SYMPOSIUM II

Scientific Basis for Nuclear Waste Management XXVI

December 2 – 5, 2002

Chairs

Robert J. Finch Argonne Natl Laboratory
Daniel B. Bullen Iowa State Univ, U.S. Nuclear Waste Tech Review Board

Symposium Support

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* Invited paper

SESSION II1: PERFORMANCE ASSESSMENT AND REGULATORY STUDIES
Chair: Daniel B. Bullen
Monday Morning, December 2, 2002
Back Bay A (Sheraton)

8:30 AM *II1.1
YUCCA MOUNTAIN PROJECT OVERVIEW. Stephen H. Hanauer, U.S. Department of Energy, Yucca Mountain Project, North Las Vegas, NV.

9:00 AM II1.2
GRIMSEL TEST SITE – THE NEXT DECADES. Stratis Vomvoris, Wolfgang Kickmaier, Ian McKinley, NAGRA, Wettingen, SWITZERLAND.

9:15 AM II1.3
UNCERTAINTY AND SENSITIVITY ANALYSIS ON A SIMULATION OF ROCK / HIGH pH FLUID INTERACTION. Göran Källvenius, Christian Ekberg, Chalmers University of Technology, Dept of Nuclear Chemistry, Gothenburg, SWEDEN.

9:30 AM II1.4
GEOCHEMICALLY BASED SOURCE TERM ASSESSMENT FOR THE ASSE SALT MINE? COMPARISON OF MODELLING AND EXPERIMENTAL RESULTS. Wolfram Schuessler, Volker Metz, Bernhard Kienzler, Peter Vejmelka, Institut fuer Nukleare Entsorgung, Forschungszentrum Karlsruhe, Karlsruhe, GERMANY; Herbert Meyer, Forschungsbergwerk Asse, Remlingen, GERMANY.

9:45 AM II1.5
ASSESSMENT OF GEOCHEMICAL CONTAINMENT PROPERTIES IN THE NEAR FIELD OF A DEEP UNDERGROUND REPOSITORY. Delphine Pellegrini, Institut de Radioprotection et de Surete Nucleaire, IRSN/DES/SESID, Fontenay-aux-Roses, FRANCE; Laurent De Windt, Jan van der Lee, Ecole des Mines de Paris, EMP/CIG, Fontainebleau, FRANCE.

10:00 AM BREAK

10:15 AM II1.6
IMPORTANCE OF NEAR-FIELD THERMO-HYDROLOGIC PROCESSES IN THE PERFORMANCE ASSESSMENT OF THE PROPOSED HIGH-LEVEL WASTE REPOSITORY AT YUCCA MOUNTAIN. S. Mohanty, R. Fedors, C. Manepally, Center for Nuclear Waste Regulatory Analyses, San Antonio, TX; D. Esh, U.S. Nuclear Regulatory Commission, Washington, DC.

10:30 AM II1.7
MODELING ELEMENT CONCENTRATIONS IN ÄSPÖ GROUNDWATERS. Allan T. Emren, Dept Nuclear Chemistry, Chalmers Univ. of Technology, Göteborg, SWEDEN.

10:45 AM II1.8
ANTICIPATED LONG TERM EVOLUTION OF SPENT NUCLEAR FUEL: CONSEQUENCES ON THE RELEASE RATE OF RADIONUCLIDES IN LONG TERM STORAGE AND GEOLOGICAL DISPOSAL. Christophe Poinssot, Patrick Lovera, Pierre Toulhoat, CEA Saclay, Nuclear Energy Direction, Gif-sur-Yvette, FRANCE; Jean-Paul Piron, CEA Cadarache, Nuclear Energy Direction, St. Paul Lez Durance, FRANCE; Jean-Marie Gras, EDF, R&D Division, Moret sur Loing, FRANCE.

11:00 AM II1.9
PREDICTING THE BEHAVIOUR OF VITRIFIED RADIOACTIVE WASTE: "STORM" REACTIVE TRANSPORT CODE AND FIELD TESTS INTERVALIDATION. B.P. McGrail, Pacific Northwest National Laboratory, Richland, WA; M.I. Ojovan, Scientific and Industrial Association "Radon", Moscow, RUSSIA; D.H. Bacon, J.D. Vienna, Pacific Northwest National Laboratory, Richland, WA; N.V. Ojovan, I.V. Startceva, Scientific and Industrial Association "Radon", Moscow, RUSSIA.

11:15 AM II1.10
ACCOUNTING FOR CORROSION OF HLW GLASSES BY HUMID AIR IN TSPA. W.L. Ebert, J.C. Cunnane, N.L. Dietz, Argonne National Laboratory, Chemical Technology Division, Argonne, IL.

11:30 AM II1.11
COMPUTER SIMULATIONS OF HYDRATION, ALTERATION, AND RELEASE FROM WASTE GLASSES USING A CELL MODEL. Fernando C. Perez-Cardenas, Hao Gan, and Ian L. Pegg, Vitreous State Laboratory, The Catholic University of America, Washington, DC.

11:45 AM II1.12
RISKS AND UNCERTAINTIES ASSOCIATED WITH HIGH-LEVEL WASTE TANK CLOSURE. David W. Esh, Kristina L. Banovac, B. Jennifer Davis, U.S. Nuclear Regulatory Commission, Washington, DC.

SESSION II2: ARCHAEOLOGY AND WASTE MANAGEMENT
Chair: Denis M. Strachan
Monday Afternoon, December 2, 2002
Back Bay A (Sheraton)

1:30 PM *II2.1
NEW DEVELOPMENTS IN FIELD STUDIES OF LOW-ACTIVITY WASTE GLASS CORROSION AND CONTAMINANT TRANSPORT. B.P. McGrail, D.H. Bacon, Pacific Northwest National Laboratory, Richland, WA; M.I. Ojovan, Scientific and Industrial Association "Radon", Moscow, RUSSIA; P.D. Meyer, M.J. Schweiger, Pacific Northwest National Laboratory, Richland, WA.

2:00 PM *II2.2
RESULTS FROM U.S. LONG-TERM BURIAL EXPERIMENTS OF SIMULATED NUCLEAR WASTE GLASSES. George Wicks, Savannah River Technology Center, Westinghouse Savannah River Co., Aiken, SC.

2:30 PM *II2.3
RESULTS FROM BURIAL EXPERIMENTS WITH SIMULATED MEDIEVAL GLASSES. H. Roemich[a], S. Gerlach[a], P. Mottner[a], F. Mees[b], P. Jacobs[b], D. van Dyck[c], T. Domenech Carbo[d]; [a]Fraunhofer-Institut fuer Silicatforschung (ISC), Bronnbach-Branch, GERMANY; [b]University of Ghent, BELGIUM; [c]University of Antwerp, BELGIUM; [d]Polytechnical University of Valencia, SPAIN.

3:00 PM BREAK

3:30 PM *II2.4
THE CONSERVATION OF ANCIENT GLASS.
Alice Boccia Paterakis, Agora Excavations, American School of Classical Studies, Athens, GREECE.

