



## Subject index to Volumes 251–270

### Absorber

- High burn-up rim structure: evidences that xenon-depletion, pore formation and grain subdivision start at different local burn-ups, J. Spino, D. Baron, M. Coquerelle and A.D. Stalios 256 (1998) 189
- The influence of specimen roughness on the rate of formation of  $U_3O_8$  on  $UO_2$  in air at 250°C, P. Taylor, R.J. McEachern, D.C. Doern and D.D. Wood 256 (1998) 213
- Isotope selective excitation of  $^{155}Gd$  and  $^{157}Gd$  isotopes from  $^9D_{2-6}$  states using broadband lasers, M. Sankari, M.V. Suryanarayana and S. Gangadharan 264 (1999) 122
- Study of  $B_4C$  microstructure evolution under neutron irradiation by X-ray diffraction profiles analysis, D. Simeone, D. Gosset, D. Quirion and X. Deschanel 264 (1999) 295
- The influence of water chemistry on the radiolysis of the primary coolant water in pressurized water reactors, B. Pastina, J. Isabey and B. Hickel 264 (1999) 309
- Determination of the lithium diffusion coefficient in irradiated boron carbide pellets, X. Deschanel, D. Simeone and J.P. Bonal 265 (1999) 321

### Actinides (excludes Plutonium, Thorium and Uranium)

- On the thermal conductivity of inert-matrix fuels containing americium oxide, K. Bakker and R.J.M. Konings 254 (1998) 129
- Investigation of the system  $ThO_2-NpO_2-P_2O_5$ . Solid solutions of thorium-neptunium (IV) phosphate-diphosphate, N. Dacheux, A.C. Thomas, V. Brandel and M. Genet 257 (1998) 108
- Activation of beryllium in a fusion power plant, C.B.A. Forty, R.A. Forrest and G.J. Butterworth 258–263 (1998) 793

### Adsorption

- The effect of the cracking plane crystallographic orientation on the

- stress corrosion cracking process, E. Ciocan, M. Ignat and E. Gheorghiu 255 (1998) 1
- Reaction of hydrogen with uranium catalyzed by platinum clusters, M. Balooch and W.J. Siekhaus 255 (1998) 263
- Counter-diffusion and counter-permeation of deuterium and hydrogen through palladium, K. Kizu and T. Tanabe 258–263 (1998) 1133
- Corrosion of stainless steel by gaseous  $I_2$ , J.C. Wren, G.A. Glowa and J. Merritt 265 (1999) 161

### Age Hardening

- A varying temperature irradiation experiment for operation in HFIR, A.L. Qualls and T. Muroga 258–263 (1998) 407
- Sorption and desorption phenomena of  $D_2O$  on the surface of piping materials, R. Ohmori, T. Yoneoka, M. Taniguchi and S. Tanaka 258–263 (1998) 474
- Ab initio Hartree-Fock study on surface desorption process in tritium release, M. Taniguchi and S. Tanaka 258–263 (1998) 531
- Formation of HD molecules during desorption of deuterium from solids, A.A. Pisarev, Y.V. Borisjuk, A.V. Varava and V.N. Tsypalakov 258–263 (1998) 1138

### Aluminium, Aluminum Alloys and Compounds

- Mechanical properties and microstructure of neutron irradiated cold worked Al-6063 alloy, A. Munitz, A. Shtechman, C. Cotler, M. Talianker and S. Dahan 252 (1998) 79
- Radiation-induced electrical conductivity in aluminium nitride ceramic, U. Ulmanis and E. Palcevskis 252 (1998) 195
- The influence of neutron irradiation on the microstructure of  $Al_2O_3$ ,  $Mg-Al_2O_4$ ,  $Y_3Al_5O_{12}$  and  $CeO_2$ , R.J.M. Konings, K. Bakker, J.G. Boshoven, R. Conrad and H. Hein 254 (1998) 135
- Release of tritium, protium, and helium from neutron-irradiated Li-Al alloy. II, H. Sugai, M. Tanase and M. Yahagi 254 (1998) 151

- Neutron-irradiation effect on the mechanical properties of alumina fiber, Y. Sakuma, K. Iwanaga, T. Tsujimoto, T. Yoshimoto, M. Okada, K. Miyata and H. Iwanaga 254 (1998) 243
- The effects of  $\gamma$ -irradiation on subcritical crack growth in alumina, G.P. Pells and R.M. Boothby 256 (1998) 25
- Alumina sputtered on MANET as an effective deuterium permeation barrier, E. Serra, P.J. Kelly, D.K. Ross and R.D. Arnell 257 (1998) 194
- Comparison of hot dip aluminised F82H-mod. steel after different subsequent heat treatments, H. Glasbrenner and O. Wedemeyer 257 (1998) 274
- In situ observation of microstructural development during electron irradiation in  $\text{Al}_2\text{O}_3$  containing  $\text{Cr}_2\text{O}_3$  or  $\text{TiO}_2$ , K. Nakata, Y. Katano and K. Noda 258–263 (1998) 1831
- Amorphization and Amorphous Materials**
- Irradiation-induced amorphization in  $\beta$ -SiC, W.J. Weber, N. Yu and L.M. Wang 253 (1998) 53
- Topological modeling of amorphized tetrahedral ceramic network structures, C.E. Jesurum, V. Pulim and L.W. Hobbs 253 (1998) 87
- Effects of ionizing radiation in ceramics, R. Devanathan, K.E. Sickafus, W.J. Weber and M. Nastasi 253 (1998) 113
- Thermal stability and brazing characteristics of Zr–Be binary amorphous filler metals for zirconium alloy, C.-H. Park, Y.-S. Han, Y.-K. Kim, K.-J. Jang, J.-Y. Lee, C.-B. Choi and K.-S. Sim 254 (1998) 34
- X-ray absorption fine structure of aged, Pu-doped glass and ceramic waste forms, N.J. Hess, W.J. Weber and S.D. Conradson 254 (1998) 175
- Analytical electron microscopy study of surface layers formed on the French SON68 nuclear waste glass during vapor hydration at 200°C, W.L. Gong, L.M. Wang, R.C. Ewing, E. Vernaz, J.K. Bates and W.L. Ebert 254 (1998) 249
- Radioluminescence in amorphous silica: temperature dependence and relaxation, D.W. Cooke, B.L. Bennett, E.H. Farnum, D.E. Thomas and A.M. Portis 255 (1998) 180
- The influence of grain boundary movement on radiation-induced segregation in binary alloys, A.E. Volkov and A.I. Ryazanov 256 (1998) 108
- Recoil tritium in 304-stainless steel: the initial distribution revisited, A.R. Dulloo and W.S. Diethorn 256 (1998) 235
- Accumulation and recovery of irradiation damage in  $\text{He}^+$  implanted  $\alpha$ -SiC, W. Jiang, W.J. Weber, S. Thevuthasan and D.E. McCready 257 (1998) 295
- Influence of neutron irradiation on mechanical properties of vanadium/ceramics joints, R. Yasuda, M. Satou, A. Hasegawa and K. Abe 258–263 (1998) 1528
- Neutron-induced damage in near-stoichiometric spinel ceramics irradiated below 200°C and its recovery due to annealing, T. Yano, A. Insani, H. Sawada and T. Iseki 258–263 (1998) 1836
- Electrical conductivity and current-voltage characteristics of alumina with or without neutron and electron irradiation, K. Shiyama, M.M.R. Howlader, S.J. Zinkle, T. Shikama, M. Kutsuwada, S. Matsu-mura and C. Kinoshita 258–263 (1998) 1848
- Absorption and fluorescence phenomena of optical fibers under heavy neutron irradiation, T. Kakuta, K. Sakasai, T. Shikama, M. Narui and T. Sagawa 258–263 (1998) 1893
- Vitrification of radioactive waste by reaction sintering under pressure, W.L. Gong, W. Lutze, A. Abdelouas and R.C. Ewing 265 (1999) 12
- Structure in Martensitic Steel DIN 1.4926 after 800 MeV proton irradiation, Y. Dai, G.S. Bauer, F. Carsughi, H. Ullmaier, S.A. Maloy and W.F. Sommer 265 (1999) 203
- Amorphization of  $\text{Zr}_3\text{Fe}$  under electron irradiation, A.T. Motta, L.M. Howe and P.R. Okamoto 270 (1999) 174
- Analytical Instruments and Methods**
- Studies of defects and defect agglomerates by positron annihilation spectroscopy, M. Eldrup and B.N. Singh 251 (1997) 132
- Study of the oxide layer formed on stainless steel exposed to boiling water reactor conditions by ion beam techniques, C. Degueldre, D. Buckley, J.C. Dran and E. Schenker 252 (1998) 22
- A theoretical model for determination of fracture toughness of reactor pressure vessel steels in the transition region from automated ball indentation test, T.S. Byun, J.W. Kim and J.H. Hong 252 (1998) 187
- X-ray absorption fine structure of aged, Pu-doped glass and ceramic waste forms, N.J. Hess, W.J. Weber and S.D. Conradson 254 (1998) 175
- Oxidation state of uranium: an XPS study of alkali and alkaline earth

- uranates, S. Bera, S.K. Sali, S. Sampath, S.V. Narasimhan and V. Venugopal 255 (1998) 26
- Investigation of structure and composition of surface oxides in a high chromium martensitic steel, I. Iordanova, K.S. Forcey, R. Harizanova, Y. Georgiev and M. Surtchev 257 (1998) 126
- Thermal and mechanical properties of ceramic blanket particle bed materials: Numerical derivation, M. Abdou, A. Ying and Z. Lu 258–263 (1998) 576
- High-temperature residual strain measurements, using neutron diffraction, in brazed Cu/CFC graphite divertor structures, M. Ceretti, R. Coppola, E. Di Pietro and C. Nardi 258–263 (1998) 1005
- Microstructural characterisation of F82H-mod. steel using small-angle neutron scattering, R. Coppola, K. Ehrlich, M. Magnani, E. Matera-Morris and M. Valli 258–263 (1998) 1291
- Thermal vaporization and deposition of gallium oxide in hydrogen, D.P. Butt, Y. Park and T.N. Taylor 264 (1999) 71
- Isotope selective excitation of  $^{155}\text{Gd}$  and  $^{157}\text{Gd}$  isotopes from  $^9\text{D}^{\circ}_{2-6}$  states using broadband lasers, M. Sankari, M.V. Suryanarayana and S. Gangadharan 264 (1999) 122
- Nuclear fuel pellet inspection using artificial neural networks, S. Keyvan, X. Song and M. Kelly 264 (1999) 141
- Mössbauer spectroscopy of tin in unirradiated and neutron irradiated Zircalloys, J.A. Sawicki 264 (1999) 169
- Helium implanted ZrHf as studied by time differential perturbed angular correlation and positron lifetime measurements, R. Govindaraj, G. Venugopal Rao, K.P. Gopinathan and B. Viswanathan 265 (1999) 139
- Aging characteristics of Zr–V–Fe getters as observed by Mössbauer spectroscopy, L. Rodrigo and J.A. Sawicki 265 (1999) 208
- Beryllium, Beryllium Alloys and Compounds**
- Codeposition of deuterium with beryllium, R.A. Causey and D.S. Walsh 254 (1998) 84
- Hydrogen and vacancies in the tokamak plasma-facing material beryllium, H. Krimmel and M. Fähnle 255 (1998) 72
- Observation of kinetics of  $\gamma$  zirconium hydride formation in Zr–2.5Nb by neutron diffraction, W.M. Small, J.H. Root and D. Khatamian 256 (1998) 102
- Response of beryllium to deuterium plasma bombardment, R.P. Doerner, A. Grossman, S. Luckhardt, R. Seraydarian, F.C. Sze, D.G. Whyte and R.W. Conn 257 (1998) 51
- Materials science problems of blankets in Russian concept of fusion reactor, M.I. Solonin 258–263 (1998) 30
- Fabrication and high heat flux testing of plasma sprayed beryllium ITER first wall mock-ups, R.G. Castro, K.E. Elliot, R.D. Watson, D.L. Youchison and K.T. Slattery 258–263 (1998) 252
- Development of joining technology for Be/Cu-alloy and Be/SS by HIP, T. Kuroda, T. Hatano, M. Enoda, S. Sato, K. Furuya, H. Takatsu, T. Iwadachi and K. Nishida 258–263 (1998) 258
- Interface formation and strength of Be/DSCu diffusion bonding, T. Makino and T. Iwadachi 258–263 (1998) 313
- A review of the US joining technologies for plasma facing components in the ITER fusion reactor, B.C. Odegard Jr., C.H. Cadden, R.D. Watson and K.T. Slattery 258–263 (1998) 329
- Impurity control in liquid lithium loop for IFMIF target facility, Y. Kato, H. Katsuta, S. Konishi, M. Ogoshi, T. Hua, L. Green and S. Cevolani 258–263 (1998) 394
- Handling of beryllium, A.A. Goraieb 258–263 (1998) 471
- Microstructure and mechanical properties of neutron irradiated beryllium, E. Ishitsuka, H. Kawamura, T. Terai and S. Tanaka 258–263 (1998) 566
- Critical assessment of beryllium pebbles response under neutron irradiation: Mechanical performance and tritium release, F. Scaffidi-Argentina, M. Dalle Donne and H. Werle 258–263 (1998) 595
- Beryllium R&D for blanket application, M. Dalle Donne, G.R. Longhurst, H. Kawamura and F. Scaffidi-Argentina 258–263 (1998) 601
- Tritium saturation in plasma-facing materials surfaces, G.R. Longhurst, R.A. Anderl, R.A. Causey, G. Federici, A.A. Haasz and R.J. Pawelko 258–263 (1998) 640
- Behaviour of plasma facing materials under VDE, M. Merola, M. Rödiger, J. Linke, R. Duwe and G. Vieider 258–263 (1998) 653
- On the use of flat tile armour in high heat flux components, M. Merola and G. Vieider 258–263 (1998) 672
- Transmutation of plasma facing materials by the neutron flux in a DT fusion reactor, R. Behrisch, V. Khripunov, R.T. Santoro and J.M. Yesil 258–263 (1998) 686
- Gas bubbles in beryllium implanted with He ions at temperatures  $\leq 700$  K and after post-implantation annealing, V.N. Chernikov, H. Ullmaier and A.P. Zakharov 258–263 (1998) 694
- Molecular dynamics evaluation of self-sputtering of beryllium, S. Ueda, T. Ohsaka and S. Kuwajima 258–263 (1998) 713

- Microstructural study of hydrogen-implanted beryllium, S.P. Vagin, P.V. Chakrov, B.D. Utkelbayev, L.A. Jacobson, R.D. Field and H. Kung 258–263 (1998) 719
- Steam-chemical reactivity for irradiated beryllium, R.A. Anderl, K.A. McCarthy, M.A. Oates, D.A. Petti, R.J. Pawelko and G.R. Smolik 258–263 (1998) 750
- Modelling of tritium permeation through beryllium as plasma facing material, L. Berardinucci 258–263 (1998) 777
- Activation of beryllium in a fusion power plant, C.B.A. Forty, R.A. Forrest and G.J. Butterworth 258–263 (1998) 793
- Influence of loading method on hydrogen retention and release from beryllium, A.K. Klepikov, I.L. Tazhibaeva, O.G. Romanenko, Y.V. Chikhray, V.P. Shestakov and E.A. Kenzhin 258–263 (1998) 798
- Deuterium accumulation in beryllium oxide layer exposed to deuterium atoms, V.M. Sharapov, V.K. Alimov and L.E. Gavrilov 258–263 (1998) 803
- Investigation of ITER candidate beryllium grades irradiated at high temperature, I.B. Kupriyanov, V.A. Gorokhov, R.R. Melder, Z.E. Ostrovsky and A.A. Gervash 258–263 (1998) 808
- Effects of plasma impurities on materials erosion and mixing in a steady state magnetic fusion device, Y. Hirooka 258–263 (1998) 1045
- Thermal desorption analysis of beryllium tile pieces from JET, R.G. Macaulay-Newcombe, D.A. Thompson and J.P. Coad 258–263 (1998) 1114
- Radiation swelling decrease by means of explosive wave, V.M. Kosenkov, S.A. Vorobjev and A.V. Kolesnikov 258–263 (1998) 1809
- Development and characterisation of Be/Glidcop® joints obtained by hot isostatic pressing for high temperature working conditions, F. Saint-Antonin, D. Barberi, G. Le Marois and A. Lailé 258–263 (1998) 1973
- Angular dependence of the sputtering yield of rough beryllium surfaces, M. Küstner, W. Eckstein, E. Hechtel and J. Roth 265 (1999) 22
- Mixed-material coating formation on plasma-facing components, R.P. Doerner, A.A. Grossman, S. Luckhardt, R. Seraydarian, F.C. Sze and D.G. Whyte 266–269 (1999) 392
- Erosion of beryllium and deposition of carbon and oxygen due to bombardment with C<sup>+</sup> and CO<sup>+</sup> ions, P. Goldstraß, W. Eckstein and Ch. Linsmeier 266–269 (1999) 581
- Breeding Materials**
- Fabrication development of Li<sub>2</sub>O pebbles by wet process, K. Tsuchiya, K. Fuchinoue, S. Saito, K. Watarumi, T. Furuya and H. Kawamura 253 (1998) 196
- Synthesis of Li<sub>2</sub>TiO<sub>3</sub> ceramic breeder powders by the combustion process, C.H. Jung, J.Y. Park, S.J. Oh, H.K. Park, Y.S. Kim, D.K. Kim and J.H. Kim 253 (1998) 203
- Compatibility of insulating ceramic with liquid breeders, T. Terai, T. Mitsuyama, T. Yoneoka and S. Tanaka 253 (1998) 219
- Density dependence on thermal properties of Li<sub>2</sub>TiO<sub>3</sub> pellets, S. Saito, K. Tsuchiya, H. Kawamura, T. Terai and S. Tanaka 253 (1998) 213
- Release of tritium, protium, and helium from neutron-irradiated Li–Al alloy. II, H. Sugai, M. Tanase and M. Yahagi 254 (1998) 151
- Tritium inventory in Li<sub>2</sub>ZrO<sub>3</sub> blanket, M. Nishikawa and A. Baba 257 (1998) 162
- Preparation of lithium aluminate via polymeric precursor routes, S.W. Kwon, S.B. Park, G. Seo and S.T. Hwang 257 (1998) 172
- Synthesis of lithium silicates, H. Pfeiffer, P. Bosch and S. Bulbulian 257 (1998) 309
- Materials science problems of blankets in Russian concept of fusion reactor, M.I. Solonin 258–263 (1998) 30
- Materials integration issues for high performance fusion power systems, D.L. Smith, M.C. Billone, S. Majumdar, R.F. Mattas and D.-K. Sze 258–263 (1998) 65
- Design and material selection for ITER first wall/blanket, divertor and vacuum vessel, K. Ioki, V. Barabash, A. Cardella, F. Elio, Y. Gohar, G. Janeschitz, G. Johnson, G. Kalinin, D. Lousteau, M. Onozuka, R. Parker, G. Sannazzaro and R. Tivey 258–263 (1998) 74
- Users' requirements for IFMIF, K. Noda, K. Ehrlich, S. Jitsukawa, A. Möslang and S. Zinkle 258–263 (1998) 97
- Ceramic breeder materials: Status and needs, C.E. Johnson, K. Noda and N. Roux 258–263 (1998) 140
- Water-cooled Pb–17Li test blanket module for ITER: Impact of the structural material grade on the neutronic responses, G. Vella, G. Aiello, M.A. Fütterer, L. Giancarli, E. Oliveri and F. Tavassoli 258–263 (1998) 357
- Development and performance of aluminum nitride insulating coatings for application in a lithium environment, K. Natesan, C.B. Reed, D.L. Rink and R.C. Haglund 258–263 (1998) 488

- Reassessment of Li colloid production and characterization in irradiated  $\text{Li}_2\text{O}$ , P. Vajda and F. Beuneu 258–263 (1998) 495
- Solubility of hydrogen fluoride in the molten  $\text{LiF-PbF}_2$ , M. Ablanov, H. Matsuura and R. Takagi 258–263 (1998) 500
- Self-adjustment of Li in Pb–17Li systems, H. Feuerstein, L. Hörner and S. Horn 258–263 (1998) 505
- Magnetic field effect on the deposition of nickel in molten Pb–17Li, F. Barbier and A. Alemany 258–263 (1998) 508
- Compatibility of structural materials with  $\text{Li}_2\text{BeF}_4$  molten salt breeder, T. Terai, Y. Hosoya, S. Tanaka, A. Sagara and O. Motojima 258–263 (1998) 513
- Change of tritium species in  $\text{Li}_2\text{BeF}_4$  molten salt breeder under neutron irradiation at elevated temperature, A. Suzuki, T. Terai and S. Tanaka 258–263 (1998) 519
- Production behavior of irradiation defects in ternary lithium ceramics under ion beam irradiation, K. Moritani and H. Moriyama 258–263 (1998) 525
- Ab initio Hartree–Fock study on surface desorption process in tritium release, M. Taniguchi and S. Tanaka 258–263 (1998) 531
- Study on interaction of hydrogen isotopes with radiolysis products in lithium oxide, V. Grišmanovs, M. Taniguchi, S. Tanaka and T. Yoneoka 258–263 (1998) 537
- Tritium release behavior from neutron-irradiated  $\text{Li}_2\text{TiO}_3$  single crystal, T. Tanifuji, D. Yamaki, S. Nasu and K. Noda 258–263 (1998) 543
- Helium release from neutron-irradiated  $\text{Li}_2\text{O}$  single crystals, D. Yamaki, T. Tanifuji and K. Noda 258–263 (1998) 549
- Sweep gas chemistry effect on vaporization property of  $\text{Li}_2\text{ZrO}_3$ , A. Suzuki, M. Tonegawa, M. Yasumoto, K. Yamaguchi and M. Yamawaki 258–263 (1998) 562
- Microstructure and mechanical properties of neutron irradiated beryllium, E. Ishitsuka, H. Kawamura, T. Terai and S. Tanaka 258–263 (1998) 566
- Ab initio MO study on hydrogen release from surface of lithium silicate, T. Nakazawa, K. Yokoyama and K. Noda 258–263 (1998) 571
- Thermal and mechanical properties of ceramic blanket particle bed materials: Numerical derivation, M. Abdou, A. Ying and Z. Lu 258–263 (1998) 576
- The behaviour of the natural oxide of MANET as permeation barrier under cyclic loads: Self-healing, A. Perujo and H. Kolbe 258–263 (1998) 582
- Irradiation effects in ceramic breeder materials, H. Moriyama, S. Tanaka and K. Noda 258–263 (1998) 587
- Critical assessment of beryllium pebbles response under neutron irradiation: Mechanical performance and tritium release, F. Scaffidi-Argentina, M. Dalle Donne and H. Werle 258–263 (1998) 595
- Investigation of ITER candidate beryllium grades irradiated at high temperature, I.B. Kupriyanov, V.A. Gorokhov, R.R. Melder, Z.E. Ostrovsky and A.A. Gervash 258–263 (1998) 808
- Counter-diffusion and counter-permeation of deuterium and hydrogen through palladium, K. Kizu and T. Tanabe 258–263 (1998) 1133
- Glass-ceramic joining and coating of SiC/SiC for fusion applications, M. Ferraris, M. Salvo, C. Isola, M. Appendino Montorsi and A. Kohyama 258–263 (1998) 1546
- Thermomechanical characteristics of low activation chromium and chromium alloys, H. Stamm, M.R. Bonansinga, F. Dos Santos Marques, P. Hähner, H. Kolbe and A. Volcan 258–263 (1998) 1756
- Characterization of  $\text{Y}_2\text{O}_3$  coating under neutron irradiation, M. Nakamichi and H. Kawamura 258–263 (1998) 1873
- Structural materials by powder HIP for fusion reactors, C. Dellis, G. Le Marois and E.V. van Osch 258–263 (1998) 1966
- Fabrication development and preliminary characterization of  $\text{Li}_2\text{TiO}_3$  pebbles by wet process, K. Tsuchiya, H. Kawamura, K. Fuchinoue, H. Sawada and K. Watarumi 258–263 (1998) 1985
- Application of HIP bonding to first wall panel fabrication made from reduced activation ferritic steel F82H, K. Furuya, M. Enoeda, T. Hatano, S. Sato, T. Kuroda and H. Takatsu 258–263 (1998) 2023
- Electrical properties of neutron-irradiated oxygen potential sensors using stabilized zirconia solid electrolyte, N. Hiura, Y. Endo, T. Yamamura, T. Hoshiya, M. Niimi, J. Saito, S. Sozawa, N. Ooka and M. Kobiyama 258–263 (1998) 2041
- Tritium behavior in lithium ceramics, C.E. Johnson 270 (1999) 212
- Carbon**
- Deuterium retention in carbides and doped graphites, M. Mayer, M. Balden and R. Behrisch 252 (1998) 55
- Carbon deposition from a  $\gamma$ -irradiated  $\text{CO}_2/\text{CO}/\text{CH}_4/\text{C}_2\text{H}_6$  gas mixture on magnetite  $\text{Fe}_3\text{O}_4$ , G.C. Allen and K.R. Hallam 252 (1998) 135

- Thermal transport in CKC TiB<sub>2</sub>-doped graphite, J.W. Davis and A.A. Haasz 252 (1998) 150
- The oxidation resistance improvement of matrix graphite of spherical fuel elements by slip-gelation process, Q. Zhu, X. Qiu and C. Ma 254 (1998) 221
- Hardening of Alloy N10276 by diluted flowing butane gas, S.W. Sharkawy 255 (1998) 75
- Isotopic effects in hydrocarbon formation due to low-energy H<sup>+</sup>/D<sup>+</sup> impact on graphite, B.V. Mech, A.A. Haasz and J.W. Davis 255 (1998) 153
- Chemical erosion of CKC TiB<sub>2</sub>-doped graphite, J.W. Davis and A.A. Haasz 255 (1998) 214
- The removal of codeposited layers from TFTR tiles by O<sub>2</sub> gas exposure, A.A. Haasz and J.W. Davis 256 (1998) 65
- Detrapping and diffusion of H and D implanted in carbon studied by high temperature laser annealing and depth profiling, F. Schiettekatte, G.G. Ross and B. Terreault 256 (1998) 78
- Dynamic behavior of hydrogen atoms with a boronized wall, K. Tsuzuki, N. Inoue, A. Sagara, N. Noda, O. Motojima, T. Mochizuki, T. Hino and T. Yamashina 256 (1998) 166
- Effects of titanium impregnation on the thermal conductivity of carbon/copper composite materials, T. Oku, A. Kurumada, T. Sogabe, T. Oku, T. Hiraoka and K. Kuroda 257 (1998) 59
- Carbon fiber composites application in ITER plasma facing components, V. Barabash, M. Akiba, J.P. Bonal, G. Federici, R. Matera, K. Nakamura, H.D. Pacher, M. Rödiger, G. Vieider and C.H. Wu 258–263 (1998) 149
- Effects of interface edge configuration on residual stress in the bonded structures for a divertor application, K. Kitamura, K. Nagata, M. Shibui, N. Tachikawa and M. Araki 258–263 (1998) 275
- Tritium behavior in eroded dust and debris of plasma-facing materials, A. Hassanein, B. Wiechers and I. Konkashbaev 258–263 (1998) 295
- Development of divertor plate with CFCs bonded onto DSCu cooling tube for fusion reactor application, S. Suzuki, T. Suzuki, M. Araki, K. Nakamura and M. Akiba 258–263 (1998) 318
- Divertor materials evaluation system (DiMES), C.P.C. Wong, D.G. Whyte, R.J. Bastasz, J. Brooks, W.P. West and W.R. Wampler 258–263 (1998) 433
- Erosion and surface morphology of graphite materials under high flux beam irradiation, Y. Ueda, T. Suga, K. Shiota, Y. Ohtsuka, Y. Isobe and M. Nishikawa 258–263 (1998) 628
- Material damage to beryllium, carbon, and tungsten under severe thermal shocks, J. Linke, R. Duwe, A. Gervash, R.H. Qian, M. Rödiger and A. Schuster 258–263 (1998) 634
- Behaviour of plasma facing materials under VDE, M. Merola, M. Rödiger, J. Linke, R. Duwe and G. Vieider 258–263 (1998) 653
- On the use of flat tile armour in high heat flux components, M. Merola and G. Vieider 258–263 (1998) 672
- Transmutation of plasma facing materials by the neutron flux in a DT fusion reactor, R. Behrisch, V. Khripunov, R.T. Santoro and J.M. Yesil 258–263 (1998) 686
- Erosion of carbon-based materials in a steady-state deuterium plasma, B.I. Khripunov, V.B. Petrov, Yu.V. Martynenko, A.M. Litnovsky, N.V. Antonov and V.V. Shapkin 258–263 (1998) 700
- Development of multi-element doped graphite and its modification of chemical erosion, J.P. Qian, J. Roth, J.R. Song, F. Zhang, L. Yang and G.T. Zhai 258–263 (1998) 706
- Temperature dependence of sputtering yield of carbon fiber-reinforced carbon composites with low energy and high flux deuterium ions, R. Jimbou, K. Nakamura, V. Bandourko, Y. Okumura and M. Akiba 258–263 (1998) 724
- Thermal stability and chemical erosion of the silicon doped CFC material NS31, M. Balden, J. Roth and C.H. Wu 258–263 (1998) 740
- Steady state wall pumping performance of pebble drop divertor, M. Isobe, Y. Ohtsuka, Y. Ueda and M. Nishikawa 258–263 (1998) 745
- High heat flux erosion of carbon fibre composite materials in the TEXTOR tokamak, H. Bolt, T. Scholz, J. Boedo, K.H. Finken and A. Hassanein 258–263 (1998) 757
- Oxidation induced release of deuterium from carbon based plasma facing materials, S. Alberici, J.P. Coad, H.-K. Hinssen, R. Moormann, P. Wienhold and C.H. Wu 258–263 (1998) 764
- Investigation of oxidation resistance of carbon based first-wall liner material Aerolor AO5, A.-K. Krüssenberg, R. Moormann, H.-K. Hinssen, M. Hofmann and C.H. Wu 258–263 (1998) 770
- The impact of larger clusters formation C<sub>5</sub>, C<sub>6</sub>, C<sub>7</sub>, C<sub>8</sub>, C<sub>9</sub>, and C<sub>10</sub> on the rates of carbon sublimation at elevated temperatures, C.H. Wu, U. Mszanowski and J.M.L. Martin 258–263 (1998) 782

- Behaviour of Si and Ti doped carbon composites under exposure to the deuterium plasma, M. Rubel, N. Almqvist, P. Wienhold and C.H. Wu 258–263 (1998) 787
- Effects of prestresses on mechanical properties of isotropic graphite materials, T. Oku, A. Kurumada, Y. Imamura, K. Kawamata and M. Shiraishi 258–263 (1998) 814
- The thermal shock resistance of a joining material of C/C composite and copper, A. Kurumada, T. Oku, Y. Imamura, K. Kawamata, O. Motojima, N. Noda and B. McEnaney 258–263 (1998) 821
- Disruption and sputtering erosions on SiC doped CFC, K. Nakamura, S. Suzuki, M. Dairaku, K. Yokoyama, Y. Okumura, T. Suzuki, R. Jimbou, V. Bandourko and M. Akiba 258–263 (1998) 828
- Overview of EU CFCs development for plasma facing materials, C.H. Wu, C. Alessandrini, P. Bonal, H. Grote, R. Moormann, M. Rödiger, J. Roth, H. Werle and G. Vieider 258–263 (1998) 833
- Thermodynamics of the formation of CH<sub>4</sub> by the reaction of carbon materials by a stream of NH<sub>3</sub>, M. Katsura, K. Nishimaki, T. Nakagawa, T.A. Yamamoto, M. Hirota and M. Miyake 258–263 (1998) 839
- High energy neutron and charged particle irradiation effects on thermo-mechanical properties of carbon-carbon composites for divertor applications, M. Eto, S. Baba, M. Ishihara and H. Ugachi 258–263 (1998) 843
- Carbon effect on retention and release of deuterium implanted in Mo, S. Nagata, K. Takahiro and S. Yamaguchi 258–263 (1998) 907
- Testing of actively cooled high heat flux mock-ups, M. Rödiger, R. Duwe, W. Kühnlein, J. Linke, M. Scheerer, I. Smid and B. Wiechers 258–263 (1998) 967
- High heat load properties of tungsten coated carbon materials, K. Tokunaga, N. Yoshida, N. Noda, T. Sogabe and T. Kato 258–263 (1998) 998
- ERD study of deuterium atoms implanted in edge-HOPG, H. Ohkubo, M. Takenaka, A. Takase, N. Tsukuda and E. Kuramoto 258–263 (1998) 1077
- Retention and re-emission of deuterium implanted into tungsten monocarbide, T. Horikawa, B. Tsuchiya and K. Morita 258–263 (1998) 1087
- Tritium retention in CX-2002U and methods to reduce tritium inventory, T. Tadokoro, S. O'hira, M. Nishi and K. Isobe 258–263 (1998) 1092
- Material damage and thermal response of LHD divertor mock-ups by high heat flux, K. Tokunaga, N. Yoshida, Y. Kubota, N. Noda, O. Motojima, D.L. Youchison, R.D. Watson, R.E. Nygren, J.M. McDonald and T.D. Marshall 258–263 (1998) 1097
- Experimental modelling of plasma-graphite surface interaction in ITER, Y.V. Martynenko, M.I. Guseva, V.I. Vasiliev, V.M. Gureev, L.S. Danelyan, V.E. Neumoin, V.B. Petrov, B.I. Khripunov, Y.A. Sokolov, O.V. Stativkina, V.G. Stolyarova and V.M. Strunnikov 258–263 (1998) 1120
- Effect of fiber coating on interfacial shear strength of SiC/SiC by nano-indentation technique, T. Hinoki, W. Zhang, A. Kohyama, S. Sato and T. Noda 258–263 (1998) 1567
- Thermal shock resistance of SiC compositionally graded C/C composites, K. Fujii and R. Yamada 258–263 (1998) 1953
- Erosion of thin hydrogenated carbon films in oxygen, oxygen/hydrogen and water plasmas, B. Landkammer, A. von Keudell and W. Jacob 264 (1999) 48
- Erosion behavior of soft, amorphous deuterated carbon films by heat treatment in air and under vacuum, K. Maruyama, W. Jacob and J. Roth 264 (1999) 56
- Deuterium trapping in deep traps of differently oriented pyrolytic graphite exposed to D<sub>2</sub> gas at 1473 K, V.N. Chernikov, W.R. Wampler, A.P. Zakharov and A.E. Gorodetsky 264 (1999) 180
- D-T experiments in the JET tokamak, M. Keilhacker, M.L. Watkins and JET Team 266–269 (1999) 1
- Impurity enrichment and radiative enhancement using induced SOL flow in DIII-D, M.R. Wade, W.P. West, R.D. Wood, S.L. Allen, J.A. Boedo, N.H. Brooks, M.E. Fenstermacher, D.N. Hill, J.T. Hogan, R.C. Isler, G.L. Jackson, C.J. Lasnier, R. Lehmer, A.W. Leonard, M.A. Mahdavi, R. Maingi, R.A. Moyer, T.H. Osborne, T.W. Petrie, M.J. Schaffer, R.D. Stambaugh, J.G. Watkins and D.G. Whyte 266–269 (1999) 44
- Chemical erosion of carbon based materials in fusion devices, J. Roth 266–269 (1999) 51
- Erosion/redeposition analysis: status of modeling and code validation for semi-detached tokamak edge plasmas, J.N. Brooks, D. Alman, G. Federici, D.N. Ruzic, and D.G. Whyte 266–269 (1999) 58
- Tritium recycling and retention in JET, P. Andrew, D. Brennan, J.P.

- Coad, J. Ehrenberg, M. Gadeberg, A. Gibson, M. Groth, J. How, O.N. Jarvis, H. Jensen, R. Lässer, F. Marcus, R. Monk, P. Morgan, J. Orchard, A. Peacock, R. Pearce, M. Pick, A. Rossi, B. Schunke, M. Stamp, M. von Hellermann, D.L. Hillis and J. Hogan 266-269 (1999) 153
- Review of recent works in development and evaluation of high-Z plasma facing materials, N. Yoshida 266-269 (1999) 197
- Limiter heat load and consequences on impurity source and transport, D. Guilhem, J. Hogan, T. Aniel, S. Boddeker, C. Grisolia, T. Hoang, G. Martin, B. Meslin, R. Mitteau, R. Reichle and J.C. Vallet 266-269 (1999) 272
- Mixed-material coating formation on plasma-facing components, R.P. Doerner, A.A. Grossman, S. Luckhardt, R. Seraydarian, F.C. Sze and D.G. Whyte 266-269 (1999) 392
- Wall erosion and material transport to the Mark I carbon divertor of JET, M. Mayer, R. Behrisch, K. Plamann, P. Andrew, J.P. Coad and A.T. Peacock 266-269 (1999) 604
- Deuterium release rates in a-C:D-layers during oxygen attack, S. Alberici, H.K. Hinssen, R. Moormann and C.H. Wu 266-269 (1999) 754
- Characteristics of carbon sheet pump in application experiments to a high-temperature plasma device, Y. Nakashima, A. Sagara, T. Moriwaki, Y. Hironaga, S. Kobayashi, Y. Ishimoto, M. Yoshikawa, T. Tamano, K. Yatsu, K. Tsuchiya, M. Shoji, H. Suzuki, N. Noda, A. Komori, N. Ohyabu and O. Motojima 266-269 (1999) 901
- Analysis and oxidation of thick deposits on TEXTOR plasma facing components, M. Rubel, J. von Seggern, P. Karduck, V. Philipps and A. Vevecka-Priftaj 266-269 (1999) 1185
- Cavities** (*includes Voids, Holes*)
- The influence of dynamical structural relaxation of point defect clusters on void formation in irradiated copper, Y. Shimomura, I. Mukouda and K. Sugio 251 (1997) 61
- Aspects of microstructure evolution under cascade damage conditions, B.N. Singh, S.I. Golubov, H. Trinkaus, A. Serra, Yu.N. Osetsky and A.V. Barashev 251 (1997) 107
- Studies of defects and defect agglomerates by positron annihilation spectroscopy, M. Eldrup and B.N. Singh 251 (1997) 132
- A temperature threshold for gas-bubble superlattice formation in molybdenum, F.E. Lawson and P.B. Johnson 252 (1998) 34
- Comments on 'Behaviour of inert gas bubbles under chemical concentration gradients' by G.P. Tiwari, J.H. Evans and A. van Veen 252 (1998) 156
- Reply to 'Comments on 'Behaviour of inert gas bubbles under chemical concentration gradients'', G.P. Tiwari 252 (1998) 162
- Gas bubbles in beryllium implanted with He ions at temperatures  $\leq 700$  K and after post-implantation annealing, V.N. Chernikov, H. Ullmaier and A.P. Zakharov 258-263 (1998) 694
- Effects of solid transmutants and helium in copper studied by mixed-spectrum neutron irradiation, T. Muroga, H. Watanabe and N. Yoshida 258-263 (1998) 955
- Effect of purity on helium bubble formation in 9Cr martensitic steel during post-implantation annealing at 1105 K, T. Nagasaka, T. Shibayama, H. Kayano, A. Hasegawa, M. Satou, K. Abe 258-263 (1998) 1193
- Swelling behavior of V-Fe binary and V-Fe-Ti ternary alloys, K. Fukumoto, A. Kimura and H. Matsui 258-263 (1998) 1431
- Temperature dependence of bubble structure in 316L stainless steel irradiated with 2.5 MeV He ions, C.H. Zhang, K.Q. Chen, Y.S. Wang and J.G. Sun 258-263 (1998) 1623
- Microstructural observation of helium implanted and creep ruptured Fe-25%Ni-15%Cr alloys containing various MC and MN formers, N. Yamamoto, J. Nagakawa, Y. Murase and H. Shiraishi 258-263 (1998) 1628
- In situ observation of microstructural development during electron irradiation in Al<sub>2</sub>O<sub>3</sub> containing Cr<sub>2</sub>O<sub>3</sub> or TiO<sub>2</sub>, K. Nakata, Y. Katano and K. Noda 258-263 (1998) 1831
- Damage structure evolution in Al<sub>2</sub>O<sub>3</sub> irradiated with multiple ion beams of H, He and O and after annealing, Y. Katano, T. Nakazawa, D. Yamaki, T. Aruga and K. Noda 258-263 (1998) 1842
- Investigation of plasma exposed W-1% La<sub>2</sub>O<sub>3</sub> tungsten in a high ion flux, low ion energy, low carbon impurity plasma environment for the International Thermonuclear Experimental Reactor, F.C. Sze, R.P. Doerner and S. Luckhardt 264 (1999) 89
- Study of B<sub>4</sub>C microstructure evolution under neutron irradiation by X-ray



- diffraction profiles analysis, D. Si-meone, D. Gosset, D. Quirion and X. Deschanelles 264 (1999) 295
- Helium implanted ZrHf as studied by time differential perturbed angular correlation and positron lifetime measurements, R. Govindaraj, G. Venugopal Rao, K.P. Gopinathan and B. Viswanathan 265 (1999) 139
- Ceramics**
- Stabilization of Rocky Flats Pu-contaminated ash within chemically bonded phosphate ceramics, A.S. Wagh, R. Strain, S.Y. Jeong, D. Reed, T. Krause and D. Singh 265 (1999) 295
- Ceramics (not listed elsewhere)**
- Behavior and computer simulation of SiC under irradiation with energetic particles, J.M. Perlado 251 (1997) 98
- Defect production in ceramics, S.J. Zinkle and C. Kinoshita 251 (1997) 200
- Strains and stresses in ceramics by defect accumulation, P. Jung, Z. Zhu and J. Chen 251 (1997) 276
- Studies on the kinetics of oxidation of  $\text{Pu}_y\text{Th}_{1-y}\text{O}_{2-x}$  ( $y = 0.2, 0.3$  and  $0.7$ ) in air, S.K. Sali, S. Sampath and V. Venugopal 252 (1998) 131
- Radiation-induced electrical conductivity in aluminium nitride ceramic, U. Ulmanis and E. Palcevskis 252 (1998) 195
- Thermophysical property measurements and ion-implantation studies on  $\text{CePO}_4$ , K. Bakker, H. Hein, R.J.M. Konings, R.R. van der Laan, H.J. Matzke and P. van Vlaanderen 252 (1998) 228
- Damage calculation in fusion ceramics: comparing neutrons and light ions, P.V. Vladimirov, D. Lizunov, Yu.A.I. Ryazanov and A. Möslang 253 (1998) 104
- The effect of composition, processing conditions, and irradiation, on lattice defects in spinel ceramics, T.A. Bazilevskaya, V.T. Gritsyna, D.V. Orlinski, L.V. Udalova and A.V. Voitsenya 253 (1998) 133
- X-ray absorption fine structure of aged. Pu-doped glass and ceramic waste forms. N.J. Hess. W.J. Weber and S.D. Conradson 254 (1998) 175
- Kinetics of interfacial reactions in molten U/solid  $\text{Y}_2\text{O}_3$  system. C. Tournier, B. Lorrain, F. Le Guyadec, L. Coudurier and N. Eustathopoulos 254 (1998) 215
- Vaporization behaviour and Gibbs energy of formation of  $\text{UTeO}_5$  and  $\text{UTe}_3\text{O}_9$  by transpiration, R. Mishra, P.N. Namboodiri, S.N. Tripathi, S.R. Bharadwaj and S.R. Dharwadkar 256 (1998) 139
- A study on the reaction of yttria ( $\text{Y}_2\text{O}_3$ ) in flowing uranium hexafluoride ( $\text{UF}_6$ ) gas at  $900^\circ\text{C}$ , Z.E. Erkmen 257 (1998) 152
- Synthesis of lithium silicates, H. Pfeiffer, P. Bosch and S. Bulbulian 257 (1998) 309
- Users' requirements for IFMIF, K. Noda, K. Ehrlich, S. Jitsukawa, A. Möslang and S. Zinkle 258–263 (1998) 97
- General radiation problems for insulating materials in future fusion devices, E.R. Hodgson 258–263 (1998) 226
- Production behavior of irradiation defects in ternary lithium ceramics under ion beam irradiation, K. Moritani and H. Moriyama 258–263 (1998) 525
- Anomalous exchange of deuterium implanted into an oxide ceramic for protium in air vapor, B. Tsuchiya, E. Izuka, K. Soda, K. Morita and H. Iwahara 258–263 (1998) 555
- Thermal and mechanical properties of ceramic blanket particle bed materials: Numerical derivation, M. Abdou, A. Ying and Z. Lu 258–263 (1998) 576
- Irradiation effects in ceramic breeder materials, H. Moriyama, S. Tanaka and K. Noda 258–263 (1998) 587
- Ion beam analysis of deuterium-implanted  $\text{Al}_2\text{O}_3$  and tungsten, R.G. Macaulay-Newcombe and D.A. Thompson 258–263 (1998) 1109
- Analysis and measurement of residual stress distribution of vanadium/ceramics joints for fusion reactor applications, Y. Nemoto, K. Ueda, M. Satou, A. Hasegawa and K. Abe 258–263 (1998) 1517
- Effect of high temperature heat treatment in vacuum on microstructure and bending properties of  $\text{SiC}_f/\text{SiC}$  composites prepared by CVI, H. Araki, H. Suzuki, W. Yang, S. Sato and T. Noda 258–263 (1998) 1540
- Crack initiation and growth characteristics in  $\text{SiC}/\text{SiC}$  under indentation test, W. Zhang, T. Hinoki, Y. Kato, A. Kohyama, T. Noda, T. Muroga and J. Yu 258–263 (1998) 1577
- Role of environment on the surface degradation of Wesgo AL995, A. Moroño, E.R. Hodgson 258–263 (1998) 1798
- Production and recovery of defects in SiC after irradiation and deformation, J. Chen, P. Jung and H. Klein 258–263 (1998) 1803
- Radiation effects on  $\text{Al}_2\text{O}_3$  irradiated with  $\text{H}_2^+$  ions, S. Furuno, N. Sasajima, K. Hojou, K. Izui, H. Otsu and T. Matsui 258–263 (1998) 1817
- Pre- and post-irradiation studies on mm-wave losses in reference win-

- dow materials for electron cyclotron wave systems, R. Heidinger, A. Ibarra and J. Molla 258–263 (1998) 1822
- Damage structure evolution in  $\text{Al}_2\text{O}_3$  irradiated with multiple ion beams of H, He and O and after annealing, Y. Katano, T. Nakazawa, D. Yamaki, T. Aruga and K. Noda 258–263 (1998) 1842
- Mechanical properties and microstructure of  $\alpha$ -alumina and magnesium aluminate spinel irradiated with He ions, K. Izumi, K. Yasuda, C. Kinoshita and M. Kutsuwada 258–263 (1998) 1856
- Long term degradation of electrical insulation of  $\text{Al}_2\text{O}_3$  under high flux fission reactor irradiation, T. Shikama and S.J. Zinkle 258–263 (1998) 1861
- Electrical properties of ceramics during reactor irradiation, T. Shikama, S.J. Zinkle, K. Shiiyama, L.L. Snead and E.H. Farnum 258–263 (1998) 1867
- Characterization of  $\text{Y}_2\text{O}_3$  coating under neutron irradiation, M. Nakamichi and H. Kawamura 258–263 (1998) 1873
- Photon emission induced by fusion neutrons on optical window materials, F. Sato, T. Iida, Y. Oyama, F. Maekawa and Y. Ikeda 258–263 (1998) 1897
- Study of  $\text{B}_4\text{C}$  microstructure evolution under neutron irradiation by X-ray diffraction profiles analysis, D. Simeone, D. Gosset, D. Quirion and X. Deschanel 264 (1999) 295
- Chemical Reactions** (includes *Electrochemical and Thermochemical Reactions*)
- Study of the oxide layer formed on stainless steel exposed to boiling water reactor conditions by ion beam techniques, C. Degueldre, D. Buckley, J.C. Dran and E. Schenker 252 (1998) 22
- Modeling of chemical interactions of fuel rod materials at high temperatures. I. Simultaneous dissolution of  $\text{UO}_2$  and  $\text{ZrO}_2$  by molten Zr in an oxidizing atmosphere, M.S. Veshchunov and A.V. Berdyshev 252 (1998) 98
- Modeling of chemical interactions of fuel rod materials at high temperatures. II. Investigation of downward relocation of molten materials, M.S. Veshchunov and A.V. Palagin 252 (1998) 110
- Mechanistic interpretations of  $\text{UO}_2$  oxidation, D.R. Olander 252 (1998) 121
- The effect of rare-earth fission products on the rate of  $\text{U}_3\text{O}_8$  formation on  $\text{UO}_2$ , R.J. McEachern, D.C. Doern and D.D. Wood 252 (1998) 145
- Solubility of zinc ferrite in high-temperature oxygenated water, Y. Hanzawa, D. Hiroishi, C. Matsuura and K. Ishigure 252 (1998) 209
- The electrical conductivity of zircaloy oxide films, M.M.R. Howlader, K. Shiiyama, C. Kinoshita, M. Kutsuwada and M. Inagaki 253 (1998) 149
- A review of the oxidation of uranium dioxide at temperature below  $400^\circ\text{C}$ . R.J. McEachern and P. Taylor 254 (1998) 87
- The compatibility of martensitic steels with liquid Pb–17 Li, N. Simon, A. Terlain and T. Flament 254 (1998) 185
- Kinetics of interfacial reactions in molten U/solid  $\text{Y}_2\text{O}_3$  system, C. Tournier, B. Lorrain, F. Le Guyadec, L. Coudurier and N. Eustathopoulos 254 (1998) 215
- The oxidation resistance improvement of matrix graphite of spherical fuel elements by slip-gelation process, Q. Zhu, X. Qiu and C. Ma 254 (1998) 221
- Analytical electron microscopy study of surface layers formed on the French SON68 nuclear waste glass during vapor hydration at  $200^\circ\text{C}$ , W.L. Gong, L.M. Wang, R.C. Ewing, E. Vernaz, J.K. Bates and W.L. Ebert 254 (1998) 249
- Étude du système U–Ca–O par diffractométrie de rayons X à haute température, A. Pialoux and B. Touzelin 255 (1998) 14
- Oxidation state of uranium: an XPS study of alkali and alkaline earth uranates, S. Bera, S.K. Sali, S. Sampath, S.V. Narasimhan and V. Venugopal 255 (1998) 26
- Kinetics of  $\text{UO}_2$  oxidation in steam atmosphere, B.V. Dobrov, V.V. Likhanskii, V.D. Ozrin, A.A. Solodov, M.P. Kissane and H. Manenc 255 (1998) 59
- Hardening of Alloy N10276 by diluted flowing butane gas, S.W. Sharkawy 255 (1998) 75
- The influence of nitrogen dioxide on the oxidation of  $\text{UO}_2$  in air at temperatures below  $275^\circ\text{C}$ , R.J. McEachern, S. Sunder, P. Taylor, D.C. Doern, N.H. Miller and D.D. Wood 255 (1998) 234
- Reaction of hydrogen with uranium catalyzed by platinum clusters, M. Balooch and W.J. Siekhaus 255 (1998) 263
- Deuterium release from plasma-exposed beryllium during thermal desorption, J. Won, R.P. Doerner and R.W. Conn 256 (1998) 96
- Influence of texture and physical mixture of  $\text{UO}_3$  and C for carboreduction of  $\text{UO}_3$  into  $\text{UO}_2$ , F. Poncet, F. Valdivieso and M. Pijolat 256 (1998) 155

- Effect of oxygen on the operation of a single-cell thermionic fuel element, D.V. Paramonov and M.S. El-Genk 256 (1998) 218
- Oxidation kinetics of Zircaloy-2 between 450°C and 600°C in oxidizing atmosphere, T. Arima, K. Moriyama, N. Gaja, H. Furuya, K. Idemitsu and Y. Inagaki 257 (1998) 67
- Comparison of hot dip aluminised F82H-mod. steel after different subsequent heat treatments, H. Glasbrenner and O. Wedemeyer 257 (1998) 274
- Surface chemical behavior of triuranium octaoxide in the atmospheres of carbon monoxide and hydrogen, X. Wang, Y. Fu and R. Xie 257 (1998) 287
- Development and performance of aluminum nitride insulating coatings for application in a lithium environment, K. Natesan, C.B. Reed, D.L. Rink and R.C. Haglund 258-263 (1998) 488
- Change of tritium species in  $\text{Li}_2\text{BeF}_4$  molten salt breeder under neutron irradiation at elevated temperature, A. Suzuki, T. Terai and S. Tanaka 258-263 (1998) 519
- Beryllium R&D for blanket application, M. Dalle Donne, G.R. Longhurst, H. Kawamura and F. Scaffidi-Argentina 258-263 (1998) 601
- Gas and hydrogen ion gettering properties of lithium, T. Hino, K. Kanaya, I. Takahashi, H. Yana-gihara, M. Hashiba, Y. Hirohata and K. Mori 258-263 (1998) 612
- Erosion of carbon-based materials in a steady-state deuterium plasma, B.I. Khripunov, V.B. Petrov, Yu.V. Martynenko, A.M. Litnovsky, N.V. Antonov and V.V. Shapkin 258-263 (1998) 700
- Development of multi-element doped graphite and its modification of chemical erosion, J.P. Qian, J. Roth, J.R. Song, F. Zhang, L. Yang and G.T. Zhai 258-263 (1998) 706
- Steam-chemical reactivity for irradiated beryllium, R.A. Anderl, K.A. McCarthy, M.A. Oates, D.A. Petti, R.J. Pawelko and G.R. Smolik 258-263 (1998) 750
- Oxidation induced release of deuterium from carbon based plasma facing materials, S. Alberici, J.P. Coad, H.-K. Hinssen, R. Moormann, P. Wienhold and C.H. Wu 258-263 (1998) 764
- Investigation of oxidation resistance of carbon based first-wall liner material Aerolor AO5, A.-K. Krüssenberg, R. Moormann, H.-K. Hinssen, M. Hofmann and C.H. Wu 258-263 (1998) 770
- Thermodynamics of the formation of  $\text{CH}_4$  by the reaction of carbon materials by a stream of  $\text{NH}_3$ , M. Katsura, K. Nishimaki, T. Nakagawa, T.A. Yamamoto, M. Hirota and M. Miyake 258-263 (1998) 839
- Rapid oxidation and its effects on mechanical properties of V-Ti-Cr-Si type alloys, M. Fujiwara, M. Satou, A. Hasegawa and K. Abe 258-263 (1998) 1507
- Hydrogen generation from steam reaction with tungsten, G.R. Smolik, K.A. McCarthy, D.A. Petti and K. Coates 258-263 (1998) 1979
- Thermal vaporization and deposition of gallium oxide in hydrogen, D.P. Butt, Y. Park and T.N. Taylor 264 (1999) 71
- Contact corrosion measurements on the pair  $\text{UO}_{2+x}$  and carbon steel 1.0330 in brines and bentonite porewater with respect to direct waste disposal, J. Engelhardt and G. Marx 264 (1999) 161
- Molar Gibbs energy formation of  $\text{KUO}_3(\text{s})$ , K. Jayanthi, V.S. Iyer, G.A. Rama Rao and V. Venugopal 264 (1999) 263
- Temperature programmed decomposition of uranyl nitrate hexahydrate, S. Dash, M. Kamruddin, S. Bera, P.K. Ajikumar, A.K. Tyagi, S.V. Narasimhan and B. Raj 264 (1999) 271
- The influence of water chemistry on the radiolysis of the primary coolant water in pressurized water reactors, B. Pastina, J. Isabey and B. Hicckel 264 (1999) 309
- Influence of stress developed due to oxide layer formation on the oxidation kinetics of Zr-2.5%Nb alloy, A.P. Zhilyaev and J.A. Szpunar 264 (1999) 327
- Determination of the  $\beta/\beta + \gamma$  eutectoid transition temperature in  $\text{ZrO}_{2-x}$  at variable heating/cooling rates, P.J. Hayward and I.M. George 265 (1999) 60
- Dissolution of  $\text{ZrO}_2$  in molten Zircaloy-4, P.J. Hayward and I.M. George 265 (1999) 69
- Solid state reactions of  $\text{CeO}_2$ ,  $\text{ThO}_2$  and  $\text{PuO}_2$  with ammonium sulphate, K.D. Singh Mudher, M. Keskar and V. Venugopal 265 (1999) 146
- Cs boltwoodite obtained by ion exchange from single crystals: Implications for radionuclide release in a nuclear repository, P.C. Burns 265 (1999) 218
- Influence of recoil-implanted and thermally released iodine on I-SCC of Zircaloy-4 in PCI-conditions: chemical aspects, M. Fregonese, F. Lefebvre, C. Lemaignan and T. Magnin 265 (1999) 245

- Stabilization of Rocky Flats Pu-contaminated ash within chemically bonded phosphate ceramics, A.S. Wagh, R. Strain, S.Y. Jeong, D. Reed, T. Krause and D. Singh 265 (1999) 295
- Oxidation kinetics of hydride-bearing uranium metal corrosion products, T.C. Totemeier, R.G. Pahl and S.M. Frank 265 (1999) 308
- Review of the materials-chemistry models in the VICTORIA code, D.R. Olander and V. Mubayi 270 (1999) 1
- Steam oxidation of fuel in defective LWR rods, D.R. Olander, Y.S. Kim, W.-E Wang and S.K. Yagnik 270 (1999) 11
- A hydrogen uptake micro-mechanism for Zr alloys, B. Cox and Y.-M. Wong 270 (1999) 134
- The effects of adsorbates on Zircaloy oxidation in air and steam, K. Park, Y. Cho and Y.-G. Kim 270 (1999) 154
- Thermodynamics of urania volatilization in steam, D.R. Olander 270 (1999) 187
- Prediction of the oxygen potential in the fuel-to-clad gap of defective fuel rods during severe accident conditions, B.J. Lewis 270 (1999) 221
- Thermochemical properties of the hydrogen getter DEB, M. Balooch, W.-E Wang and J.D. LeMay 270 (1999) 248
- Uranium dioxide reaction in  $CF_4/O_2$  RF plasma, Y.-S. Kim, J.-Y. Min, K.-k. Bae and M.-s. Yang 270 (1999) 253
- Vaporization properties of  $Cs_2U_4O_{12}$  in LWR severe accident simulating conditions, J. Huang, M. Yamawaki, K. Yamaguchi, F. Ono, M. Yasumoto, H. Sakurai and J. Sugimoto 270 (1999) 259
- Cladding Materials**
- Atom probe analysis of Sn in Zr-based alloys, N. Sano and K. Takeda 252 (1998) 63
- The electrical conductivity of zircaloy oxide films, M.M.R. Howlander, K. Shiiyama, C. Kinoshita, M. Kutsuwada and M. Inagaki 253 (1998) 149
- Modelling of the mechanical behavior of the metal-oxide system during Zr alloy oxidation, M. Parise, O. Sicardy and G. Cailletaud 256 (1998) 35
- Oxidation of ceramic uranium dioxide in alkali metal carbonate-based melts: a study using various oxidants and comparison with  $UO_2$  powder, V.A. Volkovich, T.R. Griffiths, D.J. Fray and M. Fields 256 (1998) 131
- Oxidation kinetics of Zircaloy-2 between 450°C and 600°C in oxidizing atmosphere, T. Arima, K. Moriyama, N. Gaja, H. Furuya, K. Idemitsu and Y. Inagaki 257 (1998) 67
- On the mechanism of Zircaloy cladding axial splits, V. Grigoriev and B. Josefsson 257 (1998) 99
- Development and material testing of OF-Cu/DS-Cu/OF-Cu triplex tube (dispersion strengthened copper clad with oxygen free-copper) and trial fabrication of a vertical target mock-up for ITER divertor, Y. Gotoh, H. Okamura, S. Kajiuira, M. Kumagai, T. Ando, M. Akiba, S. Suzuki and T. Suzuki 258–263 (1998) 271
- Assessment of tungsten for use in the ITER plasma facing components, J.W. Davis, V.R. Barabash, A. Makhankov, L. Plöchl and K.T. Slattery 258–263 (1998) 308
- Development of material irradiation rig with precision temperature control in experimental fast reactor JOYO, H. Kataoka, T. Yasu, H. Takatsudo and S. Miyakawa 258–263 (1998) 677
- Modelling of tritium permeation through beryllium as plasma facing material, L. Berardinucci 258–263 (1998) 777
- Void formation and microstructural development in oxide dispersion strengthened ferritic steels during electron-irradiation, J. Saito, T. Suda, S. Yamashita, S. Ohnuki, H. Takahashi, N. Akasaka, M. Nishida and S. Ukai 258–263 (1998) 1264
- Mössbauer spectroscopy of tin in unirradiated and neutron irradiated Zircalloys, J.A. Sawicki 264 (1999) 169
- Effect of Mo on recrystallization characteristics of Zr-Nb-(Sn)-Mo experimental alloys, Y.B. Chun, S.K. Hwang, M.H. Kim, S.I. Kwun and Y.S. Kim 265 (1999) 28
- Dissolution of  $ZrO_2$  in molten Zircaloy-4, P.J. Hayward and I.M. George 265 (1999) 69
- Synergistic effects of LiOH and  $F^-$  in accelerating the corrosion of Zircaloy-4, Y.-M. Wong, B. Cox, N. Ramasubramanian and V.C. Ling 265 (1999) 178
- Low cycle fatigue properties and microscopic deformation structure of Zircaloy-4 in recrystallized and stress-relieved conditions, X. Lin and G. Haicheng 265 (1999) 213
- Influence of recoil-implanted and thermally released iodine on I-SCC of Zircaloy-4 in PCI-conditions: chemical aspects, M. Fregonese, F. Lefebvre, C. Lemaignan and T. Magnin 265 (1999) 245
- High burnup effects on fuel behaviour under accident conditions: the tests CABRI REP-Na, F. Schmitz and J. Papin 270 (1999) 55

- A hydrogen uptake micro-mechanism for Zr alloys, B. Cox and Y.-M. Wong 270 (1999) 134
- Kinetic studies on massive hydriding of commercial zirconium alloy tubing, Y.-S. Kim and S.-k. Kim 270 (1999) 147
- The effects of adsorbates on Zircaloy oxidation in air and steam, K. Park, Y. Cho and Y.-G. Kim 270 (1999) 154
- Crystallization and degradation of zirconium oxide in various pH solutions, Y.S. Kim and S.C. Kwon 270 (1999) 165
- Prediction of the oxygen potential in the fuel-to-clad gap of defective fuel rods during severe accident conditions, B.J. Lewis 270 (1999) 221
- Coatings and Coated Particles**
- Deterioration of ZrC-coated fuel particle caused by failure of pyrolytic carbon layer, K. Minato, K. Fukuda, H. Sekino, A. Ishikawa and E. Oeda 252 (1998) 13
- Ion nitriding of titanium alpha plus beta alloy for fusion reactor applications, E. Rolinski, G. Sharp, D.F. Cowgill and D.J. Peterman 252 (1998) 200
- Compatibility of insulating ceramic with liquid breeders, T. Terai, T. Mitsuyama, T. Yoneoka and S. Tanaka 253 (1998) 219
- Adhesion and wear properties of TiN films deposited on martensitic stainless steel and Stellite by reactive magnetron sputter ion plating, M.K. Lee, W.W. Kim, J.S. Kim and W.J. Lee 254 (1998) 42
- The removal of codeposited layers from TFTR tiles by O<sub>2</sub> gas exposure, A.A. Haasz and J.W. Davis 256 (1998) 65
- Microstructure and nanohardness of hafnium diboride after ion irradiations, P. Cheminant-Coatanlem, L. Boulanger, X. Deschanel and A. Thorel 256 (1998) 180
- The influence of specimen roughness on the rate of formation of U<sub>3</sub>O<sub>8</sub> on UO<sub>2</sub> in air at 250°C, P. Taylor, R.J. McEachern, D.C. Doern and D.D. Wood 256 (1998) 213
- Materials integration issues for high performance fusion power systems, D.L. Smith, M.C. Billone, S. Majumdar, R.F. Mattas and D.-K. Sze 258–263 (1998) 65
- Fabrication and high heat flux testing of plasma sprayed beryllium ITER first wall mock-ups, R.G. Castro, K.E. Elliot, R.D. Watson, D.L. Youchison and K.T. Slattery 258–263 (1998) 252
- Development and performance of aluminum nitride insulating coatings for application in a lithium environment, K. Natesan, C.B. Reed, D.L. Rink and R.C. Haglund 258–263 (1998) 488
- The behaviour of the natural oxide of MANET as permeation barrier under cyclic loads: Self-healing, A. Perujo and H. Kolbe 258–263 (1998) 582
- Steady state wall pumping performance of pebble drop divertor, M. Isobe, Y. Ohtsuka, Y. Ueda and M. Nishikawa 258–263 (1998) 745
- Performance of tungsten coatings as plasma facing components used in ASDEX Upgrade, H. Maier, S. Kötterl, K. Krieger, R. Neu, M. Balden and ASDEX Upgrade-Team 258–263 (1998) 921
- Glass-ceramic joining and coating of SiC/SiC for fusion applications, M. Ferraris, M. Salvo, C. Isola, M. Appendino Montorsi and A. Kohyama 258–263 (1998) 1546
- Crack initiation and growth characteristics in SiC/SiC under indentation test, W. Zhang, T. Hinoki, Y. Katoh, A. Kohyama, T. Noda, T. Muroga and J. Yu 258–263 (1998) 1577
- Characterization of Y<sub>2</sub>O<sub>3</sub> coating under neutron irradiation, M. Nakamichi and H. Kawamura 258–263 (1998) 1873
- Thermal shock resistance of SiC compositionally graded C/C composites, K. Fujii and R. Yamada 258–263 (1998) 1953
- Effect of fast Ti-deposition on gas recycling at the first wall and on fast ion losses in the GDT experiment, P.A. Bagryansky, E.D. Bender, A.A. Ivanov, A.N. Karpushov, S.V. Murachtin, K. Noack, St. Krahl and S. Collatz 265 (1999) 124
- Internal stress induced in the process of boron coating, H. Kemi, C. Sasaki, M. Kitamura, N. Satomi, Y. Ueda and M. Nishikawa 266–269 (1999) 1108
- Cold-Worked Materials**
- A study on the reaction of yttria (Y<sub>2</sub>O<sub>3</sub>) in flowing uranium hexafluoride (UF<sub>6</sub>) gas at 900°C, Z.E. Erkmen 257 (1998) 152
- Effect of cold work on void swelling in proton irradiated Fe–15Cr–20Ni ternary alloys, Y. Murase, J. Nakagawa, N. Yamamoto and H. Shiraishi 258–263 (1998) 1639
- In-vessel tritium retention and removal in ITER, G. Federici, R.A. Anderl, P. Andrew, J.N. Brooks, R.A. Causey, J.P. Coad, D. Cowgill, R.P. Doerner, A.A. Haasz, G. Janeschitz, W. Jacob, G.R. Longhurst, R. Nygren, A. Peacock, M.A. Pick, V. Philipps, J. Roth, C.H. Skinner and W.R. Wampler 266–269 (1999) 14

- Compatibility and Corrosion** (*includes Stress Corrosion Cracking*)
- Mechanistic interpretations of UO<sub>2</sub> oxidation, D.R. Olander 252 (1998) 121
- The effect of rare-earth fission products on the rate of U<sub>3</sub>O<sub>8</sub> formation on UO<sub>2</sub>, R.J. McEachern, D.C. Doern and D.D. Wood 252 (1998) 145
- Solubility of zinc ferrite in high-temperature oxygenated water, Y. Hanzawa, D. Hiroishi, C. Matsuura and K. Ishigure 252 (1998) 209
- Compatibility of insulating ceramic with liquid breeders, T. Terai, T. Mitsuyama, T. Yoneoka and S. Tanaka 253 (1998) 219
- Effect of self-ion bombardment damage on high temperature oxidation behavior of Zircaloy-4, X.D. Bai, S.G. Wang, J. Xu, J. Bao, H.M. Chen and Y.D. Fan 254 (1998) 266
- The effect of the cracking plane crystallographic orientation on the stress corrosion cracking process, E. Ciocan, M. Ignat and E. Gheorghiu 255 (1998) 1
- Iodine stress corrosion cracking of Zircaloy reactor cladding: iodine chemistry (a review), P.S. Sidky 256 (1998) 1
- Corrosion of annealed AISI 316 stainless steel in sodium environment, V. Ganesan and V. Ganesan 256 (1998) 69
- Deuterium release from plasma-exposed beryllium during thermal desorption, J. Won, R.P. Doerner and R.W. Conn 256 (1998) 96
- Hydride formation by high temperature cathodic hydrogen charging method and its effect on the corrosion behavior of Zircaloy-4 tubes in acid solution, Y. Choi 256 (1998) 124
- Oxidation of ceramic uranium dioxide in alkali metal carbonate-based melts: a study using various oxidants and comparison with UO<sub>2</sub> powder, V.A. Volkovich, T.R. Griffiths, D.J. Fray and M. Fields 256 (1998) 131
- The observation of enrichment of O and Zr and depletion of Nb in the near surface region of a  $\beta$ -(Zr-20%Nb) alloy, C. Zhang and P.R. Norton 257 (1998) 1
- Oxidation kinetics of Zircaloy-2 between 450°C and 600°C in oxidizing atmosphere, T. Arima, K. Moriyama, N. Gaja, H. Furuya, K. Idemitsu and Y. Inagaki 257 (1998) 67
- Investigation of structure and composition of surface oxides in a high chromium martensitic steel, I. Iordanova, K.S. Forcey, R. Harizanova, Y. Georgiev and M. Surtchev 257 (1998) 126
- A study on the reaction of yttria (Y<sub>2</sub>O<sub>3</sub>) in flowing uranium hexafluoride (UF<sub>6</sub>) gas at 900°C, Z.E. Erkmen 257 (1998) 152
- Research and development on vanadium alloys for fusion applications, S.J. Zinkle, H. Matsui, D.L. Smith, A.F. Rowcliffe, E. van Osch, K. Abe and V.A. Kazakov 258–263 (1998) 205
- Current status and future of IASCC research, T. Shoji, S. Suzuki and K.S. Raja 258–263 (1998) 241
- Assessment of the corrosion behaviour of structural materials in the water coolant of ITER, V. Belous, G. Kalinin, P. Lorenzetto and S. Velikopolskiy 258–263 (1998) 351
- Magnetic field effect on the deposition of nickel in molten Pb-17Li, F. Barbier and A. Alemany 258–263 (1998) 508
- Compatibility of structural materials with Li<sub>2</sub>BeF<sub>4</sub> molten salt breeder, T. Terai, Y. Hosoya, S. Tanaka, A. Sagara and O. Motojima 258–263 (1998) 513
- Beryllium R&D for blanket application, M. Dalle Donne, G.R. Longhurst, H. Kawamura and F. Scaffidi-Argentina 258–263 (1998) 601
- Compatibility of vanadium alloys and its weld joints in homogeneous and heterogeneous liquid lithium systems, V.A. Evtikhin, I.E. Lyublinski and A.V. Vertkov 258–263 (1998) 1487
- Effect of irradiation temperature on irradiation assisted stress corrosion cracking of model austenitic stainless steels, T. Tsukada, Y. Miwa, H. Tsuji and H. Nakajima 258–263 (1998) 1669
- Cr-Ni alloys for fusion reactors, M.I. Solonin, A.B. Alekseev, S.A. Averin, Y.A. Burenkov, V.M. Chernov, B.K. Kardashev, V.P. Kondrat'ev, A.V. Kozlov, V.N. Rechitsky and S.N. Votinov 258–263 (1998) 1762
- Quantitative prediction of environmentally assisted cracking based on a theoretical model and computer simulation, T. Satoh, T. Nakazato, S. Moriya, S. Suzuki and T. Shoji 258–263 (1998) 2054
- Materials design and related R&D issues for the force-free helical reactor (FFHR), A. Sagara, T. Muroga, O. Motojima, T. Noda, S. Tanaka, T. Terai, A. Kohyama and H. Matsui 258–263 (1998) 2079
- An evaluation of potential material-coolant compatibility for applications in advanced fusion reactors, T. Kondo, Y. Watanabe, Y.S. Yi and A. Hishinuma 258–263 (1998) 2083
- Corrosion behavior of Mo-Re based alloys in liquid Li, J.-I. Saito, M.

