



OECD Nuclear Energy Agency



International Workshop on

Technology and Components of Accelerator Driven Systems (TCADS-2)

Nantes, France
21 - 23 May 2013

Final Programme

Tuesday, 21 May 2013

- 08.30- Registration
- Opening and invited keynote lectures**
(Chair: P. D'hondt, SCK-CEN, Belgium)
- 09.00-09.15 **Welcome by Alex C. Mueller (CNRS, France), Chair of the workshop**
- 09.15-09.30 **Welcome by a local personality**
- 09.30-10.05 *Invited talk*
A historic perspective of nuclear energy synergism: ADS as a solution and ADS as a need
J. M. Martinez-Val (Univ. Politécnica de Madrid, Spain)
- 10.05-10.40 *Invited talk*
European activity on ADS
D. Haas (European Commission, Joint Research Centre)
- 10.40-11.00 *Coffee break*
- 11.00-11.35 *Invited talk*
Impact of P&T on Nuclear Scenarios with Gen IV and ADSs
S. David (CNRS, France), S. Massara (OECD-NEA)
- 11.35-12.10 *Invited talk*
Fuel for ADS: state-of-the-art, requirements, current and future programmes
F. Gabrielli (KIT, Germany)
- 12.10-14.00 *Lunch break*

Session I: Current ADS experiments and test facilities

(Chair: K. Tsujimoto, JAEA, Japan)

- 14.00-14.35 **The MEGAPIE PIE sample preparation**
M. Wohlmuther, V. Boutellier, Y. Dai, D. Gavillet, K. Geissmann, S. Hahl, B. Hammer, A. Lagotzki, H.P. Linder, D. Kuster, J. Neuhausen, D. Schumann, R. Schwarz, H. Schweikert, A. Spahr, P. Suter, S. Teichmann, K. Thomson, H. Wiese, W. Wagner, U. Zimmermann, C. Zumbach (PSI, Switzerland)
- 14.35-14.55 **Neutron spectrum hardening in critical and subcritical reactors cooled with lead-208**
G.L. Khorasanov, A.I. Blokhin (IPPE, Russian Federation)
- 14.55-15.15 **Power Spectral Analysis for a Thermal Accelerator-Driven System of the Kyoto University Critical Assembly**
A. Sakon, K. Hashimoto (Kinki University, Japan), C. H. Pyeon (Kyoto University, Japan)
- 15.15-15.35 **Current progress and future plans of the FREYA Project**
A. Kochetkov, P. Baeten, W. Uyttenhove, G. Vittiglio, J. Wagemans (SCK-CEN, Belgium), A. Billebaud, S. Chabod, H.E. Thyébault, X. Doligez, F.R. Lecolley, J.L. Lecouey, G. Lehaut, N. Marie, G. Ban, P. Dessagne, M. Kerveno (CNRS-IN2P3, France), F. Mellier (CEA, France)
- 15.35-16.00 *Coffee break*
- 16.00-16.20 **Reactivity monitoring using the area method for the subcritical VENUS-F core within the framework of the FREYA Project**
G. Lehaut, N. Marie, J.-L. Lecouey, G. Ban, F.R. Lecolley, A. Billebaud, S. Chabod, H.-E. Thyébault (CNRS-IN2P3, France), P. Baeten, A. Kochetkov, W. Uyttenhove, G. Vittiglio, J. Wagemans (SCK-CEN, Belgium), F. Mellier (CEA, France), D. Villamarin (CIEMAT, Spain)
- 16.20-16.40 **Analysis of prompt decay experiments for ADS reactivity monitoring at VENUS-F GUINEVERE facility**
S. Chabod, A. Billebaud, H.-E. Thyébault, F.R. Lecolley, J.-L. Lecouey, G. Lehaut, N. Marie, G. Ban, X. Doligez (CNRS-IN2P3, France), P. Baeten, A. Kochetkov, G. Vittiglio, W. Uyttenhove, J. Wagemans, (SCK-CEN, Belgium), F. Mellier (CEA, France), D. Villamarin (CIEMAT, Spain)
- 16.40-17.00 **Forthcoming Experiments on ADS with 100 MeV Protons at Kyoto University Critical Assembly**
C. H. Pyeon, T. Yagi, Y. Takahashi, T. Sano, H. Shiga (Kyoto University, Japan)
- 17.00-17.35 **Role of the ADS from the perspective of the international Thorium Energy Committee iThEC**
Y. Kadi (iThEC, Switzerland)
- 17.35 *Adjourn*

Wednesday, 22 May 2013

Session II: Accelerators

(Chair: M. Seidel, PSI, Switzerland)

