19th International Conference on
Chemistry and Migration Behaviour of Actinides and
Fission Products in the Geosphere

Migration 2025



New Orleans

September 21 – 26, 2025

RADIONUCLIDE
MIGRATION

Booklet

Conference Committees

International Steering Committee:

H. Geckeis (Chairman) (Germany)
D.L. Clark (USA)
S.B. Clark (USA)
B. Grambow (France)
P. Toulhoat (France)
V. Vallet (France)
L. Van Loon (Switzerland)
J.-I. Yun (Korea)

International Scientific Committee:

M.H. Baik (Korea)
D. Bosbach (Germany)
S. Brassinnes (Belgium)
V. Brendler (Germany)
C. Bruggeman (Belgium)
J. Bruno (Spain)
W. Cha (Korea)
D. Durce (Belgium)
L. Duro (Spain)
V. Havlová (Czech Republic)
A.-M. Jakobsson (Sweden)
G. Law (Finland)
C. Liu (China)
M. Marques (Switzerland)
T. Missana (Spain)
G. Montavon (France)
K. Morris (UK)
T. Neill (UK)
T. Ohnuki (Japan)
T. Payne (Australia)
B. Powell (USA)
D. Reed (USA)
T. Sasaki (Japan)
S. Savoye (France)
B.S. Tomar (India)
C. Tournassat (France)
W. Wu (China)
T. Yang (Canada)
M. Zavarin (USA)

Scientific Secretary:

X. Gaona (Germany)
B. Powell (USA)
M. Zavarin (USA)

Local Organizing Committee:

V. Anagnostopoulos (U. Central Florida)
E. Balboni (LLNL)
H. Boukhalfa (LANL)
K. Czerwinski (U. Nevada - Las Vegas)
M. Danjji (South Carolina State U.)
H. Emerson (PNNL)
S. Estes (Clemson University)
S. Finkeldei (U. California - Irvine)
X. Guo (Washington State U.)
A. Hixon (U. Notre Dame)
C. Jove-Colon (Sandia NL)
D. Kaplan (U. Georgia)
C. Pearce (PNNL)
J. Schwantes (Pennsylvania State U.)
J. Wacker (LBNL)
H. Wainwright (MIT)
N. Wall (U. Florida)
M. Watrous (Idaho NL)
P. Yang (LANL)

Contacts

Technical and programmatic content

Brian Powell (Clemson University)
Email: bpowell@clemson.edu

Mavrik Zavarin (LLNL)
Email: zavarin1@llnl.gov

Xavier Gaona (KIT-INE)
Email: xavier.gaona@kit.edu

Supported by

















Background

The MIGRATION conferences provide an international forum for the timely exchange of scientific information on chemical processes controlling the migration behaviour of actinides and fission products in natural aquifer systems. Experimental investigations and predictive modelling of these processes are the main topics of the conferences. The information generated from the MIGRATION conferences is the basis for the mechanistic understanding of the migration behaviour of long-lived radionuclides in the geosphere, which is essential for the long-term performance assessment of nuclear waste disposal.

The first MIGRATION conference was held in 1987 in Munich, Germany. It was followed by MIGRATION ‘89 in Monterey, California, USA; MIGRATION ‘91 in Jerez de la Frontera, Spain; MIGRATION ‘93 in Charleston, South Carolina, USA; MIGRATION ‘95 in Saint-Malo, France; MIGRATION ‘97 in Sendai, Japan, MIGRATION ‘99 at Lake Tahoe, Nevada, USA, MIGRATION ‘01 in Bregenz, Austria, MIGRATION ‘03 in Gyeongju, Korea, MIGRATION ‘05 in Avignon, France, MIGRATION ‘07 in Munich, Germany, MIGRATION ’09 in Kennewick, Washington, USA, MIGRATION 2011 in Beijing, China, MIGRATION 2013 in Brighton, UK, MIGRATION 2015 in Santa Fe, New Mexico, USA, MIGRATION 2017 in Barcelona, Spain, MIGRATION 2019 in Kyoto, Japan and MIGRATION 2023 in Nantes, France.

Scope

The MIGRATION conferences focus on recent developments in the fundamental chemistry of actinides, fission and activation products in natural aquifer systems, their interactions and migration in the geosphere, and the processes involved in modelling their geochemical behaviour.

The sessions in MIGRATION'25 cover the following areas:

A Aquatic chemistry of actinides and fission products

1) Solubility and dissolution
2) Solid solution and secondary phase formation
3) Complexation with inorganic and organic ligands
4) Redox reactions and radiolysis effects
5) Solid-water interface reactions
6) Colloid formation
7) Experimental methods
8) Computational chemistry

B Migration behaviour of radionuclides

1) Sorption/desorption phenomena in dynamic systems
2) Diffusion and other migration processes
3) Colloid migration
4) Effects of biological and organic materials
5) Field and large-scale experiments
6) Natural analogues

C Geochemical and transport modelling

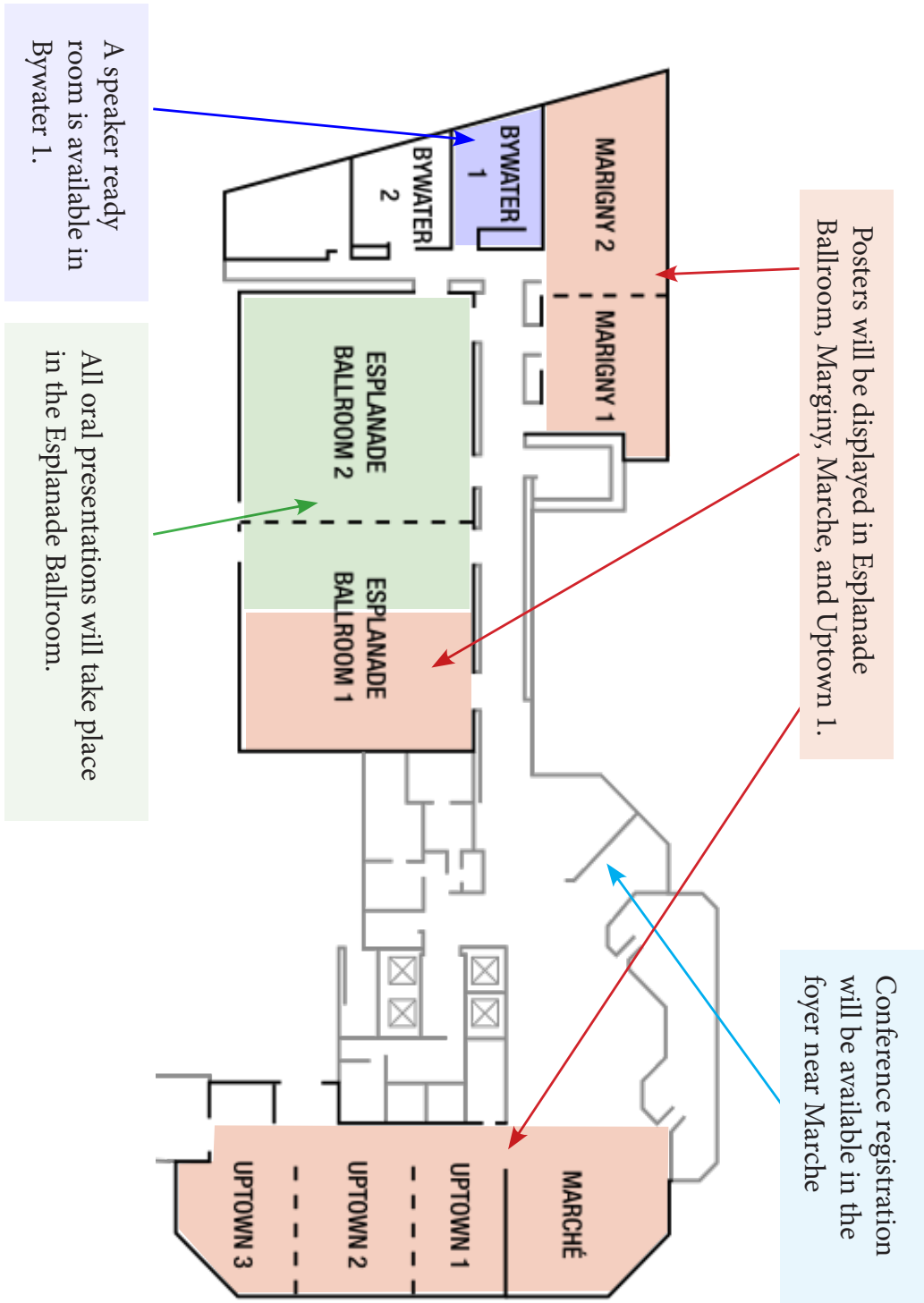
1) Data selection and evaluation
2) Coupling chemistry and transport
3) Development and application of models
4) Model validation
5) Safety assessment and repository concepts

D Application to Case Studies

E Special sessions:

1) United States Department of Energy Environmental Management, Legacy Management, and Nuclear Waste Disposition programs
2) The intersection of nuclear security and radionuclide migration in natural and/or engineered systems

Conference Layout



Programme

SUNDAY (21. SEPTEMBER)

15:00 **REGISTRATION**

17:00 **WELCOME**
M. Zavarin, B. Powell (USA)
H. Geckeis (Germany)

OPENING SESSION
BREAKTHROUGHS IN NUCLEAR WASTE MANAGEMENT

Chair: B. Powell and M. Zavarin (USA)

17:10 LONG-TERM SAFETY OF THE SWISS DGR: NO ROCKET SCIENCE, BUT ROCK SCIENCE **E-1**
T. Vietor (INVITED) (Switzerland)

17:50 SUCCESS IN THE LIQUID WASTE MISSION AT THE SAVANNAH RIVER SITE **E-2**
K. Rosenberger (INVITED) (USA)

18:30 TOWARD A PREDICTIVE UNDERSTANDING OF F-ELEMENT CHEMISTRY— THE ROLE OF ATOMIC SIMULATIONS AND EMERGING AI TOOLS **E-3**
P. Yang (INVITED) (USA)

19:10 **RECEPTION**

MONDAY (22. SEPTEMBER)

