

NUWCEM 2014

SESSION n° 1 : METHODS OF PRODUCTION OF CEMENT-WASTE FORMS

- Formulation
- Process

SESSION n° 2 : PHYSICO-CHEMICAL PROCESSES OCCURRING IN CEMENT-WASTE FORMS AT EARLY AGE

- Superplasticizers
- Waste/cement interactions
- M-S-H/C-S-H
- Cementation of metals

SESSION n° 3 : INFLUENCE OF EXTERNAL AND INTERNAL FACTORS ON LONG TERM PROPERTIES OF CEMENT-WASTE PACKAGE AND CEMENT BARRIERS

- Recommendations and modelling
- Water transport
- Leaching
- Radionuclides sorption and transport

SESSION n° 4 : EMERGING AND ALTERNATIVE CEMENTITIOUS SYSTEMS

- Low-pH Cement
- Magnesium-based cement
- Calcium sulfoaluminate cements
- Geopolymer

Tuesday, June 3, 2014

8:00 – 9:00 Registration

9:00 – 9:20 Introduction **Ph. GUIBERTEAU**, Director CEA Marcoule, France

**Session 2 : PHYSICO-CHEMICAL PROCESSES OCCURRING IN CEMENT-WASTE FORMS
AT EARLY AGE**

9:20 – 9:50 Keynote lecture
L. NICOLEAU, T. GÄDT
BASF, Germany

9:50 – 10:10 *Synthesis of Superplasticisers Tailored For Applications in Nuclear Decommissioning and Storage*
M. ISAACS¹, S. EDMONDSON¹, S. CHRISTIE², D. READ²,
¹Department of Materials, Loughborough University, Leicestershire, United Kingdom
²Department of Chemistry, Loughborough University, Leicestershire, United Kingdom

10:10 – 10:30 *On the swelling behavior of cationic exchange resins saturated with Na⁺ ions in a C₃S or Portland cement paste*
C. CAU DIT COUMES¹, E. LAFOND¹, S. GAUFFINET³, D. CHARTIER¹, P. LE BESCOP²,
L. STEFAN⁴, A. NONAT³.
¹CEA Bagnols-sur-Cèze cedex, France
²CEA Gif s/Yvette, France
³UMR5209 Institut Carnot de Bourgogne, Université de Bourgogne Dijon, Dijon, France
⁴AREVA NC Paris la Défense, France

10:30 – 10:50 *Stability investigations of a cement-matrix incorporating soluble radioactive aggregates*
H. DANIELS¹, C. KALITZ¹, L. KUHNE¹, T. STEINHARDT¹, G. CASPARY¹, U. W. SCHERER², R. PRINTZ¹
¹Juelich Research Centre,
²FH Aachen, University of Applied Sciences, Germany

10:50 – 11:10 *The effect of limestone aggregate porosity and saturation degree on the interfacial zone*
G. LE SAOUT, T. D. NGUYEN, P. DEVILLERS, É. GARCIA-DIAZ
École des mines d'Alès (EMA), Centre des Matériaux des mines d'Alès (C2MA), Alès, France.

11:10 – 11:40 Coffee break

11:40 – 12:00 *Synthesis and characterisation of pure C(-A)-S-H phases*
E. L'HÔPITAL¹*, B. LOTHENBACH¹, G. LE SAOUT¹, D.A. KULIK², K. SCRIVENER³
¹Empa, Laboratory for Concrete & Construction Chemistry, CH-8600 Dübendorf, Switzerland
²Paul Scherrer Institute, Laboratory for Waste Management, CH-5232 Villigen PSI, Switzerland
³EPLF, Laboratory of Construction Materials, CH-1015 Lausanne, Switzerland

12:00 – 12:20 *C-A-S-H synthesis and thermodynamics modelling in CaO-Al₂O₃-SiO₂-H₂O system*
J. HAAS¹, I. POCHARD¹, A. NONAT¹
¹Laboratoire Interdisciplinaire Carnot de Bourgogne (UMR 6303), Dijon, France