- Morinaga, S. Kano, M. Furui and K. Noda 264 (1999) 206
- Alloying effects on the corrosion behavior of binary Nb-based and Mo-based alloys in liquid Li, J. Saito, S. Inoue, S. Kano, T. Yuza-wa, M. Furui and M. Morinaga 264 (1999) 216
- Deformation–corrosion interactions for Zr alloys during I-SCC crack initiation. Part I: Chemical contributions, P. Jacques, F. Lefebvre and C. Lemaignan 264 (1999) 239
- Deformation–corrosion interactions for Zr alloys during I-SCC crack initiation. Part II: Localised stress and strain contributions, P. Jacques, F. Lefebvre and C. Lemaignan 264 (1999) 249
- A mechanism for the hydrogen uptake process in zirconium alloys, B. Cox 264 (1999) 283
- The influence of water chemistry on the radiolysis of the primary coolant water in pressurized water reactors, B. Pastina, J. Isabey and B. Hickel 264 (1999) 309
- Influence of stress developed due to oxide layer formation on the oxidation kinetics of Zr–2.5%Nb alloy, A.P. Zhilyaev and J.A. Szpunar 264 (1999) 327
- On the effects of heat treatment and surface orientation on corrosion and hydrogen ingress of Zr–2.5Nb pressure tube material, Y.-P. Lin and J. DeLuca 265 (1999) 1
- Determination of the  $\beta/\beta + \gamma$  eutectoid transition temperature in  $ZrO_{2-x}$  at variable heating/cooling rates, P.J. Hayward and I.M. George 265 (1999) 60
- In situ measurement of electrical conductivity of Zircaloy oxides and their formation mechanism under electron irradiation, M.M.R. How-lader, C. Kinoshita, K. Shiiyama, M. Kutsuwada and M. Inagaki 265 (1999) 100
- Synergistic effects of LiOH and  $F^-$  in accelerating the corrosion of Zircaloy-4, Y.-M. Wong, B. Cox, N. Ramasubramanian and V.C. Ling 265 (1999) 178
- The effect of hydrogen on the fracture toughness of alloy X-750 at elevated temperatures, D.M. Symons 265 (1999) 225
- Effects of thermal sensitization on radiation-induced segregation in type 304 stainless steel irradiated with He-ions, O. Okada, K. Nakata and S. Kasahara 265 (1999) 232
- Influence of Ar ion bombardment on the uniform corrosion resistance of laser-surface-melted Zircaloy-4, J. Xu, X. Bai, F. He, S. Wang, X. He and Y. Fan 265 (1999) 240
- Accumulation of radioactive corrosion products on steel surfaces of VVER type nuclear reactors. I.  $^{110m}Ag$ , G. Hirschberg, P. Baradlai, K. Varga, G. Myburg, J. Schunk, P. Tilky and P. Stoddart 265 (1999) 273
- Oxidation kinetics of hydride-bearing uranium metal corrosion products, T.C. Totemeier, R.G. Pahl and S.M. Frank 265 (1999) 308
- Investigations of ion radiation effects at metal/liquid interfaces, M.B. Lewis and J.D. Hunn 265 (1999) 325
- Crystallization and degradation of zirconium oxide in various pH solutions, Y.S. Kim and S.C. Kwon 270 (1999) 165
- Composite Materials**
- The mechanical behavior of a Nicalon/SiC composite at room temperature and 1000°C, N. Miriyala, P.K. Liaw, C.J. McHargue and L.L. Snead 253 (1998) 1
- Computation of the lamina stacking sequence effect on elastic moduli of a plain-weave Nicalon/SiC laminated composite with a [0/30/60] lay-up, W. Zhao, P.K. Liaw and N.-i. Yu 253 (1998) 10
- Low dose irradiation performance of SiC interphase SiC/SiC composites, L.L. Snead, M.C. Osborne, R.A. Lowden, J. Strizak, R.J. Shinavski, K.L. More, W.S. Eatherly, J. Bailey and A.M. Williams 253 (1998) 20
- Helium implantation effects on mechanical properties of SiC<sub>f</sub>/SiC composites, A. Hasegawa, M. Saito, K. Abe and R.H. Jones 253 (1998) 31
- The challenge of developing structural materials for fusion power systems, E.E. Bloom 258–263 (1998) 7
- Derivation of hydrogen transport parameters in carbon fibre composites by modelling transient release in isovolumetric desorption experiments, L.A. Sedano, S. Alberici, A. Perujo, J. Camposilvan and K. Douglas 258–263 (1998) 662
- High heat flux erosion of carbon fibre composite materials in the TEXTOR tokamak, H. Bolt, T. Scholz, J. Boedo, K.H. Finken and A. Hassanein 258–263 (1998) 757
- Investigation of oxidation resistance of carbon based first-wall liner material Aerolor AO5, A.-K. Krüssen-berg, R. Moormann, H.-K. Hinssen, M. Hofmann and C.H. Wu 258–263 (1998) 770
- Behaviour of Si and Ti doped carbon composites under exposure to the deuterium plasma, M. Rubel, N. Almqvist, P. Wienhold and C.H. Wu 258–263 (1998) 787

- Effect of high temperature heat treatment in vacuum on microstructure and bending properties of SiC<sub>f</sub>/SiC composites prepared by CVI, H. Araki, H. Suzuki, W. Yang, S. Sato and T. Noda 258–263 (1998) 1540
- Glass-ceramic joining and coating of SiC/SiC for fusion applications, M. Ferraris, M. Salvo, C. Isola, M. Appendino Montorsi and A. Kohyama 258–263 (1998) 1546
- Interface strength of SiC/SiC composites with and without helium implantation using micro-indentation test, M. Saito, A. Hasegawa, S. Ohtsuka and K. Abe 258–263 (1998) 1562
- Effect of fiber coating on interfacial shear strength of SiC/SiC by nano-indentation technique, T. Hinoki, W. Zhang, A. Kohyama, S. Sato and T. Noda 258–263 (1998) 1567
- Crack initiation and growth characteristics in SiC/SiC under indentation test, W. Zhang, T. Hinoki, Y. Katoh, A. Kohyama, T. Noda, T. Muroga and J. Yu 258–263 (1998) 1577
- A fusion power reactor concept using SiC/SiC composites, S. Ueda, S. Nishio, Y. Seki, R. Kurihara, J. Adachi, S. Yamazaki and DREAM Design Team 258–263 (1998) 1589
- Microstructure and oxidative degradation behavior of silicon carbide fiber Hi-Nicalon type S, M. Takeda, A. Urano, J. Sakamoto and Y. Imai 258–263 (1998) 1594
- R&D of oxide dispersion strengthened ferritic martensitic steels for FBR, S. Ukai, T. Nishida, T. Okuda and T. Yoshitake 258–263 (1998) 1745
- Development of the superconductors for ITER magnet system, A. Shikov, A. Nikulin, A. Silaev, A. Vorobieva, V. Pantsyrnyi, G. Vedernikov, N. Salunin, S. Sudiev 258–263 (1998) 1929
- Thermal shock resistance of SiC compositionally graded C/C composites, K. Fujii and R. Yamada 258–263 (1998) 1953
- Impurity enrichment and radiative enhancement using induced SOL flow in DIII-D, M.R. Wade, W.P. West, R.D. Wood, S.L. Allen, J.A. Boedo, N.H. Brooks, M.E. Fenstermacher, D.N. Hill, J.T. Hogan, R.C. Isler, G.L. Jackson, C.J. Lasnier, R. Lehmer, A.W. Leonard, M.A. Mahdavi, R. Maingi, R.A. Moyer, T.H. Osborne, T.W. Petrie, M.J. Schaffer, R.D. Stambaugh, J.G. Watkins and D.G. Whyte 266–269 (1999) 44
- Impurity enrichment and radiative enhancement using induced SOL flow in DIII-D, M.R. Wade, W.P. West, R.D. Wood, S.L. Allen, J.A. Boedo, N.H. Brooks, M.E. Fenstermacher, D.N. Hill, J.T. Hogan, R.C. Isler, G.L. Jackson, C.J. Lasnier, R. Lehmer, A.W. Leonard, M.A. Mahdavi, R. Maingi, R.A. Moyer, T.H. Osborne, T.W. Petrie, M.J. Schaffer, R.D. Stambaugh, J.G. Watkins and D.G. Whyte 266–269 (1999) 44
- Copper, Copper Alloys and Compounds**
- The influence of dynamical structural relaxation of point defect clusters on void formation in irradiated copper, Y. Shimomura, I. Mukouda and K. Sugio 251 (1997) 61
- Aspects of microstructure evolution under cascade damage conditions, B.N. Singh, S.I. Golubov, H. Trinkaus, A. Serra, Yu.N. Osetsky and A.V. Barashev 251 (1997) 107
- Effects of titanium impregnation on the thermal conductivity of carbon/copper composite materials, T. Oku, A. Kurumada, T. Sogabe, T. Oku, T. Hiraoka and K. Kuroda 257 (1998) 59
- A comparison of the effect of electron irradiation and of thermal aging on the hardness of FeCu binary alloys, A. Barbu, M.H. Mathon, F. Maury, J.F. Belliard, B. Beuneu and C.H. de Novion 257 (1998) 206
- Materials design data for fusion reactors, A.A.F. Tavassoli 258–263 (1998) 85
- The influence of neutron spectrum and irradiation history on microstructural evolution in fusion structural materials, T. Muroga, S. Ohnuki, F.A. Garner and S.J. Zinkle 258–263 (1998) 130
- Development of tungsten armor and bonding to copper for plasma-interactive components, I. Smid, M. Akiba, G. Vieider and L. Plöchl 258–263 (1998) 160
- Austenitic stainless steels and high strength copper alloys for fusion components, A.F. Rowcliffe, S.J. Zinkle, J.F. Stubbins, D.J. Edwards and D.J. Alexander 258–263 (1998) 183
- Development of joining technology for Be/Cu-alloy and Be/SS by HIP, T. Kuroda, T. Hatano, M. Enoeda, S. Sato, K. Furuya, H. Takatsu, T. Iwadachi and K. Nishida 258–263 (1998) 258
- Optimization of HIP bonding conditions for ITER shielding blanket/first wall made from austenitic stainless steel and dispersion strengthened copper alloy, S. Sato, T. Hatano, T. Kuroda, K. Furuya, S. Hara, M. Enoeda and H. Takatsu 258–263 (1998) 265



- Development and material testing of OF-Cu/DS-Cu/OF-Cu triplex tube (dispersion strengthened copper clad with oxygen free-copper) and trial fabrication of a vertical target mock-up for ITER divertor, Y. Gotoh, H. Okamura, S. Kajjura, M. Kumagai, T. Ando, M. Akiba, S. Suzuki and T. Suzuki 258–263 (1998) 271
- Effects of interface edge configuration on residual stress in the bonded structures for a divertor application, K. Kitamura, K. Nagata, M. Shibui, N. Tachikawa and M. Araki 258–263 (1998) 275
- Influence of brazing conditions on the strength of brazed joints of alumina dispersion-strengthened copper to 316 stainless steel, H. Nishi and K. Kikuchi 258–263 (1998) 281
- Development of divertor plate with CFCs bonded onto DSCu cooling tube for fusion reactor application, S. Suzuki, T. Suzuki, M. Araki, K. Nakamura and M. Akiba 258–263 (1998) 318
- Material properties and design requirements for copper alloys used in ITER, J.W. Davis and G.M. Kalinin 258–263 (1998) 323
- Comparative analysis of copper alloys for the heat sink of plasma facing components in ITER, G. Kalinin and R. Matera 258–263 (1998) 345
- Assessment of the corrosion behaviour of structural materials in the water coolant of ITER, V. Belous, G. Kalinin, P. Lorenzetto and S. Velikopolskiy 258–263 (1998) 351
- Effect of specimen type and size on fracture resistance curve determination for CuCrZr alloy, P. Karjalainen-Roikonen, M. Pyykkönen and S. Tähtinen 258–263 (1998) 462
- The thermal shock resistance of a joining material of C/C composite and copper, A. Kurumada, T. Oku, Y. Imamura, K. Kawamata, O. Motojima, N. Noda and B. McEnaney 258–263 (1998) 821
- Microstructural evolution in Cu–Al<sub>25</sub> alloy under 300 keV Cu<sup>+</sup> ion irradiation, J. Li, H. Xu, J. Yu, B. Wu and Q. He 258–263 (1998) 945
- Fracture strengths of HIPed DS-Cu/SS joints for ITER shielding blanket/first wall, T. Hatano, M. Kanari, S. Sato, M. Gotoh, K. Furuya, T. Kuroda, M. Saito, M. Enoeda and H. Takatsu 258–263 (1998) 950
- Effects of solid transmutants and helium in copper studied by mixed-spectrum neutron irradiation, T. Muroga, H. Watanabe and N. Yoshida 258–263 (1998) 955
- The effect of bonding and bakeout thermal cycles on the properties of copper alloys irradiated at 100°C, D.J. Edwards, B.N. Singh, P. Toft and M. Eldrup 258–263 (1998) 978
- Calculation and measurement of helium generation and solid transmutants in Cu–Zn–Ni alloys, L.R. Greenwood, B.M. Oliver, F.A. Garner and T. Muroga 258–263 (1998) 985
- Effect of neutron irradiation on fracture toughness behaviour of copper alloys, S. Tähtinen, M. Pyykkönen, P. Karjalainen-Roikonen, B.N. Singh and P. Toft 258–263 (1998) 1010
- The effect of neutron dose, irradiation and testing temperature on mechanical properties of copper alloys, S.A. Fabritsiev, A.S. Pokrovsky, D.J. Edwards and S.J. Zinkle 258–263 (1998) 1015
- Influence of composition, heat treatment and neutron irradiation on the electrical conductivity of copper alloys, M. Eldrup and B.N. Singh 258–263 (1998) 1022
- Hydrogen and deuterium transport and inventory parameters in a Cu–0.65Cr–0.08Zr alloy for fusion reactor applications, E. Serra and A. Perujo 258–263 (1998) 1028
- Changes of structure and properties of yttrium doped copper at deformation, annealing and irradiation, I.M. Neklyudov, V.N. Voyevodin, S.V. Shevtchenko, V.F. Rybalko, N.V. Kamychantchenko and I.A. Belenko 258–263 (1998) 1040
- Material damage and thermal response of LHD divertor mock-ups by high heat flux, K. Tokunaga, N. Yoshida, Y. Kubota, N. Noda, O. Motojima, D.L. Youchison, R.D. Watson, R.E. Nygren, J.M. McDonald and T.D. Marshall 258–263 (1998) 1097
- Development and characterisation of Be/Glidcop<sup>®</sup> joints obtained by hot isostatic pressing for high temperature working conditions, F. Saint-Antonin, D. Barberi, G. Le Marois and A. Lailié 258–263 (1998) 1973
- Irradiation resistance of DS copper/stainless steel joints fabricated by friction welding methods, S.A. Fabritsiev, A.S. Pokrovsky, M. Nakamichi and H. Kawamura 258–263 (1998) 2030
- The effect of neutron irradiation on mechanical properties of Cu/SS joints for ITER applications, S.A. Fabritsiev, A.S. Pokrovsky, D.J. Edwards, S.J. Zinkle and A.F. Rowcliffe 258–263 (1998) 2069

**Creep and Stress Relaxation**

- Irradiation creep and void swelling of austenitic stainless steels at low displacement rates in light water energy systems, F.A. Garner and M.B. Toloczko 251 (1997) 252
- Relationship between in-reactor stress relaxation and irradiation creep, J.P. Foster, E.R. Gilbert, K. Bunde and D.L. Porter 252 (1998) 89
- Irradiation-enhanced creep in SiC: data summary and planned experiments, C.A. Lewinsohn, M.L. Hamilton, G.E. Youngblood, R.H. Jones, F.A. Garner, S.L. Hecht and A. Kohyama 253 (1998) 36
- Influence of sulfur content on the thermal creep of zirconium alloy tubes at 400°C, D. Charquet, J. Senevat and J.P. Marcon 255 (1998) 78
- Stress state dependence of transient irradiation creep in 20% cold worked 316 stainless steel, J.P. Foster, K. Bunde and E.R. Gilbert 257 (1998) 118
- Fracture strengths of HIPed DS-Cu/SS joints for ITER shielding blanket/first wall, T. Hatano, M. Kanari, S. Sato, M. Gotoh, K. Furuya, T. Kuroda, M. Saito, M. Enoda and H. Takatsu 258–263 (1998) 950
- Deformation and fracture of Cu alloy–stainless steel layered structures under dynamic loading, J.H. McCoy, A.S. Kumar and J.F. Stubbins 258–263 (1998) 1033
- Irradiation creep of various ferritic alloys irradiated at ~400°C in the PFR and FFTF reactors, M.B. Toloczko, F.A. Garner and C.R. Eichelzer 258–263 (1998) 1163
- Effect of thickness and loading mode on the fracture properties of V–4Cr–4Ti at room temperature, H. Li, R.J. Kurtz and R.H. Jones 258–263 (1998) 1386
- Dynamic finite element analysis of third size charpy specimens of V–4Cr–4Ti, M.R. Lansberry, R.J. Kurtz, A.S. Kumar and G.E. Mueller 258–263 (1998) 1392
- Analysis and measurement of residual stress distribution of vanadium/ceramics joints for fusion reactor applications, Y. Nemoto, K. Ueda, M. Satou, A. Hasegawa and K. Abe 258–263 (1998) 1517
- Fiber creep rate and high-temperature properties of SiC/SiC composites, C.A. Lewinsohn, R.H. Jones, G.E. Youngblood and C.H. Henager Jr. 258–263 (1998) 1557
- Flux and composition dependence of irradiation creep of austenitic alloys irradiated in PFR at ~420°C, M.B. Toloczko, F.A. Garner, J. Standing, B. Munro and S. Adaway 258–263 (1998) 1606
- Swelling and void-induced embrittlement of austenitic stainless steel irradiated to 73–82 dpa at 335–365°C, S.I. Porollo, A.N. Vorobjev, Y.V. Konobeev, A.M. Dvoriahin, V.M. Krigan, N.I. Budylnkin, E.G. Mironova and F.A. Garner 258–263 (1998) 1613
- Irradiation creep and stress-enhanced swelling of Fe–16Cr–15Ni–Nb austenitic stainless steel in BN-350, A.N. Vorobjev, N.I. Budylnkin, E.G. Mironova, S.I. Porollo, Y.V. Konobeev and F.A. Garner 258–263 (1998) 1618
- The dependence of irradiation creep in austenitic alloys on displacement rate and helium to dpa ratio, F.A. Garner, M.B. Toloczko and M.L. Grossbeck 258–263 (1998) 1718
- Simulation of helium bubble behavior in neutron-irradiated stainless steel during welding, S. Kawano, R. Sumiya and K. Fukuya 258–263 (1998) 2008
- Comparison of stress corrosion cracking susceptibility of thermally-sensitized and proton-irradiated 304 stainless steel using electrochemical noise techniques, L.H. Wang, J.J. Kai, C.H. Tsai and C. Fong 258–263 (1998) 2046

**Crystallographic Properties**

- Topological modeling of amorphized tetrahedral ceramic network structures, C.E. Jesurum, V. Pulim and L.W. Hobbs 253 (1998) 87
- X-ray absorption fine structure of aged, Pu-doped glass and ceramic waste forms, N.J. Hess, W.J. Weber and S.D. Conradson 254 (1998) 175
- The effect of the cracking plane crystallographic orientation on the stress corrosion cracking process, E. Ciocan, M. Ignat and E. Gheorghiu 255 (1998) 1
- Materials design data for fusion reactors, A.A.F. Tavassoli 258–263 (1998) 85
- Calculation of radiation-induced deformation in the ITER vacuum vessel, J. Nagakawa 258–263 (1998) 289
- Improvement of hydriding properties of a Zr<sub>1</sub>Ni<sub>1</sub> alloy by adding third transition metals for tritium recovery, T. Kabutomori, Y. Wakisaka, K. Tsuchiya and H. Kawamura 258–263 (1998) 481
- Development of oxide dispersion strengthened ferritic steels for fusion, D.K. Mukhopadhyay, F.H. Froes and D.S. Gelles 258–263 (1998) 1209
- Irradiation creep of vanadium-base alloys, H. Tsai, H. Matsui, M.C. Billone, R.V. Strain and D.L. Smith 258–263 (1998) 1471

- Analysis and measurement of residual stress distribution of vanadium/ceramics joints for fusion reactor applications, Y. Nemoto, K. Ueda, M. Satou, A. Hasegawa and K. Abe 258–263 (1998) 1517
- Light ion irradiation creep of SiC fibers in torsion, R. Scholz 258–263 (1998) 1533
- The effect of hold-times on the fatigue behavior of type AISI 316L stainless steel under deuteron irradiation, R. Scholz and R. Mueller 258–263 (1998) 1600
- Effect of combined addition of Ti and P on creep rupture properties of helium implanted Fe–25%Ni–15%Cr alloy, N. Yamamoto, J. Nagakawa, Y. Murase and H. Shiraishi 258–263 (1998) 1634
- Cs boltwoodite obtained by ion exchange from single crystals: Implications for radionuclide release in a nuclear repository, P.C. Burns 265 (1999) 218
- Defects and Defect Structures** (*excludes by Irradiation*)
- Computer simulation of vacancy and interstitial clusters in bcc and fcc metals, Yu.N. Osetsky, M. Victoria, A. Serra, S.I. Golubov and V. Priego 251 (1997) 34
- Topological modeling of amorphized tetrahedral ceramic network structures, C.E. Jesurum, V. Pulim and L.W. Hobbs 253 (1998) 87
- Dielectric spectroscopy of alumina ceramics over a wide frequency range, R. Vila, M. González, J. Mollá and A. Ibarra 253 (1998) 141
- Clustering and ordering of nitrogen in nuclear grade 316LN austenitic stainless steel, P. Shankar, D. Sundararaman and S. Ranganathan 254 (1998) 1
- Hydrogen and vacancies in the tokamak plasma-facing material beryllium, H. Krimmel and M. Fähnle 255 (1998) 72
- Atomistic modeling of finite-temperature properties of crystalline  $\beta$ -SiC. II. Thermal Conductivity and effects of point defects, J. Li, L. Porter and S. Yip 255 (1998) 139
- Materials design data for fusion reactors, A.A.F. Tavassoli 258–263 (1998) 85
- Beryllium R&D for blanket application, M. Dalle Donne, G.R. Longhurst, H. Kawamura and F. Scaffidi-Argentina 258–263 (1998) 601
- Low cycle fatigue properties of 8Cr–2WVTa ferritic steel at elevated temperatures, T. Ishii, K. Fukaya, Y. Nishiyama, M. Suzuki and M. Eto 258–263 (1998) 1183
- Performance of V–4Cr–4Ti material exposed to the DIII-D tokamak environment, H. Tsai, W.R. Johnson, D.L. Smith, J.P. Smith and H.M. Chung 258–263 (1998) 1466
- Irradiation creep of vanadium-base alloys, H. Tsai, H. Matsui, M.C. Billone, R.V. Strain and D.L. Smith 258–263 (1998) 1471
- Nucleation and growth of dislocation loops in austenitic stainless steels irradiated by fission and fusion neutrons, Q. Xu, N. Yoshida and T. Yoshiie 258–263 (1998) 1730
- Radiation effects on Al<sub>2</sub>O<sub>3</sub> irradiated with H<sub>2</sub><sup>+</sup> ions, S. Furuno, N. Sasajima, K. Hojou, K. Izui, H. Otsu and T. Matsui 258–263 (1998) 1817
- Photon emission induced by fusion neutrons on optical window materials, F. Sato, T. Iida, Y. Oyama, F. Maekawa and Y. Ikeda 258–263 (1998) 1897
- Hydrogen generation from steam reaction with tungsten, G.R. Smolik, K.A. McCarthy, D.A. Petti and K. Coates 258–263 (1998) 1979
- Nuclear fuel pellet inspection using artificial neural networks, S. Keyvan, X. Song and M. Kelly 264 (1999) 141
- A many body potential for  $\alpha$ -Zr. Application to defect properties, R.C. Pasianot and A.M. Monti 264 (1999) 198
- Modelling of high temperature superionic transition of uranium dioxide crystals, L.V. Matveev and M.S. Veshchunov 265 (1999) 285
- Deformation**
- Strains and stresses in ceramics by defect accumulation, P. Jung, Z. Zhu and J. Chen 251 (1997) 276
- Atomic processes during damage production and defect retention, N.M. Ghoniem 258–263 (1998) 113
- Examination of indentation geometry-constitutive behaviour relations with confocal microscopy and finite element modeling, C. Santos, G.R. Odette, G.E. Lucas and T. Yamamoto 258–263 (1998) 452
- Damages of hot-pressed boron carbide during solid target boronization in Uragan-3M torsatron, G.P. Glazunov, E.D. Volkov, O.S. Pavlichenko, V.S. Voitsenya, N.I. Nazarov, V.G. Kotenko, S. Tanaka and O. Motojima 258–263 (1998) 682
- Behaviour of Si and Ti doped carbon composites under exposure to the deuterium plasma, M. Rubel, N. Almqvist, P. Wienhold and C.H. Wu 258–263 (1998) 787
- Changes of structure and properties of yttrium doped copper at deformation, annealing and irradiation, I.M. Neklyudov, V.N. Voyevodin, S.V. Shevtchenko, V.F. Rybalko,

- N.V. Kamychantchenko and I.A. Belenko 258–263 (1998) 1040
- Helium-vacancy clustering in V-4Cr-4Ti at elevated temperatures, A.V. Fedorov, A. van Veen and A.I. Ryazanov 258–263 (1998) 1396
- Influence of thermal treatment on helium trapping at fine-size precipitates in V-4Cr-4Ti, A. van Veen, A.V. Fedorov and A.I. Ryazanov 258–263 (1998) 1400
- R&D of oxide dispersion strengthened ferritic martensitic steels for FBR, S. Ukai, T. Nishida, T. Okuda and T. Yoshitake 258–263 (1998) 1745
- Studies on hot hardness of Zr and its alloys for nuclear reactors, T.R.G. Kutty, K. Ravi and C. Ganguly 265 (1999) 91
- Diffusion**
- Computer simulation of vacancy and interstitial clusters in bcc and fcc metals, Yu.N. Osetsky, M. Victoria, A. Serra, S.I. Golubov and V. Priego 251 (1997) 34
- Heat and mass transport in nanoscale phase transitions induced by collision cascades, A. Caro, M. Alurralde, R. Saliba and M. Caro 251 (1997) 72
- Atom transport under ion irradiation, P. Fielitz, M.-P. Macht, V. Naundorf and H. Wollenberger 251 (1997) 123
- Defect production in ceramics, S.J. Zinkle and C. Kinoshita 251 (1997) 200
- Studies on the kinetics of oxidation of  $\text{Pu}_y\text{Th}_{1-y}\text{O}_{2-x}$  ( $y = 0.2, 0.3$  and  $0.7$ ) in air, S.K. Sali, S. Sampath and V. Venugopal 252 (1998) 131
- Effects of ionizing radiation in ceramics, R. Devanathan, K.E. Sickafus, W.J. Weber and M. Nastasi 253 (1998) 113
- Microstructure of  $\text{Al}_2\text{O}_3$  and  $\text{MgAl}_2\text{O}_4$  irradiated at low temperatures, S.J. Zinkle and G.P. Pells 253 (1998) 120
- Effect of additives ( $\text{Cr}_2\text{O}_3$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{SiO}_2$ ,  $\text{MgO}$ ) on diffusional release of  $^{133}\text{Xe}$  from  $\text{UO}_2$  fuels, S. Kashibe and K. Ue 254 (1998) 234
- Hydrogen isotopes transport parameters in fusion reactor materials, E. Serra, G. Benamati and O.V. Ogorodnikova 255 (1998) 105
- Thermal diffusion and Soret effect in  $(\text{U}, \text{Me})\text{O}_{2+\delta}$ : the heat of transport of oxygen, J. Janek and H. Timm 255 (1998) 116
- Swelling modification by one-dimensional diffusion of cascade-produced small interstitial clusters, V.A. Borodin and A.I. Ryazanov 256 (1998) 47
- Observation of kinetics of  $\gamma$  zirconium hydride formation in Zr-2.5Nb by neutron diffraction, W.M. Small, J.H. Root and D. Khatamian 256 (1998) 102
- The observation of enrichment of O and Zr and depletion of Nb in the near surface region of a  $\beta$ -(Zr-20%Nb) alloy, C. Zhang and P.R. Norton 257 (1998) 1
- Thermotransport of hydrogen in Zircaloy-4 and modified Zircaloy-4, H.S. Hong, S.J. Kim and K.S. Lee 257 (1998) 15
- Interdiffusion studies in titanium-304 stainless steel system, G.B. Kale, R.V. Patil and P.S. Gawade 257 (1998) 44
- First study of uranium self-diffusion in  $\text{UO}_2$  by SIMS, A.C.S. Sabioni, W.B. Ferraz and F. Millot 257 (1998) 180
- Tritium release behavior from neutron-irradiated  $\text{Li}_2\text{TiO}_3$  single crystal, T. Tanifuji, D. Yamaki, S. Nasu and K. Noda 258–263 (1998) 543
- Dynamical simulation for sputtering of  $\text{B}_4\text{C}$ , T. Kenmotsu, T. Kawamura, T. Ono and Y. Yamamura 258–263 (1998) 729
- Influence of loading method on hydrogen retention and release from beryllium, A.K. Klepikov, I.L. Tazhibaeva, O.G. Romanenko, Y.V. Chikhray, V.P. Shestakov and E.A. Kenzhin 258–263 (1998) 798
- Counter-diffusion and counter-permeation of deuterium and hydrogen through palladium, K. Kizu and T. Tanabe 258–263 (1998) 1133
- Quantitative visualization of tritium distribution in vanadium by tritium radioluminography, H. Saitoh, T. Hishi, T. Misawa, T. Ohnishi, Y. Noya, T. Matsuzaki and T. Watanabe 258–263 (1998) 1404
- A many body potential for  $\alpha$ -Zr. Application to defect properties, R.C. Pasianot and A.M. Monti 264 (1999) 198
- A mechanism for the hydrogen uptake process in zirconium alloys, B. Cox 264 (1999) 283
- Influence of stress developed due to oxide layer formation on the oxidation kinetics of Zr-2.5%Nb alloy, A.P. Zhilyaev and J.A. Szpunar 264 (1999) 327
- Dissolution of  $\text{ZrO}_2$  in molten Zircaloy-4, P.J. Hayward and I.M. George 265 (1999) 69
- Determination of the lithium diffusion coefficient in irradiated boron carbide pellets, X. Deschanel, D. Simeone and J.P. Bonal 265 (1999) 321
- Effect of particle size on the diffusion behavior of some radionuclides in compacted bentonite, T. Kozaki, Y. Sato, M. Nakajima, H. Kato, S. Sato and H. Ohashi 270 (1999) 265
- Dislocations**
- Segregation of cascade induced interstitial loops at dislocations: possible effect on initiation of plastic

- deformation. H. Trinkaus, B.N. Singh and A.J.E. Foreman 251 (1997) 172
- Atomic processes during damage production and defect retention, N.M. Ghoniem 258–263 (1998) 113
- Optimization of HIP bonding conditions for ITER shielding blanket/first wall made from austenitic stainless steel and dispersion strengthened copper alloy, S. Sato, T. Hatano, T. Kuroda, K. Furuya, S. Hara, M. Enoda and H. Takatsu 258–263 (1998) 265
- Tritium behavior in eroded dust and debris of plasma-facing materials, A. Hassanein, B. Wiechers and I. Konkashbaev 258–263 (1998) 295
- A review of the US joining technologies for plasma facing components in the ITER fusion reactor, B.C. Odegard Jr., C.H. Cadden, R.D. Watson and K.T. Slattery 258–263 (1998) 329
- Anomalous exchange of deuterium implanted into an oxide ceramic for protium in air vapor, B. Tsuchiya, E. Iizuka, K. Soda, K. Morita and H. Iwahara 258–263 (1998) 555
- Deuterium migration in titanium during deuterium irradiation observed by proton spectra of the  $d(d,p)t$  reaction, H. Kudo, Y. Kosaku, Y. Ando, M. Hiraga and T. Sekine 258–263 (1998) 622
- Derivation of hydrogen transport parameters in carbon fibre composites by modelling transient release in isovolumetric desorption experiments, L.A. Sedano, S. Alberici, A. Perujo, J. Camposilvan and K. Douglas 258–263 (1998) 662
- Deuterium accumulation in beryllium oxide layer exposed to deuterium atoms, V.M. Sharapov, V.K. Alimov and L.E. Gavrilov 258–263 (1998) 803
- Hydrogen and deuterium transport and inventory parameters in a Cu–0.65Cr–0.08Zr alloy for fusion reactor applications, E. Serra and A. Perujo 258–263 (1998) 1028
- Influence of coexisting hydrogen isotopes on diffusion of tritium in niobium, K. Sakamoto, T. Higuchi, K. Hashizume and M. Sugisaki 258–263 (1998) 1073
- Tritium retention in CX-2002U and methods to reduce tritium inventory, T. Tadokoro, S. O'hira, M. Nishi and K. Isobe 258–263 (1998) 1092
- Ion beam analysis of deuterium-implanted  $Al_2O_3$  and tungsten, R.G. Macaulay-Newcombe and D.A. Thompson 258–263 (1998) 1109
- Temperature dependence of bubble structure in 316L stainless steel irradiated with 2.5 MeV He ions, C.H. Zhang, K.Q. Chen, Y.S. Wang and J.G. Sun 258–263 (1998) 1623
- Nucleation and growth of dislocation loops in austenitic stainless steels irradiated by fission and fusion neutrons, Q. Xu, N. Yoshida and T. Yoshiie 258–263 (1998) 1730
- Divertor Materials**
- Damage accumulation under low energy hydrogen ion irradiation, N. Yoshida and R. Sakamoto 251 (1997) 284
- Impacts of charge-exchange neutrals on degradation of plasma-facing materials, N. Yoshida and Y. Hirooka 258–263 (1998) 173
- Development and material testing of OF-Cu/DS-Cu/OF-Cu triplex tube (dispersion strengthened copper clad with oxygen free-copper) and trial fabrication of a vertical target mock-up for ITER divertor, Y. Gotoh, H. Okamura, S. Kajiuura, M. Kumagai, T. Ando, M. Akiba, S. Suzuki and T. Suzuki 258–263 (1998) 271
- Influence of brazing conditions on the strength of brazed joints of alumina dispersion-strengthened copper to 316 stainless steel, H. Nishi and K. Kikuchi 258–263 (1998) 281
- Effect of specimen type and size on fracture resistance curve determination for CuCrZr alloy, P. Karjalainen-Roikonen, M. Pyykkönen and S. Tähtinen 258–263 (1998) 462
- Dynamical simulation for sputtering of  $B_4C$ , T. Kenmotsu, T. Kawamura, T. Ono and Y. Yamamura 258–263 (1998) 729
- Overview of EU CFCs development for plasma facing materials, C.H. Wu, C. Alessandrini, P. Bonal, H. Grote, R. Moormann, M. Rödig, J. Roth, H. Werle and G. Vieider 258–263 (1998) 833
- High energy neutron and charged particle irradiation effects on thermo-mechanical properties of carbon-carbon composites for divertor applications, M. Eto, S. Baba, M. Ishihara and H. Ugachi 258–263 (1998) 843
- Experiments with tungsten limiters in TEXTOR-94, V. Philipps, A. Pospieszczyk, A. Huber, A. Kirschner, J. Rapp, B. Schweer, P. Wienhold, G. van Oost, G. Sergienko, T. Tanabe, K. Ohya, M. Wada, T. Ohgo and M. Rubel 258–263 (1998) 858
- Radiation embrittlement of Mo–Re welds under low-temperature irradiation in the SM reactor, V.P. Chakin, F. Morito, V.A. Kazakov, Y.D. Goncharenko and Z.E. Ostrovsky 258–263 (1998) 883

- The effective secondary electron yield in the space-charge limited condition, I.V. Tsvetkov and T. Tanabe 258–263 (1998) 927
- The effect of bonding and bakeout thermal cycles on the properties of copper alloys irradiated at 100°C, D.J. Edwards, B.N. Singh, P. Toft and M. Eldrup 258–263 (1998) 978
- Tritium retention study of tungsten using various hydrogen isotope irradiation sources, S. O'hira, A. Steinér, H. Nakamura, R. Causey, M. Nishi and S. Willms 258–263 (1998) 990
- High heat load properties of tungsten coated carbon materials, K. Tokunaga, N. Yoshida, N. Noda, T. Sogabe and T. Kato 258–263 (1998) 998
- High-temperature residual strain measurements, using neutron diffraction, in brazed Cu/CFC graphite divertor structures, M. Ceretti, R. Coppola, E. Di Pietro and C. Nardi 258–263 (1998) 1005
- Effect of neutron irradiation on fracture toughness behaviour of copper alloys, S. Tähtinen, M. Pyykkönen, P. Karjalainen-Roikonen, B.N. Singh and P. Toft 258–263 (1998) 1010
- Material damage and thermal response of LHD divertor mock-ups by high heat flux, K. Tokunaga, N. Yoshida, Y. Kubota, N. Noda, O. Motojima, D.L. Youchison, R.D. Watson, R.E. Nygren, J.M. McDonald and T.D. Marshall 258–263 (1998) 1097
- Microstructure assessment of the low activation ferritic/martensitic steel F82H, R. Schäublin, P. Spätig and M. Victoria 258–263 (1998) 1178
- Microstructure of V-4Cr-4Ti alloy after low-temperature irradiation by ions and neutrons, J. Gazda, M. Meshii and H.M. Chung 258–263 (1998) 1437
- Radiation swelling decrease by means of explosive wave, V.M. Kosenkov, S.A. Vorobjev and A.V. Kolesnikov 258–263 (1998) 1809
- Magnetic non-destructive evaluation of accumulated fatigue damage in ferromagnetic steels for nuclear plant component, K. Morishita, A. Gilanyi, T. Sukegawa, T. Uesaka and K. Miya 258–263 (1998) 1946
- Dosimetry**
- Design and material selection for ITER first wall/blanket, divertor and vacuum vessel, K. Ioki, V. Barabash, A. Cardella, F. Elio, Y. Gohar, G. Janeschitz, G. Johnson, G. Kalinin, D. Lousteau, M. Onozuka, R. Parker, G. Sannazzaro and R. Tivey 258–263 (1998) 74
- Carbon fiber composites application in ITER plasma facing components, V. Barabash, M. Akiba, J.P. Bonal, G. Federici, R. Matera, K. Nakamura, H.D. Pacher, M. Rödiger, G. Vieider and C.H. Wu 258–263 (1998) 149
- Effects of interface edge configuration on residual stress in the bonded structures for a divertor application, K. Kitamura, K. Nagata, M. Shibui, N. Tachikawa and M. Araki 258–263 (1998) 275
- Assessment of tungsten for use in the ITER plasma facing components, J.W. Davis, V.R. Barabash, A. Makhankov, L. Plöchl and K.T. Slattery 258–263 (1998) 308
- Development of divertor plate with CFCs bonded onto DSCu cooling tube for fusion reactor application, S. Suzuki, T. Suzuki, M. Araki, K. Nakamura and M. Akiba 258–263 (1998) 318
- Material properties and design requirements for copper alloys used in ITER, J.W. Davis and G.M. Kalinin 258–263 (1998) 323
- A review of the US joining technologies for plasma facing components in the ITER fusion reactor, B.C. Odegard Jr., C.H. Cadden, R.D. Watson and K.T. Slattery 258–263 (1998) 329
- Comparative analysis of copper alloys for the heat sink of plasma facing components in ITER, G. Kalinin and R. Matera 258–263 (1998) 345
- Material damage to beryllium, carbon, and tungsten under severe thermal shocks, J. Linke, R. Duwe, A. Gervash, R.H. Qian, M. Rödiger and A. Schuster 258–263 (1998) 634
- Behaviour of plasma facing materials under VDE, M. Merola, M. Rödiger, J. Linke, R. Duwe and G. Vieider 258–263 (1998) 653
- On the use of flat tile armour in high heat flux components, M. Merola and G. Vieider 258–263 (1998) 672
- Erosion of carbon-based materials in a steady-state deuterium plasma, B.I. Khripunov, V.B. Petrov, Yu.V. Martynenko, A.M. Litnovsky, N.V. Antonov and V.V. Shapkin 258–263 (1998) 700
- Steady state wall pumping performance of pebble drop divertor, M. Isobe, Y. Ohtsuka, Y. Ueda and M. Nishikawa 258–263 (1998) 745
- Disruption and sputtering erosions on SiC doped CFC, K. Nakamura, S. Suzuki, M. Dairaku, K. Yokoyama, Y. Okumura, T. Suzuki, R. Jimbou, V. Bandourko and M. Akiba 258–263 (1998) 828

- Microstructure of tantalum irradiated with heavy ions, K. Yasunaga, H. Watanabe, N. Yoshida, T. Muroga and N. Noda 258–263 (1998) 879
- Deuterium retention in tungsten for fusion use, A.A. Haasz, J.W. Davis, M. Poon and R.G. Macaulay-Newcombe 258–263 (1998) 889
- Tungsten self-sputtering yield with different incidence angles and target temperatures, V. Bandourko, R. Jimbou, K. Nakamura and M. Akiba 258–263 (1998) 917
- Performance of tungsten coatings as plasma facing components used in ASDEX Upgrade, H. Maier, S. Kötterl, K. Krieger, R. Neu, M. Balden and ASDEX Upgrade-Team 258–263 (1998) 921
- Microstructural evolution in Cu–Al25 alloy under 300 keV Cu<sup>+</sup> ion irradiation, J. Li, H. Xu, J. Yu, B. Wu and Q. He 258–263 (1998) 945
- Testing of actively cooled high heat flux mock-ups, M. Rödíg, R. Duwe, W. Kühnlein, J. Linke, M. Scheerer, I. Smid and B. Wiechers 258–263 (1998) 967
- Calculation and measurement of helium generation and solid transmutants in Cu–Zn–Ni alloys, L.R. Greenwood, B.M. Oliver, F.A. Garner and T. Muroga 258–263 (1998) 985
- Thermal desorption analysis of beryllium tile pieces from JET, R.G. Macaulay-Newcombe, D.A. Thompson and J.P. Coad 258–263 (1998) 1114
- Experimental modelling of plasma-graphite surface interaction in ITER, Y.V. Martynenko, M.I. Guseva, V.I. Vasiliev, V.M. Gureev, L.S. Danelyan, V.E. Neumoin, V.B. Petrov, B.I. Khripunov, Y.A. Sokolov, O.V. Stativkina, V.G. Stolyarova and V.M. Strunnikov 258–263 (1998) 1120
- Formation of HD molecules during desorption of deuterium from solids, A.A. Pisarev, Y.V. Borisyuk, A.V. Varava and V.N. Tsyplakov 258–263 (1998) 1138
- Performance of V–4Cr–4Ti material exposed to the DIII-D tokamak environment, H. Tsai, W.R. Johnson, D.L. Smith, J.P. Smith and H.M. Chung 258–263 (1998) 1466
- Development and characterisation of Be/Glidcop<sup>®</sup> joints obtained by hot isostatic pressing for high temperature working conditions, F. Saint-Antonin, D. Barberi, G. Le Marois and A. Lailé 258–263 (1998) 1973
- Ductile–brittle transition**
- Development of tungsten armor and bonding to copper for plasma-interactive components, I. Smid, M. Akiba, G. Vieider and L. Plöchl 258–263 (1998) 160
- Deformation analysis of small size bend specimens by FEM calculation to estimate irradiation induced embrittlement of Mo and W, K. Ueda, M. Satou, A. Hasegawa and K. Abe 258–263 (1998) 466
- Embrittlement behaviour of different international low activation alloys after neutron irradiation, M. Rieth, B. Dafferner and H.-D. Röhrig 258–263 (1998) 1147
- Grain boundary chemistry and heat treatment effects on the ductile-to-brittle transition behavior of vanadium alloys, R.J. Kurtz, M.L. Hamilton and H. Li 258–263 (1998) 1375
- Dynamic finite element analysis of third size charpy specimens of V–4Cr–4Ti, M.R. Lansberry, R.J. Kurtz, A.S. Kumar and G.E. Mueller 258–263 (1998) 1392
- Thermomechanical characteristics of low activation chromium and chromium alloys, H. Stamm, M.R. Bonansinga, F. Dos Santos Marques, P. Hähner, H. Kolbe and A. Volcan 258–263 (1998) 1756
- Electrical Properties**
- Radiation-induced electrical conductivity in aluminium nitride ceramic, U. Ulmanis and E. Palcevskis 252 (1998) 195
- The effect of rhenium on the radiation damage resistivity of Mo–Re alloys, S.A. Fabritsiev and A.S. Pokrovsky 252 (1998) 216
- The electrical conductivity of zircaloy oxide films, M.M.R. Howlander, K. Shiiyama, C. Kinoshita, M. Kutsuwada and M. Inagaki 253 (1998) 149
- Electrical conductivity change in single crystal Al<sub>2</sub>O<sub>3</sub> and MgO under neutron and gamma-ray irradiation, T. Tanifuji, Y. Katano, T. Nakazawa and K. Noda 253 (1998) 156
- Radiation-induced electrical degradation: an effect of surface conductance and microcracking, W. Kesternich 253 (1998) 167
- Electrical and optical characteristics of dielectrics for fusion use under irradiation, V.M. Chernov, G.L. Khorasanov, O.A. Plaksin, V.A. Stepanov, P.A. Stepanov and V.A. Belyakov 253 (1998) 175
- Compatibility of insulating ceramic with liquid breeders, T. Terai, T. Mitsuyama, T. Yoneoka and S. Tanaka 253 (1998) 219
- The kinetics of formation and growth of TiC precipitates in Ti-modified stainless steel studied by positron

- annihilation spectroscopy, P. Gopalan, R. Rajaraman, B. Viswanathan, K.P. Gopinathan and S. Venkadesan 256 (1998) 229
- General radiation problems for insulating materials in future fusion devices, E.R. Hodgson 258–263 (1998) 226
- The effective secondary electron yield in the space-charge limited condition, I.V. Tsvetkov and T. Tanabe 258–263 (1998) 927
- Influence of composition, heat treatment and neutron irradiation on the electrical conductivity of copper alloys, M. Eldrup and B.N. Singh 258–263 (1998) 1022
- R&D of oxide dispersion strengthened ferritic martensitic steels for FBR, S. Ukai, T. Nishida, T. Okuda and T. Yoshitake 258–263 (1998) 1745
- Role of environment on the surface degradation of Wesgo AL995, A. Moroño, E.R. Hodgson 258–263 (1998) 1798
- Pre- and post-irradiation studies on mm-wave losses in reference window materials for electron cyclotron wave systems, R. Heidinger, A. Ibarra and J. Molla 258–263 (1998) 1822
- Radiation effects on insulating gases for the ITER NBI system, E.R. Hodgson and A. Moroño 258–263 (1998) 1827
- Electrical conductivity and current-voltage characteristics of alumina with or without neutron and electron irradiation, K. Shiiyama, M.M.R. Howlader, S.J. Zinkle, T. Shikama, M. Kutsuwada, S. Matsumura and C. Kinoshita 258–263 (1998) 1848
- Long term degradation of electrical insulation of  $Al_2O_3$  under high flux fission reactor irradiation, T. Shikama and S.J. Zinkle 258–263 (1998) 1861
- Electrical properties of ceramics during reactor irradiation, T. Shikama, S.J. Zinkle, K. Shiiyama, L.L. Snead and E.H. Farnum 258–263 (1998) 1867
- Characterization of  $Y_2O_3$  coating under neutron irradiation, M. Nakamichi and H. Kawamura 258–263 (1998) 1873
- Radiation effects on dielectric losses of Au-doped silicon, J. Molla, R. Vila, R. Heidinger and A. Ibarra 258–263 (1998) 1884
- Radiation resistance of amorphous silicon in optoelectric properties under proton bombardment, N. Kishimoto, H. Amekura, K. Kono and C.G. Lee 258–263 (1998) 1908
- Defect production and recovery in high- $T_c$  superconductors irradiated with electrons and ions at low temperature, N. Ishikawa, Y. Chimi, A. Iwase, K. Tsuru, O. Michikami 258–263 (1998) 1924
- Electrical properties of neutron-irradiated oxygen potential sensors using stabilized zirconia solid electrolyte, N. Hiura, Y. Endo, T. Yamaura, T. Hoshiya, M. Niimi, J. Saito, S. Sozawa, N. Ooka and M. Kobiyama 258–263 (1998) 2041
- Electronic ion energy loss calculations on the basis of the binary encounter approximation, C.A. Ordóñez, D.R. Bickel, V.C. Venezia, F.D. McDaniel, S.E. Matteson and M.I. Molina 264 (1999) 133
- Preshock-induced phase transition in spalled U-0.75 wt% Ti, A.K. Zurek 264 (1999) 155
- In situ measurement of electrical conductivity of Zircaloy oxides and their formation mechanism under electron irradiation, M.M.R. Howlader, C. Kinoshita, K. Shiiyama, M. Kutsuwada and M. Inagaki 265 (1999) 100
- Electron Irradiation**
- Studies of defects and defect agglomerates by positron annihilation spectroscopy, M. Eldrup and B.N. Singh 251 (1997) 132
- Defect production in ceramics, S.J. Zinkle and C. Kinoshita 251 (1997) 200
- Defect interaction processes controlling the accumulation of defects produced by high energy recoils, M. Kiritani 251 (1997) 237
- Post-yield strain hardening behavior as a clue to understanding irradiation hardening, R.J. DiMelfi, D.E. Alexander and L.E. Rehn 252 (1998) 171
- The effect of composition, processing conditions, and irradiation, on lattice defects in spinel ceramics, T.A. Bazilevskaya, V.T. Gritsyna, D.V. Orlinski, L.V. Udalova and A.V. Voitsenya 253 (1998) 133
- Identification of the nature of small point defect clusters in neutron irradiated Fe-16Ni-15Cr by means of electron irradiation, M. Horiki, S. Arai, Y. Satoh and M. Kiritani 255 (1998) 165
- A comparison of the effect of electron irradiation and of thermal aging on the hardness of FeCu binary alloys, A. Barbu, M.H. Mathon, F. Maury, J.F. Belliard, B. Beuneu and C.H. de Novion 257 (1998) 206
- Reassessment of Li colloid production and characterization in irradiated  $Li_2O$ , P. Vajda and F. Beuneu 258–263 (1998) 495
- Material damage to beryllium, carbon, and tungsten under severe thermal shocks, J. Linke, R. Duwe, A. Gerwash, R.H. Qian, M. Rödig and A. Schuster 258–263 (1998) 634



- Testing of actively cooled high heat flux mock-ups, M. Rödiger, R. Duwe, W. Kühnlein, J. Linke, M. Scheerer, I. Smid and B. Wiechers 258–263 (1998) 967
- Void formation and microstructural development in oxide dispersion strengthened ferritic steels during electron-irradiation, J. Saito, T. Suda, S. Yamashita, S. Ohnuki, H. Takahashi, N. Akasaka, M. Nishida and S. Ukai 258–263 (1998) 1264
- Mechanical properties and damage behavior of non-magnetic high manganese austenitic steels, H. Takahashi, Y. Shindo, H. Kinoshita, T. Shibayama, S. Ishiyama, K. Fukaya, M. Eto, M. Kusuhashi, T. Hatakeyama and I. Sato 258–263 (1998) 1644
- Damage behavior in an electron/helium dual-beam irradiated Fe–Cr–Mn(W,V) alloy, H. Benfu, H. Kinoshita and H. Takahashi 258–263 (1998) 1708
- Role of environment on the surface degradation of Wesgo AL995, A. Moroño, E.R. Hodgson 258–263 (1998) 1798
- Pre- and post-irradiation studies on mm-wave losses in reference window materials for electron cyclotron wave systems, R. Heidinger, A. Ibarra and J. Molla 258–263 (1998) 1822
- Radiation effects on insulating gases for the ITER NBI system, E.R. Hodgson and A. Moroño 258–263 (1998) 1827
- In situ observation of microstructural development during electron irradiation in Al<sub>2</sub>O<sub>3</sub> containing Cr<sub>2</sub>O<sub>3</sub> or TiO<sub>2</sub>, K. Nakata, Y. Katano and K. Noda 258–263 (1998) 1831
- Electrical conductivity and current-voltage characteristics of alumina with or without neutron and electron irradiation, K. Shiiyama, M.M.R. Howlader, S.J. Zinkle, T. Shikama, M. Kutsuwada, S. Matsumura and C. Kinoshita 258–263 (1998) 1848
- Radiation effects on dielectric losses of Au-doped silicon, J. Molla, R. Vila, R. Heidinger and A. Ibarra 258–263 (1998) 1884
- Radiation induced optical absorption and radioluminescence in electron irradiated SiO<sub>2</sub>, A. Moroño and E.R. Hodgson 258–263 (1998) 1889
- Defect production and recovery in high-*T<sub>c</sub>* superconductors irradiated with electrons and ions at low temperature, N. Ishikawa, Y. Chimi, A. Iwase, K. Tsuru, and O. Michikami 258–263 (1998) 1924
- In situ measurement of electrical conductivity of Zircaloy oxides and their formation mechanism under electron irradiation, M.M.R. Howlader, C. Kinoshita, K. Shiiyama, M. Kutsuwada and M. Inagaki 265 (1999) 100
- Amorphization of Zr<sub>3</sub>Fe under electron irradiation, A.T. Motta, L.M. Howe and P.R. Okamoto 270 (1999) 174
- Electron Microscopy**
- The influence of dynamical structural relaxation of point defect clusters on void formation in irradiated copper, Y. Shimomura, I. Mukouda and K. Sugio 251 (1997) 61
- A review of in situ observation of defect production with energetic heavy ions, S. Ishino 251 (1997) 225
- Defect interaction processes controlling the accumulation of defects produced by high energy recoils, M. Kiritani 251 (1997) 237
- Low dose irradiation performance of SiC interphase SiC/SiC composites, L.L. Snead, M.C. Osborne, R.A. Lowden, J. Strizak, R.J. Shinavski, K.L. More, W.S. Eatherly, J. Bailey and A.M. Williams 253 (1998) 20
- Irradiation-induced amorphization in β-SiC, W.J. Weber, N. Yu and L.M. Wang 253 (1998) 53
- X-ray diffractometry and high-resolution electron microscopy of neutron-irradiated SiC to a fluence of 1.9×10<sup>27</sup> n/m<sup>2</sup>, T. Yano, H. Miyazaki, M. Akiyoshi and T. Iseki 253 (1998) 78
- Effects of ionizing radiation in ceramics, R. Devanathan, K.E. Sickafus, W.J. Weber and M. Nastasi 253 (1998) 113
- Microstructure of Al<sub>2</sub>O<sub>3</sub> and MgAl<sub>2</sub>O<sub>4</sub> irradiated at low temperatures, S.J. Zinkle and G.P. Pells 253 (1998) 120
- Analytical electron microscopy study of surface layers formed on the French SON68 nuclear waste glass during vapor hydration at 200°C, W.L. Gong, L.M. Wang, R.C. Ewing, E. Vernaz, J.K. Bates and W.L. Ebert 254 (1998) 249
- Identification of the nature of small point defect clusters in neutron irradiated Fe–16Ni–15Cr by means of electron irradiation, M. Horiki, S. Arai, Y. Satoh and M. Kiritani 255 (1998) 165
- Development of a triple beam irradiation facility, S. Hamada, Y. Miwa, D. Yamaki, Y. Katano, T. Nakazawa and K. Noda 258–263 (1998) 383
- Microstructure of tantalum irradiated with heavy ions, K. Yasunaga, H. Watanabe, N. Yoshida, T. Muroga and N. Noda 258–263 (1998) 879
- Radiation embrittlement of Mo–Re welds under low-temperature irradiation in the SM reactor, V.P. Chakin, F. Morito, V.A. Kazakov,

- Y.D. Goncharenko and Z.E. Ostrovsky 258–263 (1998) 883
- Microstructural evolution in Cu–Al25 alloy under 300 keV Cu<sup>+</sup> ion irradiation, J. Li, H. Xu, J. Yu, B. Wu and Q. He 258–263 (1998) 945
- Changes of structure and properties of yttrium doped copper at deformation, annealing and irradiation, I.M. Neklyudov, V.N. Voyevodin, S.V. Shevtchenko, V.F. Rybalko, N.V. Kamychantchenko and I.A. Belenko 258–263 (1998) 1040
- Microstructure assessment of the low activation ferritic/martensitic steel F82H, R. Schäublin, P. Spätig and M. Victoria 258–263 (1998) 1178
- Effect of purity on helium bubble formation in 9Cr martensitic steel during post-implantation annealing at 1105 K, T. Nagasaka, T. Shibayama, H. Kayano, A. Hasegawa, M. Satou and K. Abe 258–263 (1998) 1193
- Microstructural examination of irradiated V–(4–5%) – (4–5%) Ti, D.S. Gelles, P.M. Rice, S.J. Zinkle and H.M. Chung 258–263 (1998) 1380
- Temperature dependence of the radiation damage microstructure in V–4Cr–4Ti neutron irradiated to low dose, P.M. Rice and S.J. Zinkle 258–263 (1998) 1414
- Swelling behavior of V–Fe binary and V–Fe–Ti ternary alloys, K. Fukumoto, A. Kimura and H. Matsui 258–263 (1998) 1431
- Microstructure of V–4Cr–4Ti alloy after low-temperature irradiation by ions and neutrons, J. Gazda, M. Meshii and H.M. Chung 258–263 (1998) 1437
- Tensile properties and fracture behaviour of V–Cr–Ti alloys after neutron irradiation at 330°C, V.A. Kazakov, V.P. Chakin and Y.D. Goncharenko 258–263 (1998) 1492
- Swelling behaviour and TEM studies of SiC<sub>f</sub>/SiC composites after fusion relevant helium implantation, H.W. Scholz, A.J. Frias Rebelo, D.G. Rickerby, P. Krogul, W.E. Lee, J.H. Evans and P. Fenici 258–263 (1998) 1572
- Temperature dependence of bubble structure in 316L stainless steel irradiated with 2.5 MeV He ions, C.H. Zhang, K.Q. Chen, Y.S. Wang and J.G. Sun 258–263 (1998) 1623
- Microstructural observation of helium implanted and creep ruptured Fe–25%Ni–15%Cr alloys containing various MC and MN formers, N. Yamamoto, J. Nagakawa, Y. Murase and H. Shiraishi 258–263 (1998) 1628
- Radiation effects on Al<sub>2</sub>O<sub>3</sub> irradiated with H<sub>2</sub><sup>+</sup> ions, S. Furuno, N. Sasa-jima, K. Hojou, K. Izui, H. Otsu and T. Matsui 258–263 (1998) 1817
- Damage structures in fission-neutron irradiated Ni-based alloys at high temperatures, K. Yamakawa and Y. Shimomura 264 (1999) 319
- On the effects of heat treatment and surface orientation on corrosion and hydrogen ingress of Zr–2.5Nb pressure tube material, Y.-P. Lin and J. DeLuca 265 (1999) 1
- Embrittlement**
- Post-yield strain hardening behavior as a clue to understanding irradiation hardening, R.J. DiMelfi, D.E. Alexander and L.E. Rehn 252 (1998) 171
- Materials design data for fusion reactors, A.A.F. Tavassoli 258–263 (1998) 85
- Hydrogen inventory and embrittlement in low activation steels, P. Jung 258–263 (1998) 124
- Deformation analysis of small size bend specimens by FEM calculation to estimate irradiation induced embrittlement of Mo and W, K. Ueda, M. Satou, A. Hasegawa and K. Abe 258–263 (1998) 466
- Neutron irradiation embrittlement of polycrystalline and single crystalline molybdenum, K. Watanabe, A. Hishinuma, Y. Hiraoka and T. Fujii 258–263 (1998) 848
- Radiation embrittlement of Mo–Re welds under low-temperature irradiation in the SM reactor, V.P. Chakin, F. Morito, V.A. Kazakov, Y.D. Goncharenko and Z.E. Ostrovsky 258–263 (1998) 883
- Neutron irradiation embrittlement of molybdenum rhenium alloys and their improvement by heat treatment, A. Hasegawa, K. Ueda, M. Satou and K. Abe 258–263 (1998) 902
- Response of dynamically compacted tungsten to high fluence neutron irradiation at 423–600°C in FFTF, J. Megusar and F.A. Garner 258–263 (1998) 940
- Embrittlement behaviour of different international low activation alloys after neutron irradiation, M. Rieth, B. Dafferner and H.-D. Röhrig 258–263 (1998) 1147
- Irradiation embrittlement of <sup>24</sup>Cr–1Mo steel at 400°C and its electrochemical evaluation, Y. Nishiyama, K. Fukaya, M. Suzuki and M. Eto 258–263 (1998) 1187
- A review of some effects of helium on charpy impact properties of ferritic/martensitic steels, D.S. Gelles, G.L. Hankin and M.L. Hamilton 258–263 (1998) 1216
- The effect of low dose irradiation on the impact fracture energy and ten-

- sile properties of pure iron and two ferritic martensitic steels, I. Belianov and P. Marmy 258–263 (1998) 1259
- Heat treatment effects on impact toughness of 9Cr–1MoVNb and 12Cr–1MoVW steels irradiated to 100 dpa, R.L. Klueh and D.J. Alexander 258–263 (1998) 1269
- Effect of small additional elements on DBTT of V–4Cr–4Ti irradiated at low temperatures, T. Shibayama, I. Yamagata, H. Kayano and C. Namba 258–263 (1998) 1361
- Development of techniques for welding V–Cr–Ti alloys, M.L. Grossbeck, J.F. King, D.J. Alexander, P.M. Rice and G.M. Goodwin 258–263 (1998) 1369
- Performance of V–4Cr–4Ti material exposed to the DIII-D tokamak environment, H. Tsai, W.R. Johnson, D.L. Smith, J.P. Smith and H.M. Chung 258–263 (1998) 1466
- Tensile properties and fracture behaviour of V–Cr–Ti alloys after neutron irradiation at 330°C, V.A. Kazakov, V.P. Chakin and Y.D. Goncharenko 258–263 (1998) 1492
- Microstructural observation of helium implanted and creep ruptured Fe–25%Ni–15%Cr alloys containing various MC and MN formers, N. Yamamoto, J. Nagakawa, Y. Murase and H. Shiraiishi 258–263 (1998) 1628
- Effect of combined addition of Ti and P on creep rupture properties of helium implanted Fe–25%Ni–15%Cr alloy, N. Yamamoto, J. Nagakawa, Y. Murase and H. Shiraiishi 258–263 (1998) 1634
- Densification behaviour of UO<sub>2</sub>–50%PuO<sub>2</sub> pellets by dilatometry, T.R.G. Kutty, P.V. Hegde, R. Keswani, K.B. Khan, S. Majumdar and D.S.C. Purushotham 264 (1999) 10
- Assessment of hydrogen embrittlement of Zircaloy-2 pressure tubes using unloading compliance and load normalization techniques for determining *J*–*R* curves, J.S. Dubey, S.L. Wadekar, R.N. Singh, T.K. Sinha and J.K. Chakravarty 264 (1999) 20
- Influence of microstructure on the hydrogen permeability of 9%Cr–1%Mo ferritic steel, N. Parvathavarthini, S. Saroja and R.K. Dayal 264 (1999) 35
- The principal structural changes proceeding in Russian pressure vessel steels as a result of neutron irradiation, recovery annealing and re-irradiation, B.A. Gurovich, E.A. Kuleshova, O.V. Lavrenchuk, K.E. Prikhodko and Y.I. Shtrombakh 264 (1999) 333
- Effect of neutron flux on low temperature irradiation embrittlement of reactor pressure vessel steel, K. Dohi, T. Onchi, F. Kano, K. Fukuya, M. Narui and H. Kayano 265 (1999) 78
- The effect of hydrogen on the fracture toughness of alloy X-750 at elevated temperatures, D.M. Symons 265 (1999) 225
- High burnup effects on fuel behaviour under accident conditions: the tests CABRI REP-Na, F. Schmitz and J. Papin 270 (1999) 55
- Role and significance of source hardening in radiation embrittlement of iron and ferritic steels, K. Linga Murty 270 (1999) 115
- Environmental Effects**
- Defect production and accumulation under hydrogen and helium ion irradiation, J. Yu, X. Zhao, W. Zhang, W. Yang and F. Chu 251 (1997) 150
- Low volatile fission-product release and fuel volatilization during severe reactor accident conditions, B.J. Lewis, B.J. Corse, W.T. Thompson, M.H. Kaye, F.C. Iglesias, P. Elder, R. Dickson and Z. Liu 252 (1998) 235
- Current status and future of IASCC research, T. Shoji, S. Suzuki and K.S. Raja 258–263 (1998) 241
- Assessment of the corrosion behaviour of structural materials in the water coolant of ITER, V. Belous, G. Kalinin, P. Lorenzetto and S. Velikopolskiy 258–263 (1998) 351
- Sweep gas chemistry effect on vaporization property of Li<sub>2</sub>ZrO<sub>3</sub>, A. Suzuki, M. Tonegawa, M. Yasumoto, K. Yamaguchi and M. Yamawaki 258–263 (1998) 562
- Temperature dependence of sputtering yield of carbon fiber-reinforced carbon composites with low energy and high flux deuterium ions, R. Jimbou, K. Nakamura, V. Bاندourko, Y. Okumura and M. Akiba 258–263 (1998) 724
- Dynamical simulation for sputtering of B<sub>4</sub>C, T. Kenmotsu, T. Kawamura, T. Ono and Y. Yamamura 258–263 (1998) 729
- Boron ion particles sputtered from boron films deposited on graphites, Y. Ohtsuka, M. Tsuji, Y. Kitamura, Y. Ueda, M. Isobe and M. Nishikawa 258–263 (1998) 735
- Effect of hydrogen on tensile properties of martensitic steels for fusion application, M. Beghini, G. Benamati, L. Bertini and R. Valentini 258–263 (1998) 1295
- The possibility of the commercial production of low-activation structural steels for fusion energy in the

- Russian Federation, N.P. Lyakishev, V.Y. Dashevsky, E.V. Dyomina, L.I. Ivanov, Y.M. Platon, M.D. Prusakova, V.P. Kolotov and M.V. Alenina 258–263 (1998) 1300
- Effects of oxygen and oxidation on tensile behavior of V-4Cr-4Ti alloy, K. Natesan, W.K. Soppet and M. Uz 258–263 (1998) 1476
- Microstructure and oxidative degradation behavior of silicon carbide fiber Hi-Nicalon type S, M. Takeda, A. Urano, J. Sakamoto and Y. Imai 258–263 (1998) 1594
- Low-activation characteristics of V-alloys and SiC composites, E.V. Dyomina, P. Fenici, V.P. Kolotov and M. Zucchetti 258–263 (1998) 1784
- Damage structure evolution in Al<sub>2</sub>O<sub>3</sub> irradiated with multiple ion beams of H, He and O and after annealing, Y. Katano, T. Nakazawa, D. Yamaki, T. Aruga and K. Noda 258–263 (1998) 1842
- Effect of weld thermal cycle on helium bubble formation in stainless steel, F. Kano, S. Nakahigashi, H. Nakamura, N. Uesugi, T. Mitamura, M. Terasawa, H. Irie and K. Fukuya 258–263 (1998) 2013
- An evaluation of potential material-coolant compatibility for applications in advanced fusion reactors, T. Kondo, Y. Watanabe, Y.S. Yi and A. Hishinuma 258–263 (1998) 2083
- Review of recent works in development and evaluation of high-Z plasma facing materials, N. Yoshida 266–269 (1999) 197
- Experimental Techniques**
- Atom transport under ion irradiation, P. Fielitz, M.-P. Macht, V. Naundorf and H. Wollenberger 251 (1997) 123
- A review of in situ observation of defect production with energetic heavy ions, S. Ishino 251 (1997) 225
- Irradiation-enhanced creep in SiC: data summary and planned experiments, C.A. Lewinsohn, M.L. Hamilton, G.E. Youngblood, R.H. Jones, F.A. Garner, S.L. Hecht and A. Kohyama 253 (1998) 36
- Radiation-induced electrical degradation: an effect of surface conductance and microcracking, W. Kesternich 253 (1998) 167
- Growth of optical transmission loss at 850 nm in silica core optical fibers during fission reactor irradiation, T. Shikama, T. Kakuta, M. Narui and T. Sagawa 253 (1998) 180
- Radioluminescence in amorphous silica: temperature dependence and relaxation, D.W. Cooke, B.L. Bennett, E.H. Farnum, D.E. Thomas and A.M. Portis 255 (1998) 180
- IFMIF, its facility concept and technology, T. Kondo 258–263 (1998) 47
- The influence of neutron spectrum and irradiation history on microstructural evolution in fusion structural materials, T. Muroga, S. Ohnuki, F.A. Garner and S.J. Zinkle 258–263 (1998) 130
- Temperature controlled material irradiation in the advanced test reactor, F.W. Ingram, A.J. Palmer and D.J. Stites 258–263 (1998) 362
- Development of rig for systematic irradiation tests of fusion reactor materials in a fission reactor, M. Narui, T. Sagawa and T. Shikama 258–263 (1998) 372
- Irradiation techniques under high pressurized water using hybrid type saturated temperature capsule in the JMTR, Y. Matsui, M. Niimi, T. Hoshiya, T. Tsukada and H. Tsuji 258–263 (1998) 378
- Present status of the conceptual design of IFMIF target facility, H. Katsuta, Y. Kato, S. Konishi, Y. Miyachi, D. Smith, T. Hua, L. Green, G. Benamati, S. Cevolani, H. Roehrig and W. Schutz 258–263 (1998) 388
- A varying temperature irradiation experiment for operation in HFIR, A.L. Qualls and T. Muroga 258–263 (1998) 407
- Experimental and analytical studies on high-speed plane jet along concave wall simulating IFMIF Li target flow, H. Nakamura, K. Itoh, Y. Kukita, M. Ida, Y. Kato, H. Mae-kawa and H. Katsuta 258–263 (1998) 440
- A remotely operated FIMEC apparatus for the mechanical characterization of neutron irradiated materials, A. Donato, P. Gondi, R. Montanari, L. Moreschi, A. Sili and S. Storai 258–263 (1998) 446
- Development of a miniaturized hour-glass shaped fatigue specimen, Y. Miwa, S. Jitsukawa and A. Hishinuma 258–263 (1998) 457
- Deuterium migration in titanium during deuteron irradiation observed by proton spectra of the d(d,p)t reaction, H. Kudo, Y. Kosaku, Y. Ando, M. Hiraga and T. Sekine 258–263 (1998) 622
- Development of material irradiation rig with precision temperature control in experimental fast reactor JOYO, H. Kataoka, T. Yasu, H. Takatsudo and S. Miyakawa 258–263 (1998) 677
- Hardening behavior of molybdenum by low energy He and D ion irradiation, H. Iwakiri, H. Wakimoto, H. Watanabe and N. Yoshida 258–263 (1998) 873

- Estimation of incident flux rate in PDP experiments by calculating plasma composition, M. Takizawa, K. Kiuchi, H. Ishizuka, M. Okamoto and Y. Fujii 258–263 (1998) 1066
- Analysis of error field due to ferritic steel in the advanced material testing program of JFT-2M, M. Sato, Y. Miura, S. Takeji, H. Kimura and K. Shiba 258–263 (1998) 1253
- Experience in irradiation testing of low-activation structural materials in fast reactor BOR-60, V.A. Kazakov, H.-C. Tsai, V.P. Chakin, F.W. Wiffen, A.F. Rowcliffe, D.L. Smith, A.E. Rusanov, A.A. Teikovtsev, N.V. Markina and L.R. Greenwood 258–263 (1998) 1458
- Radiation response of SiC-based fibers, G.E. Youngblood, R.H. Jones, A. Kohyama and L.L. Snead 258–263 (1998) 1551
- Validation of the shear punch–tensile correlation technique using irradiated materials, G.L. Hankin, M.B. Toloczko, M.L. Hamilton and R.G. Faulkner 258–263 (1998) 1651
- Shear punch testing of  $^{59}\text{Ni}$  isotopically-doped model austenitic alloys after irradiation in FFTF at different He/dpa ratios, G.L. Hankin, M.B. Toloczko, M.L. Hamilton, F.A. Garner and R.G. Faulkner 258–263 (1998) 1657
- Radiation swelling decrease by means of explosive wave, V.M. Kosenkov, S.A. Vorobjev and A.V. Kolesnikov 258–263 (1998) 1809
- On the choice of materials for the first mirrors of plasma diagnostics in a fusion reactor, V.S. Voitsynya, A.F. Bardamid, V.T. Gritsyna, V.G. Konovalov, O. Motojima, D.V. Orlinskij, R. Palladino, B.J. Peterson, A.N. Shapoval, A.F. Shtan, S.I. Solodovchenko, K.I. Yakimov and K. Young 258–263 (1998) 1919
- Magnetic non-destructive evaluation of accumulated fatigue damage in ferromagnetic steels for nuclear plant component, K. Morishita, A. Gilanyi, T. Sukegawa, T. Uesaka and K. Miya 258–263 (1998) 1946
- Fabrication development and preliminary characterization of  $\text{Li}_2\text{TiO}_3$  pebbles by wet process, K. Tsuchiya, H. Kawamura, K. Fuchinoue, H. Sawada and K. Watarumi 258–263 (1998) 1985
- Application of HIP bonding to first wall panel fabrication made from reduced activation ferritic steel F82H, K. Furuya, M. Enoeda, T. Hatano, S. Sato, T. Kuroda and H. Takatsu 258–263 (1998) 2023
- Comparison of stress corrosion cracking susceptibility of thermally-sensitized and proton-irradiated 304 stainless steel using electrochemical noise techniques, L.H. Wang, J.J. Kai, C.H. Tsai and C. Fong 258–263 (1998) 2046
- A fast scanning Langmuir probe system for ASDEX-Upgrade divertor, N. Tsois, C. Dorn, G. Kyriakakis, M. Markoulaki, M. Pflug, G. Schramm, P. Theodoropoulos, P. Xantopoulos, M. Weinlich and the ASDEX Upgrade team 266–269 (1999) 1230
- Fabrication**
- Computation of the lamina stacking sequence effect on elastic moduli of a plain-weave Nicalon/SiC laminated composite with a [0/30/60] lay-up, W. Zhao, P.K. Liaw and N.-i. Yu 253 (1998) 10
- Fabrication development of  $\text{Li}_2\text{O}$  pebbles by wet process, K. Tsuchiya, K. Fuchinoue, S. Saito, K. Watarumi, T. Furuya and H. Kawamura 253 (1998) 196
- Synthesis of  $\text{Li}_2\text{TiO}_3$  ceramic breeder powders by the combustion process, C.H. Jung, J.Y. Park, S.J. Oh, H.K. Park, Y.S. Kim, D.K. Kim and J.H. Kim 253 (1998) 203
- Density dependence on thermal properties of  $\text{Li}_2\text{TiO}_3$  pellets, S. Saito, K. Tsuchiya, H. Kawamura, T. Terai and S. Tanaka 253 (1998) 213
- Effect of physical vapor deposition on microstructure and properties of uranium-6 wt% niobium alloy, A.J. Sunwoo, T.S. Chow and C.J. Long 254 (1998) 65
- Hydrogen ingress through EDM surfaces of Zr-2.5Nb pressure-tube material, C.K. Chow, G.R. Brady, V.F. Urbanic and C.E. Coleman 257 (1998) 35
- An analysis of density distribution in  $\text{UO}_2$  green pellet by finite element method, K. Yanai, M. Hirai, T. Ishikawa, J. Ishizaki and H. Saitoh 257 (1998) 318
- Present status and future prospect of the ITER project, R. Aymar, ITER Joint Central Team and Home Teams 258–263 (1998) 56
- Materials design data for fusion reactors, A.A.F. Tavassoli 258–263 (1998) 85
- Nuclear fuel pellet inspection using artificial neural networks, S. Keyvan, X. Song and M. Kelly 264 (1999) 141
- Fast Reactors**
- Thirty years of fuels and materials information from EBR-II, L.C. Walters 270 (1999) 39

**Fatigue**

Low cycle fatigue properties and microscopic deformation structure of Zircaloy-4 in recrystallized and stress-relieved conditions, X. Lin and G. Haicheng 265 (1999) 213

