




The 70th International Conference

GLOBAL 2011

Toward and Over the Fukushima Daiichi Accident



MAKUHARI MESSE



December 11-16, 2011
Makuhari Messe, Chiba, Japan



Sponsors

Organized by Atomic Energy Society of Japan,
Co-organized by Japan Atomic Energy Agency,
American Nuclear Society, Canadian Nuclear Society, Chinese Nuclear Society,
European Nuclear Society, French Nuclear Society, Indian Nuclear Society,
Korean Nuclear Society, International Atomic Energy Agency, Nuclear Energy Agency/OECD

Conference Scope

GLOBAL 2011 is the 10th conference after GLOBAL2009 in Paris. Based on the long-term needs to realize sustainable energy and mitigate the climate change, last conferences were successfully promoted the global initiatives of ‘nuclear renaissance’. However, the severe accident at the Fukushima Daiichi Nuclear Power Plant destroyed its trend due to reveal the vulnerability of nuclear power plants and betrays public trust in nuclear safety. We offer our deepest condolences to all affected by the tragic chain of events following the devastating earthquake and consequent tsunami attacked east Japan on March 11, 2011.

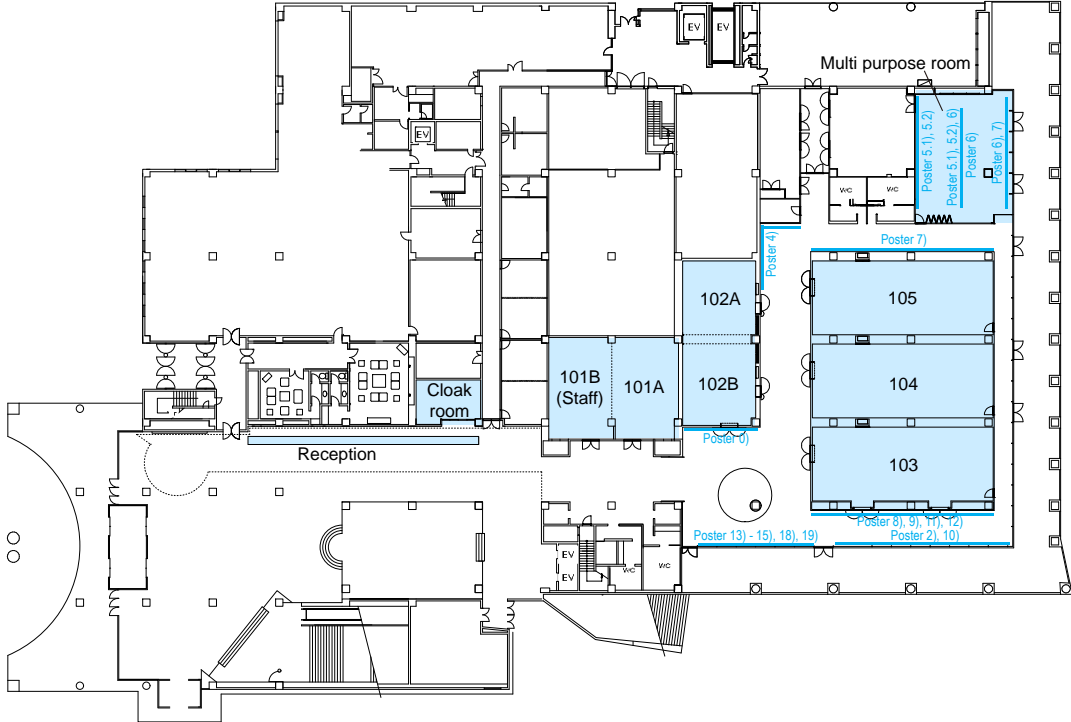
The Fukushima Daiichi accident is the third serious Nuclear Power Plant accident in the world, followed by TMI and Chernobyl, giving enormous impact on nuclear politics in Japan and around the globe. It is important to draw lessons and share them globally, based on the technical, scientific and social sequences experienced the Fukushima Daiichi accident; even in the accident was triggered by a historically unprecedented scale of disaster; huge earthquake and tsunami. We should take measures; ‘never such accident occur anywhere in the world’.

GLOBAL 2011 should be the opportunity to discuss medium- and long-term atomic energy and nuclear fuel cycle forecasts after the Fukushima Daiichi accident across nations and beyond generations. How to overcome the accident and recover the public trust are the worldwide big concerns. Various suggestions and discussions are welcome in GLOBAL 2011 special sessions.

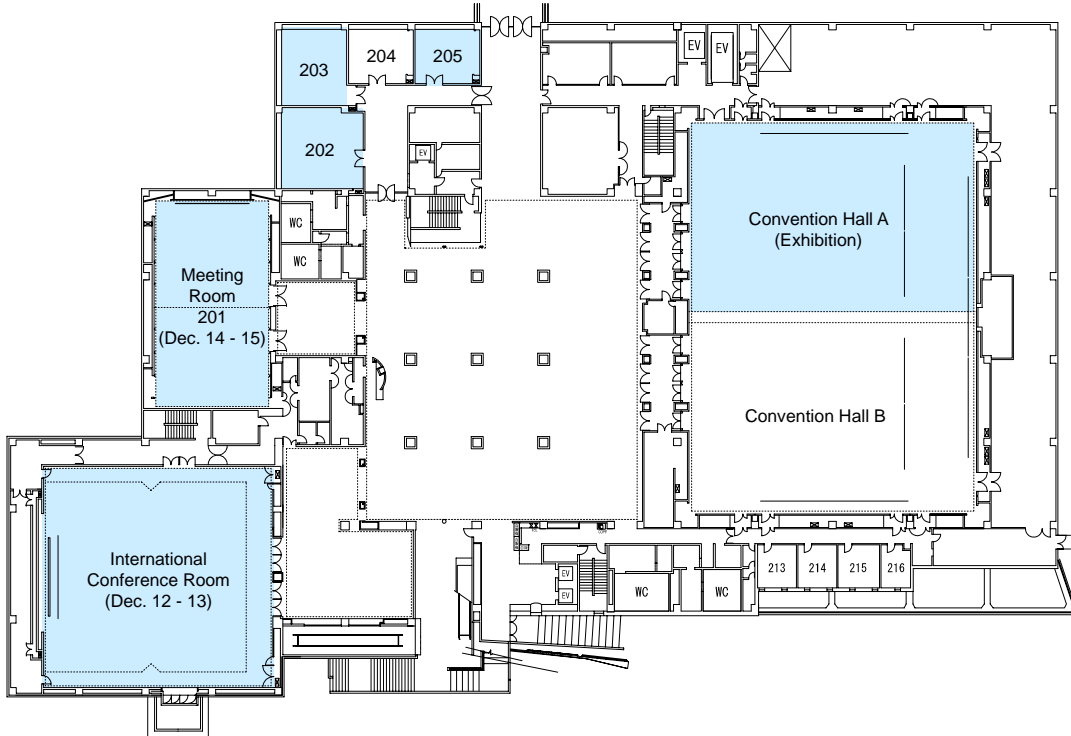
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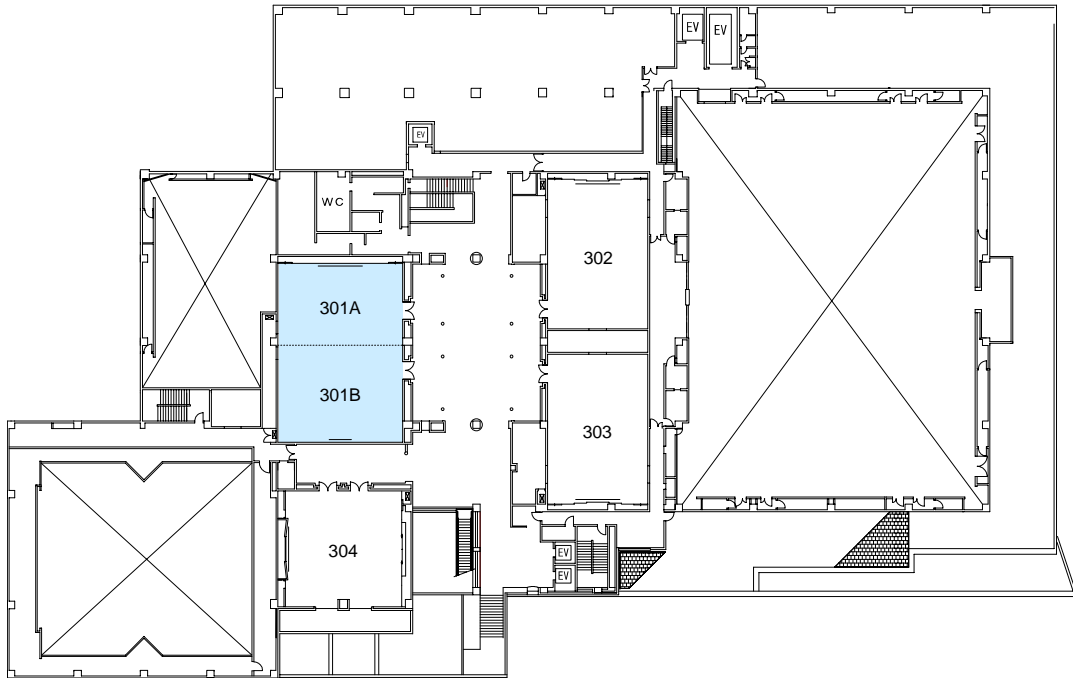
Floor Plan



1st (Ground) Floor of Makuhari Messe International Conference Halls



2nd Floor of Makuhari Messe International Conference Halls



3rd Floor of Makuhari Messe International Conference Halls

Banquet

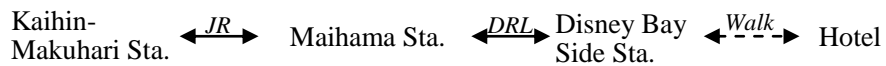
Dec. 13. 19:00 – 21:00, at Tokyo Bay Maihama Hotel Club Resort

Pick up bus is available around 18:00 to Tokyo Bay Maihama Hotel Club Resort and return bus is also available around 21:00 from the hotel.

International Conference Halls Bus Stop for Pick up Bus



Also JR Keiyo Line & Disney Resort Line will be available to and from the hotel.



Program, Session by Day

Monday, December 12, 2011

Dec. 12, 9:00–9:30, International Conference Room

Welcome Address

Satoru Tanaka (Univ. Tokyo, Organizing Committee Chair)

Shunsuke Kondo (JAEC, Organizing Committee Honorary Chair)

Dec. 12, 9:30–10:00, International Conference Room

Plenary I –Special I–: An overview of Fukushima Daiichi Accident

(Chair: Satoru Tanaka (Univ. Tokyo))

PI-I-1 Akira Omoto (Univ. Tokyo)

Dec. 12, 10:20–12:30, International Conference Room

Opening: Nuclear prospects of each country after the Fukushima Daiichi Accident

(Chair: Satoru Tanaka (Univ. Tokyo), David Hill (INL))

- Japan: Atsuyuki Suzuki (JAEA)
- USA: John Grossenbacher (INL)
- France: Alain Bucaille (AREVA, ICL)
- O-4 Korea: S. H. Chang (KNS)
- IAEA: Alexander Bychkov (IAEA)

Dec. 12, 14:00–17:30, International Conference Room

Plenary II –Special II–: Reports from the nuclear safety investigation commission of AESJ and global view on the Fukushima Daiichi accident

(Chair: Takashi Sawada (AESJ), Dominique Ochem (CEA))

1. Nuclear Technology
 - PI-II-1 Akira Kawano (TEPCO)
 - Koji Okamoto (Univ. Tokyo)
 - Jean-Luc Provost (EDF)
2. Radiation Environment
 - PI-II-4 Itsumasa Urabe (Fukuyama Univ.)
 - Kazuo Sakai (NIRS)
 - PI-II-6 Gerhard Proehl (IAEA)
3. Clean-up
 - PI-II-7 Tadashi Inoue (CRIEPI)
 - PI-II-8 Russell Green (Exelon)
4. Discussion

Dec. 12, 17:40–19:00, International Conference Room

Evening Session: Figure of the earthquake and tsunami, and Chernobyl accident

(Chair: Tadashi Inoue (CRIEPI), Russell Green (Exelon))

1. Mechanism of the earthquake and tsunami
 - E-1 Koji Fujima (National Defence Academy of Japan)
2. Lessons learned from Chernobyl accident
 - E-2 Volodymyr V. Tokarevsky (Chernobyl Union of Ukraine)
 - E-3 John Cardarelli (EPA)
 - E-4 Oleg Bondarenko (Ukraine)

Tuesday, December 13, 2011

Dec. 13, 8:30–10:30, International Conference Room

Plenary III: Fuel cycle

(Chair: Tadashi Inoue (CRIEPI), Vasdeva Rao (IGCAR))

- PI-III-1 Japan: Satoru Tanaka (Univ. Tokyo)
- France: Bernard Boullis (CEA)
- Russia: Evgeny Kudryavtsev (ROSATOM)
- China: Guoan Ye (CIAE)
- PI-III-5 EU: Thomas Fanghänel (JRC-ITU)
- PI-III-6 Gen-IV: Pascal Anzieu (GIF)

Dec. 13, 10:50–12:30, International Conference Room

Plenary IV: Reprocessing, plutonium utilization and spent fuel management

(Chair: Shigeo Nomura (JAEA), Bernard Boullis (CEA))

- PI-IV-1 Japan: Harukuni Tanaka (JNFL)
- PI-IV-2 OECD/NEA: Thierry Dujardin
(OECD/NEA)
- PI-IV-3 France: Jean-Luc Provost (EDF)
- PI-IV-4 India: Vasudeva Rao (IGCAR)
- PI-IV-5 IAEA: Gary R. Dyck (IAEA)

Dec. 13, 14:00–16:00, International Conference Room

Plenary V –Special III–: Safety and security (considering Fukushima Daiichi accident)

(Chair: Mitsutoshi Suzuki (JAEA), Gary R. Dyck (IAEA))

- PI-V-1 USA: Kemal Pasamehmetoglu (INL)
- Canada: Rosaura Ham-Su (AECL)
- PI-V-3 Germany: Victor Sanchez (KIT)
- PI-V-4 France: Michel Schwarz (ISRN)
- PI-V-5 Japan: Akira Omoto (Univ. Tokyo)
- Discussion

Dec. 13, 16:20–18:00, International Conference Room

Panel I: Nonproliferation –Multilateralization, fuel supply-reprocessing-reactor countries–

(Chair: Yusuke Kuno (JAEA / Univ. Tokyo), Jor-Shan Choi (UCB))

- Japan: Nobumasa Akiyama (Hitotsubashi Univ.)
- Pa-I-2 USA: Micah Lowenthal (US Academy of Sciences)
- Pa-I-3 Russia: Gleb Efremov (International Uranium Enrichment Center)
- Korea: Kwang-Seok Lee (KAERI)
- Pa-I-5 Kazakhstan: Baurzhan Duisebayev
(KAZATOMPROM)
- Discussion

Wednesday, December 14, 2011

Dec. 14, 8:30–10:30, Meeting Room 201

Panel II: Partitioning and transmutation –Separation, transmutation, fuel, P&T impact–

(Chair: Kazuo Minato (JAEA), Jean-Paul Glatz (ITU))

- Pa-II-1 Overview: Hiroyuki Oigawa (JAEA)
- Pa-II-2 Partitioning, wet process: Jing Chen (Tsinghua Univ.)
- Pa-II-3 Partitioning, dry process: Tadafumi Koyama (CRIEPI)
 - Transmutation (FBR): Fabienne Delage (CEA)
- Pa-II-5 Transmutation (ADS): Pierre D'Hondt (SCK-CEN)
- Pa-II-6 P&T impact: Massimo Salvatores (CEA)
 - Summary: Kazuo Minato (JAEA)

Dec. 14, 10:50–12:30, Meeting Room 201

0) A-1: Fukushima Contaminated Water Treatment

(Chair: T. Tsukada (CRIEPI), Agnes Grandjean (Institut de Chimie Séparative de Marcoule))