4:00 PM *II2.5
CHARACTERIZATION OF 9TH CENTURY BC MANUFACTURED GLASS EXCAVATED FROM HASANLU, NORTHWEST IRAN. Colleen P. Stapleton, Samuel E. Swanson, University of Georgia, Dept of Geology, Athens, GA.

4:30 PM *II2.6
4200-YEAR OLD GLASS AS A MODEL FOR CORROSION OF NUCLEAR WASTE GLASS. Pamela B. Vandiver, Senior Research Scientist in Glass and Ceramics, Smithsonian Center for Materials Research and Education, Suitland, MD.

SESSION II3: POSTER SESSION
Chairs: Robert J. Finch and Daniel B. Bullen
Monday Evening, December 2, 2002
8:00 PM
Exhibition Hall D (Hynes)

II3.1
SYNTHESIS OF URANIUM PHOSPHATE PHASES AND POTENTIAL RETARDATION EFFECTS ON SPENT FUEL RADIONUCLIDES. A.S. Turner and D.J. Wronkiewicz, Department of Geology and Geophysics, University of Missouri-Rolla, Rolla, MO.

II3.2
INCORPORATION OF RADIOACTIVE METALS AND TRACE METALS INTO PHOSPHATE AUTUNITE PHASES: THERMODYNAMIC EVALUATION. Huifang Xu, Department of Earth and Planetary Sciences, The University of New Mexico, Albuquerque, NM; Yifeng Wang, Sandia National Laboratories, Carlsbad, NM.

II3.3
NEPTUNIUM SUBSTITUTION INTO THE STRUCTURE OF ALPHA-U3O8. Robert J. Finch and A.J. Kropf, Chemical Technology Division, Argonne National Laboratory, Argonne, IL.

II3.4
CHARACTERIZATION OF URANIUM SPECIATION IN AN AMORPHOUS METALLIC MATRIX. Gini Curran, Ken R. Czerwinski, Massachusetts Institute of Technology, Nuclear Engineering Dept, Cambridge, MA; Patrick G. Allen, Lawrence Livermore National Laboratory, Livermore, CA.

II3.5
HOST PHASES FOR ACTINIDE ELEMENTS IN THE METALLIC WASTE FORM. D.E. Janney, Argonne National Laboratory-West, Idaho Falls, ID.

II3.6
CAESIUM AND NIOBIUM TRANSPORT THROUGH POORLY CEMENTED SANDSTONE FROM KRASNOYARSK-26 (RUSSIAN FEDERATION): BATCH AND COLUMN EXPERIMENTS AND MODELING. Ignasi Casas, Javier Gimenez, Juan Manuel Merino, Emilio Arasanz, Joan de Pablo, Dept of Chemical Engineering, UPC, Barcelona, SPAIN; Josep Torras, Miquel Rovira, Waste Management Laboratory, CTM-UPC, Manresa, SPAIN.

II3.7
MIGRATION BEHAVIOR OF IRON ION IN COMPACTED BENTONITE UNDER REDUCING CONDITION BY USING ELECTROMIGRATION. Kazuya Idemitsu, Seiji Yano, Xiaobin Xia, Yoshiro Kikuchi, Yaohiro Inagaki, Tatsumi Arima, Kyushu Univ, Dept of Applied Quantum Physics and Nuclear Engineering, Fukuoka, JAPAN.

II3.8
A STUDY ON CHEMICAL FORMS AND MIGRATION BEHAVIOR OF CARBON-14 LEACHED FROM THE SIMULATED HULL WASTE IN THE UNDERGROUND CONDITION. Satoru Kaneko, Hiromi Tanabe, Radioactive Waste Management Funding and Research Center, Tokyo JAPAN; Michitaka Sasoh, Ryota Takahashi, Takayuki Shibano, Shinji Tateyama, Toshiba Corp, Power Systems & Services Company Kanagawa, JAPAN.

II3.9
CHARACTERIZATION OF α-ISOSACCHARINIC ACID: pK_a-DETERMINATION. Yngve Albinsson, Christian Ekberg, Stefan Ekberg, Chalmers University of Technology, Dept of Nuclear Chemistry, Gothenburg, SWEDEN.

II3.10
MODELLING THE SORPTION OF ACTINIDES ONTO CEMENT: AN APPROACH WITH THE SURFACE CO-PRECIPITATION MODEL. Daisuke Sugiyama, Tomonari Fujita, Central Research Institute of Electric Power Industry (CRIEPI), Tokyo, JAPAN.

II3.11
EFFECT OF TEMPERATURE ON FORMATION OF MURATAITE AND MURATAITE-PYROCHLORE CERAMICS. O.I. Kirjanova[a], S.V. Stefanovsky[a], S.V. Yudintsev[b]; [a]SIA Radon, Moscow, RUSSIA; [b]IGEM RAS, Moscow, RUSSIA.

II3.12
URANIUM REDUCTION BY *SHEWANELLA ONEIDENSIS*. Ken Czerwinski, Dept. of Nuclear Engineering; Martin Polz, Vanja Klepac, Dept. of Civil and Environmental Engineering, Lisa Mullen, Dept. of Nuclear Engineering; Chanathip Pharino, Dept. of Civil and Environmental Engineering, Massachusetts Institute of Technology, Cambridge, MA.

II3.13
INVESTIGATION OF REACTOR GRAPHITE PROCESSING WITH THE CARBON-14 RETENTION. Michael I. Ojovan, Olga K. Karlina, Vsevolod L. Klimov, George A. Bergman, Galina Yu. Pavlova, Andrew Yu. Yurchenko; Scientific and Industrial Association "Radon", Moscow, RUSSIA.

II3.14
INVESTIGATION OF SILICA GLASS UNDER GAMMA IRRADIATION. Ana Maria M. Santos, Vilma C. Costa, Center of Nuclear Technology Development-CDTN, Belo Horizonte, BRAZIL.

II3.15
FORMATION FACTOR MEASUREMENTS IN GRANITE IN THE LABORATORY – COMPARISON OF THROUGH DIFFUSION AND ELECTROMIGRATION TECHNIQUES. Martin Löfgren, Ivars Neretnieks, Royal Institute of Technology, Inst. of Chemical Engineering and Technology, Stockholm, SWEDEN.

II3.16
THE EFFECT OF pH ON CHLORITE DISSOLUTION AT 25°C. Åsa Gustafsson, Royal Institute of Technology, Inorg Chem, Stockholm, SWEDEN; Ignasi Puigdomenech, Swedish Nuclear Fuel & Waste Management Co., Stockholm, SWEDEN.

II3.17
DYNAMIC BEHAVIOR OF COLLOIDAL SILICA IN THE PRESENCE OF SOLID PHASE. Taiji Chida, Yuichi Niibori, Osamu Tochiyama, Koichi Tanaka, Graduate School of Engineering, Tohoku University, Sendai, JAPAN.