12:20 – 12:40 *Secondary mineral formation in the proximity of a natural cement analog (Maqarin, Jordan)*
L. H. J. MARTIN¹, A. LEEMANN¹, URS K. MÄDER², JÖRG RÜEDI³
¹Empa, Swiss Federal Laboratories for Materials Testing and Research, Laboratory for Concrete and Construction Chemistry, Dübendorf, Switzerland
²Institute of Geology, University of Bern, Bern, Switzerland
³Nagra, Nationale Genossenschaft für die Lagerung radioaktiver Abfälle, Wettingen, Switzerland

12:40 – 13:00 *Calcium and magnesium silicate hydrates*
B. LOTHENBACH¹, D. NIED², E. L'HOPITAL¹, G. ACHIEDO³, A. DAUZÈRES³
¹Empa, Laboratory for Concrete & Construction Chemistry, Dübendorf, Switzerland
²Heidelberg Cement Technology Center GmbH, Leimen, Germany
³French Institute of Radiation protection and Nuclear Safety, Fontenay aux Roses, France

13:00 – 14:20 Lunch

14:20 – 14:40 *Expansion control for cementation of incinerated ash*
T. NAKAYAMA, S. SUZUKI, K. HANADA, O. TOMIOKA, J. SATO, K. IRISAWA, J. KATO, Y. KAWATO, Y. MEGURO
Radioactive Waste Treatment Technology Development Group, Nuclear Cycle Backend Directorate, Japan Atomic Energy Agency

14:40 – 15:00 *Phase evolution of calcium aluminate cement system with sodium phosphate and fly ash for encapsulation of aluminium*
H. KINOSHITA¹, P. SWIFT¹, N. COLLIER², C. UTTON¹
¹Department of Materials Science and Engineering, The University of Sheffield, United Kingdom
²National Nuclear Laboratory, Warrington, United Kingdom

15:00 – 15:20 *Effect of calcium sulfates on the corrosion of aluminium in calcium sulfoaluminate cement*
Y. BAI², C. MCCAGUE^{1,2}, Q. ZHOU², P.A.M. BASHEER¹
¹School of Planning, Architecture and Civil Engineering, Queen's University Belfast, United Kingdom.
²Department of Civil, Environmental and Geomatic Engineering, University College London, United Kingdom

15:20 – 15:40 *Selection of a mineral binder for the stabilization / solidification of low- or intermediate-level waste containing aluminium metal*
H. LAHALLE¹, C. CAU DIT COUMES¹, D. LAMBERTIN¹, P. ANTONUCCI¹, C. CANNES², S. DELPECH²
¹CEA Marcoule, France
²Institut de Physique Nucléaire – Radiochimie, Orsay, France

15:40 – 16:00 *An alternative approach to the management of reactive metals: tolerant cementitious systems*

P. SWIFT¹, J. COX¹, M. WISE¹, J. MCKINNEY², C. RHODES²

¹ NSG Environmental Ltd, Chorley, UK

² NDA, Cumbria, UK

16:00 – 17:00 Coffee break

Poster Session

Session 3: INFLUENCE OF EXTERNAL AND INTERNAL FACTORS ON LONG TERM PROPERTIES OF CEMENT-WASTE PACKAGE AND CEMENT BARRIERS

17:00 – 17:20 *Recent IAEA activities to support utilisation of cementitious materials in radioactive waste management*

M.I. OJOVAN*, S.K. SAMANTA

Waste Technology Section, International Atomic Energy Agency, Vienna, Austria

17:20 – 17:40 *Highlights and lessons learned during the 2nd half-scale test to demonstrate the feasibility to construct the Belgian supercontainer*

L. AREIAS², B. CRAEYE¹, E. COPPENS³, P. VAN MARCKE³ AND G. DE SCHUTTER⁴

¹ KAHO Sint-Lieven – campus Dirk Martens, Aalst, Belgium

² ESV EURIDICE/SCK•CEN, Mol, Belgium

³ ONDRAF/NIRAS, Brussels, Belgium

⁴ Ghent University, Department of Structural Engineering, Magnel Laboratory for Concrete Research, Ghent, Belgium