**First Wall Materials**

Effect of fast Ti-deposition on gas recycling at the first wall and on fast ion losses in the GDT experiment, P.A. Bagryansky, E.D. Bender, A.A. Ivanov, A.N. Karpushov, S.V. Murachtin, K. Noack, St. Krahl and S. Collatz 265 (1999) 124

**Fission Products**

Vaporization study on lanthanum–uranium and cerium–uranium alloys by mass-spectrometric method, Y. Shoji, T. Matsui, K. Nakamura and T. Inoue 265 (1999) 134

Corrosion of stainless steel by gaseous I<sub>2</sub>, J.C. Wren, G.A. Glowa and J. Merritt 265 (1999) 161

Fission product release mechanisms during reactor accident conditions, F.C. Iglesias, B.J. Lewis, P.J. Reid and P. Elder 270 (1999) 21

Artificial neural network models for volatile fission product release during severe accident conditions, W.S. Andrews, B.J. Lewis and D.S. Cox 270 (1999) 74

**Fracture and Fracture Toughness**

The effect of hydrogen on the fracture toughness of alloy X-750 at elevated temperatures, D.M. Symons 265 (1999) 225

Influence of recoil-implanted and thermally released iodine on I-SCC of Zircaloy-4 in PCI-conditions: chemical aspects, M. Fregonese, F. Lefebvre, C. Lemaignan and T. Magnin 265 (1999) 245

Effects of interface and tensile properties in the dynamic fracture of layered structures, J.H. McCoy, A.S. Kumar and J.F. Stubbins 270 (1999) 129

**Fuels and Fuel Elements**

Effect of Mo on recrystallization characteristics of Zr–Nb–(Sn)–Mo experimental alloys, Y.B. Chun, S.K. Hwang, M.H. Kim, S.I. Kwun and Y.S. Kim 265 (1999) 28

Characterization of U–Nb–Zr dispersion fuel prepared by centrifugal atomization process, J.-M. Park, K.-øH. Kim, D.-S. Sohn, C.-K. Kim and G.L. Hofman 265 (1999) 38

Dissolution of ZrO<sub>2</sub> in molten Zircaloy-4, P.J. Hayward and I.M. George 265 (1999) 69

Electron energy-loss spectroscopy (EELS) study of oxidation states of Ce and U in pyrochlore and uraninite – natural analogues for Pu- and U-bearing waste forms, H. Xu and Y. Wang 265 (1999) 117

Solid state reactions of CeO<sub>2</sub>, ThO<sub>2</sub> and PuO<sub>2</sub> with ammonium sulphate, K.D. Singh Mudher, M. Keskar and V. Venugopal 265 (1999) 146

Cs boltwoodite obtained by ion exchange from single crystals: Implications for radionuclide release in a nuclear repository, P.C. Burns 265 (1999) 218

Oxidation kinetics of hydride-bearing uranium metal corrosion products, T.C. Totemeier, R.G. Pahl and S.M. Frank 265 (1999) 308

Review of the materials-chemistry models in the VICTORIA code, D.R. Olander and V. Mubayi 270 (1999) 1

Steam oxidation of fuel in defective LWR rods, D.R. Olander, Y.S. Kim, W.-E Wang and S.K. Yagnik 270 (1999) 11

Thirty years of fuels and materials information from EBR-II, L.C. Walters 270 (1999) 39

Ramp test behavior of high O/U fuel, J.H. Davies, E.V. Hoshi and D.L. Zimmerman 270 (1999) 87

Thermochemical properties of the hydrogen getter DEB, M. Balooch, W.-E Wang and J.D. LeMay 270 (1999) 248

Uranium dioxide reaction in CF<sub>4</sub>/O<sub>2</sub> RF plasma, Y.-S. Kim, J.-Y. Min, K.-k. Bae and M.-s. Yang 270 (1999) 253

**Fusion reactors**

Analysis of error field due to ferritic steel in the advanced material testing program of JFT-2M, M. Sato, Y. Miura, S. Takeji, H. Kimura and K. Shiba 258–263 (1998) 1253

Carbon fiber composites application in ITER plasma facing components, V. Barabash, M. Akiba, J.P. Bonal, G. Federici, R. Matera, K. Nakamura, H.D. Pacher, M. Rödiger, G. Vieider and C.H. Wu 258–263 (1998) 149

Fabrication and high heat flux testing of plasma sprayed beryllium ITER first wall mock-ups, R.G. Castro, K.E. Elliot, R.D. Watson, D.L. Youchison and K.T. Slattery 258–263 (1998) 252

Development of rig for systematic irradiation tests of fusion reactor materials in a fission reactor, M. Narui, T. Sagawa and T. Shikama 258–263 (1998) 372

- A varying temperature irradiation experiment for operation in HFIR, A.L. Qualls and T. Muroga 258–263 (1998) 407
- The possibility of the commercial production of low-activation structural steels for fusion energy in the Russian Federation, N.P. Lyakishev, V.Y. Dashevsky, E.V. Dyomina, L.I. Ivanov, Y.M. Platov, M.D. Prusakova, V.P. Kolotov and M.V. Alenina 258–263 (1998) 1300
- Fabrication of a 1200 kg ingot of V–4Cr–4Ti alloy for the DIII–D radiative divertor program, W.R. Johnson and J.P. Smith 258–263 (1998) 1425
- Analysis of V–Cr–Ti alloys in terms of activation of impurities, M.L. Grossbeck, R.L. Klueh, E.T. Cheng, J.R. Peterson, M.R. Woolery and E.E. Bloom 258–263 (1998) 1778
- Development of the superconductors for ITER magnet system, A. Shikov, A. Nikulin, A. Silaev, A. Vorobieva, V. Pantsyrnyi, G. Vedernikov, N. Salunin, S. Sudiev 258–263 (1998) 1929
- Thermal shock resistance of SiC compositionally graded C/C composites, K. Fujii and R. Yamada 258–263 (1998) 1953
- Processing and microstructure of silicon carbide fiber-reinforced silicon carbide composite by hot-pressing, K. Yoshida, Budiyanto, M. Imai and T. Yano 258–263 (1998) 1960
- Structural materials by powder HIP for fusion reactors, C. Dellis, G. Le Marois and E.V. van Osch 258–263 (1998) 1966
- Fabrication development and preliminary characterization of Li<sub>2</sub>TiO<sub>3</sub> pebbles by wet process, K. Tsuchiya, H. Kawamura, K. Fuchinoue, H. Sawada and K. Watarumi 258–263 (1998) 1985
- Application of HIP bonding to first wall panel fabrication made from reduced activation ferritic steel F82H, K. Furuya, M. Enoeda, T. Hatano, S. Sato, T. Kuroda and H. Takatsu 258–263 (1998) 2023
- Fast Reactors**
- Damage calculation in fusion ceramics: comparing neutrons and light ions, P.V. Vladimirov, D. Lizunov, Yu.A.I. Ryazanov and A. Möslang 253 (1998) 104
- Effect of nitrogen on high temperature low cycle fatigue behaviors in type 316L stainless steel, D.W. Kim, W.-S. Ryu, J.H. Hong and S.-K. Choi 254 (1998) 226
- Corrosion of annealed AISI 316 stainless steel in sodium environment, V. Ganesan and V. Ganesan 256 (1998) 69
- Materials design data for fusion reactors, A.A.F. Tavassoli 258–263 (1998) 85
- Development of material irradiation rig with precision temperature control in experimental fast reactor JOYO, H. Kataoka, T. Yasu, H. Takatsudo and S. Miyakawa 258–263 (1998) 677
- Irradiation creep of various ferritic alloys irradiated at ~400°C in the PFR and FFTF reactors, M.B. Toloczko, F.A. Garner and C.R. Eiholzer 258–263 (1998) 1163
- Flux and composition dependence of irradiation creep of austenitic alloys irradiated in PFR at ~420°C, M.B. Toloczko, F.A. Garner, J. Standring, B. Munro and S. Adaway 258–263 (1998) 1606
- Swelling and void-induced embrittlement of austenitic stainless steel irradiated to 73–82 dpa at 335–365°C, S.I. Porollo, A.N. Vorobjev, Y.V. Konobeev, A.M. Dvoriashin, V.M. Krigan, N.I. Budylnkin, E.G. Mironova and F.A. Garner 258–263 (1998) 1613
- Irradiation creep and stress-enhanced swelling of Fe–16Cr–15Ni–Nb austenitic stainless steel in BN-350, A.N. Vorobjev, N.I. Budylnkin, E.G. Mironova, S.I. Porollo, Y.V. Konobeev and F.A. Garner 258–263 (1998) 1618
- The dependence of irradiation creep in austenitic alloys on displacement rate and helium to dpa ratio, F.A. Garner, M.B. Toloczko and M.L. Grossbeck 258–263 (1998) 1718
- The dependence of helium generation rate on nickel content of Fe–Cr–Ni alloys irradiated to high dpa levels in EBR-II, F.A. Garner, B.M. Oliver and L.R. Greenwood 258–263 (1998) 1740
- R&D of oxide dispersion strengthened ferritic martensitic steels for FBR, S. Ukai, T. Nishida, T. Okuda and T. Yoshitake 258–263 (1998) 1745
- Molar Gibbs energy formation of KUO<sub>3</sub>(s), K. Jayanthi, V.S. Iyer, G.A. Rama Rao and V. Venugopal 264 (1999) 263
- Fatigue**
- The mechanical behavior of a Nicalon/SiC composite at room temperature and 1000°C, N. Miriyala, P.K. Liaw, C.J. McHargue and L.L. Snead 253 (1998) 1
- Effect of nitrogen on high temperature low cycle fatigue behaviors in type 316L stainless steel, D.W. Kim, W.-S. Ryu, J.H. Hong and S.-K. Choi 254 (1998) 226
- Materials design data for fusion reactors, A.A.F. Tavassoli 258–263 (1998) 85
- Development of divertor plate with CFCs bonded onto DSCu cooling tube for fusion reactor application,

- S. Suzuki, T. Suzuki, M. Araki, K. Nakamura and M. Akiba 258–263 (1998) 318
- Material properties and design requirements for copper alloys used in ITER, J.W. Davis and G.M. Kalinin 258–263 (1998) 323
- Development of a miniaturized hour-glass shaped fatigue specimen, Y. Miwa, S. Jitsukawa and A. Hishinuma 258–263 (1998) 457
- Fracture strengths of HIPed DS-Cu/SS joints for ITER shielding blanket/first wall, T. Hatano, M. Kanari, S. Sato, M. Gotoh, K. Furuya, T. Kuroda, M. Saito, M. Enoeda and H. Takatsu 258–263 (1998) 950
- Evidence of damage in carbon fibre composite tiles joined metallic heat sink under high heat flux fatigue, R. Mitteau, P. Chappuis, L. Moncel and J. Schlosser 258–263 (1998) 972
- Low cycle fatigue properties of 8Cr–2WVTa ferritic steel at elevated temperatures, T. Ishii, K. Fukaya, Y. Nishiyama, M. Suzuki and M. Eto 258–263 (1998) 1183
- Dynamic strain ageing evidences during low cycle fatigue deformation in ferritic–martensitic stainless steels, A.F. Armas, M. Avalos, I. Alvarez-Armas, C. Petersen and R. Schmitt 258–263 (1998) 1204
- Thermal fatigue behavior of low activation ferrite–martensite steels, C. Petersen 258–263 (1998) 1285
- Crack initiation and growth characteristics in SiC/SiC under indentation test, W. Zhang, T. Hinoki, Y. Kato, A. Kohyama, T. Noda, T. Muroga and J. Yu 258–263 (1998) 1577
- The effect of hold-times on the fatigue behavior of type AISI 316L stainless steel under deuteron irradiation, R. Scholz and R. Mueller 258–263 (1998) 1600
- High-cycle fatigue tests of modified 316 stainless steels under 20 MeV proton irradiation and thermal pulses, H. Mizubayashi, K. Tateishi, H. Tanimoto and K. Nakata 258–263 (1998) 1725
- The effect of helium accumulation and radiation damage on the weldability of 316-type steel, S.A. Fabritsiev and A.S. Pokrovsky 258–263 (1998) 1991
- Multiplicative model for out-of-phase thermal fatigue degradation of ferritic–martensitic steel MANET-II, A. Zisman, V. Rybin, C. Petersen and R. Schmitt 264 (1999) 234
- radiation, J. Yu, X. Zhao, W. Yang and F. Chu 251 (1997) 150
- Damage accumulation under low energy hydrogen ion irradiation, N. Yoshida and R. Sakamoto 251 (1997) 284
- Irradiation-enhanced creep in SiC: data summary and planned experiments, C.A. Lewinsohn, M.L. Hamilton, G.E. Youngblood, R.H. Jones, F.A. Garner, S.L. Hecht and A. Kohyama 253 (1998) 36
- Damage calculation in fusion ceramics: comparing neutrons and light ions, P.V. Vladimirov, D. Lizunov, Yu.A.I. Ryazanov and A. Möslang 253 (1998) 104
- Microstructure and nanohardness of hafnium diboride after ion irradiations, P. Cheminant-Coatanlem, L. Boulanger, X. Deschanel and A. Thorel 256 (1998) 180
- Present status and future prospect of the ITER project, R. Aymar, ITER Joint Central Team and Home Teams 258–263 (1998) 56
- Design and material selection for ITER first wall/blanket, divertor and vacuum vessel, K. Ioki, V. Barabash, A. Cardella, F. Elio, Y. Gohar, G. Janeschitz, G. Johnson, G. Kalinin, D. Lousteau, M. Onozuka, R. Parker, G. Sannazzaro and R. Tivey 258–263 (1998) 74
- Materials design data for fusion reactors, A.A.F. Tavassoli 258–263 (1998) 85
- Impacts of charge-exchange neutrals on degradation of plasma-facing materials, N. Yoshida and Y. Hirooka 258–263 (1998) 173
- Current status and future R&D for reduced-activation ferritic/martensitic steels, A. Hishinuma, A. Kohyama, R.L. Klueh, D.S. Gelles, W. Dietz and K. Ehrlich 258–263 (1998) 193
- Current status of SiC/SiC composites R&D, P. Fenici, A.J. Frias Rebelo, R.H. Jones, A. Kohyama and L.L. Snead 258–263 (1998) 215
- Fabrication and high heat flux testing of plasma sprayed beryllium ITER first wall mock-ups, R.G. Castro, K.E. Elliot, R.D. Watson, D.L. Youchison and K.T. Slattery 258–263 (1998) 252
- Development of joining technology for Be/Cu-alloy and Be/SS by HIP, T. Kuroda, T. Hatano, M. Enoeda, S. Sato, K. Furuya, H. Takatsu, T. Iwadachi and K. Nishida 258–263 (1998) 258
- Optimization of HIP bonding conditions for ITER shielding blanket/first wall made from austenitic stainless steel and dispersion strengthened copper alloy, S. Sato, T.

### First Wall Materials

Defect production and accumulation under hydrogen and helium ion ir-



- Hatano, T. Kuroda, K. Furuya, S. Hara, M. Enoeda and H. Takatsu 258-263 (1998) 265
- A review of the US joining technologies for plasma facing components in the ITER fusion reactor, B.C. Odegard Jr., C.H. Cadden, R.D. Watson and K.T. Slattery 258-263 (1998) 329
- Comparative analysis of copper alloys for the heat sink of plasma facing components in ITER, G. Kalinin and R. Matera 258-263 (1998) 345
- Divertor materials evaluation system (DiMES), C.P.C. Wong, D.G. Whyte, R.J. Bastasz, J. Brooks, W.P. West and W.R. Wampler 258-263 (1998) 433
- A remotely operated FIMEC apparatus for the mechanical characterization of neutron irradiated materials, A. Donato, P. Gondi, R. Montanari, L. Moreschi, A. Sili and S. Storai 258-263 (1998) 446
- Development of a miniaturized hour-glass shaped fatigue specimen, Y. Miwa, S. Jitsukawa and A. Hishinuma 258-263 (1998) 457
- Effect of specimen type and size on fracture resistance curve determination for CuCrZr alloy, P. Karjalainen-Roikonen, M. Pyykkönen and S. Tähtinen 258-263 (1998) 462
- Microstructure and mechanical properties of neutron irradiated beryllium, E. Ishitsuka, H. Kawamura, T. Terai and S. Tanaka 258-263 (1998) 566
- Behaviour of plasma facing materials under VDE, M. Merola, M. Rödiger, J. Linke, R. Duwe and G. Vieider 258-263 (1998) 653
- Derivation of hydrogen transport parameters in carbon fibre composites by modelling transient release in isovolumetric desorption experiments, L.A. Sedano, S. Alberici, A. Perujo, J. Camposilvan and K. Douglas 258-263 (1998) 662
- On the use of flat tile armour in high heat flux components, M. Merola and G. Vieider 258-263 (1998) 672
- Transmutation of plasma facing materials by the neutron flux in a DT fusion reactor, R. Behrisch, V. Khripunov, R.T. Santoro and J.M. Yesil 258-263 (1998) 686
- Development of multi-element doped graphite and its modification of chemical erosion, J.P. Qian, J. Roth, J.R. Song, F. Zhang, L. Yang and G.T. Zhai 258-263 (1998) 706
- Boron ion particles sputtered from boron films deposited on graphites, Y. Ohtsuka, M. Tsuji, Y. Kitamura, Y. Ueda, M. Isobe and M. Nishikawa 258-263 (1998) 735
- Steam-chemical reactivity for irradiated beryllium, R.A. Anderl, K.A. McCarthy, M.A. Oates, D.A. Petti, R.J. Pawelko and G.R. Smolik 258-263 (1998) 750
- Modelling of tritium permeation through beryllium as plasma facing material, L. Berardinucci 258-263 (1998) 777
- Behaviour of Si and Ti doped carbon composites under exposure to the deuterium plasma, M. Rubel, N. Almqvist, P. Wienhold and C.H. Wu 258-263 (1998) 787
- Activation of beryllium in a fusion power plant, C.B.A. Forty, R.A. Forrest and G.J. Butterworth 258-263 (1998) 793
- Hydrogen retention in high-Z materials with various contents of carbon, A. Atsumi and T. Tanabe 258-263 (1998) 896
- Erosion of W and deposition of C due to bombardment with D and CH<sub>3</sub>, W. Eckstein, K. Krieger and J. Roth 258-263 (1998) 912
- The effective secondary electron yield in the space-charge limited condition, I.V. Tsvetkov and T. Tanabe 258-263 (1998) 927
- Transmutation and induced radioactivity of W in the armor and first wall of fusion reactors, T. Noda, M. Fujita and M. Okada 258-263 (1998) 934
- Fracture strengths of HIPed DS-Cu/SS joints for ITER shielding blanket/first wall, T. Hatano, M. Kanari, S. Sato, M. Gotoh, K. Furuya, T. Kuroda, M. Saito, M. Enoeda and H. Takatsu 258-263 (1998) 950
- Evidence of damage in carbon fibre composite tiles joined metallic heat sink under high heat flux fatigue, R. Mitteau, P. Chappuis, L. Moncel and J. Schlosser 258-263 (1998) 972
- The effect of bonding and bakeout thermal cycles on the properties of copper alloys irradiated at 100°C, D.J. Edwards, B.N. Singh, P. Toft and M. Eldrup 258-263 (1998) 978
- Effect of neutron irradiation on fracture toughness behaviour of copper alloys, S. Tähtinen, M. Pyykkönen, P. Karjalainen-Roikonen, B.N. Singh and P. Toft 258-263 (1998) 1010
- Influence of composition, heat treatment and neutron irradiation on the electrical conductivity of copper alloys, M. Eldrup and B.N. Singh 258-263 (1998) 1022
- Hydrogen and deuterium transport and inventory parameters in a Cu-0.65Cr-0.08Zr alloy for fusion reactor applications, E. Serra and A. Perujo 258-263 (1998) 1028

- Experiment on atomic hydrogen reflection by use of a permeation probe, I. Takagi, K. Toyoda, M. Katayama, H. Fujita and K. Higashi 258–263 (1998) 1082
- Retention and re-emission of deuterium implanted into tungsten monocarbide, T. Horikawa, B. Tsuchiya and K. Morita 258–263 (1998) 1087
- Tritium retention in CX-2002U and methods to reduce tritium inventory, T. Tadokoro, S. O'hira, M. Nishi and K. Isobe 258–263 (1998) 1092
- Ion beam analysis of deuterium-implanted  $\text{Al}_2\text{O}_3$  and tungsten, R.G. Macaulay-Newcombe and D.A. Thompson 258–263 (1998) 1109
- Thermal desorption analysis of beryllium tile pieces from JET, R.G. Macaulay-Newcombe, D.A. Thompson and J.P. Coad 258–263 (1998) 1114
- Investigation of fusion reactor candidate materials erosion in plasma disruption simulation experiments, V.L. Yakushin, B.A. Kalin, A.V. Shul'ga, V.T. Fedotov and A.N. Plyushev 258–263 (1998) 1127
- Formation of HD molecules during desorption of deuterium from solids, A.A. Pisarev, Y.V. Borisyuk, A.V. Varava and V.N. Tsyplakov 258–263 (1998) 1138
- Influence of tantalum and nitrogen contents, normalizing condition and TMCP process on the mechanical properties of low-activation 9Cr–2W–0.2V–Ta steels for fusion application, T. Hasegawa, Y. Tomita and A. Kohyama 258–263 (1998) 1153
- Distribution of C–Cr associates and mechanical stability of Cr martensitic steels, P. Gondi, R. Montanari and M.E. Tata 258–263 (1998) 1167
- Development of oxide dispersion strengthened ferritic steels for fusion, D.K. Mukhopadhyay, F.H. Froes and D.S. Gelles 258–263 (1998) 1209
- Thermal fatigue behavior of low activation ferrite–martensite steels, C. Petersen 258–263 (1998) 1285
- Effect of hydrogen on tensile properties of martensitic steels for fusion application, M. Beghini, G. Benamati, L. Bertini and R. Valentini 258–263 (1998) 1295
- Modelling of phase transformations occurring in low activation martensitic steels, J.-C. Brachet, L. Gavard, C. Boussidan, C. Lepoittevin, S. Denis and C. Servant 258–263 (1998) 1307
- Influence of operation conditions on structure and properties of 12% Cr steels as candidate structural materials for fusion reactor, A.G. Ioltukhovskiy, M.V. Leontyeva-Smirnova, Y.I. Kazennov, E.A. Medvedeva, A.V. Tselishchev, V.K. Shamardin, A.V. Povstyanko, S.E. Ostrovskiy, A.M. Dvoryashin, S.I. Porollo, A.N. Vorobyev and V.S. Khabarov 258–263 (1998) 1312
- Production of low activation steel; JLF-1, large heats – Current status and future plan, A. Kohyama, Y. Kohno, M. Kuroda, A. Kimura and F. Wan 258–263 (1998) 1319
- Influence of delta ferrite and dendritic carbides on the impact and tensile properties of a martensitic chromium steel, L. Schäfer 258–263 (1998) 1336
- Effect of thickness and loading mode on the fracture properties of V–4Cr–4Ti at room temperature, H. Li, R.J. Kurtz and R.H. Jones 258–263 (1998) 1386
- Tensile and impact properties of vanadium-base alloys irradiated at <math>430^\circ\text{C}</math>, H.M. Chung and D.L. Smith 258–263 (1998) 1442
- Mechanical properties and microstructural characteristics of laser and electron-beam welds in V–4Cr–4Ti, H.M. Chung, J.-H. Park, R.V. Strain, K.H. Leong, D.L. Smith 258–263 (1998) 1451
- Irradiation creep of vanadium-base alloys, H. Tsai, H. Matsui, M.C. Billone, R.V. Strain and D.L. Smith 258–263 (1998) 1471
- Revision of the tensile database for V–Ti and V–Cr–Ti alloys tested at ANL, M.C. Billone, H.M. Chung and D.L. Smith 258–263 (1998) 1523
- Radiation response of SiC-based fibers, G.E. Youngblood, R.H. Jones, A. Kohyama and L.L. Snead 258–263 (1998) 1551
- Fiber creep rate and high-temperature properties of SiC/SiC composites, C.A. Lewinsohn, R.H. Jones, G.E. Youngblood and C.H. Henager Jr. 258–263 (1998) 1557
- Swelling behaviour and TEM studies of SiC<sub>f</sub>/SiC composites after fusion relevant helium implantation, H.W. Scholz, A.J. Frias Rebelo, D.G. Rickerby, P. Krogul, W.E. Lee, J.H. Evans and P. Fenici 258–263 (1998) 1572
- Comparison of the mechanical behaviour of SiC<sub>f</sub>/SiC composites following neutron irradiation and helium implantation, A.J. Frias Rebelo, H.W. Scholz, H. Kolbe, G.P. Tartaglia and P. Fenici 258–263 (1998) 1582
- A fusion power reactor concept using SiC/SiC composites, S. Ueda, S. Nishio, Y. Seki, R. Kurihara, J. Adachi, S. Yamazaki and DREAM Design Team 258–263 (1998) 1589
- Long-lived activity of elements: Effect of new activation cross-sections

- and their uncertainties on the selection of materials for IFE reactors, J. Sanz, C. González and J. Juan 258–263 (1998) 1700
- Damage behavior in an electron/helium dual-beam irradiated Fe–Cr–Mn(W,V) alloy, H. Benfu, H. Kinoshita and H. Takahashi 258–263 (1998) 1708
- High-cycle fatigue tests of modified 316 stainless steels under 20 MeV proton irradiation and thermal pulses, H. Mizubayashi, K. Tateishi, H. Tanimoto and K. Nakata 258–263 (1998) 1725
- Thermomechanical characteristics of low activation chromium and chromium alloys, H. Stamm, M.R. Bonansinga, F. Dos Santos Marques, P. Hähner, H. Kolbe and A. Volcan 258–263 (1998) 1756
- Processing and microstructure of silicon carbide fiber-reinforced silicon carbide composite by hot-pressing, K. Yoshida, Budiyanto, M. Imai and T. Yano 258–263 (1998) 1960
- Microstructural evolution of welded austenitic stainless steel irradiated in HFIR target experiments, T. Sawai, K. Shiba and A. Hishinuma 258–263 (1998) 1997
- Application of HIP bonding to first wall panel fabrication made from reduced activation ferritic steel F82H, K. Furuya, M. Enoeda, T. Hatano, S. Sato, T. Kuroda and H. Takatsu 258–263 (1998) 2023
- An evaluation of potential material-coolant compatibility for applications in advanced fusion reactors, T. Kondo, Y. Watanabe, Y.S. Yi and A. Hishinuma 258–263 (1998) 2083
- Fission Products**
- Temperature and fission rate effects on the rim structure formation in a UO<sub>2</sub> fuel with a burnup of 7.9% FIMA, M. Kinoshita, T. Kameyama, S. Kitajima and H.J. Matzke 252 (1998) 71
- The effect of rare-earth fission products on the rate of U<sub>3</sub>O<sub>8</sub> formation on UO<sub>2</sub>, R.J. McEachern, D.C. Doern and D.D. Wood 252 (1998) 145
- Vaporization study on lanthanum–cerium alloys by mass-spectrometric method, Y. Shoji, T. Matsui, K. Nakamura and T. Inoue 254 (1998) 9
- Fission product release from trace irradiated UO<sub>2+x</sub>, M.A. Mansouri and D.R. Olander Thermal stability and vapor pressure studies on UTe<sub>3</sub>O<sub>9</sub>(s) and UTeO<sub>5</sub>(s), K. Krishnan, G.A. Rama Rao, K.D. Singh Mudher and V. Venugopal 254 (1998) 49
- Transmutation of technetium: results of the EFTTRA-T1 experiment, R.J.M. Konings, A.D. Stalios, C.T. Walker and N. Cocuauud 254 (1998) 122
- Effect of additives (Cr<sub>2</sub>O<sub>3</sub>, Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, MgO) on diffusional release of <sup>133</sup>Xe from UO<sub>2</sub> fuels, S. Kashibe and K. Une 254 (1998) 234
- Thermal treatment of uranium oxide irradiated in pressurized water reactor: Swelling and release of fission gases, I. Zacharie, S. Lansart, P. Combette, M. Trotabas, M. Coster and M. Groos 255 (1998) 85
- Microstructural analysis and modeling of intergranular swelling of an irradiated UO<sub>2</sub> fuel treated at high temperature, I. Zacharie, S. Lansart, P. Combette, M. Trotabas, M. Coster and M. Groos 255 (1998) 92
- Vaporization behavior and thermodynamic stabilities of strontium tellurites, SrTeO<sub>3</sub> and SrTe<sub>2</sub>O<sub>5</sub>, R. Mishra, S.R. Bharadwaj, A.S. Kerkar and S.R. Dharwadkar 255 (1998) 210
- Iodine stress corrosion cracking of Zircaloy reactor cladding: iodine chemistry (a review), P.S. Sidky 256 (1998) 1
- High-temperature Knudsen cell studies of cesium iodide in hyperstoichiometric uranium dioxide, J. McFarlane and J.C. LeBlanc 256 (1998) 145
- Influence of texture and physical mixture of UO<sub>3</sub> and C for carboreduction of UO<sub>3</sub> into UO<sub>2</sub>, F. Poncet, F. Valdivieso and M. Pijolat 256 (1998) 155
- Gibbs energy of formation of thorium molybdate (ThMo<sub>2</sub>O<sub>8</sub>) by the transpiration technique, M. Basu, R. Mishra, S.R. Bharadwaj, A.S. Kerkar and S.R. Dharwadkar 257 (1998) 185
- Thermodynamic analysis of the Cs–Te system around the Cs<sub>2</sub>Te phase, H.P. Nawada and O.M. Sreedharan 257 (1998) 256
- Behaviour of fission gas in the rim region of high burn-up UO<sub>2</sub> fuel pellets with particular reference to results from an XRF investigation, M. Mogensen, J.H. Pearce and C.T. Walker 264 (1999) 99
- A model of silver–iodine reactions in a light water reactor containment sump under severe accident conditions, E. Krausmann and Y. Drosinos 264 (1999) 113
- Fracture and Fracture Toughness**
- Neutron irradiation and intergranular fracture in vanadium–20 wt% titanium alloys undoped and doped with phosphorus and sulfur, J. Kamada, T.E. Bloomer, A.H. Swanson and D.Y. Lyu 252 (1998) 1

- Mechanical properties and microstructure of neutron irradiated cold worked Al-6063 alloy, A. Munitz, A. Shtechman, C. Cotler, M. Talianker and S. Dahan 252 (1998) 79
- A theoretical model for determination of fracture toughness of reactor pressure vessel steels in the transition region from automated ball indentation test, T.S. Byun, J.W. Kim and J.H. Hong 252 (1998) 187
- Elevated temperature fracture toughness of AISI 403 martensitic stainless steel, J.S. Dubey, S.L. Wadekar and J.K. Chakravarty 254 (1998) 271
- The effect of the cracking plane crystallographic orientation on the stress corrosion cracking process, E. Ciocan, M. Ignat and E. Gheorghiu 255 (1998) 1
- Investigation of liquid impact erosion for 12Cr steel and Stellite 6B, M.K. Lee, W.W. Kim, C.K. Rhee and W.J. Lee 257 (1998) 134
- Effect of microstructure on the susceptibility of a 533 steel to temper embrittlement, S. Raoul, B. Marini and A. Pineau 257 (1998) 199
- Notch position in the HAZ specimen of reactor pressure vessel steel, J.H. Kim and E.P. Yoon 257 (1998) 303
- Materials design data for fusion reactors, A.A.F. Tavassoli 258–263 (1998) 85
- Research and development on vanadium alloys for fusion applications, S.J. Zinkle, H. Matsui, D.L. Smith, A.F. Rowcliffe, E. van Osch, K. Abe and V.A. Kazakov 258–263 (1998) 205
- Irradiation testing of 316L(N)-IG austenitic stainless steel for ITER, E.V. van Osch, M.G. Horsten and M.I. de Vries 258–263 (1998) 301
- Material properties and design requirements for copper alloys used in ITER, J.W. Davis and G.M. Kalinin 258–263 (1998) 323
- Effect of specimen type and size on fracture resistance curve determination for CuCrZr alloy, P. Karjalainen-Roikonen, M. Pyykkönen and S. Tähtinen 258–263 (1998) 462
- Fracture strengths of HIPed DS-Cu/SS joints for ITER shielding blanket/first wall, T. Hatano, M. Kanari, S. Sato, M. Gotoh, K. Furuya, T. Kuroda, M. Saito, M. Enoeda and H. Takatsu 258–263 (1998) 950
- Evidence of damage in carbon fibre composite tiles joined metallic heat sink under high heat flux fatigue, R. Mitteau, P. Chappuis, L. Moncel and J. Schlosser 258–263 (1998) 972
- Effect of neutron irradiation on fracture toughness behaviour of copper alloys, S. Tähtinen, M. Pyykkönen, P. Karjalainen-Roikonen, B.N. Singh and P. Toft 258–263 (1998) 1010
- Deformation and fracture of Cu alloy–stainless steel layered structures under dynamic loading, J.H. McCoy, A.S. Kumar and J.F. Stubbins 258–263 (1998) 1033
- Distribution of C–Cr associates and mechanical stability of Cr martensitic steels, P. Gondí, R. Montanari and M.E. Tata 258–263 (1998) 1167
- Fracture toughness of low activation ferritic steel (JLF-1) weld joint at room temperature, A. Nishimura, N. Inoue and T. Muroga 258–263 (1998) 1242
- Correlation between microstructure and hardness of a low activation ferritic steel (JLF-1) weld joint, N. Inoue, T. Muroga, A. Nishimura and O. Motojima 258–263 (1998) 1248
- Heat treatment effects on impact toughness of 9Cr–1MoVNb and 12Cr–1MoVW steels irradiated to 100 dpa, R.L. Klueh and D.J. Alexander 258–263 (1998) 1269
- Fracture toughness and tensile behavior of ferritic–martensitic steels irradiated at low temperatures, A.F. Rowcliffe, J.P. Robertson, R.L. Klueh, K. Shiba, D.J. Alexander, M.L. Grossbeck and S. Jitsukawa 258–263 (1998) 1275
- Effect of small additional elements on DBTT of V–4Cr–4Ti irradiated at low temperatures, T. Shibayama, I. Yamagata, H. Kayano and C. Namba 258–263 (1998) 1361
- Effect of thickness and loading mode on the fracture properties of V–4Cr–4Ti at room temperature, H. Li, R.J. Kurtz and R.H. Jones 258–263 (1998) 1386
- Dynamic finite element analysis of third size charpy specimens of V–4Cr–4Ti, M.R. Lansberry, R.J. Kurtz, A.S. Kumar and G.E. Mueller 258–263 (1998) 1392
- Effect of high temperature heat treatment in vacuum on microstructure and bending properties of SiC<sub>r</sub>/SiC composites prepared by CVI, H. Araki, H. Suzuki, W. Yang, S. Sato and T. Noda 258–263 (1998) 1540
- Crack initiation and growth characteristics in SiC/SiC under indentation test, W. Zhang, T. Hinoki, Y. Kato, A. Kohyama, T. Noda, T. Muroga and J. Yu 258–263 (1998) 1577
- Cr–Ni alloys for fusion reactors, M.I. Solonin, A.B. Alekseev, S.A. Averin, Y.A. Burenkov, V.M. Chernov, B.K. Kardashev, V.P. Kondrat'ev,

- A.V. Kozlov, V.N. Rechitsky and S.N. Votinov 258–263 (1998) 1762
- Fatigue crack growth under compressive loading, K. Kasaba, T. Sano, S. Kudo, T. Shoji, K. Katagiri and T. Sato 258–263 (1998) 2059
- Preshock-induced phase transition in spalled U–0.75 wt% Ti, A.K. Zurek 264 (1999) 155
- Fractographic observations of cleavage fracture initiation in a bainitic A508 steel, M. Mäntylä, A. Rossoll, I. Nedbal, C. Prioul and B. Marini 264 (1999) 257
- The principal structural changes proceeding in Russian pressure vessel steels as a result of neutron irradiation, recovery annealing and re-irradiation, B.A. Gurovich, E.A. Kuleshova, O.V. Lavrenchuk, K.E. Prikhodko and Y.I. Shtrombakh 264 (1999) 333
- Fuels and Fuel Elements**
- Mechanistic interpretations of UO<sub>2</sub> oxidation, D.R. Olander 252 (1998) 121
- Studies on the kinetics of oxidation of Pu<sub>y</sub>Th<sub>1-y</sub>O<sub>2-x</sub> (y = 0.2, 0.3 and 0.7) in air, S.K. Sali, S. Sampath and V. Venugopal 252 (1998) 131
- Low volatile fission-product release and fuel volatilization during severe reactor accident conditions, B.J. Lewis, B.J. Corse, W.T. Thompson, M.H. Kaye, F.C. Iglesias, P. Elder, R. Dickson and Z. Liu 252 (1998) 235
- Fission product release from trace irradiated UO<sub>2+x</sub>, M.A. Mansouri and D.R. Olander 254 (1998) 22
- Thermal stability and vapour pressure studies on UTe<sub>3</sub>O<sub>9</sub>(s) and UTeO<sub>5</sub>(s), K. Krishnan, G.A. Rama Rao, K.D. Singh Mudher and V. Venugopal 254 (1998) 49
- Irradiation behavior of high uranium-density alloys in the plate fuels, M. Ugajin, A. Itoh, M. Akabori, N. Ooka and Y. Nakakura 254 (1998) 78
- A review of the oxidation of uranium dioxide at temperatures below 400°C, R.J. McEachern and P. Taylor 254 (1998) 87
- Kinetics of interfacial reactions in molten U/solid Y<sub>2</sub>O<sub>3</sub> system, C. Tournier, B. Lorrain, F. Le Guyadec, L. Coudurier and N. Eustahopoulos 254 (1998) 215
- The oxidation resistance improvement of matrix graphite of spherical fuel elements by slip-gelation process, Q. Zhu, X. Qiu and C. Ma 254 (1998) 221
- Oxidation state of uranium: an XPS study of alkali and alkaline earth uranates, S. Bera, S.K. Sali, S. Sampath, S.V. Narashiman and V. Venugopal 255 (1998) 26
- Kinetics of UO<sub>2</sub> oxidation in steam atmosphere, B.V. Dobrov, V.V. Likhanskii, V.D. Ozrin, A.A. Solodov, M.P. Kissane and H. Manenc 255 (1998) 59
- Thermal treatment of uranium oxide irradiated in pressurized water reactor: Swelling and release of fission gases, I. Zacharie, S. Lansart, P. Combette, M. Trotabas, M. Coster and M. Groos 255 (1998) 85
- Microstructural analysis and modeling of intergranular swelling of an irradiated UO<sub>2</sub> fuel treated at high temperature, I. Zacharie, S. Lansart, P. Combette, M. Trotabas, M. Coster and M. Groos 255 (1998) 92
- The influence of nitrogen dioxide on the oxidation of UO<sub>2</sub> in air at temperatures below 275°C, R.J. McEachern, S. Sunder, P. Taylor, D.C. Doern, N.H. Miller and D.D. Wood 255 (1998) 234
- Deuterium release from plasma-exposed beryllium during thermal desorption, J. Won, R.P. Doerner and R.W. Conn 256 (1998) 96
- Vaporization behaviour and Gibbs energy of formation of UTeO<sub>5</sub> and UTe<sub>3</sub>O<sub>9</sub> by transpiration, R. Mishra, P.N. Namboodiri, S.N. Tripathi, S.R. Bharadwaj and S.R. Dharwadkar 256 (1998) 139
- High-temperature Knudsen cell studies of cesium iodide in hyperstoichiometric uranium dioxide, J. McFarlane and J.C. LeBlanc 256 (1998) 145
- A simple thermodynamical model to describe the control of the dissolution of uranium dioxide in granitic groundwater by secondary phase formation, P. Trocellier, C. Cauchoir and S. Guilbert 256 (1998) 197
- Microstructure of boron nitride coated on nuclear fuels by plasma enhanced chemical vapor deposition, H.H. Durmazucar, G. Gündüz and C. Toker 256 (1998) 207
- The influence of specimen roughness on the rate of formation of U<sub>3</sub>O<sub>8</sub> on UO<sub>2</sub> in air at 250°C, P. Taylor, R.J. McEachern, D.C. Doern and D.D. Wood 256 (1998) 213
- Effect of oxygen on the operation of a single-cell thermionic fuel element, D.V. Paramonov and M.S. El-Genk 256 (1998) 218

- Validation of an electrochemical model for the oxidative dissolution of used CANDU fuel, D.W. Shoosmith, S. Sunder and J.C. Tait 257 (1998) 89
- An analysis of density distribution in UO<sub>2</sub> green pellet by finite element method, K. Yanai, M. Hirai, T. Ishikawa, J. Ishizaki and H. Saitoh 257 (1998) 318
- R&D of oxide dispersion strengthened ferritic martensitic steels for FBR, S. Ukai, T. Nishida, T. Okuda and T. Yoshitake 258–263 (1998) 1745
- Thermal vaporization and deposition of gallium oxide in hydrogen, D.P. Butt, Y. Park and T.N. Taylor 264 (1999) 71
- Isotope selective excitation of <sup>155</sup>Gd and <sup>157</sup>Gd isotopes from <sup>9</sup>D<sup>0-6</sup> states using broadband lasers, M. Sankari, M.V. Suryanarayana and S. Gangadharan 264 (1999) 122
- Nuclear fuel pellet inspection using artificial neural networks, S. Keyvan, X. Song and M. Kelly 264 (1999) 141
- Molar Gibbs energy formation of KUO<sub>3</sub>(s), K. Jayanthi, V.S. Iyer, G.A. Rama Rao and V. Venugopal 264 (1999) 263
- Temperature programmed decomposition of uranyl nitrate hexahydrate, S. Dash, M. Kamruddin, S. Bera, P.K. Ajikumar, A.K. Tyagi, S.V. Narasimhan and B. Raj 264 (1999) 271
- Fusion Reactors**
- Behavior and computer simulation of SiC under irradiation with energetic particles, J.M. Perlado 251 (1997) 98
- Damage calculation in fusion ceramics: comparing neutrons and light ions, P.V. Vladimirov, D. Lizunov, Yu.A.I. Ryazanov and A. Möslang 253 (1998) 104
- Codeposition of deuterium with beryllium, R.A. Causey and D.S. Walsh 254 (1998) 84
- The removal of codeposited layers from TFTR tiles by O<sub>2</sub> gas exposure, A.A. Haasz and J.W. Davis 256 (1998) 65
- Tritium inventory in Li<sub>2</sub>ZrO<sub>3</sub> blanket, M. Nishikawa and A. Baba 257 (1998) 162
- Fusion R&D strategy for Japan, A. Iiyoshi 258–263 (1998) 1
- The challenge of developing structural materials for fusion power systems, E.E. Bloom 258–263 (1998) 7
- IFMIF, its facility concept and technology, T. Kondo 258–263 (1998) 47
- Design and material selection for ITER first wall/blanket, divertor and vacuum vessel, K. Ioki, V. Barabash, A. Cardella, F. Elio, Y. Gohar, G. Janeschitz, G. Johnson, G. Kalinin, D. Lousteau, M. Onozuka, R. Parker, G. Sannazzaro and R. Tivey 258–263 (1998) 74
- Materials design data for fusion reactors, A.A.F. Tavassoli 258–263 (1998) 85
- Review of SC magnet technologies developed in LHD project, O. Motojima, N. Yanagi and A. Nishimura 258–263 (1998) 234
- Development of joining technology for Be/Cu-alloy and Be/SS by HIP, T. Kuroda, T. Hatano, M. Enoeda, S. Sato, K. Furuya, H. Takatsu, T. Iwadachi and K. Nishida 258–263 (1998) 258
- Calculation of radiation-induced deformation in the ITER vacuum vessel, J. Nagakawa 258–263 (1998) 289
- Influence of materials choice on occupational radiation exposure in ITER, C.B.A. Forty, J.D. Firth and G.J. Butterworth 258–263 (1998) 335
- Neutron radiation effects of the center conductor post in a low aspect ratio tokamak reactor, Y. Wu, B. Xiao, Q. Huang and L. Qiu 258–263 (1998) 339
- Water-cooled Pb-17Li test blanket module for ITER: Impact of the structural material grade on the neutronic responses, G. Vella, G. Aiello, M.A. Fütterer, L. Giancarli, E. Oliveri and F. Tavassoli 258–263 (1998) 357
- Divertor materials evaluation system (DiMES), C.P.C. Wong, D.G. Whyte, R.J. Bastasz, J. Brooks, W.P. West and W.R. Wampler 258–263 (1998) 433
- Experimental and analytical studies on high-speed plane jet along concave wall simulating IFMIF Li target flow, H. Nakamura, K. Itoh, Y. Kukita, M. Ida, Y. Kato, H. Maekawa and H. Katsuta 258–263 (1998) 440
- Handling of beryllium, A.A. Goraieb 258–263 (1998) 471
- Solubility of hydrogen fluoride in the molten LiF–PbF<sub>2</sub>, M. Ablanov, H. Matsuura and R. Takagi 258–263 (1998) 500
- Magnetic field effect on the deposition of nickel in molten Pb–17Li, F. Barbier and A. Alemany 258–263 (1998) 508
- Compatibility of structural materials with Li<sub>2</sub>BeF<sub>4</sub> molten salt breeder, T. Terai, Y. Hosoya, S. Tanaka, A. Sagara and O. Motojima 258–263 (1998) 513
- Tritium release behavior from neutron-irradiated Li<sub>2</sub>TiO<sub>3</sub> single crystal, T. Tanifuji, D. Yamaki, S. Nasu and K. Noda 258–263 (1998) 543
- Behaviour of plasma facing materials under VDE, M. Merola, M. Rödig, J. Linke, R. Duwe and G. Vieider 258–263 (1998) 653
- Analysis of the mechanism and source of contamination of diagnostic windows in fusion devices, V.S. Voitsenya 258–263 (1998) 658
- On the use of flat tile armour in high heat flux components, M. Merola and G. Vieider 258–263 (1998) 672

- Activation of beryllium in a fusion power plant, C.B.A. Forty, R.A. Forrest and G.J. Butterworth 258–263 (1998) 793
- Effects of prestresses on mechanical properties of isotropic graphite materials, T. Oku, A. Kurumada, Y. Imamura, K. Kawamata and M. Shiraishi 258–263 (1998) 814
- High-heat-flux-exposure-experiments of a tungsten-test-limiter at TEXTOR-94, M. Wada, T. Tanabe, V. Philipps, B. Unterberg, A. Pospieszczyk, B. Schweer, J. Rapp, Y. Ueda, K. Ohya, T. Ohgo and N. Noda 258–263 (1998) 853
- Effects of neutron irradiation on microstructure and deformation behaviour of mono- and polycrystalline molybdenum and its alloys, B.N. Singh, J.H. Evans, A. Horsewell, P. Toft and G.V. Müller 258–263 (1998) 865
- Transmutation and induced radioactivity of W in the armor and first wall of fusion reactors, T. Noda, M. Fujita and M. Okada 258–263 (1998) 934
- The effect of neutron dose, irradiation and testing temperature on mechanical properties of copper alloys, S.A. Fabritsiev, A.S. Pokrovsky, D.J. Edwards and S.J. Zinkle 258–263 (1998) 1015
- Influence of composition, heat treatment and neutron irradiation on the electrical conductivity of copper alloys, M. Eldrup and B.N. Singh 258–263 (1998) 1022
- Improved activation tests of fusion structural materials with a deuterium–beryllium neutron source, U. von Möllendorff, H. Giese, Y. Ikeda, F. Maekawa, H. Tsige-Tamirat, P. Wilson 258–263 (1998) 1143
- Low cycle fatigue properties of 8Cr–2WVTa ferritic steel at elevated temperatures, T. Ishii, K. Fukaya, Y. Nishiyama, M. Suzuki and M. Eto 258–263 (1998) 1183
- Analysis of error field due to ferritic steel in the advanced material testing program of JFT-2M, M. Sato, Y. Miura, S. Takeji, H. Kimura and K. Shiba 258–263 (1998) 1253
- Effect of hydrogen on tensile properties of martensitic steels for fusion application, M. Beghini, G. Benamati, L. Bertini and R. Valentini 258–263 (1998) 1295
- Effects of helium on void swelling in boron doped V–5Fe alloys, T. Iwai, N. Sekimura and F.A. Garner 258–263 (1998) 1512
- A fusion power reactor concept using SiC/SiC composites, S. Ueda, S. Nishio, Y. Seki, R. Kurihara, J. Adachi, S. Yamazaki and DREAM Design Team 258–263 (1998) 1589
- Mechanical properties and damage behavior of non-magnetic high manganese austenitic steels, H. Takahashi, Y. Shindo, H. Kinoshita, T. Shibayama, S. Ishiyama, K. Fukaya, M. Eto, M. Kusuhashi, T. Hatakeyama and I. Sato 258–263 (1998) 1644
- Low activation austenitic Mn-steel for in-vessel fusion materials, Y. Suzuki, T. Saida and F. Kudough 258–263 (1998) 1687
- Long-lived activity of elements: Effect of new activation cross-sections and their uncertainties on the selection of materials for IFE reactors, J. Sanz, C. González and J. Juan 258–263 (1998) 1700
- The dependence of irradiation creep in austenitic alloys on displacement rate and helium to dpa ratio, F.A. Garner, M.B. Toloczko and M.L. Grossbeck 258–263 (1998) 1718
- Concentration limits of natural elements in low activation fusion materials, E.T. Cheng 258–263 (1998) 1767
- Advanced management concepts for fusion waste, P. Rocco and M. Zucchetti 258–263 (1998) 1773
- Impact of low activation materials on fusion reactor design, Y. Seki, T. Tabara, I. Aoki, S. Ueda, S. Nishio and R. Kurihara 258–263 (1998) 1791
- Mechanical properties and microstructure of  $\alpha$ -alumina and magnesium aluminate spinel irradiated with He ions, K. Izumi, K. Yasuda, C. Kinoshita and M. Kutsuwada 258–263 (1998) 1856
- Absorption and fluorescence phenomena of optical fibers under heavy neutron irradiation, T. Kakuta, K. Sakasai, T. Shikama, M. Narui and T. Sagawa 258–263 (1998) 1893
- Development of superconductors for the Large Helical Device, N. Yanagi, T. Mito, K. Takahata, S. Imagawa, S. Yamada, A. Nishimura, A. Iwamoto, H. Chikaraishi, H. Tamura, S. Yamaguchi, T. Satow, S. Satoh, O. Motojima 258–263 (1998) 1935
- Developments of high- $T_c$  superconducting current feeders for a large-scale superconducting coil system, T. Mito, K. Maehata, M. Mizokami, K. Ishibashi, M. Takeo, A. Iwamoto, N. Hirano, T. Shintomi, K. Kimura, M. Sawamura, S. Yamada, S. Satoh and O. Motojima 258–263 (1998) 1940
- The effect of neutron irradiation on mechanical properties of Cu/SS joints for ITER applications, S.A.

- Fabritsiev, A.S. Pokrovsky, D.J. Edwards, S.J. Zinkle and A.F. Rowcliffe 258–263 (1998) 2069
- Neutron irradiation experiments for fusion reactor materials through JUPITER program, K. Abe, A. Kohyama, C. Namba, F.W. Wiffen and R.H. Jones 258–263 (1998) 2075
- Materials design and related R&D issues for the force-free helical reactor (FFHR), A. Sagara, T. Muroga, O. Motojima, T. Noda, S. Tanaka, T. Terai, A. Kohyama and H. Matsui 258–263 (1998) 2079
- Investigation of plasma exposed W–1% La<sub>2</sub>O<sub>3</sub> tungsten in a high ion flux, low ion energy, low carbon impurity plasma environment for the International Thermonuclear Experimental Reactor, F.C. Sze, R.P. Doerner and S. Luczkardt 264 (1999) 89
- Gamma Irradiation**
- Radiation-induced electrical conductivity in aluminium nitride ceramic, U. Ulmanis and E. Palcevskis 252 (1998) 195
- The effect of composition, processing conditions, and irradiation, on lattice defects in spinel ceramics, T.A. Bazilevskaya, V.T. Gritsyna, D.V. Orliński, L.V. Udalova and A.V. Voitsenya 253 (1998) 133
- Electrical conductivity change in single crystal Al<sub>2</sub>O<sub>3</sub> and MgO under neutron and gamma-ray irradiation, T. Tanifuji, Y. Katano, T. Nakazawa and K. Noda 253 (1998) 156
- The effects of  $\gamma$ -irradiation on subcritical crack growth in alumina, G.P. Pells and R.M. Boothby 256 (1998) 25
- Time variation of the optical absorption of quartz KU-1 induced by gamma irradiation, V.I. In'kov, I.A. Ivanin and D.V. Orliński 256 (1998) 254
- Pre- and post-irradiation studies on mm-wave losses in reference window materials for electron cyclotron wave systems, R. Heidinger, A. Ibarra and J. Molla 258–263 (1998) 1822
- Radiation effects on insulating gases for the ITER NBI system, E.R. Hodgson and A. Moroño 258–263 (1998) 1827
- Investigation of cryogenic irradiation influence on mechanical and physical properties of ITER magnetic system insulation materials, A.V. Kozlov, E.N. Scherbacov, N.A. Dudchenko, V.S. Shihalev, V.V. Bedin, N.A. Paltusov and V.E. Korsunskiy 258–263 (1998) 1878
- Photon emission induced by fusion neutrons on optical window materials, F. Sato, T. Iida, Y. Oyama, F. Maekawa and Y. Ikeda 258–263 (1998) 1897
- Contact corrosion measurements on the pair UO<sub>2+x</sub> and carbon steel 1.0330 in brines and bentonite porewater with respect to direct waste disposal, J. Engelhardt and G. Marx 264 (1999) 161
- Runaway-limiter interaction in the FTU tokamak during disruptions, G. Maddaluno and B. Esposito 266–269 (1999) 593
- Gases (excludes Hydrogen, Helium and Tritium) in Materials**
- Defect production and accumulation under hydrogen and helium ion irradiation, J. Yu, X. Zhao, W. Zhang, W. Yang and F. Chu 251 (1997) 150
- Comments on 'Behaviour of inert gas bubbles under chemical concentration gradients' by G.P. Tiwari, J.H. Evans and A. van Veen 252 (1998) 156
- Reply to 'Comments on 'Behaviour of inert gas bubbles under chemical concentration gradients'', G.P. Tiwari 252 (1998) 162
- Effect of additives (Cr<sub>2</sub>O<sub>3</sub>, Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, MgO) on diffusional release of <sup>133</sup>Xe from UO<sub>2</sub> fuels, S. Kashibe and K. Une 254 (1998) 234
- Sorption and desorption phenomena of D<sub>2</sub>O on the surface of piping materials, R. Ohmori, T. Yoneoka, M. Taniguchi and S. Tanaka 258–263 (1998) 474
- Anomalous exchange of deuterium implanted into an oxide ceramic for protium in air vapor, B. Tsuchiya, E. Iizuka, K. Soda, K. Morita and H. Iwahara 258–263 (1998) 555
- Gas and hydrogen ion gettering properties of lithium, T. Hino, K. Kanaya, I. Takahashi, H. Yanagihara, M. Hashiba, Y. Hirohata and K. Mori 258–263 (1998) 612
- Tritium retention in CX-2002U and methods to reduce tritium inventory, T. Tadokoro, S. O'hira, M. Nishi and K. Isobe 258–263 (1998) 1092
- Radiation effects on insulating gases for the ITER NBI system, E.R. Hodgson and A. Moroño 258–263 (1998) 1827
- Fission product release mechanisms during reactor accident conditions, F.C. Iglesias, B.J. Lewis, P.J. Reid and P. Elder 270 (1999) 21
- Characterization of UO<sub>2</sub> irradiated in the BR-3 reactor, S.K. Yagnik, A.J. Machiels and R.L. Yang 270 (1999) 65
- Artificial neural network models for volatile fission product release during severe accident conditions, W.S. Andrews, B.J. Lewis and D.S. Cox 270 (1999) 74



- Ramp test behavior of high O/U fuel, J.H. Davies, E.V. Hoshi and D.L. Zimmerman 270 (1999) 87
- Grain Boundaries**
- Aspects of microstructure evolution under cascade damage conditions, B.N. Singh, S.I. Golubov, H. Trinkaus, A. Serra, Yu.N. Osetsky and A.V. Barashev 251 (1997) 107
- Radiation-induced grain boundary segregation in nuclear reactor steels, R.G. Faulkner 251 (1997) 269
- On the mechanism of radiation-induced segregation in austenitic Fe-Cr-Ni alloys, T.R. Allen, J.T. Busby, G.S. Was and E.A. Kenik 255 (1998) 44
- The effect of hydride on the corrosion of Zircaloy-4 in aqueous LiOH solution, S.-J. Kim, K.H. Kim, J.H. Baek, B.K. Choi, Y.H. Jeong and Y.H. Jung 256 (1998) 114
- Performance and lifetime assessment of reactor wall and nearby components during plasma instabilities, A. Hassanein and I. Konkashbaev 258-263 (1998) 645
- ERD study of deuterium atoms implanted in edge-HOPG, H. Ohkubo, M. Takenaka, A. Takase, N. Tsukuda and E. Kuramoto 258-263 (1998) 1077
- Grain boundary chemistry and heat treatment effects on the ductile-to-brittle transition behavior of vanadium alloys, R.J. Kurtz, M.L. Hamilton and H. Li 258-263 (1998) 1375
- Effect of carbon and nitrogen on grain boundary segregation in irradiated stainless steels, F. Kano, K. Fukuya, S. Hamada and Y. Miwa 258-263 (1998) 1713
- Simulation of helium bubble behavior in neutron-irradiated stainless steel during welding, S. Kawano, R. Sumiya and K. Fukuya 258-263 (1998) 2008
- Comparison of stress corrosion cracking susceptibility of thermally-sensitized and proton-irradiated 304 stainless steel using electrochemical noise techniques, L.H. Wang, J.J. Kai, C.H. Tsai and C. Fong 258-263 (1998) 2046
- Growth**
- New model of equiaxed grain growth in irradiated UO<sub>2</sub>, O.V. Khoruzhii, S.Y. Kourtchatov and V.V. Likhanskii 265 (1999) 112
- Heat Treatment**
- Stress state dependence of transient irradiation creep in 20% cold worked 316 stainless steel, J.P. Foster, K. Bunde and E.R. Gilbert 257 (1998) 118
- Comparison of hot dip aluminised F82H-mod. steel after different subsequent heat treatments, H. Glasbrenner and O. Wedemeyer 257 (1998) 274
- Notch position in the HAZ specimen of reactor pressure vessel steel, J.H. Kim and E.P. Yoon 257 (1998) 303
- Sorption and desorption phenomena of D<sub>2</sub>O on the surface of piping materials, R. Ohmori, T. Yoneoka, M. Taniguchi and S. Tanaka 258-263 (1998) 474
- Thermal stability and chemical erosion of the silicon doped CFC material NS31, M. Balden, J. Roth and C.H. Wu 258-263 (1998) 740
- High heat load properties of tungsten coated carbon materials, K. Tokunaga, N. Yoshida, N. Noda, T. Sogabe and T. Kato 258-263 (1998) 998
- Influence of tantalum and nitrogen contents, normalizing condition and TMCP process on the mechanical properties of low-activation 9Cr-2W-0.2V-Ta steels for fusion application, T. Hasegawa, Y. Tomita and A. Kohyama 258-263 (1998) 1153
- Physical metallurgy and mechanical behaviour of FeCrWTaV low activation martensitic steels: Effects of chemical composition, A. Alamo, J.C. Brachet, A. Castaing, C. Lepoittevin and F. Barcelo 258-263 (1998) 1228
- Void formation and microstructural development in oxide dispersion strengthened ferritic steels during electron-irradiation, J. Saito, T. Suda, S. Yamashita, S. Ohnuki, H. Takahashi, N. Akasaka, M. Nishida and S. Ukai 258-263 (1998) 1264
- Heat treatment effects on impact toughness of 9Cr-1MoVNb and 12Cr-1MoVW steels irradiated to 100 dpa, R.L. Klueh and D.J. Alexander 258-263 (1998) 1269
- Development of techniques for welding V-Cr-Ti alloys, M.L. Grossbeck, J.F. King, D.J. Alexander, P.M. Rice and G.M. Goodwin 258-263 (1998) 1369
- Effects of annealing on the tensile properties of irradiated austenitic stainless steel, I. Ioka, A. Naito, K. Shiba, J.P. Robertson, S. Jitsukawa and A. Hishinuma 258-263 (1998) 1664
- Development of the superconductors for ITER magnet system, A. Shikov, A. Nikulin, A. Silaev, A. Vorobieva, V. Pantsyrnyi, G. Vedernikov, N. Salunin, S. Sudiev 258-263 (1998) 1929
- Mössbauer spectroscopy of tin in unirradiated and neutron irradiated Zircalloys, J.A. Sawicki 264 (1999) 169
- Effect of oxygen content on the beta-quenched microstructure of modified Zircaloy-4, H.S. Hong, S.J. Kim and K.S. Lee 265 (1999) 108

**Helium**

- The consequences of helium production on microstructural development and deformation response in isotopically tailored ferritic alloys, D.S. Gelles, G.L. Hankin and M.L. Hamilton 251 (1997) 188
- Low temperature mechanical properties of steels containing high concentrations of helium, H. Ullmaier and E. Camus 251 (1997) 262
- Helium implantation effects on mechanical properties of SiC<sub>f</sub>/SiC composites, A. Hasegawa, M. Saito, K. Abe and R.H. Jones 253 (1998) 31
- Release of tritium, protium, and helium from neutron-irradiated Li-Al alloy. II, H. Sugai, M. Tanase and M. Yahagi 254 (1998) 151
- Void swelling in Fe-15Cr-xNi ternary alloys under proton irradiation, Y. Murase, J. Nagakawa, N. Yamamoto and H. Shiraishi 255 (1998) 34
- Accumulation and recovery of irradiation damage in He<sup>+</sup> implanted  $\alpha$ -SiC, W. Jiang, W.J. Weber, S. Thevuthasan and D.E. McCready 257 (1998) 295
- Characterization of the irradiation parameters in the IFMIF high flux test region, E. Daum, P.P.H. Wilson, U. Fischer and K. Ehrlich 258-263 (1998) 413
- Characterization of the volume for high dose irradiations with IFMIF, E. Daum, P.P.H. Wilson and A. Möslang 258-263 (1998) 421
- Handling of beryllium, A.A. Goraieb 258-263 (1998) 471
- Helium release from neutron-irradiated Li<sub>2</sub>O single crystals, D. Yamaki, T. Tanifuji and K. Noda 258-263 (1998) 549
- The dependence on ion energy and temperature of helium trapping in nickel, H. Yanagihara, Y. Hirohata and T. Hino 258-263 (1998) 607
- Gas bubbles in beryllium implanted with He ions at temperatures  $\leq 700$  K and after post-implantation annealing, V.N. Chernikov, H. Ullmaier and A.P. Zakharov 258-263 (1998) 694
- Hardening behavior of molybdenum by low energy He and D ion irradiation, H. Iwakiri, H. Wakimoto, H. Watanabe and N. Yoshida 258-263 (1998) 873
- Effects of solid transmutants and helium in copper studied by mixed-spectrum neutron irradiation, T. Muroga, H. Watanabe and N. Yoshida 258-263 (1998) 955
- Calculation and measurement of helium generation and solid transmutants in Cu-Zn-Ni alloys, L.R. Greenwood, B.M. Oliver, F.A. Garner and T. Muroga 258-263 (1998) 985
- Embrittlement behaviour of different international low activation alloys after neutron irradiation, M. Rieth, B. Dafferner and H.-D. Röhrig 258-263 (1998) 1147
- Effect of purity on helium bubble formation in 9Cr martensitic steel during post-implantation annealing at 1105 K, T. Nagasaka, T. Shibayama, H. Kayano, A. Hasegawa, M. Satou, K. Abe 258-263 (1998) 1193
- A review of some effects of helium on charpy impact properties of ferritic/martensitic steels, D.S. Gelles, G.L. Hankin and M.L. Hamilton 258-263 (1998) 1216
- Evolution of the mechanical properties of the F82H ferritic/martensitic steel after 590 MeV proton irradiation, P. Spätig, R. Schäublin, S. Gyger and M. Victoria 258-263 (1998) 1345
- Helium-vacancy clustering in V-4Cr-4Ti at elevated temperatures, A.V. Fedorov, A. van Veen and A.I. Ryazanov 258-263 (1998) 1396
- Influence of thermal treatment on helium trapping at fine-size precipitates in V-4Cr-4Ti, A. van Veen, A.V. Fedorov and A.I. Ryazanov 258-263 (1998) 1400
- Tensile properties of a series of V-4Ti-4Cr alloys containing small amounts of Si, Al and Y, and the influence of helium implantation, T. Matsushima, M. Satou, A. Hasegawa, K. Abe and H. Kayano 258-263 (1998) 1497
- Effects of helium on void swelling in boron doped V-5Fe alloys, T. Iwai, N. Sekimura and F.A. Garner 258-263 (1998) 1512
- Interface strength of SiC/SiC composites with and without helium implantation using micro-indentation test, M. Saito, A. Hasegawa, S. Ohtsuka and K. Abe 258-263 (1998) 1562
- Swelling behaviour and TEM studies of SiC<sub>f</sub>/SiC composites after fusion relevant helium implantation, H.W. Scholz, A.J. Frias Rebelo, D.G. Rickerby, P. Krogul, W.E. Lee, J.H. Evans and P. Fenici 258-263 (1998) 1572
- Temperature dependence of bubble structure in 316L stainless steel irradiated with 2.5 MeV He ions, C.H. Zhang, K.Q. Chen, Y.S. Wang and J.G. Sun 258-263 (1998) 1623
- Microstructural observation of helium implanted and creep ruptured Fe-25%Ni-15%Cr alloys containing various MC and MN formers, N. Yamamoto, J. Nagakawa, Y. Murase and H. Shiraishi 258-263 (1998) 1628
- Effect of combined addition of Ti and P on creep rupture properties of helium implanted Fe-25%Ni-15%Cr alloy, N. Yamamoto, J.