II3.18
USAGE OF SHS ROUTE FOR FABRICATION OF ACTINIDE-DOPED PYROCHLORES. Eduard Glagovsky, Alexander Kuprin, Institute of Inorganic Materials, Moscow, RUSSIA; Sergey Yudintsev, Institute of Geology of Ore Deposits, Moscow, RUSSIA; Sergey Perevalov, Boris Myasoedov, Institute of Geochemistry, Moscow, RUSSIA.

II3.19
POTENTIAL APPLICATIONS OF NANOSTRUCTURED MATERIALS IN NUCLEAR WASTE MANAGEMENT. Yifeng Wang, Charles Bryan, Sandia National Laboratories, Carlsbad, NM; Huifang Xu, Dept. of Earth and Planetary Sciences, University of New Mexico, Albuquerque, NM; Phil Pohl, and C. Jeffrey Brinker, Sandia National Laboratories, Albuquerque, NM.

II3.20
PHASES FORMATION RATE AT SYNTHESIS OF ACTINIDE WASTE FORMS. N.P. Laverov, S.V. Yudintsev, Institute of Geology of Ore Deposits, Moscow, RUSSIA; S.V. Stefanovsky, SIA "Radon", Moscow, RUSSIA; Y.N. Jang, S. Chae, Korea Institute of Geoscience, Daejon, KOREA; R.C. Ewing, University of Michigan, Ann Arbor, MI.

II3.21
LEACHING OF AMERICIUM-241, PLUTONIUM-238 AND MATRIX ELEMENTS FROM PEROVSKITE-BASED CERAMICS. A.V. Ochkin, S.V. Chizhevskaya, N.E. Cherniavskaya, A.O. Merkushkin, I.A. Petukhova, D. Mendeleev University of Chemical Technology, Moscow, RUSSIA; S.V. Stefanovsky, SIA Radon, Moscow, RUSSIA.

II3.22
GEOLOGIC DURABILITY OF SIMULATED IRON PHOSPHATE NUCLEAR WASTE GLASS. H. Haworth[a], D.J. Wronkiewicz[a], and D.E. Day[b], [a]Department of Geology and Geophysics and [b]The Graduate Center for Materials Research, University of Missouri-Rolla, Rolla, MO.

II3.23
MOLECULAR DYNAMICS SIMULATION OF DISPLACEMENT CASCADES IN COMPOUNDS OF PARENT STRUCTURES: UO_2, $La_2Zr_2O_7$ AND $CaZrTi_2O_7$. J.P. Crocombette, L. Veiller, CEA, DEN-SRMP, Saclay, FRANCE; C. Meis, A. Chartier, CEA, DEN-SCPA, Saclay, FRANCE; N. Morelon and D. Ghaleb, CEA, DEN-SESC, Marcoule, FRANCE.

II3.24
CATHODOLUMINESCENCE OF Am^{3+} IN GARNET, $(Y,Gd,...)_3(Al,Ga,...)_5O_{12}$, AND ZIRCON, $(Zr,Gd,...)SiO_4$. Maria V. Zamoryanskaya, Khlopin Radium Institute, St. Petersburg, RUSSIA; John M. Hanchar, Dep of Earth & Environmental Sciences, The George Washington University, Washington, DC; Boris E.

Burakov, Khlopin Radium Institute, St. Petersburg, RUSSIA.

II3.25
SODIUM ZIRCONIUM PHOSPHATE [NZP] AS A HOST MATRIX FOR HIGH LEVEL RADIOACTIVE WASTE. Yoshimi Seida, Yuki Mami, Hisao Ohtsuka, Kazunori Suzuki, Institute of Research & Innovation, Nuclear Chem. & Chem. Eng. Center, Kashiwa, JAPAN.

II3.26
IMPACT OF ATMOSPHERIC PRESSURE FLUCTUATIONS ON VADOSE-ZONE CONTAMINANT PLUMES. Wayne Downs, Brigham Young Univ, Dept of Civil Engineering, Chang Oh, INEEL, Nuclear Engineering Design.

II3.27
SAND/BENTONITE BARRIERS AND GAS MIGRATION: THE GMT LARGE-SCALE IN-SITU TEST IN THE GRIMSEL TEST SITE. Stratis Vomvoris, George W. Lanyon, Paul Marschall, Ken Ando, Tetsuya Adachi, Ai Fujiwara.

II3.28
OBSERVATIONS ON AQUEOUS COLLOID FORMATION DURING HIGH LEVEL WASTE GLASS CORROSION. J.A. Fortner, C.J. Mertz, and J.C. Cunnane Chemical Technology Division, Argonne National Laboratory, Argonne, IL.

II3.29
SELECTION OF MATRICES FOR IMMOBILIZATION OF ACTINIDE FRACTION OF HLW. A.V. Ochkin, D. Mendeleev University of Chemical Technology, Moscow, RUSSIA; S.V. Stefanovsky, SIA Radon, Moscow, RUSSIA; S.I. Rovny, P.A. Mayak, Ozersk, Chelyabinsk reg., RUSSIA.

II3.30
LOW-MELTING SALT MIXTURES CONCENTRATION COORDINATES EVALUATION FOR THE WASTE NUCLEAR FUEL REPROCESSING. Vasily Lutsyk, Edward Nasrulin, Buryat Scientific Center, Physical Problems Dept, Ulan-Ude, RUSSIA; Bair Mokhosoev, Alexandr Zyryanov, Buryat State University, Mathematical Dept, Ulan-Ude, RUSSIA.

II3.31
SIMULATION OF RADIOLYSIS IN THE NEAR-FIELD OF A NUCLEAR REPOSITORY AND THE SPECTROPHOTOMETRIC INVESTIGATION OF THE FORMATION OF RADIOLYSIS BY-PRODUCTS BY APPLYING HIGH ENERGY BEAM-LINE EXPERIMENTS. Thomas Hartmann, Patricia Paviet-Hartmann, Christopher Wetteland, Ningping Lu, Doug Ware, Los Alamos National Laboratory, Los Alamos, NM; Sondra Sage, Carlsbad Environmental Monitoring Research Center, Carlsbad, NM; Andrzej Rafalski, Institute of Nuclear Chemistry and Technology, Warsaw, POLAND.

II3.32
AB-INITIO STUDIES OF PLUTONIUM WITH RELEVANCE TO NUCLEAR WASTE MANAGEMENT. A.K. Setty, B.R. Cooper, West Virginia Univ, Dept of Physics, Morgantown, WV; D.L. Price (deceased), University of Memphis, Dept of Physics, Memphis, TN.

II3.33
EFFECT OF GAS GENERATION IN MATRICES CONTAINING Ra-226 SOURCES. Michael I. Ojovan, Scientific and Industrial Association "Radon", Moscow, RUSSIA.

