OECD Nuclear Energy Agency

9th IEM on Actinide and Fission Product Partitioning and Transmutation (9-IEMPT)

(Nîmes, France, 25-29 September 2006)

Programme

Registration: Monday 25, (1700 to 2000). *Welcome cocktail at 1900.*

- Opening session (Tuesday 26, 0900 to 0930)
  - Welcome addresses from Conference Chairs:
    - L. Echávarri (OECD/NEA Director General)
    - J. Bouchard (Special Advisor to the Chairman and CEO of the CEA)
  - Welcome to CEA Marcoule Center:
    - L. Martin-Deidier (Director CEA Valrhô)
  - Introduction to the IEM Programme by the Chair of the 9-IEMPT Advisory Committee:
    - J. Guidez (CEA Valrhô)

- Session on P & T Programmes within Fuel Cycle Strategies (Tuesday 26, Chairs: J. Bouchard and D. Hill)
  - Fuel Cycle Strategies and National Programmes on P & T:
    - France (CEA Pradel), 0930-1000: *French Fuel Cycle Strategy and Partitioning and Transmutation Programme*
    - Japan (JAEA Minato), 1000-1030: *Research and Development Activities on Partitioning and Transmutation of Radioactive Nuclides in Japan*
    - 1030-1100: Coffee Break
    - Republic of Korea (KAERI E H Kim), 1100-1130: *Current Status on Development of P&T in Korea*
    - USA (US DOE Goldner), 1130-1200: *The United States National Fuel Cycle Strategy Programme*
    - Russia (ROSATOM/RIAR Bychkov), *Wednesday 27, 0830-0900*: *Fuel Cycle Strategies and National Programmes in Russia*
    - 1200-1500: Lunch Break
  - International Activities on P & T and the Fuel Cycle:
    - 1500-1530: *Overview of EU Activities in Partitioning and Transmutation Research in the EURATOM 6th and 7th Framework Programmes* (EU Bhatnagar)
    - 1530-1600: *IAEA Activities in the Area of Partitioning and Transmutation* (IAEA Stanculescu)
    - 1600-1630: Coffee Break

- 1630-1700: *Overview of NEA activities in Partitioning and Transmutation* (OECD/NEA Dujardin)
- 1700-1730: *Improved resources utilisation, waste minimisation and proliferation resistance in a regional context* (ANL and CEA Salvatores)

- Tuesday 26: *Conference Dinner at 20:00*

- Technical Session I: Progress in fuels and targets
  (Wednesday 27, Chairs: D. Warin and K. Minato)

  - 0900-0930: *Progress in fuels for fast reactors* (CEA Tourasse)
  - 0930-0950: *Overview of ITU Work on Inert Matrix Fuels* (ITU Fernandez)
  - 0950-1010: *Oxide Fuels and Targets for Transmutation* (CEA Sudreau)
  - 1010-1040: Coffee Break
  - 1040-1110: *Progress in Transmutation Targets from EFTTRA* (ITU Haas)
  - 1110-1135: *Metallic Fuels for Transmutation* (INL Hayes)
  - 1135-1200: *JAEA's Activities on Nitride Fuel Research for Minor Actinide Transmutation* (JAEA Arai)
  - 1200-1400: Lunch Break

- Technical Session II: Progress in partitioning and waste forms
  (Wednesday 27, Chairs: B. Boullis and S. W. Park)