- Nagakawa, Y. Murase and H. Shiraishi 258–263 (1998) 1634
- Effect of cold work on void swelling in proton irradiated Fe–15Cr–20Ni ternary alloys, Y. Murase, J. Nagakawa, N. Yamamoto and H. Shiraishi 258–263 (1998) 1639
- Shear punch testing of <sup>59</sup>Ni isotopically-doped model austenitic alloys after irradiation in FFTF at different He/dpa ratios, G.L. Hankin, M.B. Toloczko, M.L. Hamilton, F.A. Garner and R.G. Faulkner 258–263 (1998) 1657
- Microchemical and microstructural changes of austenitic steels caused by proton irradiation following helium implantation, T. Fukuda, T. Aoki, Y. Isobe, T. Furuya, A. Hasegawa and K. Abe 258–263 (1998) 1694
- Damage behavior in an electron/helium dual-beam irradiated Fe–Cr–Mn(W,V) alloy, H. Benfu, H. Kinoshita and H. Takahashi 258–263 (1998) 1708
- The dependence of helium generation rate on nickel content of Fe–Cr–Ni alloys irradiated to high dpa levels in EBR-II, F.A. Garner, B.M. Oliver and L.R. Greenwood 258–263 (1998) 1740
- The effect of helium accumulation and radiation damage on the weldability of 316-type steel, S.A. Fabritsiev and A.S. Pokrovsky 258–263 (1998) 1991
- Yag laser welding of neutron irradiated stainless steels, S. Nishimura, R. Katsura, Y. Saito, W. Kono, H. Takahashi, M. Koshiishi, T. Kato and K. Asano 258–263 (1998) 2002
- Simulation of helium bubble behavior in neutron-irradiated stainless steel during welding, S. Kawano, R. Sumiya and K. Fukuya 258–263 (1998) 2008
- Effect of weld thermal cycle on helium bubble formation in stainless steel, F. Kano, S. Nakahigashi, H. Nakamura, N. Uesugi, T. Mitamura, M. Terasawa, H. Irie and K. Fukuya 258–263 (1998) 2013
- Weldability of helium-containing stainless steels using a YAG laser, S. Kawano, S. Nakahigashi, K. Uesugi, H. Nakamura, W. Kono, K. Fukuya, F. Kano, A. Hasegawa and K. Abe 258–263 (1998) 2018
- Densification behaviour of UO<sub>2</sub>–50%PuO<sub>2</sub> pellets by dilatometry, T.R.G. Kutty, P.V. Hegde, R. Keswani, K.B. Khan, S. Majumdar and D.S.C. Purushotham 264 (1999) 10
- Helium-bubble formation behavior of SiCf/SiC composites after helium implantation, A. Hasegawa, M. Saito, S. Nogami, K. Abe, R.H. Jones and H. Takahashi 264 (1999) 355
- High Temperature Reactors**
- Present status and future prospect of the ITER project, R. Aymar, ITER Joint Central Team and Home Teams 258–263 (1998) 56
- Carbon fiber composites application in ITER plasma facing components, V. Barabash, M. Akiba, J.P. Bonal, G. Federici, R. Matera, K. Nakamura, H.D. Pacher, M. Rödiger, G. Vieider and C.H. Wu 258–263 (1998) 149
- Development of divertor plate with CFCs bonded onto DSCu cooling tube for fusion reactor application, S. Suzuki, T. Suzuki, M. Araki, K. Nakamura and M. Akiba 258–263 (1998) 318
- Material properties and design requirements for copper alloys used in ITER, J.W. Davis and G.M. Kalinin 258–263 (1998) 323
- Deformation analysis of small size bend specimens by FEM calculation to estimate irradiation induced embrittlement of Mo and W, K. Ueda, M. Satou, A. Hasegawa and K. Abe 258–263 (1998) 466
- Erosion and surface morphology of graphite materials under high flux beam irradiation, Y. Ueda, T. Sugai, K. Shiota, Y. Ohtsuka, Y. Isobe and M. Nishikawa 258–263 (1998) 628
- Behaviour of plasma facing materials under VDE, M. Merola, M. Rödiger, J. Linke, R. Duwe and G. Vieider 258–263 (1998) 653
- On the use of flat tile armour in high heat flux components, M. Merola and G. Vieider 258–263 (1998) 672
- Development of multi-element doped graphite and its modification of chemical erosion, J.P. Qian, J. Roth, J.R. Song, F. Zhang, L. Yang and G.T. Zhai 258–263 (1998) 706
- Temperature dependence of sputtering yield of carbon fiber-reinforced carbon composites with low energy and high flux deuterium ions, R. Jimbou, K. Nakamura, V. Bandourko, Y. Okumura and M. Akiba 258–263 (1998) 724
- Thermal stability and chemical erosion of the silicon doped CFC material NS31, M. Balden, J. Roth and C.H. Wu 258–263 (1998) 740
- Steady state wall pumping performance of pebble drop divertor, M. Isobe, Y. Ohtsuka, Y. Ueda and M. Nishikawa 258–263 (1998) 745
- Disruption and sputtering erosions on SiC doped CFC, K. Nakamura, S. Suzuki, M. Dairaku, K. Yokoyama, Y. Okumura, T. Suzuki, R. Jimbou, V. Bandourko and M. Akiba 258–263 (1998) 828

- Neutron irradiation embrittlement of molybdenum rhenium alloys and their improvement by heat treatment, A. Hasegawa, K. Ueda, M. Satou and K. Abe 258–263 (1998) 902
- Microstructural evolution in Cu–Al25 alloy under 300 keV Cu<sup>+</sup> ion irradiation, J. Li, H. Xu, J. Yu, B. Wu and Q. He 258–263 (1998) 945
- Testing of actively cooled high heat flux mock-ups, M. Rödiger, R. Duwe, W. Kühnlein, J. Linke, M. Scheerer, I. Smid and B. Wiechers 258–263 (1998) 967
- History (of Nuclear Materials, Nuclear Technology)**
- Permeation of multi-component hydrogen isotopes through nickel, T. Shiraishi, M. Nishikawa and T. Fukumatsu 254 (1998) 205
- Thermotransport of hydrogen in Zircaloy-4 and modified Zircaloy-4, H.S. Hong, S.J. Kim and K.S. Lee 257 (1998) 15
- Hydrogen ingress through EDM surfaces of Zr–2.5Nb pressure-tube material, C.K. Chow, G.R. Brady, V.F. Urbanic and C.E. Coleman 257 (1998) 35
- Response of beryllium to deuterium plasma bombardment, R.P. Doerner, A. Grossman, S. Luckhardt, R. Seraydarian, F.C. Sze, D.G. Whyte and R.W. Conn 257 (1998) 51
- On the mechanism of Zircaloy cladding axial splits, V. Grigoriev and B. Josefsson 257 (1998) 99
- Alumina sputtered on MANET as an effective deuterium permeation barrier, E. Serra, P.J. Kelly, D.K. Ross and R.D. Arnell 257 (1998) 194
- Fusion R&D strategy for Japan, A. Iiyoshi 258–263 (1998) 1
- Thirty years of fuels and materials information from EBR-II, L.C. Walters 270 (1999) 39
- Hydrogen and Hydrides (includes Deuterium and Deuterides)**
- Damage accumulation under low energy hydrogen ion irradiation, N. Yoshida and R. Sakamoto 251 (1997) 284
- Assessment of hydrogen levels in Zircaloy-2 by non-destructive testing, P.K. De, J.T. John, S. Banerjee, T. Jayakumar, M. Thavasimuthu and B. Raj 252 (1998) 43
- Deuterium retention in carbides and doped graphites, M. Mayer, M. Balden and R. Behrisch 252 (1998) 55
- Ion nitriding of titanium alpha plus beta alloy for fusion reactor applications, E. Rolinski, G. Sharp, D.F. Cowgill and D.J. Peterman 252 (1998) 200
- Codeposition of deuterium with beryllium, R.A. Causey and D.S. Walsh 254 (1998) 84
- Void swelling in Fe–15Cr–xNi ternary alloys under proton irradiation, Y. Murase, J. Nagakawa, N. Yamamoto and H. Shiraishi 255 (1998) 34
- Hydrogen and vacancies in the tokamak plasma-facing material beryllium, H. Krimmel and M. Fähnle 255 (1998) 72
- Hydrogen isotopes transport parameters in fusion reactor materials, E. Serra, G. Benamati and O.V. Ogorodnikova 255 (1998) 105
- Isotopic effects in hydrocarbon formation due to low-energy H<sup>+</sup>/D<sup>+</sup> impact on graphite, B.V. Mech, A.A. Haasz and J.W. Davis 255 (1998) 153
- Chemical erosion of CKC TiB<sub>2</sub>-doped graphite, J.W. Davis and A.A. Haasz 255 (1998) 214
- Modelling of hydrogen absorption by zirconium alloys during high temperature oxidation in steam, M.S. Veschunov and A.V. Berdyshev 255 (1998) 250
- Reaction of hydrogen with uranium catalyzed by platinum clusters, M. Balooch and W.J. Siekhaus 255 (1998) 263
- The removal of codeposited layers from TFTR tiles by O<sub>2</sub> gas exposure, A.A. Haasz and J.W. Davis 256 (1998) 65
- Detrapping and diffusion of H and D implanted in carbon studied by high temperature laser annealing and depth profiling, F. Schietekatte, G.G. Ross and B. Terreault 256 (1998) 78
- Observation of kinetics of  $\gamma$  zirconium hydride formation in Zr–2.5Nb by neutron diffraction, W.M. Small, J.H. Root and D. Khatamian 256 (1998) 102
- The influence of grain boundary movement on radiation-induced segregation in binary alloys, A.E. Volkov and A.I. Ryazanov 256 (1998) 108
- Hydride formation by high temperature cathodic hydrogen charging method and its effect on the corrosion behavior of Zircaloy-4 tubes in acid solution, Y. Choi 256 (1998) 124
- Oxidation of ceramic uranium dioxide in alkali metal carbonate-based melts: a study using various oxidants and comparison with UO<sub>2</sub> powder, V.A. Volkovich, T.R. Griffiths, D.J. Fray and M. Fields 256 (1998) 131
- Microstructure and nanohardness of hafnium diboride after ion irradiations, P. Cheminant-Coatanlem, L. Boulanger, X. Deschanel and A. Thorel 256 (1998) 180
- Hydrogen inventory and embrittlement in low activation steels, P. Jung 258–263 (1998) 124
- Impurity control in liquid lithium loop for IFMIF target facility, Y. Kato,

- H. Katsuta, S. Konishi, M. Ogoshi, T. Hua, L. Green and S. Cevolani  
Characterization of the irradiation parameters in the IFMIF high flux test region, E. Daum, P.P.H. Wilson, U. Fischer and K. Ehrlich 258-263 (1998) 394
- Characterization of the volume for high dose irradiations with IFMIF, E. Daum, P.P.H. Wilson and A. Möslang 258-263 (1998) 413
- Sorption and desorption phenomena of D<sub>2</sub>O on the surface of piping materials, R. Ohmori, T. Yoneoka, M. Taniguchi and S. Tanaka 258-263 (1998) 474
- Improvement of hydriding properties of a Zr<sub>1</sub>Ni<sub>1</sub> alloy by adding third transition metals for tritium recovery, T. Kabutomori, Y. Wakisaka, K. Tsuchiya and H. Kawamura 258-263 (1998) 481
- Study on interaction of hydrogen isotopes with radiolysis products in lithium oxide, V. Grišmanovs, M. Taniguchi, S. Tanaka and T. Yoneoka 258-263 (1998) 537
- Ab initio MO study on hydrogen release from surface of lithium silicate, T. Nakazawa, K. Yokoyama and K. Noda 258-263 (1998) 571
- The behaviour of the natural oxide of MANET as permeation barrier under cyclic loads: Self-healing, A. Perujo and H. Kolbe 258-263 (1998) 582
- Deuterium migration in titanium during deuteron irradiation observed by proton spectra of the d(d,p)t reaction, H. Kudo, Y. Kosaku, Y. Ando, M. Hiraga and T. Sekine 258-263 (1998) 622
- Influence of target chemical activity on Balmer lines emission from back-scattered hydrogen, A. Ohmori and T. Tanabe 258-263 (1998) 666
- Erosion of carbon-based materials in a steady-state deuterium plasma, B.I. Khripunov, V.B. Petrov, Yu.V. Martynenko, A.M. Litnovsky, N.V. Antonov and V.V. Shapkin 258-263 (1998) 700
- Microstructural study of hydrogen-implanted beryllium, S.P. Vagin, P.V. Chakrov, B.D. Utkelbayev, L.A. Jacobson, R.D. Field and H. Kung 258-263 (1998) 719
- Temperature dependence of sputtering yield of carbon fiber-reinforced carbon composites with low energy and high flux deuterium ions, R. Jimbou, K. Nakamura, V. Bandourko, Y. Okumura and M. Akiba 258-263 (1998) 724
- Steady state wall pumping performance of pebble drop divertor, M. Isobe, Y. Ohtsuka, Y. Ueda and M. Nishikawa 258-263 (1998) 745
- Oxidation induced release of deuterium from carbon based plasma facing materials, S. Alberici, J.P. Coad, H.-K. Hinssen, R. Moormann, P. Wienhold and C.H. Wu 258-263 (1998) 764
- Influence of loading method on hydrogen retention and release from beryllium, A.K. Klepikov, I.L. Tazhibaeva, O.G. Romanenko, Y.V. Chikhray, V.P. Shestakov and E.A. Kenzhin 258-263 (1998) 798
- Deuterium accumulation in beryllium oxide layer exposed to deuterium atoms, V.M. Sharapov, V.K. Alimov and L.E. Gavrilov 258-263 (1998) 803
- Deuterium retention in tungsten for fusion use, A.A. Haasz, J.W. Davis, M. Poon and R.G. Macaulay-Newcombe 258-263 (1998) 889
- Hydrogen retention in high-Z materials with various contents of carbon, A. Atsumi and T. Tanabe 258-263 (1998) 896
- Carbon effect on retention and release of deuterium implanted in Mo, S. Nagata, K. Takahiro and S. Yamaguchi 258-263 (1998) 907
- Tritium retention study of tungsten using various hydrogen isotope irradiation sources, S. O'hira, A. Steinér, H. Nakamura, R. Causey, M. Nishi and S. Willms 258-263 (1998) 990
- Hydrogen and deuterium transport and inventory parameters in a Cu-0.65Cr-0.08Zr alloy for fusion reactor applications, E. Serra and A. Perujo 258-263 (1998) 1028
- Implantation driven permeation behavior of deuterium through stainless steel type 316L, H. Nakamura, T. Hayashi, S. O'hira, M. Nishi and K. Okuno 258-263 (1998) 1050
- Influence of coexisting hydrogen isotopes on diffusion of tritium in niobium, K. Sakamoto, T. Higuchi, K. Hashizume and M. Sugisaki 258-263 (1998) 1073
- ERD study of deuterium atoms implanted in edge-HOPG, H. Ohkubo, M. Takenaka, A. Takase, N. Tsukuda and E. Kuramoto 258-263 (1998) 1077
- Experiment on atomic hydrogen reflection by use of a permeation probe, I. Takagi, K. Toyoda, M. Katayama, H. Fujita and K. Higashi 258-263 (1998) 1082
- Study of the retention of hydrogen isotopes implanted in Mo, K. Yamaguchi, M. Okada, O. Onoue, F. Ono and M. Yamawaki 258-263 (1998) 1104
- Ion beam analysis of deuterium-implanted Al<sub>2</sub>O<sub>3</sub> and tungsten, R.G. Macaulay-Newcombe and D.A. Thompson 258-263 (1998) 1109
- Thermal desorption analysis of beryllium tile pieces from JET, R.G. Macaulay-Newcombe, D.A. Thompson and J.P. Coad 258-263 (1998) 1114

- Experimental modelling of plasma-graphite surface interaction in ITER, Y.V. Martynenko, M.I. Guseva, V.I. Vasiliev, V.M. Gureev, L.S. Danelyan, V.E. Neumoin, V.B. Petrov, B.I. Khripunov, Y.A. Sokolov, O.V. Stativkina, V.G. Stolyarova and V.M. Strunnikov 258–263 (1998) 1120
- Formation of HD molecules during desorption of deuterium from solids, A.A. Pisarev, Y.V. Borisyuk, A.V. Varava and V.N. Tsyplakov 258–263 (1998) 1138
- Effects of hydrogen atmosphere on mechanical properties and surface conditions of a reduced activation ferritic steel F82H, S. Hara, T. Abe, M. Enoda and H. Takatsu 258–263 (1998) 1280
- Effect of hydrogen on tensile properties of martensitic steels for fusion application, M. Beghini, G. Benamati, L. Bertini and R. Valentini 258–263 (1998) 1295
- Effect of hydrogen and oxygen on the tensile properties of V-4Cr-4Ti, H.D. Röhrig, J.R. DiStefano and L.D. Chitwood 258–263 (1998) 1356
- Development of techniques for welding V-Cr-Ti alloys, M.L. Grossbeck, J.F. King, D.J. Alexander, P.M. Rice and G.M. Goodwin 258–263 (1998) 1369
- Quantitative visualization of tritium distribution in vanadium by tritium radioluminography, H. Saitoh, T. Hishi, T. Misawa, T. Ohnishi, Y. Noya, T. Matsuzaki and T. Watanabe 258–263 (1998) 1404
- Hydrogen generation from steam reaction with tungsten, G.R. Smolik, K.A. McCarthy, D.A. Petti and K. Coates 258–263 (1998) 1979
- Assessment of hydrogen embrittlement of Zircaloy-2 pressure tubes using unloading compliance and load normalization techniques for determining  $J$ - $R$  curves, J.S. Dubey, S.L. Wadekar, R.N. Singh, T.K. Sinha and J.K. Chakravarty 264 (1999) 20
- Influence of microstructure on the hydrogen permeability of 9%Cr-1%Mo ferritic steel, N. Parvathavarthini, S. Saroja and R.K. Dayal 264 (1999) 35
- Erosion behavior of soft, amorphous deuterated carbon films by heat treatment in air and under vacuum, K. Maruyama, W. Jacob and J. Roth 264 (1999) 56
- Investigation of plasma exposed W-1% La<sub>2</sub>O<sub>3</sub> tungsten in a high ion flux, low ion energy, low carbon impurity plasma environment for the International Thermonuclear Experimental Reactor, F.C. Sze, R.P. Doerner and S. Luckhardt 264 (1999) 89
- Deuterium trapping in deep traps of differently oriented pyrolytic graphite exposed to D<sub>2</sub> gas at 1473 K, V.N. Chernikov, W.R. Wampler, A.P. Zakharov and A.E. Gorodetsky 264 (1999) 180
- Quantitative determination of the bulk deuterium content of zirconium alloys using nuclear reaction analysis, Z. Qin, W.N. Lennard, C.-S. Zhang, K. Griffiths and P.R. Norton 264 (1999) 228
- A mechanism for the hydrogen uptake process in zirconium alloys, B. Cox 264 (1999) 283
- On the effects of heat treatment and surface orientation on corrosion and hydrogen ingress of Zr-2.5Nb pressure tube material, Y.-P. Lin and J. DeLuca 265 (1999) 1
- A unified model of Zircaloy BWR corrosion and hydriding mechanisms, P. Rudling and G. Wikmark 265 (1999) 44
- Aging characteristics of Zr-V-Fe getters as observed by Mössbauer spectroscopy, L. Rodrigo and J.A. Sawicki 265 (1999) 208
- The effect of hydrogen on the fracture toughness of alloy X-750 at elevated temperatures, D.M. Symons 265 (1999) 225
- Oxidation kinetics of hydride-bearing uranium metal corrosion products, T.C. Totemeier, R.G. Pahl and S.M. Frank 265 (1999) 308
- Transport properties of hydrogen isotopes in boron carbide structures, A.A. Grossman, R.P. Doerner, S. Luckhardt, R. Seraydarian and A.K. Burnham 266–269 (1999) 819
- FT-IR studies of graphite after keV-energy hydrogen ion irradiation, Y. Gotoh and S. Kajiura 266–269 (1999) 1051
- Retention and release of deuterium implanted in W and Mo, S. Nagata, K. Takahiro, S. Horriike and S. Yamaguchi 266–269 (1999) 1151
- A hydrogen uptake micro-mechanism for Zr alloys, B. Cox and Y.-M. Wong 270 (1999) 134
- Kinetic studies on massive hydriding of commercial zirconium alloy tubing, Y.-S. Kim and S.-k. Kim 270 (1999) 147
- Impact**
- Investigation of liquid impact erosion for 12Cr steel and Stellite 6B, M.K. Lee, W.W. Kim, C.K. Rhee and W.J. Lee 257 (1998) 134
- Molecular dynamics simulation of atomic beam bombardment on a solid surface, K. Ezato and T. Kunugi 258–263 (1998) 618
- The impact of larger clusters formation C<sub>5</sub>, C<sub>6</sub>, C<sub>7</sub>, C<sub>8</sub>, C<sub>9</sub>, and C<sub>10</sub>

- on the rates of carbon sublimation at elevated temperatures, C.H. Wu, U. Mszanowski and J.M.L. Martin 258–263 (1998) 782
- Deformation and fracture of Cu alloy–stainless steel layered structures under dynamic loading, J.H. McCoy, A.S. Kumar and J.F. Stubbins 258–263 (1998) 1033
- Impact behavior of two low activation steels after irradiation to  $\sim 67$  dpa at 430°C, M.L. Hamilton, L.E. Schubert and D.S. Gelles 258–263 (1998) 1222
- Superior Charpy impact properties of ODS ferritic steel irradiated in JOYO, T. Kuwabara, H. Kurishita, S. Ukai, M. Narui, S. Mizuta, M. Yamazaki and H. Kayano 258–263 (1998) 1236
- The effect of low dose irradiation on the impact fracture energy and tensile properties of pure iron and two ferritic martensitic steels, I. Belianov and P. Marmy 258–263 (1998) 1259
- Dependence of impact properties on irradiation temperature in reduced-activation martensitic steels, A. Kimura, M. Narui, T. Misawa, H. Matsui and A. Kohyama 258–263 (1998) 1340
- Dynamic finite element analysis of third size charpy specimens of V–4Cr–4Ti, M.R. Lansberry, R.J. Kurtz, A.S. Kumar and G.E. Mueller 258–263 (1998) 1392
- Shape memory characteristics of neutron irradiated Ti–Ni shape memory alloy couplers, T. Hoshiya, M. Ohmi, Y. Matsui and M. Nishikawa 258–263 (1998) 2036
- Effect of heat treatment and irradiation temperature on impact properties of Cr–W–V ferritic steels, R.L. Klueh and D.J. Alexander 265 (1999) 262
- Impurities**
- Dielectric spectroscopy of alumina ceramics over a wide frequency range, R. Vila, M. González, J. Mollá and A. Ibarra 253 (1998) 141
- Effect of nitrogen on high temperature low cycle fatigue behaviors in type 316L stainless steel, D.W. Kim, W.-S. Ryu, J.H. Hong and S.-K. Choi 254 (1998) 226
- Characterization of corroded metallic uranium fuel plates, T.C. Totemeier, R.G. Pahl, S.L. Hayes and S.M. Frank 256 (1998) 87
- The kinetics of formation and growth of TiC precipitates in Ti-modified stainless steel studied by positron annihilation spectroscopy, P. Gopalan, R. Rajaraman, B. Viswanathan, K.P. Gopinathan and S. Venkadesan 256 (1998) 229
- Impurity control in liquid lithium loop for IFMIF target facility, Y. Kato, H. Katsuta, S. Konishi, M. Ogoshi, T. Hua, L. Green and S. Cevolani 258–263 (1998) 394
- Gas and hydrogen ion gettering properties of lithium, T. Hino, K. Kanaya, I. Takahashi, H. Yanagihara, M. Hashiba, Y. Hirohata and K. Mori 258–263 (1998) 612
- Irradiation embrittlement of  $^{24}\text{Cr}$ –1Mo steel at 400°C and its electrochemical evaluation, Y. Nishiyama, K. Fukaya, M. Suzuki and M. Eto 258–263 (1998) 1187
- Effect of purity on helium bubble formation in 9Cr martensitic steel during post-implantation annealing at 1105 K, T. Nagasaka, T. Shibayama, H. Kayano, A. Hasegawa, M. Satou, K. Abe 258–263 (1998) 1193
- Grain boundary segregation of impurities in neutron irradiated and thermally aged vanadium alloys, J. Kameda, T.E. Bloomer and D.Y. Lyu 258–263 (1998) 1482
- Effect of light impurities on the early stage of swelling in austenitic stainless steel, N. Igata, A. Ryazanov and D.N. Korolev 258–263 (1998) 1735
- Concentration limits of natural elements in low activation fusion materials, E.T. Cheng 258–263 (1998) 1767
- Analysis of V–Cr–Ti alloys in terms of activation of impurities, M.L. Grossbeck, R.L. Klueh, E.T. Cheng, J.R. Peterson, M.R. Woolery and E.E. Bloom 258–263 (1998) 1778
- Low-activation characteristics of V-alloys and SiC composites, E.V. Dyomina, P. Fenici, V.P. Kolotov and M. Zucchetti 258–263 (1998) 1784
- In situ observation of microstructural development during electron irradiation in  $\text{Al}_2\text{O}_3$  containing  $\text{Cr}_2\text{O}_3$  or  $\text{TiO}_2$ , K. Nakata, Y. Katano and K. Noda 258–263 (1998) 1831
- Quantitative determination of the bulk deuterium content of zirconium alloys using nuclear reaction analysis, Z. Qin, W.N. Lennard, C.-S. Zhang, K. Griffiths and P.R. Norton 264 (1999) 228
- Accumulation of radioactive corrosion products on steel surfaces of VVER type nuclear reactors. I.  $^{110\text{m}}\text{Ag}$ , G. Hirschberg, P. Baradlai, K. Varga, G. Myburg, J. Schunk, P. Tilky and P. Stoddart 265 (1999) 273
- Interfaces**
- Effects of titanium impregnation on the thermal conductivity of carbon/copper composite materials,

- T. Oku, A. Kurumada, T. Sogabe, T. Oku, T. Hiraoka and K. Kuroda 257 (1998) 59
- Effects of interface edge configuration on residual stress in the bonded structures for a divertor application, K. Kitamura, K. Nagata, M. Shibui, N. Tachikawa and M. Arai 258–263 (1998) 275
- Interface formation and strength of Be/DSCu diffusion bonding, T. Makino and T. Iwadachi 258–263 (1998) 313
- Deformation and fracture of Cu alloy–stainless steel layered structures under dynamic loading, J.H. McCoy, A.S. Kumar and J.F. Stubbins 258–263 (1998) 1033
- Comparison of microstructure and formation of intermetallic phases on F82H-mod. and MANET II, H. Glasbrenner, J. Konys, K. Stein-Fechner and O. Wedemeyer 258–263 (1998) 1173
- Effect of fiber coating on interfacial shear strength of SiC/SiC by nano-indentation technique, T. Hinoki, W. Zhang, A. Kohyama, S. Sato and T. Noda 258–263 (1998) 1567
- Development and characterisation of Be/Glidcop® joints obtained by hot isostatic pressing for high temperature working conditions, F. Saint-Antonin, D. Barberi, G. Le Marois and A. Laillé 258–263 (1998) 1973
- Shape memory characteristics of neutron irradiated Ti–Ni shape memory alloy couplers, T. Hoshiya, M. Ohmi, Y. Matsui and M. Nishikawa 258–263 (1998) 2036
- Helium-bubble formation behavior of SiCf/SiC composites after helium implantation, A. Hasegawa, M. Saito, S. Nogami, K. Abe, R.H. Jones and H. Takahashi 264 (1999) 355
- Internal Friction**
- Dynamic strain aging sensitivity of heat affected zones in C–Mn steels, D. Wagner, J.C. Moreno and C. Prioul 252 (1998) 257
- Internal friction and anelastic properties of vanadium and V–Ti–Cr alloys, V.M. Chernov, B.K. Kardashev, L.M. Krjukova, L.I. Mamaev, O.A. Plaksin, A.E. Rusanov, M.I. Solonin, V.A. Stepanov, S.N. Votinov and L.P. Zavialski 257 (1998) 263
- Distribution of C–Cr associates and mechanical stability of Cr martensitic steels, P. Gondí, R. Montanari and M.E. Tata 258–263 (1998) 1167
- Physical metallurgy of BATMAN II Ti-bearing martensitic steels, L. Pilloni, F. Attura, A. Calza-Bini, G. De Santis, G. Filacchioni, A. Carosi and S. Amato 258–263 (1998) 1329
- Ion Irradiation**
- Atom transport under ion irradiation, P. Fielitz, M.-P. Macht, V. Naundorf and H. Wollenberger 251 (1997) 123
- Defect production in ceramics, S.J. Zinkle and C. Kinoshita 251 (1997) 200
- Defects in high- $T_c$  superconductors after ion irradiation, B. Hensel 251 (1997) 218
- A review of in situ observation of defect production with energetic heavy ions, S. Ishino 251 (1997) 225
- Strains and stresses in ceramics by defect accumulation, P. Jung, Z. Zhu and J. Chen 251 (1997) 276
- Damage accumulation under low energy hydrogen ion irradiation, N. Yoshida and R. Sakamoto 251 (1997) 284
- A temperature threshold for gas-bubble superlattice formation in molybdenum, F.E. Lawson and P.B. Johnson 252 (1998) 34
- Deuterium retention in carbides and doped graphites, M. Mayer, M. Balden and R. Behrisch 252 (1998) 55
- Ion nitriding of titanium alpha plus beta alloy for fusion reactor applications, E. Rolinski, G. Sharp, D.F. Cowgill and D.J. Peterman 252 (1998) 200
- Thermophysical property measurements and ion-implantation studies on CePO<sub>4</sub>, K. Bakker, H. Hein, R.J.M. Konings, R.R. van der Laan, H.J. Matzke and P. van Vlaanderen 252 (1998) 228
- Helium implantation effects on mechanical properties of SiC<sub>f</sub>/SiC composites, A. Hasegawa, M. Saito, K. Abe and R.H. Jones 253 (1998) 31
- Irradiation-induced amorphization in  $\beta$ -SiC, W.J. Weber, N. Yu and L.M. Wang 253 (1998) 53
- Damage calculation in fusion ceramics: comparing neutrons and light ions, P.V. Vladimirov, D. Lizunov, Yu.A.I. Ryazanov and A. Möslang 253 (1998) 104
- Effects of ionizing radiation in ceramics, R. Devanathan, K.E. Sickafus, W.J. Weber and M. Nastasi 253 (1998) 113
- Microstructure of Al<sub>2</sub>O<sub>3</sub> and MgAl<sub>2</sub>O<sub>4</sub> irradiated at low temperatures, S.J. Zinkle and G.P. Pells 253 (1998) 120
- Radiation-induced electrical degradation: an effect of surface conductance and microcracking, W. Kesternich 253 (1998) 167
- Electrical and optical characteristics of dielectrics for fusion use under irradiation, V.M. Chernov, G.L. Khorasanov, O.A. Plaksin, V.A.



- Stepanov, P.A. Stepanov and V.A. Belyakov 253 (1998) 175
- Deuteron irradiation creep of chemically vapor deposited silicon carbide fibers, R. Scholz 254 (1998) 74
- Effect of self-ion bombardment damage on high temperature oxidation behavior of Zircaloy-4 X.D. Bai, S.G. Wang, J. Xu, J. Bao, H.M. Chen and Y.D. Fan 254 (1998) 266
- Void swelling in Fe-15Cr-xNi ternary alloys under proton irradiation, Y. Murase, J. Nagakawa, N. Yamamoto and H. Shiraishi 255 (1998) 34
- On the mechanism of radiation-induced segregation in austenitic Fe-Cr-Ni alloys, T.R. Allen, J.T. Busby, G.S. Was and E.A. Kenik 255 (1998) 44
- Isotopic effects in hydrocarbon formation due to low-energy H<sup>+</sup>/D<sup>+</sup> impact on graphite, B.V. Mech, A.A. Haasz and J.W. Davis 255 (1998) 153
- Chemical erosion of CKC TiB<sub>2</sub>-doped graphite, J.W. Davis and A.A. Haasz 255 (1998) 214
- Detrapping and diffusion of H and D implanted in carbon studied by high temperature laser annealing and depth profiling, F. Schiettekatte, G.G. Ross and B. Terreault 256 (1998) 78
- High burn-up rim structure: evidences that xenon-depletion, pore formation and grain subdivision start at different local burn-ups, J. Spino, D. Baron, M. Coquerelle and A.D. Stalios 256 (1998) 189
- The microstructure and tensile properties of Fe-Cr alloys after neutron irradiation at 400°C to 5.5-7.1 dpa, S.I. Porollo, A.M. Dvorishin, A.N. Vorobyev and Y.V. Kobeev 256 (1998) 247
- Response of beryllium to deuterium plasma bombardment, R.P. Doerner, A. Grossman, S. Luckhardt, R. Seraydarian, F.C. Sze, D.G. Whyte and R.W. Conn 257 (1998) 51
- Accumulation and recovery of irradiation damage in He<sup>+</sup> implanted  $\alpha$ -SiC, W. Jiang, W.J. Weber, S. Thevuthasan and D.E. McCready 257 (1998) 295
- The influence of neutron spectrum and irradiation history on microstructural evolution in fusion structural materials, T. Muroga, S. Ohnuki, F.A. Garner and S.J. Zinkle 258-263 (1998) 130
- Development of a triple beam irradiation facility, S. Hamada, Y. Miwa, D. Yamaki, Y. Katano, T. Nakazawa and K. Noda 258-263 (1998) 383
- Production behavior of irradiation defects in ternary lithium ceramics under ion beam irradiation, K. Moritani and H. Moriyama 258-263 (1998) 525
- The dependence on ion energy and temperature of helium trapping in nickel, H. Yanagihara, Y. Hirohata and T. Hino 258-263 (1998) 607
- Deuterium migration in titanium during deuteron irradiation observed by proton spectra of the d(d,p)t reaction, H. Kudo, Y. Kosaku, Y. Ando, M. Hiraga and T. Sekine 258-263 (1998) 622
- Erosion and surface morphology of graphite materials under high flux beam irradiation, Y. Ueda, T. Sugai, K. Shiota, Y. Ohtsuka, Y. Isobe and M. Nishikawa 258-263 (1998) 628
- Influence of target chemical activity on Balmer lines emission from back-scattered hydrogen, A. Ohmori and T. Tanabe 258-263 (1998) 666
- Gas bubbles in beryllium implanted with He ions at temperatures  $\leq 700$  K and after post-implantation annealing, V.N. Chernikov, H. Ullmaier and A.P. Zakharov 258-263 (1998) 694
- Molecular dynamics evaluation of self-sputtering of beryllium, S. Ueda, T. Ohsaka and S. Kuwajima 258-263 (1998) 713
- Microstructural study of hydrogen-implanted beryllium, S.P. Vagin, P.V. Chakrov, B.D. Utkelbayev, L.A. Jacobson, R.D. Field and H. Kung 258-263 (1998) 719
- Dynamical simulation for sputtering of B<sub>4</sub>C, T. Kenmotsu, T. Kawamura, T. Ono and Y. Yamamura 258-263 (1998) 729
- High energy neutron and charged particle irradiation effects on thermomechanical properties of carbon-carbon composites for divertor applications, M. Eto, S. Baba, M. Ishihara and H. Ugachi 258-263 (1998) 843
- Hardening behavior of molybdenum by low energy He and D ion irradiation, H. Iwakiri, H. Wakimoto, H. Watanabe and N. Yoshida 258-263 (1998) 873
- Microstructure of tantalum irradiated with heavy ions, K. Yasunaga, H. Watanabe, N. Yoshida, T. Muroga and N. Noda 258-263 (1998) 879
- Deuterium retention in tungsten for fusion use, A.A. Haasz, J.W. Davis, M. Poon and R.G. Macaulay-Newcombe 258-263 (1998) 889
- Carbon effect on retention and release of deuterium implanted in Mo, S. Nagata, K. Takahiro and S. Yamaguchi 258-263 (1998) 907
- Erosion of W and deposition of C due to bombardment with D and CH<sub>3</sub>, W. Eckstein, K. Krieger and J. Roth 258-263 (1998) 912
- Tungsten self-sputtering yield with different incidence angles and target

- temperatures, V. Bandourko, R. Jimbou, K. Nakamura and M. Akiba 258–263 (1998) 917
- Microstructural evolution in Cu–Al25 alloy under 300 keV Cu<sup>+</sup> ion irradiation, J. Li, H. Xu, J. Yu, B. Wu and Q. He 258–263 (1998) 945
- Tritium retention study of tungsten using various hydrogen isotope irradiation sources, S. O'hira, A. Steinér, H. Nakamura, R. Causey, M. Nishi and S. Willms 258–263 (1998) 990
- Changes of structure and properties of yttrium doped copper at deformation, annealing and irradiation, I.M. Neklyudov, V.N. Voyevodin, S.V. Shevtchenko, V.F. Rybalko, N.V. Kamychantchenko and I.A. Belenko 258–263 (1998) 1040
- Implantation driven permeation behavior of deuterium through stainless steel type 316L, H. Nakamura, T. Hayashi, S. O'hira, M. Nishi and K. Okuno 258–263 (1998) 1050
- Ion beam analysis of deuterium-implanted Al<sub>2</sub>O<sub>3</sub> and tungsten, R.G. Macaulay-Newcombe and D.A. Thompson 258–263 (1998) 1109
- Formation of HD molecules during desorption of deuterium from solids, A.A. Pisarev, Y.V. Borisyuk, A.V. Varava and V.N. Tsyplakov 258–263 (1998) 1138
- Helium-vacancy clustering in V–4Cr–4Ti at elevated temperatures, A.V. Fedorov, A. van Veen and A.I. Ryazanov 258–263 (1998) 1396
- Influence of thermal treatment on helium trapping at fine-size precipitates in V–4Cr–4Ti, A. van Veen, A.V. Fedorov and A.I. Ryazanov 258–263 (1998) 1400
- Tensile properties of a series of V–4Ti–4Cr alloys containing small amounts of Si, Al and Y, and the influence of helium implantation, T. Matsushima, M. Satou, A. Hasegawa, K. Abe and H. Kayano 258–263 (1998) 1497
- Interface strength of SiC/SiC composites with and without helium implantation using micro-indentation test, M. Saito, A. Hasegawa, S. Ohtsuka and K. Abe 258–263 (1998) 1562
- Swelling behaviour and TEM studies of SiC<sub>f</sub>/SiC composites after fusion relevant helium implantation, H.W. Scholz, A.J. Frias Rebelo, D.G. Rickerby, P. Krogul, W.E. Lee, J.H. Evans and P. Fenici 258–263 (1998) 1572
- Comparison of the mechanical behaviour of SiC<sub>f</sub>/SiC composites following neutron irradiation and helium implantation, A.J. Frias Rebelo, H.W. Scholz, H. Kolbe, G.P. Tartaglia and P. Fenici 258–263 (1998) 1582
- Temperature dependence of bubble structure in 316L stainless steel irradiated with 2.5 MeV He ions, C.H. Zhang, K.Q. Chen, Y.S. Wang and J.G. Sun 258–263 (1998) 1623
- Effect of combined addition of Ti and P on creep rupture properties of helium implanted Fe–25%Ni–15%Cr alloy, N. Yamamoto, J. Nagakawa, Y. Murase and H. Shiraiishi 258–263 (1998) 1634
- Effects of annealing on the tensile properties of irradiated austenitic stainless steel, I. Ioka, A. Naito, K. Shiba, J.P. Robertson, S. Jitsukawa and A. Hishinuma 258–263 (1998) 1664
- The structural evolution of new low-activation and chromium–nickel stainless steels under high-dose irradiation up to 200 dpa, V.V. Sagaradze, S.S. Lapin, B.N. Goshchitskii and M.A. Kirk 258–263 (1998) 1675
- Effect of carbon and nitrogen on grain boundary segregation in irradiated stainless steels, F. Kano, K. Fukuya, S. Hamada and Y. Miwa 258–263 (1998) 1713
- Effects of Mn and Si additions on microstructural development in TiAl intermetallic compounds irradiated with He-ions, O. Okada, K. Nakata, K. Fukai, A. Hishinuma and K. Ameyama 258–263 (1998) 1750
- Production and recovery of defects in SiC after irradiation and deformation, J. Chen, P. Jung and H. Klein 258–263 (1998) 1803
- Radiation effects on Al<sub>2</sub>O<sub>3</sub> irradiated with H<sub>2</sub><sup>+</sup> ions, S. Furuno, N. Sasajima, K. Hojou, K. Izui, H. Otsu and T. Matsui 258–263 (1998) 1817
- Damage structure evolution in Al<sub>2</sub>O<sub>3</sub> irradiated with multiple ion beams of H, He and O and after annealing, Y. Katano, T. Nakazawa, D. Yamaki, T. Aruga and K. Noda 258–263 (1998) 1842
- Mechanical properties and microstructure of  $\alpha$ -alumina and magnesium aluminate spinel irradiated with He ions, K. Izumi, K. Yasuda, C. Kinoshita and M. Kutsuwada 258–263 (1998) 1856
- Photon emission induced by fusion neutrons on optical window materials, F. Sato, T. Iida, Y. Oyama, F. Maekawa and Y. Ikeda 258–263 (1998) 1897
- Dynamic effects in energetic particle-induced luminescence of SiO<sub>2</sub>, T. Tanabe, A. Omori and M. Fujiwara 258–263 (1998) 1914
- On the choice of materials for the first mirrors of plasma diagnostics in a fusion reactor, V.S. Voitsenya, A.F. Bardamid, V.T. Gritsyna, V.G. Kononov, O. Motojima,

- D.V. Orlinskij, R. Palladino, B.J. Peterson, A.N. Shapoval, A.F. Shtan, S.I. Solodovchenko, K.I. Yakimov and K. Young 258–263 (1998) 1919
- Defect production and recovery in high- $T_c$  superconductors irradiated with electrons and ions at low temperature, N. Ishikawa, Y. Chimi, A. Iwase, K. Tsuru, O. Michikami 258–263 (1998) 1924
- Effect of weld thermal cycle on helium bubble formation in stainless steel, F. Kano, S. Nakahigashi, H. Nakamura, N. Uesugi, T. Mitamura, M. Terasawa, H. Irie and K. Fukuya 258–263 (1998) 2013
- Weldability of helium-containing stainless steels using a YAG laser, S. Kawano, S. Nakahigashi, K. Uesugi, H. Nakamura, W. Kono, K. Fukuya, F. Kano, A. Hasegawa and K. Abe 258–263 (1998) 2018
- Investigations on Inconel 718 irradiated with 800 MeV protons, F. Carsughi, H. Derz, P. Ferguson, G. Pott, W. Sommer and H. Ullmaier 264 (1999) 78
- Deuterium trapping in deep traps of differently oriented pyrolytic graphite exposed to  $D_2$  gas at 1473 K, V.N. Chernikov, W.R. Wampler, A.P. Zakharov and A.E. Gorodetsky 264 (1999) 180
- Quantitative determination of the bulk deuterium content of zirconium alloys using nuclear reaction analysis, Z. Qin, W.N. Lennard, C.-S. Zhang, K. Griffiths and P.R. Norton 264 (1999) 228
- Helium implanted ZrHf as studied by time differential perturbed angular correlation and positron lifetime measurements, R. Govindaraj, G. Venugopal Rao, K.P. Gopinathan and B. Viswanathan 265 (1999) 139
- Effects of thermal sensitization on radiation-induced segregation in type 304 stainless steel irradiated with He-ions, O. Okada, K. Nakata and S. Kasahara 265 (1999) 232
- Influence of Ar ion bombardment on the uniform corrosion resistance of laser-surface-melted Zircaloy-4, J. Xu, X. Bai, F. He, S. Wang, X. He and Y. Fan 265 (1999) 240
- Investigations of ion radiation effects at metal/liquid interfaces, M.B. Lewis and J.D. Hunn 265 (1999) 325
- Range, energy loss, energy straggling and damage production for  $\alpha$ -particles in uranium dioxide, HJ. Matzke 270 (1999) 49
- Microchemistry and microstructure of proton-irradiated austenitic alloys: toward an understanding of irradiation effects in LWR core components, G.S. Was, T.R. Allen, J.T. Busby, J. Gan, D. Damcott, D. Carter, M. Atzmon and E.A. Kenik 270 (1999) 96
- Iron, Iron Alloys (excludes Steels) and Compounds**
- Defect production due to displacement cascades in metals as revealed by computer simulation, D.J. Bacon, A.F. Calder and F. Gao 251 (1997) 1
- Primary damage formation in bcc iron, R.E. Stoller, G.R. Odette and B.D. Wirth 251 (1997) 49
- Grain boundary segregation under neutron irradiation in dilute alloys, R.G. Faulkner, S. Song, P.E.J. Flewitt, M. Victoria and P. Marmy 255 (1998) 189
- The effect of hydride on the corrosion of Zircaloy-4 in aqueous LiOH solution, S.-J. Kim, K.H. Kim, J.H. Baek, B.K. Choi, Y.H. Jeong and Y.H. Jung 256 (1998) 114
- A comparison of the effect of electron irradiation and of thermal aging on the hardness of FeCu binary alloys, A. Barbu, M.H. Mathon, F. Maury, J.F. Belliard, B. Beuneu and C.H. de Novion 257 (1998) 206
- Irradiation (not listed elsewhere, includes Irradiation History or Schedule)**
- High magnification SEM observations for two types of granularity in a high burnup PWR fuel rim, N. Lozano, L. Desgranges, D. Aymes and J.C. Niepce 257 (1998) 78
- Characterization of the irradiation parameters in the IFMIF high flux test region, E. Daum, P.P.H. Wilson, U. Fischer and K. Ehrlich 258–263 (1998) 413
- Characterization of the volume for high dose irradiations with IFMIF, E. Daum, P.P.H. Wilson and A. Möslang 258–263 (1998) 421
- The effect of low dose irradiation on the impact fracture energy and tensile properties of pure iron and two ferritic martensitic steels, I. Beliaev and P. Marmy 258–263 (1998) 1259
- Electrical properties of neutron-irradiated oxygen potential sensors using stabilized zirconia solid electrolyte, N. Hiura, Y. Endo, T. Yamaura, T. Hoshiya, M. Niimi, J. Saito, S. Sozawa, N. Ooka and M. Kobiyama 258–263 (1998) 2041
- IFMIF, its facility concept and technology, T. Kondo 258–263 (1998) 47
- Users' requirements for IFMIF, K. Noda, K. Ehrlich, S. Jitsukawa, A. Möslang and S. Zinkle 258–263 (1998) 97

- Conceptual design of the international fusion materials irradiation facility (IFMIF), T.E. Shannon, R.A. Jameson, H. Katsuta, H. Maekawa, M. Martone, A. Möslang, V. Teplyakov and M.J. Rennich 258–263 (1998) 106
- Current status and future of IASCC research, T. Shoji, S. Suzuki and K.S. Raja 258–263 (1998) 241
- Neutron radiation effects of the center conductor post in a low aspect ratio tokamak reactor, Y. Wu, B. Xiao, Q. Huang and L. Qiu 258–263 (1998) 339
- Development of rig for systematic irradiation tests of fusion reactor materials in a fission reactor, M. Narui, T. Sagawa and T. Shikama 258–263 (1998) 372
- Design concept for the IFMIF test assemblies, J.R. Haines, I. Jitsukawa, A. Möslang, K. Noda, R. Viola and S.J. Zinkle 258–263 (1998) 400
- A varying temperature irradiation experiment for operation in HFIR, A.L. Qualls and T. Muroga 258–263 (1998) 407
- Overview of the IFMIF test facility, A. Möslang, C. Antonucci, E. Daum, J.R. Haines, I. Jitsukawa, K. Noda and S. Zinkle 258–263 (1998) 427
- Irradiation effects in ceramic breeder materials, H. Moriyama, S. Tanaka and K. Noda 258–263 (1998) 587
- Beryllium R&D for blanket application, M. Dalle Donne, G.R. Longhurst, H. Kawamura and F. Scaffidi-Argentina 258–263 (1998) 601
- Development of material irradiation rig with precision temperature control in experimental fast reactor JOYO, H. Kataoka, T. Yasu, H. Takatsudo and S. Miyakawa 258–263 (1998) 677
- Tritium retention in CX-2002U and methods to reduce tritium inventory, T. Tadokoro, S. O'hira, M. Nishi and K. Isobe 258–263 (1998) 1092
- Evolution of the mechanical properties of the F82H ferritic/martensitic steel after 590 MeV proton irradiation, P. Spätig, R. Schäublin, S. Gyger and M. Victoria 258–263 (1998) 1345
- Tensile and impact properties of vanadium-base alloys irradiated at <math>430^{\circ}\text{C}</math>, H.M. Chung and D.L. Smith 258–263 (1998) 1442
- Validation of the shear punch–tensile correlation technique using irradiated materials, G.L. Hankin, M.B. Toloczko, M.L. Hamilton and R.G. Faulkner 258–263 (1998) 1651
- Neutron irradiation experiments for fusion reactor materials through JUPITER program, K. Abe, A. Kohyama, C. Namba, F.W. Wiffen and R.H. Jones 258–263 (1998) 2075
- New model of equiaxed grain growth in irradiated  $\text{UO}_2$ , O.V. Khoruzhii, S.Y. Kourtchatov and V.V. Likhanskii 265 (1999) 112
- High burnup effects on fuel behaviour under accident conditions: the tests CABRI REP-Na, F. Schmitz and J. Papin 270 (1999) 55
- Characterization of  $\text{UO}_2$  irradiated in the BR-3 reactor, S.K. Yagnik, A.J. Machiels and R.L. Yang 270 (1999) 65
- Ramp test behavior of high O/U fuel, J.H. Davies, E.V. Hoshi and D.L. Zimmerman 270 (1999) 87
- Role and significance of source hardening in radiation embrittlement of iron and ferritic steels, K. Linga Murty 270 (1999) 115
- Joining**
- Thermal stability and brazing characteristics of Zr–Be binary amorphous filler metals for zirconium alloy, C.-H. Park, Y.-S. Han, Y.-K. Kim, K.-J. Jang, J.-Y. Lee, C.-B. Choi and K.-S. Sim 254 (1998) 34
- Notch position in the HAZ specimen of reactor pressure vessel steel, J.H. Kim and E.P. Yoon 257 (1998) 303
- Materials design data for fusion reactors, A.A.F. Tavassoli 258–263 (1998) 85
- Development of tungsten armor and bonding to copper for plasma-interactive components, I. Smid, M. Akiba, G. Vieider and L. Plöchl 258–263 (1998) 160
- Research and development on vanadium alloys for fusion applications, S.J. Zinkle, H. Matsui, D.L. Smith, A.F. Rowcliffe, E. van Osch, K. Abe and V.A. Kazakov 258–263 (1998) 205
- Current status of SiC/SiC composites R&D, P. Fenici, A.J. Frias Rebelo, R.H. Jones, A. Kohyama and L.L. Snead 258–263 (1998) 215
- Fabrication and high heat flux testing of plasma sprayed beryllium ITER first wall mock-ups, R.G. Castro, K.E. Elliot, R.D. Watson, D.L. Youchison and K.T. Slattery 258–263 (1998) 252
- Development of joining technology for Be/Cu-alloy and Be/SS by HIP, T. Kuroda, T. Hatano, M. Enoeda, S. Sato, K. Furuya, H. Takatsu, T. Iwadachi and K. Nishida 258–263 (1998) 258
- Optimization of HIP bonding conditions for ITER shielding blanket/first wall made from austenitic stainless steel and dispersion strengthened copper alloy, S. Sato, T. Hatano, T. Kuroda, K. Furuya, S. Hara, M. Enoeda and H. Takatsu 258–263 (1998) 265

- Development and material testing of OF-Cu/DS-Cu/OF-Cu triplex tube (dispersion strengthened copper clad with oxygen free-copper) and trial fabrication of a vertical target mock-up for ITER divertor, Y. Gotoh, H. Okamura, S. Kajiuira, M. Kumagai, T. Ando, M. Akiba, S. Suzuki and T. Suzuki 258–263 (1998) 271
- Effects of interface edge configuration on residual stress in the bonded structures for a divertor application, K. Kitamura, K. Nagata, M. Shibui, N. Tachikawa and M. Araki 258–263 (1998) 275
- Influence of brazing conditions on the strength of brazed joints of alumina dispersion-strengthened copper to 316 stainless steel, H. Nishi and K. Kikuchi 258–263 (1998) 281
- Interface formation and strength of Be/DSCu diffusion bonding, T. Makino and T. Iwadachi 258–263 (1998) 313
- A review of the US joining technologies for plasma facing components in the ITER fusion reactor, B.C. Odegard Jr., C.H. Cadden, R.D. Watson and K.T. Slattery 258–263 (1998) 329
- The thermal shock resistance of a joining material of C/C composite and copper, A. Kurumada, T. Oku, Y. Imamura, K. Kawamata, O. Motojima, N. Noda and B. McEnaney 258–263 (1998) 821
- Fracture strengths of HIPed DS-Cu/SS joints for ITER shielding blanket/first wall, T. Hatano, M. Kanari, S. Sato, M. Gotoh, K. Furuya, T. Kuroda, M. Saito, M. Enoeda and H. Takatsu 258–263 (1998) 950
- Testing of actively cooled high heat flux mock-ups, M. Rödíg, R. Duwe, W. Kühnlein, J. Linke, M. Scheerer, I. Smid and B. Wiechers 258–263 (1998) 967
- Evidence of damage in carbon fibre composite tiles joined metallic heat sink under high heat flux fatigue, R. Mitteau, P. Chappuis, L. Moncel and J. Schlosser 258–263 (1998) 972
- High heat load properties of tungsten coated carbon materials, K. Tokunaga, N. Yoshida, N. Noda, T. Sogabe and T. Kato 258–263 (1998) 998
- Material damage and thermal response of LHD divertor mock-ups by high heat flux, K. Tokunaga, N. Yoshida, Y. Kubota, N. Noda, O. Motojima, D.L. Youchison, R.D. Watson, R.E. Nygren, J.M. McDonald and T.D. Marshall 258–263 (1998) 1097
- Development of techniques for welding V–Cr–Ti alloys, M.L. Grossbeck, J.F. King, D.J. Alexander, P.M. Rice and G.M. Goodwin 258–263 (1998) 1369
- Metallurgical bonding development of V–4Cr–4Ti alloy for the DIII-D radiative divertor program, J.P. Smith, W.R. Johnson and P.W. Trester 258–263 (1998) 1420
- Mechanical properties and microstructural characteristics of laser and electron-beam welds in V–4Cr–4Ti, H.M. Chung, J.-H. Park, R.V. Strain, K.H. Leong, D.L. Smith 258–263 (1998) 1451
- Analysis and measurement of residual stress distribution of vanadium/ceramics joints for fusion reactor applications, Y. Nemoto, K. Ueda, M. Satou, A. Hasegawa and K. Abe 258–263 (1998) 1517
- Influence of neutron irradiation on mechanical properties of vanadium/ceramics joints, R. Yasuda, M. Satou, A. Hasegawa and K. Abe 258–263 (1998) 1528
- Glass-ceramic joining and coating of SiC/SiC for fusion applications, M. Ferraris, M. Salvo, C. Isola, M. Appendino Montorsi and A. Kohyama 258–263 (1998) 1546
- Development and characterisation of Be/Glidcop® joints obtained by hot isostatic pressing for high temperature working conditions, F. Saint-Antonin, D. Barberi, G. Le Marois and A. Lailé 258–263 (1998) 1973
- Microstructural evolution of welded austenitic stainless steel irradiated in HFIR target experiments, T. Sawai, K. Shiba and A. Hishinuma 258–263 (1998) 1997
- Application of HIP bonding to first wall panel fabrication made from reduced activation ferritic steel F82H, K. Furuya, M. Enoeda, T. Hatano, S. Sato, T. Kuroda and H. Takatsu 258–263 (1998) 2023
- Irradiation resistance of DS copper/stainless steel joints fabricated by friction welding methods, S.A. Fabritsiev, A.S. Pokrovsky, M. Nakamichi and H. Kawamura 258–263 (1998) 2030
- The effect of neutron irradiation on mechanical properties of Cu/SS joints for ITER applications, S.A. Fabritsiev, A.S. Pokrovsky, D.J. Edwards, S.J. Zinkle and A.F. Rowcliffe 258–263 (1998) 2069
- Densification behaviour of UO<sub>2</sub>–50%PuO<sub>2</sub> pellets by dilatometry, T.R.G. Kutty, P.V. Hegde, R. Keswani, K.B. Khan, S. Majumdar and D.S.C. Purushotham 264 (1999) 10
- Kinetics**
- Alloys under irradiation, G. Martin, P. Bellon and F. Soisson 251 (1997) 86

- Segregation of cascade induced interstitial loops at dislocations: possible effect on initiation of plastic deformation, H. Trinkaus, B.N. Singh and A.J.E. Foreman 251 (1997) 172
- The effect of composition, processing conditions, and irradiation, on lattice defects in spinel ceramics, T.A. Bazilevskaya, V.T. Gritsyna, D.V. Orlinski, L.V. Udalova and A.V. Voitsenya 253 (1998) 133
- Thermal stability and vapour pressure studies on  $UTe_3O_9(s)$  and  $UTeO_5(s)$  K. Krishnan, G.A. Rama Rao, K.D. Singh Mudher and V. Venugopal 254 (1998) 49
- A review of the oxidation of uranium dioxide at temperatures below 400°C, R.J. McEachern and P. Taylor 254 (1998) 87
- On the mechanism of radiation-induced segregation in austenitic Fe-Cr-Ni alloys, T.R. Allen, J.T. Busby, G.S. Was and E.A. Kenik 255 (1998) 44
- Grain boundary segregation under neutron irradiation in dilute alloys, R.G. Faulkner, S. Song, P.E.J. Flewitt, M. Victoria and P. Marmy 255 (1998) 189
- The influence of nitrogen dioxide on the oxidation of  $UO_2$  in air at temperatures below 275°C, R.J. McEachern, S. Sunder, P. Taylor, D.C. Doern, N.H. Miller and D.D. Wood 255 (1998) 234
- Recoil tritium in 304-stainless steel: the initial distribution revisited, A.R. Dulloo and W.S. Diethorn 256 (1998) 235
- Surface chemical behavior of triuranium octaoxide in the atmospheres of carbon monoxide and hydrogen, X. Wang, Y. Fu and R. Xie 257 (1998) 287
- Improvement of hydriding properties of a  $Zr_1Ni_1$  alloy by adding third transition metals for tritium recovery, T. Kabutomori, Y. Wakisaka, K. Tsuchiya and H. Kawamura 258-263 (1998) 481
- Change of tritium species in  $Li_2BeF_4$  molten salt breeder under neutron irradiation at elevated temperature, A. Suzuki, T. Terai and S. Tanaka 258-263 (1998) 519
- Production behavior of irradiation defects in ternary lithium ceramics under ion beam irradiation, K. Moritani and H. Moriyama 258-263 (1998) 525
- Irradiation effects in ceramic breeder materials, H. Moriyama, S. Tanaka and K. Noda 258-263 (1998) 587
- Investigation of oxidation resistance of carbon based first-wall liner material Aerolor AO5, A.-K. Krüssenberg, R. Moormann, H.-K. Hinssen, M. Hofmann and C.H. Wu 258-263 (1998) 770
- The impact of larger clusters formation  $C_5$ ,  $C_6$ ,  $C_7$ ,  $C_8$ ,  $C_9$ , and  $C_{10}$  on the rates of carbon sublimation at elevated temperatures, C.H. Wu, U. Mszanowski and J.M.L. Martin 258-263 (1998) 782
- Study of the retention of hydrogen isotopes implanted in Mo, K. Yamaguchi, M. Okada, O. Onoue, F. Ono and M. Yamawaki 258-263 (1998) 1104
- Effects of oxygen and oxidation on tensile behavior of V-4Cr-4Ti alloy, K. Natesan, W.K. Soppet and M. Uz 258-263 (1998) 1476
- A model of silver-iodine reactions in a light water reactor containment sump under severe accident conditions, E. Krausmann and Y. Drossinos 264 (1999) 113
- Temperature programmed decomposition of uranyl nitrate hexahydrate, S. Dash, M. Kamruddin, S. Bera, P.K. Ajikumar, A.K. Tyagi, S.V. Narasimhan and B. Raj 264 (1999) 271
- A mechanism for the hydrogen uptake process in zirconium alloys, B. Cox 264 (1999) 283
- Amorphization of  $Zr_3Fe$  under electron irradiation, A.T. Motta, L.M. Howe and P.R. Okamoto 270 (1999) 174
- Laser**
- Yag laser welding of neutron irradiated stainless steels, S. Nishimura, R. Katsura, Y. Saito, W. Kono, H. Takahashi, M. Koshiishi, T. Kato and K. Asano 258-263 (1998) 2002
- Weldability of helium-containing stainless steels using a YAG laser, S. Kawano, S. Nakahigashi, K. Uesugi, H. Nakamura, W. Kono, K. Fukuya, F. Kano, A. Hasegawa and K. Abe 258-263 (1998) 2018
- Influence of Ar ion bombardment on the uniform corrosion resistance of laser-surface-melted Zircaloy-4, J. Xu, X. Bai, F. He, S. Wang, X. He and Y. Fan 265 (1999) 240
- Limiter Materials**
- Material properties and design requirements for copper alloys used in ITER, J.W. Davis and G.M. Kalinin 258-263 (1998) 323
- A review of the US joining technologies for plasma facing components in the ITER fusion reactor, B.C. Odegard Jr., C.H. Cadden, R.D. Watson and K.T. Slattery 258-263 (1998) 329
- Damages of hot-pressed boron carbide during solid target boronization in Uranan-3M torsatron, G.P. Glazunov, E.D. Volkov, O.S. Pavlichenko, V.S. Voitsenya, N.I. Nazarov,

- V.G. Kotenko, S. Tanaka and O. Motojima 258–263 (1998) 682
- High-heat-flux-exposure-experiments of a tungsten-test-limiter at TEXTOR-94, M. Wada, T. Tanabe, V. Philipps, B. Unterberg, A. Pospieszczyk, B. Schweer, J. Rapp, Y. Ueda, K. Ohya, T. Ohgo and N. Noda 258–263 (1998) 853
- Revision of the tensile database for V–Ti and V–Cr–Ti alloys tested at ANL, M.C. Billone, H.M. Chung and D.L. Smith 258–263 (1998) 1523
- Wall erosion and material transport to the Mark I carbon divertor of JET, M. Mayer, R. Behrisch, K. Plamann, P. Andrew, J.P. Coad and A.T. Peacock 266–269 (1999) 604
- Liquid Metals**
- Compatibility of insulating ceramic with liquid breeders, T. Terai, T. Mitsuyama, T. Yoneoka and S. Tanaka 253 (1998) 219
- Corrosion of annealed AISI 316 stainless steel in sodium environment, V. Ganesan and V. Ganesan 256 (1998) 69
- Materials integration issues for high performance fusion power systems, D.L. Smith, M.C. Billone, S. Majumdar, R.F. Mattas and D.-K. Sze 258–263 (1998) 65
- Conceptual design of the international fusion materials irradiation facility (IFMIF), T.E. Shannon, R.A. Jameson, H. Katsuta, H. Maekawa, M. Martone, A. Möslang, V. Teplyakov and M.J. Rennich 258–263 (1998) 106
- Water-cooled Pb-17Li test blanket module for ITER: Impact of the structural material grade on the neutronic responses, G. Vella, G. Aiello, M.A. Fütterer, L. Giancarli, E. Oliveri and F. Tavassoli 258–263 (1998) 357
- Present status of the conceptual design of IFMIF target facility, H. Katsuta, Y. Kato, S. Konishi, Y. Miyachi, D. Smith, T. Hua, L. Green, G. Benamati, S. Cevolani, H. Roehrig and W. Schutz 258–263 (1998) 388
- Impurity control in liquid lithium loop for IFMIF target facility, Y. Kato, H. Katsuta, S. Konishi, M. Ogoshi, T. Hua, L. Green and S. Cevolani 258–263 (1998) 394
- Experimental and analytical studies on high-speed plane jet along concave wall simulating IFMIF Li target flow, H. Nakamura, K. Itoh, Y. Kukita, M. Ida, Y. Kato, H. Maekawa and H. Katsuta 258–263 (1998) 440
- Development and performance of aluminum nitride insulating coatings for application in a lithium environment, K. Natesan, C.B. Reed, D.L. Rink and R.C. Haglund 258–263 (1998) 488
- Self-adjustment of Li in Pb–17Li systems, H. Feuerstein, L. Hörner and S. Horn 258–263 (1998) 505
- Magnetic field effect on the deposition of nickel in molten Pb–17Li, F. Barbier and A. Alemany 258–263 (1998) 508
- Gas and hydrogen ion gettering properties of lithium, T. Hino, K. Kanaya, I. Takahashi, H. Yanagihara, M. Hashiba, Y. Hirohata and K. Mori 258–263 (1998) 612
- Experience in irradiation testing of low-activation structural materials in fast reactor BOR-60, V.A. Kazakov, H.-C. Tsai, V.P. Chakin, F.W. Wiffen, A.F. Rowcliffe, D.L. Smith, A.E. Rusanov, A.A. Teikovtsev, N.V. Markina and L.R. Greenwood 258–263 (1998) 1458
- Compatibility of vanadium alloys and its weld joints in homogeneous and heterogeneous liquid lithium systems, V.A. Evtikhin, I.E. Lyublinski and A.V. Vertkov 258–263 (1998) 1487
- Tensile properties and fracture behaviour of V–Cr–Ti alloys after neutron irradiation at 330°C, V.A. Kazakov, V.P. Chakin and Y.D. Goncharenko 258–263 (1998) 1492
- Corrosion behavior of Mo–Re based alloys in liquid Li, J.-I. Saito, M. Morinaga, S. Kano, M. Furui and K. Noda 264 (1999) 206
- Alloying effects on the corrosion behavior of binary Nb-based and Mo-based alloys in liquid Li, J. Saito, S. Inoue, S. Kano, T. Yuzawa, M. Furui and M. Morinaga 264 (1999) 216
- Investigations of ion radiation effects at metal/liquid interfaces, M.B. Lewis and J.D. Hunn 265 (1999) 325
- Low Activation and Low Activation Materials (includes Reduced Activation)**
- Low-activation Mn–Cr austenitic stainless steel with further reduced content of long-lived radioactive elements, M. Onozuka, T. Saida, S. Hirai, M. Kusuhashi, I. Sato and T. Hatekeyama 255 (1998) 128
- The challenge of developing structural materials for fusion power systems, E.E. Bloom 258–263 (1998) 7
- Materials integration issues for high performance fusion power systems, D.L. Smith, M.C. Billone, S. Majumdar, R.F. Mattas and D.-K. Sze 258–263 (1998) 65
- Current status and future R&D for reduced-activation ferritic/martensitic steels, A. Hishinuma, A.

- Kohyama, R.L. Klueh, D.S. Gelles, W. Dietz and K. Ehrlich 258–263 (1998) 193
- Current status of SiC/SiC composites R&D, P. Fenici, A.J. Frias Rebelo, R.H. Jones, A. Kohyama and L.L. Snead 258–263 (1998) 215
- Influence of materials choice on occupational radiation exposure in ITER, C.B.A. Forty, J.D. Firth and G.J. Butterworth 258–263 (1998) 335
- Transmutation and induced radioactivity of W in the armor and first wall of fusion reactors, T. Noda, M. Fujita and M. Okada 258–263 (1998) 934
- Improved activation tests of fusion structural materials with a deuterium–beryllium neutron source, U. von Möllendorff, H. Giese, Y. Ikeda, F. Maekawa, H. Tsige-Tamirat, P. Wilson 258–263 (1998) 1143
- Embrittlement behaviour of different international low activation alloys after neutron irradiation, M. Rieth, B. Dafferner and H.-D. Röhrig 258–263 (1998) 1147
- Influence of tantalum and nitrogen contents, normalizing condition and TMCP process on the mechanical properties of low-activation 9Cr–2W–0.2V–Ta steels for fusion application, T. Hasegawa, Y. Tomita and A. Kohyama 258–263 (1998) 1153
- Comparison of microstructure and formation of intermetallic phases on F82H-mod. and MANET II, H. Glasbrenner, J. Konys, K. Stein-Fechner and O. Wedemeyer 258–263 (1998) 1173
- Microstructure assessment of the low activation ferritic/martensitic steel F82H, R. Schäublin, P. Spätig and M. Victoria 258–263 (1998) 1178
- Low cycle fatigue properties of 8Cr–2WVTa ferritic steel at elevated temperatures, T. Ishii, K. Fukaya, Y. Nishiyama, M. Suzuki and M. Eto 258–263 (1998) 1183
- Effect of purity on helium bubble formation in 9Cr martensitic steel during post-implantation annealing at 1105 K, T. Nagasaka, T. Shibayama, H. Kayano, A. Hasegawa, M. Satou, K. Abe 258–263 (1998) 1193
- Dynamic strain ageing evidences during low cycle fatigue deformation in ferritic–martensitic stainless steels, A.F. Armas, M. Avalos, I. Alvarez-Armas, C. Petersen and R. Schmitt 258–263 (1998) 1204
- Impact behavior of two low activation steels after irradiation to ~67 dpa at 430°C, M.L. Hamilton, L.E. Schubert and D.S. Gelles 258–263 (1998) 1222
- Physical metallurgy and mechanical behaviour of FeCrW-TaV low activation martensitic steels: Effects of chemical composition, A. Alamo, J.C. Brachet, A. Castaing, C. Lepoittevin and F. Barcelo 258–263 (1998) 1228
- Fracture toughness of low activation ferritic steel (JLF-1) weld joint at room temperature, A. Nishimura, N. Inoue and T. Muroga 258–263 (1998) 1242
- Correlation between microstructure and hardness of a low activation ferritic steel (JLF-1) weld joint, N. Inoue, T. Muroga, A. Nishimura and O. Motojima 258–263 (1998) 1248
- Analysis of error field due to ferritic steel in the advanced material testing program of JFT-2M, M. Sato, Y. Miura, S. Takeji, H. Kimura and K. Shiba 258–263 (1998) 1253
- Fracture toughness and tensile behavior of ferritic–martensitic steels irradiated at low temperatures, A.F. Rowcliffe, J.P. Robertson, R.L. Klueh, K. Shiba, D.J. Alexander, M.L. Grossbeck and S. Jitsukawa 258–263 (1998) 1275
- Effects of hydrogen atmosphere on mechanical properties and surface conditions of a reduced activation ferritic steel F82H, S. Hara, T. Abe, M. Enoda and H. Takatsu 258–263 (1998) 1280
- Thermal fatigue behavior of low activation ferrite–martensite steels, C. Petersen 258–263 (1998) 1285
- The possibility of the commercial production of low-activation structural steels for fusion energy in the Russian Federation, N.P. Lyakishev, V.Y. Dashevsky, E.V. Dyomina, L.I. Ivanov, Y.M. Platov, M.D. Prusakova, V.P. Kolotov and M.V. Alenina 258–263 (1998) 1300
- Modelling of phase transformations occurring in low activation martensitic steels, J.-C. Brachet, L. Gavard, C. Boussidan, C. Lepoittevin, S. Denis and C. Servant 258–263 (1998) 1307
- Production of low activation steel; JLF-1, large heats – Current status and future plan, A. Kohyama, Y. Kohno, M. Kuroda, A. Kimura and F. Wan 258–263 (1998) 1319
- Effect of neutron irradiation at low temperature on the embrittlement of the reduced-activation ferritic steels, V.V. Rybin, I.P. Kursevich and A.N. Lapin 258–263 (1998) 1324
- Physical metallurgy of BATMAN II Ti-bearing martensitic steels, L. Piloni, F. Attura, A. Calza-Bini, G. De Santis, G. Filacchioni, A. Carosi and S. Amato 258–263 (1998) 1329
- Effect of small additional elements on DBTT of V–4Cr–4Ti irradiated at



- low temperatures, T. Shibayama, I. Yamagata, H. Kayano and C. Namba 258–263 (1998) 1361
- Fabrication of a 1200 kg ingot of V–4Cr–4Ti alloy for the DIII–D radiative divertor program, W.R. Johnson and J.P. Smith 258–263 (1998) 1425
- Tensile properties of a series of V–4Ti–4Cr alloys containing small amounts of Si, Al and Y, and the influence of helium implantation, T. Matsushima, M. Satou, A. Hasegawa, K. Abe and H. Kayano 258–263 (1998) 1497
- Radiation hardening of V–C, V–O, V–N alloys neutron-irradiated to high fluences, T. Chuto, M. Satou and K. Abe 258–263 (1998) 1502
- Rapid oxidation and its effects on mechanical properties of V–Ti–Cr–Si type alloys, M. Fujiwara, M. Satou, A. Hasegawa and K. Abe 258–263 (1998) 1507
- Revision of the tensile database for V–Ti and V–Cr–Ti alloys tested at ANL, M.C. Billone, H.M. Chung and D.L. Smith 258–263 (1998) 1523
- Effect of high temperature heat treatment in vacuum on microstructure and bending properties of SiC<sub>f</sub>/SiC composites prepared by CVI, H. Araki, H. Suzuki, W. Yang, S. Sato and T. Noda 258–263 (1998) 1540
- Effect of fiber coating on interfacial shear strength of SiC/SiC by nano-indentation technique, T. Hinoki, W. Zhang, A. Kohyama, S. Sato and T. Noda 258–263 (1998) 1567
- Comparison of the mechanical behaviour of SiC<sub>f</sub>/SiC composites following neutron irradiation and helium implantation, A.J. Frias Rebelo, H.W. Scholz, H. Kolbe, G.P. Tartaglia and P. Fenici 258–263 (1998) 1582
- A fusion power reactor concept using SiC/SiC composites, S. Ueda, S. Nishio, Y. Seki, R. Kurihara, J. Adachi, S. Yamazaki and DREAM Design Team 258–263 (1998) 1589
- Microstructure and oxidative degradation behavior of silicon carbide fiber Hi-Nicalon type S, M. Takeda, A. Urano, J. Sakamoto and Y. Imai 258–263 (1998) 1594
- Mechanical properties and damage behavior of non-magnetic high manganese austenitic steels, H. Takahashi, Y. Shindo, H. Kinoshita, T. Shibayama, S. Ishiyama, K. Fukaya, M. Eto, M. Kusuhashi, T. Hatakeyama and I. Sato 258–263 (1998) 1644
- The structural evolution of new low-activation and chromium–nickel stainless steels under high-dose irradiation up to 200 dpa, V.V. Sa-garadze, S.S. Lapin, B.N. Goshchitskii and M.A. Kirk 258–263 (1998) 1675
- Low activation austenitic Mn-steel for in-vessel fusion materials, Y. Suzuki, T. Saida and F. Kudough 258–263 (1998) 1687
- Long-lived activity of elements: Effect of new activation cross-sections and their uncertainties on the selection of materials for IFE reactors, J. Sanz, C. González and J. Juan 258–263 (1998) 1700
- Damage behavior in an electron/helium dual-beam irradiated Fe–Cr–Mn(W,V) alloy, H. Benfu, H. Kinoshita and H. Takahashi 258–263 (1998) 1708
- Thermomechanical characteristics of low activation chromium and chromium alloys, H. Stamm, M.R. Bonansinga, F. Dos Santos Marques, P. Hähner, H. Kolbe and A. Volcan 258–263 (1998) 1756
- Concentration limits of natural elements in low activation fusion materials, E.T. Cheng 258–263 (1998) 1767
- Advanced management concepts for fusion waste, P. Rocco and M. Zucchetti 258–263 (1998) 1773
- Analysis of V–Cr–Ti alloys in terms of activation of impurities, M.L. Grossbeck, R.L. Klueh, E.T. Cheng, J.R. Peterson, M.R. Woolery and E.E. Bloom 258–263 (1998) 1778
- Low-activation characteristics of V-alloys and SiC composites, E.V. Dyomina, P. Fenici, V.P. Kolotov and M. Zucchetti 258–263 (1998) 1784
- Impact of low activation materials on fusion reactor design, Y. Seki, T. Tabara, I. Aoki, S. Ueda, S. Nishio and R. Kurihara 258–263 (1998) 1791
- Structural materials by powder HIP for fusion reactors, C. Dellis, G. Le Marois and E.V. van Osch 258–263 (1998) 1966
- Application of HIP bonding to first wall panel fabrication made from reduced activation ferritic steel F82H, K. Furuya, M. Enoeda, T. Hatano, S. Sato, T. Kuroda and H. Takatsu 258–263 (1998) 2023
- Materials design and related R&D issues for the force-free helical reactor (FFHR), A. Sagara, T. Muroga, O. Motojima, T. Noda, S. Tanaka, T. Terai, A. Kohyama and H. Matsui 258–263 (1998) 2079
- Magnesium, Magnesium Alloys and Compounds**
- Influence of neutron irradiation on mechanical properties of vanadium/ceramics joints, R. Yasuda, M. Satou, A. Hasegawa and K. Abe 258–263 (1998) 1528
- Mathematical and Computational Methods**
- Defect production due to displacement cascades in metals as revealed by

- computer simulation, D.J. Bacon, A.F. Calder and F. Gao 251 (1997) 1
- Computer simulation of vacancy and interstitial clusters in bcc and fcc metals, Yu.N. Osetsky, M. Victoria, A. Serra, S.I. Golubov and V. Priego 251 (1997) 34
- Primary damage formation in bcc iron, R.E. Stoller, G.R. Odette and B.D. Wirth 251 (1997) 49
- Heat and mass transport in nanoscale phase transitions induced by collision cascades, A. Caro, M. Alurralde, R. Saliba and M. Caro 251 (1997) 72
- Stochastic annealing simulation of intracascade defect interactions, H.L. Heinisch and B.N. Singh 251 (1997) 77
- Behavior and computer simulation of SiC under irradiation with energetic particles, J.M. Perlado 251 (1997) 98
- Displacement threshold energies in  $\beta$ -SiC, R. Devanathan, T.D. de la Rubia and W.J. Weber 253 (1998) 47
- A molecular dynamics study of high-energy displacement cascades in  $\alpha$ -zirconium, S.J. Wooding, L.M. Howe, F. Gao, A.F. Calder and D.J. Bacon 254 (1998) 191
- The effect of hydride on the corrosion of Zircaloy-4 in aqueous LiOH solution, S.-J. Kim, K.H. Kim, J.H. Baek, B.K. Choi, Y.H. Jeong and Y.H. Jung 256 (1998) 114
- An analysis of density distribution in UO<sub>2</sub> green pellet by finite element method, K. Yanai, M. Hirai, T. Ishikawa, J. Ishizaki and H. Saitoh 257 (1998) 318
- Calculation of radiation-induced deformation in the ITER vacuum vessel, J. Nagakawa 258–263 (1998) 289
- Experimental and analytical studies on high-speed plane jet along concave wall simulating IFMIF Li target flow, H. Nakamura, K. Itoh, Y. Kukita, M. Ida, Y. Kato, H. Maekawa and H. Katsuta 258–263 (1998) 440
- Ab initio MO study on hydrogen release from surface of lithium silicate, T. Nakazawa, K. Yokoyama and K. Noda 258–263 (1998) 571
- Molecular dynamics simulation of atomic beam bombardment on a solid surface, K. Ezato and T. Kunugi 258–263 (1998) 618
- Performance and lifetime assessment of reactor wall and nearby components during plasma instabilities, A. Hassanein and I. Konkashbaev 258–263 (1998) 645
- Long-lived activity of elements: Effect of new activation cross-sections and their uncertainties on the selection of materials for IFE reactors, J. Sanz, C. González and J. Juan 258–263 (1998) 1700
- Electronic ion energy loss calculations on the basis of the binary encounter approximation, C.A. Ordóñez, D.R. Bickel, V.C. Venezia, F.D. McDaniel, S.E. Matteson and M.I. Molina 264 (1999) 133
- A many body potential for  $\alpha$ -Zr. Application to defect properties, R.C. Pasianot and A.M. Monti 264 (1999) 198
- Mechanical Properties (not listed elsewhere)**
- A theoretical model for determination of fracture toughness of reactor pressure vessel steels in the transition region from automated ball indentation test, T.S. Byun, J.W. Kim and J.H. Hong 252 (1998) 187
- The effect of rhenium on the radiation damage resistivity of Mo-Re alloys, S.A. Fabritsiev and A.S. Pokrovsky 252 (1998) 216
- Dynamic strain aging sensitivity of heat affected zones in C-Mn steels, D. Wagner, J.C. Moreno and C. Prioul 252 (1998) 257
- Computation of the lamina stacking sequence effect on elastic moduli of a plain-weave Nicalon/SiC laminated composite with a [0/30/60] lay-up, W. Zhao, P.K. Liaw and N.-i. Yu 253 (1998) 10
- Adhesion and wear properties of TiN films deposited on martensitic stainless steel and Stellite by reactive magnetron sputter ion plating, M.K. Lee, W.W. Kim, J.S. Kim and W.J. Lee 254 (1998) 42
- Effect of physical vapor deposition on microstructure and properties of uranium-6 wt% niobium alloy, A.J. Sunwoo, T.S. Chow and C.J. Long 254 (1998) 65
- Neutron-irradiation effect on the mechanical properties of alumina fiber, Y. Sakuma, K. Iwanaga, T. Tsujimoto, T. Yoshimoto, M. Okada, K. Miyata and H. Iwanaga 254 (1998) 243
- Modelling of the mechanical behavior of the metal-oxide system during Zr alloy oxidation, M. Parise, O. Sicardy and G. Cailletaud 256 (1998) 35
- High burn-up rim structure: evidences that xenon-depletion, pore formation and grain subdivision start at different local burn-ups, J. Spino, D. Baron, M. Coquerelle and A.D. Stalios 256 (1998) 189
- Notch position in the HAZ specimen of reactor pressure vessel steel, J.H. Kim and E.P. Yoon 257 (1998) 303
- General radiation problems for insulating materials in future fusion devices, E.R. Hodgson 258–263 (1998) 226

