



Strasbourg (France)

E-MRS Spring Meeting 2005
May 31 – June 3, 2005

SYMPOSIUM N
Nuclear Materials

Symposium Organizers:

Claude Degueldre, Paul Scherrer Institute, Villigen, Switzerland

Dolores Gomez Briceno, CIEMAT, Madrid, Spain

Thomas Fanghänel, INE, FzKarlsruhe, Germany

Dominique Warin, CEA, Saclay, France

Papers will be published in journal of nuclear materials

E-MRS 2005 SPRING MEETING

SYMPOSIUM N

Tuesday, May 31, 2005
Mardi 31 mai 2005

Morning
Matin

8:30 **Welcome:** Presidency EMRS
8:40 **Introduction:** C. Degueldre (PSI)

Session I: Component materials for advanced fusion/fission systems

Session chairs: Nadine Baluc (EPFL), Dominique Hittner (Framatome-ANP)

- N-I.01** 09:00 -Invited- ADVANCED STRUCTURAL MATERIALS FOR NUCLEAR POWER APPLICATIONS
S.J. Zinkle, Oak Ridge National Laboratory, Oak Ridge TN 37831-6138, USA
- N-I.2** 09:20 EFFECTS OF POROSITY CHANGES ON MECHANICAL PROPERTIES OF NUCLEAR GRAPHITE
Ch. Berre, A. Fok, B. Marsden, Nuclear Graphite Research Group, University of Manchester, U.K.
- N-I.3** 09:35 OPTICAL CHARACTERIZATION OF TRISO FUEL PARTICLE CROSS-SECTIONS USING GENERALIZED ELLIPSOMETRY
G.E. Jellison, Jr. and J.D. Hunn, Oak Ridge National Laboratory, Oak Ridge TN 37831-6030, USA
- N-I.4** 09:50 REVIEW OF CO PRESSURE MEASUREMENTS IN THE U-C-O TERNARY SYSTEM
S. Gossé(a), C. Guéneau(a), S. Chatain(a), C. Chatillon(b), (a)DEN/DPC/SCP -CEA Saclay 91191 Gif-sur-Yvette Cedex, France, (b)LTPCM -CNRS UMR5614, ENSEEG BP75 Grenoble 38402 Saint-Martin d'Hères Cedex, France
- N-I.5** 10:05 ATOMISTIC SIMULATION OF RAPID COMPRESSION OF FRACTURED SILICON CARBIDE
A. Romano(a), Ju Li(b), S. Yip(c), (a)Laboratory of Reactor Physics and Systems Behaviour, Paul Scherrer Institut, 5232 Villigen PSI, Switzerland, (b)Department of Materials Science and Engineering, Ohio State University, Columbus OH 43210, USA, (c)Department of Nuclear Science and Engineering and Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge MA 02139, USA
- 10:20 **BREAK**
- N-I.6** 10:35 IN-SITU CREEP UNDER HELIUM IMPLANTATION OF -TiAl ALLOY
J. Chen(a), P. Jung(b), M. Nazmy(c) and W. Hoffelner(a), (a)Department of Nuclear Energy and Safety, Paul Scherrer Institut, 5232 Villigen PSI, Switzerland, (b)Forschungszentrum Jülich, 52425 Jülich, Germany, (c)ALSTOM POWER, Haseltrasse, 5401 Baden, Switzerland
- N-I.7** 10:50 MULTISCALE MODELING OF DEFECT KINETICS IN ELECTRON IRRADIATED IRON
Chu-Chun Fu, J. Dalla Torre, Fr. Willaime, J.- L. Bocquet and A. Barbu, Service de Recherches de Métallurgie Physique CEA/Saclay, 91191 Gif-sur-Yvette, France
- N-I.8** 11:05 ATOMIC SIMULATIONS OF IRRADIATED NANOCRYSTALLINE FE CONTAINING PRE-EXISTING VOIDS
M. Samaras(a), P.M. Derlet(a), H. Van Swygenhoven(a), W. Hoffelner(a), M. Victoria(b,c), (a)Paul Scherrer Institute, NUM/ASQ, 5232 Villigen-PSI, Switzerland, (b)Lawrence Livermore National Laboratory, California, USA, (c)Polytechnic University of Madrid, Spain
- N-I.9** 11:20 AB INITIO STUDY OF DISSOLUTION, MIGRATION AND CLUSTERING OF HELIUM IN ALPHA-IRON
Chu-Chun Fu and Fr. Willaime, Service de Recherches de Métallurgie Physique, CEA/Saclay, 91191 Gif-sur-Yvette, France
- N-I.10** 11:35 ODS STEEL IRRADIATION WITH HE
M.A. Pouchon, J.-Ch. Chen, W. Hoffelner, Paul Scherrer Institute, 5232 Villigen PSI, Switzerland
- 11:50 **DISCUSSION**
- 12:05 **LUNCH**