  - 1400-1430: *Recent Activities on Aqueous Partitioning at JAEA* (JAEA Kimura)
  - 1430-1500: *Development of Spent Fuel Processing Technologies in the United States* (ANL Laidler)
  - 1500-1530: Coffee Break
  - 1530-1550: *EUROPART: European Research Programme for Partitioning of Minor Actinides Within High Active Wastes Issuing the Reprocessing of Spent Nuclear Fuels – Some of the Principal Results Obtained* (CEA Madic)
  - 1550-1610: *Partitioning of Fissile and Radiotoxic Materials from Spent Nuclear Fuel* (RIAR Kormilitsyn)
  - 1610-1630: *Partitioning Research at the Joint Research Center-Institute for Transuranium Elements* (ITU Glatz)
  - 1630-1650: *Progress in Partitioning: Activities in ATLANTE* (CEA Baron)
  - 1650-1710: *Pyroprocess Technology for Metal Fuel Cycle with Integration of Oxide Fuel Treatment at CRIEPI* (CRIEPI Inoue)
  - 1710-1730: *Carbide Fuel Reprocessing and Fast Reactor Fuel Cycle Development* (IGCAR Raj)

- Poster Session: contributed papers for all Technical Sessions
  (Wednesday 27, 1800-2200. *A buffet will be served*)

- Technical Session III: Spallation targets, dedicated transmutation systems, coolants, physics and nuclear data (Thursday 28, Chairs: C. Fazio and J. Wallenius)

  - 0900-0930: *EUROTRANS: European Research Programme for the Transmutation of High-level Nuclear Waste in an Accelerator-driven System* (FZK Knebel)
  - 0930-1000: *Research and Development on ADS at JAEA* (JAEA Oigawa)

- 1000-1030: *Presentation of the MYRRHA Draft-2 Design File: State-of-the-Art of the Project at Mid-2005 and Prospects for Realisation* (SCK CEN Abderrahim Hamit)
- 1030-1100: Coffee Break
- 1100-1130: *IP-EUROTRANS DM5: Nuclear Data for Transmutation (NUDATRA) Overview and Status* (CIEMAT González),
- 1130-1200: *MEGAPIE Target: A Key Experiment for the Demonstration of ADS* (CEA Latgé)
- 1200-1230: *Los Alamos Transmutation Research: Heavy Liquid Metal Coolant Technology and Accelerator-driven Materials Test Station* (LANL Li)
- 1230-1400: Lunch Break

- Technical Session IV: Transmutation in Generation IV Reactors, Implications for waste management, in particular for geological disposal
  (Thursday 28, Chairs: A. van Luik and M. Salvatores)
  - 1400-1430: *Transmutation capabilities of Generation IV reactors* (US DOE Goldner)
  - 1430-1500: *Progress in Red-Impact* (KTH Gudowski)
  - 1500-1530: Coffee Break
  - 1530-1600: *Criteria Derived for Geological Disposal Concepts* (ANL Wigeland)
  - 1600-1630: *NEA Study on the Impact of Advanced Cycles on Waste Management Policies Project* (PSI Cavedon)
  - 1630-1700: *Issues Related to Public Perception of Radioactive Waste Management Options* (EU Taylor)

- Summary Session (Guidez and Session Chairs) (Thursday 28, 1700-1800)

- *Friday 29 September: Technical visits (ATALANTE, PHENIX, MELOX)*

Contributed papers will be presented during the Poster Session on Wednesday 27, from 1800 to 2200. Papers have been arranged in the following order: firstly by topic (according to the Technical Sessions I to IV) and then, within each topic, by alphabetical order according to the surname of the submitting author. Consequently, each paper is identified in the Book of Abstracts and during the poster session as shown below:

Contributed Presentations to Technical Session I: Progress in fuels and targets

J. Carmack, R.J. Kennedy, S. Hayes, D. Utterbeck, G. Chang, B. Hilton
Preliminary Design for the AFC-2 Transmutation Nuclear Fuel Test ***I-c-1***

M.J. den Exter, F.C. Klaassen, G.J.L.M. de Haas, R.P.C. Schram
Investigation of He-induced Swelling Behaviour of Inert Matrices
by ^{10}B Doping: The BODEX Irradiation Experiment ***I-c-2***

P. Jaecki, S. Pillon, D. Warin, L. Donnet, S.L. Hayes, J.R. Kennedy,
K. Pasamehmetoglu, S.L. Voit, D. Haas, A. Fernandez, Y. Arai
Update on the FUTURIX-FTA Experiment in Phénix ***I-c-3***