- Optimization of HIP bonding conditions for ITER shielding blanket/first wall made from austenitic stainless steel and dispersion strengthened copper alloy, S. Sato, T. Hatano, T. Kuroda, K. Furuya, S. Hara, M. Enoeda and H. Takatsu 258–263 (1998) 265
- Development and material testing of OF-Cu/DS-Cu/OF-Cu triplex tube (dispersion strengthened copper clad with oxygen free-copper) and trial fabrication of a vertical target mock-up for ITER divertor, Y. Gotoh, H. Okamura, S. Kajiura, M. Kumagai, T. Ando, M. Akiba, S. Suzuki and T. Suzuki 258–263 (1998) 271
- Influence of brazing conditions on the strength of brazed joints of alumina dispersion-strengthened copper to 316 stainless steel, H. Nishi and K. Kikuchi 258–263 (1998) 281
- Interface formation and strength of Be/DSCu diffusion bonding, T. Makino and T. Iwadachi 258–263 (1998) 313
- Material properties and design requirements for copper alloys used in ITER, J.W. Davis and G.M. Kalinin 258–263 (1998) 323
- Comparative analysis of copper alloys for the heat sink of plasma facing components in ITER, G. Kalinin and R. Matera 258–263 (1998) 345
- Design concept for the IFMIF test assemblies, J.R. Haines, I. Jitsukawa, A. Möslang, K. Noda, R. Viola and S.J. Zinkle 258–263 (1998) 400
- A remotely operated FIMEC apparatus for the mechanical characterization of neutron irradiated materials, A. Donato, P. Gondi, R. Montanari, L. Moreschi, A. Sili and S. Storai 258–263 (1998) 446
- Examination of indentation geometry-constitutive behaviour relations with confocal microscopy and finite element modeling, C. Santos, G.R. Odette, G.E. Lucas and T. Yamamoto 258–263 (1998) 452
- Thermal and mechanical properties of ceramic blanket particle bed materials: Numerical derivation, M. Abdou, A. Ying and Z. Lu 258–263 (1998) 576
- Effects of prestresses on mechanical properties of isotropic graphite materials, T. Oku, A. Kurumada, Y. Imamura, K. Kawamata and M. Shiraishi 258–263 (1998) 814
- High energy neutron and charged particle irradiation effects on thermo-mechanical properties of carbon-carbon composites for divertor applications, M. Eto, S. Baba, M. Ishihara and H. Ugachi 258–263 (1998) 843
- The effect of neutron dose, irradiation and testing temperature on mechanical properties of copper alloys, S.A. Fabritsiev, A.S. Pokrovsky, D.J. Edwards and S.J. Zinkle 258–263 (1998) 1015
- Changes of structure and properties of yttrium doped copper at deformation, annealing and irradiation, I.M. Neklyudov, V.N. Voyevodin, S.V. Shevtchenko, V.F. Rybalko, N.V. Kamychantchenko and I.A. Belenko 258–263 (19c98) 1040
- Distribution of C–Cr associates and mechanical stability of Cr martensitic steels, P. Gondi, R. Montanari and M.E. Tata 258–263 (1998) 1167
- Dynamic strain ageing evidences during low cycle fatigue deformation in ferritic–martensitic stainless steels, A.F. Armas, M. Avalos, I. Alvarez-Armas, C. Petersen and R. Schmitt 258–263 (1998) 1204
- Physical metallurgy and mechanical behaviour of FeCrWTaV low activation martensitic steels: Effects of chemical composition, A. Alamo, J.C. Brachet, A. Castaing, C. Lepoittevin and F. Barcelo 258–263 (1998) 1228
- Fracture toughness of low activation ferritic steel (JLF-1) weld joint at room temperature, A. Nishimura, N. Inoue and T. Muroga 258–263 (1998) 1242
- Correlation between microstructure and hardness of a low activation ferritic steel (JLF-1) weld joint, N. Inoue, T. Muroga, A. Nishimura and O. Motojima 258–263 (1998) 1248
- Fracture toughness and tensile behavior of ferritic–martensitic steels irradiated at low temperatures, A.F. Rowcliffe, J.P. Robertson, R.L. Klueh, K. Shiba, D.J. Alexander, M.L. Grossbeck and S. Jitsukawa 258–263 (1998) 1275
- Thermal fatigue behavior of low activation ferrite–martensite steels, C. Petersen 258–263 (1998) 1285
- Influence of operation conditions on structure and properties of 12% Cr steels as candidate structural materials for fusion reactor, A.G. Ioltukhovskiy, M.V. Leontyeva-Smirnova, Y.I. Kazennov, E.A. Medvedeva, A.V. Tselishchev, V.K. Shamardin, A.V. Povstyanenko, S.E. Ostrovsky, A.M. Dvoryashin, S.I. Porollo, A.N. Vorobyev and V.S. Khabarov 258–263 (1998) 1312
- Influence of delta ferrite and dendritic carbides on the impact and tensile properties of a martensitic chromium steel, L. Schäfer 258–263 (1998) 1336

- Effect of hydrogen and oxygen on the tensile properties of V-4Cr-4Ti, H.D. Röhrig, J.R. DiStefano and L.D. Chitwood 258-263 (1998) 1356
- Tensile and impact properties of vanadium-base alloys irradiated at <430°C, H.M. Chung and D.L. Smith 258-263 (1998) 1442
- Effects of oxygen and oxidation on tensile behavior of V-4Cr-4Ti alloy, K. Natesan, W.K. Soppet and M. Uz 258-263 (1998) 1476
- Tensile properties and fracture behaviour of V-Cr-Ti alloys after neutron irradiation at 330°C, V.A. Kazakov, V.P. Chakin and Y.D. Goncharenko 258-263 (1998) 1492
- Tensile properties of a series of V-4Ti-4Cr alloys containing small amounts of Si, Al and Y, and the influence of helium implantation, T. Matsushima, M. Satou, A. Hasegawa, K. Abe and H. Kayano 258-263 (1998) 1497
- Radiation hardening of V-C, V-O, V-N alloys neutron-irradiated to high fluences, T. Chuto, M. Satou and K. Abe 258-263 (1998) 1502
- Rapid oxidation and its effects on mechanical properties of V-Ti-Cr-Si type alloys, M. Fujiwara, M. Satou, A. Hasegawa and K. Abe 258-263 (1998) 1507
- Interface strength of SiC/SiC composites with and without helium implantation using micro-indentation test, M. Saito, A. Hasegawa, S. Ohtsuka and K. Abe 258-263 (1998) 1562
- Microstructure and oxidative degradation behavior of silicon carbide fiber Hi-Nicalon type S, M. Takeda, A. Urano, J. Sakamoto and Y. Imai 258-263 (1998) 1594
- Mechanical properties and damage behavior of non-magnetic high manganese austenitic steels, H. Takahashi, Y. Shindo, H. Kinoshita, T. Shibayama, S. Ishiyama, K. Fukaya, M. Eto, M. Kusuhashi, T. Hatakeyama and I. Sato 258-263 (1998) 1644
- Validation of the shear punch-tensile correlation technique using irradiated materials, G.L. Hankin, M.B. Toloczko, M.L. Hamilton and R.G. Faulkner 258-263 (1998) 1651
- Shear punch testing of <sup>59</sup>Ni isotopically-doped model austenitic alloys after irradiation in FFTF at different He/dpa ratios, G.L. Hankin, M.B. Toloczko, M.L. Hamilton, F.A. Garner and R.G. Faulkner 258-263 (1998) 1657
- Irradiation resistance of DS copper/stainless steel joints fabricated by friction welding methods, S.A. Fabritsiev, A.S. Pokrovsky, M. Nakamichi and H. Kawamura 258-263 (1998) 2030
- Fatigue crack growth under compressive loading, K. Kasaba, T. Sano, S. Kudo, T. Shoji, K. Katagiri and T. Sato 258-263 (1998) 2059
- The effect of neutron irradiation on mechanical properties of Cu/SS joints for ITER applications, S.A. Fabritsiev, A.S. Pokrovsky, D.J. Edwards, S.J. Zinkle and A.F. Rowcliffe 258-263 (1998) 2069
- Preshock-induced phase transition in spalled U-0.75 wt% Ti, A.K. Zurek 264 (1999) 155
- Studies on hot hardness of Zr and its alloys for nuclear reactors, T.R.G. Kutty, K. Ravi and C. Ganguly 265 (1999) 91
- Characterization of UO<sub>2</sub> irradiated in the BR-3 reactor, S.K. Yagnik, A.J. Machiels and R.L. Yang 270 (1999) 65
- Effects of interface and tensile properties in the dynamic fracture of layered structures, J.H. McCoy, A.S. Kumar and J.F. Stubbins 270 (1999) 129
- Metals, Alloys and Compounds (not listed elsewhere)**
- A review of in situ observation of defect production with energetic heavy ions, S. Ishino 251 (1997) 225
- Hydrogen isotopes transport parameters in fusion reactor materials, E. Serra, G. Benamati and O.V. Ogorodnikova 255 (1998) 105
- Hardening of Alloy N10276 by diluted flowing butane gas, S.W. Sharkawy 255 (1998) 75
- Texture and residual-stress analysis in Zircaloy-4 cylindrical samples, R. Guillen, C. Cossu, M. François and E. Girard 255 (1998) 174
- Investigation of liquid impact erosion for 12Cr steel and Stellite 6B, M.K. Lee, W.W. Kim, C.K. Rhee and W.J. Lee 257 (1998) 134
- Solubility of hydrogen fluoride in the molten LiF-PbF<sub>2</sub>, M. Ablanov, H. Matsuura and R. Takagi 258-263 (1998) 500
- Dynamical simulation for sputtering of B<sub>4</sub>C, T. Kenmotsu, T. Kawamura, T. Ono and Y. Yamamura 258-263 (1998) 729
- Low activation austenitic Mn-steel for in-vessel fusion materials, Y. Suzuki, T. Saida and F. Kudough 258-263 (1998) 1687
- An evaluation of potential material-coolant compatibility for applications in advanced fusion reactors, T. Kondo, Y. Watanabe, Y.S. Yi and A. Hishinuma 258-263 (1998) 2083
- Microstructure and Texture (excludes by Irradiation)**
- The mechanical behavior of a Nicalon/SiC composite at room temperature and 1000°C, N. Miriyala,

- P.K. Liaw, C.J. McHargue and L.L. Snead 253 (1998) 1
- Computation of the lamina stacking sequence effect on elastic moduli of a plain-weave Nicalon/SiC laminated composite with a [0/30/60] lay-up, W. Zhao, P.K. Liaw and N.-i. Yu 253 (1998) 10
- Effect of physical vapor deposition on microstructure and properties of uranium-6 wt% niobium alloy, A.J. Sunwoo, T.S. Chow and C.J. Long 254 (1998) 65
- Effects of heat treatment on grain refinement in cast uranium-0.25 wt% vanadium alloy, A.J. Sunwoo, R.N. Accardo and W.H. Gourdin 256 (1998) 53
- Dynamic behavior of hydrogen atoms with a boronized wall, K. Tsuzuki, N. Inoue, A. Sagara, N. Noda, O. Motojima, T. Mochizuki, T. Hino and T. Yamashina 256 (1998) 166
- Influence of brazing conditions on the strength of brazed joints of alumina dispersion-strengthened copper to 316 stainless steel, H. Nishi and K. Kikuchi 258-263 (1998) 281
- The thermal shock resistance of a joining material of C/C composite and copper, A. Kurumada, T. Oku, Y. Imamura, K. Kawamata, O. Motojima, N. Noda and B. McEnaney 258-263 (1998) 821
- High-temperature residual strain measurements, using neutron diffraction, in brazed Cu/CFC graphite divertor structures, M. Ceretti, R. Coppola, E. Di Pietro and C. Nardi 258-263 (1998) 1005
- Comparison of microstructure and formation of intermetallic phases on F82H-mod. and MANET II, H. Glasbrenner, J. Konys, K. Stein-Fechner and O. Wedemeyer 258-263 (1998) 1173
- Dynamic strain ageing evidences during low cycle fatigue deformation in ferritic-martensitic stainless steels, A.F. Armas, M. Avalos, I. Alvarez-Armas, C. Petersen and R. Schmitt 258-263 (1998) 1204
- Microstructural characterisation of F82H-mod. steel using small-angle neutron scattering, R. Coppola, K. Ehrlich, M. Magnani, E. Materana-Morris and M. Valli 258-263 (1998) 1291
- Influence of operation conditions on structure and properties of 12% Cr steels as candidate structural materials for fusion reactor, A.G. Ioltukhovskiy, M.V. Leontyeva-Smirnova, Y.I. Kazennov, E.A. Medvedeva, A.V. Tselishchev, V.K. Shamardin, A.V. Povstyanenko, S.E. Ostrovskiy, A.M. Dvorya-  
shin, S.I. Porollo, A.N. Vorobyev and V.S. Khabarov 258-263 (1998) 1312
- Processing and microstructure of silicon carbide fiber-reinforced silicon carbide composite by hot-pressing, K. Yoshida, Budiyanto, M. Imai and T. Yano 258-263 (1998) 1960
- Microstructural evolution of welded austenitic stainless steel irradiated in HFIR target experiments, T. Sawai, K. Shiba and A. Hishinuma 258-263 (1998) 1997
- The influence of water chemistry on the radiolysis of the primary coolant water in pressurized water reactors, B. Pastina, J. Isabey and B. Hickel 264 (1999) 309
- On the effects of heat treatment and surface orientation on corrosion and hydrogen ingress of Zr-2.5Nb pressure tube material, Y.-P. Lin and J. DeLuca 265 (1999) 1
- Effect of Mo on recrystallization characteristics of Zr-Nb-(Sn)-Mo experimental alloys, Y.B. Chun, S.K. Hwang, M.H. Kim, S.I. Kwun and Y.S. Kim 265 (1999) 28
- Characterization of U-Nb-Zr dispersion fuel prepared by centrifugal atomization process, J.-M. Park, K.-øH. Kim, D.-S. Sohn, C.-K. Kim and G.L. Hofman 265 (1999) 38
- Effect of oxygen content on the beta-quenched microstructure of modified Zircaloy-4, H.S. Hong, S.J. Kim and K.S. Lee 265 (1999) 108
- Moderator and Reflector Materials**
- The influence of dynamical structural relaxation of point defect clusters on void formation in irradiated copper, Y. Shimomura, I. Mukouda and K. Sugio 251 (1997) 61
- Molecular dynamics evaluation of self-sputtering of beryllium, S. Ueda, T. Ohsaka and S. Kuwajima 258-263 (1998) 713
- Molybdenum, Molybdenum Alloys and Compounds**
- A temperature threshold for gas-bubble super-lattice formation in molybdenum, F.E. Lawson and P.B. Johnson 252 (1998) 34
- The effect of rhenium on the radiation damage resistivity of Mo-Re alloys, S.A. Fabritsiev and A.S. Pokrovskiy 252 (1998) 216
- Uranium molybdenum silicide  $U_3MoSi_2$  and phase equilibria in the U-Mo-Si system, M. Ugajin, A. Itoh, S. Okayasu and Y. Kazumata 257 (1998) 145
- Deformation analysis of small size bend specimens by FEM calcula-

- tion to estimate irradiation induced embrittlement of Mo and W, K. Ueda, M. Satou, A. Hasegawa and K. Abe 258–263 (1998) 466
- Neutron irradiation embrittlement of polycrystalline and single crystalline molybdenum, K. Watanabe, A. Hishinuma, Y. Hiraoka and T. Fujii 258–263 (1998) 848
- Effects of neutron irradiation on microstructure and deformation behaviour of mono- and polycrystalline molybdenum and its alloys, B.N. Singh, J.H. Evans, A. Horsewell, P. Toft and G.V. Müller 258–263 (1998) 865
- Hardening behavior of molybdenum by low energy He and D ion irradiation, H. Iwakiri, H. Wakimoto, H. Watanabe and N. Yoshida 258–263 (1998) 873
- Radiation embrittlement of Mo–Re welds under low-temperature irradiation in the SM reactor, V.P. Chakin, F. Morito, V.A. Kazakov, Y.D. Goncharenko and Z.E. Ostrovsky 258–263 (1998) 883
- Hydrogen retention in high-Z materials with various contents of carbon, A. Atsumi and T. Tanabe 258–263 (1998) 896
- Neutron irradiation embrittlement of molybdenum rhenium alloys and their improvement by heat treatment, A. Hasegawa, K. Ueda, M. Satou and K. Abe 258–263 (1998) 902
- Carbon effect on retention and release of deuterium implanted in Mo, S. Nagata, K. Takahiro and S. Yamaguchi 258–263 (1998) 907
- Study of the retention of hydrogen isotopes implanted in Mo, K. Yamaguchi, M. Okada, O. Onoue, F. Ono and M. Yamawaki 258–263 (1998) 1104
- Corrosion behavior of Mo–Re based alloys in liquid Li, J.-I. Saito, M. Morinaga, S. Kano, M. Furui and K. Noda 264 (1999) 206
- Alloying effects on the corrosion behavior of binary Nb-based and Mo-based alloys in liquid Li, J. Saito, S. Inoue, S. Kano, T. Yuza-wa, M. Furui and M. Morinaga 264 (1999) 216
- Release of hydrogen molecules from hydrogen-containing carbon film deposited on molybdenum, K. Ashida, K. Watanabe, I. Kitamura and S. Ikeno 266–269 (1999) 434
- Monitoring Methods**
- Examination of indentation geometry-constitutive behaviour relations with confocal microscopy and finite element modeling, C. Santos, G.R. Odette, G.E. Lucas and T. Yamamoto 258–263 (1998) 452
- Magnetic non-destructive evaluation of accumulated fatigue damage in ferromagnetic steels for nuclear plant component, K. Morishita, A. Gilanyi, T. Sukegawa, T. Uesaka and K. Miya 258–263 (1998) 1946
- Neutron Irradiation**
- Aspects of microstructure evolution under cascade damage conditions, B.N. Singh, S.I. Golubov, H. Trinkaus, A. Serra, Yu.N. Osetsky and A.V. Barashev 251 (1997) 107
- Studies of defects and defect agglomerates by positron annihilation spectroscopy, M. Eldrup and B.N. Singh 251 (1997) 132
- The consequences of helium production on microstructural development and deformation response in isotopically tailored ferritic alloys, D.S. Gelles, G.L. Hankin and M.L. Hamilton 251 (1997) 188
- Defect interaction processes controlling the accumulation of defects produced by high energy recoils, M. Kiritani 251 (1997) 237
- Irradiation creep and void swelling of austenitic stainless steels at low displacement rates in light water energy systems, F.A. Garner and M.B. Toloczko 251 (1997) 252
- Neutron irradiation and intergranular fracture in vanadium–20 wt% titanium alloys undoped and doped with phosphorus and sulfur, J. Kamada, T.E. Bloomer, A.H. Swanson and D.Y. Lyu 252 (1998) 1
- Deterioration of ZrC-coated fuel particle caused by failure of pyrolytic carbon layer, K. Minato, K. Fukuda, H. Sekino, A. Ishikawa and E. Oeda 252 (1998) 13
- Relationship between in-reactor stress relaxation and irradiation creep, J.P. Foster, E.R. Gilbert, K. Bunde and D.L. Porter 252 (1998) 89
- Post-yield strain hardening behavior as a clue to understanding irradiation hardening, R.J. DiMelfi, D.E. Alexander and L.E. Rehn 252 (1998) 171
- Radiation-induced electrical conductivity in aluminium nitride ceramic, U. Ulmanis and E. Palcevskis 252 (1998) 195
- The effect of rhenium on the radiation damage resistivity of Mo–Re alloys, S.A. Fabritsiev and A.S. Pokrovsky 252 (1998) 216
- X-ray diffractometry and high-resolution electron microscopy of neutron-irradiated SiC to a fluence of  $1.9 \times 10^{27}$  n/m<sup>2</sup>, T. Yano, H. Miyazaki, M. Akiyoshi and T. Iseki 253 (1998) 78

- Damage calculation in fusion ceramics: comparing neutrons and light ions, P.V. Vladimirov, D. Lizunov, Yu.A.I. Ryazanov and A. Möslang 253 (1998) 104
- The effect of composition, processing conditions, and irradiation, on lattice defects in spinel ceramics, T.A. Bazilevskaya, V.T. Gritsyna, D.V. Orlinski, L.V. Udalova and A.V. Voitsenya 253 (1998) 133
- Electrical conductivity change in single crystal  $\text{Al}_2\text{O}_3$  and  $\text{MgO}$  under neutron and gamma-ray irradiation, T. Tanifuji, Y. Katano, T. Nakazawa and K. Noda 253 (1998) 156
- Growth of optical transmission loss at 850 nm in silica core optical fibers during fission reactor irradiation, T. Shikama, T. Kakuta, M. Narui and T. Sagawa 253 (1998) 180
- Effect of neutron radiation on the dielectric, mechanical and thermal properties of ceramics for rf transmission windows, C. Hazelton, J. Rice, L.L. Snead and S.J. Zinkle 253 (1998) 190
- Fission product release from trace irradiated  $\text{UO}_{2+x}$ , M.A. Mansouri and D.R. Olander 254 (1998) 22
- Irradiation behavior of high uranium-density alloys in the plate fuels, M. Ugajin, A. Itoh, M. Akabori, N. Ooka and Y. Nakakura 254 (1998) 78
- Transmutation of technetium: results of the EFTTRA-T1 experiment, R.J.M. Konings, A.D. Stalios, C.T. Walker and N. Cocuauud 254 (1998) 122
- The influence of neutron irradiation on the microstructure of  $\text{Al}_2\text{O}_3$ ,  $\text{MgAl}_2\text{O}_4$ ,  $\text{Y}_3\text{Al}_5\text{O}_{12}$  and  $\text{CeO}_2$ , R.J.M. Konings, K. Bakker, J.G. Boshoven, R. Conrad and H. Hein 254 (1998) 135
- Release of tritium, protium, and helium from neutron-irradiated Li-Al alloy. II, H. Sugai, M. Tanase and M. Yahagi 254 (1998) 151
- Effect of additives ( $\text{Cr}_2\text{O}_3$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{SiO}_2$ ,  $\text{MgO}$ ) on diffusional release of  $^{133}\text{Xe}$  from  $\text{UO}_2$  fuels, S. Kashibe and K. Une 254 (1998) 234
- Neutron-irradiation effect on the mechanical properties of alumina fiber, Y. Sakuma, K. Iwanaga, T. Tsujimoto, T. Yoshimoto, M. Okada, K. Miyata and H. Iwanaga 254 (1998) 243
- Comments on the paper 'Phase diagram calculations of the U-Pu-N system with carbon and oxygen impurities', by D.D. Sood, R. Agarwal, V. Venugopal [Journal of Nuclear Materials 247 (1997) 293], G.C. Jain 256 (1998) 85
- Hydrogen ingress through EDM surfaces of Zr-2.5Nb pressure-tube material, C.K. Chow, G.R. Brady, V.F. Urbanic and C.E. Coleman 257 (1998) 35
- Impacts of damage production and accumulation on materials performance in irradiation environment, B.N. Singh 258-263 (1998) 18
- IFMIF, its facility concept and technology, T. Kondo 258-263 (1998) 47
- Users' requirements for IFMIF, K. Noda, K. Ehrlich, S. Jitsukawa, A. Möslang and S. Zinkle 258-263 (1998) 97
- Conceptual design of the international fusion materials irradiation facility (IFMIF), T.E. Shannon, R.A. Jameson, H. Katsuta, H. Maekawa, M. Martone, A. Möslang, V. Teplyakov and M.J. Rennich 258-263 (1998) 106
- The influence of neutron spectrum and irradiation history on microstructural evolution in fusion structural materials, T. Muroga, S. Ohnuki, F.A. Garner and S.J. Zinkle 258-263 (1998) 130
- Current status and future R&D for reduced-activation ferritic/martensitic steels, A. Hishinuma, A. Kohyama, R.L. Klueh, D.S. Gelles, W. Dietz and K. Ehrlich 258-263 (1998) 193
- Irradiation testing of 316L(N)-IG austenitic stainless steel for ITER, E.V. van Osch, M.G. Horsten and M.I. de Vries 258-263 (1998) 301
- Influence of materials choice on occupational radiation exposure in ITER, C.B.A. Forty, J.D. Firth and G.J. Butterworth 258-263 (1998) 335
- Neutron radiation effects of the center conductor post in a low aspect ratio tokamak reactor, Y. Wu, B. Xiao, Q. Huang and L. Qiu 258-263 (1998) 339
- Water-cooled Pb-17Li test blanket module for ITER: Impact of the structural material grade on the neutronic responses, G. Vella, G. Aiello, M.A. Fütterer, L. Giancarli, E. Oliveri and F. Tavassoli 258-263 (1998) 357
- Temperature controlled material irradiation in the advanced test reactor, F.W. Ingram, A.J. Palmer and D.J. Stites 258-263 (1998) 362
- Accelerator conceptual design of the international fusion materials irradiation facility, M. Sugimoto, R.A. Jameson, V. Teplyakov, D. Berwald, B. Blind, D. Bruhwiler, H. Deitinghoff, R. Ferdinand, M. Kinsho, H. Klein, J.-M. Lagniel, A. Miyahara, M. Olivier, M. Peacock, E. Piechowiak, Y. Pozimski, J. Rathke, Y. Tanabe and K. Volk 258-263 (1998) 367
- Development of rig for systematic irradiation tests of fusion reactor materials in a fission reactor, M. Narui, T. Sagawa and T. Shikama 258-263 (1998) 372

- Irradiation techniques under high pressurized water using hybrid type saturated temperature capsule in the JMTR, Y. Matsui, M. Niimi, T. Hoshiya, T. Tsukada and H. Tsuji 258–263 (1998) 378
- Present status of the conceptual design of IFMIF target facility, H. Katsuta, Y. Kato, S. Konishi, Y. Miyauchi, D. Smith, T. Hua, L. Green, G. Benamati, S. Cevolani, H. Roehrig and W. Schutz 258–263 (1998) 388
- Design concept for the IFMIF test assemblies, J.R. Haines, I. Jitsukawa, A. Möslang, K. Noda, R. Viola and S.J. Zinkle 258–263 (1998) 400
- Characterization of the irradiation parameters in the IFMIF high flux test region, E. Daum, P.P.H. Wilson, U. Fischer and K. Ehrlich 258–263 (1998) 413
- Characterization of the volume for high dose irradiations with IFMIF, E. Daum, P.P.H. Wilson and A. Möslang 258–263 (1998) 421
- Overview of the IFMIF test facility, A. Möslang, C. Antonucci, E. Daum, J.R. Haines, I. Jitsukawa, K. Noda and S. Zinkle 258–263 (1998) 427
- Experimental and analytical studies on high-speed plane jet along concave wall simulating IFMIF Li target flow, H. Nakamura, K. Itoh, Y. Kukita, M. Ida, Y. Kato, H. Maekawa and H. Katsuta 258–263 (1998) 440
- Change of tritium species in  $\text{Li}_2\text{BeF}_4$  molten salt breeder under neutron irradiation at elevated temperature, A. Suzuki, T. Terai and S. Tanaka 258–263 (1998) 519
- Helium release from neutron-irradiated  $\text{Li}_2\text{O}$  single crystals, D. Yamaki, T. Tanifuji and K. Noda 258–263 (1998) 549
- Anomalous exchange of deuterium implanted into an oxide ceramic for protium in air vapor, B. Tsuchiya, E. Iizuka, K. Soda, K. Morita and H. Iwahara 258–263 (1998) 555
- Microstructure and mechanical properties of neutron irradiated beryllium, E. Ishitsuka, H. Kawamura, T. Terai and S. Tanaka 258–263 (1998) 566
- Development of material irradiation rig with precision temperature control in experimental fast reactor JOYO, H. Kataoka, T. Yasu, H. Takatsudo and S. Miyakawa 258–263 (1998) 677
- Transmutation of plasma facing materials by the neutron flux in a DT fusion reactor, R. Behrisch, V. Khripunov, R.T. Santoro and J.M. Yesil 258–263 (1998) 686
- Steam-chemical reactivity for irradiated beryllium, R.A. Anderl, K.A. McCarthy, M.A. Oates, D.A. Petti, R.J. Pawelko and G.R. Smolik 258–263 (1998) 750
- Activation of beryllium in a fusion power plant, C.B.A. Forty, R.A. Forrest and G.J. Butterworth 258–263 (1998) 793
- Investigation of ITER candidate beryllium grades irradiated at high temperature, I.B. Kupriyanov, V.A. Gorokhov, R.R. Melder, Z.E. Ostrovsky and A.A. Gervash 258–263 (1998) 808
- Overview of EU CFCs development for plasma facing materials, C.H. Wu, C. Alessandrini, P. Bonal, H. Grote, R. Moormann, M. Rödiger, J. Roth, H. Werle and G. Vieider 258–263 (1998) 833
- High energy neutron and charged particle irradiation effects on thermo-mechanical properties of carbon-carbon composites for divertor applications, M. Eto, S. Baba, M. Ishihara and H. Ugachi 258–263 (1998) 843
- Neutron irradiation embrittlement of polycrystalline and single crystalline molybdenum, K. Watanabe, A. Hishinuma, Y. Hiraoka and T. Fujii 258–263 (1998) 848
- Effects of neutron irradiation on microstructure and deformation behaviour of mono- and polycrystalline molybdenum and its alloys, B.N. Singh, J.H. Evans, A. Horsewell, P. Toft and G.V. Müller 258–263 (1998) 865
- Radiation embrittlement of Mo-Re welds under low-temperature irradiation in the SM reactor, V.P. Chakin, F. Morito, V.A. Kazakov, Y.D. Goncharenko and Z.E. Ostrovsky 258–263 (1998) 883
- Neutron irradiation embrittlement of molybdenum rhenium alloys and their improvement by heat treatment, A. Hasegawa, K. Ueda, M. Satou and K. Abe 258–263 (1998) 902
- Transmutation and induced radioactivity of W in the armor and first wall of fusion reactors, T. Noda, M. Fujita and M. Okada 258–263 (1998) 934
- Response of dynamically compacted tungsten to high fluence neutron irradiation at 423–600°C in FFTF, J. Megusar and F.A. Garner 258–263 (1998) 940
- Effects of solid transmutants and helium in copper studied by mixed-spectrum neutron irradiation, T. Muroga, H. Watanabe and N. Yoshida 258–263 (1998) 955
- Testing of actively cooled high heat flux mock-ups, M. Rödiger, R. Duwe, W. Kühnlein, J. Linke, M. Scheerer, I. Smid and B. Wiechers 258–263 (1998) 967
- The effect of bonding and bakeout thermal cycles on the properties



- of copper alloys irradiated at 100°C, D.J. Edwards, B.N. Singh, P. Toft and M. Eldrup 258–263 (1998) 978
- Effect of neutron irradiation on fracture toughness behaviour of copper alloys, S. Tähtinen, M. Pyykkönen, P. Karjalainen-Roikonen, B.N. Singh and P. Toft 258–263 (1998) 1010
- The effect of neutron dose, irradiation and testing temperature on mechanical properties of copper alloys, S.A. Fabritsiev, A.S. Pokrovsky, D.J. Edwards and S.J. Zinkle 258–263 (1998) 1015
- Influence of composition, heat treatment and neutron irradiation on the electrical conductivity of copper alloys, M. Eldrup and B.N. Singh 258–263 (1998) 1022
- Improved activation tests of fusion structural materials with a deuterium–beryllium neutron source, U. von Möllendorff, H. Giese, Y. Ikeda, F. Maekawa, H. Tsigie-Tamirat, P. Wilson 258–263 (1998) 1143
- Embrittlement behaviour of different international low activation alloys after neutron irradiation, M. Rieth, B. Dafferner and H.-D. Röhrig 258–263 (1998) 1147
- Irradiation creep of various ferritic alloys irradiated at ~400°C in the PFR and FFTF reactors, M.B. Toloczko, F.A. Garner and C.R. Eiholzer 258–263 (1998) 1163
- Irradiation embrittlement of  $2\frac{1}{2}$ Cr–1Mo steel at 400°C and its electrochemical evaluation, Y. Nishiyama, K. Fukaya, M. Suzuki and M. Eto 258–263 (1998) 1187
- The effect of low dose irradiation on the impact fracture energy and tensile properties of pure iron and two ferritic martensitic steels, I. Belianov and P. Marmy 258–263 (1998) 1259
- Heat treatment effects on impact toughness of 9Cr–1MoVNb and 12Cr–1MoVW steels irradiated to 100 dpa, R.L. Klueh and D.J. Alexander 258–263 (1998) 1269
- Effect of neutron irradiation at low temperature on the embrittlement of the reduced-activation ferritic steels, V.V. Rybin, I.P. Kursevich and A.N. Lapin 258–263 (1998) 1324
- Dependence of impact properties on irradiation temperature in reduced-activation martensitic steels, A. Kimura, M. Narui, T. Misawa, H. Matsui and A. Kohyama 258–263 (1998) 1340
- Effect of neutron irradiation on swelling, elastic modulus and thermal conductivity of V–Ga alloys, A.I. Dediurin, Y.M. Platov, M.I. Zakharova, I.V. Borovitskaja and N.A. Artemov 258–263 (1998) 1409
- Swelling behavior of V–Fe binary and V–Fe–Ti ternary alloys, K. Fukumoto, A. Kimura and H. Matsui 258–263 (1998) 1431
- Microstructure of V–4Cr–4Ti alloy after low-temperature irradiation by ions and neutrons, J. Gazda, M. Meshii and H.M. Chung 258–263 (1998) 1437
- Experience in irradiation testing of low-activation structural materials in fast reactor BOR-60, V.A. Kazakov, H.-C. Tsai, V.P. Chakin, F.W. Wiffen, A.F. Rowcliffe, D.L. Smith, A.E. Rusanov, A.A. Teikovtsev, N.V. Markina and L.R. Greenwood 258–263 (1998) 1458
- Irradiation creep of vanadium-base alloys, H. Tsai, H. Matsui, M.C. Billone, R.V. Strain and D.L. Smith 258–263 (1998) 1471
- Grain boundary segregation of impurities in neutron irradiated and thermally aged vanadium alloys, J. Kameda, T.E. Bloomer and D.Y. Lyu 258–263 (1998) 1482
- Tensile properties and fracture behaviour of V–Cr–Ti alloys after neutron irradiation at 330°C, V.A. Kazakov, V.P. Chakin and Y.D. Goncharenko 258–263 (1998) 1492
- Radiation hardening of V–C, V–O, V–N alloys neutron-irradiated to high fluences, T. Chuto, M. Satou and K. Abe 258–263 (1998) 1502
- Effects of helium on void swelling in boron doped V–5Fe alloys, T. Iwai, N. Sekimura and F.A. Garner 258–263 (1998) 1512
- Influence of neutron irradiation on mechanical properties of vanadium/ceramics joints, R. Yasuda, M. Satou, A. Hasegawa and K. Abe 258–263 (1998) 1528
- Radiation response of SiC-based fibers, G.E. Youngblood, R.H. Jones, A. Kohyama and L.L. Snead 258–263 (1998) 1551
- Fiber creep rate and high-temperature properties of SiC/SiC composites, C.A. Lewinsohn, R.H. Jones, G.E. Youngblood and C.H. Henninger Jr. 258–263 (1998) 1557
- Comparison of the mechanical behaviour of SiC<sub>f</sub>/SiC composites following neutron irradiation and helium implantation, A.J. Frias Rebelo, H.W. Scholz, H. Kolbe, G.P. Tartaglia and P. Fenici 258–263 (1998) 1582
- Flux and composition dependence of irradiation creep of austenitic alloys irradiated in PFR at ~420°C, M.B. Toloczko, F.A. Garner, J. Standring, B. Munro and S. Adaway 258–263 (1998) 1606

- Swelling and void-induced embrittlement of austenitic stainless steel irradiated to 73–82 dpa at 335–365°C, S.I. Porollo, A.N. Vorobjev, Y.V. Konobeev, A.M. Dvoria-shin, V.M. Krigan, N.I. Budylnkin, E.G. Mironova and F.A. Garner 258–263 (1998) 1613
- Irradiation creep and stress-enhanced swelling of Fe–16Cr–15Ni–Nb austenitic stainless steel in BN-350, A.N. Vorobjev, N.I. Budylnkin, E.G. Mironova, S.I. Porollo, Y.V. Konobeev and F.A. Garner 258–263 (1998) 1618
- Effects of annealing on the tensile properties of irradiated austenitic stainless steel, I. Ioka, A. Naito, K. Shiba, J.P. Robertson, S. Jitsukawa and A. Hishinuma 258–263 (1998) 1664
- Effect of irradiation temperature on irradiation assisted stress corrosion cracking of model austenitic stainless steels, T. Tsukada, Y. Miwa, H. Tsuji and H. Nakajima 258–263 (1998) 1669
- The effect of tritium and low-temperature neutron irradiation at 77 K on the structure and mechanical properties of reactor steels, B.N. Goshchitskii, V.V. Sagardze, V.L. Arbuzov, S.S. Lapin, Yu.N. Zuev, I.V. Podgornova, V.D. Parkhomenko, A.V. Kozlov 258–263 (1998) 1681
- The dependence of irradiation creep in austenitic alloys on displacement rate and helium to dpa ratio, F.A. Garner, M.B. Toloczko and M.L. Grossbeck 258–263 (1998) 1718
- Nucleation and growth of dislocation loops in austenitic stainless steels irradiated by fission and fusion neutrons, Q. Xu, N. Yoshida and T. Yoshiie 258–263 (1998) 1730
- The dependence of helium generation rate on nickel content of Fe–Cr–Ni alloys irradiated to high dpa levels in EBR-II, F.A. Garner, B.M. Oliver and L.R. Greenwood 258–263 (1998) 1740
- Radiation swelling decrease by means of explosive wave, V.M. Kosenkov, S.A. Vorobjev and A.V. Kolesnikov 258–263 (1998) 1809
- Effects of DD and DT neutron irradiation on some Si devices for fusion diagnostics, Y. Tanimura and T. Iida 258–263 (1998) 1812
- Pre- and post-irradiation studies on mm-wave losses in reference window materials for electron cyclotron wave systems, R. Heidinger, A. Ibarra and J. Molla 258–263 (1998) 1822
- Neutron-induced damage in near-stoichiometric spinel ceramics irradiated below 200°C and its recovery due to annealing, T. Yano, A. Insani, H. Sawada and T. Iseki 258–263 (1998) 1836
- Electrical conductivity and current-voltage characteristics of alumina with or without neutron and electron irradiation, K. Shiiyama, M.M.R. Howlader, S.J. Zinkle, T. Shikama, M. Kutsuwada, S. Matsumura and C. Kinoshita 258–263 (1998) 1848
- Long term degradation of electrical insulation of Al<sub>2</sub>O<sub>3</sub> under high flux fission reactor irradiation, T. Shikama and S.J. Zinkle 258–263 (1998) 1861
- Electrical properties of ceramics during reactor irradiation, T. Shikama, S.J. Zinkle, K. Shiiyama, L.L. Snead and E.H. Farnum 258–263 (1998) 1867
- Characterization of Y<sub>2</sub>O<sub>3</sub> coating under neutron irradiation, M. Nakamichi and H. Kawamura 258–263 (1998) 1873
- Investigation of cryogenic irradiation influence on mechanical and physical properties of ITER magnetic system insulation materials, A.V. Kozlov, E.N. Scherbacov, N.A. Dudchenko, V.S. Shihalev, V.V. Bedin, N.A. Paltusov and V.E. Korsunskiy 258–263 (1998) 1878
- Radiation effects on dielectric losses of Au-doped silicon, J. Molla, R. Vila, R. Heidinger and A. Ibarra 258–263 (1998) 1884
- Absorption and fluorescence phenomena of optical fibers under heavy neutron irradiation, T. Kakuta, K. Sakasai, T. Shikama, M. Narui and T. Sagawa 258–263 (1998) 1893
- Photon emission induced by fusion neutrons on optical window materials, F. Sato, T. Iida, Y. Oyama, F. Maekawa and Y. Ikeda 258–263 (1998) 1897
- Dose dependence of neutron irradiation effects on MgAl<sub>2</sub>O<sub>4</sub> spinels, A. Ibarra, D. Bravo, M.A. Garcia, J. Llopis, F.J. Lopez and F.A. Garner 258–263 (1998) 1902
- Structural materials by powder HIP for fusion reactors, C. Dellis, G. Le Marois and E.V. van Osch 258–263 (1998) 1966
- Yag laser welding of neutron irradiated stainless steels, S. Nishimura, R. Katsura, Y. Saito, W. Kono, H. Takahashi, M. Koshiishi, T. Kato and K. Asano 258–263 (1998) 2002
- Simulation of helium bubble behavior in neutron-irradiated stainless steel during welding, S. Kawano, R. Sumiya and K. Fukuya 258–263 (1998) 2008
- Irradiation resistance of DS copper/stainless steel joints fabricated by friction welding methods, S.A. Fabritsiev, A.S. Pokrovsky, M. Nakamichi and H. Kawamura 258–263 (1998) 2030

- Electrical properties of neutron-irradiated oxygen potential sensors using stabilized zirconia solid electrolyte, N. Hiura, Y. Endo, T. Yamamura, T. Hoshiya, M. Niimi, J. Saito, S. Sozawa, N. Ooka and M. Kobiyama 258–263 (1998) 2041
- Quantitative prediction of environmentally assisted cracking based on a theoretical model and computer simulation, T. Satoh, T. Nakazato, S. Moriya, S. Suzuki and T. Shoji 258–263 (1998) 2054
- The effect of neutron irradiation on mechanical properties of Cu/SS joints for ITER applications, S.A. Fabritsiev, A.S. Pokrovsky, D.J. Edwards, S.J. Zinkle and A.F. Rowcliffe 258–263 (1998) 2069
- Neutron irradiation experiments for fusion reactor materials through JUPITER program, K. Abe, A. Kohyama, C. Namba, F.W. Wiffen and R.H. Jones 258–263 (1998) 2075
- Materials design and related R&D issues for the force-free helical reactor (FFHR), A. Sagara, T. Muroga, O. Motojima, T. Noda, S. Tanaka, T. Terai, A. Kohyama and H. Matsui 258–263 (1998) 2079
- Densification behaviour of UO<sub>2</sub>–50%PuO<sub>2</sub> pellets by dilatometry, T.R.G. Kutty, P.V. Hegde, R. Keswani, K.B. Khan, S. Majumdar and D.S.C. Purushotham 264 (1999) 10
- Study of B<sub>4</sub>C microstructure evolution under neutron irradiation by X-ray diffraction profiles analysis, D. Simeone, D. Gosset, D. Quirion and X. Deschanel 264 (1999) 295
- Damage structures in fission-neutron irradiated Ni-based alloys at high temperatures, K. Yamakawa and Y. Shimomura 264 (1999) 319
- The principal structural changes proceeding in Russian pressure vessel steels as a result of neutron irradiation, recovery annealing and re-irradiation, B.A. Gurovich, E.A. Kuleshova, O.V. Lavrenchuk, K.E. Prikhodko and Y.I. Shtrombakh 264 (1999) 333
- Effect of neutron flux on low temperature irradiation embrittlement of reactor pressure vessel steel, K. Dohi, T. Onchi, F. Kano, K. Fukuya, M. Narui and H. Kayano 265 (1999) 78
- Effect of heat treatment and irradiation temperature on impact properties of Cr–W–V ferritic steels, R.L. Klueh and D.J. Alexander 265 (1999) 262
- Runaway-limiter interaction in the FTU tokamak during disruptions, G. Maddaluno and B. Esposito 266–269 (1999) 593
- Role and significance of source hardening in radiation embrittlement of iron and ferritic steels, K. Linga Murty 270 (1999) 115
- Nickel, Nickel Alloys and Compounds**
- Behavior and computer simulation of Sic under irradiation with energetic particles, J.M. Perlado 251 (1997) 98
- Atom transport under ion irradiation, P. Fielitz, M.-P. Macht, V. Naundorf and H. Wollenberger 251 (1997) 123
- Permeation of multi-component hydrogen isotopes through nickel, T. Shiraishi, M. Nishikawa and T. Fukumatsu 254 (1998) 205
- Hardening of alloy N10276 by diluted flowing butane gas, S.W. Sharkawy 255 (1998) 75
- The dependence on ion energy and temperature of helium trapping in nickel, H. Yanagihara, Y. Hirohata and T. Hino 258–263 (1998) 607
- Microstructural observation of helium implanted and creep ruptured Fe–25%Ni–15%Cr alloys containing various MC and MN formers, N. Yamamoto, J. Nagakawa, Y. Murase and H. Shiraishi 258–263 (1998) 1628
- Effect of combined addition of Ti and P on creep rupture properties of helium implanted Fe–25%Ni–15%Cr alloy, N. Yamamoto, J. Nagakawa, Y. Murase and H. Shiraishi 258–263 (1998) 1634
- The dependence of helium generation rate on nickel content of Fe–Cr–Ni alloys irradiated to high dpa levels in EBR-II, F.A. Garner, B.M. Oliver and L.R. Greenwood 258–263 (1998) 1740
- Cr–Ni alloys for fusion reactors, M.I. Solonin, A.B. Alekseev, S.A. Averin, Y.A. Burenkov, V.M. Chernov, B.K. Kardashev, V.P. Kondrat'ev, A.V. Kozlov, V.N. Rechitsky and S.N. Votinov 258–263 (1998) 1762
- Shape memory characteristics of neutron irradiated Ti–Ni shape memory alloy couplers, T. Hoshiya, M. Ohmi, Y. Matsui and M. Nishikawa 258–263 (1998) 2036
- Electrical properties of neutron-irradiated oxygen potential sensors using stabilized zirconia solid electrolyte, N. Hiura, Y. Endo, T. Yamamura, T. Hoshiya, M. Niimi, J. Saito, S. Sozawa, N. Ooka and M. Kobiyama 258–263 (1998) 2041
- Investigations on Inconel 718 irradiated with 800 MeV protons, F. Carsughi, H. Derz, P. Ferguson, G. Pott, W. Sommer and H. Ullmaier 264 (1999) 78
- Damage structures in fission-neutron irradiated Ni-based alloys at high

- temperatures, K. Yamakawa and Y. Shimomura 264 (1999) 319
- The effect of hydrogen on the fracture toughness of alloy X-750 at elevated temperatures, D.M. Symons 265 (1999) 225
- Niobium, Niobium Alloys and Compounds**
- Influence of coexisting hydrogen isotopes on diffusion of tritium in niobium, K. Sakamoto, T. Higuchi, K. Hashizume and M. Sugisaki 258–263 (1998) 1073
- Experience in irradiation testing of low-activation structural materials in fast reactor BOR-60, V.A. Kazakov, H.-C. Tsai, V.P. Chakin, F.W. Wiffen, A.F. Rowcliffe, D.L. Smith, A.E. Rusanov, A.A. Teikovtsev, N.V. Markina and L.R. Greenwood 258–263 (1998) 1458
- Development of the superconductors for ITER magnet system, A. Shikov, A. Nikulin, A. Silaev, A. Vorobieva, V. Pantsyrnyi, G. Vedernikov, N. Salunin, S. Sudiev 258–263 (1998) 1929
- Alloying effects on the corrosion behavior of binary Nb-based and Mo-based alloys in liquid Li, J. Saito, S. Inoue, S. Kano, T. Yuza-wa, M. Furui and M. Morinaga 264 (1999) 216
- Nuclear Properties**
- Low activation austenitic Mn-steel for in-vessel fusion materials, Y. Suzuki, T. Saida and F. Kudough 258–263 (1998) 1687
- Materials design and related R&D issues for the force-free helical reactor (FFHR), A. Sagara, T. Muroga, O. Motojima, T. Noda, S. Tanaka, T. Terai, A. Kohyama and H. Matsui 258–263 (1998) 2079
- Isotope selective excitation of  $^{155}\text{Gd}$  and  $^{157}\text{Gd}$  isotopes from  $^9\text{D}^{0-6}$  states using broadband lasers, M. Sankari, M.V. Suryanarayana and S. Gangadharan 264 (1999) 122
- Quantitative determination of the bulk deuterium content of zirconium alloys using nuclear reaction analysis, Z. Qin, W.N. Lennard, C.-S. Zhang, K. Griffiths and P.R. Norton 264 (1999) 228
- Optical Microscopy**
- The effect of composition, processing conditions, and irradiation, on lattice defects in spinel ceramics, T.A. Bazilevskaya, V.T. Gritsyna, D.V. Orlinski, L.V. Udalova and A.V. Voitsenya 253 (1998) 133
- Sorption and desorption phenomena of  $\text{D}_2\text{O}$  on the surface of piping materials, R. Ohmori, T. Yoneoka, M. Taniguchi and S. Tanaka 258–263 (1998) 474
- Influence of target chemical activity on Balmer lines emission from back-scattered hydrogen, A. Ohmori and T. Tanabe 258–263 (1998) 666
- Absorption and fluorescence phenomena of optical fibers under heavy neutron irradiation, T. Kakuta, K. Sakasai, T. Shikama, M. Narui and T. Sagawa 258–263 (1998) 1893
- Radiation resistance of amorphous silicon in optoelectric properties under proton bombardment, N. Kishimoto, H. Amekura, K. Kono and C.G. Lee 258–263 (1998) 1908
- Dynamic effects in energetic particle-induced luminescence of  $\text{SiO}_2$ , T. Tanabe, A. Omori and M. Fujiwara 258–263 (1998) 1914
- Permeation**
- A new internal gelation process for fuel microsphere preparation without cooling initial solutions, S. Yamagishi 254 (1998) 14
- Permeation of multi-component hydrogen isotopes through nickel, T. Shiraishi, M. Nishikawa and T. Fukumatsu 254 (1998) 205
- Hydrogen isotopes transport parameters in fusion reactor materials, E. Serra, G. Benamati and O.V. Ogorodnikova 255 (1998) 105
- Alumina sputtered on MANET as an effective deuterium permeation barrier, E. Serra, P.J. Kelly, D.K. Ross and R.D. Arnell 257 (1998) 194
- Hydrogen inventory and embrittlement in low activation steels, P. Jung 258–263 (1998) 124
- Tritium behavior in eroded dust and debris of plasma-facing materials, A. Hassanein, B. Wiechers and I. Konkashbaev 258–263 (1998) 295
- The behaviour of the natural oxide of MANET as permeation barrier under cyclic loads: Self-healing, A. Perujo and H. Kolbe 258–263 (1998) 582
- Derivation of hydrogen transport parameters in carbon fibre composites by modelling transient release in isovolumetric desorption experiments, L.A. Sedano, S. Alberici, A. Perujo, J. Camposilvan and K. Douglas 258–263 (1998) 662
- Modelling of tritium permeation through beryllium as plasma facing material, L. Berardinucci 258–263 (1998) 777
- Hydrogen and deuterium transport and inventory parameters in a Cu-0.65Cr-0.08Zr alloy for fusion reactor applications, E. Serra and A. Perujo 258–263 (1998) 1028
- Implantation driven permeation behavior of deuterium through stainless

- steel type 316L, H. Nakamura, T. Hayashi, S. O'hira, M. Nishi and K. Okuno 258-263 (1998) 1050
- Estimation of incident flux rate in PDP experiments by calculating plasma composition, M. Takizawa, K. Kiuchi, H. Ishizuka, M. Okamoto and Y. Fujii 258-263 (1998) 1066
- Influence of coexisting hydrogen isotopes on diffusion of tritium in niobium, K. Sakamoto, T. Higuchi, K. Hashizume and M. Sugisaki 258-263 (1998) 1073
- Experiment on atomic hydrogen reflection by use of a permeation probe, I. Takagi, K. Toyoda, M. Katayama, H. Fujita and K. Higashi 258-263 (1998) 1082
- Counter-diffusion and counter-permeation of deuterium and hydrogen through palladium, K. Kizu and T. Tanabe 258-263 (1998) 1133
- Wall erosion and material transport to the Mark I carbon divertor of JET, M. Mayer, R. Behrisch, K. Plamann, P. Andrew, J.P. Coad and A.T. Peacock 266-269 (1999) 604
- Deuterium transport in Cu, CuCrZr, and Cu/Be, R.A. Anderl, M.R. Hankins, G.R. Longhurst and R.J. Pawelko 266-269 (1999) 761
- Phase Equilibria (includes Constitution, Phase Stability, Phase Instability)**
- Alloys under irradiation, G. Martin, P. Bellon and F. Soisson 251 (1997) 86
- Disorder-induced amorphization, N.Q. Lam, P.R. Okamoto and M. Li 251 (1997) 89
- Instability of ordered precipitates due to local disordering and atomic mixing under irradiation, S. Matsumura, M. Okudaira and C. Kinoshita 251 (1997) 145
- Atom probe analysis of Sn in Zr-based alloys, N. Sano and K. Takeda 252 (1998) 63
- Topological modeling of amorphized tetrahedral ceramic network structures, C.E. Jesurum, V. Pulim and L.W. Hobbs 253 (1998) 87
- Fabrication development of Li<sub>2</sub>O pebbles by wet process, K. Tsuchiya, K. Fuchinoue, S. Saito, K. Watarumi, T. Furuya and H. Kawamura 253 (1998) 196
- Étude de système U-Ca-O par diffractométrie de rayons X à haute température, A. Pialoux and B. Touzelin 255 (1998) 14
- Low-activation Mn-Cr austenitic stainless steel with further reduced content of long-lived radioactive elements, M. Onozuka, T. Saida, S. Hirai, M. Kushuhashi, I. Sato and T. Hatakeyama 255 (1998) 128
- Characterization of corroded metallic uranium fuel plates, T.C. Totemeier, R.G. Pahl, S.L. Hayes and S.M. Frank 256 (1998) 87
- Uranium molybdenum silicide U<sub>3</sub>MoSi<sub>2</sub> and phase equilibria in the U-Mo-Si system, M. Ugajin, A. Itoh, S. Okayasu and Y. Kazumata 257 (1998) 145
- Thermodynamic analysis of the Cs-Te system around the Cs<sub>2</sub>Te phase, H.P. Nawada and O.M. Sreedharan 257 (1998) 256
- Self-adjustment of Li in Pb-17Li systems, H. Feuerstein, L. Hörner and S. Horn 258-263 (1998) 505
- Compatibility of structural materials with Li<sub>2</sub>BeF<sub>4</sub> molten salt breeder, T. Terai, Y. Hosoya, S. Tanaka, A. Sagara and O. Motojima 258-263 (1998) 513
- Sweep gas chemistry effect on vaporization property of Li<sub>2</sub>ZrO<sub>3</sub>, A. Suzuki, M. Tonegawa, M. Yasumoto, K. Yamaguchi and M. Yamawaki 258-263 (1998) 562
- Development of oxide dispersion strengthened ferritic steels for fusion, D.K. Mukhopadhyay, F.H. Froes and D.S. Gelles 258-263 (1998) 1209
- Modelling of phase transformations occurring in low activation martensitic steels, J.-C. Brachet, L. Gavard, C. Boussidan, C. Lepoittevin, S. Denis and C. Servant 258-263 (1998) 1307
- Microstructural examination of irradiated
- Mechanical properties and damage behavior of non-magnetic high manganese austenitic steels, H. Takahashi, Y. Shindo, H. Kinoshita, T. Shibayama, S. Ishiyama, K. Fukaya, M. Eto, M. Kusuhashi, T. Hatakeyama and I. Sato 258-263 (1998) 1644
- Mössbauer spectroscopy of tin in unirradiated and neutron irradiated Zircalloys, J.A. Sawicki 264 (1999) 169
- Vaporization study on lanthanum-uranium and cerium-uranium alloys by mass-spectrometric method, Y. Shoji, T. Matsui, K. Nakamura and T. Inoue 265 (1999) 134
- Oxygen potential of solid solution Eu<sub>y</sub>U<sub>1-y</sub>O<sub>2+x</sub>, T. Fujino, N. Sato, K. Yamada, S. Nakama, K. Fukuda, H. Serizawa and T. Shiratori 265 (1999) 154
- On the zirconium-oxygen-hydrogen ternary system, M. Miyake, M. Uno and S. Yamanaka 270 (1999) 233
- A thermodynamic evaluation of the titanium-oxygen system from O/Ti=0 to 3/2, W.-E. Wang and Y.S. Kim 270 (1999) 242

**Phase Transformation** (*includes Evaporation, Sublimation*)

- Heat and mass transport in nanoscale phase transitions induced by collision cascades, A. Caro, M. Alaralde, R. Saliba and M. Caro 251 (1997) 72
- Alloys under irradiation, G. Martin, P. Bellon and F. Soisson 251 (1997) 86
- Disorder-induced amorphization, N.Q. Lam, P.R. Okamoto and M. Li 251 (1997) 89
- Instability of ordered precipitates due to local disordering and atomic mixing under irradiation, S. Matsumura, M. Okudaira and C. Kinoshita 251 (1997) 145
- Defect production and accumulation under hydrogen and helium ion irradiation, J. Yu, X. Zhao, W. Zhang, W. Yang and F. Chu 251 (1997) 150
- The influence of grain boundary movement on radiation-induced segregation in binary alloys, A.E. Volkov and A.I. Ryazanov 256 (1998) 108
- General radiation problems for insulating materials in future fusion devices, E.R. Hodgson 258–263 (1998) 226
- The impact of larger clusters formation C<sub>5</sub>, C<sub>6</sub>, C<sub>7</sub>, C<sub>8</sub>, C<sub>9</sub>, and C<sub>10</sub> on the rates of carbon sublimation at elevated temperatures, C.H. Wu, U. Mszanowski and J.M.L. Martin 258–263 (1998) 782
- Investigation of fusion reactor candidate materials erosion in plasma disruption simulation experiments, V.L. Yakushin, B.A. Kalin, A.V. Shul'ga, V.T. Fedotov and A.N. Plyushev 258–263 (1998) 1127
- Comparison of microstructure and formation of intermetallic phases on F82H-mod. and MANET II, H. Glasbrenner, J. Konys, K. Stein-Fechner and O. Wedemeyer 258–263 (1998) 1173
- Physical metallurgy and mechanical behaviour of FeCrW-TaV low activation martensitic steels: Effects of chemical composition, A. Alamo, J.C. Brachet, A. Castaing, C. Lepoittevin and F. Barcelo 258–263 (1998) 1228
- Modelling of phase transformations occurring in low activation martensitic steels, J.-C. Brachet, L. Gavard, C. Boussidan, C. Lepoittevin, S. Denis and C. Servant 258–263 (1998) 1307
- Shape memory characteristics of neutron irradiated Ti-Ni shape memory alloy couplers, T. Hoshiya, M. Ohmi, Y. Matsui and M. Nishikawa 258–263 (1998) 2036
- Preshock-induced phase transition in spalled U-0.75 wt% Ti, A.K. Zurek 264 (1999) 155
- Determination of the  $\beta/\beta + \gamma$  eutectoid transition temperature in ZrO<sub>2-x</sub> at variable heating/cooling rates, P.J. Hayward and I.M. George 265 (1999) 60
- Effect of oxygen content on the beta-quenched microstructure of modified Zircaloy-4, H.S. Hong, S.J. Kim and K.S. Lee 265 (1999) 108
- Plasma edge characterisation and control in ergodic divertor experiments on Tore Supra, B. Meslin, T. Loarer, Ph. Ghendrih, A. Grosman, A. Az eroual, R. Guirlet, J. Gunn and B. P egouri e 266–269 (1999) 318
- Uranium dioxide reaction in CF<sub>4</sub>/O<sub>2</sub> RF plasma, Y.-S. Kim, J.-Y. Min, K.-k. Bae and M.-s Yang 270 (1999) 253
- Vaporization properties of Cs<sub>2</sub>U<sub>4</sub>O<sub>12</sub> in LWR severe accident simulating conditions, J. Huang, M. Yamawaki, K. Yamaguchi, F. Ono, M. Yasumoto, H. Sakurai and J. Sugimoto 270 (1999) 259

**Physical Properties** (*not listed elsewhere*)

- Displacement threshold energies in  $\beta$ -SiC, R. Devanathan, T.D. de la Rubia and W.J. Weber 253 (1998) 47
- Dielectric spectroscopy of alumina ceramics over a wide frequency range, R. Vila, M. Gonz alez, J. Moll a and A. Ibarra 253 (1998) 141
- The electrical conductivity of zircaloy oxide films, M.M.R. Howlander, K. Shiiyama, C. Kinoshita, M. Kutsuwada and M. Inagaki 253 (1998) 149
- Electrical and optical characteristics of dielectrics for fusion use under irradiation, V.M. Chernov, G.L. Khorasanov, O.A. Plaksin, V.A. Stepanov, P.A. Stepanov and V.A. Belyakov 253 (1998) 175
- Fabrication development of Li<sub>2</sub>O pebbles by wet process, K. Tsuchiya, K. Fuchinoue, S. Saito, K. Watarumi, T. Furuya and H. Kawamura 253 (1998) 196
- Synthesis of Li<sub>2</sub>TiO<sub>3</sub> ceramic breeder powders by the combustion process, C.H. Jung, J.Y. Park, S.J. Oh, H.K. Park, Y.S. Kim, D.K. Kim and J.H. Kim 253 (1998) 203
- Density dependence on thermal properties of Li<sub>2</sub>TiO<sub>3</sub> pellets, S. Saito, K. Tsuchiya, H. Kawamura, T. Terai and S. Tanaka 253 (1998) 213
- Study on the precipitates in Zircaloy-4 by M ossbauer spectroscopy, W. Xiao and C. Ma 255 (1998) 67
- The kinetics of formation and growth of TiC precipitates in Ti-modified stainless steel studied by positron annihilation spectroscopy, P. Gopalan, R. Rajaraman, B. Viswanathan, K.P. Gopinathan and S. Venkadesan 256 (1998) 229

- Time variation of the optical absorption of quartz KU-1 induced by gamma irradiation, V.I. In'kov, I.A. Ivanin and D.V. Orlinski 256 (1998) 254
- Effects of titanium impregnation on the thermal conductivity of carbon/copper composite materials, T. Oku, A. Kurumada, T. Sogabe, T. Oku, T. Hiraoka and K. Kuroda 257 (1998) 59
- Design concept for the IFMIF test assemblies, J.R. Haines, I. Itsukawa, A. Möslang, K. Noda, R. Viola and S.J. Zinkle 258-263 (1998) 400
- Magnetic field effect on the deposition of nickel in molten Pb-17Li, F. Barbier and A. Alemany 258-263 (1998) 508
- Production behavior of irradiation defects in ternary lithium ceramics under ion beam irradiation, K. Moritani and H. Moriyama 258-263 (1998) 525
- Radiation induced optical absorption and radioluminescence in electron irradiated SiO<sub>2</sub>, A. Moroño and E.R. Hodgson 258-263 (1998) 1889
- Development of the superconductors for ITER magnet system, A. Shikov, A. Nikulin, A. Silaev, A. Vorobieva, V. Pantsyrnyi, G. Vedernikov, N. Salunin, S. Sudiev 258-263 (1998) 1929
- Chemical erosion of carbon based materials in fusion devices, J. Roth 266-269 (1999) 51
- Removal of redeposited layers and hydrogen release by oxygen ventilation of TEXTOR-94, V. Philipps, H.G. Esser, J. von Seggern, H. Reimer, M. Freisinger, E. Vietzke and P. Wienhold 266-269 (1999) 386
- Plasma-Materials Interaction**
- Defect production and accumulation under hydrogen and helium ion irradiation, J. Yu, X. Zhao, W. Zhang, W. Yang and F. Chu 251 (1997) 150
- Thermal transport in CKC TiB<sub>2</sub>-doped graphite, J.W. Davis and A.A. Haasz 252 (1998) 150
- Ion nitriding of titanium alpha plus beta alloy for fusion reactor applications, E. Rolinski, G. Sharp, D.F. Cowgill and D.J. Peterman 252 (1998) 200
- Codeposition of deuterium with beryllium, R.A. Causey and D.S. Walsh 254 (1998) 84
- Isotopic effects in hydrocarbon formation due to low-energy H<sup>+</sup>/D<sup>+</sup> impact on graphite, B.V. Mech, A.A. Haasz and J.W. Davis 255 (1998) 153
- Chemical erosion of CKC TiB<sub>2</sub>-doped graphite, J.W. Davis and A.A. Haasz 255 (1998) 214
- The removal of codeposited layers from TFTR tiles by O<sub>2</sub> gas exposure, A.A. Haasz and J.W. Davis 256 (1998) 65
- Detrapping and diffusion of H and D implanted in carbon studied by high temperature laser annealing and depth profiling, F. Schiettekatte, G.G. Ross and B. Terreault 256 (1998) 78
- Observation of kinetics of  $\gamma$  zirconium hydride formation in Zr-2.5Nb by neutron diffraction, W.M. Small, J.H. Root and D. Khatamian 256 (1998) 102
- Microstructure and nanohardness of hafnium diboride after ion irradiations, P. Cheminant-Coatanlem, L. Boulanger, X. Deschanel and A. Thorel 256 (1998) 180
- The microstructure and tensile properties of Fe-Cr alloys after neutron irradiation at 400°C to 5.5-7.1 dpa, S.I. Porollo, A.M. Dvoria-shin, A.N. Vorobyev and Y.V. Kono-beev 256 (1998) 247
- Response of beryllium to deuterium plasma bombardment, R.P. Doerner, A. Grossman, S. Luckhardt, R. Seraydarian, F.C. Sze, D.G. Whyte and R.W. Conn 257 (1998) 51
- Effects of titanium impregnation on the thermal conductivity of carbon/copper composite materials, T. Oku, A. Kurumada, T. Sogabe, T. Oku, T. Hiraoka and K. Kuroda 257 (1998) 59
- Present status and future prospect of the ITER project, R. Aymar, ITER Joint Central Team and Home Teams 258-263 (1998) 56
- Design and material selection for ITER first wall/blanket, divertor and vacuum vessel, K. Ioki, V. Barabash, A. Cardella, F. Elio, Y. Gohar, G. Janeschitz, G. Johnson, G. Kalinin, D. Lousteau, M. Onozuka, R. Parker, G. Sannazzaro and R. Tivey 258-263 (1998) 74
- Impacts of charge-exchange neutrals on degradation of plasma-facing materials, N. Yoshida and Y. Hirooka 258-263 (1998) 173
- Assessment of tungsten for use in the ITER plasma facing components, J.W. Davis, V.R. Barabash, A. Makhankov, L. Plöchl and K.T. Slattery 258-263 (1998) 308
- Divertor materials evaluation system (DiMES), C.P.C. Wong, D.G. Whyte, R.J. Bastasz, J. Brooks, W.P. West and W.R. Wampler 258-263 (1998) 433
- Gas and hydrogen ion gettering properties of lithium, T. Hino, K. Kanaya, I. Takahashi, H. Yanagihara, M. Hashiba, Y. Hirohata and K. Mori 258-263 (1998) 612
- Deuterium migration in titanium during deuterium irradiation observed

- by proton spectra of the d(d,p)t reaction, H. Kudo, Y. Kosaku, Y. Ando, M. Hiraga and T. Sekine 258–263 (1998) 622
- Erosion and surface morphology of graphite materials under high flux beam irradiation, Y. Ueda, T. Sugai, K. Shiota, Y. Ohtsuka, Y. Isobe and M. Nishikawa 258–263 (1998) 628
- Material damage to beryllium, carbon, and tungsten under severe thermal shocks, J. Linke, R. Duwe, A. Gervash, R.H. Qian, M. Rödiger and A. Schuster 258–263 (1998) 634
- Performance and lifetime assessment of reactor wall and nearby components during plasma instabilities, A. Hassanein and I. Konkashbaev 258–263 (1998) 645
- Transmutation of plasma facing materials by the neutron flux in a DT fusion reactor, R. Behrisch, V. Khripunov, R.T. Santoro and J.M. Yesil 258–263 (1998) 686
- Development of multi-element doped graphite and its modification of chemical erosion, J.P. Qian, J. Roth, J.R. Song, F. Zhang, L. Yang and G.T. Zhai 258–263 (1998) 706
- Microstructural study of hydrogen-implanted beryllium, S.P. Vagin, P.V. Chakrov, B.D. Utkelbayev, L.A. Jacobson, R.D. Field and H. Kung 258–263 (1998) 719
- Temperature dependence of sputtering yield of carbon fiber-reinforced carbon composites with low energy and high flux deuterium ions, R. Jimbou, K. Nakamura, V. Bandourko, Y. Okumura and M. Akiba 258–263 (1998) 724
- Thermal stability and chemical erosion of the silicon doped CFC material NS31, M. Balden, J. Roth and C.H. Wu 258–263 (1998) 740
- Steady state wall pumping performance of pebble drop divertor, M. Isobe, Y. Ohtsuka, Y. Ueda and M. Nishikawa 258–263 (1998) 745
- High heat flux erosion of carbon fibre composite materials in the TEXTOR tokamak, H. Bolt, T. Scholz, J. Boedo, K.H. Finken and A. Hassanein 258–263 (1998) 757
- Oxidation induced release of deuterium from carbon based plasma facing materials, S. Alberici, J.P. Coad, H.-K. Hinssen, R. Moormann, P. Wienhold and C.H. Wu 258–263 (1998) 764
- Investigation of oxidation resistance of carbon based first-wall liner material Aerolor AOS, A.-K. Krüssenberg, R. Moormann, H.-K. Hinssen, M. Hofmann and C.H. Wu 258–263 (1998) 770
- Modelling of tritium permeation through beryllium as plasma facing material, L. Berardinucci 258–263 (1998) 777
- The impact of larger clusters formation C<sub>5</sub>, C<sub>6</sub>, C<sub>7</sub>, C<sub>8</sub>, C<sub>9</sub>, and C<sub>10</sub> on the rates of carbon sublimation at elevated temperatures, C.H. Wu, U. Mszanowski and J.M.L. Martin 258–263 (1998) 782
- Behaviour of Si and Ti doped carbon composites under exposure to the deuterium plasma, M. Rubel, N. Almqvist, P. Wienhold and C.H. Wu 258–263 (1998) 787
- Deuterium accumulation in beryllium oxide layer exposed to deuterium atoms, V.M. Sharapov, V.K. Alimov and L.E. Gavrilov 258–263 (1998) 803
- Investigation of ITER candidate beryllium grades irradiated at high temperature, I.B. Kupriyanov, V.A. Gorokhov, R.R. Melder, Z.E. Ostrovsky and A.A. Gervash 258–263 (1998) 808
- Disruption and sputtering erosions on SiC doped CFC, K. Nakamura, S. Suzuki, M. Dairaku, K. Yokoyama, Y. Okumura, T. Suzuki, R. Jimbou, V. Bandourko and M. Akiba 258–263 (1998) 828
- Neutron irradiation embrittlement of polycrystalline and single crystalline molybdenum, K. Watanabe, A. Hishinuma, Y. Hiraoka and T. Fujii 258–263 (1998) 848
- High-heat-flux-exposure-experiments of a tungsten-test-limiter at TEXTOR-94, M. Wada, T. Tanabe, V. Philipps, B. Unterberg, A. Pospieszczyk, B. Schweer, J. Rapp, Y. Ueda, K. Ohya, T. Ohgo and N. Noda 258–263 (1998) 853
- Hardening behavior of molybdenum by low energy He and D ion irradiation, H. Iwakiri, H. Wakimoto, H. Watanabe and N. Yoshida 258–263 (1998) 873
- Deuterium retention in tungsten for fusion use, A.A. Haasz, J.W. Davis, M. Poon and R.G. Macaulay-Newcombe 258–263 (1998) 889
- Carbon effect on retention and release of deuterium implanted in Mo, S. Nagata, K. Takahiro and S. Yamaguchi 258–263 (1998) 907
- Erosion of W and deposition of C due to bombardment with D and CH<sub>3</sub>, W. Eckstein, K. Krieger and J. Roth 258–263 (1998) 912
- Performance of tungsten coatings as plasma facing components used in ASDEX Upgrade, H. Maier, S. Kötterl, K. Krieger, R. Neu, M. Balden and ASDEX Upgrade-Team 258–263 (1998) 921



- The effective secondary electron yield in the space-charge limited condition, I.V. Tsvetkov and T. Tanabe 258–263 (1998) 927
- Static and dynamic erosion behavior of TiC coated graphite in high heat flux plasma, S. Takamura, K. Hayashi, N. Ohno and K. Morita 258–263 (1998) 961
- Effects of plasma impurities on materials erosion and mixing in a steady state magnetic fusion device, Y. Hirooka 258–263 (1998) 1045
- Ion reflection and sputtering at tungsten surface exposed to edge plasmas in TEXTOR, K. Ohya, J. Kawata, T. Tanabe, M. Wada, Y. Ueda, V. Philipps, B. Unterberg, A. Pospieszczyk, B. Schweer, F. Weschenfelder and N. Noda 258–263 (1998) 1055
- Investigation on modification of plasma facing surface under long duration discharges by means of a collector probe in TRIAM-1M, T. Hirai, K. Tokunaga, T. Fujiwara, N. Yoshida, S. Itoh and TRIAM group 258–263 (1998) 1060
- Estimation of incident flux rate in PDP experiments by calculating plasma composition, M. Takizawa, K. Kiuchi, H. Ishizuka, M. Okamoto and Y. Fujii 258–263 (1998) 1066
- Experiment on atomic hydrogen reflection by use of a permeation probe, I. Takagi, K. Toyoda, M. Katayama, H. Fujita and K. Higashi 258–263 (1998) 1082
- Retention and re-emission of deuterium implanted into tungsten monocarbide, T. Horikawa, B. Tsuchiya and K. Morita 258–263 (1998) 1087
- Tritium retention in CX-2002U and methods to reduce tritium inventory, T. Tadokoro, S. O'hira, M. Nishi and K. Isobe 258–263 (1998) 1092
- Material damage and thermal response of LHD divertor mock-ups by high heat flux, K. Tokunaga, N. Yoshida, Y. Kubota, N. Noda, O. Motojima, D.L. Youchison, R.D. Watson, R.E. Nygren, J.M. McDonald and T.D. Marshall 258–263 (1998) 1097
- Study of the retention of hydrogen isotopes implanted in Mo, K. Yamaguchi, M. Okada, O. Onoue, F. Ono and M. Yamawaki 258–263 (1998) 1104
- Thermal desorption analysis of beryllium tile pieces from JET, R.G. Macaulay-Newcombe, D.A. Thompson and J.P. Coad 258–263 (1998) 1114
- Investigation of fusion reactor candidate materials erosion in plasma disruption simulation experiments, V.L. Yakushin, B.A. Kalin, A.V. Shul'ga, V.T. Fedotov and A.N. Plyushev 258–263 (1998) 1127
- Counter-diffusion and counter-permeation of deuterium and hydrogen through palladium, K. Kizu and T. Tanabe 258–263 (1998) 1133
- Dynamic effects in energetic particle-induced luminescence of SiO<sub>2</sub>, T. Tanabe, A. Omori and M. Fujiwara 258–263 (1998) 1914
- Development and characterisation of Be/Glidcop<sup>®</sup> joints obtained by hot isostatic pressing for high temperature working conditions, F. Saint-Antonin, D. Barberi, G. Le Marois and A. Lailé 258–263 (1998) 1973
- Hydrogen generation from steam reaction with tungsten, G.R. Smolik, K.A. McCarthy, D.A. Petti and K. Coates 258–263 (1998) 1979
- Investigation of plasma exposed W–1% La<sub>2</sub>O<sub>3</sub> tungsten in a high ion flux, low ion energy, low carbon impurity plasma environment for the International Thermonuclear Experimental Reactor, F.C. Sze, R.P. Doerner and S. Luckhardt 264 (1999) 89
- Effect of fast Ti-deposition on gas recycling at the first wall and on fast ion losses in the GDT experiment, P.A. Bagryansky, E.D. Bender, A.A. Ivanov, A.N. Karpushov, S.V. Murachtin, K. Noack, St. Krahl and S. Collatz 265 (1999) 124
- D–T experiments in the JET tokamak, M. Keilhacker, M.L. Watkins and JET Team 266–269 (1999) 1
- In-vessel tritium retention and removal in ITER, G. Federici, R.A. Anderl, P. Andrew, J.N. Brooks, R.A. Causey, J.P. Coad, D. Cowgill, R.P. Doerner, A.A. Haasz, G. Janeschitz, W. Jacob, G.R. Longhurst, R. Nygren, A. Peacock, M.A. Pick, V. Philipps, J. Roth, C.H. Skinner and W.R. Wampler 266–269 (1999) 14
- The experimental determination of the volume recombination rate in tokamak divertors, J.L. Terry, B. Lipschultz, X. Bonnin, C. Boswell, S.I. Krasheninnikov, A.Yu. Pigarov, B. LaBombard, D.A. Pappas and H.A. Scott 266–269 (1999) 30
- Volume recombination and detachment in JET divertor plasmas, G.M. McCracken, R.D. Monk, A. Meigs, L. Horton, L.C. Ingesson, J. Lingertat, G.F. Matthews, M.G. O'Mullane, R. Prentice, M.F. Stamp and P.C. Stangeby 266–269 (1999) 37
- Impurity enrichment and radiative enhancement using induced SOL flow in DIII-D, M.R. Wade, W.P. West, R.D. Wood, S.L. Allen, J.A. Boedo, N.H. Brooks, M.E. Fensterma-

