



Contents

Proceedings of the E-MRS 2008 Spring Meeting: Third Symposium N on Nuclear Materials

Editorial Note	vii	Oxidation behavior of Incoloy 800 under simulated supercritical water conditions, <i>M. Fulger, D. Ohai, M. Mihalache, M. Pantiru and V. Malinovski</i>	288
Invited paper			
Structural materials challenges for advanced reactor systems, <i>P. Yvon and F. Carré</i>	217	Behaviour of helium after implantation in molybdenum, <i>C. Viaud, S. Maillard, G. Carlot, C. Valot, E. Gilibert, T. Sauvage, C. Peauccelle and N. Moncoffre</i>	294
Component materials for advanced fusion systems			
An object Kinetic Monte Carlo Simulation of the dynamics of helium and point defects in tungsten, <i>C.S. Becquart and C. Domain</i>	223	Irradiation effects in helium implanted silicon carbide measured by X-ray absorption spectrometry, <i>M.A. Pouchon, J. Chen, A. Froideval, M. Janousch and C. Degueldre</i>	299
Radiation-induced reduction in the void swelling, <i>V.I. Dubinko, A.G. Guglya, E. Melnichenko and R. Vasilenko</i>	228	Damages induced by heavy ions in titanium silicon carbide: Effects of nuclear and electronic interactions at room temperature, <i>J.C. Nappé, Ph. Grosseau, F. Audubert, B. Guilhot, M. Beauvy, M. Benabdesselam and I. Monnet</i>	304
High-resolution transmission electron microscopy and electron backscatter diffraction in nanoscaled ferritic and ferritic-martensitic oxide dispersion strengthened-steels, <i>Ch.Ch. Eiselt, M. Klimenkov, R. Lindau, A. Möslang, H.R.Z. Sandim, A.F. Padilha and D. Raabe</i>	231	Development of oxides dispersion strengthened steels for high temperature nuclear reactor applications, <i>K. Verhies, A. Almazouzi, N.D. Wispelaere, R. Petrov and S. Claessens</i>	308
Potential of direct metal deposition technology for manufacturing thick functionally graded coatings and parts for reactors components, <i>L. Thivillon, Ph. Bertrand, B. Laget and I. Smurov</i>	236	Structure materials for 'Generation II & III' reactors	
Influence of the bias voltage on the formation of beryllium films by a thermionic vacuum arc method, <i>A. Anghel, I. Mustata, C. Porosnicu and C.P. Lungu</i>	242	Neutron induced damage in reactor pressure vessel steel: An X-ray absorption fine structure study, <i>G. Kuri, S. Cammelli, C. Degueldre, J. Bertsch and D. Gavillet</i>	312
Damage of actively cooled plasma facing components of magnetic confinement controlled fusion machines, <i>G. Chevet, J. Schlosser, E. Martin, V. Herb and G. Camus</i>	246	Study of atomic clusters in neutron irradiated reactor pressure vessel surveillance samples by extended X-ray absorption fine structure spectroscopy, <i>S. Cammelli, C. Degueldre, G. Kuri, J. Bertsch, D. Lützenkirchen-Hecht and R. Frahm</i>	319
Component materials for spallation systems			
Fracture toughness assessment of ferritic-martensitic steel in liquid lead-bismuth eutectic, <i>J. Van den Bosch, G. Coen, A. Almazouzi and J. Degrieck</i>	250	Microstructure evolution and degradation mechanisms of reactor internal steel irradiated with heavy ions, <i>O.V. Borodin, V.V. Bryk, A.S. Kalchenko, A.A. Parkhomenko, B.A. Shilyaev, G.D. Tolstolutskaya and V.N. Voyevodin</i>	325
Tensile properties of the ferritic martensitic steel F82H after irradiation in a spallation target, <i>Z. Tong and Y. Dai</i>	258	Deformation and microstructure of neutron irradiated stainless steels with different stacking fault energy, <i>X. Li and A. Almazouzi</i>	329
Component materials for 'Generation IV' reactors			
Multiscale modelling of bi-crystal grain boundaries in bcc iron, <i>N. Gao, C.-C. Fu, M. Samaras, R. Schäublin, M. Victoria and W. Hoffelner</i>	262	Positron annihilation study of neutron irradiated model alloys and of a reactor pressure vessel steel, <i>M. Lambrecht and A. Almazouzi</i>	334
Numerical prediction of thermodynamic properties of iron-chromium alloys using semi-empirical cohesive models: The state of the art, <i>G. Bonny, R.C. Pasianot, L. Malerba, A. Caro, P. Olsson and M.Yu. Lavrentiev</i>	268	Influence of oxide layer morphology on hydrogen concentration in tin and niobium containing zirconium alloys after high temperature steam oxidation, <i>M. Große, E. Lehmann, M. Steinbrück, G. Kühne and J. Stuckert</i>	339
The hardening of iron-chromium alloys under thermal ageing: An atomistic study, <i>G. Bonny, D. Terentyev and L. Malerba</i>	278	Microprobe analysis of neutron irradiated and autoclaved zirconium niobium claddings using synchrotron-based hard X-ray imaging and spectroscopy, <i>A. Froideval, S. Abolhassani, D. Gavillet, D. Grolimund, C. Borca, J. Krbanjevic and C. Degueldre</i>	346
Depinning transition of a dislocation line in ferritic oxide strengthened steels, <i>B. Bakó, M. Zaiser, D. Weygand, M. Samaras and W. Hoffelner</i>	284	Fuel materials	
		A molecular dynamics study of radiation induced diffusion in uranium dioxide, <i>G. Martin, S. Maillard, L. Van Brutzel, P. Garcia, B. Dorado and C. Valot</i>	351
		Computer simulations of non-congruent melting of hyperstoichiometric uranium dioxide, <i>M.J. Welland, W.T. Thompson, B.J. Lewis and D. Manara</i>	358