Tuesday, May 31, 2005
Mardi 31 mai 2005

Afternoon
Après-midi

13:30-14:30 POSTER SESSION

14:45 Poster session briefing
Christine Guéneau (CEA Saclay), Alvin Solomon (University
Purdue)

Session II: Structural materials for thermal reactors

Session chairs: Peter Rudling (ANT), Margaret McGrath (OECD, Halden)

- N-II.1** 15:00 -Invited- THREE DIMENSIONAL OBSERVATIONS AND MODELLING OF INTERGRANULAR STRESS CORROSION CRACKING IN AUSTENITIC STAINLESS STEEL
T.J. Marrow, L. Babout, A. Jivkov, P. Wood, D. Engelberg, N. Stevens, **P.J. Withers**, School of Materials, University of Manchester, UK and R.C. Newman, Department of Chemical Engineering and Applied Chemistry, University of Toronto, Canada
- N-II.2** 15:20 UNDERSTANDING OF RADIATION DAMAGE IN REACTOR PRESSURE VESSEL STEELS FOR LONG TERM EVOLUTION MODELLING
Ph. Pareige and B. Radiguet, Equipe de Recherche Technologique n°1000, GPM UMR CNRS 6634, Alain Barbu, CEA, Saclay, France
- N-II.3** 15:35 MODEL-ORIENTED EXPERIMENTS TO VALIDATE MULTISCALE MODELING OF RADIATION DAMAGE BEHAVIOUR OF REACTOR PRESSURE VESSEL STEELS
M. Hernández-Mayoral, D. Gómez-Briceño, CIEMAT, Department of Technology, Materials Division, Avenida Complutense, 22, 28040-Madrid, Spain
- N-II.4** 15:50 ASSESSMENT OF THE CONSTITUTIVE LAW BY INVERSE METHODOLOGY
J. Isselin(a), A. Iost(a), J. Golek(a), M. Bigerelle(a,b), (a)Laboratoire de Métallurgie Physique et Génie des Matériaux, CNRS UMR 8517, Equipe Surfaces et Interfaces; ENSAM, 8 Boulevard Louis XIV, 59046 Lille Cedex France, (b)Laboratoire Roberval, FRE CNRS 2833, UTC Centre de Recherches de Royallieu BP 20529, 60205 Compiègne France
- 16:05 **BREAK**
- N-II.5** 16:20 THE STUDY OF OXIDE FILMS OBTAINING ON THE SURFACE OF NUCLEAR METALLIC MATERIALS BY XRD AND SYNCHROTRON RADIATION ANALYSIS
V. Malinovschi(a), C. Ducu(a), N. Aldea(b), (a)University of Pitesti, Research Center for Advanced Materials, Targul din Vale Street, no.1, Pitesti, Romania, (b)National Institute for Research and Development for Isotopic and Molecular Technologies, P.O.B 700, 3400 Cluj-Napoca, Romania
- N-II.6** 16:35 XAFS STUDY OF NB IN ZIRCONIUM ALLOY CORROSION LAYERS
K. Dardenne, INE, Forschungszentrum Karlsruhe, 76344 Eggenstein-Leopoldshafen, Germany, C. Degueldre, LWV, Paul Scherrer Institut, 5232 Villigen, Switzerland
- N-II.7** 16:50 J-R CURVES DETERMINATION OF TUBE CLADDING MATERIAL
J. Bertsch, W. Hoffelner, Paul Scherrer Institut, Laboratory for Materials Behavior, 5232 Villigen PSI, Switzerland
- N-II.8** 17:05 FEELING DEFECTS IN ZIRCALOY BY XAFS AND muSR
C. Degueldre(a), S. Conradson(b), A. Amato(c), E. Campitelli(a), (a)LWV, PSI Villigen, Switzerland, (b)LANL, Los Alamos, NM, USA, (c)LMS, PSI Villigen, Switzerland
- 17:20 **DISCUSSION**

Wednesday, June 1, 2005
Mercredi 1 juin 2005

Afternoon
Après-midi

Session III: Fuel materials

Session chairs: Didier Hass (ITU), Tim Abram (BNFL)