P. Jaecki, D. Warin, J.P. Ottaviani, E. Abonneau, R. Soule,
Y. Peneliau, E. Brunon, D. Haas, A. Fernandez
Update on the CAMIX-COCHIX Experiment in Phénix ***I-c-4***

J.R. Kennedy, T. O'Holleran, D. Keiser
Results from the Characterisation of the FUTURIX-FTA Metal Alloy
Transmutation Fuels ***I-c-5***

S. Lemonnier, S. Grandjean, A-C. Robisson, J-P. Jolivet
Sol-gel Chemistry Applied to the Synthesis of Am-bearing Cubic
Stabilised Zirconia: Reactivity and Structure from Solution to Solid State ***I-c-6***

W. Maschek, X. Chen, C. Matzerath Boccaccini, A. Rineiski, J. Wallenius,
V. Sobolev, P. Smith, R. Thetford, J.P. Ottaviani, S. Pillon, D. Haas
First Results of Safety Analyses for ADTS with CERCER and CERMET Fuels
Within the EUROTRANS-AFTRA Programme ***I-c-7***

S. Voit, K. McClellan, C. Stanek, S. Maloy
Actinide Nitride Ceramic Transmutation Fuels for the
FUTURIX-FTA Irradiation Experiment ***I-c-8***

Contributed Presentations to Technical Session II: Progress in partitioning and waste forms

H. Asp, G. Modolo, C. Schreinemachers, H. Vijgen
Development of a TODGA-process for Co-separation of Trivalent
Actinides and Lanthanides from a High Active Raffinate ***II-c-1***

D. Beller, W. Kernan, M. Schanfein, T. Ward, A. Rimsky-Korsakov,
F. Harmon, Q. Newell, L. Lakeotes, T. Beller, B. Howard, P. Attur
Combined Radiation Detection Methods for the AFCI MPAC Project ***II-c-2***

L. Berthon, N. Zorz, E. Leclerc, B. Gannaz, C. Hill
Use of Electrospray Ionisation Mass Spectrometry (ESI-MS) for the
Characterisation of Complexes – Ligand-metallic Cations in Solution ***II-c-3***

S. Bourg, C. Caravaca, E. Walle, G. de Angelis,
R. Malmbeck, B.G. Lewin, J. Uhlir, T. Inoue, V. Luca
Pyrochemistry Within EUROPART from the Acquisition of Basic Data
to the Processes for the Treatment of Spent Fuels ***II-c-4***

B. Camès, B. Saucerotte, D. Rudloff, M. Faucon, I. Bisel
DIAMEX Solvent Behaviour Under Continuous Degradation
and Regeneration Operation ***II-c-5***

C. Caravaca, G. De Córdoba, L. Gutiérrez
Salt Decontamination Treatment from a Pyrochemical Spent
Fuel Process in Molten LiCl-KCl ***II-c-6***

L. Cassayre, R. Malmbeck, P. Masset, J. Serp, P. Soucek, J-P.Glatz
Electrorefining of UZr and UPuZr Alloys onto Al Cathodes in LiCl-KCl Melt ***II-c-7***

Y-J. Cho, H-C. Yang, H-C. Eun, E-H. Kim, I-T. Kin
Treatment of Waste Salts by Oxygen Sparging and Vacuum Distillation ***II-c-8***

G. De Córdoba, A. Laplace, J. Lacquement, C. Caravaca
Determination of Basic Properties of Actinide Elements in Molten
Chlorides: Application to Neptunium ***II-c-9***

G.D. Del Cul, B.B. Spencer, E.D. Collins
Advanced Head-end Alternatives for the Processing of US Spent Nuclear Fuel ***II-c-10***