8:25 **CONFERENCE ANNOUNCEMENTS**

SESSION 1 A1: SOLUBILITY AND DISSOLUTION

Chair: *G. Law (Finland) and T. Kobayashi (Japan)*

8:30 Pu(VI) HYDROLYSIS IN AQUEOUS NaCl-NaOH SOLUTIONS **A1-1**
D. Fellhauer, O. Walter, R. Meier, J. Rothe, K. Dardenne, D. Schild, Y. Jo, T. Schramm, A. Kuzenkova, M. Schorer, P. Müller, X. Gaona, M. Altmaier, H. Geckeis (INVITED) (Germany, Korea)

9:15 BEHAVIOUR OF POTASSIUM URANATES IN PEROXO-CARBONATE SOLUTIONS: DISSOLUTION AND URANYL STABILISATION **A1-2**
L. Floarea, C. Coubronne, J. Margate, G. Milanole, M. Arab, V. Vallet, E. Berrier, M. Rivenet (France)

9:40 SOLUBILITY OF NEPTUNIUM DIOXIDE AS A FUNCTION OF IONIC STRENGTH AND TEMPERATURE **A1-3**
C. Dye, A. Hixon (USA)

10:05 IRON(II) IN REPOSITORY SYSTEMS - A THERMODYNAMIC STUDY OF SOLUBILITY AND HYDROLYSIS IN DILUTE TO CONCENTRATED CHLORIDE SYSTEMS **A1-4**
P. Q. Fürst, N. Çevirim-Papaioannou, X. Gaona, T. Roth, S. Hagemann, K. Garbev, M. Altmaier, H. Geckeis (Germany)

10:30 **BREAK**

SESSION 2 B2: DIFFUSION AND OTHER MIGRATION PROCESSES

Chair: *S. Savoye (France) and B. Powell (USA)*

10:55 UNDERSTANDING THE MOBILITY AND FATE OF POLONIUM-210 IN NATURAL AND ANTHROPIZED ENVIRONMENTS **B2-1**
A.-L. Nivesse, G. Montavon (France)

11:20 UNDERSTANDING THE GEOCHEMICAL PROCESSES DURING NEPTUNIUM DIFFUSION THROUGH ILLITE **B2-2**
C. Joseph, B. Schacherl, T. Vitova, P. Lavrova, T. Hennig, M. Kühn (Germany)

11:45 DIFFUSIVE BEHAVIOR OF HTO, ^{36}Cl, ^{35}S AND ^{75}Se THROUGH COMPACTED FEBEX BENTONITE UNDER THE INFLUENCE OF TEMPERATURE **PB2-6**
A. Romero-Salido, T. Missana, U. Alonso, M. García-Gutiérrez (Spain)

12:10 REACTIVE TRANSPORT OF Np AND Pu IN OPALINUS CLAY INVESTIGATED BY SYNCHROTRON-BASED CHEMICAL TOMOGRAPHY **B2-4**
T. Reich, M. Breckheimer, S. Amayri, D. Ferreira Sanchez, D. Grolimund, M. Grazyna Makowska (Germany, Switzerland)

12:35 **BREAK**

SESSION 3 C1: DATA SELECTION AND EVALUATION. DEVELOPMENT AND APPLICATION OF MODELS

Chair: *M. Zavarin (USA) and T. Missana (Spain)*

14:20 SORPTION DATA MANAGEMENT FOR RADIOACTIVE WASTE **C1-1**
D. Garcia, S. Brassinnes, M. Zavarin, V. Brendler, S. Choi, J. Hwang, G. D. Miron, L. Van Laer, S. Britz, D. Durce, F. Bocchese, S.-G. Kim, B. Madé, T. Yang, J. L. Leganés Nieto (INVITED) (Spain, Belgium, USA, Germany, Korea, Switzerland, France, Canada)

15:05	AI TECHNOLOGIES TO SUPPORT KNOWLEDGE MANAGEMENT FOR RWMOS - AN INNOVATIVE APPROACH FOR SORPTION STUDIES? *H. Seher, H. Mönig, F. Dierschow, J. Herb, S. Britz, C.-L. Giorio (Germany)*	**C1-2**
15:30	THERMOCHIMIE PHASE 3 - KEY ACHIEVEMENTS AND OUTLOOK *S. Brassinnes, B. Madé, W. Bower, E. Colàs, A. Lassin, J. Begg (Belgium, France, UK, Spain)*	**C1-3**
15:55	ANOMALOUS ION TRANSPORT BEHAVIOR IN FRACTURED CLAY-ROCKS *C. Steefel, A. Jew, C. Tournassat, W. Dong, M. Bill (USA)*	**C1-4**
16:20	**BREAK**	

SESSION 4 A3: COMPLEXATION WITH INORGANIC AND ORGANIC LIGANDS

Chair: *N. Wall (USA) and D. Durce (Belgium)*

16:45	DETERMINATION OF URANYL-NITRATE SPECIATION AND THERMODYNAMICS AT 25-250°C BY A COMBINATION OF UV-VIS SPECTROSCOPY AND SOLUBILITY STUDIES *M. Reece, A. Migdisov, F. Häusler, X. Gaona, A. Lassin, M. Altmaier, B. Madé, K. Olivares, H. Boukhalfa (USA, Germany, France)*	**A3-1**
17:10	SPECIATION STUDY OF CALCIUM(II)TRISCARBONATOACTINYLATE(VI) COMPLEXES ON POLYETHERETHERKETONE CAPILLARY USING CE-ICP-MS *R. Sun, E. Dupuis, J. Aupiais, P. Reiller (France)*	**A3-2**
17:35	FORMATION OF CALCIUM-NEPTUNYL(VI)-CARBONATE COMPLEX: A VIS-NIR ABSORPTION SPECTROSCOPIC INVESTIGATION *Y. Jo, H. Kim, S. Choi, S. Cho, H.-K. Kim, H.-R. Cho (Korea)*	**A3-3**
18:00	**END OF ORAL SESSIONS OF MONDAY**	

SESSION 5 POSTER SESSION I (19:00 – 22:00)

PA1 SOLUBILITY AND DISSOLUTION

PA1-1 SOLUBILITY AND SOLID PHASE OF ACTINIDE HYDROXIDE COPRECIPITATES
T. Kobayashi, Y. Yoshikawa, N. Harada, R. Motokawa, D. Matsumura, A. Ikeda-Ohno, K. Mori, T. Sasaki (Japan)

PA1-2 CHEMISTRY OF IRON IN CEMENTITIOUS SYSTEMS: IMPACT OF CALCIUM AND PARTICLE SIZE ON IRON(III) SOLUBILITY AND SPECIATION
P. Q. Fürst, N. Çevirim-Papaioannou, X. Gaona, T. Prüßmann, K. Dardenne, J. Rothe, M. Altmaier, H. Geckeis (Germany)

PA2 SOLID SOLUTION AND SECONDARY PHASE FORMATION

PA2-1 WITHDRAWN ~~THERMODYNAMIC MODELING OF U AND LANTHANIDE IMMOBLIZIATION IN REPOSITORY RELATED MINERALS AND CERAMICS IN HYDROTHERMAL CONDITIONS~~
~~*N. Yaw, X. Guo, O. Bahhage, C. Johnson (USA)*~~

PA2-2 THERMOYDNAMIC CONSISTENCY OF ZIRCON-TYPE ENDMEMBER AND SOLID-SOLUTION PHASES FOR ACTINIDE IMMOBLIZATION
X. Guo, X. Zhao, N. Yaw, G. Roy, A. Avallone, A. Strzelecki, P. Estevenon, N. Clavier, B. Woodfield, N. Dacheux (USA, France)

PA3 COMPLEXATION WITH INORGANIC AND ORGANIC LIGANDS

PA3-1 CHEMICAL SPECIATION OF TRACE-LEVEL CALCIUM URANYL TRICARBONATE COMPLEXES BY SURFACE-ENHANCED RAMAN SPECTROSCOPY
J. Jung, S. Yeon, J.-I. Yun (Korea)

PA3-2 A STUDY OF DISSOLUTION EQUILIBRIA OF URANYL SILICATE MINERALS IN GROUNDWATER USING TIME-RESOLVED LASER-INDUCED LUMINESCENCE SPECTROSCOPY
W. Cha, E. Chang Jung, H.-R. Cho, H.-K. Kim (Korea)

PA3-4 FUNDAMENTAL SPECTROSCOPIC STUDIES OF NEPTUNIUM AND PLUTONIUM IN SUPPORT OF THE PLUTONIUM-238 SUPPLY PROGRAM AT OAK RIDGE NATIONAL
S. Gilson, L. Sadergaski, H. Andrews, A. Parkison (USA)

PA3-5 FUNCTIONALIZATION OF AMINO ACIDS USING A PO_2 SYNTHON AND THEIR INTERACTION WITH F-ELEMENTS
J. Long, T. Schneider, M. Wenzel, K. Schwedtmann, J. J. Weigand (Germany)

PA3-6 THEORETICAL CALCULATIONS OF THE THERMODYNAMIC PROPERTIES AND SOLUBILITIES OF URANYL CARBONATE MINERALS
F. Colmenero, N. Rodríguez-Villagra (Spain)

PA3-7 IMPACT OF THE ALKALI OF BACKGROUND SALT ON PLUTONIUM(V) HYDROLYSIS
G. Lasnier, J. Aupiais, B. Siberchicoti (France)

PA4 REDOX REACTIONS AND RADIOLYSIS EFFECTS

PA4-1 SORPTION BEHAVIOR OF Re(VII) ONTO SOLID AND COLLOID PHASES OF BENTONITE UNDER VARIOUS REDOX CONDITIONS
J. Ha, S.-H. Lee, J.-Y. Lee (Korea)

PA5 SOLID-WATER INTERFACE REACTIONS

PA5-1 EFFECT OF ORGANIC LIGANDS ON RADIONUCLIDE MOBILITY IN NATURAL APTIAN SANDS ENVIRONMENTS
I. Canals, M. López García, B. Madé, L. Alcubierre, M. Agnel, N. Michau, J.-C. Robinet (Spain, France)

PA5-2 THE INFLUENCE OF Al(III) ON THE RETENTION OF Eu(III) ON HEMATITE SURFACES
S. Hilpmann, J. Lessing, M. Schmidt, V. Brendler (Germany)

PA5-3 RETENTION AND STABILITY OF MOLYBDENUM IN ALKALI AND ACID-ACTIVATED GEOPOLYMER WASTE FORMS
S. Iqbal, J.-I. Yun (Korea)

PA5-4 LIXIVIATION OF CEMENTED IONIC EXCHANGE RESINS: DATA ANALISIS FROM REAL SAMPLES
E. Colàs, A. Cerezo, R. López, S. Rueda, P. M. Gallego, J. L. Leganés, D. García (Germany)