- N-III.1** 14:30 -Invited- FUEL MATERIALS FOR GAS COOLED FAST REACTORS
Ph. Martin(a), H. Burlet(b), J.L. Seran(c), (a)CEA/DEN/DEC, Centre de Cadarache, 13108 ST Paul lez Durance, France, (b)CEA/DRT/DTEN, Centre de Grenoble, 17 Rue des Martyrs, 38054 Grenoble, France, (c)CEA/DEN/DMN, Centre de Saclay, 91191 Gif sur Yvette, France
- N-III.2** 14:50 THE EFFECT OF HIGHLY PRESSURISED INTRA-GRANULAR BUBBLES ON THE MOBILITY AND RELEASE TO GRAIN BOUNDARIES OF DIFFUSING RARE GAS ATOMS IN URANIUM DIOXIDE
P. Garcia(a), P. Martin(a), G. Carlot(a), E. Castelier(a), M. Ripert(a), C. Sabathier(a), C. Valot(a), F. D'Acapito(b), J-L. Hazemann(c), O. Proux(c), V. Nassif(c), (a)CEA-Cadarache, DEN/DEC/SESC/LLCC, Bâtiment 315, 13108 Saint-Paul-lez-Durance cedex, France, (b)GILDA/CRG-ESRF 6 rue Jules Horowitz, B.P. 220 38043 Grenoble, France, (c)CNRS, Laboratoire de Cristallographie, B.P. 166, 38042 Grenoble cedex 09, France
- N-III.3** 15:05 FABRICATION METHOD AND THE VARIATION OF THERMAL CONDUCTIVITY OF Mo-PRECIPITATED UO₂ PELLETS
Si-Hyung Kim, Yeon-Gu Kim, Han-Soo Kim, Sang-Ho Na, Young-Woo Lee, Dong-Seong Sohn, Korea Atomic Energy Research Institute, P.O. Box 105, Yuseong, Daejeon 305-600, South Korea
- N-III.3** 15:20 FABRICATION OF DRY PROCESS NUCLEAR FUEL PELLETS BY USING SIMULATED HIGH BURNUP SPENT FUEL
W.K. Kim, W.C. Shin, Jae W. Lee, G.I. Park and J.W. Lee, Korea Atomic Energy Research Institute, PO Box 105, Yusong, Taejon, South Korea
- N-III.5** 15:35 CALCULATIONS ON GRAIN BOUNDARY DIFFUSION OF XE/KR IN THE HIGH BURNUP STRUCTURE
P. Blair, A. Romano, Ch. Hellwig, Paul Scherrer Institut, 5232 Villigen-PSI, Switzerland
- 15:50 **BREAK**
- N-III.6** 16:05 PROTECTED PLUTONIUM PRODUCTION (P³) FOR PEACE AND SUSTAINABLE PROSPERITY
M. Saito, Research Laboratory for Nuclear Reactors; Tokyo Institute of Technology, 2-12-1, O-okayama, Meguro-ku, Tokyo 152, Japan
- N-III.7** 16:20 HEU LEU FUEL BEHAVIOR COMPARISON FOR THE TRIGA SSR
Gh. Negut(a), N. Danila(b), (a)Institute for Nuclear Research (ICN), 0300 Pitesti, PO Box 78, Romania, (b)University Politehnica Bucharest, Romania
- N-III.8** 16:35 FABRICATION, CHARACTERIZATION AND PROPERTY EVALUATION OF MIXED CARBIDE FUEL FOR INDIAN FAST BREEDER TEST REACTOR
S. Majumdar, A.K. Sengupta and H.S. Kamath, Radiometallurgy Division, Bhabha Atomic Research Centre, Mumbai 400085, India
- N-III.9** 16:50 NITRIDES AS A NUCLEAR FUEL OPTION
M. Streit, F. Ingold, Paul Scherrer Institute, 5232 Villigen PSI, Switzerland
- 17:05 **DISCUSSION**
- 19:00 **AWARD CEREMONY**
The symposium organizers and the candidates to the graduate student award are requested to attend.
- CONFERENCE RECEPTION**

Thursday, June 2, 2005
Jeudi 2 juin 2005

Morning
Matin

Session IV: Waste form

Session chairs: Bernard Kienzler (INE, FzK), Virginia Oversby (VMO Konsult, Stockholm)