- 517264 R&D back-ups for design and operation of the Kurion media system for early construction of the contaminated water treatment system in Fukushima Daiichi Nuclear Power Station
Tadafumi Koyama (CRIEPI), Takeshi Tsukada, Takatoshi Hijikata, Koichi Uozumi, Kenta Inagaki, Yasushi Nauchi, Keiji Ishikawa, Shoichi Ono, Shunichi Suzuki, Mark S. Denton, John Raymond, Richard Keenan and Gaetan Bonhomme
- 518830 Readily Available Experience, Technologies, Media, Modular Equipment and Rapid Deployment During a Nuclear Crisis
Mark S. Denton (Kurion), Joshua L. Mertz and William D. Bostick
- 448653 Selective Sorbents to Uptake Radioactive Cs and Sr from Sea Water Simulating Effluent from Fukushima Site
Guilhem Arrachart (Inst. Chimie Séparative de Marcoule), Yves Barre, Carole Delchet, Bruno Fournel, Agnès Grandjean, Celia Lepeytre, Aurélie Merceille, Stéphane Pellet-Rostaing, Hugues Peycelon, Cyrielle Rey and Raphaël Turgis
- 462556 Three months to start liquid waste treatment, challenges and results

Thierry Prevost (AREVA), Carol Redonnet, Grégoire Piot, Stéphane Jouaville, Laurent David, Georges Pagis

- 462557 AREVA first responses to TEPCO for Fukushima remediation site
Arnaud Gay (AREVA) and Philippe Gillet

Dec. 14, 14:00–16:00, Meeting Room 201

0) B-1: Lessons Learned

(Chair: Koji Okamoto (Univ. Tokyo), Kune Y. Suh (Seoul National Univ. / PHILOSOPHIA))

- 449030 Lessons learned from the accident, – behavior of valves –
Koji Okamoto (Univ. Tokyo)
- 454595 Analysis of Fukushima Daiichi Nuclear Power Station severe accident using MAAP4.05
Jae S. Yoo (Seoul National Univ.), Dong M. Kim, and Kune Y. Suh
- 448790 Estimation of dynamic loading on a design of the NPP caused by seismic influences
Konstantin N. Proskuryakov (Moscow Power Eng. Inst.)
- 449457 The Fukushima Accidents: Simulation of the NPP inventory and comparison with experimental measurements of the fallout by the UC Berkeley Team
Christian DiSanzo (UCB), Jasmina Vujic, Mark Bandstra, Daniel H. Chivers, Kai Vetter and Tim Aucott
- 454589 Measurements of Fukushima fallout by the University of California, Berkeley Nuclear Engineering Department
Mark S. Bandstra (UCB), Kai Vetter, Daniel H. Chivers, Jasmina Vujic, Tim Aucott, Cameron Bates, Amy Coffey, Joseph Curtis, Christian DiSanzo, Daniel Hogan, Anagha Iyengar, Quinn Looker, Joseph Miller, Victor Negut, Brian Plimley, Nicholas Satterlee, Lazar Supic, and Ben Yee
- 448356 Safe management of nuclear energy- A key towards sustainable development
Andrejs Dreimanis (State Environ. Ser., Latvia)

Dec. 14, 16:20–17:20, Meeting Room 201

0) C-1: Other Facilities

(Chair: Chaim Braun (Stanford Univ.))

454591 Application of nanofluids to mitigation of severe accident at the Fukushima Daiichi Nuclear Power Plant

Kune Y. Suh (Seoul National Univ.)

440767 Prospects for regionalizing back-end of the fuel cycle activities in Rokkasho-Mura post-Fukushima

Chaim Braun (Stanford Univ.)

448786 Feature and evaluation of fission products behavior during a severe accident of the FBR
Masaaki Inoue (JNES), Hiroshi Endo, Kazuo Haga, Isao Tatewaki and Ken-Ichiro Sugiyama

[Dec. 14, 8:30–10:30, Meeting Room 202](#)

[16\) A-1: Technologies for Safeguards](#)

(Chair: Mitsutoshi Suzuki (JAEA), S. DeMuth (LANL))

356978 Quantifying fissile content in spent nuclear fuel assemblies using ²⁵²Cf interrogation with prompt neutron detection

Jianwei Hu (LANL), Stephen J. Tobin and Howard O. Menlove

385211 A concept for quantitative NDA measurements of advanced reprocessing product materials
Braden Goddard (Texas A&M Univ.), William Charlton, Claudio Gariazzo, and Paolo Peerani

392340 Determination of fissile material content with delayed gamma and pulsed neutron generator
Se-Hwan Park (KAERI), Sung-Ho Eom, June-Sic Park, Hee-Sung Shin and Ho Dong Kim

503362 Quartz-Crystal Spectrometer for the Analysis of Plutonium K X-Rays
Alison V. Goodsell (Texas A&M Univ.) and William S. Charlton

384545 The Multi-Isotope Process (MIP) Monitor: a Near-Real-Time, Non-Destructive Monitor for Reprocessing
Christopher Orton (PNNL), Carlos G. Fraga, Kenneth J. Dayman, Sarah E. Bender, Sheldon Landsberger, Kenan Ünlü and Jon M. Schwantes

385784 Quality Assurance and Quality Control at the Joint IAEA NMCC On-Site Laboratory at RRP as a Contribution to the Inspectorate's Review of Near Real Time Accountancy of Nuclear Material
R. Ludwig (IAEA), G. Duhamel, K. Rapti, V.

Mayorov, Y. Sato, S. Hara, Y. Itoh and T. Hayakawa

[Dec. 14, 10:50–12:30, Meeting Room 202](#)

[16\) B-1: Safeguards and Security](#)

(Chair: Yusuke Kuno (JAEA / Univ. Tokyo), Jor-Shan Choi (UCB))

355108 Integration of self-interrogation neutron resonance densitometry and differential die-away self-interrogation to quantify plutonium in a PWR 17x17 spent fuel assembly

Adrienne M. Lafleur (LANL), Howard O. Menlove, Stephen J. Tobin, Martyn T. Swinhoe and Melissa A. Schear

387547 The emerging safeguards challenges of pyroprocessing technology
Shelly Li (IAEA), Ryszard Zarucki and Mark Pellechi

476495 A study on the MUF uncertainty estimation for an engineering-scale pyroprocessing facility
Hee-Sung Shin (KAERI), Bo-Young Han, Dae-Yong Song, Seong-Kyu Ahn, Se-Hwan Park, Yos Panagaman Sitompul and Ho-Dong Kim

357866 Safeguards and Security by Design (SSBD) for the domestic threat – theft and sabotage
Scott DeMuth (LANL), Mark Mullen and Paul Pan

357058 Physical protection and its relationship with nuclear disaster preparedness and nuclear damage compensation in Japan
Kazutomo Irie (JNES)

[Dec. 14, 14:00–16:00, Meeting Room 202](#)

[17\) A-1: Multilateral Nuclear Approach \(MNA\)](#)

(Chair: Nobuo Shinohara (JAEA), Gleb Efremov (International Uranium Enrichment Center))

386576 Study on sustainable regional nuclear fuel cycle framework from nuclear non-proliferation viewpoint
Y. Kuno (JAEA / Univ. Tokyo), S. Tanaka, A. Omoto, M. Tazaki, M. Akiba, T. Adachi, T. Oda, Y. Izumi, K. Horio, R. Takashima, J.-S. Choi, S. Hoshiba and N. Teraoka

392010 Historical review on the studies of multilateral approaches to nuclear fuel cycle facilities

- M. Tazaki (JAEA / Univ. Tokyo), M. Akiba and Y. Kuno
- 391375 Multilateral simulation on various models for internationalization of nuclear fuel cycle
T. Adachi (Univ. Tokyo), M. Akiba, M. Tazaki, Y. Kuno, J.-S. Choi, S. Tanaka and A. Omoto
- 387879 Economic evaluation of multilateral nuclear fuel cycle approach
Ryuta Takashima (Univ. Tokyo), Yusuke Kuno, Akira Omoto and Satoru Tanaka
- 392033 The legal aspects of Internationalization of Nuclear Fuel Cycle
M. Tazaki (JAEA / Univ. Tokyo), M. Akiba and Y. Kuno
- 392343 The roles of industry for internationalization of nuclear fuel cycle
Jor-Shan Choi (UCB), Takuji Oda, Satoru Tanaka and Yusuke Kuno
- [Dec. 14, 16:20–18:00, Meeting Room 202](#)
[16\) C-1: Proliferation Resistance \(PR\)](#)
(Chair: Hiroshi Sagara (JAEA), Temitope Taiwo (ANL))
- 468557 Consideration on the potential increasing risk of the proliferation of nuclear materials vs. nonproliferation challenges from nuclear renaissance
Gheorghe Vieru (Institute for Nuclear Research Pitesti, Romania)
- 392346 Evaluating the attractiveness of nuclear material for proliferation-resistance and nuclear security
Jor-shan Choi (UCB), Kou Ikegame, and Yusuke Kuno
- 391726 Different loading materials analysis in FBR blanket for evaluating recycling options of plutonium proliferation resistance
Sidik Permana (JAEA / Bandung Inst. Technol.), Mitsutoshi Suzuki, Zaki Suud, and Masaki Saito
- 392174 Study on Degradation of Pu-Grade Generated in Blanket of FBR by Introduction of Moderator
Kazuma Sugawara (Tohoku Univ.), Toshio Wakabayashi, Makoto Takahashi and Tsugio Yokoyama
- 468544 Proliferation risk assessment for large reprocessing facilities with simulation and modeling
Mitsutoshi Suzuki (JAEA) and Scott DeMuth
- 360473 Integrating Virtual Reality Applications in Nuclear Safeguards
Michael Barletta (IAEA), Jean-Maurice Crété, Susan Pickett
- [Dec. 14, 8:30–10:30, Meeting Room 203](#)
[13\) A-1: Deep-Burn LWR Concept with FCM Fuel – I](#)
(Chair: Tatsuya Hinoki (Kyoto Univ.), Lance L. Snead (ORNL))
- 400845 (Invited) Microencapsulated fuels applied to LWR reactors**
Lance L. Snead (ORNL), Yutai Katoh, Francesco Venneri, Tatsuya Hinoki, Kurt Terrani, Jess Gehin, Mike Todosow, Jim Kiggans, and Ser Gi Hong
- 400862 Fuel cycle analyses of fully ceramic microencapsulated fuels for present light water reactors
J. C. Gehin (ORNL), I. G. Maldonado, A. T. Godfrey, C. A. Gentry and N. M. George
- 400848 Fuel cycle performance of deep burn TRISO-transuranic fuel with SiC inert matrix in zircaloy clad used in light water reactors (DB-LWR)
Francesco Venneri (LOGOS) and Chris Hamilton
- 400852 Silicon carbide matrix development for LWR microencapsulated fuels
Tatsuya Hinoki (Kyoto Univ.), Lance L. Snead, Yutai Katoh, Kurt Terrani and Lee Youngju
- 358459 Modeling high burnup coated particle fuel
Theodore M. Besmann (ORNL), Roger E. Stoller, Paul C. Schuck, German D. Samolyuk, Hua-Tay Lin, Andrew A. Wereszczak, Brian D. Wirth, Stanislav I. Golubov, John Maki, Abderrafi Ougouag and Jeffrey J. Powers
- 400853 Zirconium Metal Matrix Microencapsulated Nuclear Fuel
Kurt Terrani (ORNL), Jim Kiggans and Lance Snead

Dec. 14, 10:50–11:30, Meeting Room 203

13) A-2: Deep-Burn LWR Concept with FCM Fuel – II

(Chair: Tsutomu Okubo (JAEA))

- 400856 A neutronic feasibility study on the deep-burning of TRU in a commercial LWR core
Ser Gi Hong (KAERI), Sang Yoon Park ,
Kyung Hoon Lee, Jin Young Cho, Kang-Seog
Kim, Chang Keun Jo, Kyo Youn Kim and
Francesco Venneri
- 400859 Safety evaluation of LWR-deep burn core with
16x16 TRU FCM fuel
Ji Han Chun (KAERI), Won Jae Lee, Kyoung
Min Kang and Francesco Venneri

Dec. 14, 14:00–16:00, Meeting Room 203

13) B-1: Fast Reactors

(Chair: Shoji Kotake (JAPC), Bruno Fontaine (CEA))

- 471611 (Invited) Status of JSFR development in phase I FaCT project**
Kazumi Aoto (JAEA), Yoshitaka Chikazawa, Shoji Kotake and Takaya Ito
- 432757 (Invited) The French R&D on SFR core design and ASTRID Project**
B. Fontaine (CEA), N. Devictor, P. Le Coz, A. Zaetta, D. Verwaerde and J-M. Hamy
- 357127 State of the art and trends of development of fast reactor technology
Vladimir M. Poplavsky (State Sci. Center Russian Federation) and Alexander Chebeskov
- 468536 Restart and progress of system start-up test in MONJU
Takehide Deshimaru (JAEA) and Mamoru Konomura
- 392485 Design concepts of LFRs and related studies in CRINES of Tokyo Tech.
Minoru Takahashi (Tokyo Inst. Technol.) ,
Toru Obara and Hiroshi Sekimoto
- 392605 ELECTRA: European lead cooled training reactor
Janne Wallenius (Kungliga Tekniska Högskolan) and Erdenechimeg Suvdantsetseg

Dec. 14, 16:20–17:40, Meeting Room 203

13) C-1: Advanced Reactors and Technologies

(Chair: Naoyuki Takaki (Tokai Univ.), Imre Pazsit (Chalmers Univ. Technol.))

- 348300 Small modular reactors – reasons for development and available options
Chaim Braun (Stanford Univ.)
- 447600 Preliminary study on the burnup improvement of HTGR based on the spectrum shifting concept
Piyatida Trinuruk (Tokyo Inst. Technol.) and Toru Obara
- 474361 Kinetic behaviour and neutron noise in molten salt reactors
Imre Pázsit (Chalmers Univ. Technol.) and Anders Jonsson
- 359967 Monte Carlo calculation method for the effective delayed neutron fraction and the mean neutron generation time.
Evgeny Y. Stankovskiy (Central Inst. Continuing Education and Training), Christian C. Jammes, Denis E. Beller and Vladimir V. Artisyuk

Dec. 14, 8:30–9:50, Meeting Room 101A

14) A-1: SFR systems

(Chair: Katsuyuki Kawashima, Jiri Krepel (PSI))

- 391865 (Invited) Safety design approach of Japan sodium-cooled fast reactor**
Ryodai Nakai (JAEA), Takaaki Sakai and Yasushi Okano
- 359487 (Invited) 4S Safety characteristics and evaluation of emergency planning zone**
Kazuhito Asano (Toshiba), Hisato Matsumiya, Nobuhisa Takezawa and Yasushi Tsuboi
- 409075 Impact of sodium-CO₂ interaction on design of supercritical CO₂ power conversion system of an SFR
Jae-Hyuk Eoh (KAERI), Hee Cheon No, Yong-Bum Lee and Seong-O Kim
- 366441 (Invited) Comparison of the code systems SAS-SFR and SIMMER-III on the primary phase of an unprotected loss of flow**
Sandra Pומרouly (EDF), Thierry Jeanne, Johann Lecerf and Gérald Rimpault

Dec. 14, 10:30–11:10, Meeting Room 101A

14) B-1: Heavy Metal

(Chair: Katsuyuki Kawashima (JAEA), Jiří Křepel (PSI))

- 398761 Lead containing mainly isotope ²⁰⁸Pb: New neutron moderator, coolant and reflector for

innovative nuclear reactors

Evgeny G. Kulikov (National Res. Nucl. Univ. MEPHI), Gennady Kulikov, Anatoly Shmelev, Vladimir Apse and Vladimir Artisyuk

386009 (Invited) Comparison of safety related parameters of Generation-IV fast reactors in equilibrium closed cycle

Jiri Krepel (PSI), Joseph Saliba, Konstantin Mikityuk and Rakesh Chawla

[Dec. 14, 14:00–15:40, Meeting Room 101A](#)

[14\) C-1: LWR Systems – I](#)

(Chair: Yoshihisa Nishi (CRIEPI), Dirceu Ferreira da Cruz)

358460 (Invited) Advanced multiscale fuel performance modeling

Michael R. Tonks (INL), Derek Gaston, Paul Millett, Pankaj Nerikar, David Andersson and Chris Stanek