A.G. Espartero, P. Prados, M.T. Murillo, M. Almaraz,
J. Sánchez-Quesada, J.L. Gascón, J. de Mendoza
Study of the Extracting Properties of New *Bis*-malonamide Ligands
for An(III) and Ln(III) Co-extraction ***II-c-11***

Y. Fujii, T. Suzuki, S. Koyama, M. Ozawa
Extensive Reprocessing Process for All Actinide Recycling
Based on Tertiary Pyridine Resin ***II-c-12***

H. Geckeis, D. Guillaneux, Th. Wiss, F. Joppen, M.A. Denecke,
A. Scheinost, G. Geipel, A. Scheidegger, P. Chaix
European Laboratories for Actinide Research: The Actinide Pooled Facilities ***II-c-13***

A. Geist, G. Modolo, M. Weigl, K. Gompper
Partitioning of Minor Actinides: Research at Jülich and Karlsruhe Research Centres ***II-c-14***

A. Geist, M.A. Denecke, P.J. Panak, M. Weigl, B. Schimmelpfennig, K. Gompper
On the Selectivity of BTP Extractants for Am(III) and Cm(III) Over Lanthanides ***II-c-15***

A. Geist, D. Magnussen, D. Serrano-Purroy,
B. Christiansen, R. Malmbeck, M. Weigl, K. Gompper
Towards a Hot DIAMEX Test in a Hollow Fibre Module Micro-plant ***II-c-16***

C. Hill, L. Berthon, C. Madic, M.J. Hudson, M.R.S. Foreman
A Study of the Resistance of some N-heterocycles (BTPS) to Radiolysis ***II-c-17***

I-T. Kim, H-S. Park, J-G. Kim, H-C. Yang, Y-J. Cho, E-H. Kim
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T. Koyama, T. Hijikata, K. Kinoshita, T. Yokoo, T. Inoue
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Reprocessing: Development of Transport Technology and Pyroprocess Equipments.....***II-c-19***

S-W. Kwon, J-H. Lee, J-B. Shim, E-H. Kim
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Surrounded with a Ceramic Container ***II-c-20***

A. Laplace, O. Conocar, J. Finne, S. Delpech,
J. Vermeulen, L. Blairat, G. Picard, E. Walle, J. Lacquement
Liquid Metallic Solvents Hierarchy for Actinides/Lanthanides Separation.....***II-c-21***

J.D. Law, D.R. Peterman, T.A. Todd, D.A. Meikrantz, C.L. Riddle
Flow-sheet Testing of the Fission Product Extraction Process for the
Separation of Caesium and Strontium from Spent Nuclear Fuel.....***II-c-22***

A.G. Maslennikov, J. Vermeulen, Ph. Moisy
Uranium Carbide Oxidation with Nitrous Acid in Acid Solutions.....***II-c-23***

B.J. Mincher, D.R. Peterman, S.P. Mezyk
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G. Modolo, H. Asp, C. Schreinemachers, H. Vijgen
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Chromatography Using TODGA + TBP Impregnated Resins ***II-c-25***

M. Ozawa, R. Fujita, S. Koyama,T. Suzuki,Y. Fujii
Strategic Recycling of Fission Products in Nuclear Fuel Cycle
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B-H. Park, S-M. Jeong, I-K. Choi, C-S. Seo, S-W. Park
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A. Paulenova, P. Tkac
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C-S. Seo, S-M. Jeong, J-M. Hur, S-B. Park,
S-S. Hong, D-S. Kang, M-S. Jung, S-W. Park
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in the Advanced Spent Fuel Conditioning Process (ACP) ***II-c-29***

C. Sorel
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B.B. Spencer, G.D. Del Cul, C.H. Mattus, E.D. Collins
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D.W. Tedder
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R. Tuláčková, K. Chuchvalcová Bímová, F. Lisý
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J. Uhlíř
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H. Aït Abderrahim, G. Rimpault, L. Cinotti, B. Giraud, C. Artioli, A. Mueller, Th. Kirchner, R. Sehgal, D. Struwe, A. Orden, J. Pirson, A. Rolfe
Development of the Design of Heavy-liquid-metal-cooled XT-ADS and EFIT: Status and Recent Results from Domain Design of EUROTRANS.....***III-c-1***