II3.34
INCORPORATION OF CESIUM CHLORIDE IN BIOMIMETIC SILICA. Gustavo de A.M. Safar, Ana Maria M. dos Santos, Fernando S. Lameiras, Centro de Desenvolvimento de Tecnologia Nuclear, Belo Horizonte, MG, BRAZIL; Marcelo P. Bemquerer, Marco Antonio R. Paiva, Alessandra Giani, Instituto de Cincias Biologicas, Universidade Federal de Minas Gerais, Belo Horizonte, MG, BRAZIL.

II3.35
THE EFFECT OF UNCERTAINTIES IN STABILITY CONSTANTS ON SPECIATION DIAGRAMS. Arvid Ödegaard-Jensen, Christian Ekberg, Dept. Nuclear Chemistry, Chalmers University of Technology, Göteborg, SWEDEN; Gunther Meinrath, RER Consultants Passau, Passau, GERMANY, Technical University Mining Academy Freiberg, Institute of Geology, Freiberg, GERMANY.

II3.36
DIFFUSION AND MIGRATION OF IONS IN SEDIMENTARY ROCK MATRIX: BEHAVIOUR OF CESIUM AND IODIDE IN MICROPORES OF SANDSTONE. Haruo Sato and Tamotsu Muraoka, Japan Nuclear Cycle Development Institute, Tokai-mura, Naka-gun, Ibaraki-ken, JAPAN.

II3.37
INFLUENCE OF ORGANIC MATTER IN THE PREDICTION OF IODINE MIGRATION IN NATURAL ENVIRONMENT. Pascal Reiller, Florence Casanova, Valerie Moulin, Christophe Poinssot, CEA Saclay, Nuclear Energy Division, FRANCE.

II3.38
SOL-GEL-DERIVED HYDROXYAPATITE AND ITS APPLICATION TO SORPTION OF HEAVY METALS. A. Deptula, J. Chwastowska, W. Lada, T. Olczak, M. Sadowska-Bratek, E. Sterlilska, B. Sartowska, A.G. Chmielewski, Institute of Nuclear Chemistry and Technology, Warszawa, POLAND; K.C. Goretta, Argonne National Laboratory, Argonne, IL.

SESSION II4: ENGINEERED BARRIERS I — WASTE PACKAGE MATERIALS

Chair: Roger E. Stoller
Tuesday Morning, December 3, 2002
Back Bay A (Sheraton)

NOTE EARLY START

8:00 AM II4.1
REVIEW OF CORROSION MODES FOR ALLOY 22 REGARDING LIFETIME EXPECTANCY OF NUCLEAR WASTE CONTAINERS. Raúl B. Rebak, John C. Estill, Lawrence Livermore National Laboratory, Livermore, CA.

8:15 AM II4.2
LONG-TERM EXTRAPOLATION OF PASSIVE BEHAVIOR OF ALLOY 22. Osvaldo Pensado, Darrell Dunn, Gustavo Cragnolino, and Vijay Jain, Center for Nuclear Waste Regulatory Analyses (CNWRA), San Antonio, TX.

8:30 AM II4.3
STABILITY AND AGEING OF CANDIDATE ALLOYS FOR THE YUCCA MOUNTAIN PROJECT: CALPHAD RESULTS. P.E.A. Turchi, Lawrence Livermore National Laboratory (L-353), Livermore, CA; Larry Kaufman, MIT, Dept. of Mater. Sci. and Eng., Cambridge, MA; Zi-Kui Liu, The Pennsylvania State University, Dept. of Mater. Sci. and Eng., University Park, PA.

8:45 AM II4.4
CHARACTERIZATION OF THE CORROSION BEHAVIOR OF ALLOY 22 AFTER FIVE YEARS IMMERSION IN MULTI-IONIC SOLUTIONS. David V. Fix, John C. Estill, R. Daniel McCright, Raúl B. Rebak, Lawrence Livermore National Laboratory, Livermore, CA.

9:00 AM II4.5
CORROSION AND STRESS CORROSION CRACKING OF ALLOY 22 IN LEAD-CONTAINING SOLUTIONS. Y.-M. Pan, D.S. Dunn, L. Yang, and G.A. Cragnolino, Center for Nuclear Waste Regulatory Analyses, Southwest Research Institute, San Antonio, TX.

9:15 AM II4.6
EFFECTS OF FLUORDE AND OTHER ANIONS ON THE CORROSION OF ALLOY-22. April L. Pulvirenti, Aaron Barkatt, Karen Needham, Mohamad A. Adel-Hadadi, Department of Chemistry, Catholic University; Jeffrey A. Gorman, Charles R. Marks, Dominion Engineering Inc. McLean VA.

9:30 AM II4.7
ACCOUNTING FOR METALLIC WASTE FORM DEGRADATION IN TSPA. William L. Ebert, Michele A. Lewis, Argonne National Laboratory, Chemical Technology Division, Argonne, IL; Stephen G. Johnson, Tanya L. Barber, Argonne National Laboratory-West, Engineering Technology Division, Idaho Falls, ID.

9:45 AM BREAK

10:00 AM II4.8
CHARACTERISTICS OF THE PASSIVE FILMS ON ALLOY 22. Christine Orme, Kelly Campos, Alan Szmodis, Tiangan Lian, Joseph Farmer, Lawrence Livermore National Laboratory, Livermore, CA.

10:15 AM II4.9
CHANGES IN THE CORROSION BEHAVIOR OF ALLOY 22 INFLUENCED BY ITS ENNOBLEMENT IN AQUEOUS SOLUTIONS. Tiangan Lian, John C. Estill, Gary A. Hust, Ken J. Evans, and Raul B. Rebak, Lawrence Livermore National Laboratory, Livermore, CA.

10:30 AM II4.10
THERMOGRAVIMETRIC THIN AQUEOUS FILM CORROSION

STUDIES OF ALLOY C 22. Gregory E. Gdowski, Phillip D. Hailey, Lawrence Livermore National Laboratory, Livermore, CA.

10:45 AM II4.11
ASSESSMENT OF CREVICE CORROSION AND HYDROGEN-INDUCED STRESS CORROSION CRACKS OF Ti-Pd ALLOYS FOR HLW OVERPACK IN DEEP UNDERGROUND WATER ENVIRONMENTS. Guen Nakayama, Koichi Murakami, Masatsune Akashi, Research Laboratory, Ishikawajima-Harima Heavy Industries Co., Ltd., Yokohama, JAPAN.

11:00 AM II4.12
SYNERGISTIC EFFECTS OF FLUORIDE AND CHLORIDE ON CORROSION OF TITANIUM-7. April L. Pulvirenti, Aaron Barkatt, Karen Needham, David S. Wong, Mohamad A. Adel-Hadadi, Department of Chemistry, Catholic University, Washington, DC; Jeffrey A. Gorman, Charles R. Marks, Dominion Engineering Inc., McLean, VA.

11:15 AM II4.13
REAL AND RECIPROCAL SPACE IMAGING OF RADIATION EFFECTS IN BCC Fe. Roger E. Stoller, Gene E. Ice, Rosa I. Barabash, Oak Ridge National Laboratory, Oak Ridge, TN.