392413 Interrelation analysis program of parameters of nuclear safety

Denis Solovyev (National Res. Nucl. Univ. MEPHI), Andrey Semenov, Alex L. Cherezov, Nikolai V. Shchukin

366953 Nuclear reactor technology demonstration program: What does a regulator expect?

Alexandre Viktorov (Canadian Nuclear Safety Commission)

358296 Seismic re-qualification of nuclear facility building using probabilistic approach

Shailesh M. Thorve (BARC), R. S. Soni and K. N. S. Nair

392396 Large break LOCA uncertainty quantification for boiling natural circulation reactor using Latin Hypercube Sampling

A. Srivastava (BARC), A. K. Trivedi, H. G. Lele, P. Munshi and K. K. Vaze

[Dec. 14, 16:20–17:40, Meeting Room 101A](#)

[14\) C-2: LWR Systems – II](#)

(Chair: Kazuhito Asano (Toshiba), Michael R. Tonks)

358540 Radiolysis of water: An important issue for supercritical water cooled reactors

Mingzhang Lin (JAEA), Yousuke Katsumura, Yusa Muroya, Ryuji Nagaishi and Yuta Kumagai

357340 (Invited) Safety issues on the deployment of thorium fuel in pressurized water reactors

Dirceu Ferreira da Cruz (NRG) and Siegfried Mittag

392413 Interrelation analysis program of parameters of nuclear safety

Denis Solovyev (National Res. Nucl. Univ. MEPHI), Andrey Semenov, Alex L. Cherezov and Nikolai V. Shchukin

362690 Investigation of the Liquid film Flow Rate in an Annular TwoPhase Flow

D. K. Chandraker (BARC), A. Dasgupta, P. K. Vijayan and M. Aritomi

[Dec. 14, 8:30–9:10, Meeting Room 102A](#)

[15\) A-1: Hydrogen production systems and irradiation applications using HTGR](#)

(Chair: Shinji Kubo (JAEA), Kazuya Yamada (Toshiba))

392206 R&D on thermochemical IS process for nuclear hydrogen production at JAEA

Kaoru Onuki (JAEA), Shinji Kubo, Jin Iwatsuki, Seiji Kasahara, Nobuyuki Tanaka, Yoshiyuki Imai and Hiroki Noguchi

391316 Feasibility study on silicon doping using high temperature test engineering reactor

Masaya Seki (Tokai Univ.), Naoyuki Takaki, Minoru Goto, Satoshi Shimakawa

[Dec. 14, 10:50–12:30, Meeting Room 102A](#)

[20\) A-1: Human resource development – I](#)

(Chair: Kiyonobu Yamashita (JAEA), Masahiko Osaka (JAEA))

359794 Development of student training program for fuel cycle chemistry

Kwangheon Park (Kyunghee Univ.), Nobuaki Sato, Akira Kirishima and Tsutomu Ohtsuki

364104 Facts, fictions, and fear as correlates of NPP NIMBY mitigation in Thai University students Vutthi Bhanthumnavin (Shinawatra Univ.) and Duchduen Bhanthumnavin

386772 Human capital development through interdisciplinary nuclear education

Michaela E. Eddy (PNNL), Jeffery Jay, and Shaheen Dewji

390724 European approach for nuclear education, training and knowledge management

Joseph Safieh (CEA), Peter Paul De Regge and Ryoko Kusumi

391364 Actinide-handling experience for training and education of future expert under J-ACTINET

Masahiko Osaka (JAEA), Kenji Konashi, Hirokazu Hayashi, Dexin Li, Yoshiya Homma, Tomoo Yamamura, Isamu Sato, Shuhei Miwa, Syun Sekimoto, Takumi Kubota, Satoshi Fukutani, Junichi Hori, Ryo Okumura, Akihiro Uehara, Toshiyuki Fujii, Hajimu Yamana, Ken Kurosaki, Hiroaki Muta, Yuji Ohishi, Shinsuke Yamanaka, Masayoshi Uno, Tsuyoshi Yaita and Kazuo Minato

[Dec. 14, 14:00–15:20, Meeting Room 102A](#)

[20\) A-2: Human resource development – II](#)

(Chair: Kiyonobu Yamashita (JAEA), Kohta Juraku (Univ. Tokyo))

392604 Nuclear FiRST Doctoral Training Centre - opportunities for international collaboration and training

Hajime Kinoshita (Univ. Sheffield), Neil Hyatt, Karl Travis, Francis Livens and Nick Bryan

392615 Educating the next generation of nuclear safeguards and security experts at Texas A&M University

William S. Charlton (Texas A&M Univ.), David Boyle, Sunil Chirayath, David G. Ford, Claudio A. Gariazzo, Craig Marianno, Kelley Ragusa, and Alexander Solodov

444319 INIS-based Japanese literature materials of bibliographic tools for human resource development

Katsuhiko Kunii (JAEA), Mayuki Gonda, Kiyoshi Ikeda, Shun Nagaya, Keizo Itabashi, Hidemitsu Nakajima and Yukinobu Mineo

449192 Advanced educational program for nuclear professionals with social scientific literacy: Collaborative initiative by UC Berkeley & Univ. of Tokyo and the Fukushima Accident
Kohta Juraku (Univ. Tokyo), Joonhong Ahn, Shinya Nagasaki, Cathryn Carson and Mikael Jensen

[Dec. 14, 16:20–18:00, Meeting Room 102A](#)

[5.2\) A-1: Transmutation – I](#)

(Chair: Hiroyuki Oigawa (JAEA), Pierre D'Hondt (SCK/CEN))

391772 (Invited) Present status for research and development on accelerator driven system in JAEA

Kazufumi Tsujimoto (JAEA), Hiroyuki

Oigawa, Yuji Kurata, Kenji Nishihara, Takanori Sugawara, Hayanori Takei, Shigeru Saito, Hironari Obayashi and Hiroki Iwamoto

386820 Subcritical molten salt reactor with fast/intermediate spectrum for minor actinides transmutation

Alexey M. Degtyarev (Kurchatov Inst.), Olga S. Feinberg, Fedor I. Karmanov, Oleg E. Kolyaskin, Andrey Yu. Kuznetsov, Andrey A. Myasnikov, Leonid I. Ponomarev, Mikhail B. Seregin and Stanislav F. Sidorkin

358113 Concept of the heavy water ma-burner with the neutral fuel matrix

Vladimir Seliverstov (ITEP), Viacheslav Konev, and Leonid Ponomarev

392654 Effects of burn-up, recovery efficiency and waste form on the environmental impact of fusion-fission transmutation systems

Christian DiSanzo (UCB) and Joonhong Ahn

360438 Validation of the burn-up code EVOLCODE 2.0 with PWR spent fuel compositions

Francisco Alvarez-Velarde (CIEMAT) and Enrique M. González-Romero

[Dec. 14, 8:30–10:30, Meeting Room 102B](#)

[11\) A-1: Spent Fuel Management – I](#)

(Chair: Kenya Suyama (JAEA), Joonhong Ahn (UCB))

358619 Developing the Technical Bases for Long Term Storage and Subsequent Transportation of Used Nuclear Fuel

Ken Sorenson (SNL), Brady Hanson, Felicia Duran, Paul McConnell, and Ruth Weiner

455416 Demonstration Test Program for Long-term Dry Storage of PWR Spent Fuel

Atsushi Otsuka (KEPCO), Masaaki Nakamura, Kazuhiko Katayama, Katsuhiko Shigemune, Takeshi Fujimoto, Tatsuya Ono, Toshihiro Matsuoka, and Daiichi Ishiko

391424 Spent fuel management in Tokai No.2 Power Station

Akihiro Miyata (JAPC), Tetsu Nagamine, and Takeshi Fujimoto

358302 Development of MSF-type cask for interim storage and transport of PWR spent fuel

Yoshiyuki Saito (MHI), Daiichi Ishiko,

- Toshihiro Matsuoka, Hiroki Tamaki, and Akio Kitada
- 447289 Experimental study of homogen process for lead-type multi layer cask and applicability of R-PUF for shock absorbing material
Yuko Sakamoto (Hitachi Zosen), Satoshi Ashida, Koji Kitamura and Jun Okada
- 392376 SCC evaluation test of multi-purpose canister
Masumi Wataru (CRIEPI), Koji Shirai, Junichi Tani, Hirofumi Takeda and Toshiaki Saegusa
- [Dec. 14, 10:50–12:30, Meeting Room 102B](#)
- [5.0\) A-1: Partitioning and Transmutation Program Overviews](#)
(Chair: Terry A. Todd (INL), Kazufumi Tsujimoto (JAEA))
- 387490 Comparison of different options for minor actinide transmutation in the frame of the french law for waste management
Christine Chabert (CEA), Alain Leudet, Anne Saturnin, Gilles Mathonniere, Guy-Marie Gautier, Bernard Boullis, Christine Coquelet-Pascal, Sophie GABRIEL, Emmanuel Gagnier, Richard Girieud, Jean-Louis Giroto, Hervé Hancock, Frédéric Jasserand, Frédéric Legee, Maryan Meyer, Jean-François Milot, Christine Poinot-Salanon, Pierre Sarrat, Luc Van Den Durpel, Thierry Duquesnoy, Marylise Caron-Charles, Bertrand Carlier, Jean-Claude Lefevre, Claude Garzenne, Patrick Barbrault, Frédéric Laugier, Benoit Gannaz
- 357849 Transmutation of americium and curium in a lanthanide matrix
Bronwyn Hyland (AECL), E. D Collins, R. J. Ellis, G. Del Cul and M. Magill
- 387481 Technology readiness of partitioning and transmutation toward closed fuel cycle in Japan
Kazumi Ikeda (MFBR), Masaki Kurata, Yasuji Morita, Kazufumi Tsujimoto Shin-ichi Koyama and Kazuo Minato
- 478580 Future nuclear fuel cycles: meeting sustainability through actinide recycling
Dominique Warin (CEA), Christophe Poinssot and Stéphane Bourg
- 407053 Safe, secure, and clean disposal of final nuclear wastes using “PyroGreen” strategies
HyoSook Jung (NUTRECK), Sungyeol Choi and Il Soon Hwang
- [Dec. 14, 14:00–16:00, Meeting Room 102B](#)
- [5.1\) A-1: Aqueous Partitioning Process – I](#)
(Chair: Dominique M. Warin (CEA), Yasuji Morita (JAEA))
- 356833 (Invited) A novel partitioning process aiming for waste minimization and valuable elements utilization**
Yuezhou Wei (Shanghai Jiao Tong Univ.), Ruiqin Liu, Tsuyoshi Arai and Harutaka Hoshi
- 357353 ACSEPT? the current European project on actinide recycling
Stephane Bourg (CEA), S. Bouvet, C. Caravaca, L. Cassayre, G. de Angelis, C. Ekberg, A.G. Espartero, A. Geist, Ph. Guilbaud, M. Harrison, F. Klaassen, R. Malmbeck, G. Modolo, N. Ouvrier, C. Rhodes and R. Taylor
- 356985 Novel combined An/Ln separation extraction process
Art Guelis (ANL), George Vandegrift, Peter Tkac and Gregg Lumetta
- 358081 Separation of Am, Cm and Ln by combination of two novel-diamide compounds at n-Dodecane and HNO₃ System
Yuji Sasaki(JAEA), Yoshihiro Kitatsuji, Yasuhiro Tsubata, Yumi Sugo, Noriko Shirasu and Yasuji Morita
- 357146 Properties Evaluation of isoheptyl-BTP/SiO₂-P extraction resin for potential direct separation of minor actinides from HLLW
Ruiqin Liu (Shanghai Jiao Tong Univ.), Yuezhou Wei, Yuanlai Xu, Shigekazu Usuda, Seongyun Kim, Hiromichi Yamazaki and Keizo Ishii
- 394959 Speciation of actinide(III) and lanthanide(III) complexes in organic and aqueous phase in the diamex-sanex process
Laurence Berthon (Univ. Pierre et Marie Curie), Manuel Miguiriditchian, Julie Muller, Laurent Couston, Nicole Zorz, Pascal Baron, Jean-Pierre Simonin

Dec. 14, 16:20–17:40, Meeting Room 102B

11) A-2: Spent Fuel Management – II

(Chair: Masumi Wataru (CRIEPI) and Kevin McMahon (SNL))

- 359873 On the issues of uranium reprocessed from high burnup fuels
Vladimir V. Artisyuk (Central Inst. Continuing Education and Training), Anton Dyachenko, Nikolay Balagurov
- 391973 Study on Reactivity Effect of Fission Products for Introducing Burnup Credit into the Criticality Safety Evaluation of Spent Nuclear Fuel
Kiyoshi Ohkubo(JAEA), Kenya Suyama, and Gunzo Uchiyama
- 503370 Sensitivity Analysis and Benchmarking of Low and Broad Energy Photon Measurements for Spent Nuclear Fuel
Julia M. Eigenbrodt (Texas A&M Univ.), William S. Charlton and Alexander A. Solodov
- 392626 Deep-Burn spent fuel: Graphite as a possible high-level waste matrix
Bret Patrick van den Akker (UCB) and Joonhong Ahn

Dec. 14, 8:30–9:50, Meeting Room 103

10) A-1: Waste management for advance fuel cycle

(Chair: Hitoshi Owada (RWMC))

- 392628 Changing the paradigm of disposing nuclear wastes
Jor-shan Choi (UCB)
- 357773 A calculation scheme to optimize the high-level waste geological disposal: an application to a transition scenario from PWR to FR
Hadrien Leroyer (EDF), A. Ribes¹, J. Le Mer, C. Garzenne, C. Péniguel and I. Rupp
- 360981 Effective Management of Radioactive Waste to Support Advanced Nuclear Fuel Cycle
Boonchawee Srimok (North Carolina State Univ.), Man-Sung Yim
- 391435 Storage and Disposal of High-level Radioactive Waste from Advanced FBR Fuel Cycle
Kenji Nishihara (JAEA), Hiroyuki Oigawa,

Shinichi Nakayama, Kiyoshi Ono, and Hiroki Shiotani

Dec. 14, 10:50–12:10, Meeting Room 103

6) A-1: Pyrochemical Reprocessing – I

(Chair: Tokuhiro Yamamoto (JAEA) and Gary R. Dyck (IAEA))

399195 (Invited) Advanced nuclear fuel cycle options

Jean-Paul Glatz (EC)

- 390943 A pyroprocess project management system using requirements engineering
Heeseong Park (KAERI), Ho Dong Kim, Eung Ho Kim
- 391291 Engineering-scale fuel cycle tests using simulated oxide/metal fuels with process equipment of semi-industrial design
Masatoshi Iizuka (CRIEPI), Kensuke Kinoshita, Yoshiharu Sakamura, Takatoshi Hijikata, Takanari Ogata, Tadafumi Koyama
- 370053 Pyrochemical reprocessing tests using a simulated spent oxide fuel
Yoshiharu Sakamura (CRIEPI) and Masaaki Akagi

Dec. 14, 14:00–15:40, Meeting Room 103

6) A-2: Pyrochemical Reprocessing – II

(Chair: Y. Sakamura (CRIEPI) and M. Kormilitsyn (ROSATOM))

448054 (Invited) On the utilization of the divalency of actinides and lanthanides for their effective separation

Hajimu Yamana (Kyoto Univ.), Kazuhito Fukasawa, Toshiyuki Fujii, Takayuki Nagai, and Akihiro Uehara

- 386112 Electrorefining test of U-Pu-Zr alloy fuel prepared pyrometallurgically from MOX
Shinichi Kitawaki (JAEA), Akira Nakayoshi, Mineo Fukushima, Yoshiharu Sakamura, Tsuyoshi Murakami, Naoyuki Akiyama
- 472379 A comprehensive electrorefining process simulation model for pyroprocessing of spent fuel
Jun Li (Univ. North Carolina), Man-sung Yim and David Mcnelis
- 474358 Development of Solvent Regeneration Process
Riley M Cumberland (North Carolina State Univ.) and Man-Sung Yim

357089 Uranium purification process in the “FLUOREX” system - Adsorption mechanism of MoF₆ on MgF₂ -

Daisuke Watanabe (Hitachi), Hiroki SATO, Akira Sasahira, Kuniyoshi Hoshino, and Fumio Kawamura

[Dec. 14, 16:20–18:00, Meeting Room 103](#)

[6\) B-1: FaCT – Japanese Advanced Reprocessing Technology](#)

(Chair: Tadafumi Koyama (CRIEPI) and Jean-Paul Glatz (EU))

392233 FaCT Phase-I evaluation on the advanced aqueous reprocessing process (1) – Summary of the Advanced Reprocessing Technology Development –

Tadahiro Washiya (JAEA), Tsutomu Koizumi and Tomozo Koyama

392040 FaCT Phase-I evaluation on the advanced aqueous reprocessing process (2) – Development of mechanical disassembly and short stroke shearing systems for FBR fuel reprocessing –

Masayuki Takeuchi (JAEA), Toru Kitagaki, Hidetoshi Higuch, Mineo Fukushima, Tadahiro Washiya and Tsuguyuki Kobayashi

392227 FaCT Phase-I evaluation on the advanced aqueous reprocessing process (3) – Highly effective dissolution technology for FBR MOX fuels –

Hiroto Ikehuchi (JAEA), Kiyomichi Katsurai, Yuichi Sano and Tadahiro Washiya

391547 FaCT Phase-I evaluation on the advanced aqueous reprocessing process (4) – Solvent extraction simplified for FBR fuel reprocessing –

Yoshikazu Koma (JAEA), Hideki Ogino, Atsushi Sakamoto, Hiroki Nakabayashi, Atsuhiko Shibata, Masaumi Nakahara, Tadahiro Washiya

391745 FaCT Phase-I evaluation on the advanced aqueous reprocessing process (5) – Research and development of uranium crystallization system –

Atsuhiko Shibata (JAEA), Kimihiko Yano, Yuji Sanbonmatsu, Masaumi Nakahara,

Masayuki Takeuchi, Tadahiro Washiya, Masanobu Nagata and Takahiro Chikazawa

[Dec. 14, 8:30–10:30, Meeting Room 104](#)

[10\) B-1: Waste treatment and analysis](#)

(Chair: Yaohiro Inagaki (Kyushu Univ.))