- N-IV.1** 09:00 -Invited- THE INFLUENCE OF THE PRODUCTS OF ANOXIC CORROSION OF IRON ON THE RATES OF DISSOLUTION OF SPENT FUEL AND UO_2 DOPED WITH ^{235}U
K. Spahiu and L. Werme, SKB, Brahegatan 47, 102 40 Stockholm, Sweden
- N-IV.2** 09:20 ROLE OF IRRADIATION AND AIR RELATIVE HUMIDITY ON IRON CORROSION
S. Lapuerta(a), N. Béreard(a), A. Chevarier(a), H. Jaffrézic(a), N. Millard-Pinard(a), N. Moncoffre(a), D. Crusset(b), F. Petit(c), B. Hannover(c), (a)Institut de Physique Nucléaire de Lyon, 4, rue Enrico Fermi, 69622 Villeurbanne cedex, France, (b)ANDRA, Parc de la Croix Blanche, 1-7 rue Jean Monnet, 92298 Châtenay-Malabry Cedex, France, (c)LASTSM, Institut des Matériaux de Rouen, Avenue de l'Université - B.P. 12, 76801 Saint Etienne du Rouvray Cedex France
- N-IV.3** 09:35 SOLUBILITY IMPROVEMENT OF CERIUM AND PLUTONIUM BY REDUCTION IN BOROSILICATE GLASSES
J.-N. Cachia(a), X. Deschanel(a), C. Denauwer(b), (a)Commissariat à l'Energie Atomique, DEN/DTCD/SECM/LMPA, BP 17171, 30207 Bagnols-sur-Cèze Cedex, France, (b)Commissariat à l'Energie Atomique, DEN/DRCP/SCPS/LCAM, BP 17171, 30207 Bagnols-sur-Cèze Cedex, France
- N-IV.4** 09:50 PERLITE FOR THE CONFINEMENT OF Cs
J. Balencie(a), D. Burger(a), J.-L. Rehspringer(a), C. Estournès(a), **S. Vilminot**(a), M. Richard-Plouet(a), A. Boos(b), (a)IPCMS-GMI, UMR7504, BP43, 67034 Strasbourg Cedex, France, (b)LCAM, UMR7512, ECPM, 25 rue Becquerel, 67087 Strasbourg Cedex 2, France
- N-IV.5** 10:05 CHARACTERIZATION OF SIMULATED VITRIFIED INEEL AND HANFORD WASTES PRODUCED IN COLD CRUCIBLE
S.V. Stefanovsky(a), T.N. Lashchenova(a), L.D. Bogomolova(a), C.C. Herman(b), D.F. Bickford(b), E.W. Holtzscheiter(b), R.W. Goles(c), D. Gombert(d), (a)SIA Radon, 7th Rostovskii per. 2/14, Moscow 119121, Russia, (b)Savannah River Technology Center, Aiken SC 29808, USA, (c)Pacific Northwest National Laboratory, Battelle Blvd, Richland WA 99352, USA, (d)Idaho National Engineering and Environmental Laboratory, Idaho Falls ID 83415, USA
- 10:20 **BREAK**

- N-IV.6** 10:35 HELIUM BEHAVIOUR IN WASTE CONDITIONING MATRICES DURING THERMAL ANNEALING
T.A.G. Wiss(a), J-P. Hiernaut(a), P.M.G. Damen(b), S. Lutique(c), R. Fromknecht(d), and W.J. Weber(e),
(a)European Commission, JRC, Institute for Transuranium Elements, P.O. Box 2340, 76125 Karlsruhe,
Germany, (b)Nederlands Meetinstituut, Princetonplein 5, 3584 CC Utrecht, The Netherlands, (c)CEA,
DEN/DEC/SPUA/LTEC, C.E.N Cadarache,Bât. 717, 13108 Saint Paul-lez-Durance, France, (d)Institut für
Festkörperphysik, Forschungszentrum Karlsruhe, Postfach 3640, 76021 Karlsruhe, Germany, (e)Pacific
Northwest National Laboratory, P.O. Box 999, K8-93, Richland WA 99352, USA
- N-IV.7** 10:50 A NEW WAY OF PREPARATION OF THORIUM PHOSPHATE DIPHOSPHATE AND ASSOCIATED
SOLID SOLUTIONS FROM CRYSTALLIZED PRECURSORS
N. Clavier(a), N. Dacheux(a), G. Wallez(b), J. Emery(c), M. Quarton(b), (a)Groupe de Radiochimie, IPN
Orsay, Université Paris-Sud-11, Orsay, France, (b)Laboratoire de Cristalochimie du Solide, Université Pierre
et Marie Curie, Paris, France, (b)Laboratoire de Physique de l'Etat Condensé, Université du Maine, Le Mans,
France
- N-IV.8** 11:05 STUDY OF THE CHEMICAL SCHEME OF DISSOLUTION OF THORIUM-URANIUM(IV)
PHOSPHATE-DIPHOSPHATE SOLID SOLUTIONS
N. Clavier(a), E. du Fou de Kerdaniel(a), N. Dacheux(a), R. Drot(a), R. Podor(b), E. Simoni(a), (a)Groupe de
Radiochimie, IPNO, Université Paris-Sud-11, Orsay, France, (b)LCSM, Université Henri Poincaré, Nancy I,
Vandoeuvre lès Nancy, France
- N-IV.9** 11:20 HEALING OF DAMAGE IN HEAVY ION IRRADIATED FLUOROAPATITES BY X-RAY
DIFFRACTION AND μ RAMAN SPECTROSCOPY
F. Studer(a), S. Miro(a), D. Chateigner(1), D. Gréville(a), J.-J. Grob(b) and J-M.Costantini(c), (a)CRISMAT,
ENSICAEN 6, Bd du Marechal Juin, 14050 Caen Cedex, France, (b)Laboratoire PHASE, B.P.20, 67037
Strasbourg Cedex 2, France, (c)CEA SACLAY, DMN/SRMA, 91191 Gif-sur-Yvette Cedex, France
- N-IV.10** 11:35 PLUTONIUM INCORPORATION INTO PHOSPHATE AND TITANATE CERAMICS FOR MINOR
ACTINIDE CONTAINMENT
X. Deschanels(a), V. Picot(a), J-N. Cachia(a), B. Glorieux(b), J.P. Coutures(b), (a)CEA Marcoule,
DEN/DTCD/SECM/LMPA, BP 17171, 30207 Bagnols-sur-Cèze Cedex, France, (b)PROMES-CNRS
Tecnosud, Rambla de la thermodynamique, 66100 Perpignan, France
- 11:50 **DISCUSSION**
- 12:00 **LUNCH**