PA5-5 WITHDRAWN ~~SORPTION OF SELECTED RADIONUCLIDES ON CANADIAN CRYSTALLINE ROCKS~~
~~*T. Yang, S. Nagasaki, A. Blyth, M. Gobien (Canada)*~~

PA5-6 SORPTION OF AMERICIUM AND PLUTONIUM ON CALCITE IN CONDITIONS RELEVANT FOR NUCLEAR WASTE DISPOSAL
D. Durce, L. Van Laer, E. Coppens, A. Vanleeuw, F. Bocchese (Belgium)

PA5-7 SURFACE COMPLEXATION MODELLING: PATHWAYS TOWARDS A CONSISTENT SORPTION DATABASE
F. Bok, S. Zechel, G.-D. Miron, O. Marinich, V. Brendler (Germany, Switzerland)

PA5-8 INVESTIGATING HETEROGENEOUS Eu(III) SORPTION ON MUSCOVITE: A MULTI-SCALE APPROACH
S. Holzknecht, M. Lindemann, C. Fischer (Germany)

PA5-9 IMPACT OF ISA AND NaCl ON THE UPTAKE OF Ra(II) BY CALCITE
N. Huber, R. E. Guidone, X. Gaona, R. Polly, F. Heberling, F. Bocchese, S. Brassinnes, M. Altmaier, H. Geckeis (Germany, Belgium)

PA5-10 REDOX-DRIVEN SORPTION BEHAVIOR OF PLUTONIUM AND CERIUM ON IRON AND ALUMINIUM OXIDES UNDER VARYING IONIC STRENGTH CONDITIONS
C. Ebite, B. Powell (USA)

PA5-11 SORPTION OF Ba AND Ra ON MONTMORILLONITE IN THE PRESENCE OF Ca
T. Ishidera, S. Shibutani, T. Hamamoto (Japan)

PA5-12 RETENTION OF ANIONIC RADIONUCLIDES IN CEMENTITIOUS ENVIRONMENTS: $^{14}CO_3^{2-}$,$^{36}Cl^-$ AND THE COMPETITION WITH OTHER ANIONS
X. Gaona, R. E. Guidone, Y. Jo, P. Szabo, B. Lothenbach, F. Bocchese, S. Brassinnes, M. Altmaier (Germany, Korea, Switzerland, Belgium)

PA5-13 SORPTION BEHAVIOR OF HUMIC ACIDS ON SEDIMENTARY ROCK AND MONTMORILLONITE
A. Eguchi, K. Yasuda, Y. Nishikawa, K. Nemoto, T. Ishidera (Japan)

PA7 EXPERIMENTAL METHODS

PA7-1 CURIUM OXIDE AGING AND CHARACTERIZATION TO SUPPORT HEAVY ELEMENT RESEARCH STOCKS
C. Parker, S. Schrell, S. Kozimor, I. Piedmonte, T. Spano, A. Miskowiec (USA)

PA7-2 SAGE - SMARTER EXPERIMENT DESIGN FOR MORE SIGNIFICANT RESULTS
J. Kuva, V.-M. Pulkkanen, J. Yliharju, V. Rinta-Hiiro, E. M. Jolis, A. Miettinen, A. Seppälä, S. Naumer (Finland)

PA7-3 RESEARCH ON ANALYTICAL TECHNIQUES FOR TRACE RADIONUCLIDES IN COMPLEX MATRICES
K. Shi, J. Yang, X. Shan, T. Liu, J. He, K. Kang, X. Hou (China)

PA7-4 ULTRAFAST AND SELECTIVE CAPTURE OF $^{99}TcO_4^-$ /ReO_4^- FROM WASTEWATER BY HYPER-BRANCHED QUATERNARY AMMONIUM GROUP-FUNCTIONALIZED RESIN
J. Tong, J. Yang, X. Li, K. Hu, Y. Lu, M. Wang, Y. Hu, K. Shi (China)

PA8 COMPUTATIONAL CHEMISTRY

PA8-1 AN ATOMIC SCALE COMPUTATIONAL APPROACH TO UNDERSTANDING ACTINIDE INCORPORATION INTO GOETHITE
C. Hatton, N. Kaltsoyannis (UK)

PB1 SORPTION/DESORPTION PHENOMENA IN DYNAMIC SYSTEMS

PB1-1 pH-DEPENDENT REMOBILIZATION OF IODINE SPECIES IN SOILS: IMPLICATION TO RADIOIODINE TRANSPORT IN CONTAMINATED ENVIRONMENTS
P. Lin, K. Greene, W. Xing, D. Kaplan (USA)

PB1-2 MECHANISMS HINDERING URANIUM RELEASE FROM ORGANIC LIGAND-PROMOTED DISSOLUTION OF A URANYL PHOSPHATE
B. Ferguson, K. Koehler, M. Trumm, F. Liu, A. Rao, L. Murdoch, B. Powell (USA, Germany)

PB2 DIFFUSION AND OTHER MIGRATION PROCESSES

PB2-1 IN-DIFFUSION AND SITE-SPECIFIC RETENTION OF RADIUM IN CRYSTALLINE ROCKS
O. Fabritius, J. Garnavault, X. Li, J. Sammaljärvi, A.-M. Jakobsson, T. Sojakka, P. Sardini, A. Fabritius, M. Siitari-Kauppi (Finland, Sweden)

PB2-2 TRANSPORT PROPERTIES OF HARD PELITES; ACCESSIBLE POROSITY AND DIFFUSIVITY
J. Sammaljärvi, O. Fabritius, X. Li, M. Siitari-Kauppi, J. Arkko, S. Brassinnes (Finland, Belgium)

PB2-3 DIFFUSION CHARACTERISTIC OF U(VI), Th(IV), Eu(III), Sr(II), Cs(I), AND Cl(-I) IN ALTERED GRANITE UNDER OXIDATION CONDITIONS
H.-K. Lee, J.-K. Lee, S. Choi, J.-S. Kwon, S.-H. Lee (Korea)

PB2-4 NUCLIDE AND GAS DIFFUSION BEHAVIOR IN COMPACTED BENTONITE UNDER DEEP GEOLOGICAL REPOSITORY CONDITIONS
J.-S. Kim, S. U. Mun, J.-Y. Goo, J.-S. Kim, S. Y. Lee, J.-S. Kwon, S.-H. Lee (Korea)

PB3 COLLOID MIGRATION

PB3-1 STUDY ON COLLOID AND RADIONUCLIDES CO-MIGRATION MODEL IN SATURATED POROUS SYSTEM
Q. Tan, X. Wei, Z. Xu, D. Pan, W. Wu (China)

PB3-2 STABILITY OF ILLITE-DERIVED COLLOIDES AND THEIR INTERACTIONS WITH RADIONUCLIDES UNDER AQUATIC CONDITIONS OF NATIONAL LILW REPOSITORIES
H.-K. Kim, K. Lee, Y. Kim, S. H. Lee, H.-R. Cho, E. C. Jung (Korea)

PB3-3 THE MIGRATION BEHAVIOR AND MICROSCOPIC MECHANISMS OF TYPICAL ACTINIDES UNDER THE INFLUENCE OF ENVIRONMENTAL COLLOIDS
Z. Xu, Q. Tang, D. Pan, W. Wu (China)

PB3-4 COLLOIDS MEDIATED TRANSPORT POSE ENHANCED ENVIRONMENTAL RISK OF URANIUM: A CHALLENGE FOR PHOSPHORIC AND REDUCTIVE IMMOBILIZATION
D. Pan, X. Wei, X. Shi, W. Wu (China)

PB3-5 FORMATION, STABILITY AND TRANSPORT OF Eu(III)-SILICATE COLLOIDS
Q. Jin, D. Zhang, Z. Chen, Z. Guo, W. Wu (China)

PB4 EFFECTS OF BIOLOGICAL AND ORGANIC MATERIALS

PB4-1 UNDERSTANDING RADIONUCLIDE BEHAVIOUR AT THE PLANT-SOIL INTERFACE TO DIRECT BIOREMEDIATION STRATEGIES FOR CONTAMINATED LAND
R. Drew, J. Pittman (UK)

PB4-2 EXPLORATION OF THE BIOSORPTION BEHAVIOR AND MECHANISM OF U(VI) BY A NATIVE MICROALGA
H. Li, Y. Guo, J. Gong, F. Li, Y. Yang, J. Liao, N. Liu (China)

PB4-3 THE IMPACT OF MINERAL ORGANIC MATTER ON URANIUM GEOLOGICAL BEHAVIOR
Y. Li, R.Y. Zhang, S. Shi, F. Li, Y. Yang, N. Niu, J. Liao (China)

PB4-4 DEVELOPING (BIO)REMEDIATION OPTIONS FOR HIGH pH RADIONUCLIDE CONTAMINATED LAND AND WATER
L. Shaughnessy, S. Shaw, K. Morris, J. Graham, L. Abrahamsen-Mills (UK)

PB4-5 CHARACTERIZATION OF BOOM CLAY (BC) DISSOLVED ORGANIC MATTER (DOM) AND ASSOCIATED NATURALLY ABUNDANT TRACE ELEMENTS
M. Bouby, A. Lunz, F. Geyer, U. Kaplan, H. Geckeis, S. Brassinnes (Germany, USA, Belgium)

PB6 NATURAL ANALOGUES

PB6-1 SIMULATION OF IODINE MIGRATION AT CIGAR LAKE - A NATURAL ANALOG STUDY
T. Hennig, L. Zheng, J. T. Birkholzer (USA)

PC1 DATA SELECTION AND EVALUATION

PC1-1 DEVELOPMENT OF A SORPTION DATABASE SYSTEM FOR RADIONUCLIDE SORPTION ON CLAY AND CEMENT SYSTEMS IN SUPPORT TO RADIOACTIVE WASTE MANAGEMENT
D. García, M. López-García, I. Canals, S. Álvarez, A. Nardi, L. Duro, S. Brassinnes (Spain, Belgium)

PC1-2 THERMOCHIMIE DATABASE VERSION 13A: UPDATES AND NEW DEVELOPMENTS
B. Madé, W. Bower, S. Brassinnes, J. D. Begg, A. Lassin, P. Felipe dos Santos, D. García, L. Duro, E. Colàs (France, UK, Belgium, Spain)