396120 Radioactive waste treatment in tokai reprocessing plant

Osamu Yamaura (JAEA), Kentaro Kobayashi

366872 High-temperature conditioning of spent ion-exchange resins

Nikolai D. Musatov (ISTC), Aleksey S. Mityanin, Olga M. Khimchenko and Anastasia V. Lebedeva

391844 Treatment of radioactive waste salt (LiCl, LiCl-KCl) by de-chlorination using inorganic composite, SAP (SiO₂-Al₂O₃-P₂O₅)

Hwanseo Park (KAERI), Inhak Cho, Suna-Ahn, Intae Kim, Yongzun Cho and Hansoo Lee

384110 Adsorption of molybdenum in nitric acid solution by using an iron-based adsorbent

Gjergj Dodbiba (Univ. Tokyo), Toyohisa Fujita, Takahiro Kikuchi, and Takaumi Kimura

418193 Recovery of cesium from nuclear waste using hollow fibre supported liquid membrane containing calix[4]arene-bis-(2,3-naphtho)-crown-6

Pankaj Kandwal (BARC), Prasanta K. Mohapatra*, Seraj A. Ansari and Vijay K. Manchanda

386232 Measurement of isotopic composition of lanthanides in reprocessing process solutions by high-performance liquid chromatography with inductively coupled plasma mass spectrometry (HPLC/ICP-MS)

Masanori Okano (JAEA), Shu Jitsukata, Takehiko Kuno and Keiji Yamada

[Dec. 14, 10:50–12:10, Meeting Room 104](#)

[10\) C-1: Iodine waste issues](#)

(Chair: Hitoshi Owada (RWMC))

357355 Effects of aging on iodine capture by silver-exchanged mordenite

Robert T. Jubin (ORNL), D. W. Ramey, B. B. Spencer and K. K. Anderso

359801 Synthesis of sodalite from iodine loaded silver-zeolite

Yusuke Tanada (Nagoya Univ.), Daisuke Hirabayashi, Kayo Sawada and Youichi Enokida

391339 Migration behavior of iodine in compacted bentonite

Yoshihiko Matsuki (Kyushu Univ.), Kazuya Idemitsu, Daisuke Akiyama, Yaohiro Inagaki, Tatsumi Arima

446834 Temperature dependence of aqueous dissolution of silver iodide under reducing condition with FeCl₂ solution

Masahiko Tada (Kyushu Univ.), Y. Inagaki, K. Idemitsu, T. Arima, O. Kato and T. Sakuragi

[Dec. 14, 14:00–16:00, Meeting Room 104](#)

[10\) D-1: Waste forms and related issues, Waste storage and geological disposal](#)

(Chair: Yasuhisa Ikeda (Tokyo Inst. Technol.))

398435 Characterization of magnesium phosphate ceramics incorporating off-gas filters

Jae Hwan Yang (KAERI), Chang Hwa Lee, Chul Min Heo, Kweon Ho Kang

443937 The development and application of calcium aluminate phosphate cement for the encapsulation of low- and intermediate-level radioactive waste in the UK

Paul Swift (Univ. Sheffield), Hajime Kinoshita, and Nicholas Collier

355738 Development of equipments for remote dismantling of joule heated ceramic melter

Kiran T. Badgujar (BARC), Sachin G. Usarkar, Binu Kumar and K. N. S. Nair

365822 Safe thermal conditions during dry spent nuclear fuel storage

Svitlana Alyokhina (National Academy Sci. Ukraine)

391486 Current status of the demonstration test of underground cavern-type disposal facilities

Kenji Terada (RWMC), Yoshihiro Akiyama, Nobuaki ODA, Takahiro Nakajima, and Tsutomu Yada

392536 Thermal analysis of high level waste geological disposal module with the Thermal Code SYRTHES

Christophe Peniguel (EDF), Isabelle Rupp, Hadrien Leroyer and Matthieu Guillaud

[Dec. 14, 16:20–17:40, Meeting Room 104](#)

[10\) E-1: Remediation and decontamination techniques](#)

(Chair: Kazuya Idemitsu (Kyushu Univ.))

449436 Development of real-scale washing-electrokinetic decontamination equipment for uranium and cesium removal from soil

Gye-Nam Kim (KAERI), Dong-Bin Shon, Ki-Won Lee and Jei-Kwon Moon

405150 Basic study on decontamination of TRU waste with cerium-mediated electrolytic oxidation method

Jun-ichi Ishii (JAEA), Fuyumi Kobayashi, Shoji Uchida, Masato Sumiya and Miki Umeda

348945 Waste cleaning using CO₂-acid microemulsion Kwangheon Park (Kyung Hee Univ.), Jinhyun Sung, Moonsung Koh and Minsu Ju

447065 Application of hydrotalcites for remediation of Beverley in-situ recovery uranium mine barren lixiviant

Grant Douglas (CSIRO), Laura Wendling, Kayley Usher and Peter Woods

[Dec. 14, 8:30–10:30, Meeting Room 105](#)

[9\) A-1: Vitrification – I](#)

(Chair: Yuuji Tanaka (JNFL))

360463 A review of French vitrification industrial achievements

Catherine Veyer (AREVA), François Drain, Gilles Perrier, Philippe Mahut, Anthony Prod'Homme, Eric Chauvin, Sandrine Naline, Christian Ladirat, Jacques Lacombe and Jean-François Hollebecque

360907 Industrial start-up of a cold crucible induction melter for high level waste vitrification in an existing hot cell

Jerome Brueziere (AREVA) and François Drain

363232 Academic research for french industrial HLW vitrification

Sophie Schuller (CEA), Frédéric. Angel, Thibault. Charpentier, Jean Christophe Piroux, Bruno Lorrain, Olivier Pinet, Christophe. Girolid and Sandrine Naline

- 387290 Thermal flow analysis for design and development of advanced vitrification melter
Yoshikatsu Tochigi (IHI), Toyonobu Nabemoto, Hiroaki Fujiwara, Shinsuke Matsuno, Kouhei Otake, Atsushi Yamazaki and Eiji Ochi
- 391251 Material strength test at elevated temperature and preliminary evaluation of structural integrity of pouring nozzle of advanced vitrification melter
Yoshin Morigaki (IHI), Toshiyuki Ito, Hajime Koikegami, Hiroshi Sugiyama, Noriyasu Moriya, Yuji Tanaka and Eiji Ochi
- 442223 Mock-up test for development of an advanced melter
Hiroshi Sugiyama (JNFL), Noriyasu Moriya, Yuji Tanaka, Eiji Ochi, Masatoshi Murata, Hiroshi Ikai, Akito Yamasaki, Toshiyuki Ito and Hajime Koikegami
- 441526 Development of new method for yellow phase suppression by redistribution of frit components
Yoshiyuki Miura (JNFL), Norio Kanehira, Eiji Ochi, Toshiro Oniki, Akito Yamasaki, Yoshihiro Endo, Ian L. Pegg, Hao Gan, Keith S. Matlack, Innocent Joseph and Bradley W. Bowan

Dec. 14, 10:50–12:30, Meeting Room 105

9) B-I: Reprocessing technology– I

(Chair: Takashi Matsuda (JNFL), Jérôme Brueziere (AREVA))

- 354559 Development of solvent regeneration process
N K Pandey (IGCAR), Vishnu. Annd, R. Rajev, C. V. Joyakin, P. Velavendan, U. Kamachi Mudali and R. Natarajan
- 355213 Simplified risk assessment based on accident categories at Tokai Reprocessing Plant
Shinichi Nagaoka (JAEA), Michihiko Ishida, Sadamu Kanamori, and Shinichiro Hayashi
- 471879 Improvement of risk assessment method for application of risk information at Rokkasho Reprocessing Plant
Yoshikazu Tamauchi (JNFL), Kazumi Takebe and Yasunori Yamanaka
- 390923 Physiochemical properties of tributyl phosphate/dodecane/nitric acid systems

Amber Dawn Wright (Univ. Nevada), Patricia Paviet-Hartmann

- 391000 Modernization of SNF WWER-440 reprocessing at RPA "Mayak"
Yury S. Fedorov (FSUE RPA), Sergey N. Kirillov, Dmitry N. Kolupaev, Mikhail V. Logunov, Evgeny G. Kudryavtsev, Anjilika V. Khaperskaya, Oleg P. Anisimov, Boris Ya. Zilberman and Dmitry V. Ryabkov

Dec. 14, 14:00–16:00, Meeting Room 105

9) C-1: Corrosion in reprocessing process – I

(Chair: Naoki .Surugaya (JAEA))

- 357450 Corrosion evaluation of uranyl nitrate solution evaporator and denitrator in Tokai Reprocessing Plant
Atsushi Yamanaka (JAEA), Kowa Hashimoto, Toyomi Uchida, Yoji Shirato, Toshihiko Isozaki and Yoshinobu Nakamura
- 360006 Corrosion issues about the materials of the French fuel reprocessing
Rapahel Robin (CEA), Fanny Balbaud, Pierre Fauvet, Nathalie Gruet and Benoit Gwinner
- 397644 Leakage of high active liquid waste into the thermowell of HALW evaporator (1/4): Overview
Kosuke Watanabe (JNFL)
- 444986 Leakage of high active liquid waste into the thermowell of HALW evaporator (2/4): Investigation of the causes
Tetsunari Ebina (JNFL), Akira Mitani, Yoichi Kano and Takashi Itagaki
- 448646 Leakage of high active liquid waste into the thermowell of HALW evaporator (3/4) Causes of the high temperature at the bottom of high active liquid waste evaporator and countermeasures
Hideaki Torihara (JNFL), Takashi Tamura, Kosuke Watanabe, Takashi Itagaki
- 446360 Leakage of high active liquid waste into the thermowell of HALW evaporator (4/4): Repair work for leakage prevention
Tomohiro Ishida (JNFL), Akira Mitani, Hideto Adachi, Hideaki Torihara, Kosuke Watanabe, Takashi Itagaki
- 444985 Corrosion behavior of extra high purity stainless steel in boiling nitric acid with Cr(VI)

Shigeru Yamazaki (JNFL) , Tetsunari Ebina
and Yoichi Kano

Dec. 14, 16:20–18:00, Meeting Room 105

9) C-2: Corrosion in reprocessing process – II

(Chair: Naoki .Surugaya (JAEA))

392621 Process control and glass product quality
assessment applied in the VEK Plant

Wolfgang Grünewald (KIT), Markus Plaschke,
Günther Roth, Winfried Tobie, Karlheinz
Weiss, Siegfried Weisenburger, Arno
Stollenwerk, Rene Gauthier and Alexander
Eissler

392622 Application of advanced large-scale ceramic
melter technology for HLLW vitrification

Wolfgang Grünewald (KIT), Guenther Roth,
Winfried Tobie, Siegfried Weisenburger,
Karlheinz Weiss

359460 Mechanism of formation of needle-shaped
crystal of ruthenium dioxide in the vitrification
of highly-radioactive liquid waste

Takahiro Shimada (Nagoya Univ.), Kayo
Sawada, Daisuke Hirabayashi and Youichi
Enokida

392619 Hot operation performance of the German
vitrification plant VEK

Wolfgang Grünewald (KIT), Günther Roth,
Winfried Tobie, Joachim Fleisch, Franz-Josef
Schmitz and Martin Weishaupt

399779 Fundamental studies for the establishment of
advanced vitrification process in Tokyo
Institute of Technology

Kenji Takeshita (Tokyo Inst. Technol.),
Toshio Maruyama, Tetsuji Yano, Hiroshige
Kikura, Kazuo Utsumi, Akira Inagaki and Eiji
Ochi

439645 Investigation for picking up a brick from the
melter

Nobuyuki Hayashi (JNFL), Wataru Koizumi
and Tooru Ino

Dec. 14, 8:30–9:30, Meeting Room 301A

1&2) A-1: Nuclear Strategy

(Chair: Toshio Wakabayashi. C. Garzenne)

451660 Overview of Fast Reactor Cycle System
Technology Development Project (FaCT)
Phase 1 and future direction

Yoshiaki Ieda (JAEA), Kiyoshi Ono, Hitoshi

Negishi, Hiroki Shiotani, Yoshihiro Nagaoki
and Takashi Namba

372570 Analysis of nuclear energy strategy for
massive CO₂ mitigation pathways with a
long-term global energy model

Saurabh Sharma (Univ. Tokyo), Yoshifumi
Hosoya, Ryoichi Komiya and Yasumasa
Fujii

358216 Innovative global architecture for sustainable
nuclear power

Vladimir Ivanovich Usanov (IAEA), Hideyuki
Hayashi

Dec. 14, 10:50–12:10, Meeting Room 301A

2) B-1: Sustainability

(Chair: Nariaki Uto (JAEA), Kemal O. Pasamehmetoglu
(INL))

392523 Advanced nuclear fuel cycle modeling- an
expanded MESSAGE V Framework

Elena Fedorova (NNRU MEPHI), A. A.
Andrianov and Yu. A. Korovin

360017 Status of the international project on
innovative nuclear reactors and fuel cycles

Randy Beaty (IAEA), Peter Gowin and
Vladimir Usanov

449068 A Prospective scenario of the french nuclear
fleet growth based on sodium cooled fast
reactor technology

Claude Garzenne (EDF), Joël Le Mer, David
Lemasson, and Manh-Hung Hoang

391144 Pebble bed modular reactors versus other
generation technologies: Costs and challenges
for South Africa

Emily Grubert (Univ. Texas), Brian Parks,
Erich Schneider and Srinivas Sekar

Dec. 14, 14:00–16:00, Meeting Room 301A

4) A-1: Fuel cycles for LWR to FR transition – I

(Chair: Yong-Joon Choi (OECD/NEA), Bronwyn Hyland
(AECL))

**355737 (Invited) Flexible LWR-to-FBR transition
fuel cycle system**

**Tetsuo Fukasawa (Hitachi-GE), Kuniyoshi
Hoshino, Masahide Takano, Seichi Sato,
and Yoichiro Shimazu**

400843 Recycling with or without fast breeders?

Dominique Mockly (AREVA)

357120 Analysis of Russian transition scenarios to innovative nuclear energy system based on thermal and fast reactors with closed nuclear fuel cycle
V. S. Kagramanyan (IPPE), E. V. Poplavskaya, V. V. Korobeynikov, A. G. Kalashnikov, A. L. Moseev and V. E. Korobitsyn