- cher, D.N. Hill, J.T. Hogan, R.C. Isler, G.L. Jackson, C.J. Lasnier, R. Lehmer, A.W. Leonard, M.A. Mahdavi, R. Maingi, R.A. Moyer, T.H. Osborne, T.W. Petrie, M.J. Schaffer, R.D. Stambaugh, J.G. Watkins and D.G. Whyte 266–269 (1999) 44
- Chemical erosion of carbon based materials in fusion devices, J. Roth 266–269 (1999) 51
- Erosion/redeposition analysis: status of modeling and code validation for semi-detached tokamak edge plasmas, J.N. Brooks, D. Alman, G. Federici, D.N. Ruzic, and D.G. Whyte 266–269 (1999) 58
- Divertor erosion in DIII-D, D.G. Whyte, R. Bastasz, J.N. Brooks, W.R. Wampler, W.P. West, C.P.C. Wong, O.I. Buzhinskij and I.V. Opimach 266–269 (1999) 67
- Plasma wall interaction and plasma edge properties with radiation cooling and improved confinement in TEXTOR-94, B. Unterberg, M. Brix, R. Jaspers, A. Kreter, Y.M. Kim, M. Lehnen, Ph. Mertens, A.M. Messiaen, J. Ongena, V. Philipps, A. Pospieszczyk, U. Samm and B. Schweer 266–269 (1999) 75
- Turbulent SOL transport in stellarators and tokamaks, M. Endler 266–269 (1999) 84
- SOL width scaling from consideration of edge transport in tokamaks, G.F. Counsell, J.W. Connor, S.K. Erents, A.R. Field, S.J. Fielding, B. La Bombard and K.M. Morel 266–269 (1999) 91
- ITER edge database investigations of the SOL width, K. McCormick, N. Asakura, S. Bosch, S. Davies, S. Fielding, K. Itami, H. Kawashima, B. LaBombard, B. Lipschultz, A. Loarte, R. Monk, G. Porter, J. Schweinzer, M. Shimada and M. Sugihara 266–269 (1999) 99
- The impact of ELMs on the ITER divertor, A.W. Leonard, A. Herrmann, K. Itami, J. Lingertat, A. Loarte, T.H. Osborne, W. Suttrop, the ITER Divertor Modeling and Database Expert Group and the ITER Divertor Physics Expert Group 266–269 (1999) 109
- Operational limits for high edge density H-mode tokamak operation, W. Suttrop, V. Mertens, H. Murmann, J. Neuhauser, J. Schweinzer and ASDEX-Upgrade Team 266–269 (1999) 118
- The edge operational space in JET, J. Lingertat, V. Bhatnagar, G.D. Conway, L.-G. Eriksson, K. Günther M. von Hellermann, M. Mantsinen, V. Parail, R. Prentice, G. Saibene, R. Smith and K.D. Zastrow 266–269 (1999) 124
- H-mode pedestal characteristics in ITER shape discharges on DIII-D, T.H. Osborne, K.H. Burrell, R.J. Groebner, L.L. Lao, A.W. Leonard, R. Maingi, R.L. Miller, G.D. Porter, G.M. Staebler and A.D. Turnbull 266–269 (1999) 131
- In situ measurement and modeling of hydrogen recycling and transport processes – the role of molecules, A. Pospieszczyk, P. Mertens, G. Sergienko, A. Huber, V. Philipps, D. Reiter, D. Rusbüldt, B. Schweer, E. Vietzke and P.T. Greenland 266–269 (1999) 138
- Plasma wall interaction during long pulse operation in Tore Supra, C. Grisolia 266–269 (1999) 146
- Tritium recycling and retention in JET, P. Andrew, D. Brennan, J.P. Coad, J. Ehrenberg, M. Gadeberg, A. Gibson, M. Groth, J. How, O.N. Jarvis, H. Jensen, R. Lässer, F. Marcus, R. Monk, P. Morgan, J. Orchard, A. Peacock, R. Pearce, M. Pick, A. Rossi, B. Schunke, M. Stamp, M. von Hellermann, D.L. Hillis and J. Hogan 266–269 (1999) 153
- The effect of divertor geometry on divertor and core plasma performance in JET, G.C. Vlases, L.D. Horton, G.F. Matthews, P. Andrew, K. Borrass, A. Chankin, S. Clement, G. Conway, S. Davies, J. Ehrenberg, G. Fishpool, H.-Y. Guo, P.J. Harbour, L.C. Ingesson, H.J. Jäckel, J. Lingertat, A. Loarte, C.G. Lowry, C.F. Maggi, G.M. McCracken, R. Mohanti, R.D. Monk, R. Reichle, E. Righi, R. Smith, M.F. Stamp, P.C. Stangeby, A. Taroni and M. von Hellermann 266–269 (1999) 160
- Studies of high- $\delta$  (baffled) and low- $\delta$  (open) pumped divertor operation on DIII-D, S.L. Allen, M.E. Fenstermacher, C.M. Greenfield, A.W. Hyatt, R. Maingi, G.D. Porter, M.R. Wade, A.S. Bozek, R. Ellis, D.N. Hill, M.A. Hollerbach, C.J. Lasnier, A.W. Leonard, M.A. Mahdavi, D.G. Nilson, T.W. Petrie, M.J. Schaffer, J.P. Smith, R.D. Stambaugh, D.M. Thomas, J.G. Watkins, W.P. West, D.G. Whyte and R.D. Wood 266–269 (1999) 168
- Role of divertor geometry on detachment in ASDEX Upgrade, R. Schneider, H.-S. Bosch, D. Coster, J.C. Fuchs, J. Gafert, G. Haas, A. Herrmann, M. Kaufmann, A. Kaltenbach, J. Neuhauser, J. Schwein-

- zer, U. Wenzel and ASDEX-Up-  
grade Teams 266–269 (1999) 175
- Role of divertor geometry on detach-  
ment and core plasma performance  
in JT60U, N. Asakura, N. Hosogane,  
K. Itami, A. Sakasai, S. Sakurai,  
K. Shimizu, M. Shimada, H. Kubo,  
S. Higashijima, H. Takenaga, H. Tamai,  
S. Konoshima, T. Sugie, K. Masaki,  
Y. Koide, O. Naito, H. Shirai, T. Takizuka,  
T. Ishijima, S. Suzuki, A. Kumagai  
and JT-60 Team 266–269 (1999) 182
- Comparison of ergodic and axisym-  
metric divertors, P. Ghendrih,  
A. Grosman, J. Gunn, F. Laugier,  
B. Meslin, C. Grisolia, R. Guirlet,  
P. Monier-Garbet and T. Loarer 266–269 (1999) 189
- Review of recent works in development  
and evaluation of high-Z plasma  
facing materials, N. Yoshida 266–269 (1999) 197
- Conclusions about the use of tungsten  
in the divertor of ASDEX  
Upgrade, K. Krieger, H. Maier,  
R. Neu and ASDEX Upgrade  
Team 266–269 (1999) 207
- Molybdenum erosion measurements in  
Alcator C-Mod, W.R. Wampler,  
B. LaBombard, B. Lipschultz,  
G.M. McCracken, D.A. Pappas  
and C.S. Pitcher 266–269 (1999) 217
- Dust in magnetic confinement fusion  
devices and its impact on plasma  
operation, J. Winter and G. Gebauer 266–269 (1999) 228
- Boronization in future devices – pro-  
tecting layer against tritium and  
energetic neutrals, N. Noda, K.  
Tsuzuki, A. Sagara, N. Inoue and  
T. Muroga 266–269 (1999) 234
- Deposition of a-C/B:D layers by  
ICRF-wall conditioning in TEX-  
TOR-94, H.G. Esser, A.I. Lysoivan,  
M. Freisinger, P. Karduck,  
R. Koch, V. Philipps, H. Reimer,  
M. Rubel, J. von Seggern, M. Vervier  
and P. Wienhold 266–269 (1999) 240
- Hydrogen absorption/desorption be-  
havior with oxygen-contaminated  
boron film, K. Tsuzuki, H. Eiki,  
N. Inoue, A. Sagara, N. Noda, Y.  
Hirohata and T. Hino 266–269 (1999) 247
- Stability of the detachment front in a  
tokamak divertor, S.I. Krasheninnikov,  
M. Rensink, T.D. Rognlien,  
A.S. Kukushkin, J.A. Goetz, B.  
LaBombard, B. Lipschultz, J.L.  
Terry and M. Umansky 266–269 (1999) 251
- Sheath over a finely structured diver-  
tor plate, R.H. Cohen, R.E. Cid,  
E.B. Hooper, A.W. Molvik, G.D.  
Porter and D.D. Ryutov 266–269 (1999) 258
- Plasma pressure and flows during di-  
vertor detachment, M.J. Schaffer,  
J.A. Boedo and R.A. Moyer 266–269 (1999) 264
- Limiter heat load and consequences on  
impurity source and transport, D.  
Guilhem, J. Hogan, T. Aniel, S.  
Boddeker, C. Grisolia, T. Hoang,  
G. Martin, B. Meslin, R. Mitteau,  
R. Reichle and J.C. Vallet 266–269 (1999) 272
- Localized heat flux due to lower hy-  
brid wave coupling in the Ergodic  
Divertor configuration on Tore  
Supra, I. Pugno, J.J. Cordier, Ph.  
Ghendrih, M. Goniche, A. Gros-  
man, J.P. Gunn, J. Mailloux and  
S. Person 266–269 (1999) 280
- Power deposition in the JET divertor  
during ELMs, S. Clement, A.  
Chankin, D. Ciric, J.P. Coad, J.  
Falter, E. Gauthier, J. Lingertat  
and S. Puppini 266–269 (1999) 285
- Heat flux distribution in the divertor-II  
of ASDEX Upgrade, A. Herrmann,  
C.J. Fuchs, V. Rohde and  
M. Weinlich 266–269 (1999) 291
- Operational performance of JT-60U  
W-shaped divertor, N. Hosogane,  
H. Tamai, S. Higashijima, H.  
Kubo, A. Sakasai, H. Takenaga,  
K. Itami, S. Sakurai, N. Asakura,  
S. Konoshima, T. Sugie, K. Shimi-  
zu, T. Ishijima, A. Kumagai, S. Su-  
zuki and M. Shimada 266–269 (1999) 296
- LHD divertor experimental program,  
N. Ohyaabu, A. Komori, H. Suzuki,  
T. Morisaki, S. Masuzaki, H. Fu-  
naba, N. Noda, Y. Nakamura, A.  
Sagara, N. Inoue, R. Sakamoto,  
S. Inagaki, S. Morita, Y. Takeiri,  
T. Watanabe, O. Motojima, M.  
Fujiwara and A. Iyoshi 266–269 (1999) 302
- Divertor helium pumping in TdeV-96  
under various conditions, J.L.  
Gauvreau, G.W. Pacher, R. Dé-  
coste, Y. Demers, B.L. Stansfield,  
C. Côté, J.-L. Lachambre, N. Ri-  
chard, G. Lebrun and TdeV  
Team 266–269 (1999) 307
- Helium exhaust in ELMy H-mode  
plasmas with W-shaped pumped  
divertor of JT-60U, A. Sakasai,  
H. Takenaga, N. Hosogane, S. Sa-  
kurai, N. Akino, H. Kubo, S. Hi-  
gashijima, H. Tamai, N. Asakura,  
K. Itami and K. Shimizu 266–269 (1999) 312
- Reflection and adsorption of deuter-  
ium atoms and molecules on gra-  
phite, E. Vietzke, M. Wada and  
M. Hennes 266–269 (1999) 324
- Contribution of molecular activated  
recombination to hydrogen plasma  
detachment in the divertor plasma  
simulator NAGDIS-II, N. Ezumi,

- D. Nishijima, H. Kojima, N. Ohno, S. Takamura, S.I. Krashennnikov and A.Yu. Pigarov 266-269 (1999) 337
- New results on carbon release and transport in ASDEX-Upgrade, A. Kallenbach, A. Bard, D. Coster, R. Dux, C. Fuchs, J. Gafert, A. Herrmann, R. Schneider and ASDEX-Upgrade Team 266-269 (1999) 343
- Evolution of 2D deuterium and impurity radiation profiles during transitions from attached to detached divertor operation in DIII-D, M.E. Fenstermacher, S.L. Allen, D.N. Hill, R.C. Isler, C.J. Lasnier, A.W. Leonard, T.W. Petrie, G.D. Porter, W.P. West, D.G. Whyte and R.D. Wood 266-269 (1999) 348
- Impurity compression and enrichment studies on Alcator C-Mod, J.A. Goetz, B. Lipschultz, C.S. Pitcher, J.L. Terry, P.T. Bonoli, J.E. Rice and S.J. Wukitch 266-269 (1999) 354
- Transport of hydrocarbon molecules in the edge plasma of fusion experiments, D. Naujoks, D. Coster, H. Kastelewicz and R. Schneider 266-269 (1999) 360
- Spectroscopic investigation of the dynamics of ions and neutrals in the ASDEX Upgrade Divertor II, J. Gafert, K. Behringer, D. Coster, C. Dorn, A. Kallenbach, R. Schneider, U. Schumacher and ASDEX-Upgrade Team 266-269 (1999) 365
- Recombination and ion loss in C-Mod detached divertor discharges, B. Lipschultz, J.L. Terry, C. Boswell, S.I. Krashennnikov, B. LaBombard and D.A. Pappas 266-269 (1999) 370
- Spectroscopic measurements of impurity temperatures and parallel ion flows in the DIII-D divertor, R.C. Isler, N.H. Brooks, W.P. West, A.W. Leonard, G.R. McKee and G.D. Porter 266-269 (1999) 376
- Enhanced confinement discharges in DIII-D with neon and argon induced radiation, G.L. Jackson, M. Murakami, G.M. Staebler, M.R. Wade, A.M. Messiaen, J. Ongena, B. Unterberg, J.A. Boedo, T.E. Evans, A.W. Hyatt, R.J. LaHaye, C.J. Lasnier, A.W. Leonard, G.W. McKee, R. Maingi, R.A. Moyer, T.W. Petrie and W.P. West 266-269 (1999) 380
- Removal of redeposited layers and hydrogen release by oxygen ventilation of TEXTOR-94, V. Philipps, H.G. Esser, J. von Seggern, H. Reimer, M. Freisinger, E. Vietzke and P. Wienhold 266-269 (1999) 386
- Mixed-material coating formation on plasma-facing components, R.P. Doerner, A.A. Grossman, S. Luckhardt, R. Seraydarian, F.C. Sze and D.G. Whyte 266-269 (1999) 392
- Laboratory experiment on lithium chemistry and its application to effective wall conditioning, S. Kato, M. Watanabe, H. Toyoda and H. Sugai 266-269 (1999) 406
- Comparative studies of ionised and excited hydrogen atoms and molecules distributions for plasma-target interaction in a linear simulator machine, V.A. Kurnaev, V.A. Abramov, V.A. Kadetov, D.V. Mozgrin, D.V. Sarytchev, A.S. Savjолоv, I.V. Vizgalov, V.N. Kolesnikov and L.P. Presnyakov 266-269 (1999) 412
- Dust and flakes in the JET MkIIa divertor, analysis and results, A.T. Peacock, P. Andrew, P. Cetier, J.P. Coad, G. Federici, F.H. Hurd, M.A. Pick and C.H. Wu 266-269 (1999) 423
- Molybdenum flux measurements in the FTU scrape off layer by deposition probes, M.L. Apicella, G. Maddaluno, V. Pericoli Ridolfini, R. Zagórski, C. Alessandrini, G. Apruzzese, G. Mazzitelli, D. Pacella and L. Verdini 266-269 (1999) 429
- Co-deposition of deuterium with silicon doped carbon, M. Balden, M. Mayer and J. Roth 266-269 (1999) 440
- Impurity screening in the RFX reversed field pinch, L. Carraro, M.E. Puiatti, F. Sattin, P. Scarin, M. Valisa, G. DePol, R. Pasqualotto, R. Pugno and G. Telesca 266-269 (1999) 446
- Kinetic study of thermoelectric currents in the SOL plasmas, O. Batishchev and B. LaBombard 266-269 (1999) 452
- Fueling efficiency of pellet injection on DIII-D, L.R. Baylor, T.C. Jernigan, C.J. Lasnier, R. Maingi and M.A. Mahdavi 266-269 (1999) 457
- Tritium retention in tungsten exposed to intense fluxes of 100 eV tritons, R. Causey, K. Wilson, T. Venhaus and W.R. Wampler 266-269 (1999) 467
- Effects of particle exhaust on neutral compression ratios in DIII-D, R.J. Colchin, R. Maingi, S.L. Allen, C.M. Greenfield and M.R. Wade 266-269 (1999) 472
- Oxygen removal of codeposited a-C:D layers from tokamak tiles, J.W. Davis and A.A. Haasz 266-269 (1999) 478
- The diagnosed mobile limiters of the TJ-II stellarator for plasma boundary studies, E. de la Cal, F.L. Tabarés, D. Tafalla, I.G. Cortés, C. Hidalgo and A. López 266-269 (1999) 485
- Modeling of the dynamic ergodic divertor of TEXTOR-94, K.H. Fin-

- ken, Th. Eich, S.S. Abdullaev, A. Kaleck, G. Mank, D. Reiser, A. Runov and M. Tokar 266-269 (1999) 495
- Radiation measurements and modeling of the density limit on the W7-AS stellarator, L. Giannone, R. Burhenn, P. Grigull, U. Stroth, R. Brakel, R. Dux, A. Elsner, S. Fiedler, G. Kühner F. Penningsfeld, G. Pereverzev, F. Wagner, A. Weller, C. Wendland, NBI TEAM and W7-AS TEAM 266-269 (1999) 507
- Carbon and neon penetration near a neutraliser plate of the Tore Supra ergodic divertor, R. Guirlet, J. Hogan, L. Chérigier, C. DeMichelis, P. Ghendrih, A. Grosman, D. Guilhem, B. Meslin and P. Monier-Garbet 266-269 (1999) 513
- The effect of ion damage on deuterium trapping in tungsten, A.A. Haasz, M. Poon and J.W. Davis 266-269 (1999) 520
- Numerical analysis of thermoelectric instability in tokamak divertor, N. Hayashi, T. Takizuka, A. Hatayama and M. Ogasawara 266-269 (1999) 526
- Deuterium trapping in divertor tiles of ASDEX-Upgrade, D. Hildebrandt, M. Akbi, B. Jüttner and W. Schneider 266-269 (1999) 532
- Helium retention of plasma facing materials, T. Hino, Y. Yamauchi and Y. Hirohata 266-269 (1999) 538
- Effects of supersonic beam and pellet injection on edge electric field and plasma rotation in HL-1M, W.Y. Hong, E.Y. Wang, Y.D. Pan and X.Q. Xu 266-269 (1999) 542
- Space resolved fluctuations of electron density measured by means of two thermal Li-beams in TEXTOR-94, A. Huber, A.V. Nedospasov, U. Samm and B. Schweer 266-269 (1999) 546
- Removal of codeposited layers by ECR discharge cleaning, W. Jacob, B. Landkammer and C.H. Wu 266-269 (1999) 552
- Simulation studies on sputtering and reflection from compound materials at elevated temperatures, T. Kenmotsu, T. Kawamura, Z. Li, T. Ono and Y. Yamamura 266-269 (1999) 557
- Deuterium permeation through metals under hydrogen counter flow, K. Kizu and T. Tanabe 266-269 (1999) 561
- Neutral particle transport under strong hydrogen recycling condition in the GAMMA 10 central cell, S. Kobayashi, Y. Nakashima, M. Shoji, K. Tsuchiya, Y. Hasegawa, M.K. Islam, N. Yamaguchi, M. Yoshikawa, A. Mase, T. Tamano and K. Yatsu 266-269 (1999) 566
- A novel tracer-gas injection system for scrape-off layer impurity transport and screening experiments, B. Labombard, S. Gangadhara, B. Lipschultz, S. Lisgo, D.A. Pappas, C.S. Pitcher, P. Stangeby and J. Terry 266-269 (1999) 571
- Scaling and profiles of heat flux during partial detachment in DIII-D, C.J. Lasnier, D.N. Hill, S.L. Allen, M.E. Fenstermacher, A.W. Leonard, T.W. Petrie, G.D. Porter and J.G. Watkins 266-269 (1999) 577
- Erosion of beryllium and deposition of carbon and oxygen due to bombardment with  $C^+$  and  $CO^+$  ions, P. Goldsträß, W. Eckstein and Ch. Linsmeier 266-269 (1999) 581
- Multi-machine scaling of the divertor peak heat flux and width for L-mode and H-mode discharges, A. Loarte, S. Bosch, A. Chankin, S. Clement, A. Herrmann, D. Hill, K. Itami, J. Lingertat, B. Lipschultz, K. McCormick, R. Monk, G.D. Porter, M. Shimada and M. Sugihara 266-269 (1999) 587
- Runaway-limiter interaction in the FTU tokamak during disruptions, G. Maddaluno and B. Esposito 266-269 (1999) 593
- Wall erosion and material transport to the Mark I carbon divertor of JET, M. Mayer, R. Behrisch, K. Plamann, P. Andrew, J.P. Coad and A.T. Peacock 266-269 (1999) 604
- Radiation efficiency of high power ergodic divertor plasmas in Tore Supra, P. Monier-Garbet, C. DeMichelis, Ph. Ghendrih, R. Giannella, C. Grisolia, A. Grosman, R. Guirlet, J. Gunn, F. Laugier, B. Meslin, R. Reichle and J.C. Vallet 266-269 (1999) 611
- Erosion of vanadium in lithium plasma, A.V. Nedospasov, G.V. Sergienko, N.M. Zykova, I.V. Pen'deev, E.V. Mydretskaya and A.V. Zhmendak 266-269 (1999) 618
- Studies of boundary plasmas and fueling on the JFT-2M, H. Ogawa, Y. Miura, N. Fukumoto, T. Ogawa, K. Hasegawa, S. Kasai, H. Kawashima, H. Kimura, M. Maeno, M. Nagata, S. Sengoku, T. Shibata, T. Uyama, T. Yamauchi and JFT-2M Group 266-269 (1999) 623
- Particle emission from a tungsten test limiter in TEXTOR-94: a comparison between experimental and Monte Carlo simulated results, K. Ohya, J. Kawata, T. Tanabe, M. Wada, T. Ohgo, V. Philipps, B. Unterberg, A. Pospieszczyk,

- B. Schweer, A. Huber and N. Noda 266-269 (1999) 629
- Molybdenum sources and transport in the Alcator C-Mod tokamak, D.A. Pappas, B. Lipschultz, B. LaBombard, M.J. May and C.S. Pitcher 266-269 (1999) 635
- The role of neutrals in the H-L back transition of high density single-null and double-null gas-fueled discharges in DIII-D, T.W. Petrie, R. Maingi, G.D. Porter, S.L. Allen, M.E. Fenstermacher, R.J. Groebner, D.N. Hill, A.W. Leonard, C.J. Lasnier, M.A. Mahdavi, R.A. Moyer, M.E. Rensink, D.M. Thomas, W.P. West and DIII-D Team 266-269 (1999) 642
- Experimental investigation of the effects of neon injection in TCV, R.A. Pitts, A. Refke, B.P. Duval, I. Furno, B. Joye, J.B. Lister, Y. Martin, J.M. Moret, J. Rommers and H. Weisen 266-269 (1999) 648
- Chemical sputtering from the pump limiter neutralizer in Tore Supra, R. Ruggi, E. Gauthier, J. Hogan, J.M. Layet and T. Loarer 266-269 (1999) 660
- Measurement of edge parameters in TEXTOR-94 at the low and high field side with atomic beams, B. Schweer, M. Brix and M. Lehnen 266-269 (1999) 673
- SOL currents and divertor asymmetries on COMPASS-D, C.G. Silva, S.J. Fielding, K.B. Axon and M.G. Booth 266-269 (1999) 679
- Experimental determination of the contribution of chemical sputtering of carbon on carbon core concentrations, M.F. Stamp, D. Elder, H.Y. Guo, M. von Hellermann, L. Horton, R. König, J. Lingertat, G. McCracken, A. Meigs, P. Stangeby and A. Tabasso 266-269 (1999) 685
- Simulation of transient wall pumping, fuelling effects and density control in tokamaks, M. Sugihara, G. Federici, C. Grisolia, P. Ghendrih, J.T. Hogan, G. Janeschitz, G. Pacher and D.E. Post 266-269 (1999) 691
- Experiments on potential energy diagram for hydrogen isotopes on nickel surface, I. Takagi, H. Fujita and K. Higashi 266-269 (1999) 697
- Influence of deuterium implanted in materials surface on Balmer lines emission from backscattering deuterium, T. Tanabe and A. Ohmori 266-269 (1999) 703
- Erosion, redeposition and boronization lifetime in RFX, L. Tramontin, V. Antoni, M. Bagatin, D. Boscarino, E. Cattaruzza, V. Rigato and S. Zandolin 266-269 (1999) 709
- The influence of electron emission on heat load to the plasma facing materials under space charge limited condition with an oblique magnetic field, I.V. Tsvetkov and T. Tanabe 266-269 (1999) 714
- Carbon influx in He and D plasmas in DIII-D, W.P. West, N.H. Brooks, M.E. Fenstermacher, R.C. Isler, G.L. Jackson, C.J. Lasnier, A. Ramsey, M.R. Wade, D.G. Whyte and R.D. Wood 266-269 (1999) 732
- Effect of divertor geometry on plasma detachment in DIII-D, N.S. Wolf, G.D. Porter, D.N. Hill and S.L. Allen 266-269 (1999) 739
- Hot spot formation on electron-emissive target plate with plasma potential variation across magnetic field, M.Y. Ye, K. Kudose, T. Kuwabara, N. Ohno and S. Takamura 266-269 (1999) 742
- In situ silicon and lithium coating and its removal in the HL-1M tokamak, N.M. Zhang, E.Y. Wang, M.X. Wang, W.Y. Hong, C.H. Cui, Z.W. Wang and D.H. Yan 266-269 (1999) 747
- Absolute VUV spectroscopy of an eroding graphite target using a calibrated CCD camera, N. Arkipov, V. Bakhtin, S. Kurkin, V. Safonov, D. Toporkov, S. Vasenin, A. Zhitlukhin, P. Rockett and J. Hunter 266-269 (1999) 751
- Deuterium release rates in a-C:D layers during oxygen attack, S. Alberici, H.K. Hinssen, R. Moormann and C.H. Wu 266-269 (1999) 754
- Effect of the velocity shear on particle transport and edge turbulence in a reversed field pinch, V. Antoni, R. Cavazzana, E. Martines, G. Seriani, M. Bagatin, D. Desideri, M. Moresco, E. Spada and L. Tramontin 266-269 (1999) 766
- Particle diffusion coefficient at the edge of RFX, M. Bagatin, V. Antoni, D. Desideri, E. Martines, R. Pasqualotto, R. Pugno, G. Serianni, L. Tramontin and M. Valisa 266-269 (1999) 771
- Edge profiles and limiter tests in Extrap T2, H. Bergsaker, G. Hedin, L. Ilyinsky, D. Larsson and A. Möller 266-269 (1999) 777
- Measurements of flows in the DIII-D divertor by Mach probes, J.A. Boedo, R. Lehmer, R.A. Moyer, J.G. Watkins, G.D. Porter, T.E. Evans, A.W. Leonard and M.J. Schaffer 266-269 (1999) 783
- The generation of poloidal pressure gradients in the SOL of TdeV by plate biasing, C. Boucher, B.C. Gregory, J.-L. Lachambre, J.P. Gunn, B.L. Stansfield, M. Tendler and TdeV Team 266-269 (1999) 788

- The investigation of structure, chemical composition, hydrogen isotope trapping and release processes in deposition layers on surfaces exposed to DIII-D divertor plasma, O.I. Buzhinskij, I.V. Opimach, V.A. Barsuk, I.I. Arkhipov, W.P. West, D. Whyte, C.P.C. Wong and W.R. Wampler 266–269 (1999) 793
- Heat flux deposition on plasma-facing components using a convective model with ripple and Shafranov shift, R. Mitteau, A. Moal, J. Schlosser and D. Guilhem 266–269 (1999) 798
- B2-Eirene modelling of the density limit on ASDEX-Upgrade, D.P. Coster, K. Borrass, R. Schneider and ASDEX Upgrade Team 266–269 (1999) 804
- Pattern of ion bombardment on the poloidal divertor plates, U. Daybelge and C. Yarim 266–269 (1999) 809
- The role of recycling and impurity production in JET hot-ion H-modes, H.Y. Guo, B. Balet, G. Conway, G. Corrigan, S. Davies, B. de Esch, M. von Hellermann, L.D. Horton, H. Lingertat, P. Lomas, G.F. Matthews, G.M. McCracken, R.D. Monk, M.F.F. Nave, V. Parail, R. Simonini, R. Smith, M. Stamp, P.C. Stangeby, A. Tabasso, A. Taroni, P. Thomas and K.-D. Zastrow 266–269 (1999) 825
- Dependence of surface oxidation on hydrogen absorption and desorption behaviors of Ti–6Al–4V alloy, Y. Hirohata, T. Nakamura, Y. Aihara and T. Hino 266–269 (1999) 831
- L–H transition in tokamak plasmas: 1.5-D simulations, G. Janeschitz, G.W. Pacher, Yu. Igitkhanov, H.D. Pacher, S.D. Pinches, O. Pogutse and M. Sugihara 266–269 (1999) 843
- Spectroscopic study on the reflected neutral particles from solid surface, K. Kobayasi, S. Ohtsu and S. Tanaka 266–269 (1999) 850
- Hydrogen recycling in graphite at higher fluxes, D. Larsson, H. Bergsäker and A. Hedqvist 266–269 (1999) 856
- Measured and simulated poloidal asymmetries of the FTU SOL in the toroidal limiter configuration, M. Leigheb, V. Pericoli Ridolfini and R. Zagorski 266–269 (1999) 862
- Measured and simulated poloidal asymmetries of the FTU SOL in the toroidal limiter configuration, M. Leigheb, V. Pericoli Ridolfini and R. Zagorski 266–269 (1999) 862
- Modelling of deuterium emission in high density divertor plasmas in JET, C.F. Maggi, L.D. Horton, G. Corrigan, H.J. Jäckel, A. Loarte, R.D. Monk, R. Simonini, M. Stamp and A. Taroni 266–269 (1999) 867
- Charge separation at a plasma–wall transition due to the finite ion gyro-radius, G. Manfredi, M. Shoucri, I. Shkarofsky, P. Bertrand, A. Ghizzo, S. Krasheninnikov, D. Sigmar, O. Batishcheva and A. Batishcheva 266–269 (1999) 873
- Edge localised asymmetric radiative phenomena in RFX, L. Marrelli, P. Zanca, P. Martin, S. Martini and A. Murari 266–269 (1999) 877
- Radial and spectral profiles of atomic deuterium in front of a limiter in TEXTOR 94: Results of laser-induced fluorescence at Lyman- $\alpha$ , Ph. Mertens and A. Pospieszczyk 266–269 (1999) 884
- Modeling of neutral particle distributions at the L to H transition in DIII-D, L.W. Owen, B.A. Carreras, R. Maingi, P.K. Mioduszewski, T.N. Carlstrom and R.J. Groebner 266–269 (1999) 890
- Electron cyclotron discharge cleaning (ECDC) experiments on Alcator C-Mod, R.T. Nachtrieb, B.L. LaBombard, J.L. Terry, J.C. Reardon, W.L. Rowan and W.R. Wampler 266–269 (1999) 896
- Characteristics of carbon sheet pump in application experiments to a high-temperature plasma device, Y. Nakashima, A. Sagara, T. Moriwaki, Y. Hironaga, S. Kobayashi, Y. Ishimoto, M. Yoshikawa, T. Tamano, K. Yatsu, K. Tsuchiya, M. Shoji, H. Suzuki, N. Noda, A. Komori, N. Ohyabu and O. Motojima 266–269 (1999) 901
- Effect of gyro-motion of incident ions on inboard–outboard asymmetry in divertor plasmas, M. Shimada and T. Ohkawa 266–269 (1999) 906
- Dependence of the L–H transition on separatrix-wall gaps on TdeV, G.W. Pacher, R. Decoste, Y. Demers, A. Cote, J.L. Lachambre, C. Boucher, C. Cote, J.-L. Gauvreau, D. Lafrance, D. Pinsonneault, B. Quirion, N. Richard, M. St-Onge and the TdeV Team 266–269 (1999) 911
- Analysis of separatrix plasma parameters using local and multi-machine databases, G.D. Porter, S. Davies, B. LaBombard, A. Loarte, K. McCormick, R. Monk, M. Shimada and M. Sugihara 266–269 (1999) 917
- Modelling of plasma tritium concentration and wall tritium inventory at JET, A. Rossi, T. Loarer, G. Saibene, R.D. Monk, L.D. Horton, M.L. Apicella and B. Annaratone 266–269 (1999) 922

- Drift effects in W7-AS limiter and island divertor configurations, Y. Feng, F. Sardei, P. Grigull, G. Herre and W7-AS Team 266–269 (1999) 928
- Comparison of scrape-off layer behaviour between DIV-I and DIV-II operations on ASDEX-Upgrade, J. Schweinzer, W. Sandmann, G. Haas, J. Neuhauser, H. Murmann, H. Salzmann and ASDEX Upgrade- and NBI-Teams 266–269 (1999) 934
- Modeling of tritium retention in TFTR, C.H. Skinner, J.T. Hogan, J.N. Brooks, W. Blanchard, R.V. Budny, J. Hosea, D. Mueller, A. Nagy and D.P. Stotler 266–269 (1999) 940
- Polarized laser-induced fluorescence technique to measure localized electric field induced perpendicularly to magnetic field in the plasma-edge, K. Takiyama, M. Watanabe and T. Oda 266–269 (1999) 953
- Localized recycling as a trigger of MARFE, M.Z. Tokar, J. Rapp, D. Reiser, U. Samm, F.C. Schüller, G. Sergienko and P.C. de Vries 266–269 (1999) 958
- Simulation of different pumping configurations for the CIEL project on Tore Supra, E. Tsiatroni, P. Chappuis, M. Chatelier, F. Faisse, A. Grosman and D. Reiter 266–269 (1999) 963
- Study of the radio-frequency driven sheath in the ion cyclotron slow wave antennas, T. Imai, H. Sawada, Y. Uesugi and S. Takamura 266–269 (1999) 969
- Hydrogen in diamond-like carbon films, E. Vainonen-Ahlgren, P. Tikkanen, J. Likonen, E. Rauhala and J. Keinonen 266–269 (1999) 975
- An evaluation of kinetic effects in the DIII-D divertor, J.G. Watkins, O. Batishchev, J. Boedo, D.N. Hill, C.J. Lasnier, R. Lehmer, A.W. Leonard and R.A. Moyer 266–269 (1999) 980
- Non-uniform carbon redeposition on graphite, P. Wienhold, F. Weschenfelder, P. Karduck, K. Ohya, S. Richter, M. Rubel and J. von Seggern 266–269 (1999) 986
- Turbulence in boundary plasmas, X.Q. Xu, R.H. Cohen, G.D. Porter, J.R. Myra, D.A. D'Ippolito and R. Moyer 266–269 (1999) 993
- Microstructural evolution in beryllium by fusion-relevant low energy helium ion irradiation, K. Morishita, T. Inoue and N. Yoshida 266–269 (1999) 997
- Erosion and deposition in the ASDEX Upgrade tungsten divertor experiment, H. Maier, K. Krieger, M. Balden, J. Roth and the ASDEX-Upgrade Team 266–269 (1999) 1003
- The role of friction in SOL pressure balance in Alcator C-Mod, C.S. Pitcher, J.A. Goetz, B. LaBombard, B. Lipschultz, J.L. Weaver and B.L. Welch 266–269 (1999) 1009
- B2-EIRENE code modelling of an island divertor, G. Herre, P. Grigull and R. Schneider 266–269 (1999) 1015
- Effects of temperature gradients and sheath power transmission on Langmuir probes, A. Carlson and A. Bergmann 266–269 (1999) 1020
- Thermal pattern measurements during disruptions on TEXTOR-94, M. Ciotti, T. Denner, G. Maruccia, K.H. Finken, J. Hobirk, A. Kremer-Flecken, G. Maddaluno, G. Mank, P. Pasqua, F.C. Schüller and R. Zanino 266–269 (1999) 1023
- Behaviour of upstream separatrix density in JET H-mode plasmas, S.J. Davies, S.K. Erents, P.C. Stangeby, J. Lingertat, G.F. Matthews, R.D. Monk and G.C. Vlases 266–269 (1999) 1028
- Quantitative comparisons between experimentally measured 2D carbon radiation and Monte Carlo impurity (MCI) code simulations, T.E. Evans, D.F. Finkenthal, M.E. Fenstermacher, A.W. Leonard, G.D. Porter and W.P. West 266–269 (1999) 1034
- Asymmetries in the divertor power loading in START, K.M. Morel, G.F. Counsell and P. Helander 266–269 (1999) 1040
- A CFD onion-skin model for the interpretation of edge experiments, W. Fundamenski, P.C. Stangeby and J.D. Elder 266–269 (1999) 1045
- Dynamic hydrogen retention in the walls of the tokamaks ASDEX Upgrade and DIII-D, G. Haas, R. Maingi, J. Neuhauser, ASDEX-Upgrade team and DIII-D team 266–269 (1999) 1065
- Study on energy distribution of reflected particles from plasma facing materials, Y. Hasegawa, S. Masuzaki, N. Noda, N. Ohyabu, A. Sagarra, H. Suzuki, A. Komori, T. Morisaki, O. Motojima and V.S. Voitsenya 266–269 (1999) 1072
- Carbon impurity behavior in w-shaped pumped divertor of JT-60U, S. Higashijima, H. Kubo, T. Sugie, K. Shimizu, A. Kumagai, A. Sakasai, N. Asakura, S. Sakurai, N. Hosogane, S. Konoshima, H. Tamai, T. Ishijima, H. Takenaga, K. Itami and M. Shimada 266–269 (1999) 1078
- Noble gas impurity balance and exhaust model for DIII-D and JET, D.L. Hillis, J. Hogan, M. von Hellermann, J. Ehrenberg, L. Horton,



- R. König, P. Morgan, G. Saibene and M.R. Wade 266–269 (1999) 1084
- Dynamic behavior of hydrogen isotopes in tungsten–carbon composite materials, T. Horikawa, B. Tsuchiya and K. Morita 266–269 (1999) 1091
- Radiative plasma by impurity seeding in W-shaped pumped divertor experiment of JT-60U, K. Itami, N. Hosogane, S. Konoshima, S. Sakurai, N. Asakura, S. Higashijima, A. Sakasai, H. Tamai and M. Shimada 266–269 (1999) 1097
- Trapping and reflection of eV deuterium ions by fusion materials, A.A. Evanov, V.A. Kurnaev, D.V. Levchuk and A.A. Pisarev 266–269 (1999) 1113
- Modification of hydrogen recycling due to edge ergodic magnetic layer in long tokamak discharge with high duty, M. Kobayashi, K. Tashiro and S. Takamura 266–269 (1999) 1118
- Comparison of B2-EIRENE calculations with multi-machine experimental measurements, A. Loarte, A.S. Kukushkin, H.D. Pacher, D.P. Coster, R. Schneider, N. Asakura, K. Itami, B. LaBombard, B. Lipschultz, C.F. Maggi, R.D. Monk, G.D. Porter, M. Shimada, M. Sugihara and J. Terry 266–269 (1999) 1123
- Finite element modelling  $D_x$  radiation and impurity transport in TdeV, R. Marchand, F. Meo, M. Simard, B. Stansfield, E. Haddad, G. Abel, J.L. Lachambre, D. Pinsonneault, N. Richard and TdeV team 266–269 (1999) 1129
- Trace tritium and the H-mode density limit, G.F. Matthews, K.-D. Zastrow, P. Andrew, B. Balet, N.P. Basse, J. Ehrenberg, S.K. Erents, H. Guo, N. Jarvis, M. Loughlin, F. Marcus, R. Monk, M. O'Mullane, L. Lauro-Taroni, G. Sadler, G. Saibene, R. Simonini, P.C. Stangeby, J. Strachan and A. Taroni 266–269 (1999) 1134
- Influence of magnetic configuration and heating methods on distribution of diverted plasmas in Heliotron E, T. Mizuuchi, V.S. Voitsenya, V.V. Chechkin, K. Nagasaki, H. Zushi, M. Nakasuga, H. Okada, S. Besshou, A. Hayakawa, H. Funaba, T. Hamada, S. Masuzaki, K. Kondo, F. Sano, O. Motojima, O.S. Pavlichenko and T. Obiki 266–269 (1999) 1139
- Potentials,  $E \times B$  drifts, and fluctuations in the DIII-D boundary R.A. Moyer, R. Lehmer, J.A. Boedo, J.G. Watkins, X. Xu, J.R. Myra, R. Cohen, D.A. D'Ippolito, T.W. Petrie and M.J. Schaffer 266–269 (1999) 1145
- Spectroscopic observation of a helium plasma cooled by a hydrogen gas injection, S. Namba, I. Nomura, K. Iwasaki, K. Takiyama, U. Furukane, T. Oda and K. Sato 266–269 (1999) 1157
- Two-dimensional structure of the detached recombining helium plasma associated with molecular activated recombination, D. Nishijima, N. Ezumi, H. Kojima, N. Ohno, S. Takamura, S.I. Krashenninnikov and A.Y. Pigarov 266–269 (1999) 1161
- The ion- and atom-driven transport of deuterium in Nb under the influence of surface impurities, K. Ohkoshi, V. Alimov, K. Yamaguchi, M. Yamawakia and A.I. Livshits 266–269 (1999) 1167
- Operating window for high divertor radiation in ITER, H.D. Pacher, A.S. Kukushkin, D.P. Coster, A. Loarte, G. Janeschitz, D. Reiter and R. Schneider 266–269 (1999) 1172
- Analysis and oxidation of thick deposits on TEXTOR plasma facing components, M. Rubel, J. von Seggern, P. Karduck, V. Philipps and A. Vevecka-Priftaj 266–269 (1999) 1185
- Plasma characteristics near the X-point in W-shaped divertor of JT-60U, S. Sakurai, N. Asakura, N. Hosogane, K. Itami, M. Shimada and O. Naito 266–269 (1999) 1191
- Kinetic analysis of recycling plasma in an oblique magnetic field, K. Sato 266–269 (1999) 1197
- Growth of redeposited carbon and its impact on isotope retention properties on tungsten in a high flux deuterium plasma, F.C. Sze, L. Chousal, R.P. Doerner and S. Luchhardt 266–269 (1999) 1212
- Particle control and behaviour of neutrals in the pumped W-shaped divertor of JT-60U, H. Tamai, N. Asakura, N. Hosogane, H. Take-naga, S. Higashijima, K. Itami, S. Konoshima, H. Kubo, A. Sakasai, S. Sakurai and K. Shimizu 266–269 (1999) 1219
- Behavior of plasma-sprayed tungsten coatings on CFC and graphite under high heat load, K. Tokunaga, N. Yoshida, N. Noda, Y. Kubota, S. Inagaki, R. Sakamoto, T. Sogabe and L. Plöchl 266–269 (1999) 1224
- A fast scanning Langmuir probe system for ASDEX-Upgrade divertor, N. Tsois, C. Dorn, G. Kyriakakis, M. Markoulaki, M. Pflug, G. Schramm, P. Theodoropoulos, P. Xantopoulos, M. Weinlich and the ASDEX Upgrade team 266–269 (1999) 1230
- Interpretative modelling of JET's thermal helium diagnostic, Y. Andrew,

- S.J. Davies, D. Elder, L.D. Horton, G.F. Matthews, A. Meigs, P.D. Morgan, M. O'Mullane, M. Stamp, R. Prentice and P.C. Stangeby 266–269 (1999) 1234
- Radial current and flows in the scrape-off layer of a tokamak, M. Van Schoor and R. Weynants 266–269 (1999) 1240
- Impact of detailed radiation transport on volume recombination, H.A. Scott, A.S. Wan, D.E. Post, M.E. Rensink and T.D. Rognlien 266–269 (1999) 1247
- Deuterium retention of DIII-D DiMES sample, Y. Yamauchi, Y. Hirohata, T. Hino, K. Masaki, M. Saidoh, T. Ando, D.G. Whyte and C. Wong 266–269 (1999) 1257
- Numerical analysis of plasma instabilities in the TEXTOR tokamak edge plasma, R. Zagórski, H. Gerhauser and H.A. Claassen 266–269 (1999) 1261
- Fuel recycling and edge plasma control with membrane techniques: plasma-membrane simulation experiments, A. Livshits, N. Ohyabu, M. Bacal, Y. Nakamura, A. Busnyuk, M. Notkin, V. Alimov, A. Samartsev, H. Suzuki and F. Sube 266–269 (1999) 1267
- Plasma-wall interaction in the Spanish stellarator TJ-II. Diagnostics and first results, F.L. Tabarés, D. Taffalla, E. de la Cal, B. Brañas and TJ-II team 266–269 (1999) 1273
- Edge plasma diagnostics on W7-AS and ASDEX-Upgrade using fast Li beams, S. Fiedler, R. Brandenburg, J. Baldzuhn, K. McCormick, F. Aumayr, J. Schweinzer, H.P. Winter and W7-AS and ASDEX-Upgrade team 266–269 (1999) 1279
- Broadening of the parallel and perpendicular ion energy spectrum and correlation with turbulent potential fluctuations in a linear magnetized plasma, S.C. Luckhardt, R.W. Harvey, O.V. Batishchev, A.A. Batishcheva, J. Cuthbertson, R. Doerner, A. Grossman, R. Lehmer, L. Blush and D.G. Whyte 266–269 (1999) 1285
- Self-consistent impurity modeling in the Frascati Tokamak Upgrade, R. Zanino, C. Ferro, M. Frassinetti and M. Leigh 266–269 (1999) 1290
- Hydrogen isotope inventories in the ASDEX Upgrade tungsten coated divertor tiles, D. Schleußner, H. Maier, P. Franzen, R. Behrisch, M. Balden, The ASDEX-Upgrade Team, M. Perl, W. Knapp and Chr. Edelmann 266–269 (1999) 1296
- The effect of lithium wall conditioning in TFTR on plasma-surface interactions, D.N. Ruzic, M.M.C. Alain and R.V. Budny 266–269 (1999) 1303
- D-T experiments in the JET tokamak, M. Keilhacker, M.L. Watkins and JET Team 266–269 (1999) 1
- In-vessel tritium retention and removal in ITER, G. Federici, R.A. Anderl, P. Andrew, J.N. Brooks, R.A. Causey, J.P. Coad, D. Cowgill, R.P. Doerner, A.A. Haasz, G. Janeschitz, W. Jacob, G.R. Longhurst, R. Nygren, A. Peacock, M.A. Pick, V. Philipps, J. Roth, C.H. Skinner and W.R. Wampler 266–269 (1999) 14
- The experimental determination of the volume recombination rate in tokamak divertors, J.L. Terry, B. Lipschultz, X. Bonnin, C. Boswell, S.I. Krasheninnikov, A.Yu. Pigarov, B. LaBombard, D.A. Pappas and H.A. Scott 266–269 (1999) 30
- Volume recombination and detachment in JET divertor plasmas, G.M. McCracken, R.D. Monk, A. Meigs, L. Horton, L.C. Ingesson, J. Lingertat, G.F. Matthews, M.G. O'Mullane, R. Prentice, M.F. Stamp and P.C. Stangeby 266–269 (1999) 37
- Impurity enrichment and radiative enhancement using induced SOL flow in DIII-D, M.R. Wade, W.P. West, R.D. Wood, S.L. Allen, J.A. Boedo, N.H. Brooks, M.E. Fenstermacher, D.N. Hill, J.T. Hogan, R.C. Isler, G.L. Jackson, C.J. Lasnier, R. Lehmer, A.W. Leonard, M.A. Mahdavi, R. Maingi, R.A. Moyer, T.H. Osborne, T.W. Petrie, M.J. Schaffer, R.D. Stambaugh, J.G. Watkins and D.G. Whyte 266–269 (1999) 44
- Erosion/redeposition analysis: status of modeling and code validation for semi-detached tokamak edge plasmas, J.N. Brooks, D. Alman, G. Federici, D.N. Ruzic, and D.G. Whyte 266–269 (1999) 58
- Divertor erosion in DIII-D, D.G. Whyte, R. Bastasz, J.N. Brooks, W.R. Wampler, W.P. West, C.P.C. Wong, O.I. Buzhinskij and I.V. Opimach 266–269 (1999) 67
- ITER edge database investigations of the SOL width, K. McCormick, N. Asakura, S. Bosch, S. Davies, S. Fielding, K. Itami, H. Kawashima, B. LaBombard, B. Lipschultz, A. Loarte, R. Monk, G. Porter, J. Schweinzer, M. Shimada and M. Sugihara 266–269 (1999) 99
- The impact of ELMs on the ITER divertor, A.W. Leonard, A. Herrmann, K. Itami, J. Lingertat, A. Loarte, T.H. Osborne, W. Suttrp,

- the ITER Divertor Modeling and Database Expert Group and the ITER Divertor Physics Expert Group 266–269 (1999) 109
- Operational limits for high edge density H-mode tokamak operation, W. Suttrop, V. Mertens, H. Murmann, J. Neuhauser, J. Schweinzer and ASDEX-Upgrade Team 266–269 (1999) 118
- In situ measurement and modeling of hydrogen recycling and transport processes – the role of molecules, A. Pospieszczyk, P. Mertens, G. Sergienko, A. Huber, V. Philipps, D. Reiter, D. Rusbüldt, B. Schweer, E. Vietzke and P.T. Greenland 266–269 (1999) 138
- Plasma wall interaction during long pulse operation in Tore Supra, C. Grisolia 266–269 (1999) 146
- The effect of divertor geometry on divertor and core plasma performance in JET, G.C. Vlases, L.D. Horton, G.F. Matthews, P. Andrew, K. Borrass, A. Chankin, S. Clement, G. Conway, S. Davies, J. Ehrenberg, G. Fishpool, H.-Y. Guo, P.J. Harbour, L.C. Ingesson, H.J. Jäckel, J. Lingertat, A. Loarte, C.G. Lowry, C.F. Maggi, G.M. McCracken, R. Mohanti, R.D. Monk, R. Reichle, E. Righi, R. Smith, M.F. Stamp, P.C. Stangeby, A. Taroni and M. von Hellermann 266–269 (1999) 160
- Studies of high- $\delta$  (baffled) and low- $\delta$  (open) pumped divertor operation on DIII-D, S.L. Allen, M.E. Fenstermacher, C.M. Greenfield, A.W. Hyatt, R. Maingi, G.D. Porter, M.R. Wade, A.S. Bozek, R. Ellis, D.N. Hill, M.A. Hollerbach, C.J. Lasnier, A.W. Leonard, M.A. Mahdavi, D.G. Nilson, T.W. Petrie, M.J. Schaffer, J.P. Smith, R.D. Stambaugh, D.M. Thomas, J.G. Watkins, W.P. West, D.G. Whyte and R.D. Wood 266–269 (1999) 168
- Role of divertor geometry on detachment in ASDEX Upgrade, R. Schneider, H.-S. Bosch, D. Coster, J.C. Fuchs, J. Gafert, G. Haas, A. Herrmann, M. Kaufmann, A. Kallenbach, J. Neuhauser, J. Schweinzer, U. Wenzel and ASDEX-Upgrade Teams 266–269 (1999) 175
- Role of divertor geometry on detachment and core plasma performance in JT60U, N. Asakura, N. Hosogane, K. Itami, A. Sakasai, S. Sakurai, K. Shimizu, M. Shimada, H. Kubo, S. Higashijima, H. Takenaga, H. Tamai, S. Konoshima, T. Sugie, K. Masaki, Y. Koide, O. Naito, H. Shirai, T. Takizuka, T. Ishijima, S. Suzuki, A. Kumagai and JT-60 Team 266–269 (1999) 182
- Comparison of ergodic and axisymmetric divertors, P. Ghendrih, A. Grosman, J. Gunn, F. Laugier, B. Meslin, C. Grisolia, R. Guirlet, P. Monier-Garbet and T. Loarer 266–269 (1999) 189
- Review of recent works in development and evaluation of high-Z plasma facing materials, N. Yoshida 266–269 (1999) 197
- Boronization in future devices – protecting layer against tritium and energetic neutrals, N. Noda, K. Tsuzuki, A. Sagara, N. Inoue and T. Muroga 266–269 (1999) 234
- Stability of the detachment front in a tokamak divertor, S.I. Krasheninikov, M. Rensink, T.D. Rognlien, A.S. Kukushkin, J.A. Goetz, B. LaBombard, B. Lipschultz, J.L. Terry and M. Umansky 266–269 (1999) 251
- Sheath over a finely structured divertor plate, R.H. Cohen, R.E. Cid, E.B. Hooper, A.W. Molvik, G.D. Porter and D.D. Ryutov 266–269 (1999) 258
- Plasma pressure and flows during divertor detachment, M.J. Schaffer, J.A. Boedo and R.A. Moyer 266–269 (1999) 264
- Localized heat flux due to lower hybrid wave coupling in the Ergodic Divertor configuration on Tore Supra, I. Pugno, J.J. Cordier, Ph. Ghendrih, M. Goniche, A. Grosman, J.P. Gunn, J. Mailloux and S. Person 266–269 (1999) 280
- Power deposition in the JET divertor during ELMs, S. Clement, A. Chankin, D. Ciric, J.P. Coad, J. Falter, E. Gauthier, J. Lingertat and S. Puppin 266–269 (1999) 285
- Heat flux distribution in the divertor-II of ASDEX Upgrade, A. Herrmann, C.J. Fuchs, V. Rohde and M. Weinlich 266–269 (1999) 291
- Operational performance of JT-60U W-shaped divertor, N. Hosogane, H. Tamai, S. Higashijima, H. Kubo, A. Sakasai, H. Takenaga, K. Itami, S. Sakurai, N. Asakura, S. Konoshima, T. Sugie, K. Shimizu, T. Ishijima, A. Kumagai, S. Suzuki and M. Shimada 266–269 (1999) 296
- Divertor helium pumping in TdeV-96 under various conditions, J.L. Gauvreau, G.W. Pacher, R. Décoste, Y. Demers, B.L. Stansfield, C. Côté, J.-L. Lachambre, N. Richard, G. Lebrun and TdeV Team 266–269 (1999) 307
- Helium exhaust in ELMy H-mode plasmas with W-shaped pumped divertor of JT-60U, A. Sakasai,

- H. Takenaga, N. Hosogane, S. Sakurai, N. Akino, H. Kubo, S. Higashijima, H. Tamai, N. Asakura, K. Itami and K. Shimizu 266–269 (1999) 312
- Simulation of helium exhaust in JET and ITER, M. Fichtmüller, G. Corrigan, L. Lauro-Taroni, R. Simonini, J. Spence, E. Springmann and A. Taroni 266–269 (1999) 330
- Spectroscopic investigation of the dynamics of ions and neutrals in the ASDEX Upgrade Divertor II, J. Gafert, K. Behringer, D. Coster, C. Dorn, A. Kallenbach, R. Schneider, U. Schumacher and ASDEX-Upgrade Team 266–269 (1999) 365
- Recombination and ion loss in C-Mod detached divertor discharges, B. Lipschultz, J.L. Terry, C. Boswell, S.I. Krashenninikov, B. LaBombard and D.A. Pappas 266–269 (1999) 370
- Spectroscopic measurements of impurity temperatures and parallel ion flows in the DIII-D divertor, R.C. Isler, N.H. Brooks, W.P. West, A.W. Leonard, G.R. McKee and G.D. Porter 266–269 (1999) 376
- Enhanced confinement discharges in DIII-D with neon and argon induced radiation, G.L. Jackson, M. Murakami, G.M. Staebler, M.R. Wade, A.M. Messiaen, J. Ongena, B. Unterberg, J.A. Boedo, T.E. Evans, A.W. Hyatt, R.J. LaHaye, C.J. Lasnier, A.W. Leonard, G.W. McKee, R. Maingi, R.A. Moyer, T.W. Petrie and W.P. West 266–269 (1999) 380
- Comparative studies of ionised and excited hydrogen atoms and molecules distributions for plasma-target interaction in a linear simulator machine, V.A. Kurnaev, V.A. Abramov, V.A. Kadetov, D.V. Mozgrin, D.V. Sarytchev, A.S. Savjolov, I.V. Vizgalov, V.N. Kolesnikov and L.P. Presnyakov 266–269 (1999) 412
- Kinetic study of thermoelectric currents in the SOL plasmas, O. Batischev and B. LaBombard 266–269 (1999) 452
- Optical emission measurements of H<sub>2</sub> and D<sub>2</sub> molecules in the divertor region of ASDEX-Upgrade, U. Fantz, K. Behringer, J. Gafert, D. Coster and ASDEX-Upgrade Team 266–269 (1999) 490
- Radiation measurements and modeling of the density limit on the W7-AS stellarator, L. Giannone, R. Burhenn, P. Grigull, U. Stroth, R. Brakel, R. Dux, A. Elsner, S. Fiedler, G. Kühner, F. Penningsfeld, G. Pereverzev, F. Wagner, A. Weller, C. Wendland, NBI TEAM and W7-AS TEAM 266–269 (1999) 507
- Carbon and neon penetration near a neutraliser plate of the Tore Supra ergodic divertor, R. Guirlet, J. Hogan, L. Chérigier, C. DeMichelis, P. Ghendrih, A. Grosman, D. Guilhem, B. Meslin and P. Monier-Garbet 266–269 (1999) 513
- Space resolved fluctuations of electron density measured by means of two thermal Li-beams in TEXTOR-94, A. Huber, A.V. Nedospasov, U. Samm and B. Schweer 266–269 (1999) 546
- Deuterium permeation through metals under hydrogen counter flow, K. Kizu and T. Tanabe 266–269 (1999) 561
- Multi-machine scaling of the divertor peak heat flux and width for L-mode and H-mode discharges, A. Loarte, S. Bosch, A. Chankin, S. Clement, A. Herrmann, D. Hill, K. Itami, J. Lingertat, B. Lipschultz, K. McCormick, R. Monk, G.D. Porter, M. Shimada and M. Sugihara 266–269 (1999) 587
- Runaway-limiter interaction in the FTU tokamak during disruptions, G. Maddaluno and B. Esposito 266–269 (1999) 593
- Radiation efficiency of high power ergodic divertor plasmas in Tore Supra, P. Monier-Garbet, C. DeMichelis, Ph. Ghendrih, R. Giannella, C. Grisolia, A. Grosman, R. Guirlet, J. Gunn, F. Laugier, B. Meslin, R. Reichle and J.C. Vallet 266–269 (1999) 611
- Erosion of vanadium in lithium plasma, A.V. Nedospasov, G.V. Sergienko, N.M. Zykova, I.V. Pen'deev, E.V. Mydretskaya and A.V. Zhmendak 266–269 (1999) 618
- Studies of boundary plasmas and fueling on the JFT-2M, H. Ogawa, Y. Miura, N. Fukumoto, T. Ogawa, K. Hasegawa, S. Kasai, H. Kawashima, H. Kimura, M. Maeno, M. Nagata, S. Sengoku, T. Shibata, T. Uyama, T. Yamauchi and JFT-2M Group 266–269 (1999) 623
- The role of neutrals in the H–L back transition of high density single-null and double-null gas-fueled discharges in DIII-D, T.W. Petrie, R. Maingi, G.D. Porter, S.L. Allen, M.E. Fenstermacher, R.J. Groebner, D.N. Hill, A.W. Leonard, C.J. Lasnier, M.A. Mahdavi, R.A. Moyer, M.E. Rensink, D.M. Thomas, W.P. West and DIII-D Team 266–269 (1999) 642
- Influence of  $\mathbf{E} \times \mathbf{B}$  and  $\nabla B$  drift terms in 2-D edge/SOL transport simula-

- tions, T.D. Rognlien, G.D. Porter and D.D. Ryutov 266–269 (1999) 654
- MARFE feedback experiments on TEXTOR-94, U. Samm, M. Brix, F. Durodi, M. Lehnen, A. Pospieszczyk, J. Rapp, G. Sergienko, B. Schweer, M.Z. Toka and B. Unterberg 266–269 (1999) 666
- Measurement of edge parameters in TEXTOR-94 at the low and high field side with atomic beams, B. Schweer, M. Brix and M. Lehnen 266–269 (1999) 673
- SOL currents and divertor asymmetries on COMPASS-D, C.G. Silva, S.J. Fielding, K.B. Axon and M.G. Booth 266–269 (1999) 679
- Influence of deuterium implanted in materials surface on Balmer lines emission from backscattering deuterium, T. Tanabe and A. Ohmori 266–269 (1999) 703
- The influence of electron emission on heat load to the plasma facing materials under space charge limited condition with an oblique magnetic field, I.V. Tsvetkov and T. Tanabe 266–269 (1999) 714
- Scrape off layer modelling studies for SST-I, M. Warriar, S. Jaishankar, S. Deshpande, D. Coster, R. Schneider, S. Chaturvedi, R. Srinivasan, B.J. Braams and SST Team 266–269 (1999) 726
- Effect of divertor geometry on plasma detachment in DIII-D, N.S. Wolf, G.D. Porter, D.N. Hill and S.L. Allen 266–269 (1999) 739
- Hot spot formation on electron-emissive target plate with plasma potential variation across magnetic field, M.Y. Ye, K. Kudose, T. Kuwabara, N. Ohno and S. Takamura 266–269 (1999) 742
- Effect of the velocity shear on particle transport and edge turbulence in a reversed field pinch, V. Antoni, R. Cavazzana, E. Martines, G. Serianni, M. Bagatin, D. Desideri, M. Moresco, E. Spada and L. Tramontin 266–269 (1999) 766
- Particle diffusion coefficient at the edge of RFX, M. Bagatin, V. Antoni, D. Desideri, E. Martines, R. Pasqualotto, R. Pugno, G. Serianni, L. Tramontin and M. Valisa 266–269 (1999) 771
- The generation of poloidal pressure gradients in the SOL of TdeV by plate biasing, C. Boucher, B.C. Gregory, J.-L. Lachambre, J.P. Gunn, B.L. Stansfield, M. Tendler and TdeV Team 266–269 (1999) 788
- Pattern of ion bombardment on the poloidal divertor plates, U. Daybelge and C. Yarim 266–269 (1999) 809
- Dependence of surface oxidation on hydrogen absorption and desorption behaviors of Ti-6Al-4V alloy, Y. Hirohata, T. Nakamura, Y. Aihara and T. Hino 266–269 (1999) 831
- MARFE onset conditions and stability, Yu. Igitkhanov and M. Mikhailov 266–269 (1999) 837
- L–H transition in tokamak plasmas: 1.5-D simulations, G. Janeschitz, G.W. Pacher, Yu. Igitkhanov, H.D. Pacher, S.D. Pinches, O. Pogutse and M. Sugihara 266–269 (1999) 843
- Measured and simulated poloidal asymmetries of the FTU SOL in the toroidal limiter configuration, M. Leigheb, V. Pericoli Ridolfini and R. Zagorski 266–269 (1999) 862
- Charge separation at a plasma-wall transition due to the finite ion gyro-radius, G. Manfredi, M. Shoucri, I. Shkarofsky, P. Bertrand, A. Ghizzo, S. Krasheninnikov, D. Sigmar, O. Batishchev and A. Batishcheva 266–269 (1999) 873
- Edge localised asymmetric radiative phenomena in RFX, L. Marrelli, P. Zanca, P. Martin, S. Martini and A. Murari 266–269 (1999) 877
- Radial and spectral profiles of atomic deuterium in front of a limiter in TEXTOR 94: Results of laser-induced fluorescence at Lyman- $\alpha$ , Ph. Mertens and A. Pospieszczyk 266–269 (1999) 884
- Modeling of neutral particle distributions at the L to H transition in DIII-D, L.W. Owen, B.A. Carreras, R. Maingi, P.K. Mioduszewski, T.N. Carlstrom and R.J. Groebner 266–269 (1999) 890
- Characteristics of carbon sheet pump in application experiments to a high-temperature plasma device, Y. Nakashima, A. Sagara, T. Moriwaki, Y. Hironaga, S. Kobayashi, Y. Ishimoto, M. Yoshikawa, T. Tamano, K. Yatsu, K. Tsuchiya, M. Shoji, H. Suzuki, N. Noda, A. Komori, N. Ohyabu and O. Motojima 266–269 (1999) 901
- Dependence of the L–H transition on separatrix-wall gaps on TdeV, G.W. Pacher, R. Decoste, Y. Demers, A. Cote, J.L. Lachambre, C. Boucher, C. Cote, J.-L. Gauvreau, D. Lafrance, D. Pinsonneault, B. Quirion, N. Richard, M. St-Onge and the TdeV Team 266–269 (1999) 911
- Analysis of separatrix plasma parameters using local and multi-machine databases, G.D. Porter, S. Davies, B. LaBombard, A. Loarte, K. McCormick, R. Monk, M. Shimada and M. Sugihara 266–269 (1999) 917

- Drift effects in W7-AS limiter and island divertor configurations, Y. Feng, F. Sardei, P. Grigull, G. Herre and W7-AS Team 266–269 (1999) 928
- Comparison of scrape-off layer behaviour between DIV-I and DIV-II operations on ASDEX-Upgrade, J. Schweinzer, W. Sandmann, G. Haas, J. Neuhauser, H. Murmann, H. Salzmann and ASDEX Upgrade- and NBI-Teams 266–269 (1999) 934
- Modeling of tritium retention in TFTR, C.H. Skinner, J.T. Hogan, J.N. Brooks, W. Blanchard, R.V. Budny, J. Hosea, D. Mueller, A. Nagy and D.P. Stotler 266–269 (1999) 940
- Localized recycling as a trigger of MARFE, M.Z. Tokar, J. Rapp, D. Reiser, U. Samm, F.C. Schüller, G. Sergienko and P.C. de Vries 266–269 (1999) 958
- Simulation of different pumping configurations for the CIEL project on Tore Supra, E. Tsitrone, P. Chappuis, M. Chatelier, F. Faisse, A. Grosman and D. Reiter 266–269 (1999) 963
- Study of the radio-frequency driven sheath in the ion cyclotron slow wave antennas, T. Imai, H. Sawada, Y. Uesugi and S. Takamura 266–269 (1999) 969
- An evaluation of kinetic effects in the DIII-D divertor, J.G. Watkins, O. Batishchev, J. Boedo, D.N. Hill, C.J. Lasnier, R. Lehmer, A.W. Leonard and R.A. Moyer 266–269 (1999) 980
- Turbulence in boundary plasmas, X.Q. Xu, R.H. Cohen, G.D. Porter, J.R. Myra, D.A. D'Ippolito and R. Moyer 266–269 (1999) 993
- The role of friction in SOL pressure balance in Alcator C-Mod, C.S. Pitcher, J.A. Goetz, B. LaBombard, B. Lipschultz, J.L. Weaver and B.L. Welch 266–269 (1999) 1009
- Behaviour of upstream separatrix density in JET H-mode plasmas, S.J. Davies, S.K. Erents, P.C. Stangeby, J. Lingertat, G.F. Matthews, R.D. Monk and G.C. Vlases 266–269 (1999) 1028
- Quantitative comparisons between experimentally measured 2D carbon radiation and Monte Carlo impurity (MCI) code simulations, T.E. Evans, D.F. Finkenthal, M.E. Fenstermacher, A.W. Leonard, G.D. Porter and W.P. West 266–269 (1999) 1034
- Asymmetries in the divertor power loading in START, K.M. Morel, G.F. Counsell and P. Helander 266–269 (1999) 1040
- A CFD onion-skin model for the interpretation of edge experiments, W. Fundamenski, P.C. Stangeby and J.D. Elder 266–269 (1999) 1045
- Study on energy distribution of reflected particles from plasma facing materials, Y. Hasegawa, S. Masuzaki, N. Noda, N. Ohyabu, A. Sagarra, H. Suzuki, A. Komori, T. Morisaki, O. Motojima and V.S. Voitsenya 266–269 (1999) 1072
- Carbon impurity behavior in w-shaped pumped divertor of JT-60U, S. Higashijima, H. Kubo, T. Sugie, K. Shimizu, A. Kumagai, A. Sakasai, N. Asakura, S. Sakurai, N. Hosogane, S. Konoshima, H. Tamai, T. Ishijima, H. Takenaga, K. Itami and M. Shimada 266–269 (1999) 1078
- Radiative plasma by impurity seeding in W-shaped pumped divertor experiment of JT-60U, K. Itami, N. Hosogane, S. Konoshima, S. Sakurai, N. Asakura, S. Higashijima, A. Sakasai, H. Tamai and M. Shimada 266–269 (1999) 1097
- Modification of hydrogen recycling due to edge ergodic magnetic layer in long tokamak discharge with high duty, M. Kobayashi, K. Tashiro and S. Takamura 266–269 (1999) 1118
- Comparison of B2-EIRENE calculations with multi-machine experimental measurements, A. Loarte, A.S. Kukushkin, H.D. Pacher, D.P. Coster, R. Schneider, N. Asakura, K. Itami, B. LaBombard, B. Lipschultz, C.F. Maggi, R.D. Monk, G.D. Porter, M. Shimada, M. Sugihara and J. Terry 266–269 (1999) 1123
- Finite element modelling  $D_2$  radiation and impurity transport in TdeV, R. Marchand, F. Meo, M. Simard, B. Stansfield, E. Haddad, G. Abel, J.L. Lachambre, D. Pinsonneault, N. Richard and TdeV team 266–269 (1999) 1129
- Trace tritium and the H-mode density limit, G.F. Matthews, K.-D. Zastrow, P. Andrew, B. Balet, N.P. Basse, J. Ehrenberg, S.K. Erents, H. Guo, N. Jarvis, M. Loughlin, F. Marcus, R. Monk, M. O'Mullane, L. Lauro-Taroni, G. Sadler, G. Saibene, R. Simonini, P.C. Stangeby, J. Strachan and A. Taroni 266–269 (1999) 1134
- Potentials,  $E \times B$  drifts, and fluctuations in the DIII-D boundary R.A. Moyer, R. Lehmer, J.A. Boedo, J.G. Watkins, X. Xu, J.R. Myra, R. Cohen, D.A. D'Ippolito, T.W. Petrie and M.J. Schaffer 266–269 (1999) 1145
- Spectroscopic observation of a helium plasma cooled by a hydrogen gas injection, S. Namba, I. Nomura, K. Iwasaki, K. Takiyama, U. Furukane, T. Oda and K. Sato 266–269 (1999) 1157

- Two-dimensional structure of the detached recombining helium plasma associated with molecular activated recombination, D. Nishijima, N. Ezumi, H. Kojima, N. Ohno, S. Takamura, S.I. Krashenninikov and A.Y. Pigarov 266–269 (1999) 1161
- The ion- and atom-driven transport of deuterium in Nb under the influence of surface impurities, K. Ohkoshi, V. Alimov, K. Yamaguchi, M. Yamawakia and A.I. Livshits 266–269 (1999) 1167
- Operating window for high divertor radiation in ITER, H.D. Pacher, A.S. Kukushkin, D.P. Coster, A. Loarte, G. Janeschitz, D. Reiter and R. Schneider 266–269 (1999) 1172
- Edge plasma modeling of limiter surfaces in a tokamak divertor configuration, M.E. Rensink and T.D. Rognlien 266–269 (1999) 1180
- Plasma characteristics near the X-point in W-shaped divertor of JT-60U, S. Sakurai, N. Asakura, N. Hosogane, K. Itami, M. Shimada and O. Naito 266–269 (1999) 1191
- Kinetic analysis of recycling plasma in an oblique magnetic field, K. Sato 266–269 (1999) 1197
- Particle control and behaviour of neutrals in the pumped W-shaped divertor of JT-60U, H. Tamai, N. Asakura, N. Hosogane, H. Takenaga, S. Higashijima, K. Itami, S. Konoshima, H. Kubo, A. Sakasai, S. Sakurai and K. Shimizu 266–269 (1999) 1219
- A fast scanning Langmuir probe system for ASDEX-Upgrade divertor, N. Tsois, C. Dorn, G. Kyriakakis, M. Markoulaki, M. Pflug, G. Schramm, P. Theodoropoulos, P. Xantopoulos, M. Weinlich and the ASDEX Upgrade team 266–269 (1999) 1230
- Interpretative modelling of JET's thermal helium diagnostic, Y. Andrew, S.J. Davies, D. Elder, L.D. Horton, G.F. Matthews, A. Meigs, P.D. Morgan, M. O'Mullane, M. Stamp, R. Prentice and P.C. Stangeby 266–269 (1999) 1234
- Impact of detailed radiation transport on volume recombination, H.A. Scott, A.S. Wan, D.E. Post, M.E. Rensink and T.D. Rognlien 266–269 (1999) 1247
- Numerical analysis of plasma instabilities in the TEXTOR tokamak edge plasma, R. Zagórski, H. Gerhauser and H.A. Claaßen 266–269 (1999) 1261
- Fuel recycling and edge plasma control with membrane techniques: plasma-membrane simulation experiments, A. Livshits, N. Ohyabu, M. Bacal, Y. Nakamura, A. Busnyuk, M. Notkin, V. Alimov, A. Samartsev, H. Suzuki and F. Sube 266–269 (1999) 1267
- Plasma-wall interaction in the Spanish stellarator TJ-II. Diagnostics and first results, F.L. Tabarés, D. Taffalla, E. de la Cal, B. Brañas and TJ-II team 266–269 (1999) 1273
- Broadening of the parallel and perpendicular ion energy spectrum and correlation with turbulent potential fluctuations in a linear magnetized plasma, S.C. Luckhardt, R.W. Harvey, O.V. Batishchev, A.A. Batishcheva, J. Cuthbertson, R. Doerner, A. Grossman, R. Lehmer, L. Blush and D.G. Whyte 266–269 (1999) 1285
- Plasma Properties (includes Plasma Disruption)**
- Tritium behavior in eroded dust and debris of plasma-facing materials, A. Hassanein, B. Wiechers and I. Konkashbaev 258–263 (1998) 295
- The dependence on ion energy and temperature of helium trapping in nickel, H. Yanagihara, Y. Hirohata and T. Hino 258–263 (1998) 607
- Erosion and surface morphology of graphite materials under high flux beam irradiation, Y. Ueda, T. Sugai, K. Shiota, Y. Ohtsuka, Y. Isobe and M. Nishikawa 258–263 (1998) 628
- Performance and lifetime assessment of reactor wall and nearby components during plasma instabilities, A. Hassanein and I. Konkashbaev 258–263 (1998) 645
- Damages of hot-pressed boron carbide during solid target boronization in Uranan-3M torsatron, G.P. Glazunov, E.D. Volkov, O.S. Pavlichenko, V.S. Voitsenya, N.I. Nazarov, V.G. Kotenko, S. Tanaka and O. Motojima 258–263 (1998) 682
- Erosion of carbon-based materials in a steady-state deuterium plasma, B.I. Khripunov, V.B. Petrov, Yu.V. Martynenko, A.M. Litnovsky, N.V. Antonov and V.V. Shapkin 258–263 (1998) 700
- Development of multi-element doped graphite and its modification of chemical erosion, J.P. Qian, J. Roth, J.R. Song, F. Zhang, L. Yang and G.T. Zhai 258–263 (1998) 706
- High heat flux erosion of carbon fibre composite materials in the TEXTOR tokamak, H. Bolt, T. Scholz, J. Boedo, K.H. Finken and A. Hassanein 258–263 (1998) 757
- Deuterium accumulation in beryllium oxide layer exposed to deuterium atoms, V.M. Sharapov, V.K. Alimov and L.E. Gavrilov 258–263 (1998) 803
- Tritium retention study of tungsten using various hydrogen isotope irradiation sources, S. O'hira, A.