PC1-3 DECOUPLING THE THERMOCHIMIE DATABASE
J. Rodríguez-Mestres, S. Álvarez, G. Román-Ross, E. Colàs, D. García, B. Madé, W. Bower, S. Brassinnes (Spain, France, UK, Belgium)

PC1-4 DEVELOPMENT AND IMPROVEMENT OF THERMODYNAMIC UNDERSTANDING FOR USE IN NUCLEAR WASTE DISPOSAL SAFETY CASE
S. Brassinnes, X. Gaona, J. Poonoosamy, E. Colàs, G.-D. Miron (Belgium, Germany, Spain, Switzerland)

PC1-5 DEVELOPMENT OF SMART DATABASES: THE CASE OF CESIUM RETENTION IN CRYSTALLINE ROCKS
T. Missana, M. García-Gutiérrez (Spain)

PC1-6 WITHDRAWN ~~A MULTIDISCIPLINARY DATA SYNTHESIS FOR EVALUATING ENVIRONMENTALLY RELEVANT FISSION PRODUCTS IN THE BACKEND FUEL CYCLE~~
~~*L. Cook, H. Wainwright (USA)*~~

PC2 COUPLING CHEMISTRY AND TRANSPORT

PC2-1 REACTIVE TRANSPORT MODELING OF U(VI) BEHAVIOR WITH HYDROGEOCHEMICAL EFFECTS OF BENTONITE INTRUSION IN THE EXCAVATION-DAMAGED ZONE
J. Lee, W. Shik Han, W. W. Yoon, S. Kwon, J.-W. Kim (Korea)

PC2-2 RADIUM TRANSPORT AND CO-PRECIPITATION IN FRACTURED CRYSTALLINE ROCKS
Y. Wang, P. Alt-Epping, G. Deissmann, D. Bosbach, J. Poonoosamy (Germany, Switzerland)

PC3 DEVELOPMENT AND APPLICATION OF MODELS

PC3-1 DEVELOPMENT OF A PLUGGIN TO FACILITATE A SEAMLESS SIMULATION WORKFLOW FOR USING SORPTION PHREEQC MODELS AND IMPORT SORPTION DATA IN GIBBSSTUDIO FRAMEWORK

M. López-García, D. García, I. Canals, S. Álvarez, A. Nardi, L. Duro, S. Brassinnes (Spain, Belgium)

PC3-2 SURROGATE MODELING FOR EVALUATING THE IMPACT OF SEAWATER INTRUSION ON HIGH-LEVEL RADIOACTIVE WASTE REPOSITORY

W. W. Yoon, W. S. Han, J. Lee, J. Hwang, J.-W. Kim (Korea)

PC3-3 RELEVANCE, RELATION AND REDUCTION OF MODEL PARAMETERS: COMBINING GEOSTATISTICAL AND GEOCHEMICAL SIMULATIONS IN ORDER TO CAPTURE HETEROGENEITY OF CRYSTALLINE ROCK

A. Duckstein, S. Pospiech, V. Brendler, F. Bok, R. Tolosana-Delgado, E. Plischke, M. Abdelhafiz (Germany)

PC4 MODEL VALIDATION

PC4-1 A STUDY ON DEVELOPMENT OF A METHODOLOGY TO VALIDATE GROUNDWATER FLOW MODELS IN FRACTURED ROCK

S. Hirota, H. Onoe, H. Saegusa, M. Ishibashi, Y. Tagawa, K. Hane, A. Sawada (Japan)

PC4-2 LABORATORY AND FIELD EVIDENCES VALIDATING A BOTTOM-UP APPROACH USED FOR ASSESSING RETARDATION OF STRONTIUM-90 AND URANIUM IN AN ALLUVIAL AQUIFER

S. Savoye, N. Coreau, H. Mahamat, C. Latrille, E. Gibert (France)

PC5 SAFETY ASSESSMENT AND REPOSITORY CONCEPTS

PC5-1 PERFORMANCE ASSESSMENT OF THE CIGEO PROJECT: POSTULATED TRANSMISSIVE FAULTS
E. Veilly, H. Amor, R. Chaves Deptulski, C. Espivent (France)

PC5-2 INTEGRATED GEOCHEMICAL MODELS FOR THE ASSESSMENT OF RADIONUCLIDE MIGRATION IN A DEEP GEOLOGICAL REPOSITORY IN SWITZERLAND
G. D. Miron, D. A. Kulik, M. A. Glaus, R. A. J. Wüst, B. Baeyens, E. Curti, W. Hummel, U. Mäder, O. Marinich, M. Marques Fernandes, T. Thoenen, L. R. Van Loon, P. Wersin, S. V. Churakov (Switzerland)

PD APPLICATION TO CASE STUDIES

PD-1 CONTAMINANT PATHWAY RESEARCH AT NUCLEAR WASTE SERVICES (UK)
W. Bower (UK)

PD-2 THE CURRENT STATUS OF BEISHAN URL AND CHALLENGES
C. L. Liu, Y. Zhu, J. Du (China)

PD-3 IRRADIATION EFFECTS ON KEROGEN BEARING ROCKS OF THE GHAREB FORMATION, IMPLICATION FOR RADIOACTIVE WASTE DISPOSAL
N. Mizrahi, O. Klein-BenDavid, A. Amrani, G. Yardeni, Y. Oved Rosenberg (Israel)

PD-4 SULFIDE AT WIPP
T. Platte, J. S. Swanson, P. V. Brady (USA)

PD-5 EVALUATION OF ALTERNATIVE LEACHING SOLUTIONS, REDUCTANTS, AND NATURAL ATTENUATION PROCESSES AT URANIUM IN SITU RECOVERY SITES USING REPRESENTATIVE COLUMN EXPERIMENTS
G. Ledingham, I. Mantelli, S. Doug Ware, M. Riss, M. Pelizza, N. Conroy (USA)

PE1 UNITED STATES DEPARTMENT OF ENERGY ENVIRONMENTAL MANAGEMENT, LEGACY MANAGEMENT, AND NUCLEAR WASTE DISPOSITION PROGRAMS

PE1-1 PLUTONIUM COLLOID BEHAVIOR UNDER CONDITIONS RELEVANT TO GROUT CLOSURE CONDITIONS OF LIQUID WASTE TANKS
D. Montgomery, B. Powell (USA)

PE1-2 IODINE-129 SEASONALITY IN WETLANDS: A CONCEPTUAL MODEL BASED ON FIELD-SCALE OBSERVATIONS
H. Gonzalez-Raymat, M. E. Denham, H. H. Vermeulen, N. A. Losey, H. M. Wainwright, C. Eddy-Dilek (USA)

PE1-3 URANIUM TRANSPORT IN A CONTAMINATED WETLAND STREAM: IMPACT OF FLOW RATE AND SUSPENDED SOLIDS COMPOSITION
D. Kaplan, K. Greene, W. Xing, B. Powell, K. Kemner, M. Boyanov, E. O'Loughlin, P. Lin (USA)

PE2 THE INTERSECTION OF NUCLEAR SECURITY AND RADIONUCLIDE MIGRATION IN NATURAL AND/OR ENGINEERED SYSTEMS

PE2-1 SEPARATIONS FOR NUCLEAR FORENSICS APPLICATIONS
N. Wall, B. Burton-Pye, M. Forbes, L. Francesconi, P. Monte, D. Penchoff, C. Peterson, N. Uhna, R. Wood (USA)

PE2-2 OPTIMIZED ALGORITHMIC SEPARATION METHODS FOR SAMPLE SPECIFIC RADIONUCLIDES
E. Fix, F. Rojas, M. Seawright, M. Perez, T. Windus, M. Danjaji, B. Powell (USA)

TUESDAY (23. SEPTEMBER)

8:25 **CONFERENCE ANNOUNCEMENTS**

SESSION 6 D: APPLICATION TO CASE STUDIES

Chair: T. Payne (Australia) and A.-M. Jakobsson (Sweden)

8:30 CESIUM-RICH MICRO-PARTICLES: A WINDOW INTO THE MELTDOWN EVENTS AT THE FUKUSHIMA DAIICHI NUCLEAR POWER PLANT **D-1**
S. Utsunomiya, S. Yamasaki, G. Law, T. Ohnuki, B. Grambow, R. Ewing (INVITED) (Taiwan, Japan, Finland, France, USA)

9:15 AUTOMATED PARTICLE ANALYSIS METHODS FOR INVESTIGATING HANFORD TANK WASTES **D-2**
E. C. Buck, R. C. Daniel, J. Yao, A. A. Bachman, C. A. Burns, A. M. Westesen, C. I. Pearce, R. A. Peterson (USA)

9:40 NEW TECHNOLOGIES TO INCREASE URANIUM PRODUCTION, IMPROVE RESTORATION OUTCOMES, AND REDUCE WATER USE AT URANIUM IN-SITU RECOVERY OPERATIONS **D-3**
N. Conroy, G. Ledingham, I. Mantelli, A. Migdissov, S. D. Ware, B. Hanson, A. Robinson, K. Erickson, M. Schappert, B. Goehring, M. Sweeney, C. Tsouris (USA)

10:05 OVERVIEW OF THE NWMO DEEP GEOLOGICAL REPOSITORY FOR CANADA'S USED NUCLEAR FUEL PROJECT **D-4**
T. Yang, M. Gobien (Canada)

10:30 **BREAK**

SESSION 7 A5: SOLID-WATER INTERFACE REACTIONS

Chair: S. Brassinnes (Belgium) and S. Estes (USA)

10:55 PROBING THE EFFECT OF ENVIRONMENTAL CONDITIONS ON THE SORPTION OF RADIONUCLIDES ON POSSIBLE HOST ROCKS AND THEIR MAIN SORBING MINERALS **A5-1**
L. Van Laer, D. Durce, N. Maes, G. Verstrepen, D. Verhaegen, S. Brassinnes (Belgium)

11:20 SORPTION OF $[Tc^{I}(CO)_3(H_2O)_3]^+$ ON REDOX ACTIVE AND INACTIVE MINERALS **A5-2**
C. Börner, M. Roca Jungfer, J. Kretzschmar, K. Müller, T. Stumpf, N. Mayordomo (Germany)

11:45 SORPTION OF Eu, Th, U, AND Pu ONTO GRANITE AND BIOTITE GNEISS IN KOREAN GROUNDWATER **A5-3**
H. Eun, P. G. Szabo, S. Lee, D. Rehhorn, Y. Jo, M. Altmaier, J. Lee, X. Gaona, J.-I, Yun (Korea, Germany)