395710 Introduction to nuclear supply chain management: In the context of fuel cycle strategy from LWR cycle system to FR cycle system
Hiroki Shiotani (JAEA), Kiyoshi Ono, Naoto Yasumatsu, Masanori Heta and Takashi Namba

360942 Comparison of different scenarios for the deployment of fast reactors in France - Results obtained with COSI
Christine Coquelet-Pascal (CEA), Maryan Meyer, Richard Girieud, Romain Eschbach, Christine Chabert, Claude Garzenne, Patrick Barbrault, Luc Van Den Durpel, Thierry Duquesnoy, Marylise Caron-Charles, Bertrand Carlier and Jean-Claude Lefevre

355754 Validation of physical models used in scenarios studies by coupling COSI with ERANOS Package
Christine Coquelet-Pascal (CEA) and Charlotte Kieffer

[Dec. 14, 16:20–18:00, Meeting Room 301A](#)

4) B-1: Reprocessing technology for the transition period

(Chair: Rosaura Ham-Su (AECL), Tatsuro Matsumura (JAEA))

391320 Actinides recovery from irradiated MOX fuel by pyrochemical reprocessing
Tetsuya Kato (CRIEPI), Tsuyoshi Murakami, Koichi Uozumi and Tadafumi Koyama

391103 Development of advanced reprocessing system "FLUOREX"
Kuniyoshi Hoshino (Hitachi-GE), Daisuke Watanabe, Akira Sasahira, Masanobu Nagata, Takahiro Chikazawa, Yuichi Sano and Fumio Kawamura

391872 A concept of Toshiba Hybrid Reprocessing Process
Takashi Omori (Toshiba), Akira Ikeda, Shingo Masaki, Koji Mizuguchi, Hisao Oomura,

Shinichi Makino, Tsutomu Takeuchi, Michitaka Saso, Junichi Taga and Reiko Fujita

358569 Development of oxalate precipitation process in Toshiba Hybrid Reprocessing Technology
Yuya Takahashi (Toshiba), Hisao Oomura, Shinichi Makino, Koji Mizuguchi, Shohei Kanamura, Shingo Masaki, Takashi Omori, Junichi Taga and Reiko Fujita

359469 Study on reprocessing plant during transition period from LWR to FBR
Minefumi Matsui (MHI), Masashi Nishimura, Yasuhiro Ishida, Takashi Shimada, Yukihide Mori and Kazuhiko Kuroda

[Dec. 14, 8:30–10:30, Meeting Room 301B](#)

7) A-1: Advanced Fuel Development

(Chair: Jack B. Henderson (NETZSCH), Yuji Arita (Univ. Fukui))

392432 Development of dispersion type fuel elements for floating nuclear power plants (FNPP)
G. V. Kulakov (VNIINM), A. V. Vatulin, S. A. Ershov, Y. V. Konovalov, A. V. Morozov, A. M. Savchenko, V. I. Sorokin, V. V. Fedotov, A. E. Novoselov, V. A. Ovchinnikov and V. Y. Shishin

448941 Prospect of increases the efficiency of nuclear energy production in advanced light water reactors
Konstantin Proskuryakov (MPEI), Svyatoslav Belikov and Konstantin Novikov

519731 Development of composite zirconium materials with increased level of properties and protective layers for new generation LWR active core components
Svetlana Ivanova (MEPhI), Eduard Glagovsky, Vladislav Orlov, Igor Shlepov, Konstantin Nikonov and Vyacheslav Rozhko

338608 Achievement of higher burn-up and proliferation protection of LWR Fuel by introduction of ^{231}Pa and ^{237}Np
Gennady Kulikov (MEPhI), Evgeny Kulikov, Eduard Kryuchkov and Anatoly Shmelev

392075 Neutronic characteristics comparison of advanced burnable poison in high burnup LWR fuel
Koichi Ieyama (Osaka Univ.), Kosuke Shimozato and Takanori Kitada

358351 Innovate Pin Design for Sphere-Pac Fuel in Sodium Cooled Fast Reactors
Manuel Alexandre Pouchon(PSI), Bojan Niceno, and Jiří Křepel

[Dec. 14, 10:50–12:30, Meeting Room 301B](#)

[7\) B-1: Advanced Oxide Fuel – I](#)

(Chair: Pascal Baron (CEA), Masayoshi Uno (Univ. Fukui))

384817 (Invited) Chemical states of fission products and actinides in irradiated mixed oxide fuels for fast reactors

Shinsuke Yamanaka (Osaka Univ.), Kosuke Tanaka, Masahiko Osaka, Hiroaki Muta, Yuji Ohishi, Ken Kurosaki

364744 The impact of O/M on the sinterability and thermophysical properties of ceria

J. B. Henderson (Netzsch), K. J. McClellan and A. T. Nelson

391456 Melting temperature evaluation for burnt fast reactor (U, Pu)₂O₃ fuels

Takashi Hirosawa (JAEA), Isamu Sato, Kosuke Tanaka and Shuhei Miwa

392582 Calcined resin microspheres pelletization (CRMP): A novel process for sintered metallic oxide pellets synthesis

Sébastien Picart (CEA), Elodie Picart, Thibaud Delahaye, Jacques Delahaye, Isabelle Delahaye, Nathalie Delahaye, Stéphane Grandjean, Philippe Blanchart, André Blanchart and Pascal Blanchart

359362 Fundamental research on behavior of helium in MA-bearing oxide fuel

Yasuo Arai (JAEA), Hiroyuki Serizawa, Kunihiisa Nakajima, Masahide Takano, Isamu Sato, Kozo Katsuyama, Hiroshi Akie, Motoe Suzuki, Noriko Shirasu, Yoshinori Haga and Mitsuo Akabori

[Dec. 14, 14:00–16:00, Meeting Room 301B](#)

[7\) C-1: Advanced Metal Fuel – I](#)

(Chair: Jun Hwan Kim (KAERI), Kenta Inagaki (CRIEPI))

395795 State-of-the art PIE capabilities in support of science-based fuel development

Kemal O Pasamehmetoglu (INL)

391616 Irradiation experiment on minor actinide-containing metal fuels to 10 at.% Burnup

Hirokazu Ohta (CRIEPI), Takanari Ogata, Tadafumi Koyama, Dimitrios Papaioannou, Vincenzo V. Rondinella, Jean-Paul Glatz, Marc Masson and Jean-Luc Paul

357822 Lanthanide migration in fast-reactor U-Zr alloy fuel

Yeon Soo Kim (ANL), G. L. Hofman, T. Wiencek, E. O'hare, J. Fortner and T. Ogata

392457 Experience in developments and tests of high-dense metal fuel applicability in fast reactors

Yulian Golovchenko (RIAR)

391852 Fabrication of BaI₂-ZrH_{2-x} composite for I-129 transmutation target

Yoshiaki Tachi (JAEA) and Toshio Wakabayashi

362460 Fabrication of U-Pu-Zr metallic fuel elements for irradiation test at Joyo

Kinya Nakamura (CRIEPI), Takanari Ogata, Hironobu Kikuchi, Takashi Iwai, Kunihiisa Nakajima, Tetsuya Kato, Yasuo Arai, Tadafumi Koyama, Wataru Itagaki, Tomonori Soga and Takafumi Aoyama

[Dec. 14, 16:20–18:00, Meeting Room 301B](#)

[7\) C-2: Advanced Metal Fuel – II](#)

(Chair: Yeon Soo Kim (ANL), Kinya Nakamura (CRIEPI))

392152 Reaction of rare-earth elements with cladding material for metallic fuel FBR

Kenta Inagaki (CRIEPI), Kinya Nakamura, Takanari Ogata and Tomoyuki Uwaba

359956 Study of corrosion behavior of chromium content of stainless steels in LBE environments using cellular automaton model

Kuan-Che Lan (Tsinghua Univ.), Yitung Chen, Tsung-Kuang Yeh, Tzu-Chen Hung, Ming-Lou Liu and Ge-Ping Yu

345895 Tellurium corrosion of nickel-based alloys in fuel salts

Victor Vladimir Ignatiev (Kurchatov Inst.) and Alexander Surenkov

357008 Development of barrier technology for preventing fuel-cladding chemical interaction (FCCI)

Junhwan Kim (KAERI), Ho Jin Ryu, Byoung

Oon Lee, Chong Tak Lee, Chan Bock Lee, and
Young Soo Yoon

392554 Modeling of fission-gas bubble size
distribution in U-Mo metal alloys

Di Yun (ANL), Jeffery Rest and Abdellatif M.
Yacout

Thursday, December 15, 2011

Dec. 15, 8:30–10:30, Meeting Room 201

Panel III: Fostering of Personnel

(Chair: Hirotake Moriyama (Kyoto Univ.), Joonhong Ahn (UCB))

- Pa-III-1 European network: Jean-Paul Glatz (ITU)
- US University program: Joonhong Ahn (UCB)
- Pa-III-3 Chinese Status: Wangsuo Wu (Lanzhou Univ.)
- Pa-III-4 Japanes Status: Kazuo Minato (JAEA)
- IAEA Status: Yanko Yanev (IAEA)
- Summary: Hirotake Moriyama (Kyoto Univ.)

Dec. 15, 10:50–12:30, Meeting Room 201

Panel IV: Fostering of Personnel – Young Panel

(Chair: Hajimu Yamana (Kyoto Univ.), I. S. Hwang (SNU))

- Pa-IV-1 Keynote: Tetsuo Sawada (Tokyo Inst. Technol.)
- Group presentation
- Group discussion
- Discussion among attendees

Dec. 15, 16:20–17:00, Meeting Room 201

Closing

(Chair: Hirotake Moriyama (Kyoto Univ.))

- GLOBAL 2011 Summary: Tadashi Inoue (CRIEPI, Program Committee Chair)
- GLOBAL 2013 Introduction: David Hill and Terry Todd

Dec. 15, 8:30–9:50, Meeting Room 202

19) A-1: Public Trust

(Chair: Yuko Kani (Hitachi), Duchduen Bhanthumnavin (NIDA))

- 358066 Trust in the government, gender, and technical knowledge in college students as correlate of the three dimensions of attitude towards NPP establishment in Thailand
Duchduen Bhanthumnavin (NIDA) and Vutthi Bhanthumnavin
- 389295 New public commons and network of nuclear site regions for the post-Fukushima Accident re-vitalization
Tetsuo Sawada (Tokyo Inst. Technol.)
- 358310 Does nuclear power-related facility siting always lower the local property values?: comparative analysis among the sites in Japan

Fumihiko Yamane (Kobe Univ.), Hideaki Ohgaki and Kota Asano

356663 economics for managing nuclear energy in Japan

Kazuaki Yanagisawa (JAEA)

Dec. 15, 10:50–11:50, Meeting Room 202

3) A-1: Fuel Cycle Properties

(Chair: Hideaki Mineo (JAEA), Fausto Franceschini (WH))

- 401927 Illuminating decision drivers using a decision analysis framework for the u.s. nuclear fuel cycle
Lara Pierpoint (MIT)
- 399423 A back-to-front approach to used nuclear fuel (UNF) management optimization
Michael Wenner (WH), Fausto Franceschini, Bojan Petrovic, Mario Carelli, Ed Lahoda
- 358318 Extending the continuous fuel cycle model with additional nuclides and constraints
Stuart Alexander Christie (Phys. Nucl. Reactors), Danny Lathouwers, Jan Leen Kloosterman and Tim van der Hagen

Dec. 15, 14:00–16:00, Meeting Room 202

3) B-1: Other Cycle Aspects

(Chair: Kiyoshi Ono (JAEA), Kathryn A. McCarthy (INL))

- 361140 Technological options and estimated life cycle cost of electricity for light water reactor in the case of India
Saurabh SHARMA (Indian Inst.Technol.), Anoop Singh, M. S. Kalra, Yasumasa Fujii, and Ryoichi Komiyama
- 386816 Economic modelling of closed nuclear fuel cycle with fast reactors
Mikhail Radchenko (VNIINM), Yury Matyunin, Ikar Salakhov, Olga Shmidt and Alexander Tuzov
- 394161 The economics of re-enrichment of depleted uranium tails in the US
Christopher Varella (Univ. Texas) and Mark R. Deinert
- 358834 Establishment of research and development priorities regarding the geologic disposal of nuclear waste in the United States and strategies for international collaboration
Kevin A McMahon (SNL), Peter Swift, Mark

Nutt, Mark Peters, Jeff Williams, Michael Voegele and Jens Birkholzer

464821 Comparative analysis of uranium and thorium fuel cycles in a lead-cooled fast reactor from the perspective of safety and waste management

Carlo Fiorina (Politecnico di Milano), Fausto Franceschini, Jiri Krepel and Konstantin Mikityuk

391324 Fuel cycle covariance of plutonium and americium separations to repository capacity using information theoretic measures

Anthony Michael Scopatz (Univ. Texas), Jun LI, Erich Schneider and Man-Sung Yim

[Dec. 15, 8:30–10:10, Meeting Room 101A](#)

[8\) A-1: Traveling Wave Reactors, Nuclear Transmutation](#)

(Chair: Hajime Kinoshita (Univ. Sheffield), Hangbok Choi (General Atomics))

390765 Sodium cooled CANDLE reactor equipped with reactivity control mechanism

Naoyuki Takaki (Tokai Univ.), Hiroki Watanabe, Azuma Namekawa and Hiroshi Sekimoto

392011 Numerical studies of radial fuel shuffling in a travelling wave reactor

Dalin Zhang (KIT), Xue-Nong Chen, Fabrizio Gabrielli, Andrei Rineiski, and Werner Maschek

392450 Theoretical modeling of traveling wave reactor fed with non-irradiated and pre-irradiated U238 fuels

Xue-Nong Chen (KIT), Dalin Zhang and Werner Maschek

400598 A new fast reactor core concept for efficient uranium utilization without fuel exchange

Mitsuaki Yamaoka (Toshiba), Yasuyuki Moriki, Hiroshi Matsumiya and Kotaro Nakada

468552 Nuclear transmutation through laser Compton scattering gamma ray

K. Imasaki (Osaka Univ.), D. Li, Y. Izawa, S. Miyamoto, K. Horikawa, S. Amano and T. Mochizuki

[Dec. 15, 10:50–12:30, Meeting Room 101A](#)

[8\) B-1: Inert Matrix Fuels, Thorium Fuels](#)

(Chair: Ken Kurosaki (Osaka Univ.), C. D. DiSanzo (UCB))

392575 (Invited) Ceramics or cements? - Alternative cement systems and beyond

Hajime Kinoshita (Univ. Sheffield), Paul Swift, Beatriz Carro-Mateo, Nick Collier and Neil Milestone

394155 Burnup dependent reactivity coefficients for inert matrix fuels

Geoff Recktenwald (Univ. Texas) and Mark Deinert

394159 Effect of axial erbium doping on temperature profiles in inert matrix fuels

Geoff Recktenwald (Univ. Texas) and Mark Deinert

390851 GTBR- Graphite thorium breeder reactor a possible thermal breeder

V. Jagannathan (BARC), Argala Srivastava, Naoyuki Takaki, Suhail Ahmad Khan, Usha Pal and R. Karthikeyan

390916 Preliminary study of accident analysis of heavy water cooled thorium breeder reactor

Yanti Yulianti (Tokai Univ.), Zaki-SU'UD and Naoyuki Takaki

[Dec. 15, 14:00–16:00, Meeting Room 101A](#)

[8\) C-1: Fast reactors](#)

(Chair: Naoyuki Takaki (Tokai Univ.), Mark Deinert (Univ. Texas Austin))

359893 Effects in reactivity coefficients of the presence of MA in sodium fast reactors

Francisco Alvarez-Velarde (CIEMAT), Francisco Martin-Fuertes, Sara Perez-Martin

357188 Feasibility of recycling a long-life gas-cooled fast reactor

Hangbok Choi (GA) and Robert W. Schleicher

358474 Modified-open fuel cycle performance with breed-and-burn advanced reactor concepts

Florent Heidet (ANL), Taek K. Kim and Temitope A. Taiwo

392452 Concept of MBIR testing reactor provision with fuel

Vladislav Kisly (RIAR), Mikhail Svyatkin, Igor Zhemkov, Sergei Vavilov, Yulian Golovchenko and Elena Fokeeva

390818 Effect of channel wall conductance on the performance characteristics of self-cooled

liquid metal fusion reactor blankets
Amit K Srivastava (Indian Inst. Technol. Kanpur), Abdul B. Ahmad, D. Nath and M. S. Kalra

[Dec. 15, 8:30–10:30, Meeting Room 102A](#)

[5.2\) A-2: Transmutation – II](#)

(Chair: Kazumi Ikeda (MFBR), D. Wootan (PNNL))

- 357422 Fast reactor core concepts for minor actinide transmutation using solid moderator
Koji Fujimura (Hitachi), Satoshi Itooka and Takeshi Nitawaki
- 357351 Transmutation abilities of a 3600 MWth SFR core
Laurent Buiron (CEA), Bruno Fontaine and Michel Pelletier
- 360949 Americium-bearing blanket separate-effect experiments: MARIOS and DIAMINO irradiations
Syriac Bejaoui (CEA), Elio D'agata, Ralph Hania, Thierry Lambert, Stéphane Bendotti, Cédric Neyroud, Nathalie Herlet and Jean-Marc Bonnerot
- 359555 Optimizing pin layout in transmutation rate of long-life FP with deuteride moderator for fast reactors
Tsugio Yokoyama (Toshihba), Toshio Wakabayashi, Yoshiaki Tachi and Akito Nagata
- 392629 Transmutation of americium in sodium cooled fast reactors
Youpeng Zhang (Kungliga Tekniska Högskolan) and Janne Wallenius
- 365714 Transmutation and recycling of actinides without and with Th-U support in molten salt reactors
Olga Feinberg (Kurchatov Inst.) and Victor Ignatiev

[Dec. 15, 8:30–10:30, Meeting Room 102B](#)

[5.1\) A-2: Aqueous Partitioning Process – II](#)

(Chair: Yuezhou Wei (SJT Univ.), Tomozo Koyama (JAEA))

- 472055 (Invited) Managing transplutonium actinides in advanced nuclear fuel cycles**
Ken L. Nash (Washington State Univ.)