11:30 AM II4.14
CORROSION BEHAVIOR OF CARBON STEEL MATERIALS UNDER SALT DEPOSITS IN SIMULATED DRY REPOSITORY ENVIRONMENTS. Lietai Yang, Roberto T. Pabalan, Lauren B. Browning, Darrell S. Dunn, Southwest Research Institute, Center for Nuclear Waste Regulatory Analyses, San Antonio, TX.

11:45 AM II4.15
SENSITIVITY STUDIES OF WASTE PACKAGE PERFORMANCE IN HIGH-LEVEL WASTE MANAGEMENT. Nilda Rivera-Feliciano, U.S. Nuclear Regulatory Commission, Region II, Atlanta, GA; Osvaldo Pensado, Center for Nuclear Waste Regulatory Analyses, San Antonio, TX; Tamara Bloomer, Tae Ahn, U.S. Nuclear Regulatory Commission, Division of Waste Management, Washington, DC.

SESSION II5: GLASS WASTE FORMS
Chair: William L. Ebert
Tuesday Afternoon, December 3, 2002
Back Bay A (Sheraton)

1:30 PM II5.1
RESULTS OF VERTICAL SCANNING INTERFEROMETRY (VSI) OF DISSOLVED BOROSILICATE GLASS: EVIDENCE FOR VARIABLE SURFACE FEATURES AND GLOBAL SURFACE RETREAT. Jonathan Icenhower, B. Peter McGrail, Elsa A. Rodriguez, Jackie L. Steele, and Steven S. Baum, Pacific Northwest National Laboratory, Applied Geology and Geochemistry, Richland, WA; Andreas Luttge, Mikhala S. Beig, and Rolf S. Arvidson, Rice University, Geology and Geophysics, Houston, TX.

1:45 PM II5.2
ELECTRON MICROSCOPY STUDY OF REACTION SINTERED HLW GLASS. Weiliang Gong and Werner Lutze Vitreous State Laboratory, The Catholic University of America, Washington, DC.

2:00 PM II5.3
ANALYTICAL ELECTRON MICROSCOPY STUDIES OF AN IRON-PHOSPHATE GLASS WASTE FORM. K. Sun[a], L.M. Wang[a], J.F. Mansfield[b], R.C. Ewing[a]; [a]Nuclear Engineering and Radiological Sciences, University of Michigan, Ann Arbor, MI; [b]Electron Microbeam Analysis Laboratory, University of Michigan, Ann Arbor, MI.

2:15 PM II5.4
MOLYBDENUM IN NUCLEAR WASTE GLASSES – INCORPORATION AND REDOX STATE. R.J. Short and R.J. Hand, Department of Engineering Materials, The University of Sheffield, Sheffield, UNITED KINGDOM.

2:30 PM II5.5
INCORPORATION OF SULFATE INTO ALKALI-ALUMINO-BOROSILICATE GLASS. Pavel Hrma, Joel S. Ricklefs, John D. Vienna, Pacific Northwest National Laboratory, Richland, WA.

2:45 PM II5.6
ALTERATION OF Si-B-Na-Al GLASS IN WATER AT 90°C: EXPERIMENTS AND THERMODYNAMIC MODELLING. Isabelle Munier and Jean-Louis Crovisier, EOST-Centre de Geochimie de la Surface, UMR 7517, Strasbourg, FRANCE.

3:00 PM BREAK

3:15 PM II5.7
EFFECTS OF IRON AND pH ON GLASS DISSOLUTION RATE. Seung-Young Jeong and William L. Ebert, Chemical Technology Division, Argonne National Laboratory, Argonne, IL.

3:30 PM II5.8
FITTING ELEMENT PROFILES FOR PREDICTING GLASS DISSOLUTION RATES IN SYNTHETIC INTERSTITIAL CLAY WATER. Marc Aertsens, Karel Lemmens, Pierre Van Iseghem, SCK-CEN, Mol, BELGIUM.

3:45 PM II5.9
SON68 GLASS DISSOLUTION KINETICS AT HIGH REACTION PROGRESS: EXPERIMENTAL EVIDENCE OF THE RESIDUAL RATE. Stéphane Gin, Pierre Frugier, Commissariat à l'Energie Atomique, CEA Valrhô DIEC/SESC, Bagnols sur Ceze, FRANCE.

4:00 PM II5.10
VAPOUR PHASE HYDRATION OF MAGNOX WASTE GLASSES. N.C. Hyatt, W.E. Lee and R.J. Hand, Department of Engineering Materials, The University of Sheffield, Sheffield, UNITED KINGDOM; P.K. Abraitis and C.R. Scales, BNFL, Research & Technology, Seascale, Cumbria, UNITED KINGDOM.

4:15 PM II5.11
FISSION PRODUCT IMMOBILISATION IN SECONDARY PHASES FORMED DURING MAGNOX WASTE GLASS DISSOLUTION AT 60°C: EXPERIMENTAL RESULTS AND MODELLING. Paul K. Abraitis, Charlie R. Scales, BNFL, Research & Technology, Seascale, Cumbria, UNITED KINGDOM; Neil Hyatt, University of Sheffield, Department of Engineering Materials, Sheffield, UNITED KINGDOM.

4:30 PM II5.12
EXTENSION OF THE MODIFIED ASSOCIATE SPECIES THERMOCHEMICAL MODEL FOR HIGH-LEVEL NUCLEAR WASTE GLASS. Theodore M. Besmann, Oak Ridge National Laboratory, Oak Ridge, TN; Karl E. Spear, The Pennsylvania State University, University Park, PA; John D. Vienna, Pacific Northwest National Laboratory, Richland, WA.

4:45 PM II5.13
COLD CRUCIBLE VITRIFICATION OF NPP OPERATIONAL WASTE. Feodor A. Lifanov, Michael I. Ojovan, Sergey V. Stefanovsky, Scientific and Industrial Association "Radon", Moscow, RUSSIA; Rudolf Burcl, International Atomic Energy Agency, Vienna, AUSTRIA.

SESSION II6: CERAMIC WASTE FORMS AND RADIATION EFFECTS
Chairs: David J. Wronkiewicz and Reto Gíere
Wednesday Morning, December 4, 2002
Back Bay A (Sheraton)

NOTE EARLY START

8:00 AM II6.1
EXPERIMENTAL DETERMINATION OF DISSOLUTION KINETICS OF Zr-SUBSTITUTED Gd-Ti PYROCHLORE CERAMICS: INFLUENCE OF CHEMISTRY ON CORROSION RESISTANCE. Jonathan Icenhower, William J. Weber, Nancy J. Hess, S. Thevuthasen, B. Peter McGrail, Elsa A. Rodriguez, Jackie L. Steele, Keith N. Geiszler, Pacific Northwest National Laboratory, Applied Geology and Geochemistry, Richland, WA; Bruce D. Begg, ANSTO, Menai, New South Wales, AUSTRALIA.