12:10 IMPACT OF ISA AND CHLORIDE ON THE UPTAKE OF Nb(V) BY CALCITE AND CARBONATED CEMENT PASTE **A5-4**
N. Huber, R. E. Guidone, X. Gaona, K. Garbev, T. Prüssmann, M. Lopez-Garcia, L. Alcubierre, F. Bocchese, S. Brassinnes, M. Altmaier, H. Geckeis (Germany, Spain, Belgium)

12:35 **BREAK**

SESSION 8 A8: COMPUTATIONAL CHEMISTRY

Chair: P. Yang (USA) and F. Réal (France)

14:30 UNVEILING ACTINIDE ELECTRONIC STRUCTURE WITH HERFD-XANES AND QUANTUM CHEMISTRY: FROM URANYL TO PROTACTINIUM COMPLEXES **A8-1**
V. Vallet, F. Réal, A. Severo Pereira Gomes, T. Shaaban, W. Aldair Misael, H. Oher, J. März, L. Amidani, E. F. Bazarkina, K. O. Kvashnina, C. Le Naour, P. Lorenzo Solari, T. Burrow, M. Hunault, M. Maloubier (INVITED) (France, Germany)

15:15 AB INITIO SPECIATION OF Tc-GLUCONATE COMPLEXES IN AQUEOUS SYSTEMS **A8-2**
R. Polly, K. Dardenne, S. Duckworth, X. Gaona, T. Prüssmann, J. Rothe, M. Altmaier, H. Geckeis (Germany)

15:40 URANIUM REDUCTION BY MAGNETITE: AB INITIO THERMODYNAMICS OF NANOWIRE FORMATION AND STABILITY **A8-3**
J. Carbone, M. Sassi, B. Bártová, T. La Grange, R. Bernier-Latmani, K. M. Rosso (Switzerland, USA)

16:05 **BREAK**

SESSION 9 A1: SOLUBILITY AND DISSOLUTION OF SPENT FUEL

Chair: D. Reed (USA) and T. Sasaki (Japan)

16:30 AQUEOUS CONCENTRATIONS OF URANIUM AND STRONTIUM RELEASED FROM SPENT NUCLEAR FUEL UNDER STRONGLY REDUCING CONDITIONS **A1-5**
M. Herm, T. König, A. Walschburger, X. Gaona, V. Metz (Germany)

16:55 THE REACTIVITY OF Nd AND Gd DOPED UO_2 IN CONTACT WITH H_2O_2: A MICROANALYTICAL AND MACROSCOPIC DISSOLUTION STUDY **A1-6**
F. Brandt, M. Klinkenberg, J. Barthel, R. Thümmler, A. Bukaemskiy, P. Kegler, J. Mayer, D. Bosbach (Germany)

17:20 DISSOLUTION OF UNIRRADIATED MOX FUEL IN THE PRESENCE OF METALLIC IRON **A1-7**
M. Saleh, N. Hansson, M. Hedberg, K. Spahiu, C. Ekberg (Sweden)

17:45 INTRAGRANULAR NON-DIFFUSIONAL XENON BUBBLE FORMATION AND BEHAVIOR IN USED NUCLEAR FUEL: IMPLICATIONS FOR WASTE STORAGE, ACCIDENTAL RELEASE, AND ACCIDENT TOLERANT FUEL DESIGNS **A1-8**
D. Williams, J. Miao, Y. Anima Opare Appiah, J. Schwantes (USA)

18:10 **END OF ORAL SESSIONS OF TUESDAY**

SESSION 10 POSTER SESSION II (19:00 – 22:00)

PA1 SOLUBILITY AND DISSOLUTION

PA1-3 INTERPLAY OF THERMODYNAMICS AND KINETICS OF SOLID PHASES: SOLUBILITY AND STABILITY OF M(II), M(III) AND M(IV) HYDROXIDES AND HYDROUS OXIDES
X. Gaona, E. Colàs, B. Grambow, T. Kobayashi, T. Suzuki-Muresan, R. Tonna, S. Brassinnes (Germany, Spain, France, Belgium)

PA1-4 SOLUBILITY PHENOMENA AND THERMODYNAMIC DESCRIPTION OF THE Tc(IV)-EDTA SYSTEM IN ALKALINE TO HYPERALKALINE CONDITIONS
K. Kim, S. Duckworth, T. Pruessmann, K. Dardenne, J. Rothe, W. Um, M. Altmaier, X. Gaona (Korea, Germany)

PA1-5 CeO_2 AND PuO_2 SOLUBILITY: EFFECT OF TEMPERATURE AND PARTICLE SIZE
G. Cothran, D. Montgomery, B. Powell (USA)

PA3 COMPLEXATION WITH INORGANIC AND ORGANIC LIGANDS

PA3-8 LEACHING BEHAVIOUR OF URANIUM OXIDES IN THE PRESENCE OF ORGANIC ACIDS
T. Sasaki, R. Tonna, R. Suenaga, T. Kobayashi, Y. Okamot (Japan)

PA3-9 LEARNING FROM NUCLEAR MEDICINE TO HELP CURE ^{99}Tc CONTAMINATED LAND
C. Robinson, T. Neill, N. Byrd, K. Morris, S. Shaw, C. Pearce, H. A. Williams, K. Rue, M. Doughman, N. Gunson, J. R Lloyd (UK, USA)

PA3-10 COMPLEXATION OF Th, U, Np, Pu, Am WITH GLUCONATE IN THE PRESENCE OF Ca STUDIED BY CE-ICP-MS
J. Lohmann, T. Kutyma, D. Velikotrav, A. Wiebe, T. Reich (Germany)

PA3-11 INSIGHT INTO THE COMPLEXATION OF PLUTONIUM(IV) AND NEPTUNIUM(V) WITH ORGANOPHOSPHORUS LIGANDS UNDER ALKALINE GEOLOGICAL CONDITIONS
Y. Chen, B. Madé, W. Bower, S. Brassinnes, J. Giménez, B. Powell, D. García (Spain, France, UK, Belgium, USA)

PA3-12 PLUTONIUM CHLORIDE SPECIATION AS A FUNCTION OF TEMPERATURE, IONIC STRENGTH, AND pH
K. Sockwell, B. Adjornor, A. Hixon (USA)

PA3-13 BREAKING THE NEPTUNYL BARRIER: DIRECT ACCESS TO NEPTUNIUM(IV) IN AQUEOUS SOLUTION VIA POLYOXOMETALATE-MEDIATED REDUCTION AND STABILIZATION
A. Hastings, I. Colliard, D. Kaseman, C. Colla, G. Deblonde (USA)

PA3-14 MOLECULAR CHARACTERIZATION AND ION BINDING PROPERTIES OF DEEP UNDERGROUND DISSOLVED ORGANIC MATTERS USING FLUORESCENCE SPECTROSCOPY
H. Sato, K. Toda, H. Beppu, A. Eguchi, Y. Amano, K. Miyakawa, T. Saito (Japan)

PA3-15 CHRONICLES OF PEROXIDE PLUTONIUM SPECIES: STRUCTURAL CHARACTERIZATION OF NEW Pu(IV) GREEN PEROXIDE
J. Margate, M. Virot, S. Bayle, D. Menut, T. Dumas, C. Tamain, P. Estevenon, P. Moisy, S. I. Nikitenko (France)

PA4 REDOX REACTIONS AND RADIOLYSIS EFFECTS

PA4-3 MECHANISMS AND RATES OF U(VI) REDUCTION BY Fe(II) AND THE ROLE OF U(V) DISPROPORTIONATION
K. Rosso, R. Collins (USA)

PA4-5 UNDERSTANDING TOWARD TECHNETIUM-99 IMMOBILIZATION MECHANISMS BY PYRITE IN PRESENCE OF METABOLITES
V. Kumar Saini, A. Rossberg, J. Kretzschmar, F. Lehmann, K. Müller, T. Stumpf, N. Mayordomo (Germany)

PA5 SOLID-WATER INTERFACE REACTIONS

PA5-14 U(VI) SORPTION ONTO RUTILE SURFACE IN THE PRESENCE OR ABSENCE OF EDTA: A COMBINED MACROSCOPIC AND SPECTROSCOPIC STUDY
W. Zhou (China)

PA5-15 NANOSTRUCTURED HALLOYSITE/CONJUGATED POLYMER SORBENTS FOR EXTRACTION OF URANIUM AND PLUTONIUM FROM NATURAL ENVIRONMENTS
V. Bliznyuk, A. Pud, N. Ogurtsov, Y. Noskov, Y. Lvov, B. Powell, T. DeVol (USA)

PA5-16 THE IMPACT OF NATURAL ORGANIC MATTER ON THE SORPTION OF RADIOCESIUM TO SAVANNAH RIVER SOILS IN LABORATORY SCALE EXPERIMENTS
J. Brown, D. Kaplan, A. Thompson, B. Ferguson (USA)

PA5-17 WITHDRAWN ~~Ra AND Am SORPTION ON BIOTITE AT pH 5-9 AND AT VARYING IONIC STRENGTH~~
~~*S. Holgersson, P. Kumar, C. Ekberg (Sweden)*~~

PA5-18 EXPLORING COMPETING SURFACE REACTIONS IN RADIONUCLIDE RETENTION: EXPERIMENTAL AND MODELLING INSIGHTS
S. Britz, J. Fricke, V. Brendler, J. Lessing, S. Hilpmann, M. Schmidt, J. Lützenkirchen, B. Hosseinimonjezi (Germany)

PA5-19 THE ROLE OF ORGANIC LIGAND COMPLEXATION TO SORPTION MECHANISMS WITH ACTINIDES ON ACID BIRNESSITE
L. Hunley, A. Humbert, N. Mlynarczyk, V. Anagnostopoulos (USA)

PA5-20 STUDY ON PREPARATION OF BORON NITRIDE-BASED ADSORBENTS AND ITS ADSORPTION PERFORMANCE FOR URANIUM
P. Zhang, D. Pan, W. Wu (China)

PA5-21 INFLUENCE OF TEMPERATURE ON TRIVALENT ION SORPTION TO HEMATITE: AMERICIUM, EUROPIUM, AND NEODYMIUM
S. Kwong-Moses, B. Powell (USA)

PA5-22 THE IMPACT OF CLAY ROCK HETEROGENEITY ON RADIONUCLIDE MIGRATION - SCALE DEPENDENT ROCK CHARACTERIZATION AND SORPTION STUDIES OF THE SANDY FACIES OF OPALINUS CLAY
F. Steegborn, N. Gill, F. Heberling, D. Schild, N. Mueller, S. Ratnayake, V. Metz, H. Geckeis (Germany)