391723 Advanced-ORIENT Cycle, its scientific progress and prospect for engineering feasibility
Shin-ichi Koyama (JAEA), Isao Yamagishi, Tatsuya Suzuki, Masaki Ozawa, Reiko Fujita, Ken Okada, Katsuyoshi Tatenuma, Hitoshi Mimura and Yasuhiko Fujii

- 417457 Extraction of neptunium by N,N,N,N-tetraoctyl diglycolamides
Prasanta K. Mohapatra (BARC), Seraj A. Ansari, Rajesh B. Gujar and Vijay K. Manchanda
- 392647 Decontamination of spent DIAMEX solvents containing contaminants difficult to strip
Kamil V. Mares (Czech Tech. Univ.), Jan John and Ferdinand Sebesta
- 392568 Alternative methods for degradation studies by alpha radiolysis
Jeremy Pearson (Univ. California Irvine), Oliver Jan, George E. Miller and Mikael Nilsson
- 392063 Theoretical study for laser isotope separation of heavy-element molecules in a thermal distribution
Leo Matsuoka (JAEA), Akira Ichihara, Masashi Hashimoto and Keiichi Yokoyama

[Dec. 15, 10:50–12:10, Meeting Room 102B](#)

[5.1\) A-3: Aqueous Partitioning Process – III](#)

(Chair: Ken L. Nash (Washington State Univ.), Shin-ichi. Koyama (JAEA))

- 391863 Development of a separation process for trivalent actinides and rareearths by extraction with N,N,N',N'-tetradodecyldiglycolamide with the aid of a process simulation code, PARC-MA
Yasuji Morita (JAEA), Yasuhiro Tsubata, Yuji Sasaki and Takaumi Kimura
- 392588 The simple solution modeling implemented in the PAREX Code to simulate solvent extraction operations
Christian Sorel (CEA), Pascal Baron, Binh Dinh, Xavier Heres, Marc Montuir, Vincent Pacary
- 357771 Actinides and lanthanides extraction by diglycolic acid diamides in new polar fluorinated diluents

Mikhail Alyapyshev (Khlopin Radium Inst.),
Vasily Babain, Ivan Eliseev and Luydmila
Tkachenko

391789 Actinide-lanthanide separation - basicity and
softness of ligands

Vasily Babain (KRI), Mikhail Alyapyshev,
Nataliya Borisova, Roman Vladimirov and
Ekaterina Eroshkina

Dec. 15, 14:00–15:20, Meeting Room 102B

5.1) B-1: Pyro-Process for Partitioning and Transmutation

(Chair: Stéphane Bourg (CEA), Masatoshi Iizuka
(CRIEPI))

407054 Numerical simulation of rotating cylinder hull
cell using two- and three-dimensional
electrorefining models

Jaeyeong Park (Seoul National Univ.), Robert
Hoover, Minsu Kim, Kwang-Rag Kim,
Sungyeol Choi, Supathorn Phongikaroon,
Michael Simpson, Tae-Sic Yoo and Il Soon
Hwang

363595 Thermodynamic properties of ytterbium
compounds in fused NaCl-KCl-CsCl eutectic
Alena Novoselova (Russian Academy of Sci.)
and Valeri Smolenski

392236 Fundamentals of partitioning of curium and
rare elements in chloride melt

Alexander Osipenko (RIAR), Alexander
Maershin and Mikhail Kormilitsyn

392446 Electrodeposition of uranium by pulse
electrolysis in molten fluoride salts

Martin Straka (Nucl. Res. Inst. Řež),
František Lisy and Lórant Szatmary

Dec. 15, 8:30–10:10, Meeting Room 103

6) C-1: New concept for Future Reprocessing

(Chair: Masaki Ozawa (Tokyo Inst. Technol.) and Terry
Todd (INL))

399776 Separation of Am(III) from Eu(III) by
extraction chromatographic technique using
functional polymer gels with TPEN analogs

Kenji Takeshita (Tokyo Inst. Technol.),
Takeshi Ogata, Hiroshi Oaki, Yusuke Inaba,
Atsunori Mori and Tsuyoshi Yaita

359786 Behavior of Fission Products in Sulfide
Reprocessing Process

Nobuaki Sato (Tohoku Univ.), Takahashi
Ohnishi and Akira Kirishima

445277 The Application of Ionic Liquids to the
Extraction of Uranium(VI) from Nitric Acid
Medium and a Study of the Chemical Form of
the Uranyl Complexes Extracted

Thomas James Bell (Tokyo Tech.) and
Yasuhisa Ikeda

391551 Study on the Possibility of Supercritical Fluid
Extraction for Reprocessing of Spent Nuclear
Fuel from High Temperature Gas-cooled
Reactor

Wuhua Duan (*Tsinghua Univ.*), Liyang Zhu,
Yongjun Zhu, and Jingming Xu

386756 Combined (Pyro+Hydro) Technology of FNR
SNF Reprocessing

Vladimir Volk (GNTs VNIINM JSC), Andrey
Shadrin, Sergey Veselov, Konstantin
Dvoeglazov, Alexander Zherebtsov, Vitaliy
Vidanov, Olga Schmidt, Michail Kormilitsyn,
Alexander Osipenko, Sergey Poglyad

Dec. 15, 10:50–12:10, Meeting Room 103

6) D-1: Aqueous Reprocessing – I

(Chair: Yasuhisa Ikeda (Titech) and A. Guelis (ANL))

390993 Complete Testing of SNF Reprocessing
Technology for EDC in the Hot Cells of FSUE
MCC

Yury S. Fedorov (FSUE RPA), Peter M.
Gavrilov, Evgeny G. Kudryavtsev, Anjilika
V. Khaperskaya, Yuri A. Revenko, Vladimir V.
Bondin, Oleg P. Anisimov, Boris Ya. Zilberman

359684 Behavior of Fission Products in Simplified
Solvent Extraction System for Uranium,
Plutonium and Neptunium Co-recovery

Masaumi Nakahara (JAEA), Atsuhiko Shibata,
and Yoshikazu Koma

**357368 (Invited) The United States Fuel Cycle
Research and Development**

**Terry A. Todd (INL), James Bresee, L.
Kevin Felker and John Vienna**

350938 A study on advanced reprocessing system
based on use of urea derivatives with highly
selective precipitation ability to uranyl(VI)

Tomoya Suzuki (Tokyo Inst. Technol.),
Takeshi Kawasaki, Koichiro Takao, Masayuki

Harada, Masanobu Nogami and Yasuhisa Ikeda

[Dec. 15, 14:00–15:20, Meeting Room 103](#)

6) D-2: Aqueous Reprocessing – II

(Chair: Kenji Takeshita (Tokyo Inst. Technol.) and W. Duan (Tsinghua Univ.))

- 363929 Development of advanced reprocessing system based on precipitation method using pyrrolidone derivatives as precipitants - Overall Evaluation of System - Yasuhisa Ikeda (Tokyo Inst. Technol.), Takeshi Kawasak, Masayuki Harada, Masanobu Nogami, Yoshihisa Kawata, Seong-Yun Kim, Yasuji Morita, Takahiro Chikazawa, Hiroshi Someya and Toshiaki Kikuchi
- 392550 Modelling of Actinide Precipitation Processes Murielle Bertrand (CEA), Sophie Lalleman, Pascal Baron, Edouard Plasari, Olivier Lebaigue and Frédéric Ducros
- 391241 The Route of Np in the U/Pu Separation Using Dihydroxyurea as Reductant Taihong Yan (CIAE), Weifang Zheng, Guoan Ye, Chen Zuo, Liang Xian, Yu Zhang, Xiaoyan Bian, Baiqin Zhang, Chuanbo Li and Zhongwei Yuan
- 442237 Adjustment of valence state of Pu and Np in nitric solution containing N,N-Dimethylhydroxylamine and Monomethylhydrazine by Electrolysis Hu Zhang (CIAE), Guo-an Ye, Hai-feng Cong, Li Li, He Yang, Gao-liang Li, Wei-fang Zheng, De-xiang Jiang

[Dec. 15, 8:30–10:30, Meeting Room 104](#)

6) A-3: Pyrochemical Reprocessing – III

(Chair: Hirohide Kofuji (JAEA) and K. C. Song (KAERI))

- 364088 Reprocessing of spent nitride fuel by chemical dissolution in molten salt –Preliminary results on rare-earth mononitride– Takumi Satoh (JAEA), Kenji Nishihara and Masahide Takano

386005 Review of mixed nitride U-Pu fuel reprocessing method for fast neutron reactors Andrey Shadrin (VNIINM), Vladimir Volk, Konstantin Dvoeglazov, Sergey Veselov, Andrey Kuznetsov, Alexander Zherebtsov and VitaliyVidanov

392090 Development of the pyrochemical process of spent nitride fuels for ADS; its elemental technologies and process flow diagram Hirokazu Hayashi (JAEA), Takumi Satoh, Hiroki Shibata, Takashi Iwai, Kenji Nishihara and Yasuo Arai

359646 (Invited) Experimental check and justification of application of pyrochemical origin plutonium dioxide for fabrication of pellet fuel

Alexander Osipenko (RIAR), Mikhail Kormilitsyn

387026 Development of salt and metal waste treatment technology for pyroprocess in CRIEPI Koichi Uozumi (CRIEPI), Masatoshi Iizuka, Kensuke Kinoshita, Takeshi Tsukada and Tadafumi Koyama

392274 Experimental check of unified reprocessing scheme of dense spent fuel Alexander G. Osipenko (RIAR), Alexander Maershin, Alexey Kayrov and Mikhail Kormilitsyn

[Dec. 15, 14:00–15:40, Meeting Room 104](#)

18) A-1: International Cooperation

(Chair: Tetsuo Fukasawa (Hitachi-GE))

- 417449 International cooperation for safety, safeguards, security and sustainability of nuclear energy Il Soon Hwang (NUTRECK) and Tadashi Inoue
- 386796 Summary of activities under the NEA/OECD expert group on advanced fuel cycle scenarios Kathryn A. Mccarthy (INL) and Yong-Joon Choi
- 520914 Renewal program of STACY for research on nuclear criticality safety and reactor physics of light-water-moderated core Yoshinori Miyoshi (JAEA), Shigeaki Okajima, Gunzo Uchiyama and Hideaki Mineo

357867 Knowledge preservation at the fast flux test facility

David Wootan (PNNL) and Ronald Omberg

400806 Computer-based control of nuclear power information systems at international level

Boniface Ekechukwu (Nnamdi Azikiwe Univ.) and Okonkwo Obi

[Dec. 15, 8:30–10:10, Meeting Room 105](#)

[9\) B-2: Reprocessing technology – II](#)

(Chair: Naoki Surugaya (JAEA))

357953 Characterization of the dissolver sludge of MOX spent fuel at the Tokai Reprocessing Plant

Kazuyuki Suzuki (JAEA), Akira Hatanaka, Hirotaka Samoto Toshio Suwa, Kosuke Tanaka and Yukiyoshi Tanaka

360020 A world first: Industrial operation of computer-aided master-slave manipulator at the La Hague Recycling Plant

Jerome Bruezière (AREVA) Jean François Thro, Gérard Piolain and Marie-Anne Brudieu

360024 MOX recycling: An industrial reality

Jérôme Bruezière (AREVA), Dominique Favet and Erwan Bouvier

360445 The French recycling industry

Jean-Pierre Gros (AREVA) and Francois Drain

391215 Characteristics of plutonium, curium and uranium in hulls of FUGEN MOX spent fuel by destructive analysis

Shizuka Iijima (JAEA), Yuichi Goto, Hirotaka Samoto, Ryo Shichi and Takenori Shimizu

[Dec. 15, 10:50–12:10, Meeting Room 105](#)

[12\) A-1: Uranium resource and fuel supply](#)

(Chair: Nobuaki SATOH (Tohoku Univ.) and Fausto Franceschini (WH))

386673 Some aspects related to the romanian management on safety and security of uranium mining operation, processing and disposal

Gheorghe Vieru (Inst. Nucl. Res. Pitesti) and I. Muntean

392631 Policy, price formation, and the front end: a market-clearing model

Erich Schneider (Univ. Texas), Roderick Eggert, Andrew Gilmore and Eric Segal

464820 Advanced fuel developments to improve fuel cycle cost in PWR

Fausto Franceschini (WH) and Edward J. Lahoda

358246 Outline of J-MOX Program

Takahiko Sato (JNFL) and Hiroyuki Ikeda

[Dec. 15, 8:30–10:10, Meeting Room 301A](#)

[4\) C-1: Utilization of LWR in the transition period](#)

(Chair: Bronwyn Hyland (AECL), Nobuaki Sato (Tohoku Univ.))