Thursday, June 2, 2005
Jeudi 2 juin 2005

Afternoon
Après-midi

13:30-14:30 POSTER SESSION

14:30 IMF Workshop
Introduction:

Session V: IMF Neutronic / Reactor

Session chairs: Vitaly Sobolev (SCK CEN), Masaki Saito (TIT)

- N-V.1** 15:00 -Invited- NEUTRONIC DOUBLE HETEROGENEITY EFFECT IN PARTICLE DISPERSED TYPE INERT MATRIX FUELS
H. Akie and H. Takano, Ibaraki Univ., Hitachi-shi, Ibaraki-ken, 316-8511, Japan, Japan Atomic Energy Research Inst., Tokai-mura, Naka-gun, Ibaraki-ken, 319-1195, Japan
- N-V.2** 15:20 THORIA INERT MATRIX FUEL IRRADIATION AT OECD HALDEN REACTOR
M. Streit, T. Tverberg, W. Wiesenack, Institutt for energiteknikk, OECD Halden reactor Project, Postboks 173, 1751 Halden, Norway
- N-V.3** 15:35 NEUTRONICS CALCULATIONS ON THE IMPACT OF BURNABLE POISONS TO SAFETY AND NON-PROLIFERATION ASPECTS OF INERT MATRIX FUELS
Ch. Pistner, Interdisciplinary Research Group Science, Technology and Security (IANUS), Darmstadt University of Technology, Hochschulstrasse 4a, 64289 Darmstadt, Germany
- 15:50 **BREAK**
- N-V.4** 16:05 THE ROLE FOR INERT MATRIX FUEL IN THE U.S. LIGHT WATER REACTOR TRANSMUTATION FUEL DEVELOPMENT PROGRAM
W. J. Carmack(a), M. Todosow(b), M. K. Meyer(a) and K. O. Pasamehmetoglu(a), (a)Idaho National Laboratory, P.O. Box 1625, Idaho Falls ID 83415-3860, USA; (b)Brookhaven National Laboratory, 12 S. Upton Rd., Bldg. 475B, P.O. Box 5000, Upton NY 11973-5000, USA
- N-V.5** 16:20 THE DEEP-BURNER MODULAR HELIUM REACTOR FOR ACTINIDE INCINERATION
D. Hittner, G. B. Bruna and Ch. Trakas, FRAMATOME-ANP, Tour AREVA, 92084 Paris La Défense Cedex, France
- N-V.6** 16:35 ASSESSMENT OF AMERICIUM TRANSMUTATION IN IMF OXIDE TARGETS IN DIFFERENT SPECTRAL ZONES OF ADS MYRRHA
W. Haeck, E. Malambu, V.P. Sobolev, Belgian Nuclear Research Centre SCK-CEN, Boeretang 200, 2400 Mol, Belgium
- 16:50 **DISCUSSION**
- 17:00 **IMF Future**

Friday, June 3, 2005
Vendredi 3 juin 2005

Morning
Matin

Session VI: IMF Materials

Session chairs: Yon-Woo Lee (KAERI), Rory Kennedy (INL)