PA5-23 EVALUATING SORBENTS FOR THE REMOVAL OF IODINE-129 IN CONTAMINATED GROUNDWATER
E. Erard-Stone, K. Greene, W Xing, B. Ferguson (USA)

PA5-25 UNDERSTANDING THE VARYING MECHANISMS OF RADIONUCLIDE IMMOBILIZATION BY ALTERNATIVE BENTONITE MATERIALS. A MULTI-TECHNIQUE STUDY OF U Cs, Eu, AND Ni
G. F. Vettese, X. Li, L. Sirén, K. Silenius, M. Siitari-Kauppi, N. Huittinen, L. B. F. dos Santos, S. Shams Aldin Azzam, A. Rossberg, R. Bes, M. Niskanen, G. T. W. Law (Finland, Germany, France)

PA6 COLLOID FORMATION

PA6-1 STABILITY AND CRITICAL COAGULATION CONCENTRATION OF COLLOIDAL IRON(II, III) OXIDE IN THE PRESENCE OF CALCIUM ION
H. Eun, S. Lee, H.-K. Kim, J.-I. Yun (Korea)

PA6-2 EFFECTS OF GROUNDWATER COMPOSITION AND ACCESSORY MINERALS ON BENTONITE EROSION
Z. Chen, M. Bouby, A. Fried, S. Kuschel, S. Moisei-Rabung, S. Kraft, H. Geckeis (Germany)

PA7 EXPERIMENTAL METHODS

PA7-5 ADVANCED FLOW INJECTION-BASED AUTOMATED SAMPLE PROCESSING FOR PRECISE ^{55}Fe AND ^{63}Ni SEPARATION IN NUCLEAR POWER PLANT EFFLUENTS
K. Hu, J. Yang, K. Shi, X. Hou (China)

PA7-6 PROBING AIR-WATER INTERFACES OF DIBUTYL PHOSPHORIC ACID (HDBP) AQUEOUS SOLUTIONS USING VIBRATIONAL SUM FREQUENCY GENERATION (VSFG)
Z. Wang, C. Louie, N. Adhikari, M. Boamah-Agyemang, S. Clark, A. Tuladhar, C. Pearce, K. Rosso (USA)

PA7-7 A METHOD FOR THE RAPID DETERMINATION OF LOW-LEVEL PLUTONIUM IN ORGANIC MATTER LADEN NATURAL WATERS
A. Kane, B. A. Powell (USA)

PA8 COMPUTATIONAL CHEMISTRY

PA8-2 AUTONOMOUS DISCOVERY OF SELECTIVE SEPARATION OF F-ELEMENTS
P. Yang, S. Adelman, L. Augustine, E. Batista, S. Kozimor, J. Lee, N. Lubbers, D. Perez, J. Schrier, T. Summers, M. Taylor, M. Tynes, Y. Wang (USA)

PA8-3 THE COORDINATION CHEMISTRY OF U(IV) IN AQUEOUS SOLUTIONS: CHALLENGES AND INSIGHTS FROM SPECTROSCOPY AND THEORY
G. Raposo-Hernández, R. R. Pappalardo, F. Réal, V. Vallet, E. Sánchez Marcos (Spain, France)

PB1 SORPTION/DESORPTION PHENOMENA IN DYNAMIC SYSTEMS

PB1-3 IMPACT OF C-STEEL CONTAINER Fe CORROSION PRODUCTS ON THE SORPTION AND DIFFUSION OF ^{75}Se(IV) and ^{233}U(VI) IN BENTONITE
U. Alonso, M. García-Gutiérrez, T. Missana (Spain)

PB1-4 RAMPEC: A WORKPACKAGE IN EURAD-2 FOCUSING ON RADIONUCLIDE MOBILITY UNDER PERTURBED CONDITIONS
M. Altmaier, S. Britz, A. Idiart, N. Macé, N. Maes, J. Meeussen, T. Missana, J. Provis, J.-C. Robinet (Germany, Spain, France, Belgium, Netherlands, Switzerland)

PB1-5 RADIONUCLIDE TRANSPORT AND FATE IN LOWER STRENGTH SEDIMENTARY ROCKS FOR GEODISPOSAL
C. Robinson, K. Morris, K. Kraavi, S. Shaw (UK)

PB2 DIFFUSION AND OTHER MIGRATION PROCESSES

PB2-5 PATHS AND ACCESSIBLE PORES FOR MATRIX DIFFUSION IN CRYSTALLINE ROCKS
Y. Fukatsu, T. Ishidera (Japan)

PB2-6 DIFFUSIVE BEHAVIOUR OF HTO, ^{36}Cl, ^{35}S AND ^{75}Se THROUGH COMPACTED FEBEX BENTONITE UNDER THE INFLUENCE OF TEMPERATURE
A. Romero-Salido, T. Missana, U. Alonso, M. García-Gutiérrez (Spain)

PB2-7 VARIABLE TEMPERATURE RADIONUCLIDE DIFFUSION THROUGH NA-MONTMORILLONITE
M. Riss, B. Powell (USA)

PB2-8 STUDY ON DIFFUSION OF IONS IN COMPACTED MONTMORILLONITE WITH CHARGE COMPENSATION
Y. Kamada, Y. Konno, S. Uematsu, N. Watanabe, T. Kozaki (Japan)

PB2-9 DIFFUSION BEHAVIOR OF D_2O AND PORE STRUCTURE EVOLUTION OF METAKAOLIN-BASED GEOPOLYMERS
K. Toda, R. Motokawa, T. Saito (Japan)

PB3 COLLOID MIGRATION

PB3-6 RETENTION MECHANISMS OF URANIUM IN CALCITE VEINS FROM DEEP SUBSURFACE SEDIMENTARY FORMATIONS OF THE HORONOBE AREA, HOKKAIDO, JAPAN
S. Dei, Y. Sugiura, Y. Amano, P. Francisco, Y. Takahashi, Y. Tachi (Japan)

PB3-7 STABILITY AND TRANSPORT OF Ce(IV)-BORATE INTRINSIC COLLOID
Z. Chen, K. Chen, G. Zu, Q. Jin, Z. Guo, W. Wu (China)

PB3-8 MULTIPLE ROLES OF COLLOIDS IN NUCLEAR WASTE DISPOSAL SCENARIOS
Z. Guo, Z. Chen, Q. Jin, W. Wu (China)

PB3-9 IN SITU CHARACTERIZATION OF F-ELEMENT RETENTION UNDER CLOSE TO NATURE CONDITIONS
S. Britz, J. Fricke, C. Fischer, S. Holzknecht, H. Foerstendorf, V. Brendler, M. Schmidt, R. Sarkar, T. Schäfer, V. Gabert (Germany)

PB4 EFFECTS OF BIOLOGICAL AND ORGANIC MATERIALS

PB4-6 THE INFLUENCE OF BACTERIA AND ALGAE ON ENVIRONMENTAL TRANSPORT OF SELECT RADIONUCLIDES: A REVIEW
D. Ryan, N. Martinez (USA)

PB4-8 WITHDRAWN ~~UNVEILING THE BIOCHEMICAL PATHWAYS OF ACTINIDE MIGRATION IN MARINE ECOSYSTEMS: INSIGHTS FROM A. NODOSUM SEAWEED~~
M. ~~R. Beccia, M. Zerbini, A. Jeanson, C. Den Auwer, P. L. Solari, C. Leblanc (France)~~

PB4-9 USING ENGINEERING BIOLOGY TO ENHANCE URANIUM BIOREMEDIATION
N. Byrd, K. Morris, J. R Lloyd (UK)

PB4-10 EXAMINATION OF URANIUM SORPTION, LOCALIZATION, AND PHYSIOLOGICAL RESPONSE IN MARINE MICROALGAE, ISOCHRYSIS GALBANA
A. Gonzales, E. Fix, D. Montgomery, S. Donaher, P. van den Hurk, S. Estes, N. Martinez (USA)

PB4-11 METABOLIC PATHWAYS OF THE BENTONITE-ISOLATE DESULFITOBACTERIUM SP. G1-2 FOR Tc-99 IMMOBILIZATION
I. Cardaio, S. Kluge, D. Prieur, A. Roßberg, C. Robinson, N. Byrd, K. Müller, J. R. Lloyd, K. Morris, T. Stumpf, A. Cherkouk, N. Mayordomo (Germany, UK)

PB5 FIELD AND LARGE-SCALE EXPERIMENTS

PB5-1 EFFECT OF A THERMAL GRADIENT ON THE DIFFUSION OF RADIONUCLIDES IN OPALINUS CLAY: IN-SITU EXPERIMENT AT MONT TERRI
V. Kerleguer, G. Pochet, F. Bernier, C. Barroo, G. Deissmann, Y. Yang, F. Heberling, S. Ratnayake, C. Dietl, C. Borkel, F. Magri, M. Agnel, B. Graupner, D. Jaeggi (Belgium, Germany, France, Switzerland)

PC1 DATA SELECTION AND EVALUATION

PC1-7 APPLICATION OF A COMMUNITY FAIR SORPTION DATABASE TO RADIONUCLIDE SURFACE COMPLEXATION AND ION EXCHANGE MODELS FOR NUCLEAR WASTE REPOSITORY SCIENCE
M. Zavarin, S.-C. Han, S. Zechel, V. Brendler, F. Bok, B. Powell, F. Coutelot, O. Marinich, M. do Sameiro Marques Fernandes, D. Miron (USA, Germany, Switzerland)

PC1-8 SURFACE COMPLEXATION/ION EXCHANGE DATA INTEGRATION FOR RADIONUCLIDE SORPTION TO CLAY MINERALS
L. Eguiguren, H. Wainwright, M. Zavarin (USA)

PC1-9 PREDICTION OF DISTRIBUTION COEFFICIENTS OF Cs FOR CRYSTALLINE ROCKS: AN APPROACH USING MACHINE LEARNING AND SORPTION DATABASE
Y. Sugiura, M. Nonaka, Y. Sugiyama, K. Hayashi, Y. Matsuura, Y. Amano, T. Ishidera (Japan)

PC1-10 THERMODYNAMIC PROPERTIES OF ZEOLITES: CURRENT STATUS WITHIN THE DITUSC STRATEGIC STUDY
A. Lassin, B. Lothenbach, G. D. Miron (France, Switzerland)