354558 Core designs for thorium-uranium breeding recycle in PWRs

Guangwen Bi (Shanghai Nucl. Eng. Res. Design Inst.) and Shengyi SI

357688 Introduction of thorium in under-moderated PWR cores and optimization to enhance the conversion factor

Vanessa Vallet (CEA), Bernard Gastaldi, Alain Santamarina and Monika Chhor

399425 Isotopic characterization of used nuclear fuel (UNF) in transition and equilibrium thorium fuel cycles

Bojan Petrovic (Georgia Inst. Technol.), L. Michael Huang, Michael Wenner and Fausto Franceschini

348944 Preliminary Analysis of a Large 1600MWe PWR Core Loaded with 30% MOX Fuel

Franco Polidoro (Ricerca sul Sistema Energetico), Edoardo Corsetti and Giuliano Vimercati

352066 Stepwise evolution of fuel assembly design toward a sustainable fuel cycle with hard neutron spectrum light water reactors

Sadao Uchikawa (JAEA), Tsutomu Okubo and Yoshihiro Nakan

[Dec. 15, 10:50–12:30, Meeting Room 301A](#)

[4\) A-2: Fuel cycles for LWR to FR transition – II](#)

(Chair: Yasuo Arai (JAEA), Hirokazu Hayashi (JAEA))

408617 (Invited) Predominant achievements of fuel cycle technology development in the FaCT Project

Sei-ichiro Takeda (JAEA)

468540 Status of MOX fuel development for FBR System in JAEA

Hisao Ojima (JAEA), Masanori Ito, Saburo Takahashi, Koichi Asakura and Hisato Sato

- 385018 Enhancement of Fuel Burn-up by Introduction of Moderators in a Blanket Region of Fast Reactor
Toshio Wakabayashi (Tohoku Univ.)
- 358321 The continuous fuel cycle model and the gas cooled fast reactor
Stuart Alexander Christie (Delft Univ. of Technol.), Danny Lathouwers, Jan Leen Kloosterman and Tim van der Hagen
- 366233 Ion exchange chemical uranium enrichment plant design
Fumiaki Kawakami (Tokyo Inst. Technol.), Moriyasu Tokiwai and Yasuhiko Fujii
- [Dec. 15, 8:30–10:30, Meeting Room 301B](#)
[7\) B-2: Advanced Oxide Fuel – II](#)
(Chair: Renaud C. Belin (CEA), Yasuo Arai (JAEA))
- 357868 Advances in estimation technology of thermal conductivity of irradiated fuels (I) - Application of a thermal microscope to measure the thermal conductivity of the second phases in irradiated pellets-
Masayoshi Uno (Univ. Fukui) and Yukihiro Murakami
- 361817 On the Role of Americium in the Reduction Process in Plutonium-Americium Oxides
Renaud C. Belin (CEA), Philippe M. Martin, Elisabeth Gavilan, Muriel Reynaud and Andreas C. Scheinost
- 392501 Chemistry of uranium surrogate during microwave assisted internal gelation for fuel fabrication
Cedric Cozzo (PSI), Sebastien Vaucher, Kotaro Ishizaki, David Megias-Alguacil and Manuel A. Pouchon
- 392586 Oxalic U-Pu coconversion into mixed oxides, fuel precursors for FR
Stephane Grandjean (CEA), Benedicte Arab-Chapelet, Sebastien Picart, Murielle Bertrand, Stephane Vaudez, Philippe Martin, Pascal Baron, Michel Masson, and Bernard Boullis
- 357776 Critical and shielding parametric studies with the Monte Carlo Code Tripoli to identify the key points to take into account during the transportation of blanket assemblies with high

ratio of americium

Cécile-Aline Gosmain (EDF)

- 356981 Three-dimensional thermal modeling of TRISO Fuel in pebble-bed reactors

Jianwei Hu (LANL), Rizwan-uddin

[Dec. 15, 10:50–12:30, Meeting Room 301B](#)

[7\) B-3: Advanced Oxide Fuel – III](#)

(Chair: Kemal O. Pasamehmetoglu(INL), Takashi Namekawa (JAEA))

387478 (Invited) Oxide Fuel Fabrication Technology Development of the FaCT Project (1) - Overall Review of Fuel Technology Development of the FaCT Project -

Tomoyuki Abe(JAEA), Takashi Namekawa, and Kenya Tanaka

- 440091 Oxide fuel fabrication technology development of the FaCT project

Yoshiyuki Kato (JAEA), N. Takahashi, M. Morita, K. Yoshimoto, H. Furuya

- 445139 Oxide fuel fabrication technology development of the FaCT Project (3) – Analysis of sintering behavior for MOX pellet production –

Shun Hirooka (JAEA), Masato Kato, Kentaro Takeuchi and Tatsuo Takano

- 385245 Oxide fuel fabrication technology development of the FaCT Project (4) – Feasibility study of oxygen getter options for pellet type MOX Fuel –

Masayuki Morihira (JAEA), Fumiki Mizusako and Yasushi Tsuboi

- 391600 Oxide fuel fabrication technology development of the FaCT Project (5) – Current status on 9Cr-ODS steel cladding development for high burn-up fast reactor fuel –

Satoshi Ohtsuka (JAEA), Takeji Kaito, Yasuhide Yano, Shinichiro Yamashita, Ryuichiro Ogawa, Tomoyuki Uwaba, Shinichi Koyama and Kenya Tanaka

[Dec. 15, 14:00–16:00, Meeting Room 301B](#)

[7\) D-1: Advanced Ceramic Fuel](#)

(Chair: Fabienne Delage (CEA), Shinsuke Yamanaka (Osaka Univ.))

395794 (Invited) Innovative fuels state-of-the art assessment

Kemal O Pasamehmetoglu (INL)

355796 Achievements on oxide and nitride ads fuels within the european project: EUROTRANS

Fabienne Delage (CEA), Yasuo Arai, Renaud Belin, Xue-Nong Chen, Elio D'Agata, Ralph Hania, Frodo Klaassen, Werner Maschek, Hiroyuli Oigawa, Jean Pierre Ottaviani, Andrei Rineiski, Vitaly Sobolev, Joseph Somers, Dragos Staicu, Roger Thetford, Janne Wallenius and Beat Wernli

391881 MgO-based inert matrix fuels for a minor actinides recycling in a fast reactor cycle

Shuhei Miwa (JAEA), Masahiko Osaka, Toshiyuki Usuki, Isamu Sato, Kosuke Tanaka, Takashi Hirose, Hiroshi Yoshimochi, Shoji Onose

358363 Ceramics composites for next generation nuclear reactors

Manuel Alexandre Pouchon (PSI), Tomislav Rebac, Jiachao Chen, Yong Dai and Wolfgang Hoffelner

401823 Development of CERMET Fuels for fast reactor

Sudhir Mishra (BARC), T. R. G. Kutty, G. K. Dey, Arun Kumar and R. P. Singh

392468 Vibropac MOX - fuel for fast reactors

Vladislav Kisly (RIAR), Oleg Shishalov, Mikhail Kormilitsyn and Yulian Golovchenko

Poster Session

Poster putting time: from Dec. 14 8:30 to Dec. 15 12:30

Core hours: Dec. 14, 18:00–20:00

Multi Purpose Room and around (1F)

0) Fukushima Daiichi Accident

446283 Lesson and learn from “Fukushima Daiichi”
180 day’ s tweets – inevitable NPP renaissance
of the culture and technology –

Masayoshi B. Tamaki (TAMAKI Memorial
Institute)

446658 For the non-destructive visualization of the
irradiated and failed fuels and materials from
the Fukushima-1 NPP using the neutron
imaging by the gamma-insensitive Dy-doped
imaging systems

Masayoshi B. Tamaki (TAMAKI Memorial
Institute)

462554 Fukushima liquid waste treatment, how to
adapt a proven process to specific environment
and schedule constraints

Thierry Prevost (AREVA), Carol Redonnet,
Grégoire Piot, Stéphane Jouaville, Laurent
David

462855 Strontium Decontamination from the
Contaminated Water by Titanium Oxide
Adsorption

Youko Takahatake (JAEA), Sou Watanabe,
Atsuhiko Shibata, Kazunori Nomura,
Yoshiyuki Ito and Yoshikazu Koma

517129 Ion-Exchange Properties of Kurion Herschelite
in the Simulated Solution of the Contaminated
Water Accumulated at Fukushima Daiichi
Power Station

Takeshi Tsukada (CRIEPI), Koichi Uozumi,
Takatoshi Hijikata, Tadafumi Koyama, Keiji
Ishikawa, Shoichi Ono, Shunichi Suzuki, Mark
S. Denton, Rich Keenan and Gaëtan
Bonhomme

517130 Small zeolite column tests for removal of
cesium from high radioactive contaminated
water in Fukushima Daiichi nuclear power
station

Takatoshi Hijikata (CRIEPI), Koichi Uozumi,
Takeshi Tukada, Tadafumi Koyama, Keiji

Ishikawa, Shoichi Ono, Shunichi Suzuki, Mark
S. Denton and John Raymont

517133 Preliminary Test of Vitrification Followed by
Leachability Measurement for Cs Loaded
Kurion-Herschelite

Kazuyoshi Uruga (CRIEPI), Takeshi Tsukada,
Tadafumi Koyama, Mark S. Denton, Rich
Keenan and Gaetan Bonhomme

517135 Development of a simulation code for the
zeolite column system and its application for
the radioactive wastewater treatment facility
used in Fukushima Daiichi Nuclear Power
Station

Kenta Inagaki (CRIEPI), Takatoshi Hijikata,
Takeshi Tsukada, Tadafumi Koyama, Keiji
Ishikawa, Shoichi Ono and Shunichi Suzuki

524705 Simplified active water retrieve and recovery
system for Fukushima

Akira Ikeda (Toshiba), Takeuchi Tsutomu,
Kobayashi Masahiko, Sasoh Michitaka, Akai
Yoshie, Ichikawa Nagayoshi, James Newburn
and Tracy Barker

1) Nuclear Energy Strategy

No. posters.

2) Sustainability of Nuclear Energy Systems

357297 Multicriteria optimization software to support
nuclear energy system studies

A. A. Andrianov (NNRU MEPHI), Yu. A.
Korovin and E.V. Fedorova

3) Fuel Cycle Strategy

No. posters.

4) Advanced Fuel Cycle Systems (LWR to FR)

357298 Integrated Program Systems for Radiation
Damage, Activation, and Transmutation
Studies of Advanced Nuclear Systems

Yu. A. Korovin (NNRU MEPHI), A. A.
Andrianov, A. N. Evdokimov, I. S. Kuptsov
and E.V. Fedorova

359469 Study on reprocessing plant during transition
period from LWR to FBR

Takashi Shimada (MHI), Minefumi Matsui,

- Masashi Nishimura, Yasuhiro Ishida, Yukihide Mori and Kazuhiko Kuroda
- 366142 Effective fuel cycle of FBR in combination with uranium multi-recycling LWR system
Takeshi Nakamura (Kyushu Univ.), Kenji Kotoh, and Yuzo Yamashita
- 369791 Vacuum distillation for salt separation of uranium metal produced from an electrolytic reduction process
Ik-Soo Kim (KAERI), Jin-Mok Hur, Sun-Seok Hong and Han-Soo Lee
- 391149 development on uranium extraction with electro-reduction in Toshiba hybrid reprocessing technology
Koji Mizuguchi (Toshiba), Shohei Kanamura, Hisao Ohmura, Takashi Omori and Reiko Fujita
- 391494 Consideration on effective Pu utilization in high conversion type LWR for better transition to FBR cycle
Nobuyuki Ishikawa (JAEA) and Tsutomu Okubo
- 391554 A flow-assisted electrode reaction modeling for pyroprocess simulation
Kwang-rag Kim (KAERI), Tack-jin Kim, Jun-bo Shim, Seungwoo Paek, Do-hee Ahn and Han-soo Lee
- 391746 Metal fuel fabrication facility for early stage of commercialization
Takanari Ogata (CRIEPI), Yoshiharu Sakamura, Tadafumi Koyama and Kazuo Aoki
- 391955 Application of normal pulse voltammetric technique for on-line monitoring of lanthanide ions in LiCl-KCl molten salt at 773K
Tack-Jin Kim (KAERI), Dae-Yeob Park, Yongju Jung, Joon-Bo Shim, Si-Hyung Kim
- 392429 Enhanced process efficiency in the RAR operation
Joonbo Shim (KAERI), Jiyong Kim, Tackjin Kim, Sihyung Kim, Seungwoo Paek, Jaehoo Jung, Kwangrag Kim, Hansoo Lee, and Dohee Ahn
- 5.1) Partitioning
- 355757 Computer code development for flow-sheet design and modeling with verification towards a novel partitioning process
Daniel Magnusson (KIT), Andreas Geist, Andreas Wilden, Giuseppe Modolo and Rikard Malbeck
- 362296 Gallium as a possible element for separation of the fission products
Alexander Salyulev (Russian Academy of Sci.), Valeri Smolenski and Alexander Osipenko
- 363561 Comparative study on the primary and secondary current density distributions of electrorefiner
S. H. Kim (Chungnam National Univ.), H. Y. Ryu, S. B. Park, J. K. Kim and J. H. Lee
- 385354 Summary report on partitioning cesium from the Chinese high level liquid waste (HLLW) by calixcrown
Jianchen Wang (Tsinghua Univ.) and Jing Chen
- 387433 MA recovery experiments from genuine HLLW by extraction chromatography
Sou Watanabe (JAEA), Tatsuya Senzaki, Atsuhiko Shibata, Kazunori Nomura, Yoshikazu Koma and Yasuo Nakajima
- 390870 Study of the solubility of UF₄, ThF₄ and CeF₃ in the NaF-ZrF₄ and LiF-NaF-KF melts
Mikhail B. Seregin (VNIKHT), Anatoly Parshin, Andrey Kuznetsov, Leonid Ponomarev, Sergey Melnikov, Andrey Mihalichenko, Alexandr Rjeutsky and Roman Manuylov
- 391436 Selective separation and recovery of cesium and strontium from high level liquid waste by two macroporous silica-based supramolecular recognition absorbents
Yan Wu (Tohoku Univ.), Daisuke Tozawa, Tatsuya Ito, Seong-Yun Kim, Keitaro Hitomi, Tsutomu Tada, Etsushu Kuraoka, Hiromichi Yamazaki and Keizo Ishii
- 391529 Predication of LiCl crystal purity during Czochralski purification process of pyroprocessing waste salt
H. Y. Ryu (Chungnam National Univ.), S. H. Kim, S. B. Park, J. K. Kim, H. S. Lee, I. T. Kim and J. H. Lee

- 391734 Effect of alkali chloride and fluoride fused electrolytes on the morphology and size of zirconium deposit
Hui Li (Chungnam National Univ.), Kyoung Tae Park, Seung Hyun Kim, Tae Hyuk Lee, Sang Ki Lee and Jong Hyeon Lee
- 391769 The hafnium free zirconium manufacturing method by combustion synthesis and molten salt
Kyoung-Tae Park (Chungnam National Univ.), Young-Jun Lee, Kwang-Mo Koo, Dae-Won Kim and Jong-Hyeon Lee
- 392539 Actinide-lanthanide separation by bipyridyl-based ligands: DFT calculations and experimental results
Nataliya E. Borisova (Moscow State Univ.), Elizaveta A. Eroshkina, Mikhail Yu. Alyapyshev, Leonid A. Korotkov, Ivan I. Eliseev, Yuri A. Ustynyuk and Vasily A. Babain
- 393784 Investigation in field of partitioning of minor actinides and rare elements in chloride melt
Alexander Osipenko (RIAR), Alexander Maershin and Mikhail Kormilitsyn
- 394713 Americium and curium recovery using extraction chromatography from simulated acidic raffinate from the PUREX process
Tatsuro Matsumura (JAEA), Yasuji Morita, Kazumi Matsumura, Yuichi Sano, Yoshikazu Koma and Kazunori Nomura
- 394880 Extraction of Pd(II) to 1-butyl-3-methylimidazolium nonafluorobutanesulfonate by using soft donor ligand
Noriko Asanuma (Tokai Univ.), Hiroki Sato, Naoki Nakamura and Yasuhisa Ikeda
- 5.2) Transmutation
- 466180 Laser Compton Scattering Gamma Ray for Nuclear Transmutation
Dazhi Li (Osaka Univ.), Kazuo Imasaki, Shuji Miyamoto, Ken Horikawa, Sho Amano and Takayasu Mochizuki
- 6) Advanced Reprocessing Technologies
- 348489 Electrochemical method to disintegrate spherical fuel elements of HTGR
Mingfen Wen(Tsinghua Univ.), Lifang Tian, Jing Chen
- 357862 Aqueous electrochemical separations processes for used fuel
Artem Guelis (ANL) James Willit and Mark Williamson
- 359815 Assessment of lab-scale high-throughput electrorefiner with respect to the anode surface area and UCl_3 concentration in LiCl-KCl eutectic salt
Sung Bin Park (KAERI), Sung Chan Hwangi, Sung Jai Lee, Se Young Choi, Young Ho Kang, Jeong Guk Kim, Hansoo Lee
- 365670 Hydrothermal synthesis for fabrication and reprocessing of MOX nuclear fuel
Suguru Ohta (Tohoku Univ.), Tomoo Yamamura, Kenji Shirasaki, Isamu Satoh and Tatsuo Shikama
- 386804 Crystallization refining of uranium in TR SNF reprocessing
Vladimir Volk (VNIINM), Leonid Arsenkov, Sergey Veselov and Alexander Zherebtsov
- 386807 Concentrating back-extraction of plutonium from technetium-containing solutions
Vladimir Volk (VNIINM), Valery Marchenko, Konstantin Dvoeglazov, Sergey Veselov, Alexander Zherebtsov, Dmitry Zverev and Vladimir Alekseenko
- 386808 Use of separator with regular granular filling in extraction processes
Vladimir Volk (VNIINM), Sergey Veselov, Konstantin Dvoeglazov, Alexander Zherebtsov and Dmitry Zverev
- 387558 Salt-Free technique for solvent washing process in NEXT Process
Yuichi Sano (JAEA), Naoya Kaji, Atsuhiko Shibata, Masayuki Takeuchi and Tadahiro Washiya
- 387804 A study of highly concentrated fission product salt loading into zeolite-A
James R Allensworth (North Carolina State Univ.), Man-Sung Yim, and Michael F. Simpson
- 391508 Absorption behavior of iodine from molten salt mixture to zeolite
Kei Sugihara (Univ. Tokyo), Koichi Uozumi,