17:40 – 18:00 *Influence of water and temperature on long term mechanical behaviour of high performance concrete*

H. CAGNON¹, T. VIDAL¹, A. SELLIER¹, G. CAMPS²

¹Laboratoire Matériaux et Durabilité des Constructions (LMDC) Université de Toulouse, INSA-UPS, GÉNIE CIVIL, Toulouse, France

²Agence Nationale pour la gestion des Déchets Radioactifs; Direction Scientifique Châtenay-Malabry, France

18:00 – 18:20 *Integrated modelling approach to simulate the long-term chemical evolution of cementitious materials in radioactive waste repository environment*

Y. ELAKNESWARAN, T. ISHIDA

Department of Civil Engineering, University of Tokyo, Japan

Wednesday, June 4, 2014

Session 3: INFLUENCE OF EXTERNAL AND INTERNAL FACTORS ON LONG TERM PROPERTIES OF CEMENT-WASTE PACKAGE AND CEMENT BARRIERS

8:00 – 9:00 Registration

9:00 – 9:20 *Moisture transport in hardened cement pastes*
D. PETIT¹, H. CHEMMI¹, V. TARIEL¹, J-P. KORB¹, R. DENOYEL², R. BOUCHET², P.LEVITZ³

¹ Laboratoire de Physique de la Matière Condensée, Ecole Polytechnique, CNRS-UMR 7643, Palaiseau, France

² MADIREL, Aix-Marseille Université, CNRS-UMR 7246, Marseille, France

³ Laboratoire de Physicochimie des Electrolytes, Colloïdes et Sciences Analytiques, CNRS-UMR 7195, Université Pierre et Marie Curie, Paris, France

9:20 – 9:40 *Cs and Cl penetration estimation in mortar from fly ash of MSWI*

K. YAMADA¹, Y. HOSOKAWA², K. HAGA³, M. OSAKO¹

¹ National Institute for Environmental Studies, Japan

² Taiheiyo Cement Corp, Japan

³ Taiheiyo Consultant Co.Ltd, Japan

9:40 – 10:00 *Impact of carbonation on water transport properties of cement-based materials*

M. AUROY^{1,2}, S. POYET¹, P. LE BESCOP¹, J-M. TORRENTI²

¹ CEA, Gif-sur-Yvette, France.

² Université Paris-Est, IFSTTAR, Département Matériaux & Structures, Marne la Vallée, France.

10:00 – 10:20 *Biotic and surface catalyzed reactivity of nitrates at alkaline pH*

Y. RAFRAFI¹, H. RANAIVOMANANA², A. BERTRON², A. ALBRECHT³, B. ERABLE¹

¹ Laboratoire de Génie Chimique ; Université de Toulouse : INPT, UPS, CNRS ; Toulouse, France

² Laboratoire Matériaux et Durabilité des Constructions ; Université de Toulouse : UPS, INSA. ; Toulouse ; France.

³ Andra, Châtenay-Malabry, France

10: 20 – 10:50 Coffee break

10:50 – 11:10 *Modeling long-term leaching experiments of full scale cemented wastes: effect of solution composition on diffusion*

C. BORKEL¹, V. MONTOYA¹, B. KIENZLER¹

¹Karlsruhe Institute of Technology - Institute for Nuclear Waste Disposal, Eggenstein-Leopoldshafen, Germany