F. Álvarez-Velarde, P.T. León, E.M. González-Romero
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M. Badea, R. Dagan, C.H.M. Broeders
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D.E. Beller, K. Sabourov, J. Chen, K. Folkman, J. Bennion
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D.E. Beller, F. Harmon, T. Ward, F. Goldner
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E.D. Collins, J-P. Renier
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C. Fazio, A. Alamo, A. Almazouzi, D. Gomez-Briceno, F. Groeschel, F. Roelofs, P. Turroni
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G. Granget, P. Baeten, M. Schikorr, W. Gudowski, R. Rosa, P. Agostini
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G.L. Khorasanov, A.P. Ivanov, A.I. Blokhin
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S. Koyama, T. Mitsugashira
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F. Mellier, P. Fougeras, J-F. Lebrat, A. Billebaud, R. Brissot, E. Liatard
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A. Plompen (on behalf of the EFNUDAT consortium)
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A. Plompen
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P. Schuurmans, T. Kirchner, A. Cadiou, J.M. Buhour, K. Van Tichelen, M. Dierckx, R. Stieglitz, D. Coors, L. Cinotti, F. Roelofs, H. Aït Abderrahim
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F. Sordo, P.T. León, J.M. Martínez-Val
Analysis of Solid Spallation Neutron Sources for Experimental Accelerator-driven Systems ***III-c-26***

F. Tovesson, T. Hill
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G. Van den Eynde, L. Cinotti, B. Giraud, A. Hogenbirk, P. Vaz, M.C. Vincente, P. Coddington, D. Struwe, G. Rimpault, C. Artioli
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F. Varaine, A. Zaetta
Review on Transmutation Scientific Feasibility Studies at CEA ***III-c-29***

M.C. Vicente, E.M. González Romero
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J. Wallenius, D. Westlén, T. Bäck
Fast Spectrum Transmutation of Minor Actinides in the Top of BWRs Using Metal Fuel ***III-c-31***

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J. Ahn, T. Ikegami
Effective Application of Partitioning and Transmutation Technologies to Geologic Disposal ***IV-c-1***

N. Amrani, W. Boukhenfouf, S. Nehoua, A. Boucenna
The Primordial Role of the Partitioning and Transmutation Option in the Waste Management Strategy ***IV-c-2***

A. Aquien, M. Kazimi, P. Hejzlar
The Impact of Spent Fuel Reprocessing Facilities Deployment on TRU Inventory Management for Alternative Fuel Cycle Strategies ***IV-c-3***

N. Cerullo, G. Lomonaco, V. Romanello, E. Bomboni
Nuclear Waste Impact Reduction Using Multiple Fuel Recycling Strategies ***IV-c-4***

A. Epiney, S. Pelloni, P. Coddington, R. Chawla
Comparison of Transmutation Capability for Two Generation IV GCFR Start-up Cores Employing (U,Pu)C Cercer Fuel ***IV-c-5***

I.S. Hwang
Global Transmutation Experimental Reactor Concept ***IV-c-6***

P.T. León, M. Sánchez, J. Muñoz, J.M. Martínez-Val
Impact of Pebble Bed Once-through Transmutation in the Final Repository ***IV-c-7***

B. Merk, C.H.M. Broeders
On the Accumulated Plutonium Mass Against the Background of the Fixed Electricity Amount Regulated by Law in Germany ***IV-c-8***

S. Nakayama, Y. Morita, K. Nishihara, H. Oigawa
Waste Disposal for Partitioning-transmutation Cycle ***IV-c-9***

H.P. Nawada, C. Ganguly
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C.H. Zimmerman, R.G. Moore, C. Robbins
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