- Steinér, H. Nakamura, R. Causey, M. Nishi and S. Willms 258–263 (1998) 990
- Effects of plasma impurities on materials erosion and mixing in a steady state magnetic fusion device, Y. Hirooka 258–263 (1998) 1045
- Implantation driven permeation behavior of deuterium through stainless steel type 316L, H. Nakamura, T. Hayashi, S. O'hira, M. Nishi and K. Okuno 258–263 (1998) 1050
- Investigation on modification of plasma facing surface under long duration discharges by means of a collector probe in TRIAM-1M, T. Hirai, K. Tokunaga, T. Fujiwara, N. Yoshida, S. Itoh and TRIAM group 258–263 (1998) 1060
- Study of the retention of hydrogen isotopes implanted in Mo, K. Yamaguchi, M. Okada, O. Onoue, F. Ono and M. Yamawaki 258–263 (1998) 1104
- Experimental modelling of plasma-graphite surface interaction in ITER, Y.V. Martynenko, M.I. Guseva, V.I. Vasiliev, V.M. Gureev, L.S. Danelyan, V.E. Neumoin, V.B. Petrov, B.I. Khripunov, Y.A. Sokolov, O.V. Stativkina, V.G. Stolyarova and V.M. Strunnikov 258–263 (1998) 1120
- Analysis of error field due to ferritic steel in the advanced material testing program of JFT-2M, M. Sato, Y. Miura, S. Takeji, H. Kimura and K. Shiba 258–263 (1998) 1253
- Effect of fast Ti-deposition on gas recycling at the first wall and on fast ion losses in the GDT experiment, P.A. Bagryansky, E.D. Bender, A.A. Ivanov, A.N. Karpushov, S.V. Murachtin, K. Noack, St. Krahl and S. Collatz 265 (1999) 124
- Plutonium, Plutonium Alloys and Compounds**
- Studies on the kinetics of oxidation of  $\text{Pu}_y\text{Th}_{1-y}\text{O}_{2-x}$  ( $y = 0.2, 0.3$  and  $0.7$ ) in air, S.K. Sali, S. Sampath and V. Venugopal 252 (1998) 131
- Investigations of systems  $\text{ThO}_2\text{-MO}_2\text{-P}_2\text{O}_5$  ( $M = \text{U, Ce, Zr, Pu}$ ). Solid solutions of thorium-uranium (IV) and thorium-plutonium (IV) phosphate-diphosphates, N. Dacheux, R. Podor, V. Brandel and M. Genet 252 (1998) 179
- Characterization of corroded metallic uranium fuel plates, T.C. Totemier, R.G. Pahl, S.L. Hayes and S.M. Frank 256 (1998) 87
- Fusion R&D strategy for Japan, A. Iiyoshi 258–263 (1998) 1
- Present status and future prospect of the ITER project, R. Aymar, ITER Joint Central Team and Home Teams 258–263 (1998) 56
- Material damage to beryllium, carbon, and tungsten under severe thermal shocks, J. Linke, R. Duwe, A. Gervash, R.H. Qian, M. Rödig and A. Schuster 258–263 (1998) 634
- Weldability of neutron irradiated austenitic stainless steels, K. Asano, S. Nishimura, Y. Saito, H. Sakamoto, Y. Yamada, T. Kato and T. Hashimoto 264 (1999) 1
- Thermal vaporization and deposition of gallium oxide in hydrogen, D.P. Butt, Y. Park and T.N. Taylor 264 (1999) 71
- Stabilization of Rocky Flats Pu-contaminated ash within chemically bonded phosphate ceramics, A.S. Wagh, R. Strain, S.Y. Jeong, D. Reed, T. Krause and D. Singh 265 (1999) 295
- Polymers**
- Plasma wall interaction and plasma edge properties with radiation cooling and improved confinement in TEXTOR-94, B. Unterberg, M. Brix, R. Jaspers, A. Kreter, Y.M. Kim, M. Lehnen, Ph. Mertens, A.M. Messiaen, J. Ongena, V. Philipps, A. Pospieszczyk, U. Samm and B. Schweer 266–269 (1999) 75
- Pores (includes Porosity, Fabrication Pores)**
- The mechanical behavior of a Nicalon/SiC composite at room temperature and  $1000^\circ\text{C}$ , N. Miriyala, P.K. Liaw, C.J. McHargue and L.L. Snead 253 (1998) 1
- High magnification SEM observations for two types of granularity in a high burnup PWR fuel rim, N. Lozano, L. Desgranges, D. Aymes and J.C. Niepce 257 (1998) 78
- Weldability of neutron irradiated austenitic stainless steels, K. Asano, S. Nishimura, Y. Saito, H. Sakamoto, Y. Yamada, T. Kato and T. Hashimoto 264 (1999) 1
- Powder Processes and Products**
- Fabrication development of  $\text{Li}_2\text{O}$  pebbles, by wet process, K. Tsuchiya, K. Fuchinoue, S. Saito, K. Watarumi, T. Furuya and H. Kawamura 253 (1998) 196
- Synthesis of  $\text{Li}_2\text{TiO}_3$  ceramic breeder powders by the combustion process, C.H. Jung, J.Y. Park, S.J. Oh, H.K. Park, Y.S. Kim, D.K. Kim and J.H. Kim 253 (1998) 203
- Density dependence on thermal properties of  $\text{Li}_2\text{TiO}_3$  pellets, S. Saito,



- K. Tsuchiya, H. Kawamura, T. Terai and S. Tanaka 253 (1998) 213
- Microwave synthesis of solid solutions of urania and thoria – a comparative study, V. Chandramouli, S. Anthonysamy, P.R. Vasudeva Rao, R. Divakar and D. Sundaraman 254 (1998) 55
- Synthesis of lithium silicates, H. Pfeiffer, P. Bosch and S. Bulbulian 257 (1998) 309
- Irradiation testing of 316L(N)-IG austenitic stainless steel for ITER, E.V. van Osch, M.G. Horsten and M.I. de Vries 258–263 (1998) 301
- Development of oxide dispersion strengthened ferritic steels for fusion, D.K. Mukhopadhyay, F.H. Froes and D.S. Gelles 258–263 (1998) 1209
- Structural materials by powder HIP for fusion reactors, C. Dellis, G. Le Marois and E.V. van Osch 258–263 (1998) 1966
- Vitrification of radioactive waste by reaction sintering under pressure, W.L. Gong, W. Lutze, A. Abdelouas and R.C. Ewing 265 (1999) 12
- Combustion synthesis of thoria – a feasibility study, V. Chandramouli, S. Anthonysamy and P.R. Vasudeva Rao 265 (1999) 255
- Precipitates and Precipitation**
- Instability of ordered precipitates due to local disordering and atomic mixing under irradiation, S. Matsumura, M. Okudaira and C. Kinoshita 251 (1997) 145
- The consequences of helium production on microstructural development and deformation response in isotopically tailored ferritic alloys, D.S. Gelles, G.L. Hankin and M.L. Hamilton 251 (1997) 188
- Study on the precipitates in Zircaloy-4 by Mössbauer spectroscopy, W. Xiao and C. Ma 255 (1998) 67
- Detection of hard intermetallics in  $\beta$ -quenched and thermally aged Zircaloy-2 using ultrasonic measurements, T. Jayakumar, P. Palanichamy and B. Raj 255 (1998) 243
- Recoil tritium in 304-stainless steel: the initial distribution revisited, A.R. Dulloo and W.S. Diethorn 256 (1998) 235
- Microstructure assessment of the low activation ferritic/martensitic steel F82H, R. Schäublin, P. Spätig and M. Victoria 258–263 (1998) 1178
- A review of some effects of helium on charpy impact properties of ferritic/martensitic steels, D.S. Gelles, G.L. Hankin and M.L. Hamilton 258–263 (1998) 1216
- Influence of delta ferrite and dendritic carbides on the impact and tensile properties of a martensitic chromium steel, L. Schäfer 258–263 (1998) 1336
- Microstructural examination of irradiated V-(4–5%)Cr-(4–5%)Ti, D.S. Gelles, P.M. Rice, S.J. Zinkle and H.M. Chung 258–263 (1998) 1380
- Influence of thermal treatment on helium trapping at fine-size precipitates in V-4Cr-4Ti, A. van Veen, A.V. Fedorov and A.I. Ryazanov 258–263 (1998) 1400
- Quantitative visualization of tritium distribution in vanadium by tritium radioluminography, H. Saitoh, T. Hishi, T. Misawa, T. Ohnishi, Y. Noya, T. Matsuzaki and T. Watanabe 258–263 (1998) 1404
- Swelling behavior of V-Fe binary and V-Fe-Ti ternary alloys, K. Fukumoto, A. Kimura and H. Matsui 258–263 (1998) 1431
- Mechanical properties and microstructural characteristics of laser and electron-beam welds in V-4Cr-4Ti, H.M. Chung, J.-H. Park, R.V. Strain, K.H. Leong, D.L. Smith 258–263 (1998) 1451
- Microstructure in Martensitic Steel DIN 1.4926 after 800 MeV proton irradiation, Y. Dai, G.S. Bauer, F. Carsughi, H. Ullmaier, S.A. Maloy and W.F. Sommer 265 (1999) 203
- Pressure Vessels**
- Fractographic observations of cleavage fracture initiation in a bainitic A508 steel, M. Mäntylä, A. Rossoll, I. Nedbal, C. Prioul and B. Marini 264 (1999) 257
- The principal structural changes proceeding in Russian pressure vessel steels as a result of neutron irradiation, recovery annealing and re-irradiation, B.A. Gurovich, E.A. Kuleshova, O.V. Lavrenchuk, K.E. Prikhodko and Y.I. Shtrombakh 264 (1999) 333
- Effect of neutron flux on low temperature irradiation embrittlement of reactor pressure vessel steel, K. Dohi, T. Onchi, F. Kano, K. Fukuya, M. Narui and H. Kayano 265 (1999) 78
- Role and significance of source hardening in radiation embrittlement of iron and ferritic steels, K. Linga Murty 270 (1999) 115
- Processing**
- Dielectric spectroscopy of alumina ceramics over a wide frequency range, R. Vila, M. González, J. Mollá and A. Ibarra 253 (1998) 141
- Effect of physical vapor deposition on microstructure and properties of uranium-6 wt% niobium alloy.

- A.J. Sunwoo, T.S. Chow and C.J. Long 254 (1998) 65
- Investigation of production conditions of ThO<sub>2</sub>-UO<sub>3</sub> microspheres via the sol-gel process for pellet type fuels, H. Tel, M. Eral and Y. Altaş 256 (1998) 18
- Effects of heat treatment on grain refinement in cast uranium-0.25 wt% vanadium alloy, A.J. Sunwoo, R.N. Accardo and W.H. Gourdin 256 (1998) 53
- Preparation of lithium aluminate via polymeric precursor routes, S.W. Kwon, S.B. Park, G. Seo and S.T. Hwang 257 (1998) 172
- A feasibility study of the preparation of (U,Gd)<sub>3</sub>O<sub>8</sub> solid solutions by thermal decomposition of co-precipitated carbonate mixtures, P.V. Ravindran, K.V. Rajagopalan and P.K. Mathur 257 (1998) 189
- Synthesis of lithium silicates, H. Pfeiffer, P. Bosch and S. Bulbulian 257 (1998) 309
- Processing and microstructure of silicon carbide fiber-reinforced silicon carbide composite by hot-pressing, K. Yoshida, Budiyanto, M. Imai and T. Yano 258-263 (1998) 1960
- Characterization of U-Nb-Zr dispersion fuel prepared by centrifugal atomization process, J.-M. Park, K.-øH. Kim, D.-S. Sohn, C.-K. Kim and G.L. Hofman 265 (1999) 38
- Aging characteristics of Zr-V-Fe getters as observed by Mössbauer spectroscopy, L. Rodrigo and J.A. Sawicki 265 (1999) 208
- Proton irradiation**
- Temperature dependence of sputtering yield of carbon fiber-reinforced carbon composites with low energy and high flux deuterium ions, R. Jimbou, K. Nakamura, V. Bandourko, Y. Okumura and M. Aki-ba 258-263 (1998) 724
- Effect of cold work on void swelling in proton irradiated Fe-15Cr-20Ni ternary alloys, Y. Murase, J. Nagakawa, N. Yamamoto and H. Shiraishi 258-263 (1998) 1639
- Radiation resistance of amorphous silicon in optoelectric properties under proton bombardment, N. Kishimoto, H. Amekura, K. Kono and C.G. Lee 258-263 (1998) 1908
- Comparison of stress corrosion cracking susceptibility of thermally-sensitized and proton-irradiated 304 stainless steel using electrochemical noise techniques, L.H. Wang, J.J. Kai, C.H. Tsai and C. Fong 258-263 (1998) 2046
- Radiation Effects: Atomic Defects**
- Defect production due to displacement cascades in metals as revealed by computer simulation, D.J. Bacon, A.F. Calder and F. Gao 251 (1997) 1
- Computer simulation of vacancy and interstitial clusters in bcc and fcc metals, Yu.N. Osetsky, M. Victoria, A. Serra, S.I. Golubov and V. Priego 251 (1997) 34
- Primary damage formation in bcc iron, R.E. Stoller, G.R. Odette and B.D. Wirth 251 (1997) 49
- The influence of dynamical structural relaxation of point defect clusters on void formation in irradiated copper, Y. Shimomura, I. Mukouda and K. Sugio 251 (1997) 61
- Stochastic annealing simulation of intracascade defect interactions, H.L. Heinisch and B.N. Singh 251 (1997) 77
- Disorder-induced amorphization, N.Q. Lam, P.R. Okamoto and M. Li 251 (1997) 89
- Atom transport under ion irradiation, P. Fielitz, M.-P. Macht, V. Naundorf and H. Wollenberger 251 (1997) 123
- Studies of defects and defect agglomerates by positron annihilation spectroscopy, M. Eldrup and B.N. Singh 251 (1997) 132
- Defect production in ceramics, S.J. Zinkle and C. Kinoshita 251 (1997) 200
- Defect interaction processes controlling the accumulation of defects produced by high energy recoils, M. Kiritani 251 (1997) 237
- Strains and stresses in ceramics by defect accumulation, P. Jung, Z. Zhu and J. Chen 251 (1997) 276
- Displacement threshold energies in β-SiC, R. Devanathan, T.D. de la Rubia and W.J. Weber 253 (1998) 47
- Damage calculation in fusion ceramics: comparing neutrons and light ions, P.V. Vladimirov, D. Lizunov, Yu.A.I. Ryazanov and A. Möslang 253 (1998) 104
- The effect of composition, processing conditions, and irradiation, on lattice defects in spinel ceramics, T.A. Bazilevskaya, V.T. Gritsyna, D.V. Orlinski, L.V. Udalova and A.V. Voitsenya 253 (1998) 133
- A molecular dynamics study of high-energy displacement cascades in α-zirconium, S.J. Wooding, L.M. Howe, F. Gao, A.F. Calder and D.J. Bacon 254 (1998) 191
- Accumulation and recovery of irradiation damage in He<sup>+</sup> implanted α-SiC, W. Jiang, W.J. Weber, S. Thevuthasan and D.E. McCready 257 (1998) 295

- Impacts of damage production and accumulation on materials performance in irradiation environment, B.N. Singh 258–263 (1998) 18
- Water-cooled Pb-17Li test blanket module for ITER: Impact of the structural material grade on the neutronic responses, G. Vella, G. Aiello, M.A. Fütterer, L. Giancarli, E. Oliveri and F. Tavassoli 258–263 (1998) 357
- Production behavior of irradiation defects in ternary lithium ceramics under ion beam irradiation, K. Moritani and H. Moriyama 258–263 (1998) 525
- Study on interaction of hydrogen isotopes with radiolysis products in lithium oxide, V. Grišmanovs, M. Taniguchi, S. Tanaka and T. Yoneoka 258–263 (1998) 537
- Irradiation effects in ceramic breeder materials, H. Moriyama, S. Tanaka and K. Noda 258–263 (1998) 587
- Deuterium retention in tungsten for fusion use, A.A. Haasz, J.W. Davis, M. Poon and R.G. Macaulay-Newcombe 258–263 (1998) 889
- Helium-vacancy clustering in V-4Cr-4Ti at elevated temperatures, A.V. Fedorov, A. van Veen and A.I. Ryazanov 258–263 (1998) 1396
- Influence of thermal treatment on helium trapping at fine-size precipitates in V-4Cr-4Ti, A. van Veen, A.V. Fedorov and A.I. Ryazanov 258–263 (1998) 1400
- Production and recovery of defects in SiC after irradiation and deformation, J. Chen, P. Jung and H. Klein 258–263 (1998) 1803
- Radiation effects on dielectric losses of Au-doped silicon, J. Molla, R. Vila, R. Heidinger and A. Ibarra 258–263 (1998) 1884
- Defect production and recovery in high- $T_c$  superconductors irradiated with electrons and ions at low temperature, N. Ishikawa, Y. Chimi, A. Iwase, K. Tsuru, O. Michikami 258–263 (1998) 1924
- Electronic ion energy loss calculations on the basis of the binary encounter approximation, C.A. Ordóñez, D.R. Bickel, V.C. Venezia, F.D. McDaniel, S.E. Matteson and M.I. Molina 264 (1999) 133
- Range, energy loss, energy straggling and damage production for  $\alpha$ -particles in uranium dioxide, Hj. Matzke 270 (1999) 49
- Radiation Effects: Extended Defects, Microstructures**
- Electron energy-loss spectroscopy (EELS) study of oxidation states of Ce and U in pyrochlore and uraninite – natural analogues for Pu- and U-bearing waste forms, H. Xu and Y. Wang 265 (1999) 117
- Microstructure in Martensitic Steel DIN 1.4926 after 800 MeV proton irradiation, Y. Dai, G.S. Bauer, F. Carsughi, H. Ullmaier, S.A. Maloy and W.F. Sommer 265 (1999) 203
- Radiation Effects: Extended Defects, Microstructures**
- Defect production due to displacement cascades in metals as revealed by computer simulation, D.J. Bacon, A.F. Calder and F. Gao 251 (1997) 1
- Primary damage formation in bcc iron, R.E. Stoller, G.R. Odette and B.D. Wirth 251 (1997) 49
- Stochastic annealing simulation of intracascade defect interactions, H.L. Heinisch and B.N. Singh 251 (1997) 77
- Alloys under irradiation, G. Martin, P. Bellon and F. Soisson 251 (1997) 86
- Aspects of microstructure evolution under cascade damage conditions, B.N. Singh, S.I. Golubov, H. Trinkaus, A. Serra, Yu.N. Osetsky and A.V. Barashev 251 (1997) 107
- Instability of ordered precipitates due to local disordering and atomic mixing under irradiation, S. Matsumura, M. Okudaira and C. Kinoshita 251 (1997) 145
- Segregation of cascade induced interstitial loops at dislocations: possible effect on initiation of plastic deformation, H. Trinkaus, B.N. Singh and A.J.E. Foreman 251 (1997) 172
- The consequences of helium production on microstructural development and deformation response in isotopically tailored ferritic alloys, D.S. Gelles, G.L. Hankin and M.L. Hamilton 251 (1997) 188
- Defect production in ceramics, S.J. Zinkle and C. Kinoshita 251 (1997) 200
- Defects in high- $T_c$  superconductors after ion irradiation, B. Hensel 251 (1997) 218
- A review of in situ observation of defect production with energetic heavy ions, S. Ishino 251 (1997) 225
- Defect interaction processes controlling the accumulation of defects produced by high energy recoils, M. Kiritani 251 (1997) 237
- Radiation-induced grain boundary segregation in nuclear reactor steels, R.G. Faulkner 251 (1997) 269
- Temperature and fission rate effects on the rim structure formation in a UO<sub>2</sub> fuel with a burnup of 7.9% FIMA, M. Kinoshita, T. Kameyama, S. Kitajima and Hj. Matzke 252 (1998) 71
- Mechanical properties and microstructure of neutron irradiated cold worked Al-6063 alloy, A. Munitz,

- A. Shtechman, C. Cotler, M. Talianker and S. Dahan 252 (1998) 79
- Irradiation-induced amorphization in  $\beta$ -SiC, W.J. Weber, N. Yu and L.M. Wang 253 (1998) 53
- X-ray diffractometry and high-resolution electron microscopy of neutron-irradiated SiC to a fluence of  $1.9 \times 10^{27}$  n/m<sup>2</sup>, T. Yano, H. Miyazaki, M. Akiyoshi and T. Iseki 253 (1998) 78
- Effects of ionizing radiation in ceramics, R. Devanathan, K.E. Sickafus, W.J. Weber and M. Nastasi 253 (1998) 113
- Microstructure of Al<sub>2</sub>O<sub>3</sub> and MgAl<sub>2</sub>O<sub>4</sub> irradiated at low temperatures, S.J. Zinkle and G.P. Pells 253 (1998) 120
- Radiation-induced electrical degradation: an effect of surface conductance and microcracking, W. Kesternich 253 (1998) 167
- Effect of neutron radiation on the dielectric, mechanical and thermal properties of ceramics for rf transmission windows, C. Hazelton, J. Rice, L.L. Snead and S.J. Zinkle 253 (1998) 190
- The influence of neutron irradiation on the microstructures of Al<sub>2</sub>O<sub>3</sub>, MgAl<sub>2</sub>O<sub>4</sub>, Y<sub>3</sub>Al<sub>5</sub>O<sub>12</sub> and CeO<sub>2</sub>, R.J.M. Konings, K. Bakker, J.G. Boshoven, R. Conrad and H. Hein 254 (1998) 135
- Small angle neutron scattering investigations of the microstructure of VVER-440-type reactor pressure vessel steel after irradiation at 60°C, M. Grosse, J. Boehmert and R. Gilles 254 (1998) 143
- Void swelling in Fe-15Cr- $x$ Ni Ternary alloys under proton irradiation, Y. Murase, J. Nagakawa, N. Yamamoto and H. Shiraiishi 255 (1998) 34
- Swelling modification by one-dimensional diffusion of cascade-produced small interstitial clusters, V.A. Borodin and A.I. Ryazanov 256 (1998) 47
- Comments on the paper 'Phase diagram calculations of the U-Pu-N system with carbon and oxygen impurities', by D.D. Sood, R. Agarwal, V. Venugopal [Journal of Nuclear Materials 247 (1997) 293], G.C. Jain 256 (1998) 85
- Impacts of damage production and accumulation on materials performance in irradiation environment, B.N. Singh 258-263 (1998) 18
- Atomic processes during damage production and defect retention, N.M. Ghoniem 258-263 (1998) 113
- The influence of neutron spectrum and irradiation history on microstructural evolution in fusion structural materials, T. Muroga, S. Ohnuki, F.A. Garner and S.J. Zinkle 258-263 (1998) 130
- Impacts of charge-exchange neutrals on degradation of plasma-facing materials, N. Yoshida and Y. Hirooka 258-263 (1998) 173
- Austenitic stainless steels and high strength copper alloys for fusion components, A.F. Rowcliffe, S.J. Zinkle, J.F. Stubbins, D.J. Edwards and D.J. Alexander 258-263 (1998) 183
- Development of a triple beam irradiation facility, S. Hamada, Y. Miwa, D. Yamaki, Y. Katano, T. Nakazawa and K. Noda 258-263 (1998) 383
- Reassessment of Li colloid production and characterization in irradiated Li<sub>2</sub>O, P. Vajda and F. Beuneu 258-263 (1998) 495
- Molecular dynamics simulation of atomic beam bombardment on a solid surface, K. Ezato and T. Kunugi 258-263 (1998) 618
- Gas bubbles in beryllium implanted with He ions at temperatures  $\leq 700$  K and after post-implantation annealing, V.N. Chernikov, H. Ullmaier and A.P. Zakharov 258-263 (1998) 694
- Microstructural study of hydrogen-implanted beryllium, S.P. Vagin, P.V. Chakrov, B.D. Utkelbayev, L.A. Jacobson, R.D. Field and H. Kung 258-263 (1998) 719
- Investigation of ITER candidate beryllium grades irradiated at high temperature, I.B. Kupriyanov, V.A. Gorokhov, R.R. Melder, Z.E. Ostrovsky and A.A. Gervash 258-263 (1998) 808
- Effects of neutron irradiation on microstructure and deformation behaviour of mono- and polycrystalline molybdenum and its alloys, B.N. Singh, J.H. Evans, A. Horsewell, P. Toft and G.V. Müller 258-263 (1998) 865
- Microstructure of tantalum irradiated with heavy ions, K. Yasunaga, H. Watanabe, N. Yoshida, T. Muroga and N. Noda 258-263 (1998) 879
- Neutron irradiation embrittlement of molybdenum rhenium alloys and their improvement by heat treatment, A. Hasegawa, K. Ueda, M. Satou and K. Abe 258-263 (1998) 902
- Microstructural evolution in Cu-A125 alloy under 300 keV Cu<sup>+</sup> ion irradiation, J. Li, H. Xu, J. Yu, B. Wu and Q. He 258-263 (1998) 945
- Effects of solid transmutants and helium in copper studied by mixed-spectrum neutron irradiation, T. Muroga, H. Watanabe and N. Yoshida 258-263 (1998) 955
- Investigation on modification of plasma facing surface under long dura-

- tion discharges by means of a collector probe in TRIAM-1M, T. Hirai, K. Tokunaga, T. Fujiwara, N. Yoshida, S. Itoh and TRIAM group 258–263 (1998) 1060
- Microstructure assessment of the low activation ferritic/martensitic steel F82H, R. Schäublin, P. Spätig and M. Victoria 258–263 (1998) 1178
- Microstructural examination of irradiated 258–263 (1998) 1178
- Temperature dependence of the radiation damage microstructure in V–4Cr–4Ti neutron irradiated to low dose, P.M. Rice and S.J. Zinkle 258–263 (1998) 1414
- Tensile and impact properties of vanadium-base alloys irradiated at <430°C, H.M. Chung and D.L. Smith 258–263 (1998) 1442
- Swelling behaviour and TEM studies of SiC<sub>f</sub>/SiC composites after fusion relevant helium implantation, H.W. Scholz, A.J. Frias Rebelo, D.G. Rickerby, P. Krogul, W.E. Lee, J.H. Evans and P. Fenici 258–263 (1998) 1572
- Effect of cold work on void swelling in proton irradiated Fe–15Cr–20Ni ternary alloys, Y. Murase, J. Nagakawa, N. Yamamoto and H. Shiraishi 258–263 (1998) 1639
- Mechanical properties and damage behavior of non-magnetic high manganese austenitic steels, H. Takahashi, Y. Shindo, H. Kinoshita, T. Shibayama, S. Ishiyama, K. Fukaya, M. Eto, M. Kusuhashi, T. Hatakeyama and I. Sato 258–263 (1998) 1644
- The structural evolution of new low-activation and chromium–nickel stainless steels under high-dose irradiation up to 200 dpa, V.V. Sagaradze, S.S. Lapin, B.N. Goshchitskii and M.A. Kirk 258–263 (1998) 1675
- The effect of tritium and low-temperature neutron irradiation at 77 K on the structure and mechanical properties of reactor steels, B.N. Goshchitskii, V.V. Sagaradze, V.L. Arbuzov, S.S. Lapin, Yu.N. Zuev, I.V. Podgornova, V.D. Parkhomenko, A.V. Kozlov 258–263 (1998) 1681
- Microchemical and microstructural changes of austenitic steels caused by proton irradiation following helium implantation, T. Fukuda, T. Aoki, Y. Isobe, T. Furuya, A. Hasegawa and K. Abe 258–263 (1998) 1694
- Nucleation and growth of dislocation loops in austenitic stainless steels irradiated by fission and fusion neutrons, Q. Xu, N. Yoshida and T. Yoshiie 258–263 (1998) 1730
- Effect of light impurities on the early stage of swelling in austenitic stainless steel, N. Igata, A. Ryazanov and D.N. Korolev 258–263 (1998) 1735
- Effects of Mn and Si additions on microstructural development in TiAl intermetallic compounds irradiated with He-ions, O. Okada, K. Nakata, K. Fukai, A. Hishinuma and K. Ameyama 258–263 (1998) 1750
- Radiation effects on Al<sub>2</sub>O<sub>3</sub> irradiated with H<sub>2</sub><sup>+</sup> ions, S. Furuno, N. Sasajima, K. Hojou, K. Izui, H. Otsu and T. Matsui 258–263 (1998) 1817
- In situ observation of microstructural development during electron irradiation in Al<sub>2</sub>O<sub>3</sub> containing Cr<sub>2</sub>O<sub>3</sub> or TiO<sub>2</sub>, K. Nakata, Y. Katano and K. Noda 258–263 (1998) 1831
- Damage structure evolution in Al<sub>2</sub>O<sub>3</sub> irradiated with multiple ion beams of H, He and O and after annealing, Y. Katano, T. Nakazawa, D. Yamaki, T. Aruga and K. Noda 258–263 (1998) 1842
- Mechanical properties and microstructure of  $\alpha$ -alumina and magnesium aluminate spinel irradiated with He ions, K. Izumi, K. Yasuda, C. Kinoshita and M. Kutsuwada 258–263 (1998) 1856
- On the choice of materials for the first mirrors of plasma diagnostics in a fusion reactor, V.S. Voitsenya, A.F. Bardamid, V.T. Gritsyna, V.G. Kononov, O. Motojima, D.V. Orlinkij, R. Palladino, B.J. Peterson, A.N. Shapoval, A.F. Shtan, S.I. Solodovchenko, K.I. Yakimov and K. Young 258–263 (1998) 1919
- Effects of grain boundary misorientation on the solute segregation in austenitic stainless steels, T.S. Duh, J.J. Kai, F.R. Chen and L.H. Wang 258–263 (1998) 2064
- Neutron irradiation experiments for fusion reactor materials through JUPITER program, K. Abe, A. Kohyama, C. Namba, F.W. Wiffen and R.H. Jones 258–263 (1998) 2075
- Damage structures in fission-neutron irradiated Ni-based alloys at high temperatures, K. Yamakawa and Y. Shimomura 264 (1999) 319
- Helium-bubble formation behavior of SiC<sub>f</sub>/SiC composites after helium implantation, A. Hasegawa, M. Saito, S. Nogami, K. Abe, R.H. Jones and H. Takahashi 264 (1999) 355
- High burnup effects on fuel behaviour under accident conditions: the tests CABRI REP-Na, F. Schmitz and J. Papin 270 (1999) 55

- Characterization of UO<sub>2</sub> irradiated in the BR-3 reactor, S.K. Yagnik, A.J. Machiels and R.L. Yang 270 (1999) 65
- Microchemistry and microstructure of proton-irradiated austenitic alloys: toward an understanding of irradiation effects in LWR core components, G.S. Was, T.R. Allen, J.T. Busby, J. Gan, D. Damcott, D. Carter, M. Atzmon and E.A. Kenik 270 (1999) 96
- Radiation Effects: Mechanical Properties**
- Segregation of cascade induced interstitial loops at dislocations: possible effect on initiation of plastic deformation, H. Trinkaus, B.N. Singh and A.J.E. Foreman 251 (1997) 172
- Low temperature mechanical properties of steels containing high concentrations of helium, H. Ullmaier and E. Camus 251 (1997) 262
- Neutron irradiation and intergranular fracture in vanadium-20 wt% titanium alloys undoped and doped with phosphorus and sulfur, J. Kameda, T.E. Bloomer, A.H. Swanson and D.Y. Lyu 252 (1998) 1
- Mechanical properties and microstructure of neutron irradiated cold worked Al-6063 alloy, A. Munitz, A. Shtechman, C. Cotler, M. Talianker and S. Dahan 252 (1998) 79
- Relationship between in-reactor stress relaxation and irradiation creep, J.P. Foster, E.R. Gilbert, K. Bunde and D.L. Porter 252 (1998) 89
- Post-yield strain hardening behavior as a clue to understanding irradiation hardening, R.J. DiMelfi, D.E. Alexander and L.E. Rehn 252 (1998) 171
- Low dose irradiation performance of SiC interphase SiC/SiC composites, L.L. Snead, M.C. Osborne, R.A. Lowden, J. Strizak, R.J. Shinavski, K.L. More, W.S. Eatherly, J. Bailey and A.M. Williams 253 (1998) 20
- Helium implantation effects on mechanical properties of SiC<sub>f</sub>/SiC composites, A. Hasegawa, M. Saito, K. Abe and R.H. Jones 253 (1998) 31
- Irradiation-enhanced creep in SiC: data summary and planned experiments, C.A. Lewinsohn, M.L. Hamilton, G.E. Youngblood, R.H. Jones, F.A. Garner, S.L. Hecht and A. Kohyama 253 (1998) 36
- Dimensional stability and tensile strength of irradiated Nicalon-CG and Hi-Nicalon fibers, C.H. Henager, G.E. Youngblood, D.J. Senor, G.A. Newsome and J.J. Woods 253 (1998) 60
- Effect of neutron radiation on the dielectric, mechanical and thermal properties of ceramics for rf transmission windows, C. Hazleton, J. Rice, L.L. Snead and S.J. Zinkle 253 (1998) 190
- Deuteron irradiation creep of chemically vapor deposited silicon carbide fibers, R. Scholz 254 (1998) 74
- The effects of  $\gamma$ -irradiation on subcritical crack growth in alumina, G.P. Pells and R.M. Boothby 256 (1998) 25
- Effect of oxygen on the operation of a single-cell thermionic fuel element, D.V. Paramonov and M.S. El-Genk 256 (1998) 218
- Comments on the paper 'Phase diagram calculations of the U-Pu-N system with carbon and oxygen impurities', by D.D. Sood, R. Agarwal, V. Venugopal [Journal of Nuclear Materials 247 (1997) 293], G.C. Jain 256 (1998) 85
- Stress state dependence of transient irradiation creep in 20% cold worked 316 stainless steel, J.P. Foster, K. Bunde and E.R. Gilbert 257 (1998) 118
- Internal friction and anelastic properties of vanadium and V-Ti-Cr alloys, V.M. Chernov, B.K. Kardashev, L.M. Krjukova, L.I. Mamaev, O.A. Plaksin, A.E. Rusanov, M.I. Solonin, V.A. Stepanov, S.N. Votinov and L.P. Zavialski 257 (1998) 263
- Impacts of damage production and accumulation on materials performance in irradiation environment, B.N. Singh 258-263 (1998) 18
- Materials integration issues for high performance fusion power systems, D.L. Smith, M.C. Billone, S. Majumdar, R.F. Mattas and D.-K. Sze 258-263 (1998) 65
- Hydrogen inventory and embrittlement in low activation steels, P. Jung 258-263 (1998) 124
- Austenitic stainless steels and high strength copper alloys for fusion components, A.F. Rowcliffe, S.J. Zinkle, J.F. Stubbins, D.J. Edwards and D.J. Alexander 258-263 (1998) 183
- Current status and future R&D for reduced-activation ferritic/martensitic steels, A. Hishinuma, A. Kohyama, R.L. Klueh, D.S. Gelles, W. Dietz and K. Ehrlich 258-263 (1998) 193
- Research and development on vanadium alloys for fusion applications, S.J. Zinkle, H. Matsui, D.L. Smith, A.F. Rowcliffe, E. van Osch, K. Abe and V.A. Kazakov 258-263 (1998) 205
- Current status of SiC/SiC composites R&D, P. Fenici, A.J. Frias Rebelo, R.H. Jones, A. Kohyama and L.L. Snead 258-263 (1998) 215

- General radiation problems for insulating materials in future fusion devices, E.R. Hodgson 258–263 (1998) 226
- Current status and future of IASCC research, T. Shoji, S. Suzuki and K.S. Raja 258–263 (1998) 241
- Calculation of radiation-induced deformation in the ITER vacuum vessel, J. Nagakawa 258–263 (1998) 289
- Irradiation testing of 316L(N)-IG austenitic stainless steel for ITER, E.V. van Osch, M.G. Horsten and M.I. de Vries 258–263 (1998) 301
- Assessment of tungsten for use in the ITER plasma facing components, J.W. Davis, V.R. Barabash, A. Makhankov, L. Plöchl and K.T. Slattery 258–263 (1998) 308
- Examination of indentation geometry-constitutive behaviour relations with confocal microscopy and finite element modeling, C. Santos, G.R. Odette, G.E. Lucas and T. Yamamoto 258–263 (1998) 452
- Deformation analysis of small size bend specimens by FEM calculation to estimate irradiation induced embrittlement of Mo and W, K. Ueda, M. Satou, A. Hasegawa and K. Abe 258–263 (1998) 466
- Microstructure and mechanical properties of neutron irradiated beryllium, E. Ishitsuka, H. Kawamura, T. Terai and S. Tanaka 258–263 (1998) 566
- Investigation of ITER candidate beryllium grades irradiated at high temperature, I.B. Kupriyanov, V.A. Gorokhov, R.R. Melder, Z.E. Ostrovsky and A.A. Gervash 258–263 (1998) 808
- Effects of neutron irradiation on microstructure and deformation behaviour of mono- and polycrystalline molybdenum and its alloys, B.N. Singh, J.H. Evans, A. Horsewell, P. Toft and G.V. Müller 258–263 (1998) 865
- Hardening behavior of molybdenum by low energy He and D ion irradiation, H. Iwakiri, H. Wakimoto, H. Watanabe and N. Yoshida 258–263 (1998) 873
- Neutron irradiation embrittlement of molybdenum rhenium alloys and their improvement by heat treatment, A. Hasegawa, K. Ueda, M. Satou and K. Abe 258–263 (1998) 902
- The effect of bonding and bakeout thermal cycles on the properties of copper alloys irradiated at 100°C, D.J. Edwards, B.N. Singh, P. Toft and M. Eldrup 258–263 (1998) 978
- Irradiation embrittlement of  $2\frac{1}{2}$ Cr–1Mo steel at 400°C and its electrochemical evaluation, Y. Nishiya, K. Fukaya, M. Suzuki and M. Eto 258–263 (1998) 1187
- Enhancement of irradiation hardening by nickel addition in the reduced-activation 9Cr–2W martensitic steel, R. Kasada, A. Kimura, H. Matsui and M. Narui 258–263 (1998) 1199
- Superior Charpy impact properties of ODS ferritic steel irradiated in JOYO, T. Kuwabara, H. Kurishita, S. Ukai, M. Narui, S. Mizuta, M. Yamazaki and H. Kayano 258–263 (1998) 1236
- Fracture toughness and tensile behavior of ferritic–martensitic steels irradiated at low temperatures, A.F. Rowcliffe, J.P. Robertson, R.L. Klueh, K. Shiba, D.J. Alexander, M.L. Grossbeck and S. Jitsukawa 258–263 (1998) 1275
- Production of low activation steel; JLF-1, large heats – Current status and future plan, A. Kohyama, Y. Kohno, M. Kuroda, A. Kimura and F. Wan 258–263 (1998) 1319
- Effect of neutron irradiation at low temperature on the embrittlement of the reduced-activation ferritic steels, V.V. Rybin, I.P. Kursevich and A.N. Lapin 258–263 (1998) 1324
- Evolution of the mechanical properties of the F82H ferritic/martensitic steel after 590 MeV proton irradiation, P. Spätig, R. Schäublin, S. Gyger and M. Victoria 258–263 (1998) 1345
- Effect of small additional elements on DBTT of V–4Cr–4Ti irradiated at low temperatures, T. Shibayama, I. Yamagata, H. Kayano and C. Namba 258–263 (1998) 1361
- Temperature dependence of the radiation damage microstructure in V–4Cr–4Ti neutron irradiated to low dose, P.M. Rice and S.J. Zinkle 258–263 (1998) 1414
- Microstructure of V–4Cr–4Ti alloy after low-temperature irradiation by ions and neutrons, J. Gazda, M. Meshii and H.M. Chung 258–263 (1998) 1437
- Irradiation creep of vanadium-base alloys, H. Tsai, H. Matsui, M.C. Billone, R.V. Strain and D.L. Smith 258–263 (1998) 1471
- Radiation hardening of V–C, V–O, V–N alloys neutron-irradiated to high fluences, T. Chuto, M. Satou and K. Abe 258–263 (1998) 1502
- Revision of the tensile database for V–Ti and V–Cr–Ti alloys tested at ANL, M.C. Billone, H.M. Chung and D.L. Smith 258–263 (1998) 1523
- Influence of neutron irradiation on mechanical properties of vanadium/ceramics joints, R. Yasuda, M. Satou, A. Hasegawa and K. Abe 258–263 (1998) 1528

- Light ion irradiation creep of SiC fibers in torsion, R. Scholz 258–263 (1998) 1533
- Fiber creep rate and high-temperature properties of SiC/SiC composites, C.A. Lewinsohn, R.H. Jones, G.E. Youngblood and C.H. Henager Jr. 258–263 (1998) 1557
- Interface strength of SiC/SiC composites with and without helium implantation using micro-indentation test, M. Saito, A. Hasegawa, S. Ohtsuka and K. Abe 258–263 (1998) 1562
- Comparison of the mechanical behaviour of SiC<sub>f</sub>/SiC composites following neutron irradiation and helium implantation, A.J. Frias Rebelo, H.W. Scholz, H. Kolbe, G.P. Tartaglia and P. Fenici 258–263 (1998) 1582
- Microstructural observation of helium implanted and creep ruptured Fe–25%Ni–15%Cr alloys containing various MC and MN formers, N. Yamamoto, J. Nagakawa, Y. Murase and H. Shiraishi 258–263 (1998) 1628
- Effect of combined addition of Ti and P on creep rupture properties of helium implanted Fe–25%Ni–15%Cr alloy, N. Yamamoto, J. Nagakawa, Y. Murase and H. Shiraishi 258–263 (1998) 1634
- Validation of the shear punch–tensile correlation technique using irradiated materials, G.L. Hankin, M.B. Toloczko, M.L. Hamilton and R.G. Faulkner 258–263 (1998) 1651
- Shear punch testing of <sup>59</sup>Ni isotopically-doped model austenitic alloys after irradiation in FFTF at different He/dpa ratios, G.L. Hankin, M.B. Toloczko, M.L. Hamilton, F.A. Garner and R.G. Faulkner 258–263 (1998) 1657
- Effects of annealing on the tensile properties of irradiated austenitic stainless steel, I. Ioka, A. Naito, K. Shiba, J.P. Robertson, S. Jitsukawa and A. Hishinuma 258–263 (1998) 1664
- The effect of tritium and low-temperature neutron irradiation at 77 K on the structure and mechanical properties of reactor steels, B.N. Goshchitskii, V.V. Sagardze, V.L. Arbuzov, S.S. Lapin, Yu.N. Zuev, I.V. Podgornova, V.D. Parkhomenko, A.V. Kozlov 258–263 (1998) 1681
- High-cycle fatigue tests of modified 316 stainless steels under 20 MeV proton irradiation and thermal pulses, H. Mizubayashi, K. Tateishi, H. Tanimoto and K. Nakata 258–263 (1998) 1725
- Cr–Ni alloys for fusion reactors, M.I. Solonin, A.B. Alekseev, S.A. Averin, Y.A. Burenkov, V.M. Chernov, B.K. Kardashev, V.P. Kondrat'ev, A.V. Kozlov, V.N. Rechitsky and S.N. Votinov 258–263 (1998) 1762
- Mechanical properties and microstructure of  $\alpha$ -alumina and magnesium aluminate spinel irradiated with He ions, K. Izumi, K. Yasuda, C. Kinoshita and M. Kutsuwada 258–263 (1998) 1856
- Investigation of cryogenic irradiation influence on mechanical and physical properties of ITER magnetic system insulation materials, A.V. Kozlov, E.N. Scherbacov, N.A. Dudchenko, V.S. Shihalev, V.V. Bedin, N.A. Paltusov and V.E. Korsunskiy 258–263 (1998) 1878
- The effect of helium accumulation and radiation damage on the weldability of 316-type steel, S.A. Fabritsiev and A.S. Pokrovskiy 258–263 (1998) 1991
- Shape memory characteristics of neutron irradiated Ti–Ni shape memory alloy couplers, T. Hoshiya, M. Ohmi, Y. Matsui and M. Nishikawa 258–263 (1998) 2036
- Neutron irradiation experiments for fusion reactor materials through JUPITER program, K. Abe, A. Kohyama, C. Namba, F.W. Wiffen and R.H. Jones 258–263 (1998) 2075
- Investigations on Inconel 718 irradiated with 800 MeV protons, F. Carsughi, H. Derz, P. Ferguson, G. Pott, W. Sommer and H. Ullmaier 264 (1999) 78
- The principal structural changes proceeding in Russian pressure vessel steels as a result of neutron irradiation, recovery annealing and re-irradiation, B.A. Gurovich, E.A. Kuleshova, O.V. Lavrenchuk, K.E. Prikhodko and Y.I. Shtrombakh 264 (1999) 333
- Microstructure in Martensitic Steel DIN 1.4926 after 800 MeV proton irradiation, Y. Dai, G.S. Bauer, F. Carsughi, H. Ullmaier, S.A. Maloy and W.F. Sommer 265 (1999) 203
- Effect of heat treatment and irradiation temperature on impact properties of Cr–W–V ferritic steels, R.L. Klueh and D.J. Alexander 265 (1999) 262
- High burnup effects on fuel behaviour under accident conditions: the tests CABRI REP-Na, F. Schmitz and J. Papin 270 (1999) 55
- Characterization of UO<sub>2</sub> irradiated in the BR-3 reactor, S.K. Yagnik, A.J. Machiels and R.L. Yang 270 (1999) 65
- Microchemistry and microstructure of proton-irradiated austenitic alloys: toward an understanding of irradiation effects in LWR core com-



- ponents, G.S. Was, T.R. Allen, J.T. Busby, J. Gan, D. Damcott, D. Carter, M. Atzmon and E.A. Kenik 270 (1999) 96
- Radiation Effects: Physical Properties**
- Heat and mass transport in nanoscale phase transitions induced by collision cascades, A. Caro, M. Alurralde, R. Saliba and M. Caro 251 (1997) 72
- Behavior and computer simulation of SiC under irradiation with energetic particles, J.M. Perlado 251 (1997) 98
- Defects in high- $T_c$  superconductors after ion irradiation, B. Hensel 251 (1897) 218
- Radiation-induced electrical conductivity in aluminium nitride ceramic, U. Ulmanis and E. Palcevskis 252 (1998) 195
- Low dose irradiation performance of SiC interphase SiC/SiC composites, L.L. Snead, M.C. Osborne, R.A. Lowden, J. Strizak, R.J. Shinavski, K.L. More, W.S. Eatherly, J. Bailey and A.M. Williams 253 (1998) 20
- Dimensional stability and tensile strength of irradiated Nicalon-CG and Hi-Nicalon fibers, C.H. Heager, G.E. Youngblood, D.J. Senor, G.A. Newsome and J.J. Woods 253 (1998) 60
- The effect of composition, processing conditions, and irradiation, on lattice defects in spinel ceramics, T.A. Bazilevskaya, V.T. Gritsyna, D.V. Orlinski, L.V. Udalova and A.V. Voitsenya 253 (1998) 133
- Electrical conductivity change in single crystal  $Al_2O_3$  and MgO under neutron and gamma-ray irradiation, T. Tanifuji, Y. Katano, T. Nakazawa and K. Noda 253 (1998) 156
- Radiation-induced electrical degradation: an effect of surface conductance and microcracking, W. Kesternich 253 (1998) 167
- Electrical and optical characteristics of dielectrics for fusion use under irradiation, V.M. Chernov, G.L. Khorasanov, O.A. Plaksin, V.A. Stepanov, P.A. Stepanov and V.A. Belyakov 253 (1998) 175
- Growth of optical transmission loss at 850 nm in silica core optical fibers during fission reactor irradiation, T. Shikama, T. Kakuta, M. Narui and T. Sagawa 253 (1998) 180
- Effect of neutron radiation on the dielectric, mechanical and thermal properties of ceramics for rf transmission windows, C. Hazelton, J. Rice, L.L. Snead and S.J. Zinkle 253 (1998) 190
- Radioluminescence in amorphous silica: temperature dependence and relaxation, D.W. Cooke, B.L. Bennett, E.H. Farnum, D.E. Thomas and A.M. Portis 255 (1998) 180
- Carbon fiber composites application in ITER plasma facing components, V. Barabash, M. Akiba, J.P. Bonal, G. Federici, R. Matera, K. Nakamura, H.D. Pacher, M. Rödig, G. Vieider and C.H. Wu 258–263 (1998) 149
- Current status of SiC/SiC composites R&D, P. Fenici, A.J. Frias Rebelo, R.H. Jones, A. Kohyama and L.L. Snead 258–263 (1998) 215
- General radiation problems for insulating materials in future fusion devices, E.R. Hodgson 258–263 (1998) 226
- Reassessment of Li colloid production and characterization in irradiated  $Li_2O$ , P. Vajda and F. Beuneu 258–263 (1998) 495
- Steam-chemical reactivity for irradiated beryllium, R.A. Anderl, K.A. McCarthy, M.A. Oates, D.A. Petti, R.J. Pawelko and G.R. Smolik 258–263 (1998) 750
- Production of low activation steel; JLF-1, large heats – Current status and future plan, A. Kohyama, Y. Kohno, M. Kuroda, A. Kimura and F. Wan 258–263 (1998) 1319
- Effect of neutron irradiation on swelling, elastic modulus and thermal conductivity of V–Ga alloys, A.I. Dediurin, Y.M. Platov, M.I. Zakharova, I.V. Borovitskaja and N.A. Artemov 258–263 (1998) 1409
- Radiation response of SiC-based fibers, G.E. Youngblood, R.H. Jones, A. Kohyama and L.L. Snead 258–263 (1998) 1551
- Role of environment on the surface degradation of Wesgo AL995, A. Moroño, E.R. Hodgson 258–263 (1998) 1798
- Radiation swelling decrease by means of explosive wave, V.M. Kosenkov, S.A. Vorobjev and A.V. Kolesnikov 258–263 (1998) 1809
- Effects of DD and DT neutron irradiation on some Si devices for fusion diagnostics, Y. Tanimura and T. Iida 258–263 (1998) 1812
- Pre- and post-irradiation studies on mm-wave losses in reference window materials for electron cyclotron wave systems, R. Heidinger, A. Ibarra and J. Molla 258–263 (1998) 1822
- Radiation effects on insulating gases for the ITER NBI system, E.R. Hodgson and A. Moroño 258–263 (1998) 1827
- Neutron-induced damage in near-stoichiometric spinel ceramics irradiated below 200°C and its recovery due to annealing, T. Yano, A. Insani, H. Sawada and T. Iseki 258–263 (1998) 1836

- Electrical conductivity and current-voltage characteristics of alumina with or without neutron and electron irradiation, K. Shiiyama, M.M.R. Howlader, S.J. Zinkle, T. Shikama, M. Kutsuwada, S. Matsumura and C. Kinoshita 258–263 (1998) 1848
- Long term degradation of electrical insulation of Al<sub>2</sub>O<sub>3</sub> under high flux fission reactor irradiation, T. Shikama and S.J. Zinkle 258–263 (1998) 1861
- Electrical properties of ceramics during reactor irradiation, T. Shikama, S.J. Zinkle, K. Shiiyama, L.L. Snead and E.H. Farnum 258–263 (1998) 1867
- Investigation of cryogenic irradiation influence on mechanical and physical properties of ITER magnetic system insulation materials, A.V. Kozlov, E.N. Scherbacov, N.A. Dudchenko, V.S. Shihalev, V.V. Bedin, N.A. Paltusov and V.E. Korsunskiy 258–263 (1998) 1878
- Radiation effects on dielectric losses of Au-doped silicon, J. Molla, R. Vila, R. Heidinger and A. Ibarra 258–263 (1998) 1884
- Radiation induced optical absorption and radioluminescence in electron irradiated SiO<sub>2</sub>, A. Moroño and E.R. Hodgson 258–263 (1998) 1889
- Absorption and fluorescence phenomena of optical fibers under heavy neutron irradiation, T. Kakuta, K. Sakasai, T. Shikama, M. Narui and T. Sagawa 258–263 (1998) 1893
- Radiation resistance of amorphous silicon in optoelectric properties under proton bombardment, N. Kishimoto, H. Amekura, K. Kono and C.G. Lee 258–263 (1998) 1908
- On the choice of materials for the first mirrors of plasma diagnostics in a fusion reactor, V.S. Voitsenya, A.F. Bardamid, V.T. Gritsyna, V.G. Konovalov, O. Motojima, D.V. Orlinskij, R. Palladino, B.J. Peterson, A.N. Shapoval, A.F. Shtan, S.I. Solodovchenko, K.I. Yakimov and K. Young 258–263 (1998) 1919
- Defect production and recovery in high-*T<sub>c</sub>* superconductors irradiated with electrons and ions at low temperature, N. Ishikawa, Y. Chimi, A. Iwase, K. Tsuru, O. Michikami 258–263 (1998) 1924
- Effects of grain boundary misorientation on the solute segregation in austenitic stainless steels, T.S. Duh, J.J. Kai, F.R. Chen and L.H. Wang 258–263 (1998) 2064
- Investigations of ion radiation effects at metal/liquid interfaces, M.B. Lewis and J.D. Hunn 265 (1999) 325
- Radiation Sources**
- Damage calculation in fusion ceramics: comparing neutrons and light ions, P.V. Vladimirov, D. Lizunov, Yu.A.I. Ryazanov and A. Möslang 253 (1998) 104
- The effect of composition, processing conditions, and irradiation, on lattice defects in spinel ceramics, T.A. Bazilevskaya, V.T. Gritsyna, D.V. Orlinski, L.V. Udalova and A.V. Voitsenya 253 (1998) 133
- IFMIF, its facility concept and technology, T. Kondo 258–263 (1998) 47
- Radiolysis**
- Carbon deposition from a  $\gamma$ -irradiated CO<sub>2</sub>/CO/CH<sub>4</sub>/C<sub>2</sub>H<sub>6</sub> gas mixture on magnetite Fe<sub>3</sub>O<sub>4</sub>, G.C. Allen and K.R. Hallam 252 (1998) 135
- Validation of an electrochemical model for the oxidative dissolution of used CANDU fuel, D.W. Shoemsmith, S. Sunder and J.C. Tait 257 (1998) 89
- Production behavior of irradiation defects in ternary lithium ceramics under ion beam irradiation, K. Moritani and H. Moriyama 258–263 (1998) 525
- Irradiation effects in ceramic breeder materials, H. Moriyama, S. Tanaka and K. Noda 258–263 (1998) 587
- The influence of water chemistry on the radiolysis of the primary coolant water in pressurized water reactors, B. Pastina, J. Isabey and B. Hickel 264 (1999) 309
- Rare Earths**
- Isotope selective excitation of <sup>155</sup>Gd and <sup>157</sup>Gd isotopes from <sup>9</sup>D<sub>2-6</sub> states using broadband lasers, M. Sankari, M.V. Suryanarayana and S. Gangadharan 264 (1999) 122
- Oxygen potential of solid solution Eu<sub>*y*</sub>U<sub>1-*y*</sub>O<sub>2+x</sub>, T. Fujino, N. Sato, K. Yamada, S. Nakama, K. Fukuda, H. Serizawa and T. Shiratori 265 (1999) 154
- Recrystallization, Recovery and Grain Growth**
- Mechanical properties and microstructure of neutron irradiated cold worked Al-6063 alloy, A. Munitz, A. Shtechman, C. Cotler, M. Talianker and S. Dahan 252 (1998) 79
- Physical metallurgy of BATMAN II Ti-bearing martensitic steels, L. Pilloni, F. Attura, A. Calza-Bini, G. De Santis, G. Filacchioni, A. Carosi and S. Amato 258–263 (1998) 1329
- Redeposition**
- Tritium behavior in eroded dust and debris of plasma-facing materials,

- A. Hassanein, B. Wiechers and I. Konkashbaev 258–263 (1998) 295
- Magnetic field effect on the deposition of nickel in molten Pb–17Li, F. Barbier and A. Alemany 258–263 (1998) 508
- Analysis of the mechanism and source of contamination of diagnostic windows in fusion devices, V.S. Voitsenya 258–263 (1998) 658
- Oxidation induced release of deuterium from carbon based plasma facing materials, S. Alberici, J.P. Coad, H.-K. Hinssen, R. Moormann, P. Wienhold and C.H. Wu 258–263 (1998) 764
- Performance of tungsten coatings as plasma facing components used in ASDEX Upgrade, H. Maier, S. Kötterl, K. Krieger, R. Neu, M. Balden and ASDEX Upgrade-Team 258–263 (1998) 921
- Effects of plasma impurities on materials erosion and mixing in a steady state magnetic fusion device, Y. Hirooka 258–263 (1998) 1045
- Ion reflection and sputtering at tungsten surface exposed to edge plasmas in TEXTOR, K. Ohya, J. Kawata, T. Tanabe, M. Wada, Y. Ueda, V. Philipps, B. Unterberg, A. Pospieszczyk, B. Schweer, F. Weschenfelder and N. Noda 258–263 (1998) 1055
- Investigation on modification of plasma facing surface under long duration discharges by means of a collector probe in TRIAM-1M, T. Hirai, K. Tokunaga, T. Fujiwara, N. Yoshida, S. Itoh and TRIAM group 258–263 (1998) 1060
- Thermal desorption analysis of beryllium tile pieces from JET, R.G. Macaulay-Newcombe, D.A. Thompson and J.P. Coad 258–263 (1998) 1114
- Effect of neutron irradiation at low temperature on the embrittlement of the reduced-activation ferritic steels, V.V. Rybin, I.P. Kursevich and A.N. Lapin 258–263 (1998) 1324
- Accumulation of radioactive corrosion products on steel surfaces of VVER type nuclear reactors. I.  $^{110m}\text{Ag}$ , G. Hirschberg, P. Baradlai, K. Varga, G. Myburg, J. Schunk, P. Tilky and P. Stoddart 265 (1999) 273
- Wall erosion and material transport to the Mark I carbon divertor of JET, M. Mayer, R. Behrisch, K. Plamann, P. Andrew, J.P. Coad and A.T. Peacock 266–269 (1999) 604
- Refractory Metals, Alloys and Compounds** (*not listed elsewhere*)
- Microstructure of tantalum irradiated with heavy ions, K. Yasunaga, H. Watanabe, N. Yoshida, T. Muroga and N. Noda 258–263 (1998) 879
- Thermomechanical characteristics of low activation chromium and chromium alloys, H. Stamm, M.R. Bonansinga, F. Dos Santos Marques, P. Hähner, H. Kolbe and A. Volcan 258–263 (1998) 1756
- Reprocessing**
- Evaluation of stainless steel–zirconium alloys as high-level nuclear waste forms, S.M. McDeavitt, D.P. Abraham and J.Y. Park 257 (1998) 21
- Solid state reactions of  $\text{CeO}_2$ ,  $\text{ThO}_2$  and  $\text{PuO}_2$  with ammonium sulphate, K.D. Singh Mudher, M. Keskar and V. Venugopal 265 (1999) 146
- Safety of Nuclear Reactors**
- Mechanistic interpretations of  $\text{UO}_2$  oxidation, D.R. Olander 252 (1998) 121
- Low volatile fission-product release and fuel volatilization during severe reactor accident conditions, B.J. Lewis, B.J. Corse, W.T. Thompson, M.H. Kaye, F.C. Iglesias, P. Elder, R. Dickson and Z. Liu 252 (1998) 235
- Irradiation behavior of high uranium-density alloys in the plate fuels, M. Ugajin, A. Itoh, M. Akabori, N. Ooka and Y. Nakakura 254 (1998) 78
- Kinetics of interfacial reactions in molten U/solid  $\text{Y}_2\text{O}_3$  system. C. Tournier, B. Lorrain, F. Le Guyadec, L. Coudurier and N. Eustathopoulos 254 (1998) 215
- Swelling modification by one-dimensional diffusion of cascade-produced small interstitial clusters, V.A. Borodin and A.I. Ryazanov 256 (1998) 47
- Influence of texture and physical mixture of  $\text{UO}_3$  and C for carboreduction of  $\text{UO}_3$  into  $\text{UO}_2$ , F. Poncet, F. Valdivieso and M. Pijolat 256 (1998) 155
- Oxidation induced release of deuterium from carbon based plasma facing materials, S. Alberici, J.P. Coad, H.-K. Hinssen, R. Moormann, P. Wienhold and C.H. Wu 258–263 (1998) 764
- Investigation of oxidation resistance of carbon based first-wall liner material Aerolor AO5, A.-K. Krüssenberg, R. Moormann, H.-K. Hinssen, M. Hofmann and C.H. Wu 258–263 (1998) 770
- Influence of coexisting hydrogen isotopes on diffusion of tritium in niobium, K. Sakamoto, T. Higuchi, K. Hashizume and M. Sugisaki 258–263 (1998) 1073

- Magnetic non-destructive evaluation of accumulated fatigue damage in ferromagnetic steels for nuclear plant component, K. Morishita, A. Gilanyi, T. Sukegawa, T. Uesaka and K. Miya 258–263 (1998) 1946
- Hydrogen generation from steam reaction with tungsten, G.R. Smolik, K.A. McCarthy, D.A. Petti and K. Coates 258–263 (1998) 1979
- Determination of the  $\beta/\beta + \gamma$  eutectoid transition temperature in  $ZrO_{2-x}$  at variable heating/cooling rates, P.J. Hayward and I.M. George 265 (1999) 60
- Dissolution of  $ZrO_2$  in molten Zircaloy-4, P.J. Hayward and I.M. George 265 (1999) 69
- Corrosion of stainless steel by gaseous  $I_2$ , J.C. Wren, G.A. Glowa and J. Merritt 265 (1999) 161
- Accumulation of radioactive corrosion products on steel surfaces of VVER type nuclear reactors. I.  $^{110m}Ag$ , G. Hirschberg, P. Baradlai, K. Varga, G. Myburg, J. Schunk, P. Tilky and P. Stoddart 265 (1999) 273
- High burnup effects on fuel behaviour under accident conditions: the tests CABRI REP-Na, F. Schmitz and J. Papin 270 (1999) 55
- Current knowledge on core degradation phenomena, a review, P. Hofmann 270 (1999) 194
- Segregation**
- Radiation-induced grain boundary segregation in nuclear reactor steels, R.G. Faulkner 251 (1997) 269
- Some features of grain boundary segregations in sensitized austenitic stainless steel, A.M. Ilyin 252 (1998) 168
- On the mechanism of radiation-induced segregation in austenitic Fe–Cr–Ni alloys, T.R. Allen, J.T. Busby, G.S. Was and E.A. Kenik 255 (1998) 44
- Grain boundary segregation under neutron irradiation in dilute alloys, R.G. Faulkner, S. Song, P.E.J. Flewitt, M. Victoria and P. Marmy 255 (1998) 189
- The effect of hydride on the corrosion of Zircaloy-4 in aqueous LiOH solution, S.-J. Kim, K.H. Kim, J.H. Baek, B.K. Choi, Y.H. Jeong and Y.H. Jung 256 (1998) 114
- The observation of enrichment of O and Zr and depletion of Nb in the near surface region of a  $\beta$ -(Zr–20%Nb) alloy, C. Zhang and P.R. Norton 257 (1998) 1
- Static and dynamic erosion behavior of TiC coated graphite in high heat flux plasma, S. Takamura, K. Hayashi, N. Ohno and K. Morita 258–263 (1998) 961
- Enhancement of irradiation hardening by nickel addition in the reduced-activation 9Cr–2W martensitic steel, R. Kasada, A. Kimura, H. Matsui and M. Narui 258–263 (1998) 1199
- Microchemical and microstructural changes of austenitic steels caused by proton irradiation following helium implantation, T. Fukuda, T. Aoki, Y. Isobe, T. Furuya, A. Hasegawa and K. Abe 258–263 (1998) 1694
- Damage behavior in an electron/helium dual-beam irradiated Fe–Cr–Mn(W,V) alloy, H. Benfu, H. Kinoshita and H. Takahashi 258–263 (1998) 1708
- Effect of carbon and nitrogen on grain boundary segregation in irradiated stainless steels, F. Kano, K. Fukuya, S. Hamada and Y. Miwa 258–263 (1998) 1713
- Comparison of stress corrosion cracking susceptibility of thermally-sensitized and proton-irradiated 304 stainless steel using electrochemical noise techniques, L.H. Wang, J.J. Kai, C.H. Tsai and C. Fong 258–263 (1998) 2046
- Effects of grain boundary misorientation on the solute segregation in austenitic stainless steels, T.S. Duh, J.J. Kai, F.R. Chen and L.H. Wang 258–263 (1998) 2064
- Effects of thermal sensitization on radiation-induced segregation in type 304 stainless steel irradiated with He-ions, O. Okada, K. Nakata and S. Kasahara 265 (1999) 232
- Semiconductors**
- Atomistic modeling of finite-temperature properties of crystalline  $\beta$ -SiC. II. Thermal conductivity and effects of point defects J. Li, L. Porter and S. Yip 255 (1998) 139
- Effects of DD and DT neutron irradiation on some Si devices for fusion diagnostics, Y. Tanimura and T. Iida 258–263 (1998) 1812
- Radiation resistance of amorphous silicon in optoelectric properties under proton bombardment, N. Kishimoto, H. Amekura, K. Kono and C.G. Lee 258–263 (1998) 1908
- Silicon and Silicon Compounds**
- The mechanical behavior of a Nicalon/SiC composite at room temperature and 1000°C, N. Miriyala, P.K. Liaw, C.J. McHargue and L.L. Snead 253 (1998) 1
- Computation of the lamina stacking sequence effect on elastic moduli of a plain-weave Nicalon/SiC laminated composite with a [0/30/60]

- lay-up, W. Zhao, P.K. Liaw and N.-i. Yu 253 (1998) 10
- Helium implantation effects on mechanical properties of SiC<sub>f</sub>/SiC composites, A. Hasegawa, M. Saito, K. Abe and R.H. Jones 253 (1998) 31
- Irradiation-enhanced creep in SiC: data summary and planned experiments, C.A. Lewinsohn, M.L. Hamilton, G.E. Youngblood, R.H. Jones, F.A. Garner, S.L. Hecht and A. Kohyama 253 (1998) 36
- Displacement threshold energies in  $\beta$ -SiC, R. Devanathan, T.D. de la Rubia and W.J. Weber 253 (1998) 47
- Dimensional stability and tensile strength of irradiated Nicalon-CG and Hi-Nicalon fibers, C.H. Henager, G.E. Youngblood, D.J. Senor, G.A. Newsome and J.J. Woods 253 (1998) 60
- X-ray diffractometry and high-resolution electron microscopy of neutron-irradiated SiC to a fluence of  $1.9 \times 10^{27}$  n/m<sup>2</sup>, T. Yano, H. Miyazaki, M. Akiyoshi and T. Iseki 253 (1998) 78
- Deuteron irradiation creep of chemically vapor deposited silicon carbide fibers, R. Scholz 254 (1998) 74
- The oxidation resistance improvement of matrix graphite of spherical fuel elements by slip-gelation process, Q. Zhu, X. Qiu and C. Ma 254 (1998) 221
- Radioluminescence in amorphous silica: temperature dependence and relaxation, D.W. Cooke, B.L. Bennett, E.H. Farnum, D.E. Thomas and A.M. Portis 255 (1998) 180
- Recoil tritium in 304-stainless steel: the initial distribution revisited, A.R. Dulloo and W.S. Diethorn 256 (1998) 235
- Time variation of the optical absorption of quartz KU-1 induced by gamma irradiation, V.I. In'kov, I.A. Ivanin and D.V. Orlinski 256 (1998) 254
- Uranium molybdenum silicide U<sub>3</sub>MoSi<sub>2</sub> and phase equilibria in the U-Mo-Si system, M. Ugajin, A. Itoh, S. Okayasu and Y. Kazumata 257 (1998) 145
- Accumulation and recovery of irradiation damage in He<sup>+</sup> implanted  $\alpha$ -SiC, W. Jiang, W.J. Weber, S. Thevuthasan and D.E. McCready 257 (1998) 295
- Impacts of charge-exchange neutrals on degradation of plasma-facing materials, N. Yoshida and Y. Hirooka 258-263 (1998) 173
- Analysis of the mechanism and source of contamination of diagnostic windows in fusion devices, V.S. Voitsenya 258-263 (1998) 658
- Influence of target chemical activity on Balmer lines emission from back-scattered hydrogen, A. Ohmori and T. Tanabe 258-263 (1998) 666
- Molecular dynamics evaluation of self-sputtering of beryllium, S. Ueda, T. Ohsaka and S. Kuwajima 258-263 (1998) 713
- Thermal stability and chemical erosion of the silicon doped CFC material NS31, M. Balden, J. Roth and C.H. Wu 258-263 (1998) 740
- Disruption and sputtering erosions on SiC doped CFC, K. Nakamura, S. Suzuki, M. Dairaku, K. Yokoyama, Y. Okumura, T. Suzuki, R. Jimbou, V. Bandourko and M. Akiba 258-263 (1998) 828
- Light ion irradiation creep of SiC fibers in torsion, R. Scholz 258-263 (1998) 1533
- Effect of high temperature heat treatment in vacuum on microstructure and bending properties of SiC<sub>f</sub>/SiC composites prepared by CVI, H. Araki, H. Suzuki, W. Yang, S. Sato and T. Noda 258-263 (1998) 1540
- Interface strength of SiC/SiC composites with and without helium implantation using micro-indentation test, M. Saito, A. Hasegawa, S. Ohtsuka and K. Abe 258-263 (1998) 1562
- Effect of fiber coating on interfacial shear strength of SiC/SiC by nano-indentation technique, T. Hinoki, W. Zhang, A. Kohyama, S. Sato and T. Noda 258-263 (1998) 1567
- Microstructure and oxidative degradation behavior of silicon carbide fiber Hi-Nicalon type S, M. Takeda, A. Urano, J. Sakamoto and Y. Imai 258-263 (1998) 1594
- Low-activation characteristics of V-alloys and SiC composites, E.V. Dyomina, P. Fenici, V.P. Kolotov and M. Zucchetti 258-263 (1998) 1784
- Radiation effects on dielectric losses of Au-doped silicon, J. Molla, R. Vila, R. Heidinger and A. Ibarra 258-263 (1998) 1884
- Radiation resistance of amorphous silicon in optoelectric properties under proton bombardment, N. Kishimoto, H. Amekura, K. Kono and C.G. Lee 258-263 (1998) 1908
- Dynamic effects in energetic particle-induced luminescence of SiO<sub>2</sub>, T. Tanabe, A. Omori and M. Fujiwara 258-263 (1998) 1914
- Thermal shock resistance of SiC compositionally graded C/C composites, K. Fujii and R. Yamada 258-263 (1998) 1953
- Processing and microstructure of silicon carbide fiber-reinforced silicon carbide composite by hot-pressing,