8:15 AM II6.2
U- AND HF-BEARING PYROCHLORE AND ZIRCONOLITE AND THEIR LEACHED LAYERS FORMED IN ACIDIC SOLUTION: TEM INVESTIGATION. Huifang Xu, Department of Earth and Planetary Sciences, The University of New Mexico, Albuquerque, NM; Yifeng Wang, Sandia National Laboratories, Carlsbad, NM; Pihong Zhao, and Bill Bourcier, Lawrence Livermore National Laboratory, Geoscience and Environmental Technologies, LLNL, Livermore, CA.

8:30 AM II6.3
STRUCTURAL CHARACTERIZATION OF Nd-SUBSTITUTED ZIRCONOLITE POLYCRISTALLINE MATERIALS. Pascal Loiseau, Daniel Caurant, Noël Baffier, Laboratoire de Chimie Appliquée de l'Etat Solide (ENSCP), Paris, FRANCE; Catherine Fillet, CEA-Valrho, DEN/DIEC/SCDV/LEBM, Bagnols-sur-Cèze, FRANCE.

8:45 AM II6.4
CHARACTERIZATION OF A CERIUM-RICH NUCLEAR WASTE CERAMIC. Reto Giere, Sharon Segvich, Earth and Atmospheric Sciences, Purdue University, West Lafayette, IN; Edgar Buck, Pacific Northwest National Laboratory, Richland, WA.

9:00 AM II6.5
PHASES FORMATION AND ELEMENTS PARTITIONING IN THE CaO-$Gd_2O_3(UO_2)$-MnO-TiO_2 SYSTEM: APPLICATION TO RARE EARTH – ACTINIDE WASTE IMMOBILIZATION. O.I. Kirjanova[a], S.V. Stefanovsky[a], S.V. Yudintsev[b]; [a]SIA Radon, Moscow, RUSSIA; [b]IGEM RAS, Moscow, RUSSIA.

9:15 AM II6.6
PREPARATION AND CHARACTERIZATION OF A CALCIUM PHOSPHATE CERAMIC FOR THE IMMOBILIZATION OF CHLORIDE-CONTAINING INTERMEDIATE LEVEL WASTE. I.W. Donald, B.L. Metcalfe, Atomic Weapons Establishment, Aldermaston, Berkshire, UNITED KINGDOM; D.M. Strachan, R.D. Scheele, Pacific Northwest National Laboratory, Richland, WA.

9:30 AM II6.7
DISSOLUTION OF A MULTIPHASE WASTE FORM. M.A. Lewis, N.L. Dietz, and T.H. Fanning, Argonne National Laboratory, Argonne, IL.

9:45 AM II6.8
ZIRCONOLITE-BASED GLASS-CERAMICS FOR ACTINIDES IMMOBILIZATION: EFFECT OF GLASS COMPOSITION AND OF ACTINIDE SIMULANT NATURE. Pascal Loiseau, Daniel Caurant, Isabelle Bardez, Odile Majerus, Noël Baffier, Laboratoire de Chimie Appliquée de l'Etat Solide (ENSCP), Paris, FRANCE; Catherine Fillet, CEA, Centre d'Etudes de la Vallée du Rhone, DEN/DIEC/SCDV/LEBM, Bagnols-sur-Céze, FRANCE.

10:00 AM BREAK

10:15 AM *II6.9
INVESTIGATION OF SINGLE CRYSTAL ZIRCON, (Zr,Pu)SiO4, DOPED WITH 238Pu AND 239Pu. John Hanchar, George Washington University, Dept. of Earth & Env. Sci., Washington, DC; Boris E. Burakov, Evgeniy B. Anderson, Maria Zamoryanskaya, V.G. Khlopin Radium Institute, St. Petersburg, RUSSIA.

10:45 AM II6.10
ION IRRADIATION OF STANNAE PYROCHLORES. Jie Lian, Lumin Wang, Rodney C. Ewing, University of Michigan, Dept. of Nuclear Engineering & Radiological Sciences, Ann Arbor, MI.

11:00 AM II6.11
CHARACTERIZATION OF PURE AND Au^{2+} IRRADIATED $Gd_2(Ti_{1-x}Zr_x)_2O_7$ PYROCHLORES BY NEXAFS. P. Nachimuthu, D.W. Lindle, University of Nevada, Department of Chemistry, Las Vegas, NV; S. Thevuthasan, W.J. Weber, V. Shutthanandan, E.M. Adams, Pacific Northwest National Laboratory, Richland, WA; B.D. Begg, ANSTO, PMB1, Menai, New South Wales, AUSTRALIA; D.K. Shuh, E.M. Gullikson, R.C. Perera, Lawrence Berkeley National Laboratory, Berkeley, CA.

11:15 AM II6.12
THE EFFECT OF RADIATION DAMAGE ON ZIRCONOLITE DISSOLUTION. Katherine L. Smith, Darren J. Attard, Michael Colella, Gregory R. Lumpkin, Peter McGlinn, Terry I. McLeod, Zaynab F. Aly, Zhaoming Zhang and Nick Dytlewski, Materials Division, Australian Nuclear Science and Technology Organisation, Menai, NSW, AUSTRALIA.

11:30 AM II6.13
EFFECT OF RADIATION-INDUCED AMORPHIZATION ON DISSOLUTION RATE IN A RARE-EARTH SILICATE APATITE. William J. Weber, Jonathan P. Icenhower, Weilin Jiang, Chongmin Wang, Pacific Northwest National Laboratory, Richland, WA; Bruce D. Begg, Australian Nuclear Science and Technology Organisation, Menai, AUSTRALIA.

11:45 AM II6.14
HELIUM BEHAVIOUR IN PYROCHLORES DURING THERMAL ANNEALING. P.M.G. Damen, S. Lutique, J.P. Hiernaut, T.A.G. Wiss, Joint Research Centre, European Commission, Institute for Transuranium Elements, Karlsruhe, GERMANY; R. Fromknecht, Institut fuer Nukleare Festkoerperphysik, Forschungszentrum Karlsruhe, Karlsruhe, GERMANY.

SESSION II7: CHEMISTRY I — SPECIATION, COLLOIDS AND ORGANICS
Chairs: Richard Aguilar and Ken R. Czerwinski
Wednesday Afternoon, December 4, 2002
Back Bay A (Sheraton)

1:30 PM *II7.1
Np SPECIATION IN HUMIC ACID-RICH CLAY WATER UPON INTERACTION WITH RADIOACTIVE WASTE GLASS SAMPLES. Vera Pirlet, SCKCEN, Waste and Disposal Department, Mol, BELGIUM.

2:00 PM II7.2
ROLE OF NATURAL OCCURRING ORGANIC MATTER ON THORIUM TRANSPORT IN A WETLAND. Daniel Kaplan, Anna Knox, Westinghouse Savannah River Company, Aiken, SC.