- 09.00-09.35 *Invited talk*
Present status of China ADS proton accelerator R&D
Y. Chi (IHEP, People Rep. of China)
- 09.35-10.10 **Beam operation aspects for the MYRRHA linear accelerator**
J.-L. Biarrotte (CNRS-IN2P3, France), D. Uriot (CEA, France), L. Medeiros Romão, D. Vandeplassche (SCK-CEN, Belgium)
- 10.10-10.30 **The R&D@UCL program in support of the MYRRHA linear accelerator**
R. Salemme, D. Vandeplassche, L. Medeiros Romão, J.-P. Carneiro (SCK-CEN, Belgium), J.-L. Biarrotte, M. Baylac (CNRS-IN2P3, France), D. Uriot (CEA, France), H. Podlech (Goethe Universität, Germany)
- 10.30-10.50 **Superconducting RF cavities activities for the MAX Project**
M. El Yacoubi (CNRS-IN2P3, France)
- 10.50-11.10 *Coffee break*
- 11.10-11.30 **Reliability model of SNS linac (spallation neutron source-ORNL)**
A. Pitigoi, P. Fernandez (EA, Spain)
- 11.30-11.50 **Approach of a Failure Analysis for the MYRRHA Linac**
D. Vandeplassche, J.-P. Carneiro, L. Medeiros Romão, (SCK-CEN, Belgium), J.-L. Biarrotte, F. Bouly (CNRS-IN2P3, France), D. Uriot (CEA, France)
- 11.50-12.10 **The Strong-Focusing Cyclotron: Optimized Proton Driver for ADS Fission**
P. McIntyre (Texas A&M University, USA)
- 12.10-12.30 **MYRRHA Cryogenic System: study on performances and reliability requirements**
T. Junquera, N. R. Chevalier (ACS, France), J.-P. Thermeau (CNRS-IN2P3, France), L. Medeiros Romão, D. Vandeplassche (SCK-CEN, Belgium)
- 12.30-13.05 **The GENEPI-3C accelerator as a versatile neutron source for the low power ADS experiment GUINEVERE**
M. Baylac (CNRS-IN2P3, France)
- 13.05-14.30 *Lunch break*

Session III: Simulation, safety, data

(Chair: *Y. Gohar, ANL, USA*)

- 14.30-15.05 *Invited talk*
Nuclear data for safe operation and waste transmutation
E. Gonzalez-Romero (CIEMAT, Spain)
- 15.05-15.25 **Accelerator Driven System design concept for disposing of spent nuclear fuels**
Y. Gohar, Y. Cao, R. Kellogg, E. Merzari (ANL, USA)
- 15.25-15.45 **A high power ADS concept for the Minor Actinides transmutation**
N. Thiolliere, B. Mouginot (CNRS-IN2P3, France)
- 15.45-16.00 *Coffee break*
- 16.00-16.20 **CLASS: Core Library for Advanced Scenario Simulation**
B. Mouginot, N. Thiolliere (CNRS-IN2P3, France)
- 16.20-16.40 **Design simulation of zero power subcritical system at BARC, India**
T. Roy, N. Ray, Y. S. Kashyap, M. Shukla, T. P. Patel, A. Sinha, S. Kailas (BARC, India)
- 16.40-17.15 **Transient analysis for lead-bismuth cooled Accelerator Driven System proposed by JAEA**
T. Sugawara, K. Nishihara, K. Tsujimoto (JAEA, Japan)
- 17.15 *Adjourn*
- 19.30 *Dinner cruise on the "Bateaux Nantais"*

Thursday, 23 May 2013

Session IV: Neutron sources

(Chair: B. Grambow, CNRS, France)

- 09.00-09.35 **KIPT Accelerator Driven System design and performance**
Y. Gohar (ANL, USA), I. Bolshinsky (INL, USA), I. Karnaukhov (Kharkov Institute of Physics & Technology, Ukraine)
- 09.35-09.55 **A Multi-Megawatt compact neutron source for ADS**
K. Samec (CERN, Switzerland)
- 09.55-10.15 **Thermal-hydraulic numerical investigation of the heavy liquid metal free surface of MYRRHA spallation target experiment**
A. Batta, A. Class (KIT, Germany)
- 10.15-10.35 **A flexible testing facility for high-power targets (TIARA FP7 program)**
Y. Fusco (CERN, Switzerland)
- 10.35-11.00 *Coffee break*
- 11.00-11.20 **Numerical analysis of feasibility of beam window for TEF target**
H. Obayashi, H. Takei, H. Iwamoto, T. Sasa (JAEA, Japan)
- 11.20-11.40 **On the parameters promoting liquid metal embrittlement of the T91 steel in lead bismuth eutectic alloy**
J.-B. Vogt, I. Proriol Serre, C. Yé (CNRS, France)
- 11.40-12.00 **Neutron source of INR, the Russian Academy of Sciences: status and the further development**
S. Sidorkin, E. Koptelov, A. Rogov, L. Ponomarev (INR RAS, Russian Federation)
- 12.00-12.35 **Conceptual design studies for the liquid metal spallation target META:LIC**
J. R. Fetzer, A. G. Class, C. Fazio (KIT, Germany)
- 12.35-14.00 *Lunch break*

Special Session: H. Klein Memory
(Chair: A.C. Mueller, CNRS, France))

- 14.00-14.45 **Horst Klein: souvenirs of a great accelerator physicist**
H. Stoecker (GSI, Germany)
- 14.45-15.05 **A high intensity proton Linac and the FAIR Project**
O. Kester (GSI & Goethe-Universität, Germany)
- 15.05-15.40 **Linac strategies for the lower beam energies**
U. Ratzinger (Goethe-Universität, Germany)
- 15.40-16.15 **Recent developments of the MYRRHA Project**
P. D'hondt, P. Baeten, D. De Bruyn, R. Fernandez, G. Van den Eynde, H. Aït Abderrahim (SCK-CEN, Belgium)
- 16.15-16.30 **Conclusion by the Chair of the Workshop**
- 16.30 *Adjourn*