PC1-11 STUDY ON THE STATE OF KNOWLEDGE ON RADIONUCLIDE SORPTION IN THE NEAR-FIELD OF A DEEP GEOLOGICAL NUCLEAR WASTE REPOSITORY
G. Bracke, T. Philipp, T. Weyand (Germany)

PC1-12 THE NEA THERMOCHEMICAL DATABASE (TDB) PROJECT: HIGH QUALITY DATA, ACCESSIBILITY AND CAPACITY BUILDING
A. Mercier (France)

PC1-13 THEREDA - THERMODYNAMIC REFERENCE DATABASE
H.C. Moog, S. Hagemann, A. Kozlowski, H. Seher, F. Bok, V. Brendler, A. Richter, L. Wissmeier, M. Altmaier, X. Gaona, C. Kiefer, C. Marquardt, D. Freyer, M. Pannach, J. Sohr, W. Voigt, D. Miron (Germany, Switzerland)

PC2 COUPLING CHEMISTRY AND TRANSPORT

PC2-3 CRACKING REACTIVE TRANSPORT PROCESSES WITH GAS: HOW MINERAL REACTIONS AND GAS PRODUCTION SHAPE SAFE RADIOACTIVE WASTE DISPOSAL?
J. Poonoosamy, L. Wegner, A. Kaspor, G. Dan Miron, R. Santoso, N. I. Prasianakis, R.V.H. Dagnelie, G. Deissmann, D. Bosbach (Germany, Switzerland, France)

PC2-4 REACTIVE TRANSPORT MODELING OF DIFFUSIVE ION TRANSPORT IN CLAY ROCKS
D. Sarsenbayev, C. Tournassat, H. Wainwright, C. Steefel (USA, France)

PC3 DEVELOPMENT AND APPLICATION OF MODELS

PC3-4 WEBASED VISUALIZATION OF SURFACE COMPLEXATION-ION EXCHANGE (L-SCIE) DATABASE
F. Coutelot, M. Macfarlane, B. Powell, M. Zavarin, H. Wainwright (USA)

PC3-5 PHYSICS-INFORMED MACHINE LEARNING WITH SORPTION EXPERIEMNETAL DATABASE FOR NUCLEAR WASTE DISPOSAL PERFORMANCE ASSESSMENTS
H. Wainwright, F. Coutelot, D. Sarsenbayev, L. Eguiguren, S.-C. Han, B. Powell, M. Zavarin (USA)

PC3-6 THE TRANSPORT OF RADIONUCLIDES ALONG THE SELLAFIELD SHORELINE: CLIMATE CHANGE IMPACT AND MITIGATION STRATEGIES
L. Bacon-Hall, N. Leonardi, A. Plater, C. Lyddon, L. Abrahamsen-Mills, S. Kwong (UK)

PC4 MODEL VALIDATION

PC4-3 CAN TIPPING MODEL VII ACCURATELY DESCRIBE RADIONUCLIDE INTERACTIONS WITH BOOM CLAY DISSOLVED ORGANIC MATTER?
D. Durce, J. Govaerts, S. Salah, L. Van Laer, L. Wang, N. Maes, S. Brassinnes (Belgium)

PC4-4 CAPACITY OF SORPTION MODELS TO DESCRIBE Cs^{+}, Sr^{2+} AND URANIUM BEHAVIOR ON SOILS SURROUNDING NUCLEAR FACILITIES
S. Savoye, C. Latrille, N. Coreau, M. Krimissa, M. Lorthioy, N. Grozeva (France)

PC5 SAFETY ASSESSMENT AND REPOSITORY CONCEPTS

PC5-3 RADIOLOGICAL CONSEQUENCE ANALYSIS AND STUDY ON THE BARRIER EFFICIENCY AGAINST RADIONUCLIDE MIGRATION IN A DEEP GEOLOGICAL REPOSITORY IN NORTHERN SWITZERLAND
X. Li, S. Diem, S. Röthlin, G. Mayer, N. Hubschwerlen (Switzerland)

PC5-4 HEAT-GENERATING SPENT NUCLEAR FUEL SIMULATIONS TO ASSESS SUBSURFACE DISPOSITION IN THE NEGEV DESERT, ISRAEL
D. D. Lucero, K. C. Swager, N. Balaban, H. Boukhalfa, S. M. Bourret, G. Y. Bussod, R. Calvo, O. Klein-BenDavid, I. J. Reznik, Y. Rosenberg, R. Rosenzweig, G. A. Zyvoloski, P. H. Stauffer (USA, Israel)

PD APPLICATION TO CASE STUDIES

PD-6 EVALUATION OF AN ORGANIC-RICH ROCK FORMATION AS A POTENTIAL NUCLEAR WASTE REPOSITORY SITE IN ISRAEL
G. Deblonde, K. Morrison, M. Zavarin, A. Kersting, O. Klein BenDavid (USA, Israel)

PD-7 DENSITY DISTRIBUTION AND GRAVITATIONAL SEPARATION OF RADIOCESIUM-BEARING MICROPARTICLES IN FUKUSHIMA SOILS
S. Yamasaki, K. Takeuchi, A. Sakaguchi, S. Utsunomiya (Japan, Taiwan)

PD-9 ~~RADIONUCLIDE TRANSPORT IN SATURATED AND UNSATURATED DISCRETE FRACTURES~~
WITHDRAWN
N. ~~Weisbrod, O. Klein-BenDavid, T. Turkeltaub, H. Jmili, H. Ougazdamou, N. DeFalco (Israel)~~

PD-10 DISPOSAL OF SPENT FUEL FROM SMALL MODULAR NUCLEAR REACTORS USING A DEEP BOREHOLE METHOD: BEHAVIOR OF RADIONUCLIDES IN BEDROCK AND BARRIERS
A. Fabritius, J. Sammaljärvi, G. Law, J. Kuva, E. Jolis (Finland)

PE1 UNITED STATES DEPARTMENT OF ENERGY ENVIRONMENTAL MANAGEMENT, LEGACY MANAGEMENT, AND NUCLEAR WASTE DISPOSITION PROGRAMS

PE1-4 ADVANCING LIQUID PHOSPHATE TECHNOLOGIES FOR IN SITU SUBSURFACE IMMOBILIZATION OF URANIUM AND TECHNETIUM AT THE HANFORD SITE
H. Emerson, J. Szecsody, S. Pochampally, E. Arnold, M. Snyder, A. Lawter, J. Hager, C. Resch, D. Boglaienko, S. Saslow, C. Pearce, M. Doughman, K. Rue, M. Kim, R. Mackley (USA)

PE1-5 CHARACTERIZING PLUTONIUM AND AMERICIUM MOBILITY IN SUBSURFACE SEDIMENTS AT THE HANFORD SITE
H. Emerson, C. Delegard, M. Snyder, A. Plymale, C. Pearce (USA)

PE1-6 EFFECTS OF UV AND GAMMA IRRADIATION ON THE REDOX SPECIATION AND CHEMISTRY OF PERTECHNETATE AND PERRHENATE UNDER SOLVENT EXTRACTION CONDITIONS
H. Elshendidi, R. Salcedo, R. Greenberg, B. Layne, J. Wishart, B. Burton-Pye, D. McGregor, L. Francesconi (USA)

PE1-7 UNDERSTANDING THE CHEMISTRY OF PLUTONIUM OXIDE NANOPARTICLES IN WASTE TANKS THROUGH AGING EXPERIMENTS
R. Wolsleger, D. Montgomery, J. Neumann, R. Wilson, B. Powell (USA)

WEDNESDAY (24. SEPTEMBER)

8:25 **CONFERENCE ANNOUNCEMENTS**

SESSION 11 A6: COLLOID FORMATION AND MIGRATION

Chair: W. Cha (Korea) and H. Emerson (USA)

8:30 COLLOIDS POSE AN ENHANCED TRANSPORT RISK OF RADIONUCLIDES IN SATURATED POROUS MEDIA **A6-1**
W. Wu, X. Shi, X. Wei, D. Pan, Z. Xu (INVITED) (China)

9:15 COLLOIDAL VECTORS OF URANIUM AS DETERMINED BY SIZE-BASED FRACTIONATION TECHNIQUES: CASE OF THE WETLAND FROM THE FORMER MINING SITE OF ROPHIN (FRANCE) **A6-2**
M. Chaillou, M. Bouby, F. Geyer, N. Müller, A.-L. Nivesse, C. Landesman, G. Montavon (France)

9:40 ASSESSING POST-REMEDIATION MOBILITY RISKS OF URANIUM(IV) THROUGH COLLOIDAL TRANSPORT AND ISOTOPIC SIGNATURES **A6-3**
X. Shi, D. Pan, W. Wu (China)

10:05 LONG-TERM ALTERATION OF HYDROLYTIC ACTINIDE OXIDE NANOPARTICLES UNDER CONTROLLED STORAGE CONDITIONS **A6-4**
I. Russell, N. Cabanas, A. Hixon (USA)

10:30 THERMODYNAMIC AND SPECTROSCOPIC CHARACTERIZATION OF PLUTONIUM OXIDE COLLOIDS REACTED IN CONCENTRATED ELECTROLYTE SOLUTIONS **A6-5**
J. Neumann, B. A. Powell, D. A. Montgomery, R. E. Wilson (USA)

10:55 **BREAK**

SESSION 12 D: APPLICATIONS TO CASE STUDIES

Chair: *C. Pearce (USA) and W. Bower (UK)*

11:15	SCIENCE-INFORMED INTERVENTION: OUTCOMES FROM TWO DECADES OF RESEARCH AT THE LITTLE FOREST LEGACY SITE, AUSTRALIA *T. Payne, P. Bots, D. Cendon, S. Hankin, J. Harrison, C. Hughes, R. Islam, M. Johansen, A. Kinsela, B. Rowling, A. Borovskis, H. Griffiths, D. Kemp, J. Stephanou (Australia, UK)*	**D-5**
11:40	IODINE-129 PARADOX IN THE NUCLEAR FUEL CYCLE— IS DILUTION A SOLUTION? *H. Wainwright, K. Whiteaker, H. Gonzalez-Raymat, M. Denham, I. Pegg, D. Kaplan, N. Qafoku, D. Wilson, S. Wilson, C. Eddy-Dilek (USA)*	**D-6**
12:05	DEVELOPMENT OF REALISTIC NUCLIDE MIGRATION MODEL USING REACTIVE TRANSPORT / PARTICLE TRACKING SIMULATIONS FOR TRU WASTE GEOLOGICAL REPOSITORY *K. Ayaka, Y. Fumiko, M. Morihiro (Japan)*	**D-7**
12:30	BOREHOLE DISPOSAL OF RADIOACTIVE WASTE IN ISRAEL - CHARACTERIZATION PROGRAM AND BOREHOLE *O. Klein-BenDavid, G. Peer, N. Balaban, R. Calvo (Israel)*	**D-8**
12:55	**END OF ORAL SESSIONS OF WEDNESDAY**	