2:15 PM II7.3
STUDY OF COMPLEXATION OF IRON(III) WITH HUMIC ACID AND POLYACRYLIC ACID BY USING ION EXCHANGE METHOD. Budi Setiawan, Kouichi Tanaka, Yuichi Niibori, Osamu Tochiyama, Department of Quantum Science and Energy Engineering, Graduate School of Engineering, Tohoku University, Sendai, JAPAN.

2:30 PM II7.4
NATURAL GROUND WATER COLLOIDS FROM THE USGS J-13 WELL IN NYE COUNTY, NV: A STUDY USING SAXS AND TEM. Jeffrey A. Fortner[a], Carol J. Mertz[a], and Peter R. Jemian[b]; [a]Chemical Technology Division, Argonne National Laboratory; [b]University of Illinois, Urbana-Champaign, Urbana, IL.

2:45 PM II7.5
UNDERSTANDING THE BEHAVIOR AND STABILITY OF SOME URANIUM MINERAL COLLOIDS. Carol J. Mertz and Jeffrey A. Fortner, Argonne National Laboratory, Chemical Technology Division, Argonne, IL.

3:00 PM BREAK

SESSION II8: ENGINEERED BARRIERS II – BACKFILL
Chair: Charles W. Forsberg
Wednesday Afternoon, December 4, 2002
Back Bay A (Sheraton)

3:15 PM II8.1
REDOX CONDITIONS IN BENTONITE-WATER SYSTEMS. Cecilia Lazo, Royal Institute of Technology, Inorg Chem, Stockholm, SWEDEN; Åsa Gusafsson, Royal Institute of Technology, Inorg Chem, Stockholm, SWEDEN; Ignasi Puigdomenech, Swedish Nuclear Fuel & Waste Management Co., Stockholm, SWEDEN; Ola Karnland, Clay Technology AB, Lund, SWEDEN; Eva-Lena Tullborg, Terralogica AB, Gråbo, SWEDEN.

3:30 PM II8.2
MOBILIZATION/RETENTION OF RADIONUCLIDES DURING CO-DISSOLUTION OF HIGH BURNUP SPENT FUEL AND NEAR FIELD MATERIALS IN SALT BRINES. Andreas Loida, Bernhard Kienzler, Horst Geckeis, Forschungszentrum Karlsruhe, Institut für Nukleare Entsorgung, Karlsruhe, GERMANY.

3:45 PM II8.3
THE HYDRATION OF MAGNESIUM OXIDE IN THE WASTE ISOLATION PILOT PLANT. Anna C. Snider, Sandia National Laboratories, Carlsbad, NM.

4:00 PM II8.4
SOLUTION CHEMISTRY AND PLUTONIUM-239 BEHHAVIOR IN SYNTHETIC BRINES AFTER EXPOSURE TO MAGNESIUM OXIDE BACKFILL. Ningping Lu, Thomas Hartmann, James Conca, Patricia Paviet-Hartmann, Gary Parker, Los Alamos National Laboratory, Los Alamos, NM; Jeffrey Terry, Illinois Institute of Technology, IL.

4:15 PM II8.5
KINETICS OF ANION SORPTION BY Mg-Al LAYERED DOUBLE HYDROXIDES. Charles Bryan, Yifeng Wang, Sandia National Labs, Carlsbad, NM; Huifang Xu, Univ of New Mexico, Dept of Earth and Planetary Sciences, Albuquerque, NM; Paul Braterman, Univ of North Texas, Denton, TX.

4:30 PM II8.6
MAINTAINING CHEMICALLY REDUCING WASTE PACKAGE CONDITIONS IN AN OXIDIZING GEOCHEMICAL

ENVIRONMENT. Charles Forsberg, Leslie Dole, Oak Ridge National Laboratory, Oak Ridge, TN.

4:45 PM II8.7
NOVEL FUNCTIONALIZED CERAMIC GETTER MATERIALS FOR ADSORPTION OF RADIOIODINE. Shas V. Mattigod, Glen Fryxell, Kent Parker, Pacific Northwest National Laboratory, Richland, WA; and Dan Kaplan, Westinghouse Savannah River Company, Aiken, SC.

SESSION II9: SPENT FUEL
Chairs: Jonathan P. Icenhower and Andreas Loida
Thursday Morning, December 5, 2002
Back Bay A (Sheraton)

NOTE EARLY START

8:15 AM II9.1
SURFACE PRECIPITATION DURING THE LEACHING OF SPENT FUEL. Daqing Cui, Jerome Devoy, Studsvik Nuclear AB, Nyköping, SWEDEN; Kastriot Spahiu, SKB, Stockholm, SWEDEN.

8:30 AM II9.2
DISSOLUTION BEHAVIOUR OF PLUTONIUM FROM UNIRRADIATED MOX FUEL. J. Cobos, CIEMAT, Madrid, SPAIN; V.V. Rondinella, T. Gouder, European Commission, Joint Research Centre, Institute for Transuranium Elements, Karlsruhe, GERMANY.

8:45 AM II9.3
DISSOLUTION BEHAVIOR AND FISSION PRODUCT RELEASE FROM IRRADIATED THORIA-URANIA FUEL IN GROUNDWATER AT 90°C. J.L. Jerden Jr. and J.C. Cunnane Chemical Technology Division, Argonne National Laboratory, Argonne, IL.

9:00 AM II9.4
THE BEHAVIOR OF LIGHT WATER REACTOR FUEL AFTER THE CLADDING IS BREACHED UNDER UNSATURATED TEST CONDITIONS. J. Cunnane, J. Fortner and R. Finch Chemical Technology Division, Argonne National Laboratory, Argonne, IL.

9:15 AM II9.5
RADIONUCLIDE RELEASE RATES FROM SPENT FUEL ROD SEGMENT. Margaret Goldberg and Yifen Tsai, Chemical Technology Division, Argonne National Laboratory, Argonne, IL.

9:30 AM II9.6
A COMPARISON AND ABSTRACTION OF THE COMMERCIAL SPENT FUEL DISSOLUTION EXPERIMENTS IN THE U.S. Eric Siegmann, Framatome ANP DE&S, Las Vegas, NV.

9:45 AM II9.7
DETERMINATION OF THE STRUCTURE THAT MAKES SPENT FUEL FLOAT. Bruce McNamara, Pacific Northwest Laboratory, Radiochemical Processing Laboratory (RPL), Richland, WA; Brady Hanson, Pacific Northwest Laboratory, Radiochemical Processing Laboratory (RPL), Richland, WA; Edgar Buck, Pacific Northwest Laboratory, Radiochemical Processing Laboratory (RPL), Richland, WA; Steve Marschman, Pacific Northwest Laboratory, Radiochemical Processing Laboratory (RPL), Richland, WA.

10:00 AM BREAK

10:15 AM II9.8
LEACHING OF SPENT FUEL UNDER ANAEROBIC AND REDUCING CONDITIONS. Yngve Albinsson, Chalmers University of Technology, Dep. of Nuclear Chemistry, Goteborg, SWEDEN; Virginia Oversby, VMO Konsult, Stockholm, SWEDEN; Lars Werme, Swedish Nuclear Fuel and Waste Management Co, Stockholm, SWEDEN.