- Takeshi Tsukada, Tadafumi Koyama, Takayuki Terai and Akihiro Suzuki
- 391566 Development of actinides co-extraction system with direct extraction process using supercritical fluid
Masayoshi Kamiya (JAEA), Sachiko Miura, Yoshikazu Koma, Tomozo Koyama, Kazuo Aoki, Seiya Yamada and Kayo Sawada
- 391629 Characterization of precipitates formed in simulated high-level liquid wastes
Ayako Murao (Tohoku Univ.), Hitoshi Mimura, Akira Kirishima, Yoshikazu Kondo, Kazunori Nomura, Tadahiro Washiya
- 392136 Remote handling system development for pyroprocessing facility
Hyo Jik Lee (KAERI), Jong Kwang Lee, Kiho Kim, Byung Suk Park, and Seung Nam Yu
- 392276 Recent advances in electrorefining process in KAERI
Jeong-Guk Kim (KAERI), Sung-Jai Lee, Moon-Sik Woo, Sung-Bin Park, Sang-Woon Kwon, Hee-Suk Kang, Sung-Ho Lee and Hansoo Lee
- 392419 Criticality safety evaluation of voloxidation process
Fanxing Gao (KAERI), Won Il Ko, Chang Je Park and Ho Hee Lee
- 392443 Polyfunctional radiochemical complex: Objectives & principles
Mikhail V. Kormilitsyn (RIAR) and Sergey S. Poglyad
- 400834 Fluoride volatility process for spent nuclear fuel recycle
Nikolai M. Trotsenko et al. (Kurchatov Inst.)
- 465895 Kinetics of reaction between acetic acid and Ag^{2+} in nitric acid medium
Gao-liang Li (CIAE), Hui He, Hongbin Tang, Hu Zhang and Guoan Ye
- 465979 Adjustment of valence state of Pu and Np in nitric solution containing N,N-Dimethylhydroxylamine and Monomethylhydrazine by Electrolysis
Hu Zhang (CIAE), Guo-an Ye, Hai-feng Cong, Li Li, He Yang, Gao-liang Li, Wei-fang Zheng and De-xiang Jiang
- 466099 Solvent extraction of Pu(IV) with TODGA in C_6mimTf_2N RTIL
Xiaohong Huang (CIAE), Hui He, JinPing Liu, Wenbin Zhu and Xiaorong Wang
- 480469 Chemistry grafting of a novel silica-based anion exchange material and its adsorption mechanism for Pu(IV)
Hui-bo Li (CIAE), Guo-an Ye, Can-sheng Lin, Zhe Su, Xiao-rong Wang and Xing-hong Zhao
- 7) Advanced Fuels/Targets and Materials
- 357370 Development of PRW welding technology for 9Cr-ODS cladding tube
Masayuki Seki (JAEA), Yoshiyuki Kihara, Takeji Kaito, Tatsuya Tsukada, Kazuhiko Motoki and Kazuhito Hirako
- 358290 Thermal conductivities of $(Zr_xPu_{(1-x)/2}Am_{(1-x)/2})N$ solid solutions
Tsuyoshi Nishi (JAEA), Masahide Takano, Mitsuo Akabori and Yasuo Arai
- 359023 Effects of central hole plugging on mechanical and thermal integrities of the annular fuel pin
Masayuki Naganuma (JAEA) and Seiichiro Maeda
- 359735 Mass-spectrometric study on helium release behaviors from UO_2 and MOX
Kunihisa Nakajima (JAEA), Noriko Shirasu, Hiroyuki Serizawa, Yoshinori Haga and Yasuo Arai
- 384200 Preparation of nitride fuel pellet with TiN inert matrix for transmutation of minor actinides
Masahide Takano (JAEA)
- 384377 Chemical and physical properties of $CaMoO_4$
Yusuke Masahira (Osaka Univ.), Yuji Ohinishi, Ken Kurosaki, Tohru Sugahara, Aikebaier Yusufu, Hiroaki Muta and Shinsuke Yamanaka
- 386458 Casting evaluation of U-Zr Alloy System fuel slugs for SFR prepared by gravity casting method
Ki-Hwan Kim (KAERI), Seok-Jin Oh, Young-Mo Ko, Chong-Tak Lee, Chan-Bock Lee and Randall S. Fielding
- 387007 Development of improved fuel properties of particle dispersion

- Yuji Arita (Univ. Fukui) and Akiyuki Shiroshita
- 387512 Development of pressing machine with a die wall lubrication system for the simplified MOX pellet fabrication method in the FaCT project
Katsuo Sudo (JAEA), Tatsuo Takano, Kentaro Takeuchi, Yoshiyuki Kihara and Masato Kato
- 391870 Advance in estimation technology of thermal conductivity of irradiated fuels (2) - Application of hot disk method to measure the thermal conductivity of pellets possessing a central hole -
Yukihiro Murakami (Univ. Fukui) and Masayoshi Uno
- 391900 Defect and void evolution in precipitation hardened high purity Ni-base alloy under multi-ion irradiation
Gwangho Kim (JAEA), Kiyoyuki Shiba, Tomotsugu Sawai, Ikuo Ioka, Kiyoshi Kiuchi
- 392244 Development of oxygen-to-metal ratio of MOX pellet adjustment technology for the simplified MOX pellet fabrication method in the FaCT Project
Tatsuo Takano (JAEA), Katsuo Sudo, Kentaro Takeuchi, Yoshiyuki Kihara and Masato Kato
- 392438 Modeling LWR Fuel in MSC.MARC &MENTAT
G. V. Kulakov (VNIINM), B. A. Kashirin, A. A. Kosurov, Y. V. Kononov, A. V. Kuznetsov and S. M. Bogatyr
- 392449 Dispersion fuel of novel generation for different types of reactors
Alexey Savchenko (VNIINM), Alexander Vatulin, Gennady Kulakov, Alexander Morozov, Sergey Ershov and Vladimir Sorokin
- 392454 An effort to improve U foil fabrication technology for fission Mo-99 target by using planar flow casting
Moonsoo Sim (Chungnam National Univ.), Chang-Kyu Kim, Yoon-Sang Lee, Jong-Myeong Oh, Ki-Hwan Kim and Jong-Hyeon Lee
- 392460 Dismountable FA for irradiation of fuels and structural materials in fast reactor BOR-60
Vladislav Kisly (RIAR), Anatoly Korolkov, Anatoly Solovev, Oleg Shishalov, Elena Fokeeva and Yulian Golovchenko
- 392464 Investigations of change in kinetics of thermal-physical characteristics of fuel rods during irradiation
Valery Grachyov (RIAR), Vladislav Kisly and Sergei Trekhonin
- 392567 Point defects in (U,Zr)N
Merja Pukari (Kungliga Tekniska Högskolan) and Janne Wallenius
- 392582 Calcined Resin Microspheres Pelletization (CRMP): A novel process for sintered metallic oxide pellets synthesis.
Sébastien Picart (CEA), Elodie Remy, Thibaud Delahaye, Jacques Dauby, Isabelle Jobelin, Nathalie Herlet, Stéphane Grandjean, Philippe Blanchart, André Ayrat and Pascal Baron
- 8) Innovative Nuclear Energy Systems beyond 2030
- 355716 Review of geology problems in system of East Asia nuclear fuel cycle
Qingzhao Guo (East China Inst. Technol.)
- 387692 Thorium utilization in a small and long-life HTR with homogeneous fuel blocks
Ming Ding (Delft Univ. Technol.) and Leen Kloosterman
- 391363 Study on transmutation of long-lived fission product using high-temperature gas-cooled reactors
Hiroyuki Nakaya (Kyushu Univ.), Shohei Kouchi, Satoshi Shimakawa, Hideaki Matuura, Takashi Yasumoto, Yasuyuki Nakao, Minoru Goto and Shigeaki Nakagawa
- 392081 Comparative analysis of the efficiency of minor actinide burning in the accelerator-driven system and critical reactors within various scenarios for closing the nuclear fuel cycle
Andrey Gulevich (Inst. for Phys. and Power Eng.), Evgeny Zemskov, Kirill Melnikov, Oleg Komlev and Leonid Ponomarev

- 9) Improvements in Reprocessing and Vitrification Technologies
- 357791 Solubility of DCH18C6 and n-octanol in nitric acid system
Qiang He (Tsinghua Univ.), Jian-chen Wang and Jin Chen
- 358679 Auto-control algorithm for the phase interface height based on the hydraulic character of pulsed column
Shuwei Wang (Tsinghua Univ.) and Jing Chen
- 359721 Study of hydrogen consumption reaction catalyzed by Pd ions in the simulated high-level liquid waste
Takashi Kodama (JNFL), Shingo Matsuoka, Yasuo Ito, Chihiro Matura and Hirotsugu Shiraiishi
- 365664 Use of the nonflammable hydrofluorocarbon for nuclear fuel reprocessing: extraction by TBP and CMPO
Tomoo Yamamura (Tohoku Univ.), Suguru Ohta, Isamu Satoh, Tatsuo Shikama and Tatsuro Matsumura
- 391344 Study on evaluation of confinement capability of fuel cycle facility under combustion of glove-box and cable sheath materials
Hitoshi Abe (JAEA), and Gunzo Uchiyama
- 392034 Electrical and rheological properties of simulated waste glass
Tsuyoshi Usami (CRIEPI), Kazuyoshi Uruga, Takeshi Tsukada, Satoshi Komamine and Eiji Ochi
- 392731 Development of sludge dissolution technology
Hiroaki Kobayashi (CRIEPI), Tsuyoshi Usami, Takeshi Tsukada, Noriyasu Moriya, Takashi Hamada, Daniel Serrano-Purroy, Rikard Malmbeck and Jean-Paul Glatz
- 395994 Phase state, physical properties and oxidation behavior of the Mo-Ru-Rh-Pd alloys
Toru Sugahara (Osaka Univ.), Yuji Ohishi, Ken Kurosaki, Aikebaier Yusufu, Yusuke Masahira, Hiroaki Mutai, Shinsuke Yamanaka, Satoshi Komamine, Toshiki Fukui and Eiji Ochi
- 474355 Phase state and thermodynamic properties of Mo-Ru-Ph-Pd alloys
Yuji Ohishi (Osaka Univ.), Tohru Sugahara, Ken Kurosaki, Aikebaier Yusufu, Yusuke Masahira, Hiroaki Muta, Shinsuke Yamanaka, Satoshi Komamine, Toshiki Fukui and Eiji Ochi
- 10) Radioactive Waste Treatment and Disposal Options
- 356824 Thermal conductivities of Y_6WO_{12} , Yb_6WO_{12} , and Y_6UO_{12}
Ying Zheng (Osaka Univ.), Ken Kurosaki, Kazuyuki Tokushima, Hiroaki Muta, Yuji Ohishi, Shinsuke Yamanaka
- 358120 Simple cation-exchange separation for ICP-MS measurement of Se-79 in spent nuclear fuel sample
Shiho Asai (JAEA), Yukiko Hanzawa, Hideya Suzuki, Masaaki Toshimitsu, Keisuke Okumura, Nobuo Shinohara, Takaumi Kimura, Jun Inagawa, Kensuke Suzuki and Satoru Kaneko
- 358141 New ORIGEN2 Libraries based on JENDL-4.0 and their validation for long-lived fission products by post irradiation examination analyses of LWR spent fuels
Kensuke Kojima (JAEA), Keisuke Okumura, Shiho Aai, Yukiko Hanzawa, Tsutomu Okamoto, Masaaki Toshimitsu, Jun Inagawa, Takaumi Kimura, Satoru Kaneko and Kensuke Suzuki
- 358400 Removal of Sr-85, Cs-134, Ce-141, Eu-152 and Am-241 from nitric acidic solutions by tungsten doped antimony silicate
Airi Paajanen (Univ. Helsinki) and Risto O. Harjula
- 384177 Thermodynamic interpretation on solubility of neptunium, technetium, selenium and palladium in nitrate and ammonium solutions
Akira Kitamura (JAEA) and Takayuki Sasaki
- 395956 Design of an engineering scale off-gas trapping system at KAERI
Jin Myeong Shin (KAERI), Jang Jin Park, Jae Won Lee, Sang Ho Na, Young Ja Kim and Geun IL Park
- 400476 Engineering design on optimum volume for a reactor of vol-oxidizer
Young-Hwan Kim (KAERI), Geun-Ii Park,

- Jung-Won Lee, Yong-Soon Lee, Do-Youn Lee and Su-sung Kim
- 400638 Development of process coupling system for the numerical experiment of high level radioactive waste
Yoshiro Hagiya (MHI Nucl. Eng.), Ken Mihara, Mitsuyo Matsumoto and Susumu Kawachi
- 400686 Cement solidification method for liquid waste generated from primary loop resin elution process of PWR
Yoshiko Haruguchi (Toshiba), Shinya Miyamoto, Michitaka Sasoh, Masamichi Obata and Toshikazu Waki
- 401080 Toshiba's decontamination technologies for the decommissioning
Yuki Inoue (Toshiba), Yumi Yaita and Hitoshi Sakai
- 449199 Study on absorption of radioactive iodine in nitric acid solution using hydroxylamine nitrate
Haruaki Tokuda (JNFL), Yan Wu, Tsutomu Tada, Keitaro Hitomi, Seong-Yun Kim, Hiromichi Yamazaki and Keizo Ishii
- 11) Spent Fuel Management
- 383893 At-Reactor dry storage installation with dual-purpose metal casks at Hamaoka Nuclear Power Station
Keisuke Asai (Chubu EPCO), Takefumi Mikatsura, Yuuichi Fujimori, Seishi Muto and Takao Wakunaga
- 384467 Mechanical Modeling of Spent Fuel Behaviors in the Dry Storage Condition
Soyoung Kim (Kyung Hee Univ.), Kwangheon Park, Jongwon Choi and Kwangil Ho
- 12) Uranium Resource and Fuel Supply
- 357682 Study of microstructure of ammonium diuranate and uranium oxide produced from differently sourced ore
Subhankar Manna (BRAC), K. N. Hareendran, J. Banerjee, T. R. G. Kutty, S. B. Roy and J. B. Joshi
- 357860 Sensitivity analyses of the life cycle cost of uranium extraction from seawater
Darshan Sachde (Univ. Texas), Erich A Schneider
- 387142 Effective use of uranium resources in light water system
Kenji Kotoh (Kyushu Univ.), Yuzo Yamashita, and Takeshi Nakamura
- 13) Advanced Reactors
- 359578 Inclusive spectra of (p,xp) and (p,x α) reactions on ^{27}Al and ^{120}Sn nuclei at $E_p=30$ MeV
Timur Zholdybaev (National Nucl. Center, Republic of Kazakhstan), Alnur Duisebaev, Bek Duisebaev and Bakhtiar Sadyko
- 499579 Development of seismic isolation technology of a two-tiered laminated rubber bearing for actualizing large deformation capacity
Ryu Shimamoto (Chubu EPCO), Yoshihiro Sato, E. Takaoka, N. Sato and Y. Takenaka
- 14) Nuclear Safety
- 357972 Power Distribution Skewing Effects on Fuel Temperature during TOP in a Large Commercial-Base Fast Reactor
Katsuyuki Kawashima (JAEA), Tsutomu Okubo and Tomoyasu Mizuno
- 392556 Fundamental study on upward discharge of molten core materials through inner duct for avoid of re-criticality accident in FBR
Takuya Yamashita (Tokyo Inst. Technol.), Minoru Takahashi, Yuma Nagasawa and Rongyuan Sa
- 15) Nuclear Hydrogen and Other Utilization
- 392341 Modeling of filters for formation of mono-energetic neutron beams in the Research Reactor IRT MEPHI
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