- 11:10 – 11:30 *Effects of carbonation, irradiation and temperature onto strontium immobilization into a cementitious matrix*
G. BAR-NES¹, L. CHOMAT², N. MACÉ³, C. HOSSEPIED^{2,3}, M. ARBEL-HADDAD¹, S. POYET²
¹ Department of Applied Chemistry, NRCN, Beer-Sheva, Israel.
² CEA, DEN, DPC, SECR, Laboratoire d'Étude du Comportement des Bétons et des Argiles, F-91191 Gif-sur-Yvette, France.
³ CEA, DEN, DPC, SECR, Laboratoire de Mesures et Modélisation de la Migration des radionucléides, F-91191 Gif-sur-Yvette, France.
- 11:30 – 11:50 *The rim zone of cement based materials –barrier or fast lane for chemical degradation?*
M. SCHWOTZER¹, K. KONNO², J. KALTENBACH¹, P. F. HECK¹, A. GERDES^{1,3}
¹ Karlsruhe Institute of Technology (KIT), Institute of Functional Interfaces, Eggenstein-Leopoldshafen, Germany
² Hokkaido Institute of Technology (HIT), Department of Civil and Environmental Engineering, Sapporo, Japan
³ University of Applied Sciences Karlsruhe, Institute for Prevention in Construction, Karlsruhe, Germany
- 11:50- 12:10 *Evolution of the argillite / CEM I interface at 70°C: in situ tests and modelling results*
P. LALAN^{1,2}, A. DAUZERES¹, L. DE WINDT², E. BARKER¹, V. DETILLEUX³, P. DESVEAUX⁴
¹ Institute of Radiation Protection and Nuclear Safety, SRTG, Fontenay-aux-Roses cedex, France
² Mines-ParisTech, Centre de Géosciences, Fontainebleau, France
³ BEL V, Anderlecht, Belgium
⁴ Société Martinez, Tournemire, France
- 12:10- 12:30 *The investigation of gamma and neutron shielding properties of concrete including basalt fibre for nuclear energy applications*
V. GULIK¹, H. NULK¹, C. IPBÜKER¹, A. BILAND², A. TKACZYK^{1*}
¹ University of Tartu, Institute of Physics, Estonia
² HHK Technologies, Houston, USA

12:30 – 14:00 Lunch

Session 4 : EMERGING AND ALTERNATIVE CEMENTITIOUS SYSTEMS

- 14:00 – 14:20 *Development of an alternative matrix for radwaste solidification and stabilization*
I. MARTIN^{1,2}, C. PATAPY¹, M. CYR¹, C. BOHER², D. AVRIL²
¹ Université de Toulouse, UPS, LMDC (Laboratoire Matériaux et Durabilité des Constructions), Toulouse, France
² AREVA NP / E&P, 25 avenue de Tourville, F-50120 Equeurdreville, France
- 14:20 – 14:40 *Beneficial influence of lithium for the conditioning of borated waste using calcium sulfoaluminate cement*
M. DHOURY¹, C. CAU DIT COUMES¹, D. DAMIDOT², L. PETIT³
¹ CEA Marcoule, France
² Ecole des Mines de Douai, LGCgE, Douai, France
³ EDF – R&D, MMC – Matériaux et Mécanique des Composants, Moret-sur-Loing, France
- 14:40 – 15:00 *Durability of low-pH cementitious materials based on OPC or CAC*
J.L. GARCÍA CALVO¹, M. SÁNCHEZ¹, L. FERNÁNDEZ LUCO², M.C. ALONSO¹.
¹ Eduardo Torroja Institute for Construction Science, IETcc-CSIC, Madrid, Spain
² INTECIN-University of Buenos Aires, Buenos Aires, Argentina