- N-VI.1** 08:40 -Invited- INERT MATRIX FUEL BEHAVIOUR IN TEST IRRADIATIONS
Ch. Hellwig(a), P. Blair(a), M. Streit(a), T. Tverberg(b), F.C. Klaassen(c), R.P.C. Schram(c), F. Vettrano(d), T. Yamashita(e), (a)Paul Scherrer Institut, 5232 Villigen-PSI, Switzerland, (b)Institut for energiteknikk, 1751 Halden, Norway, (c)NRG, P.O. Box 25, 1755 ZG Petten, The Netherlands, (d)ENEA-Nuclear Fission Division, Via Martiri di Monte Sole 4, 40129 Bologna, Italy, (e)Japan Atomic Energy Research Institute, JAERI, Tokai-mura, Ibaraki-ken, 319-1195, Japan
- N-VI.2** 09:00 MODELLING HEAT CAPACITY, THERMAL EXPANSION AND THERMAL CONDUCTIVITY OF OXIDE IMF
V.P. Sobolev, S.E. Lemehov, Belgian Nuclear Research Centre SCK-CEN, Boeretang 200, 2400 Mol, Belgium
- N-VI.3** 09:15 EVALUATION OF THERMAL PROPERTIES OF ZIRCONIA-BASED INERT MATRIX FUEL BY MOLECULAR DYNAMICS SIMULATION
T. Arima, Sh. Yamasaki, K. Yamahira, Y. Inagaki, K. Idemitsu, Institute of Environmental Systems, Faculty of Engineering, Kyushu University, Japan
- N-VI.4** 09:30 DUAL PHASE MAGNESIA-ZIRCONIA CERAMICS FOR LIGHT WATER REACTOR INERT MATRIX FUEL
P.G. Medvedev, S.M. Frank, M.J. Lambregts, A.P. Maddison, T.P. O'Holleran, M.K. Meyer, Argonne National Laboratory West, Idaho Falls ID 83404-2528, USA
- N-VI.5** 09:45 NEW PROCESSING METHODS TO PRODUCE SiC AND BeO MATRIX FUEL
A.A. Solomon, S. Kuchibhotla, J. Fourcade, R. Latta, S.G. Lee and Michael King, School of Nuclear Engineering, Purdue University, W. Lafayette IN 47907, USA
- N-VI.6** 10:00 FABRICATION AND THERMOPHYSICAL PROPERTY CHARACTERIZATION OF ACTINIDE ALLOYS AS NUCLEAR TRANSMUTATION FUELS
J.R. Kennedy, A.P. Maddison, D.D. Keiser, St. M. Frank, Idaho National Laboratory, Idaho Falls, Id 83403, USA
- 10:15 **BREAK**

- N-VI.7** 10:30 PRODUCTION OF ZIRCONIA-BASED TRANSMUTATION TARGETS
A. Fernandez, D. Haas, J. Somers, European Commission, Joint Research Centre, Institute for Transuranium Elements, Postfach 2340, D-76125 Karlsruhe, Germany
- N-VI.8** 10:45 USE OF ZrC FOR THE INERT MATRIX MATERIAL IN MINOR ACTINIDES TRANSMUTATION
Young-Woo Lee, Si-Hyung Kim, Dong-Koo Kim, Ho-Jin Ryu, Dong-Seong Sohn, Korea Atomic Energy Research Institute, PO Box 105 Yuseong, Daejeon 305-600, Korea
- N-VI.9** 11:00 IMF IN DISPERSION TYPE FUEL ELEMENTS
A.M. Savchenko, A.V. Vatulin, A.V. Morozov, V.L. Sirotn, I.V. Dobrikova, G.V. Kulakov, S.A. Ershov, V.P. Kostomarov, Y.I. Stelyuk, A.A. Bochvar Institute of Inorganic Materials (VNIINM), Rogova St 5A, PO Box 369, 123060 Moscow, Russia
- N-VI.10** 11:15 POST IRRADIATION EXAMINATION OF THE OTTO IRRADIATION EXPERIMENT FOR PLUTONIUM INCINERATION
F.C. Klaassen(a), R.P.C. Schram(a), K. Bakker(a), Ch. Hellwig(b), T. Yamashita(c), (a)Nuclear Research and consultancy Group, P.O. Box 25, 1755 ZG Petten, The Netherlands, (b)Paul Scherrer Institut, 5232 Villigen-PSI, Switzerland, (c)Japan Atomic Energy Research Institute, JAERI, Tokai-mura, Ibaraki-ken, 319-1195, Japan
- N-VI.11** 11:30 YTTRIUM STABILISED ZIRCONIA INERT MATRIX FUEL IRRADIATION AT OECD HALDEN REACTOR
M. Streit(a), W. Wiesenack(a), T. Tverberg(a), B. Oberländer(b), C. Hellwig(c), (a)Institut for energiteknikk, OECD Halden Reactor Project, Postboks 173, 1751 Halden, Norway, (b)Institut for energiteknikk, 2027 Kjeller, Norway, (c)Paul Scherre Institut, 5232 Villigen PSI, Switzerland
- N-VI.12** 11:45 THORIA, INERT MATRIX FOR THE IMMOBILIZATION OF PLUTONIUM
D. Barrier, A.A. Bukaemskiy, G. Modolo, Institut für Sicherheitsforschung und Reaktortechnik, Forschungszentrum Juelich GmbH, 52425 Juelich, Germany
- N-VI.13** 12:00 POST IRRADIATION EXAMINATION ON PARTICLE DISPERSED ROCK-LIKE OXIDE FUEL
N. Nitani, K. Kuramoto, T. Yamashita, K. Ichise, K. Ono and Y. Nihei, Japan Atomic Energy Research Institute, Tokai, Ibaraki, 319-1195, Japan
- 12:15 **CONCLUSIONS**
- 12:30 **LUNCH**