10:30 AM II9.9
EFFECT OF β RADIATION ON THE NON IRRADIATED UO_2 DISSOLUTION. Frederic Clarens, Javier Gimenez, Joan de Pablo, Ignasi Casas, Dept Chemical Engineering, UPC, Barcelona, SPAIN; Manuel Sevilla, Javier Dies, Dept Nuclear Engineering, UPC, SPAIN.

10:45 AM II9.10
BUILDING CONFIDENCE IN RADIOLYTIC MODELLING: APPLICATION TO SPENT FUEL DISSOLUTION EXPERIMENTS. Juan Merino, Esther Cera, Jordi Bruno, Enviros, Cerdanyola, SPAIN.

11:00 AM II9.11
REDOX REACTIONS OF IRON AND URANIUM DIOXIDE IN SIMULATED CEMENT PORE WATER UNDER ANOXIC CONDITIONS. Daqing Cui, Studsvik Nuclear AB, Nyköping, SWEDEN; Katriot Spahiu, Stockholm, SKB, SWEDEN; Paul Wersin, NAGRA, Wettingen, SWITZERLAND.

SESSION II10: ENGINEERED BARRIERS III — CEMENT
Chair: Robert J. Finch
Thursday Morning, December 5, 2002
Back Bay A (Sheraton)

11:15 AM II10.1
SYSTEMATIC TRENDS AND EMPIRICAL MODELING OF LEAD UPTAKE BY CEMENTS AND CEMENT MINERALS. Michael Ochs, Barbara Lothenbach, Caterina Talerico, BMG Engineering Ltd, Zürich-Schlieren, SWITZERLAND; Eric Giffaut, ANDRA, Chütenay-Malabry, FRANCE.

11:30 AM II10.2
BEHAVIOUR OF RADIONUCLIDES IN CONTAMINATED CONCRETE. Guido Deissmann, Brenk Systemplanung, Aachen, GERMANY; Adrian Bath, Intellisci Ltd, Loughborough, UNITED KINGDOM; Stephan Jefferis, Univ of Surrey, Dept of Civil Engineering, Guildford, UNITED KINGDOM.

11:45 AM II10.3
EFFECT OF ELEVATED TEMPERATURE ON EARLY HYDRATION AND MICROSTRUCTURE OF COMPOSITE CEMENTS. Joanne Hill, Ben R. Whittle, John H. Sharp, BNFL Immobilisation Science Laboratory, University of Sheffield, Sheffield, UNITED KINGDOM; Martin Hayes, BNFL plc, Sellafield, Cumbria, UNITED KINGDOM.

SESSION II11: CHEMISTRY II — SORPTION, MIGRATION AND PROCESSING
Chairs: Carol J. Mertz and Daqing Cui
Thursday Afternoon, December 5, 2002
Back Bay A (Sheraton)

1:30 PM II11.1
Pu(IV) SORPTION ONTO TiO_2. Mattias Olsson, Anna-Maria Jakobsson, Yngve Albinsson, Chalmers University of Technology, Dept of Nuclear Chemistry, Gothenburg, SWEDEN.

1:45 PM II11.2
ACTINIDE MIGRATION IN GRANITE FRACTURES: COMPARISON BETWEEN IN-SITU AND LABORATORY RESULTS. Bernhard Kienzler, Jürgen Römer, Peter Vejmelka, Institut für Nukleare Entsorgung, Forschungszentrum Karlsruhe, Karlsruhe, GERMANY; Mats Jansson, Trygve E. Eriksen, Dept. of Nuclear Chemistry, Royal Institute of Technology, Stockholm, SWEDEN; Kastriot Spahiu, Svensk Kärnbränslehantering AB (SKB), Stockholm, SWEDEN.

2:00 PM II11.3
LONG-TERM STABILIZATION OF URANIUM BY U(VI) PHOSPHATE MINERALIZATION IN WEATHERED BEDROCK AND SOILS DEVELOPED OVER A GRANITE-HOSTED URANIUM DEPOSIT. James L. Jerden Jr., A.K. Sinha, Virginia Polytechnic Institute and State University, Department of Geological Sciences, Blacksburg, VA.

2:15 PM II11.4
REACTIONS CONTROLLING SP GROUNDWATER CHEMISTRY. Allan T. Emren, Dept Nuclear Chemistry, Chalmers Univ.of Technology, Göteborg, SWEDEN.

2:30 PM II11.5
MODELLING OF BIOCHEMICALLY MEDIATED OXYGEN DEPLETION PROCESSES IN ROCKS. Magnus Sidborn, Ivars Neretnieks, Royal Institute of Technology, Dept of Chemical Engineering, Stockholm, SWEDEN.

2:45 PM II11.6
EVAPORATIVE EVOLUTION OF BRINES FROM SYNTHETIC TOPOPAH SPRING TUFF PORE WATER, YUCCA MOUNTAIN, NV. Maureen Alai, Susan Carroll, Lawrence Livermore National Laboratory, Energy and Environment Directorate, Livermore, CA.

3:00 PM BREAK

3:15 PM II11.7
EFFECTS OF DIFFERENTIAL VOLATILIZATION AND LOCAL GEOMETRY ON GROUNDWATER CHEMISTRY.
April L. Pulvirenti, Aaron Barkatt, Karen Needham, Mohamad A.

Adel-Hadadi, Department of Chemistry, Catholic University; Jeffrey A. Gorman, Charles R. Marks, Dominion Engineering Inc. McLean VA.

3:30 PM II11.8
OPTIMIZED AND ALTERNATIVE SORBENTS FOR Sr^{2+} AND ACTINIDE REMOVAL FROM SRS ALKALINE WASTE SOLUTIONS. May Nyman, Sandia National Laboratories, Albuquerque, NM; David T. Hobbs, Westinghouse Savannah River Company, Aiken, SC.

3:45 PM II11.9
REMOVAL OF MERCURY FROM ACIDIC WASTE STREAMS-CHARACTERIZATION AND PERFORMANCE OF A [17]ANES5 POLYMER PENDANT CROWN THIOETHER. Theodore F. Baumann, Glenn A. Fox, Art J. Nelson, Joy C. Andrews, and John G. Reynolds.

4:00 PM II11.10
SYNTHESIS AND EVALUATION OF NEPTUNIUM- AND PLUTONIUM-IMPRINTED RESINS. K.L. Noyes[a], W.H. Runde[b], and K.R. Czerwinski[a]; [a]Department of Nuclear Engineering, Massachusetts Institute of Technology, Cambridge, MA; [b]Isotope and Nuclear Chemistry, Chemistry Division, Los Alamos National Laboratory, Los Alamos, NM.

4:15 PM II11.11
PRECIPITATION OF TRANSURANICS IN TANK WASTE WITH PERMANGANATE: AN ANALYTICAL ELECTRON MICROSCOPY STUDY. Edgar Buck, Richard Hallen, Battelle, Richland, WA.