- 15:00 – 15:20 *The Full Scale Seal Experiment: An Industrial Prototype for Cigéo*
J.M BOSGIRAUD, X. BOURBON, F. PINEAU, R. FOIN
Andra, Châtenay-Malabry, France
- 15:20 – 15:40 *Formulating a low-alkalinity and self-consolidating concrete for the Cigéo-FSS experiment.*
S. POYET¹, P. LE BESCOP¹, C. CAU DIT COUMES², J. MOTH¹, G. TOUZE¹
¹ CEA, Laboratoire d'Etude du Comportement des Bétons et des Argiles, Gif sur Yvette, France.
² CEA, Laboratoire de Physico-Chimie des Matériaux Cimentaires, Marcoule, France.
- 15:40 – 16:00 *Modelling of chemical evolution of low pH cements at long term*
Y. EL BITOURI¹, L. BUFFO-LACARRIERE¹, A. SELLIER¹, X. BOURBON²
¹ Université de Toulouse, UPS, LMDC (Laboratoire Matériaux et Durabilité des Constructions), Toulouse, France
² Andra Châtenay-Malabry, France.
- 16:00 – 16:20 *M-S-H precipitation in low-pH concretes in clayey environment*
A. DAUZÈRES¹, G. ACHIEDO¹, D. NIED², E. L'HOPITAL³, S. ALAHRACHE³, B. LOTHENBACH³
¹ IRSN, French Institut of Radiation protection and Nuclear Safety, Fontenay aux Roses, France
² Heidelberg Cement Technology Center GmbH, Leimen, Germany
³ Empa, Laboratory for Concrete & Construction Chemistry, Duebendorf, Switzerland
- | | | |
|---------------|--------------|----------------|
| 16:20 – 17:20 | Coffee break | Poster Session |
|---------------|--------------|----------------|
- 17:20 – 17:40 *Elaboration of an iodine-substituted hydroxyapatite -based cement*
A. COULON¹, L. CAMPAYO¹, A. GRANDJEAN², D. LAURENCIN³, C. CAU DIT COUMES¹, S. ROSSIGNOL⁴
¹ CEA, Marcoule, France.
² Institut de Chimie Séparative de Marcoule, UMR5257 Marcoule, France
³ Institut Charles Gerhardt de Montpellier, UMR 5253, Université de Montpellier Montpellier, France
⁴ Groupe d'Etude des Matériaux Hétérogènes, Limoges, France
- 17:40 – 18:00 *Formation of k-struvite in magnesium phosphate cement*
A. LE ROUZIC^{1,2}, B. CHAUSSADENT¹, C. STEFAN², D. PLATRET¹
¹ IFSTTAR, Champs sur Marnes, Marnes la Vallée, France
² AREVA NC, BU Valorisation, Paris La Défense, France
- 18:00 – 18:20 *Reactive magnesium oxide cements: geochemical modelling of pore water and solid phase composition*
R. MARTINS DE FREITAS, A. AL-TABBAA
University of Cambridge, Department of Engineering, Cambridge, United Kingdom

Thursday, June 5, 2014

8:00 – 8:40 Registration

Session 4 : EMERGING AND ALTERNATIVE CEMENTITIOUS SYSTEMS

- 8:40 – 9:10 Keynote lecture
Which alternative cement for which function.
G. HABERT
ETH Zürich, Inst. Bau-u. Infrastrukturmanagement, Zürich, Switzerland
- 9:10 – 9:30 *Geopolymerization at moderate temperatures in the presence of nitrate anion*
E. OFER-ROZOVSKY¹, E.J.C. BOROJOVICH², A. NIKOLSKI², A. BINYAMINI², M. ARBEL-HADDAD², G. BAR-NES², A. KATZ¹
¹Faculty of Civil and Environmental Engineering, Technion I.I.T., Haifa, 32000, Israel
²Nuclear Research Center, Sheva, Israel
- 9:30 – 09:50 *Structural description of geopolymers by rheology and scattering techniques*
P. STEINS¹, F. FRIZON¹, A. POULESQUEN¹, O. DIAT² AND S. ROSSIGNOL³
¹CEA, Marcoule, France
²ICSM, UMR 5257, Marcoule, France
³GEMH, Ecole Nationale Supérieure de Céramique industrielle-Limoges, Limoges, France
- 09:50 – 10:10 *Study of the geopolymer restructuration by impulse rheology*
J. ROUYER, F. FRIZON AND A. POULESQUEN
CEA Marcoule, Marcoule, France
- 10:10 – 10:40 Coffee break
- 10:40 – 11:00 *Galvanic corrosion of Mg alloys in alkaline media for nuclear waste encapsulation in geopolymer*
J. AGULLO¹, B. MUZEAU¹, D. LAMBERTIN², C. BATAILLON³ AND V. L'HOSTIS¹
¹CEA, Laboratoire d'Etude du Comportement des Bétons et des Argiles, Gif-sur-Yvette - France
²CEA, Marcoule - France
³CEA, Gif-sur-Yvette - France
- 11:00 – 11:20 *Hydrogen formation under gamma and heavy ions irradiation of geopolymers*
F. CHUPIN¹, A. DANNOUX-PAPIN¹, JB D'ESPINOSE DE LACAILLERIE², Y. NGONO RAVACHE³
¹Laboratoire de Chimie des Fluides complexes et Irradiation, CEA Marcoule, France
²Laboratoire de Sciences et Ingénierie de la Matière Molle, UMR CNRS 7615, ESPCI ParisTech, Paris - France
³CEA, CNRS, ENSI CAEN, CIMAP, Unite Mixte, Caen, France