POSTER SESSIONS
Tuesday, May 31 and Thursday, June 2, 2005
13:30 – 14:30

- N/P.01** MICROSTRUCTURAL STUDIES OF NUCLEAR MATERIALS BY SYNCHROTRON RADIATION : A NEW CHALLENGE FOR THE NEAR FUTURE
B. Sitaud(a) and S. Lequien(b), (a)Synchrotron SOLEIL, Saint Aubin BP 48, 91192 Gif sur Yvette, France, (b)LPS, UMR 9956 CEA-CNRS, 91191 Gif sur Yvette, France
- N/P.02** OPTIMISATION AND CHARACTERISATION OF THICK W COATINGS ON Cu-Cr-Zr ALLOY FLAT SUBSTRATES
B. Riccardi(a), A. Moriani(a) R. Montanari(b), G. Costanza(b), M. Casadei(c), (a)ENEA, CR Frascati, PB 65, 00044 Frascati (Rome), Italy, (b)Università di Roma "Tor Vergata", Via di Tor Vergata, 00133 Roma, Italy, (c)Centro Sviluppo Materiali, 00100 Rome, Italy
- N/P.03** SANS ANALYSIS OF NANO-SIZED IRRADIATION-INDUCED DEFECTS IN THE EUROFER 97 RAFM STEEL
G. Yu, P. Spätig, R. Schäublin and N. Baluc, Fusion Technology-Materials, CRPP - EPFL, Association EURATOM-Confederation Suisse, 5232 Villigen PSI, Switzerland
- N/P.04** HE CLUSTER IN TITANIUM ALLOYS
I. Zizak(a), N. Darowski(a), G. Schumacher(a), E. Richter(b), (a)Hahn- Meitner Institute, Berlin, Glienicker Straße 100, 14109 Berlin, Germany, (b)FZ-Rossendorf, PO Box 510119, 01328 Dresden, Germany
- N/P.05** SLIDING WEAR BEHAVIOR OF STEAM GENERATOR TUBE MATERIALS IN PRESSURIZED WATER AT 300 ℃
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- N/P.06** EFFECT OF MN ON THE CAVITATION EROSION RESISTANCE OD FE-CR-C-SI ALLOYS FOR REPLACING CO-BASE STELLITE 6
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- N/P.07** SLIDING WEAR BEHAVIOR OF HARDFACING ALLOYS FOR NUCLEAR POWER PLANT VALVES IN A PRESSURIZED WATER ENVIRONMENT
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- N/P.08** THE EFFECTS OF B ON SLIDING WEAR BEHAVIOR OF FE-BASED HARDFACING ALLOYS FOR NUCLEAR POWER PLANTS VALVES
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- N/P.09** X-RAY ABSORPTION SPECTROSCOPY STUDY OF ZIRCONIUM ALLOY CORROSION LAYERS
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- N/P.10** RADIATION-INDUCED CHANGES IN THE ELECTRICAL PROPERTIES OF CARBON FILLED PVDF THICK FILMS
K. Arshak(a), Olga Korostynska(a), Arous Arshak(b), Deirdre Morris(b), (a)Electronic & Computer Engineering Department, University of Limerick, Plassey Technological Park, Limerick, Ireland, (b)Physics Department, University of Limerick, Plassey Technological Park, Limerick, Ireland
- N/P.11** CHARACTERIZATION OF HYDROGEN IN ZIRCALOY
Ch. Hellwig, C. Degueldre, LWV, NES, Paul Scherrer Institute, 5232-Villigen, Switzerland, S. Mintova, Department of Chemistry, LMU, Butenandtstr. 11, Munich, Germany
- N/P.12** EVALUATION OF THERMAL PROPERTIES OF UO₂ AND PUO₂ BY MOLECULAR DYNAMICS SIMULATION FROM 300 K TO 2000 K
T. Arima, Sh. Yamasaki, Y. Inagaki, K. Idemitsu, Institute of Environmental Systems, Faculty of Engineering, Kyushu University, Japan
- N/P.13** AB INITIO MODELLING OF THE BEHAVIOUR OF XENON AND HELIUM IN OXYDE NUCLEAR FUELS
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- N/P.14** FABRICATION PROCESS AND MATERIALS PROPERTIES OF FISSION PRODUCTS CONTAINING URANIUM NITRIDE FROM SIMULATED SPENT LWR FUEL