THURSDAY (25. SEPTEMBER)

8:25 **CONFERENCE ANNOUNCEMENTS**

SESSION 13 A7: EXPERIMENTAL METHODS

Chair: D. Clark (USA) and T. Neill (UK)

8.30 EXPERIMENTAL AND QUANTUM CHEMICAL INSIGHTS INTO THE COORDINATION CHEMISTRY OF PROTACTINIUM(V) IN CHLORIDE MEDIA **A7-1**
M. Maloubier, T. Shaaban, C. Le Naour, B. Siberchicot, F. Réal, V. Vallet (INVITED) (France)

9:15 ADVANCED X-RAY SPECTROSCOPIC TOOLS FOR PROBING 5F ELECTRON PARTICIPATION IN ACTINIDE BONDING **A7-2**
T. Vitova, B. Schacherl, H. Ramanantoanina, H. Kaufmann, S. Schenk, T. Prüßmann, M. Tagliavini, M. Haverkort, A. Bajaja, J. Autschbach, P. Bagus (Germany, USA)

9:40 DEVELOPING U L3 AND M4,5 -EDGE HERFD-XANES TO INVESTIGATE URANIUM (BIO)GEOCHEMICAL PROCESSES IN RADIOACTIVE WASTE DISPOSAL AND NUCLEAR DECOMMISSIONING **A7-3**
C. Waters, T. S. Neill, K. Morris, M. L. Baker, N. M. Alcock, J. F. W. Mosselmans, K. Ignatyev, S. Shaw (UK)

10:05 **BREAK**

SESSION 14 E1: UNITED STATES DEPARTMENT OF ENERGY ENVIRONMENTAL MANAGEMENT, LEGACY MANAGEMENT AND NUCLEAR WASTE DISPOSITION PROGRAMS

Chair: *D. Kaplan (USA) and T. Hennig (USA)*

10:30	THE U.S. NUCLEAR WASTE REPOSITORY PROGRAM *D. Fagnant (USA)*	**E1-1**
10:55	THE U.S. ENVIRONMENTAL MANAGEMENT PROGRAM (VIRTUAL) *R. Rimando (USA)*	**E1-2**
11:20	ALTEMIS LONG-TERM ENVIRONMENTAL MONITORING STRATEGIES: INNOVATIVE STRATEGY FOR IMPROVED MONITORING OF COMPLEX GROUNDWATER PLUMES *C. Eddy-Dilek, H. Gonzalez-Raymat, H. Wainwright, E. Fabricatore, T. Danielson (USA)*	**E1-3**
11:45	RECENT PROGRESS AND INNOVATIONS FOR SUBSURFACE CLEANUP AT THE HANFORD SITE *H. Emerson, J. Szecsody, Z. Vincent, J. Thomle, A. Lawter, N. Qafoku, C. Delegard, I. Demirkanli, N. Jaschke, and R. Mackley (USA)*	**E1-4**
12:10	TRANSLATING NEW FUNDAMENTAL KNOWLEDGE TO ACCELERATE THE HANFORD TANK WASTE TREATMENT MISSION *C. Pearce, J. Reynolds, T. Graham, E. Nienhuis, J. Chun, J. De Yoreo, G. Kimmel, G. Schenter, Z. Wang, X. Zhang, L. Young, T. Orlando, L. Francesconi, L. Anovitz, J. LaVerne, A. Clark, X. Li (USA)*	**E1-5**
12:35	**BREAK**	

SESSION 15 E2: THE INTERSECTION OF NUCLEAR SECURITY AND RADIONUCLIDE MIGRATION IN NATURAL AND/OR ENGINEERED SYSTEMS

Chair: *E. Balboni (USA) and J. Schwantes (USA)*

14:30	AN INTRODUCTION TO THE CONSORTIUM FOR NUCLEAR FORENSICS *V. Anagnostopoulos (USA)*	**E2-1**
14:55	EFFICIENT PROTEIN-BASED SEPARATIONS OF ACTINIDES FOR MC-ICP-MS *N. Wasserman, G. Deblonde, B. Eva, B. Enrica, D. Park (USA)*	**E2-2**
15:20	SYNCHROTRON BASED CHEMICAL IMAGING OF ACTINIDE SPECIES: APPLICATION OF HIGH ENERGY RESOLUTION FLUORESCENCE DETECTION SPECTROSCOPY *S. Webb, V. Noel, N. Edwards (USA)*	**E2-3**
15:45	**BREAK**	

SESSION 16 B4: EFFECTS OF BIOLOGICAL AND ORGANIC MATERIALS

Chair: *T. Stumpf (Germany) and ~~W. Wu~~ D. Pan (China)*

16:05	CONTROLS ON THE LONG-TERM MIGRATION AND FATE OF SELENIUM, TECHNETIUM, AND URANIUM: INSIGHTS FROM COMPLEX ENVIRONMENTAL SYSTEMS *G. Law, W. Bower, G. Vettese, M. Ho, K. Morris, F. Mosselmans, S. Shaw, J. Lloyd, C. Pearce (INVITED) (Finland, UK, USA)*	**B4-1**
16:50	CHEMICAL MECHANISMS IN RADIOECOLOGY: CESIUM IN BIVALVE MOLLUSCS *A. Plasajec, P. L. Solari, A. L. Faure, B. Siberchicot, M. R. Beccia, J. Aupiais, M. Monfort, C. Den Auwer (France)*	**B4-2**

17:15	NEW INSIGHTS INTO THE BEHAVIOR AND MECHANISM OF URANIUM(VI) BIOMINERALIZATION IN A DUAL BACTERIAL SYSTEM SPECTROSCOPY *Y. Guo, H. Li, J. Gong, F. Li, Y. Yang, N. Liu, J. Liao (China)*	**B4-3**
17:40	MECHANISM OF MICROBIAL URANIUM REDUCTION AND ISOTOPE FRACTIONATION IN A U-CARBONATE SYSTEM *K. Reinhold, S. Bruggmann, A.-S. Chauvin, T. G. Burrow, R. Bernier-Latmani (Switzerland, France)*	**B4-4**
18:05	IMPACTS OF BENTONITE MICROBIAL ACTIVITY ON PRIORITY RADIONUCLIDE SOLUBILITY AND CANISTER CORROSION IN THE GDF NEAR-FIELD *M. Rose, S. Shaw, K. Morris, J. Lloyd, D. Engelberg (UK)*	**B4-5**
18:30	**END OF ORAL SESSIONS OF THURSDAY.** **MOVE TO BANQUET**	

FRIDAY (26. SEPTEMBER)

8:25 **CONFERENCE ANNOUNCEMENTS**

SESSION 17 A4: REDOX REACTIONS AND RADIOLYSIS EFFECTS

Chair: *J.-I. Yun (Korea) and V. Anagnostopoulos (USA)*

8:30 EXPANDING THE KNOWLEDGE ON REDOX ELEMENTS: THE CASE OF TECHNETIUM **A4-1**
V. K. Saini, C. Börner, A. Bureika, I. Cardaio, M.F. Martínez-Moreno, J. Kretzschmar, A. Cherkouk, K. Müller, N. Mayordomo (INVITED) (Germany)

9:15 IDENTIFICATION OF FREE RADICALS IN ACTINIDE MATERIALS USING ELECTRON PARAMAGNETIC RESONANCE AND VIBRATIONAL SPECTROSCOPIES **A4-2**
B. Lottes, S. Eisenberg, S. Greer, B. Stein, K. Carter (USA)

9:40 TECHNETIUM-99 OXIDATION STATE SPECIATION AS PROBED BY POLYOXOMETALATES **A4-3**
R. Salcedo, B. Burton-Pye, D. McGregor, L. Francesconi (USA)

10:05 SPECIATION OF PLUTONIUM IN THE PRESENCE OF WIPP-RELEVANT ORGANICS AND IRON CORROSION PRODUCTS **A4-4**
U. Kaplan, P. G. Hammer, A. Elice Navarrette, J. L. Potter, C. Kutahyali Aslani1 (USA)

10:30 **BREAK**

SESSION 18 A2: SOLID SOLUTIONS AND SOLID-WATER INTERFACE REACTIONS

Chair: *J. Poonoosamy (Germany) and B. Madé (France)*

10:55	THERMODYNAMIC STABILITY OF ^{226}Ra-CONTAINING CARBONATE PHASES: ATOMISTIC SIMULATIONS AND THERMODYNAMIC CALCULATIONS *S. Rudin, V. Vinograd, G. Deissmann, D. Bosbach, J. Poonoosamy (Germany)*	**A2-1**
11:20	REACTIONS OF PLUTONIUM UNDER ALKALINE CONDITIONS: ISOLATION OF NEW PLUTONIUM (V) AND (VI) COMPOUNDS *D. Kravchuk, R. Wilson (USA)*	**A2-2**
11:45	SELECTIVE INCORPORATION OF FISSION PRODUCTS INTO CARBONATE MINERALS: MECHANISMS AND ENVIRONMENTAL IMPLICATIONS *I. Szlamkowicz, Z. Murphy, Z. Ronchetti, V. Anagnostopoulos (USA)*	**A2-3**
12:10	EVALUATION OF THE IMPACT OF ORGANIC LIGANDS ON RADIONUCLIDE RETENTION IN PORTLANDITE *O. Almendros-Ginestà, M. A. Clavero-Sánchez, M. Sánchez, M. García-Gutiérrez, T. Missana (Spain)*	**A2-4**
12:35	INFLUENCE OF ALUMINUM ON THE RETENTION OF TRIVALENT ACTINIDES ON FELDSPAR *J. Lessing, J. Neumann, C. Henning, P. Eng, J. Stubbs, K. Voïtchovsky (Germany, USA)*	**A2-5**
13:00	**END OF THE CONFERENCE**	

NOTES

NOTES

NOTES

NOTES

NOTES

NOTES

NOTES

NOTES

NOTES