11:20 – 11:40 *Solidification/stabilization of organic liquid in metakaolin-based sodium geopolymer*
D. LAMBERTIN, A. ROOSES, A. POULESQUEN, F. FRIZON
CEA, Marcoule, France

11:40 – 12:00 *Cementation of biodegraded radioactive oils and organic waste*
A. SAFONOV², O. GORBUNOVA^{1,2}, V. TREGUBOVA²
¹FSUE “RADON”, Moscow, Russia
²Frumkin Institute of Physical Chemistry and Electrochemistry, Russian Academy of Sciences, Moscow, Russia

12:00 – 14:00 Lunch

Session 3: INFLUENCE OF EXTERNAL AND INTERNAL FACTORS ON LONG TERM PROPERTIES OF CEMENT-WASTE PACKAGE AND CEMENT BARRIERS

14:00 – 14:30 *Modeling of multi-species ion transport in cement-based materials for radioactive waste container*
X. PANG^{1,2}, **K.F.Li**^{1,2}, **P. Dangla**³
¹Key Laboratory of Safety and Durability of Civil Engineering of China Education Ministry, CHINA
²Civil Engineering Department, Tsinghua University, Beijing 100084, CHINA
³Laboratoire Navier, UMR8205, CNRS-ENPC ParisTech, Champs-sur-Marne, France

14:30 – 14:50 *Development of waste package for long term confinement - water penetration phenomena of high strength and ultra-low permeability concrete-*
H. OWADA¹, K. HAGA², D. HAYASHI¹ and K. NAKARAI³
¹Radioactive Waste Management Funding and Research Center, Japan
²Taikeiyo Consultant Co., LTD
³Faculty of Engineering, Hiroshima University

14:50 – 15:10 *The influence of highly saline conditions on radionuclide transport through cementitious barriers*
M. GRIVE¹, E. GIFFAUT², D. GARCIA¹, A. IDIART¹
¹Amphos Consulting S.L. Barcelona (Spain)
²Andra, Châtenay-Malabry (France)

15:10 – 15:30 *The fate of organic compounds in a cement-based repository: Impacts on the engineered barrier and the release of C-14 from the near field*
E. WIELAND¹, J. ROTHARDT¹, G. SCHLOTTERBECK²
¹Paul Scherrer Institut, Laboratory for Waste Management, Villigen, Switzerland
²University of Applied Sciences Northwestern Switzerland, School of Life Sciences, Muttenz, Switzerland

15:30 – 15:50 *Sorption of actinides onto titanium dioxide, calcium silicate hydrates and hardened cement paste*
J. TITS¹, T. STUMPF², C. WALTHER³, X. GAONA², E. WIELAND¹
¹Laboratory for Waste Management, Paul Scherrer Institute, Switzerland
²Karlsruhe Institute of Technology, Institute for Nuclear Waste Disposal, Karlsruhe, Germany
³Institut für Radioökologie und Strahlenschutz, Leibniz Universität Hannover, Hannover, Germany