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- N/P.15** IMF WITH LOW MELTING POINT ZIRCONIUM BRAZING ALLOYS
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- N/P.16** ZIRCONIA AND ZIRCONIA - SPINEL BASED CERAMIC COMPOSITES AS INERT MATRIX FUEL FOR LWRS
S. Majumdar, K.B. Khan, U. Basak, A.K. Sengupta and H.S. Kamath, Radiometallurgy Division, Bhabha Atomic Research Centre, Mumbai 400085, India
- N/P.17** SINTERING BEHAVIOR AND PROPERTIES OF CARBIDES AND NITRIDES FOR THE INERT MATRIX BY SPARK PLASMA SINTERING
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- N/P.18** STATUS OF ISTC PROJECT "MATINE -STUDY OF MINOR ACTINIDE TRANSMUTATION IN NITRIDES: MODELING AND MEASUREMENTS OF OUT-OF-PILE PROPERTIES
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- N/P.19** EFFECT OF TEMPERATURE AND REDOX CONDITIONS ON PHASE COMPOSITION OF Gd-Mn-Ti OXIDE CERAMICS
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- N/P.20** APPLIATION OF POLYSILOXANES IN NUCLEAR INDUSTRY
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- N/P.21** INFLUENCE OF OXIDATIVE AND RADIOLYTIC SPECIES ON LEACHING STABILITY OF (Th,U)O₂ FUEL KERNELS
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- N/P.22** EFFECTS OF IRRADIATION ON THORIUM PHOSPHATE DIPHOSPHATE CERAMICS AND CONSEQUENCES ON THE DISSOLUTION.
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- N/P.23** MASS TRANSPORT IN THE PBI₂ - I₂ SYSTEM AND EFFECT OF GROWTH CONDITIONS ON THE STRUCTURAL PERFECTION OF PBI₂ CRYSTALS
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- N/P.24** KINETICS OF IRON OXIDATION IN SILICATE GLASSES : IMPLICATION FOR NUCLEAR WASTE STORAGE
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- N/P.25** RADIONUCLIDE RETENTION IN COMPACTED BENTONITE CONTACTING HIGH BURNUP SPENT FUEL
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- N/P.26** IMMOBILIZATION OF TETRAVALENT ACTINIDES IN PHOSPHATE CERAMICS
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- N/P.27** URANIUM DIOXIDE INTERACTION WITH GROUNDWATER – LEACHING BEHAVIOR AND SORPTION TESTS
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- N/P.28** EUROPEAN LABORATORIES FOR ACTINIDE RESEARCH: THE ACTINET POOLED FACILITIES
H. Geckeis(a), D. Guillaneux(b), T. Wiss(c), F. Joppen(d), A. Scheinost(e), G. Geipel(e), A. Scheidegger(f), P. Chaix(b), (a)Institut für Nukleare Entsorgung, Forschungszentrum Karlsruhe, Karlsruhe, Germany, (b)Commissariat à l'Énergie Atomique, France, (c)European Commission, Joint Research Centre, Institute for Transuranium Elements, Karlsruhe, Germany, (d)Centre d'Etude de l'Énergie Nucléaire (SCK-CEN), Mol, Belgium, (e)Institut für Radiochemie, Forschungszentrum Rossendorf, Dresden, Germany, (f)Paul-Scherrer-Institut, Villigen, Switzerland
- N/P.29** MAJOR OUTCOMES OF THE FRENCH RESEARCH ON THE SPENT FUEL LONG-TERM EVOLUTION IN INTERIM DRY STORAGE AND DEEP GEOLOGICAL DISPOSAL
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- N/P.30** USE OF NON METALLIC MATERIALS IN A HIGH TEMPERATURE REACTOR
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