 Session Chairs: Katelyn Wachs, Kozo Katsuyama		
14:00 – 14:20	***PIE13*** – Determination of plutonium isotopes in spent nuclear fuel using thermal ionization mass spectrometry (TI-MS) and alpha spectrometry	Marina G. Petre ICN Pitesti, Romania
14:20 – 14:40	***PIE14*** – Examination of analytical method of rare earth elements in used nuclear fuel	Mayumi Ozawa JAEA
14:40 – 15:00	***PIE15*** – Anion exchange separation for solutions containing irradiated steel specimen used to estimate neutron fluence	Masashi Ichikawa Nippon NFD
15:00 – 15:20	***PIE16*** – Application of Coordinate Measurement Technique in Hot Cell	Yuanyuan Xiong Nuclear Power Institute of China
15:20 – 15:40	**COFFEE BREAK**	
Radioactive material and fuel accounting and characterization, operational and legacy waste Session Chairs: Olivier Dugne, Didier Gavillet		
15:40 – 16:00	***Acc1*** – Characterization Problem of the Self-Recovering Section of RPV Steel Radiation Embrittlement Kinetics as Material Smart Behavior	Evgenii Krasikov Kurchatov Institute
16:00 – 16:20	***Acc2*** – SEM analyzes of powdered actinide compounds: Implementation in a hot laboratory	Gauthier Jouan CEA Marcoule
16:20 – 16:50	***Acc3*** – Radiological characterization and 3D Scanning of Hot Cell #3 of the LECA Facility	Mehdi Ben Mosbah Sylvain Martin-Vignerte CEA Marcoule
16:50 – 17:10	***Acc4*** – Sorting Methodology to manage Radioactive Powder coming from Irradiated Fuel Machining	Mélanie Lallée CEA Cadarache
17:10 – 17:40	**AWARDS** for Best Presentation / Best Poster and Announcement of 54th HOTLAB meeting	A. Leenaers SCK•CEN
17:40 – 17:50	Closure of 53rd HOTLAB Annual Meeting	Vincenzo Rondinella JRC Karlsruhe

Technical Exhibition

In parallel to the complete conference a small technical exhibition will take place, during which industrial partners will present their solutions and products on a booth each.

The exhibition will take place in room Rüppurr, directly next to the conference room.

Thursday, 6 October 2016 – Technical Tour (confirmed participants only)

8:00	Departure from Leonardo Hotel by bus	Front of Leonardo
9:00 – 11:30	Technical tour in the hot labs of JRC Karlsruhe	JRC Karlsruhe
12:00 – 12:30	Return to Leonardo Hotel by bus	

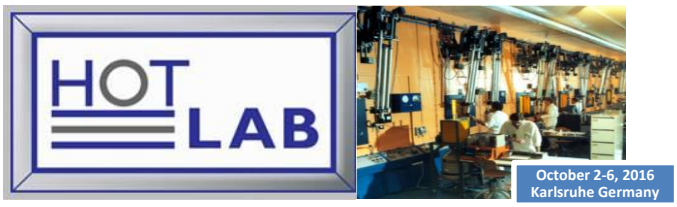

Table of Posters

1. **Astrid's fuel assembly mounting grapnel**
   Presenter: François Gobin, CEA Marcoule

2. **Hot Cell Facility in Research Centre Rez, Test of Biological Shielding**
   Presenter: Anna Petrickova, Research Centre Rez

3. **New Research Facilities in UK**
   Presenter: Paul Waller, Aquila Nuclear Engineering Ltd

4. **Current status of Reactor Fuel Examination Facility**
   Presenter: Atsushi Onozawa, Japan Atomic Energy Agency

5. **Development of periodic safety review method to cope with an aging degradation for hot laboratories**
   Presenter: Yuichi Tamaoki, Japan Atomic Energy Agency (JAEA)

6. **Mechanical testing technologies of irradiated fuel cladding tubes**
   Presenter: Makoto Aita, Nippon Nuclear Fuel Development Co., Ltd.

7. **Investigation on the Behaviour and Microstructure of Delayed Hydride Cracking in Zr-2.5Nb Pressure Tube Material**
   Presenter: Bian Wei, China Institute of Atomic Energy

8. **Image analysis as Post-Irradiation Examination for the characterisation of the high burnup structure in UO_2 fuel**
   Presenter: Fabiola Cappia, European Commission - Joint Research Centre (JRC) Karlsruhe

9. **Identification and assessment of porosity and the high burn up structure on nuclear fuel surface images**
   Presenter: Lorenzo Fongaro, European Commission - Joint Research Centre (JRC) Karlsruhe

10. **Micro-acoustic techniques for the elastic properties investigation of severely degraded nuclear fuel**
    Presenter: Mara Marchetti, European Commission - Joint Research Centre (JRC) Karlsruhe

11. **Imaging of Hydrogen in Zirconium Alloy with Secondary Ion Mass Spectrometry (SIMS)**
    Presenter: Stephane Portier, Paul Scherrer Institut (PSI)

12. **X-ray Digital Real-time Imaging System for Irradiated Fuel Rods in CIAE**
    Presenter: Tang Qi, China Institute of Atomic Energy (CIAE)

13. **Hot Work and Remote Handling at the Los Alamos Neutron Science Center**
    Presenter: Eron Kerstiens, Los Alamos National Laboratory

14. **Characterization of deposit samples collected in an evaporator used to treat fission product bearing effluents**
    Presenter: Gilles Ferlay, CEA Marcoule