15:50 – 16:50 Coffee break

Poster Session

- 16:50 – 17:10 *Radionuclide behaviour in the concrete backfill and waste inventory context of an ILW disposal vault. Current state of knowledge supporting PA and remaining issues.*
P. HENOCQ, E. GIFFAUT
Andra, Châtenay-Malabry, France
- 17:10 – 17:30 *Complexation of gluconate with Np(IV) in cementitious environments: characterization of Ca–GLU and Ca–Np(IV)–GLU systems*
X. GAONA¹, C. ADAM¹, H. ROJO^{1,2}, M. BÖTTLE¹, P. KADEN¹, M. ALTMAIER¹
¹Institute for Nuclear Waste Disposal, Karlsruhe Institute of Technology, Karlsruhe, Germany
²Laboratory for Waste Management, Paul Scherrer Institut, Villigen PSI, Switzerland
- 17:30 – 17:50 *Aquatic chemistry in alkaline CaCl₂ solutions: solubility and speciation of An(III), An(IV) and An(V)*
M. ALTMAIER, D. FELLHAUER, TH. RABUNG, X. GAONA
Institute for Nuclear Waste Disposal, Karlsruhe Institute of Technology, Karlsruhe, Germany

19:30	Conference Gala
-------	-----------------

Friday, June 6, 2014

8:00 Bus Departure

9:00 – 9:20 Introduction **M. LECOMTE**, Deputy Director CEA Marcoule, France

Session 1: METHODS OF PRODUCTION OF CEMENT-WASTE FORMS

- 9:20 – 9:40 *On the immobilization of NaNO₃-rich ILW-LL radioactive effluent*
E. COPPENS¹, C. CAU DIT COUMES², P. ANTONUCCI²
¹ ONDRAF/NIRAS, The Belgian Agency for Radioactive Waste and Enriched Fissile Materials, Brussels, Belgium
² CEA, Marcoule, France
- 9:40 – 10:00 *Cementation of nitrate solutions by alkali-activated slag-metakaolin cement*
N.R RAKHIMOVA¹, R.Z. RAKHIMOV¹, N.I NAUMKINA², A.M. GUBAIDULLINA².
¹Kazan state university of architecture and engineering (Kazan, Russian Federation)
² Central Research Institute for Geology of Industrial Minerals (Kazan, Russian Federation)
- 10:00 – 10:20 *Cement waste-form development for ion exchange resins and fine particles ILW of AREVA La Hague Reprocessing Plant*
D.CHARTIER¹, D.AVRIL², C. ROUSSEL³, J.-N. PINEAU⁴, J. SANCHEZ-CANET¹
¹ CEA, Marcoule, France
² AREVA / E&P
³ AREVA NC/ Recycling Business Unit / DIRP / RDP
⁴ AREVA NC/ Nuclear Site Value Development Business Unit / DV-RCD
- 10:20 – 10:40 *Possible recipes for conditioning low radioactive asbestos-containing waste material*
A. WAELLISCH
Paul Scherrer Institut
CH-5232 Villigen – PSI, Switzerland
- 10:40 – 11:00 Coffee break
- 11:00 – 11:20 *EIRICH*
- 11:20 – 11:40 *Solidification of Intermediate Level Liquid Waste (ILLW) – CEMEX Waste Form Qualification*
V. D'ANDREA, F. PANCOTTI, M. GUERRA, V. MAIO
Sogin S.p.A.
- 11:40 – 12:00 *Modification of cementitious binder characteristics following a change in manufacturing scale*
P. DE CONINCK, B. FERRÉ, M. MOINARD, E. TRONCHE
CEA Marcoule, France
- 12:00 – 12:20 *WESTINGHOUSE Integrated Cementation Facility Smart process automation minimizing secondary waste*
H. FEHRMANN, T. JACOBS, DR. J. AIGN
Westinghouse Electric Germany GmbH - Germany

NUWCEM 2014 – Avignon, France

12:20 – 12:40 *Joint cementation of liquid and solid radioactive waste in decommissioning of atomic objects*
A.VARLAKOV, G.VARLAKOVA, A.GERMANOV, L.SUKHANOV
Bochvar Research Institute of Inorganic Materials, Moscow, Russian Federation

12:40 – 14:00	Lunch
---------------	-------

14:00 – 16 :10 Technical tour

16:10 Bus Departure