First-principles theory for helium and xenon diffusion in uranium dioxide, <i>Y. Yun, O. Eriksson, P.M. Oppeneer, H. Kim and K. Park</i>	364	Laser melting of uranium carbides, <i>C.A. Utton, F. De Bruycker, K. Boboridis, R. Jardin, H. Noel, C. Guéneau and D. Manara</i>	443
Ab initio study of solution energy and diffusion of caesium in uranium dioxide, <i>F. Gupta, A. Pasturel and G. Brillant</i>	368	Uranium–molybdenum nuclear fuel plates behaviour under heavy ion irradiation: An X-ray diffraction analysis, <i>H. Palanchar, N. Wieschalla, P. Martin, R. Tucoulou, C. Sabathier, W. Petry, J.-F. Berar, C. Valot and S. Dubois</i>	449
Progress in understanding fission-product behaviour in coated uranium-dioxide fuel particles, <i>M. Barrachin, R. Dubourg, M.P. Kissane and V. Ozrin</i>	372		
Pressurized heavy water reactor fuel behaviour in power ramp conditions, <i>S. Ionescu, O. Uță, M. Pârvan and D. Ohâi</i>	387	Waste form materials	
Design of a fuel element for a lead-cooled fast reactor, <i>V. Sobolev, E. Malambu and H. Ait Abderrahim</i>	392	High level nuclear waste glass corrosion in synthetic clay pore solution and retention of actinides in secondary phases, <i>D. Bosbach, B. Luckscheiter, B. Brendebach, M.A. Denecke and N. Finck</i>	456
Preparation, sintering and leaching of optimized uranium thorium dioxides, <i>N. Hingant, N. Clavier, N. Dacheux, N. Barre, S. Hubert, S. Obbade, F. Taborda and F. Abraham</i>	400	Helium solubility and behaviour in uranium dioxide, <i>E. Maugeri, T. Wiss, J.-P. Hiernaut, K. Desai, C. Thiriet, V.V. Rondinella, J.-Y. Colle and R.J.M. Konings</i>	461
Microstructure and elemental distribution of americium-containing uranium plutonium mixed oxide fuel under a short-term irradiation test in a fast reactor, <i>K. Tanaka, S. Miwa, I. Sato, T. Hirosawa, H. Obayashi, S.-i. Koyama, H. Yoshimochi and K. Tanaka</i>	407	Effect of temperature on studtite stability: Thermogravimetry and differential scanning calorimetry investigations, <i>A. Rey, I. Casas, J. Giménez, J. Quiñones and J. de Pablo</i>	467
Short-term irradiation behavior of minor actinide doped uranium plutonium mixed oxide fuels irradiated in an experimental fast reactor, <i>K. Maeda, S. Sasaki, M. Kato and Y. Kihara</i>	413	Thorium sorption onto magnetite and ferrihydrite in acidic conditions, <i>I. Rojo, F. Seco, M. Rovira, J. Giménez, G. Cervantes, V. Martí and J. de Pablo</i>	474
Oxygen potentials of mixed oxide fuels for fast reactors, <i>M. Kato, T. Tamura and K. Konashi</i>	419	Luminescent monitoring of metal dititanium triphosphates as promising materials for radioactive waste confinement, <i>S. Nedilko, Yu. Hizhnyi, O. Chukova, P. Nagorny, R. Bojko and V. Boyko</i>	479
Computed phase equilibria for burnable neutron absorbing materials for advanced pressurized heavy water reactors, <i>E.C. Corcoran, B.J. Lewis, W.T. Thompson, J. Hood, F. Akbari, Z. He and P. Reid</i>	424	Ageing of a phosphate ceramic used to immobilize chloride contaminated actinide waste, <i>B.L. Metcalfe, I.W. Donald, S.K. Fong, L.A. Gerrard, D.M. Strachan and R.D. Scheele</i>	485
Thermal behaviour of cesium implanted in cubic zirconia, <i>L. Vincent, L. Thomé, F. Garrido and O. Kaitasov</i>	431	Radiation resistance of photodiodes based on indium monoselenides under γ -irradiation, <i>Z.D. Kovalyuk, O.A. Politanska, V.G. Tkachenko, I.N. Maksymchuk, V.V. Dubinko and A.I. Savchuk</i>	489
Analytical investigations of irradiated inert matrix fuel, <i>R. Restani, M. Martin, N. Kivel and D. Gavillet</i>	435		