- K. Yoshida, Budiyanto, M. Imai and T. Yano 258–263 (1998) 1960
- Helium-bubble formation behavior of SiCf/SiC composites after helium implantation, A. Hasegawa, M. Saito, S. Nogami, K. Abe, R.H. Jones and H. Takahashi 264 (1999) 355
- Steels, Austenitic**
- Irradiation creep and void swelling of austenitic stainless steels at low displacement rates in light water energy systems, F.A. Garner and M.B. Toloczko 251 (1997) 252
- Low temperature mechanical properties of steels containing high concentrations of helium, H. Ullmaier and E. Camus 251 (1997) 262
- Radiation-induced grain boundary segregation in nuclear reactor steels, R.G. Faulkner 251 (1997) 269
- Study of the oxide layer formed on stainless steel exposed to boiling water reactor conditions by ion beam techniques, C. Degueldre, D. Buckley, J.C. Dran and E. Schenker 252 (1998) 22
- Relationship between in-reactor stress relaxation and irradiation creep, J.P. Foster, E.R. Gilbert, K. Bunde and D.L. Porter 252 (1998) 89
- Some features of grain boundary segregations in sensitized austenitic stainless steel, A.M. Ilyin 252 (1998) 168
- Clustering and ordering of nitrogen in nuclear grade 316LN austenitic stainless steel, P. Shankar, D. Sundararaman and S. Ranganathan 254 (1998) 1
- The compatibility of martensitic steels with liquid Pb–17Li, N. Simon, A. Terlain and T. Flament 254 (1998) 185
- Effect of nitrogen on high temperature low cycle fatigue behaviors in type 316L stainless steel, D.W. Kim, W.-S. Ryu, J.H. Hong and S.-K. Choi 254 (1998) 226
- Elevated temperature fracture toughness of AISI 403 martensitic stainless steel, J.S. Dubey, S.L. Wadekar and J.K. Chakravarty 254 (1998) 271
- Void swelling in Fe–15Cr–xNi ternary alloys under proton irradiation, Y. Murase, J. Nagakawa, N. Yamamoto and H. Shiraishi 255 (1998) 34
- On the mechanism of radiation-induced segregation in austenitic Fe–Cr–Ni alloys, T.R. Allen, J.T. Busby, G.S. Was and E.A. Kenik 255 (1998) 44
- Low-activation Mn–Cr austenitic stainless steel with further reduced content of long-lived radioactive elements, M. Onozuka, T. Saida, S. Hirai, M. Kusuhashi, I. Sato and T. Hatakeyama 255 (1998) 128
- Identification of the nature of small point defect clusters in neutron irradiated Fe–16Ni–15Cr by means of electron irradiation, M. Horili, S. Arai, Y. Satoh and M. Kiritani 255 (1998) 165
- Corrosion of annealed AISI 316 stainless steel in sodium environment, V. Ganesan and V. Ganesan 256 (1998) 69
- The microstructure and tensile properties of Fe–Cr alloys after neutron irradiation at 400°C to 5.5–7.1 dpa, S.I. Porollo, A.M. Dvorishin, A.N. Vorobyev and Y.V. Kono-beev 256 (1998) 247
- Evaluation of stainless steel–zirconium alloys as high-level nuclear waste forms, S.M. McDeavitt, D.P. Abraham and J.Y. Park 257 (1998) 21
- Interdiffusion studies in titanium–304 stainless steel system, G.B. Kale, R.V. Patil and P.S. Gawade 257 (1998) 44
- Stress state dependence of transient irradiation creep in 20% cold worked 316 stainless steel, J.P. Foster, K. Bunde and E.R. Gilbert 257 (1998) 118
- Austenitic stainless steels and high strength copper alloys for fusion components, A.F. Rowcliffe, S.J. Zinkle, J.F. Stubbins, D.J. Edwards and D.J. Alexander 258–263 (1998) 183
- Review of SC magnet technologies developed in LHD project, O. Motojima, N. Yanagi and A. Nishimura 258–263 (1998) 234
- Current status and future of IASCC research, T. Shoji, S. Suzuki and K.S. Raja 258–263 (1998) 241
- Development of joining technology for Be/Cu-alloy and Be/SS by HIP, T. Kuroda, T. Hatano, M. Enoeda, S. Sato, K. Furuya, H. Takatsu, T. Iwadachi and K. Nishida 258–263 (1998) 258
- Optimization of HIP bonding conditions for ITER shielding blanket/first wall made from austenitic stainless steel and dispersion strengthened copper alloy, S. Sato, T. Hatano, T. Kuroda, K. Furuya, S. Hara, M. Enoeda and H. Takatsu 258–263 (1998) 265
- Calculation of radiation-induced deformation in the ITER vacuum vessel, J. Nagakawa 258–263 (1998) 289
- Irradiation testing of 316L(N)-IG austenitic stainless steel for ITER, E.V. van Osch, M.G. Horsten and M.I. de Vries 258–263 (1998) 301
- Influence of materials choice on occupational radiation exposure in ITER, C.B.A. Forty, J.D. Firth and G.J. Butterworth 258–263 (1998) 335

- Assessment of the corrosion behaviour of structural materials in the water coolant of ITER, V. Belous, G. Kalinin, P. Lorenzetto and S. Velikopolskiy 258–263 (1998) 351
- Development of a triple beam irradiation facility, S. Hamada, Y. Miwa, D. Yamaki, Y. Katano, T. Nakazawa and K. Noda 258–263 (1998) 383
- Development of a miniaturized hour-glass shaped fatigue specimen, Y. Miwa, S. Jitsukawa and A. Hishinuma 258–263 (1998) 457
- Sorption and desorption phenomena of D<sub>2</sub>O on the surface of piping materials, R. Ohmori, T. Yoneoka, M. Taniguchi and S. Tanaka 258–263 (1998) 474
- Implantation driven permeation behavior of deuterium through stainless steel type 316L, H. Nakamura, T. Hayashi, S. O'hira, M. Nishi and K. Okuno 258–263 (1998) 1050
- The possibility of the commercial production of low-activation structural steels for fusion energy in the Russian Federation, N.P. Lyakishev, V.Y. Dashevsky, E.V. Dyomina, L.I. Ivanov, Y.M. Platov, M.D. Prusakova, V.P. Kolotov and M.V. Alenina 258–263 (1998) 1300
- The effect of hold-times on the fatigue behavior of type AISI 316L stainless steel under deuteron irradiation, R. Scholz and R. Mueller 258–263 (1998) 1600
- Flux and composition dependence of irradiation creep of austenitic alloys irradiated in PFR at ~420°C, M.B. Toloczko, F.A. Garner, J. Standring, B. Munro and S. Adaway 258–263 (1998) 1606
- Swelling and void-induced embrittlement of austenitic stainless steel irradiated to 73–82 dpa at 335–365°C, S.I. Porollo, A.N. Vorobjev, Y.V. Konobeev, A.M. Dvoria-shin, V.M. Krigan, N.I. Budylnkin, E.G. Mironova and F.A. Garner 258–263 (1998) 1613
- Irradiation creep and stress-enhanced swelling of Fe–16Cr–15Ni–Nb austenitic stainless steel in BN-350, A.N. Vorobjev, N.I. Budylnkin, E.G. Mironova, S.I. Porollo, Y.V. Konobeev and F.A. Garner 258–263 (1998) 1618
- Temperature dependence of bubble structure in 316L stainless steel irradiated with 2.5 MeV He ions, C.H. Zhang, K.Q. Chen, Y.S. Wang and J.G. Sun 258–263 (1998) 1623
- Effect of cold work on void swelling in proton irradiated Fe–15Cr–20Ni ternary alloys, Y. Murase, J. Nagakawa, N. Yamamoto and H. Shiraiishi 258–263 (1998) 1639
- Validation of the shear punch–tensile correlation technique using irradiated materials, G.L. Hankin, M.B. Toloczko, M.L. Hamilton and R.G. Faulkner 258–263 (1998) 1651
- Shear punch testing of <sup>59</sup>Ni isotopically-doped model austenitic alloys after irradiation in FFTF at different He/dpa ratios, G.L. Hankin, M.B. Toloczko, M.L. Hamilton, F.A. Garner and R.G. Faulkner 258–263 (1998) 1657
- Effects of annealing on the tensile properties of irradiated austenitic stainless steel, I. Ioka, A. Naito, K. Shiba, J.P. Robertson, S. Jitsukawa and A. Hishinuma 258–263 (1998) 1664
- Effect of irradiation temperature on irradiation assisted stress corrosion cracking of model austenitic stainless steels, T. Tsukada, Y. Miwa, H. Tsuji and H. Nakajima 258–263 (1998) 1669
- The structural evolution of new low-activation and chromium–nickel stainless steels under high-dose irradiation up to 200 dpa, V.V. Sagaradze, S.S. Lapin, B.N. Goshchitskii and M.A. Kirk 258–263 (1998) 1675
- The effect of tritium and low-temperature neutron irradiation at 77 K on the structure and mechanical properties of reactor steels, B.N. Goshchitskii, V.V. Sagaradze, V.L. Arbuzov, S.S. Lapin, Yu.N. Zuev, I.V. Podgornova, V.D. Parkhomenko, A.V. Kozlov 258–263 (1998) 1681
- Low activation austenitic Mn-steel for in-vessel fusion materials, Y. Suzuki, T. Saida and F. Kudough 258–263 (1998) 1687
- Microchemical and microstructural changes of austenitic steels caused by proton irradiation following helium implantation, T. Fukuda, T. Aoki, Y. Isobe, T. Furuya, A. Hasegawa and K. Abe 258–263 (1998) 1694
- Effect of carbon and nitrogen on grain boundary segregation in irradiated stainless steels, F. Kano, K. Fukuya, S. Hamada and Y. Miwa 258–263 (1998) 1713
- The dependence of irradiation creep in austenitic alloys on displacement rate and helium to dpa ratio, F.A. Garner, M.B. Toloczko and M.L. Grossbeck 258–263 (1998) 1718
- High-cycle fatigue tests of modified 316 stainless steels under 20 MeV proton irradiation and thermal pulses, H. Mizubayashi, K. Tateishi, H. Tanimoto and K. Nakata 258–263 (1998) 1725
- Effect of light impurities on the early stage of swelling in austenitic stainless steel, N. Igata, A. Ryazanov and D.N. Korolev 258–263 (1998) 1735

- Structural materials by powder HIP for fusion reactors, C. Dellis, G. Le Marois and E.V. van Osch 258–263 (1998) 1966
- The effect of helium accumulation and radiation damage on the weldability of 316-type steel, S.A. Fabritsiev and A.S. Pokrovsky 258–263 (1998) 1991
- Microstructural evolution of welded austenitic stainless steel irradiated in HFIR target experiments, T. Sawai, K. Shiba and A. Hishinuma 258–263 (1998) 1997
- Yag laser welding of neutron irradiated stainless steels, S. Nishimura, R. Katsura, Y. Saito, W. Kono, H. Takahashi, M. Koshiishi, T. Kato and K. Asano 258–263 (1998) 2002
- Simulation of helium bubble behavior in neutron-irradiated stainless steel during welding, S. Kawano, R. Sumiya and K. Fukuya 258–263 (1998) 2008
- Effect of weld thermal cycle on helium bubble formation in stainless steel, F. Kano, S. Nakahigashi, H. Nakamura, N. Uesugi, T. Mitamura, M. Terasawa, H. Irie and K. Fukuya 258–263 (1998) 2013
- Weldability of helium-containing stainless steels using a YAG laser, S. Kawano, S. Nakahigashi, K. Uesugi, H. Nakamura, W. Kono, K. Fukuya, F. Kano, A. Hasegawa and K. Abe 258–263 (1998) 2018
- Fatigue crack growth under compressive loading, K. Kasaba, T. Sano, S. Kudo, T. Shoji, K. Katagiri and T. Sato 258–263 (1998) 2059
- Effects of grain boundary misorientation on the solute segregation in austenitic stainless steels, T.S. Duh, J.J. Kai, F.R. Chen and L.H. Wang 258–263 (1998) 2064
- Densification behaviour of  $\text{UO}_2$ –50% $\text{PuO}_2$  pellets by dilatometry, T.R.G. Kutty, P.V. Hegde, R. Keswani, K.B. Khan, S. Majumdar and D.S.C. Purushotham 264 (1999) 10
- Corrosion of stainless steel by gaseous  $\text{I}_2$ , J.C. Wren, G.A. Glowa and J. Merritt 265 (1999) 161
- Effects of thermal sensitization on radiation-induced segregation in type 304 stainless steel irradiated with He-ions, O. Okada, K. Nakata and S. Kasahara 265 (1999) 232
- Accumulation of radioactive corrosion products on steel surfaces of VVER type nuclear reactors. I.  $^{110\text{m}}\text{Ag}$ , G. Hirschberg, P. Baradlai, K. Varga, G. Myburg, J. Schunk, P. Tilky and P. Stoddart 265 (1999) 273
- Investigations of ion radiation effects at metal/liquid interfaces, M.B. Lewis and J.D. Hunn 265 (1999) 325
- Sputtering of beryllium, tungsten, tungsten oxide and mixed W–C layers by deuterium ions in the near-threshold energy range, M.I. Guseva, A.L. Suvorov, S.N. Korshunov and N.E. Lazarev 266–269 (1999) 222
- Temperature and angular dependences of sputtering yield of B, R. Jimbou, K. Nakamura, V. Bandourko, M. Dairaku, Y. Okumura and M. Akiba 266–269 (1999) 1103
- Microchemistry and microstructure of proton-irradiated austenitic alloys: toward an understanding of irradiation effects in LWR core components, G.S. Was, T.R. Allen, J.T. Busby, J. Gan, D. Damcott, D. Carter, M. Atzmon and E.A. Kenik 270 (1999) 96
- Steels, Ferritic**
- The consequences of helium production on microstructural development and deformation response in isotopically tailored ferritic alloys, D.S. Gelles, G.L. Hankin and M.L. Hamilton 251 (1997) 188
- Low temperature mechanical properties of steels containing high concentrations of helium, H. Ullmaier and E. Camus 251 (1997) 262
- Radiation-induced grain boundary segregation in nuclear reactor steels, R.G. Faulkner 251 (1997) 269
- Carbon deposition from a  $\gamma$ -irradiated  $\text{CO}_2/\text{CO}/\text{CH}_4/\text{C}_2\text{H}_6$  gas mixture on magnetite  $\text{Fe}_3\text{O}_4$ , G.C. Allen and K.R. Hallam 252 (1998) 135
- Post-yield strain hardening behavior as a clue to understanding irradiation hardening, R.J. Dimelfi, D.E. Alexander and L.E. Rehn 252 (1998) 171
- A theoretical model for determination of fracture toughness of reactor pressure vessel steels in the transition region from automated ball indentation test, T.S. Byun, J.W. Kim and J.H. Hong 252 (1998) 187
- Dynamic strain aging sensitivity of heat affected zones in C–Mn steels, D. Wagner, J.C. Moreno and C. Prioul 252 (1998) 257
- Adhesion and wear properties of TiN films deposited on martensitic stainless steel and Stellite by reactive magnetron sputter ion plating, M.K. Lee, W.W. Kim, J.S. Kim and W.J. Lee 254 (1998) 42
- Small angle neutron scattering investigations of the microstructure of VVER-440-type reactor pressure vessel steel after irradiation at 60°C, M. Grosse, J. Boehmert and R. Gilles 254 (1998) 143



- The compatibility of martensitic steels with liquid Pb-17Li, N. Simon, A. Terlain and T. Flament 254 (1998) 185
- Grain boundary segregation under neutron irradiation in dilute alloys, R.G. Faulkner, S. Song, P.E.J. Flewitt, M. Victoria and P. Marmy 255 (1998) 189
- Comments on the paper 'Phase diagram calculations of the U-Pu-N system with carbon and oxygen impurities', by D.D. Sood, R. Agarwal, V. Venugopal [Journal of Nuclear Materials 247 (1997) 293], G.C. Jain 256 (1998) 85
- Interdiffusion studies in titanium-304 stainless steel system, G.B. Kale, R.V. Patil and P.S. Gawade 257 (1998) 44
- Investigation of structure and composition of surface oxides in a high chromium martensitic steel, I. Iordanova, K.S. Forcey, R. Harizanova, Y. Georgiev and M. Surtchev 257 (1998) 126
- Investigation of liquid impact erosion for 12Cr steel and Stellite 6B, M.K. Lee, W.W. Kim, C.K. Rhee and W.J. Lee 257 (1998) 134
- Alumina sputtered on MANET as an effective deuterium permeation barrier, E. Serra, P.J. Kelly, D.K. Ross and R.D. Arnell 257 (1998) 194
- Effect of microstructure on the susceptibility of a 533 steel to temper embrittlement, S. Raoul, B. Marini and A. Pineau 257 (1998) 199
- Comparison of hot dip aluminised F82H-mod. steel after different subsequent heat treatments, H. Glasbrenner and O. Wedemeyer 257 (1998) 274
- Notch position in the HAZ specimen of reactor pressure vessel steel, J.H. Kim and E.P. Yoon 257 (1998) 303
- The challenge of developing structural materials for fusion power systems, E.E. Bloom 258-263 (1998) 7
- Materials science problems of blankets in Russian concept of fusion reactor, M.I. Solonin 258-263 (1998) 30
- Materials integration issues for high performance fusion power systems, D.L. Smith, M.C. Billone, S. Majumdar, R.F. Mattas and D.-K. Sze 258-263 (1998) 65
- Hydrogen inventory and embrittlement in low activation steels, P. Jung 258-263 (1998) 124
- Influence of materials choice on occupational radiation exposure in ITER, C.B.A. Forty, J.D. Firth and G.J. Butterworth 258-263 (1998) 335
- The behaviour of the natural oxide of MANET as permeation barrier under cyclic loads: Self-healing, A. Perujo and H. Kolbe 258-263 (1998) 582
- Improved activation tests of fusion structural materials with a deuterium-beryllium neutron source, U. von Möllendorff, H. Giese, Y. Ikeda, F. Maekawa, H. Tsige-Tamirat, P. Wilson 258-263 (1998) 1143
- Embrittlement behaviour of different international low activation alloys after neutron irradiation, M. Rieth, B. Dafferner and H.-D. Röhrig 258-263 (1998) 1147
- Influence of tantalum and nitrogen contents, normalizing condition and TMCP process on the mechanical properties of low-activation 9Cr-2W-0.2V-Ta steels for fusion application, T. Hasegawa, Y. Tomita and A. Kohtyama 258-263 (1998) 1153
- Irradiation creep of various ferritic alloys irradiated at ~400°C in the PFR and FFTF reactors, M.B. Toloczko, F.A. Garner and C.R. Eichelzer 258-263 (1998) 1163
- Comparison of microstructure and formation of intermetallic phases on F82H-mod. and MANET II, H. Glasbrenner, J. Konys, K. Stein-Fechner and O. Wedemeyer 258-263 (1998) 1173
- Microstructure assessment of the low activation ferritic/martensitic steel F82H, R. Schäublin, P. Spätig and M. Victoria 258-263 (1998) 1178
- Low cycle fatigue properties of 8Cr-2WV-Ta ferritic steel at elevated temperatures, T. Ishii, K. Fukaya, Y. Nishiyama, M. Suzuki and M. Eto 258-263 (1998) 1183
- Irradiation embrittlement of  $2\frac{1}{2}$ Cr-1Mo steel at 400°C and its electrochemical evaluation, Y. Nishiyama, K. Fukaya, M. Suzuki and M. Eto 258-263 (1998) 1187
- Effect of purity on helium bubble formation in 9Cr martensitic steel during post-implantation annealing at 1105 K, T. Nagasaka, T. Shibayama, H. Kayano, A. Hasegawa, M. Satou, K. Abe 258-263 (1998) 1193
- Dynamic strain ageing evidences during low cycle fatigue deformation in ferritic-martensitic stainless steels, A.F. Armas, M. Avalos, I. Alvarez-Armas, C. Petersen and R. Schmitt 258-263 (1998) 1204
- Development of oxide dispersion strengthened ferritic steels for fusion, D.K. Mukhopadhyay, F.H. Froes and D.S. Gelles 258-263 (1998) 1209
- A review of some effects of helium on charpy impact properties of ferritic/martensitic steels, D.S. Gelles, G.L. Hankin and M.L. Hamilton 258-263 (1998) 1216
- Impact behavior of two low activation steels after irradiation to ~67 dpa

- at 430°C, M.L. Hamilton, L.E. Schubert and D.S. Gelles 258–263 (1998) 1222
- Physical metallurgy and mechanical behaviour of FeCrW-TaV low activation martensitic steels: Effects of chemical composition, A. Alamo, J.C. Brachet, A. Castaing, C. Le-poittevin and F. Barcelo 258–263 (1998) 1228
- Superior Charpy impact properties of ODS ferritic steel irradiated in JOYO, T. Kuwabara, H. Kurishita, S. Ukai, M. Narui, S. Mizuta, M. Yamazaki and H. Kayano 258–263 (1998) 1236
- Analysis of error field due to ferritic steel in the advanced material testing program of JFT-2M, M. Sato, Y. Miura, S. Takeji, H. Kimura and K. Shiba 258–263 (1998) 1253
- The effect of low dose irradiation on the impact fracture energy and tensile properties of pure iron and two ferritic martensitic steels, I. Belia-nov and P. Marmy 258–263 (1998) 1259
- Void formation and microstructural development in oxide dispersion strengthened ferritic steels during electron-irradiation, J. Saito, T. Suda, S. Yamashita, S. Ohnuki, H. Takahashi, N. Akasaka, M. Nishida and S. Ukai 258–263 (1998) 1264
- Heat treatment effects on impact toughness of 9Cr–1MoVNb and 12Cr–1MoVW steels irradiated to 100 dpa, R.L. Klueh and D.J. Alexander 258–263 (1998) 1269
- Fracture toughness and tensile behavior of ferritic–martensitic steels irradiated at low temperatures, A.F. Rowcliffe, J.P. Robertson, R.L. Klueh, K. Shiba, D.J. Alexander, M.L. Grossbeck and S. Jitsukawa 258–263 (1998) 1275
- Thermal fatigue behavior of low activation ferrite–martensite steels, C. Petersen 258–263 (1998) 1285
- Microstructural characterisation of F82H-mod. steel using small-angle neutron scattering, R. Coppola, K. Ehrlich, M. Magnani, E. Mater-na-Morris and M. Valli 258–263 (1998) 1291
- Effect of hydrogen on tensile properties of martensitic steels for fusion application, M. Beghini, G. Benamati, L. Bertini and R. Valentini 258–263 (1998) 1295
- The possibility of the commercial production of low-activation structural steels for fusion energy in the Russian Federation, N.P. Lyakishev, V.Y. Dashevsky, E.V. Dyo-mina, L.I. Ivanov, Y.M. Platov, M.D. Prusakova, V.P. Kolotov and M.V. Alenina 258–263 (1998) 1300
- Modelling of phase transformations occurring in low activation marten-sitic steels, J.-C. Brachet, L. Gavard, C. Boussidan, C. Le-poittevin, S. Denis and C. Servant 258–263 (1998) 1307
- Influence of operation conditions on structure and properties of 12% Cr steels as candidate structural materials for fusion reactor, A.G. Ioltukhovskiy, M.V. Leontyeva-Smirnova, Y.I. Kazennov, E.A. Medvedeva, A.V. Tselishchev, V.K. Shamardin, A.V. Povstyanko, S.E. Ostrovsky, A.M. Dvoryashin, S.I. Porollo, A.N. Vorobyev and V.S. Khabarov 258–263 (1998) 1312
- Production of low activation steel; JLF-1, large heats – Current status and future plan, A. Kohyama, Y. Kohno, M. Kuroda, A. Kimura and F. Wan 258–263 (1998) 1319
- Effect of neutron irradiation at low temperature on the embrittlement of the reduced-activation ferritic steels, V.V. Rybin, I.P. Kursevich and A.N. Lapin 258–263 (1998) 1324
- Physical metallurgy of BATMAN II Ti-bearing martensitic steels, L. Pilloni, F. Attura, A. Calza-Bini, G. De Santis, G. Filacchioni, A. Carosi and S. Amato 258–263 (1998) 1329
- Influence of delta ferrite and dendritic carbides on the impact and tensile properties of a martensitic chromium steel, L. Schäfer 258–263 (1998) 1336
- Dependence of impact properties on irradiation temperature in reduced-activation martensitic steels, A. Kimura, M. Narui, T. Misawa, H. Matsui and A. Kohyama 258–263 (1998) 1340
- Evolution of the mechanical properties of the F82H ferritic/martensitic steel after 590 MeV proton irradiation, P. Spätig, R. Schäublin, S. Gyger and M. Victoria 258–263 (1998) 1345
- R&D of oxide dispersion strengthened ferritic martensitic steels for FBR, S. Ukai, T. Nishida, T. Okuda and T. Yoshitake 258–263 (1998) 1745
- Magnetic non-destructive evaluation of accumulated fatigue damage in ferromagnetic steels for nuclear plant component, K. Morishita, A. Gilanyi, T. Sukegawa, T. Uesaka and K. Miya 258–263 (1998) 1946
- Comparison of stress corrosion cracking susceptibility of thermally-sensitized and proton-irradiated 304 stainless steel using electrochemical noise techniques, L.H. Wang, J.J. Kai, C.H. Tsai and C. Fong 258–263 (1998) 2046
- Influence of microstructure on the hydrogen permeability of 9%Cr–1%Mo ferritic steel, N. Parvathavarthini, S. Saroja and R.K. Dayal 264 (1999) 35

- Contact corrosion measurements on the pair  $UO_{2+x}$  and carbon steel 1.0330 in brines and bentonite porewater with respect to direct waste disposal, J. Engelhardt and G. Marx 264 (1999) 161
- Multiplicative model for out-of-phase thermal fatigue degradation of ferritic-martensitic steel MANET-II, A. Zisman, V. Rybin, C. Petersen and R. Schmitt 264 (1999) 234
- Fractographic observations of cleavage fracture initiation in a bainitic A508 steel, M. Mäntylä, A. Rossoll, I. Nedbal, C. Prioul and B. Marini 264 (1999) 257
- Angular dependence of the sputtering yield of rough beryllium surfaces, M. Küstner, W. Eckstein, E. Hechtel and J. Roth 265 (1999) 22
- Effect of neutron flux on low temperature irradiation embrittlement of reactor pressure vessel steel, K. Dohi, T. Onchi, F. Kano, K. Fukuya, M. Narui and H. Kayano 265 (1999) 78
- Synergistic effects of LiOH and  $F^-$  in accelerating the corrosion of Zircaloy-4, Y.-M. Wong, B. Cox, N. Ramasubramanian and V.C. Ling 265 (1999) 178
- Microstructure in Martensitic Steel DIN 1.4926 after 800 MeV proton irradiation, Y. Dai, G.S. Bauer, F. Carsughi, H. Ullmaier, S.A. Maloy and W.F. Sommer 265 (1999) 203
- Effect of heat treatment and irradiation temperature on impact properties of Cr-W-V ferritic steels, R.L. Klueh and D.J. Alexander 265 (1999) 262
- Accumulation of radioactive corrosion products on steel surfaces of VVER type nuclear reactors. I.  $^{110m}Ag$ , G. Hirschberg, P. Baradlai, K. Varga, G. Myburg, J. Schunk, P. Tilky and P. Stoddart 265 (1999) 273
- Role and significance of source hardening in radiation embrittlement of iron and ferritic steels, K. Linga Murty 270 (1999) 115
- Structural Materials**
- Irradiation creep and void swelling of austenitic stainless steels at low displacement rates in light water energy systems, F.A. Garner and M.B. Toloczko 251 (1997) 252
- Low temperature mechanical properties of steels containing high concentrations of helium, H. Ullmaier and E. Camus 251 (1997) 262
- Effect of microstructure on the susceptibility of a 533 steel to temper embrittlement, S. Raoul, B. Marini and A. Pineau 257 (1998) 199
- Fusion R&D strategy for Japan, A. Iiyoshi 258-263 (1998) 1
- The challenge of developing structural materials for fusion power systems, E.E. Bloom 258-263 (1998) 7
- Users' requirements for IFMIF, K. Noda, K. Ehrlich, S. Jitsukawa, A. Möslang and S. Zinkle 258-263 (1998) 97
- Austenitic stainless steels and high strength copper alloys for fusion components, A.F. Rowcliffe, S.J. Zinkle, J.F. Stubbins, D.J. Edwards and D.J. Alexander 258-263 (1998) 183
- Current status and future R&D for reduced-activation ferritic/martensitic steels, A. Hishinuma, A. Kohyama, R.L. Klueh, D.S. Gelles, W. Dietz and K. Ehrlich 258-263 (1998) 193
- Irradiation testing of 316L(N)-IG austenitic stainless steel for ITER, E.V. van Osch, M.G. Horsten and M.I. de Vries 258-263 (1998) 301
- Development of divertor plate with CFCs bonded onto DSCu cooling tube for fusion reactor application, S. Suzuki, T. Suzuki, M. Araki, K. Nakamura and M. Akiba 258-263 (1998) 318
- Design concept for the IFMIF test assemblies, J.R. Haines, I. Jitsukawa, A. Möslang, K. Noda, R. Viola and S.J. Zinkle 258-263 (1998) 400
- A remotely operated FIMEC apparatus for the mechanical characterization of neutron irradiated materials, A. Donato, P. Gondi, R. Montanari, L. Moreschi, A. Sili and S. Storai 258-263 (1998) 446
- Examination of indentation geometry-constitutive behaviour relations with confocal microscopy and finite element modeling, C. Santos, G.R. Odette, G.E. Lucas and T. Yamamoto 258-263 (1998) 452
- Compatibility of structural materials with  $Li_2BeF_4$  molten salt breeder, T. Terai, Y. Hosoya, S. Tanaka, A. Sagara and O. Motojima 258-263 (1998) 513
- The behaviour of the natural oxide of MANET as permeation barrier under cyclic loads: Self-healing, A. Perujo and H. Kolbe 258-263 (1998) 582
- Effects of prestresses on mechanical properties of isotropic graphite materials, T. Oku, A. Kurumada, Y. Imamura, K. Kawamata and M. Shiraishi 258-263 (1998) 814
- Distribution of C-Cr associates and mechanical stability of Cr martensitic steels, P. Gondi, R. Montanari and M.E. Tata 258-263 (1998) 1167
- Low cycle fatigue properties of 8Cr-2WVTa ferritic steel at elevated temperatures, T. Ishii, K. Fukaya,

- Y. Nishiyama, M. Suzuki and M. Eto 258–263 (1998) 1183
- Superior Charpy impact properties of ODS ferritic steel irradiated in JOYO, T. Kuwabara, H. Kurishita, S. Ukai, M. Narui, S. Mizuta, M. Yamazaki and H. Kayano 258–263 (1998) 1236
- Fracture toughness of low activation ferritic steel (JLF-1) weld joint at room temperature, A. Nishimura, N. Inoue and T. Muroga 258–263 (1998) 1242
- Correlation between microstructure and hardness of a low activation ferritic steel (JLF-1) weld joint, N. Inoue, T. Muroga, A. Nishimura and O. Motojima 258–263 (1998) 1248
- Grain boundary chemistry and heat treatment effects on the ductile-to-brittle transition behavior of vanadium alloys, R.J. Kurtz, M.L. Hamilton and H. Li 258–263 (1998) 1375
- Effect of thickness and loading mode on the fracture properties of V-4Cr-4Ti at room temperature, H. Li, R.J. Kurtz and R.H. Jones 258–263 (1998) 1386
- Dynamic finite element analysis of third size charpy specimens of V-4Cr-4Ti, M.R. Lansberry, R.J. Kurtz, A.S. Kumar and G.E. Mueller 258–263 (1998) 1392
- Tensile properties of a series of V-4Ti-4Cr alloys containing small amounts of Si, Al and Y, and the influence of helium implantation, T. Matsushima, M. Satou, A. Hasegawa, K. Abe and H. Kayano 258–263 (1998) 1497
- Rapid oxidation and its effects on mechanical properties of V-Ti-Cr-Si type alloys, M. Fujiwara, M. Satou, A. Hasegawa and K. Abe 258–263 (1998) 1507
- Radiation response of SiC-based fibers, G.E. Youngblood, R.H. Jones, A. Kohyama and L.L. Snead 258–263 (1998) 1551
- Fiber creep rate and high-temperature properties of SiC/SiC composites, C.A. Lewinsohn, R.H. Jones, G.E. Youngblood and C.H. Henager Jr. 258–263 (1998) 1557
- A fusion power reactor concept using SiC/SiC composites, S. Ueda, S. Nishio, Y. Seki, R. Kurihara, J. Adachi, S. Yamazaki and DREAM Design Team 258–263 (1998) 1589
- Fatigue crack growth under compressive loading, K. Kasaba, T. Sano, S. Kudo, T. Shoji, K. Katagiri and T. Sato 258–263 (1998) 2059
- Review of the materials-chemistry models in the VICTORIA code, D.R. Olander and V. Mubayi 270 (1999) 1
- Superconductors**
- Defects in high- $T_c$  superconductors after ion irradiation, B. Hensel 251 (1897) 218
- Fusion R&D strategy for Japan, A. Iiyoshi 258–263 (1998) 1
- Present status and future prospect of the ITER project, R. Aymar, ITER Joint Central Team and Home Teams 258–263 (1998) 56
- Review of SC magnet technologies developed in LHD project, O. Motojima, N. Yanagi and A. Nishimura 258–263 (1998) 234
- Defect production and recovery in high- $T_c$  superconductors irradiated with electrons and ions at low temperature, N. Ishikawa, Y. Chimi, A. Iwase, K. Tsuru, O. Michikami 258–263 (1998) 1924
- Development of the superconductors for ITER magnet system, A. Shikov, A. Nikulin, A. Silaev, A. Vorobieva, V. Pantsyrnyi, G. Vedernikov, N. Salunin, S. Sudiev 258–263 (1998) 1929
- Development of superconductors for the Large Helical Device, N. Yanagi, T. Mito, K. Takahata, S. Imagawa, S. Yamada, A. Nishimura, A. Iwamoto, H. Chikaraishi, H. Tamura, S. Yamaguchi, T. Satow, S. Satoh, O. Motojima 258–263 (1998) 1935
- Developments of high- $T_c$  superconducting current feeders for a large-scale superconducting coil system, T. Mito, K. Maehata, M. Mizokami, K. Ishibashi, M. Takeo, A. Iwamoto, N. Hirano, T. Shintomi, K. Kimura, M. Sawamura, S. Yamada, S. Satoh and O. Motojima 258–263 (1998) 1940
- Surface Effects**
- Thermal transport in CKC TiB<sub>2</sub>-doped graphite, J.W. Davis and A.A. Haasz 252 (1998) 150
- Chemical erosion of CKC TiB<sub>2</sub>-doped graphite, J.W. Davis and A.A. Haasz 255 (1998) 214
- Investigation of structure and composition of surface oxides in a high chromium martensitic steel, I. Iordanova, K.S. Forcey, R. Harizanova, Y. Georgiev and M. Surtchev 257 (1998) 126
- Investigation of liquid impact erosion for 12Cr steel and Stellite 6B, M.K. Lee, W.W. Kim, C.K. Rhee and W.J. Lee 257 (1998) 134
- A study on the reaction of yttria (Y<sub>2</sub>O<sub>3</sub>) in flowing uranium hexafluoride (UF<sub>6</sub>) gas at 900°C, Z.E. Erkmen 257 (1998) 152
- Surface chemical behavior of triuranium octaoxide in the atmospheres of carbon monoxide and hydrogen, X. Wang, Y. Fu and R. Xie 257 (1998) 287
- Development and performance of aluminum nitride insulating coatings

- for application in a lithium environment, K. Natesan, C.B. Reed, D.L. Rink and R.C. Haglund 258–263 (1998) 488
- Ab initio Hartree–Fock study on surface desorption process in tritium release, M. Taniguchi and S. Tanaka 258–263 (1998) 531
- Ab initio MO study on hydrogen release from surface of lithium silicate, T. Nakazawa, K. Yokoyama and K. Noda 258–263 (1998) 571
- Performance and lifetime assessment of reactor wall and nearby components during plasma instabilities, A. Hassanein and I. Konkashbaev 258–263 (1998) 645
- Analysis of the mechanism and source of contamination of diagnostic windows in fusion devices, V.S. Voitsenya 258–263 (1998) 658
- Influence of target chemical activity on Balmer lines emission from back-scattered hydrogen, A. Ohmori and T. Tanabe 258–263 (1998) 666
- Gas bubbles in beryllium implanted with He ions at temperatures  $\leq 700$  K and after post-implantation annealing, V.N. Chernikov, H. Ullmaier and A.P. Zakharov 258–263 (1998) 694
- Erosion of carbon-based materials in a steady-state deuterium plasma, B.I. Khripunov, V.B. Petrov, Yu.V. Martynenko, A.M. Litnovsky, N.V. Antonov and V.V. Shapkin 258–263 (1998) 700
- Boron ion particles sputtered from boron films deposited on graphites, Y. Ohtsuka, M. Tsuji, Y. Kitamura, Y. Ueda, M. Isobe and M. Nishikawa 258–263 (1998) 735
- Thermal stability and chemical erosion of the silicon doped CFC material NS31, M. Balden, J. Roth and C.H. Wu 258–263 (1998) 740
- High heat flux erosion of carbon fibre composite materials in the TEXTOR tokamak, H. Bolt, T. Scholz, J. Boedo, K.H. Finken and A. Hassanein 258–263 (1998) 757
- Deuterium accumulation in beryllium oxide layer exposed to deuterium atoms, V.M. Sharapov, V.K. Alimov and L.E. Gavrilov 258–263 (1998) 803
- Disruption and sputtering erosions on SiC doped CFC, K. Nakamura, S. Suzuki, M. Dairaku, K. Yokoyama, Y. Okumura, T. Suzuki, R. Jimbou, V. Bandourko and M. Akiba 258–263 (1998) 828
- Overview of EU CFCs development for plasma facing materials, C.H. Wu, C. Alessandrini, P. Bonal, H. Grote, R. Moormann, M. Rödiger, J. Roth, H. Werle and G. Vieider 258–263 (1998) 833
- Experiments with tungsten limiters in TEXTOR-94, V. Philipps, A. Pospieszczyk, A. Huber, A. Kirschner, J. Rapp, B. Schweer, P. Wienhold, G. van Oost, G. Sergienko, T. Tanabe, K. Ohya, M. Wada, T. Ohgo and M. Rubel 258–263 (1998) 858
- Erosion of W and deposition of C due to bombardment with D and CH<sub>3</sub>, W. Eckstein, K. Krieger and J. Roth 258–263 (1998) 912
- Tungsten self-sputtering yield with different incidence angles and target temperatures, V. Bandourko, R. Jimbou, K. Nakamura and M. Akiba 258–263 (1998) 917
- Performance of tungsten coatings as plasma facing components used in ASDEX Upgrade, H. Maier, S. Kötterl, K. Krieger, R. Neu, M. Balden and ASDEX Upgrade-Team 258–263 (1998) 921
- Static and dynamic erosion behavior of TiC coated graphite in high heat flux plasma, S. Takamura, K. Hayashi, N. Ohno and K. Morita 258–263 (1998) 961
- Ion reflection and sputtering at tungsten surface exposed to edge plasmas in TEXTOR, K. Ohya, J. Kawata, T. Tanabe, M. Wada, Y. Ueda, V. Philipps, B. Unterberg, A. Pospieszczyk, B. Schweer, F. Weschenfelder and N. Noda 258–263 (1998) 1055
- Experiment on atomic hydrogen reflection by use of a permeation probe, I. Takagi, K. Toyoda, M. Katayama, H. Fujita and K. Higashi 258–263 (1998) 1082
- Investigation of fusion reactor candidate materials erosion in plasma disruption simulation experiments, V.L. Yakushin, B.A. Kalin, A.V. Shul'ga, V.T. Fedotov and A.N. Plyushev 258–263 (1998) 1127
- Performance of V-4Cr-4Ti material exposed to the DIII-D tokamak environment, H. Tsai, W.R. Johnson, D.L. Smith, J.P. Smith and H.M. Chung 258–263 (1998) 1466
- Effects of oxygen and oxidation on tensile behavior of V-4Cr-4Ti alloy, K. Natesan, W.K. Soppet and M. Uz 258–263 (1998) 1476
- Dynamic effects in energetic particle-induced luminescence of SiO<sub>2</sub>, T. Tanabe, A. Omori and M. Fujiwara 258–263 (1998) 1914
- On the choice of materials for the first mirrors of plasma diagnostics in a fusion reactor, V.S. Voitsenya, A.F. Bardamid, V.T. Gritsyna, V.G. Konovalov, O. Motojima, D.V. Orlinskij, R. Palladino, B.J. Peterson, A.N. Shapoval, A.F.

- Shtan, S.I. Solodovchenko, K.I. Yakimov and K. Young 258–263 (1998) 1919
- Erosion of thin hydrogenated carbon films in oxygen, oxygen/hydrogen and water plasmas, B. Landkammer, A. von Keudell and W. Jacob 264 (1999) 48
- Erosion behavior of soft, amorphous deuterated carbon films by heat treatment in air and under vacuum, K. Maruyama, W. Jacob and J. Roth 264 (1999) 56
- Thermal vaporization and deposition of gallium oxide in hydrogen, D.P. Butt, Y. Park and T.N. Taylor 264 (1999) 71
- Mixed-material coating formation on plasma-facing components, R.P. Doerner, A.A. Grossman, S. Luckhardt, R. Seraydarian, F.C. Sze and D.G. Whyte 266–269 (1999) 392
- Chemical erosion of graphite under simultaneous  $O^+$  and  $H^+$  irradiation A.Y.K. Chen, J.W. Davis and A.A. Haasz 266–269 (1999) 399
- Oxygen incorporation into beryllium under D-ion bombardment in  $O_2$  atmosphere, V.Kh. Alimov, R.Kh. Zalavutdinov and A.P. Zakharov 266–269 (1999) 417
- Release of hydrogen molecules from hydrogen-containing carbon film deposited on molybdenum, K. Ashida, K. Watanabe, I. Kitamura and S. Ikeno 266–269 (1999) 434
- Determination of angle resolved velocity distributions of sputtered tungsten atoms, A. Goehlich, N. Niemöller and H.F. Döbele 266–269 (1999) 501
- Erosion of beryllium and deposition of carbon and oxygen due to bombardment with  $C^+$  and  $CO^+$  ions, P. Goldstraß, W. Eckstein and Ch. Linsmeier 266–269 (1999) 581
- Deuterium release rates in a-C:D-layers during oxygen attack, S. Alberici, H.K. Hinssen, R. Moormann and C.H. Wu 266–269 (1999) 754
- Deuterium transport in Cu, CuCrZr, and Cu/Be, R.A. Anderl, M.R. Hankins, G.R. Longhurst and R.J. Pawelko 266–269 (1999) 761
- Dependence of surface oxidation on hydrogen absorption and desorption behaviors of Ti-6Al-4V alloy, Y. Hirohata, T. Nakamura, Y. Aihara and T. Hino 266–269 (1999) 831
- Chemical sputtering yields of carbon based materials at high ion flux densities, H. Grote, W. Bohmeyer, P. Kornejew, H.D. Reiner, G. Fussmann, R. Schlögl G. Weinberg and C.H. Wu 266–269 (1999) 1059
- Analysis and oxidation of thick deposits on TEXTOR plasma facing components, M. Rubel, J. von Segern, P. Karduck, V. Philipps and A. Vevecka-Priftaj 266–269 (1999) 1185
- Swelling**
- Irradiation creep and void swelling of austenitic stainless steels at low displacement rates in light water energy systems, F.A. Garner and M.B. Toloczko 251 (1997) 252
- Low dose irradiation performance of SiC interphase SiC/SiC composites, L.L. Snead, M.C. Osborne, R.A. Lowden, J. Strizak, R.J. Shinavski, K.L. More, W.S. Eatherly, J. Bailey and A.M. Williams 253 (1998) 20
- Dimensional stability and tensile strength of irradiated Nicalon-CG and Hi-Nicalon fibers, C.H. Henager, G.E. Youngblood, D.J. Senor, G.A. Newsome and J.J. Woods 253 (1998) 60
- Void swelling in Fe-15Cr-xNi ternary alloys under proton irradiation, Y. Murase, J. Nagakawa, N. Yamamoto and H. Shiraishi 255 (1998) 34
- Thermal treatment of uranium oxide irradiated in pressurized water reactor: Swelling and release of fission gases, I. Zacharie, S. Lansiait, P. Combette, M. Trotabas, M. Coster and M. Groos 255 (1998) 85
- Microstructural analysis and modeling of intergranular swelling of an irradiated  $UO_2$  fuel treated at high temperature, I. Zacharie, S. Lansiait, P. Combette, M. Trotabas, M. Coster and M. Groos 255 (1998) 92
- Impacts of damage production and accumulation on materials performance in irradiation environment, B.N. Singh 258–263 (1998) 18
- Microstructure and mechanical properties of neutron irradiated beryllium, E. Ishitsuka, H. Kawamura, T. Terai and S. Tanaka 258–263 (1998) 566
- Beryllium R&D for blanket application, M. Dalle Donne, G.R. Longhurst, H. Kawamura and F. Scaffidi-Argentina 258–263 (1998) 601
- Investigation of ITER candidate beryllium grades irradiated at high temperature, I.B. Kupriyanov, V.A. Gorokhov, R.R. Melder, Z.E. Ostrovsky and A.A. Gervash 258–263 (1998) 808
- Microstructure of tantalum irradiated with heavy ions, K. Yasunaga, H. Watanabe, N. Yoshida, T. Muroga and N. Noda 258–263 (1998) 879
- Effects of solid transmutants and helium in copper studied by mixed-spectrum neutron irradiation, T. Muroga, H. Watanabe and N. Yoshida 258–263 (1998) 955

- Irradiation creep of various ferritic alloys irradiated at  $\sim 400^\circ\text{C}$  in the PFR and FFTF reactors, M.B. Toloczko, F.A. Garner and C.R. Eiholzer 258–263 (1998) 1163
- Void formation and microstructural development in oxide dispersion strengthened ferritic steels during electron-irradiation, J. Saito, T. Suda, S. Yamashita, S. Ohnuki, H. Takahashi, N. Akasaka, M. Nishida and S. Ukai 258–263 (1998) 1264
- Influence of operation conditions on structure and properties of 12% Cr steels as candidate structural materials for fusion reactor, A.G. Ioltukhovskiy, M.V. Leontyeva-Smirnova, Y.I. Kazennov, E.A. Medvedeva, A.V. Tselishchev, V.K. Shamardin, A.V. Povstyanko, S.E. Ostrovskiy, A.M. Dvoryashin, S.I. Porollo, A.N. Vorobyev and V.S. Khabarov 258–263 (1998) 1312
- Effect of neutron irradiation on swelling, elastic modulus and thermal conductivity of V–Ga alloys, A.I. Dediurin, Y.M. Platov, M.I. Zakharova, I.V. Borovitskaja and N.A. Artemov 258–263 (1998) 1409
- Swelling behavior of V–Fe binary and V–Fe–Ti ternary alloys, K. Fukumoto, A. Kimura and H. Matsui 258–263 (1998) 1431
- Radiation hardening of V–C, V–O, V–N alloys neutron-irradiated to high fluences, T. Chuto, M. Satou and K. Abe 258–263 (1998) 1502
- Effects of helium on void swelling in boron doped V–5Fe alloys, T. Iwai, N. Sekimura and F.A. Garner 258–263 (1998) 1512
- Flux and composition dependence of irradiation creep of austenitic alloys irradiated in PFR at  $\sim 420^\circ\text{C}$ , M.B. Toloczko, F.A. Garner, J. Standring, B. Munro and S. Adaway 258–263 (1998) 1606
- Swelling and void-induced embrittlement of austenitic stainless steel irradiated to 73–82 dpa at 335–365 $^\circ\text{C}$ , S.I. Porollo, A.N. Vorobjev, Y.V. Konobeev, A.M. Dvoryashin, V.M. Krigan, N.I. Budylnkin, E.G. Mironova and F.A. Garner 258–263 (1998) 1613
- Irradiation creep and stress-enhanced swelling of Fe–16Cr–15Ni–Nb austenitic stainless steel in BN-350, A.N. Vorobjev, N.I. Budylnkin, E.G. Mironova, S.I. Porollo, Y.V. Konobeev and F.A. Garner 258–263 (1998) 1618
- Effect of cold work on void swelling in proton irradiated Fe–15Cr–20Ni ternary alloys, Y. Murase, J. Nagakawa, N. Yamamoto and H. Shiraiishi 258–263 (1998) 1639
- The structural evolution of new low-activation and chromium–nickel stainless steels under high-dose irradiation up to 200 dpa, V.V. Sagaradze, S.S. Lapin, B.N. Goshchitskii and M.A. Kirk 258–263 (1998) 1675
- Microchemical and microstructural changes of austenitic steels caused by proton irradiation following helium implantation, T. Fukuda, T. Aoki, Y. Isobe, T. Furuya, A. Hasegawa and K. Abe 258–263 (1998) 1694
- Effect of light impurities on the early stage of swelling in austenitic stainless steel, N. Igata, A. Ryazanov and D.N. Korolev 258–263 (1998) 1735
- Effects of Mn and Si additions on microstructural development in TiAl intermetallic compounds irradiated with He-ions, O. Okada, K. Nakata, K. Fukai, A. Hishinuma and K. Ameyama 258–263 (1998) 1750
- Production and recovery of defects in SiC after irradiation and deformation, J. Chen, P. Jung and H. Klein 258–263 (1998) 1803
- Radiation swelling decrease by means of explosive wave, V.M. Kosenkov, S.A. Vorobjev and A.V. Kolesnikov 258–263 (1998) 1809
- Neutron-induced damage in near-stoichiometric spinel ceramics irradiated below 200 $^\circ\text{C}$  and its recovery due to annealing, T. Yano, A. Insani, H. Sawada and T. Iseki 258–263 (1998) 1836
- Damage structure evolution in  $\text{Al}_2\text{O}_3$  irradiated with multiple ion beams of H, He and O and after annealing, Y. Katano, T. Nakazawa, D. Yamaki, T. Aruga and K. Noda 258–263 (1998) 1842
- Microstructural evolution of welded austenitic stainless steel irradiated in HFIR target experiments, T. Sawai, K. Shiba and A. Hishinuma 258–263 (1998) 1997
- Theory and Modelling**
- Computer simulation of vacancy and interstitial clusters in bcc and fcc metals, Yu.N. Osetsky, M. Victoria, A. Serra, S.I. Golubov and V. Priego 251 (1997) 34
- Alloys under irradiation, G. Martin, P. Bellon and F. Soisson 251 (1997) 86
- Disorder-induced amorphization, N.Q. Lam, P.R. Okamoto and M. Li 251 (1997) 89
- Instability of ordered precipitates due to local disordering and atomic mixing under irradiation, S. Matsumura, M. Okudaira and C. Kinoshita 251 (1997) 145

- Segregation of cascade induced interstitial loops at dislocations: possible effect on initiation of plastic deformation, H. Trinkaus, B.N. Singh and A.J.E. Foreman 251 (1997) 172
- Modeling of chemical interactions of fuel rod materials at high temperatures. I. Simultaneous dissolution of  $\text{UO}_2$  and  $\text{ZrO}_2$  by molten Zr in an oxidizing atmosphere, M.S. Veshchunov and A.V. Berdyshev 252 (1998) 98
- Modeling of chemical interactions of fuel rod materials at high temperatures. II. Investigation of downward relocation of molten materials, M.S. Veshchunov and A.V. Palagin 252 (1998) 110
- A theoretical model for determination of fracture toughness of reactor pressure vessel steels in the transition region from automated ball indentation test, T.S. Byun, J.W. Kim and J.H. Hong 252 (1998) 187
- Low volatile fission-product release and fuel volatilization during severe reactor accident conditions, B.J. Lewis, B.J. Corse, W.T. Thompson, M.H. Kaye, F.C. Iglesias, P. Elder, R. Dickson and Z. Liu 252 (1998) 235
- Topological modeling of amorphized tetrahedral ceramic network structures, C.E. Jesurum, V. Pulim and L.W. Hobbs 253 (1998) 87
- Fission product release from trace irradiated  $\text{UO}_{2+x}$ , M.A. Mansouri and D.R. Olander 254 (1998) 22
- Liquid immiscibility in a (O, U, Zr) model corium, C. Guéneau, V. Dauvois, P. Pérodeaud, C. Gonella and O. Dugne 254 (1998) 158
- A molecular dynamics study of high-energy displacement cascades in  $\alpha$ -zirconium, S.J. Wooding, L.M. Howe, F. Gao, A.F. Calder and D.J. Bacon 254 (1998) 191
- The effect of the cracking plane crystallographic orientation on the stress corrosion cracking process, E. Ciocan, M. Ignat and E. Gheorghiu 255 (1998) 1
- On the mechanism of radiation-induced segregation in austenitic Fe–Cr–Ni alloys. T.R. Allen, J.T. Busby, G.S. Was and E.A. Kenik 255 (1998) 44
- Kinetics of  $\text{UO}_2$  oxidation in steam atmosphere, B.V. Dobrov, V.V. Likhanskii, V.D. Ozrin, A.A. Solodov, M.P. Kissane and H. Manenc 255 (1998) 59
- Atomistic modeling of finite-temperature properties of crystalline  $\beta$ -SiC. II. Thermal conductivity and effects of point defects, J. Li, L. Porter and S. Yip 255 (1998) 139
- Grain boundary segregation under neutron irradiation in dilute alloys, R.G. Faulkner, S. Song, P.E.J. Flewitt, M. Victoria and P. Marmy 255 (1998) 189
- Extension of the TRANSURANUS burnup model to heavy water reactor conditions, K. Lassmann, C.T. Walker and J. van de Laar 255 (1998) 222
- Modelling of hydrogen absorption by zirconium alloys during high temperature oxidation in steam, M.S. Veshchunov and A.V. Berdyshev 255 (1998) 250
- Swelling modification by one-dimensional diffusion of cascade-produced small interstitial clusters, V.A. Borodin and A.I. Ryazanov 256 (1998) 47
- Observation of kinetics of  $\gamma$  zirconium hydride formation in Zr–2.5Nb by neutron diffraction, W.M. Small, J.H. Root and D. Khatamian 256 (1998) 102
- The effect of hydride on the corrosion of Zircaloy-4 in aqueous LiOH solution, S.-J. Kim, K.H. Kim, J.H. Baek, B.K. Choi, Y.H. Jeong and Y.H. Jung 256 (1998) 114
- The microstructure and tensile properties of Fe–Cr alloys after neutron irradiation at 400°C to 5.5–7.1 dpa, S.I. Porollo, A.M. Dvoria-shin, A.N. Vorobyev and Y.V. Kono-beev 256 (1998) 247
- Impacts of damage production and accumulation on materials performance in irradiation environment, B.N. Singh 258–263 (1998) 18
- Atomic processes during damage production and defect retention, N.M. Ghoniem 258–263 (1998) 113
- Ab initio MO study on hydrogen release from surface of lithium silicate, T. Nakazawa, K. Yokoyama and K. Noda 258–263 (1998) 571
- Derivation of hydrogen transport parameters in carbon fibre composites by modelling transient release in isovolumetric desorption experiments, L.A. Sedano, S. Alberici, A. Perujo, J. Camposilvan and K. Douglas 258–263 (1998) 662
- The effective secondary electron yield in the space-charge limited condition, I.V. Tsvetkov and T. Tanabe 258–263 (1998) 927
- Ion reflection and sputtering at tungsten surface exposed to edge plasmas in TEXTOR, K. Ohya, J. Kawata, T. Tanabe, M. Wada, Y. Ueda, V. Philipps, B. Unterberg, A. Pospieszczyk, B. Schweer, F. Weschenfelder and N. Noda 258–263 (1998) 1055
- Modelling of phase transformations occurring in low activation marten-



- sitic steels, J.-C. Brachet, L. Gavard, C. Boussidan, C. Lepoittevin, S. Denis and C. Servant 258–263 (1998) 1307
- A model of silver–iodine reactions in a light water reactor containment sump under severe accident conditions, E. Krausmann and Y. Drosinos 264 (1999) 113
- Electronic ion energy loss calculations on the basis of the binary encounter approximation, C.A. Ordonez, D.R. Bickel, V.C. Venezia, F.D. McDaniel, S.E. Matteson and M.I. Molina 264 (1999) 133
- Multiplicative model for out-of-phase thermal fatigue degradation of ferritic–martensitic steel MANET-II, A. Zisman, V. Rybin, C. Petersen and R. Schmitt 264 (1999) 234
- Influence of stress developed due to oxide layer formation on the oxidation kinetics of Zr–2.5%Nb alloy, A.P. Zhilyaev and J.A. Szpunar 264 (1999) 327
- Modelling of high temperature superionic transition of uranium dioxide crystals, L.V. Matweev and M.S. Veshchunov 265 (1999) 285
- Simulation of helium exhaust in JET and ITER, M. Fichtmüller, G. Corrigan, L. Lauro-Taroni, R. Simonini, J. Spence, E. Springmann and A. Taroni 266–269 (1999) 330
- Influence of  $\mathbf{E} \times \mathbf{B}$  and  $\nabla B$  drift terms in 2-D edge/SOL transport simulations, T.D. Rognlien, G.D. Porter and D.D. Ryutov 266–269 (1999) 654
- Empirical scalings of cross-field heat diffusivities in the scrape-off layer of Alcator C-Mod from a 2-D interpretive model, M.V. Umansky and B. LaBombard 266–269 (1999) 721
- Scrape off layer modelling studies for SST-I, M. Warrier, S. Jaishankar, S. Deshpande, D. Coster, R. Schneider, S. Chaturvedi, R. Srinivasan, B.J. Braams and SST Team 266–269 (1999) 726
- MARFE onset conditions and stability, Yu. Igitchkanov and M. Mikhailov 266–269 (1999) 837
- Coupled Monte Carlo neutral – fluid plasma simulation of Alcator C-Mod divertor plasma near detachment, D.P. Stotler, R.A. Vesey, D.P. Coster, C.F.F. Karney, B. LaBombard, B. Lipschultz, C.S. Pitcher and R. Schneider 266–269 (1999) 947
- Edge plasma modeling of limiter surfaces in a tokamak divertor configuration, M.E. Rensink and T.D. Rognlien 266–269 (1999) 1180
- Kinetic modeling of the transport in the SOL of TdeV during LH current drive and ELM bursts, M. Shoucri, I. Shkarofsky, J.-L. Gauvreau, P. Jacquet, G. Pacher, R. Decoste, O. Batishchev, A. Batishcheva and D. Sigmar 266–269 (1999) 1202
- The stochastic edge region of W7-X, E. Strumberger 266–269 (1999) 1207
- Prediction of the oxygen potential in the fuel-to-clad gap of defective fuel rods during severe accident conditions, B.J. Lewis 270 (1999) 221
- Thermal Reactors**
- Solubility of zinc ferrite in high-temperature oxygenated water, Y. Hanzawa, D. Hiroishi, C. Matsuura and K. Ishigure 252 (1998) 209
- Hardening of Alloy N10276 by diluted flowing butane gas, S.W. Sharkawy 255 (1998) 75
- Extension of the TRANSURANUS burnup model to heavy water reactor conditions, K. Lassmann, C.T. Walker and J. van de Laar 255 (1998) 222
- Hydride formation by high temperature cathodic hydrogen charging method and its effect on the corrosion behavior of Zircaloy-4 tubes in acid solution, Y. Choi 256 (1998) 124
- Temperature controlled material irradiation in the advanced test reactor, F.W. Ingram, A.J. Palmer and D.J. Stites 258–263 (1998) 362
- Irradiation techniques under high pressurized water using hybrid type saturated temperature capsule in the JMTR, Y. Matsui, M. Niimi, T. Hoshiya, T. Tsukada and H. Tsuji 258–263 (1998) 378
- Thermal Shock**
- Molecular dynamics simulation of atomic beam bombardment on a solid surface, K. Ezato and T. Kunugi 258–263 (1998) 618
- The thermal shock resistance of a joining material of C/C composite and copper, A. Kurumada, T. Oku, Y. Imamura, K. Kawamata, O. Motojima, N. Noda and B. McEnaney 258–263 (1998) 821
- Experimental modelling of plasma–graphite surface interaction in ITER, Y.V. Martynenko, M.I. Guseva, V.I. Vasiliev, V.M. Gureev, L.S. Danelyan, V.E. Neumoin, V.B. Petrov, B.I. Khripunov, Y.A. Sokolov, O.V. Stativkina, V.G. Stolyarova and V.M. Strunnikov 258–263 (1998) 1120
- High-cycle fatigue tests of modified 316 stainless steels under 20 MeV proton irradiation and thermal pulses, H. Mizubayashi, K. Tateishi, H. Tanimoto and K. Nakata 258–263 (1998) 1725

- Thermal shock resistance of SiC compositionally graded C/C composites, K. Fujii and R. Yamada 258–263 (1998) 1953
- Thermodynamic Properties**
- Disorder-induced amorphization, N.Q. Lam, P.R. Okamoto and M. Li 251 (1997) 89
- Deterioration of ZrC-coated fuel particle caused by failure of pyrolytic carbon layer, K. Minato, K. Fukuda, H. Sekino, A. Ishikawa and E. Oeda 252 (1998) 13
- Solubility of zinc ferrite in high-temperature oxygenated water, Y. Hanzawa, D. Hiroishi, C. Matsuura and K. Ishigure 252 (1998) 209
- Vaporization study on lanthanum–cerium alloys by mass-spectrometric method, Y. Shoji, T. Matsui, K. Nakamura and T. Inoue 254 (1998) 9
- Thermal stability and vapour pressure studies on  $UTe_3O_9(s)$  and  $UTeO_5(s)$ , K. Krishnan, G.A. Rama Rao, K.D. Singh Mudher and V. Venugopal 254 (1998) 49
- A review of the oxidation of uranium dioxide at temperatures below 400°C, R.J. McEachern and P. Taylor 254 (1998) 87
- Liquid immiscibility in a (O, U, Zr) model corium, C. Guéneau, V. Dauvois, P. Pérodeaud, C. Gonella and O. Dugne 254 (1998) 158
- Kinetics of interfacial reactions in molten U/solid  $Y_2O_3$  system, C. Tournier, B. Lorrain, F. Le Guyadec, L. Coudurier and N. Eustathopoulos 254 (1998) 215
- Thermal diffusion and Soret effect in  $(U,Me)O_{2+\delta}$ : the heat of transport of oxygen, J. Janek and H. Timm 255 (1998) 116
- Vaporization behaviour and thermodynamic stabilities of strontium tellurites,  $SrTeO_3$  and  $SrTe_2O_5$ , R. Mishra, S.R. Bharadwaj, A.S. Kerkar and S.R. Dharwadkar 255 (1998) 210
- High-temperature Knudsen cell studies of cesium iodide in hyperstoichiometric uranium dioxide, J. McFarlane and J.C. LeBlanc 256 (1998) 145
- Influence of texture and physical mixture of  $UO_3$  and C for carboreduction of  $UO_3$  into  $UO_2$ , F. Poncet, F. Valdivieso and M. Pijolat 256 (1998) 155
- Gibbs energy of formation of thorium molybdate ( $ThMo_2O_8$ ) by the transpiration technique, M. Basu, R. Mishra, S.R. Bharadwaj, A.S. Kerkar and S.R. Dharwadkar 257 (1998) 185
- Thermodynamic modelling of the O–U–Zr system, P.Y. Chevalier and E. Fischer 257 (1998) 213
- Thermodynamic analysis of the Cs–Te system around the  $Cs_2Te$  phase, H.P. Nawada and O.M. Sreedharan 257 (1998) 256
- Ceramic breeder materials: Status and needs, C.E. Johnson, K. Noda and N. Roux 258–263 (1998) 140
- Solubility of hydrogen fluoride in the molten  $LiF-PbF_2$ , M. Ablanov, H. Matsuura and R. Takagi 258–263 (1998) 500
- Thermal and mechanical properties of ceramic blanket particle bed materials: Numerical derivation, M. Abdou, A. Ying and Z. Lu 258–263 (1998) 576
- Thermodynamics of the formation of  $CH_4$  by the reaction of carbon materials by a stream of  $NH_3$ , M. Katsura, K. Nishimaki, T. Nakagawa, T.A. Yamamoto, M. Hirota and M. Miyake 258–263 (1998) 839
- Molar Gibbs energy formation of  $KUO_3(s)$ , K. Jayanthi, V.S. Iyer, G.A. Rama Rao and V. Venugopal 264 (1999) 263
- Vaporization study on lanthanum–uranium and cerium–uranium alloys by mass-spectrometric method, Y. Shoji, T. Matsui, K. Nakamura and T. Inoue 265 (1999) 134
- Oxygen potential of solid solution  $Eu_yU_{1-y}O_{2+x}$ , T. Fujino, N. Sato, K. Yamada, S. Nakama, K. Fukuda, H. Serizawa and T. Shiratori 265 (1999) 154
- Thermodynamics of uranium volatilization in steam, D.R. Olander 270 (1999) 187
- On the zirconium–oxygen–hydrogen ternary system, M. Miyake, M. Uno and S. Yamanaka 270 (1999) 233
- A thermodynamic evaluation of the titanium–oxygen system from O/Ti=0 to 3/2, W.-E Wang and Y.S. Kim 270 (1999) 242
- Thermochemical properties of the hydrogen getter DEB, M. Balooch, W.-E Wang and J.D. LeMay 270 (1999) 248
- Thermomechanical Treatment**
- Effects of heat treatment on grain refinement in cast uranium–0.25 wt% vanadium alloy, A.J. Sunwoo, R.N. Accardo and W.H. Gourdin 256 (1998) 53
- Response of dynamically compacted tungsten to high fluence neutron irradiation at 423–600°C in FFTF, J. Megusar and F.A. Garner 258–263 (1998) 940
- Influence of tantalum and nitrogen contents, normalizing condition and TMCP process on the mechanical properties of low-activation 9Cr–2W–0.2V–Ta steels for fusion application, T. Hasegawa, Y. Tomita and A. Kohyama 258–263 (1998) 1153
- Physical metallurgy of BATMAN II Ti-bearing martensitic steels, L.

- Pilloni, F. Attura, A. Calza-Bini, G. De Santis, G. Filacchioni, A. Carosi and S. Amato 258–263 (1998) 1329
- Grain boundary chemistry and heat treatment effects on the ductile-to-brittle transition behavior of vanadium alloys, R.J. Kurtz, M.L. Hamilton and H. Li 258–263 (1998) 1375
- On the effects of heat treatment and surface orientation on corrosion and hydrogen ingress of Zr–2.5Nb pressure tube material, Y.-P. Lin and J. DeLuca 265 (1999) 1
- Effect of Mo on recrystallization characteristics of Zr–Nb–(Sn)–Mo experimental alloys, Y.B. Chun, S.K. Hwang, M.H. Kim, S.I. Kwun and Y.S. Kim 265 (1999) 28
- Low cycle fatigue properties and microscopic deformation structure of Zircaloy-4 in recrystallized and stress-relieved conditions, X. Lin and G. Haicheng 265 (1999) 213
- Thermophysical Properties**
- Heat and mass transport in nanoscale phase transitions induced by collision cascades, A. Caro, M. Alurralde, R. Saliba and M. Caro 251 (1997) 72
- Thermal transport in CKC TiB<sub>2</sub>-doped graphite, J.W. Davis and A.A. Haasz 252 (1998) 150
- Thermophysical property measurements and ion-implantation studies on CePO<sub>4</sub>, K. Bakker, H. Hein, R.J.M. Konings, R.R. van der Laan, H.J. Matzke and P. van Vlaanderen 252 (1998) 228
- On the thermal conductivity of inert-matrix fuels containing americium oxide, K. Bakker and R.J.M. Konings 254 (1998) 129
- Atomistic modelling of finite-temperature properties of crystalline β-SiC. II. Thermal conductivity and effects of point defects, J. Li, L. Porter and S. Yip 255 (1998) 139
- The kinetics of formation and growth of TiC precipitates in Ti-modified stainless steel studied by positron annihilation spectroscopy, P. Gopalan, R. Rajaraman, B. Viswanathan, K.P. Gopinathan and S. Venkadesan 256 (1998) 229
- A comparison of the effect of electron irradiation and of thermal aging on the hardness of FeCu binary alloys, A. Barbu, M.H. Mathon, F. Maury, J.F. Belliard, B. Beuneu and C.H. de Novion 257 (1998) 206
- Ceramic breeder materials: Status and needs, C.E. Johnson, K. Noda and N. Roux 258–263 (1998) 140
- Physical metallurgy of BATMAN II Ti-bearing martensitic steels, L. Pilloni, F. Attura, A. Calza-Bini, G. De Santis, G. Filacchioni, A. Carosi and S. Amato 258–263 (1998) 1329
- Thorium, Thorium Alloys and Compounds**
- Kinetic study of the thermal decomposition of thorium oxalate dihydrate, M.T. Aybers 252 (1998) 28
- Studies on the kinetics of oxidation of Pu<sub>y</sub>Th<sub>1-y</sub>O<sub>2-x</sub> (y = 0.2, 0.3 and 0.7) in air, S.K. Sali, S. Sampath and V. Venugopal 252 (1998) 131
- Investigations of systems ThO<sub>2</sub>–MO<sub>2</sub>–P<sub>2</sub>O<sub>5</sub> (M = U, Ce, Zr, Pu). Solid solutions of thorium-uranium (IV) and thorium-plutonium (IV) phosphate-diphosphates, N. Dacheux, R. Podor, V. Brandel and M. Genet 252 (1998) 179
- Microwave synthesis of solid solutions of urania and thoria – a comparative study, V. Chandramouli, S. Anthonysamy, P.R. Vasudeva Rao, R. Divakar and D. Sundararaman 254 (1998) 55
- Investigation of production conditions of ThO<sub>2</sub>–UO<sub>3</sub> microspheres via the sol-gel process for pellet type fuels, H. Tel, M. Eral and Y. Altaş 256 (1998) 18
- Investigation of the system ThO<sub>2</sub>–NpO<sub>2</sub>–P<sub>2</sub>O<sub>5</sub>. Solid solutions of thorium-neptunium (IV) phosphate-diphosphate, N. Dacheux, A.C. Thomas, V. Brandel and M. Genet 257 (1998) 108
- Gibbs energy of formation of thorium molybdate (ThMo<sub>2</sub>O<sub>8</sub>) by the transpiration technique, M. Basu, R. Mishra, S.R. Bharadwaj, A.S. Kerkar and S.R. Dharwadkar 257 (1998) 185
- Solid state reactions of CeO<sub>2</sub>, ThO<sub>2</sub> and PuO<sub>2</sub> with ammonium sulphate, K.D. Singh Mudher, M. Keskar and V. Venugopal 265 (1999) 146
- Combustion synthesis of thoria – a feasibility study, V. Chandramouli, S. Anthonysamy and P.R. Vasudeva Rao 265 (1999) 255
- Titanium, Titanium Alloys and Compounds**
- Ion nitriding of titanium alpha plus beta alloy for fusion reactor applications, E. Rolinski, G. Sharp, D.F. Cowgill and D.J. Peterman 252 (1998) 200
- Adhesion and wear properties of TiN films deposited on martensitic stainless steel and Stellite by reactive magnetron sputter ion plating, M.K. Lee, W.W. Kim, J.S. Kim and W.J. Lee 254 (1998) 42
- Interdiffusion studies in titanium–304 stainless steel system, G.B. Kale, R.V. Patil and P.S. Gawade 257 (1998) 44

- Improvement of hydriding properties of a  $Zr_1Ni_1$  alloy by adding third transition metals for tritium recovery, T. Kabutomori, Y. Wakisaka, K. Tsuchiya and H. Kawamura 258–263 (1998) 481
- Deuterium migration in titanium during deuteron irradiation observed by proton spectra of the d(d,p)t reaction, H. Kudo, Y. Kosaku, Y. Ando, M. Hiraga and T. Sekine 258–263 (1998) 622
- Static and dynamic erosion behavior of TiC coated graphite in high heat flux plasma, S. Takamura, K. Hayashi, N. Ohno and K. Morita 258–263 (1998) 961
- Effects of Mn and Si additions on microstructural development in TiAl intermetallic compounds irradiated with He-ions, O. Okada, K. Nakata, K. Fukai, A. Hishinuma and K. Ameyama 258–263 (1998) 1750
- Shape memory characteristics of neutron irradiated Ti–Ni shape memory alloy couplers, T. Hoshiya, M. Ohmi, Y. Matsui and M. Nishikawa 258–263 (1998) 2036
- Effect of fast Ti-deposition on gas recycling at the first wall and on fast ion losses in the GDT experiment, P.A. Bagryansky, E.D. Bender, A.A. Ivanov, A.N. Karpushov, S.V. Murachtin, K. Noack, St. Krahl and S. Collatz 265 (1999) 124
- A thermodynamic evaluation of the titanium–oxygen system from  $O/Ti=0$  to  $3/2$ , W.-E Wang and Y.S. Kim 270 (1999) 242
- Tritium and Tritides**
- Release of tritium, protium, and helium from neutron-irradiated Li–Al alloy. II, H. Sugai, M. Tanase and M. Yahagi 254 (1998) 151
- The microstructure and tensile properties of Fe–Cr alloys after neutron irradiation at  $400^\circ\text{C}$  to  $5.5\text{--}7.1$  dpa, S.I. Porollo, A.M. Dvoria-shin, A.N. Vorobyev and Y.V. Konobevev 256 (1998) 247
- Investigation of structure and composition of surface oxides in a high chromium martensitic steel, I. Iordanova, K.S. Forcey, R. Harizanova, Y. Georgiev and M. Surtchev 257 (1998) 126
- Tritium inventory in  $Li_2ZrO_3$  blanket, M. Nishikawa and A. Baba 257 (1998) 162
- Materials integration issues for high performance fusion power systems, D.L. Smith, M.C. Billone, S. Majumdar, R.F. Mattas and D.-K. Sze 258–263 (1998) 65
- Ceramic breeder materials: Status and needs, C.E. Johnson, K. Noda and N. Roux 258–263 (1998) 140
- Tritium behavior in eroded dust and debris of plasma-facing materials, A. Hassanein, B. Wiechers and I. Konkashbaev 258–263 (1998) 295
- Impurity control in liquid lithium loop for IFMIF target facility, Y. Kato, H. Katsuta, S. Konishi, M. Ogoshi, T. Hua, L. Green and S. Cevolani 258–263 (1998) 394
- Change of tritium species in  $Li_2BeF_4$  molten salt breeder under neutron irradiation at elevated temperature, A. Suzuki, T. Terai and S. Tanaka 258–263 (1998) 519
- Ab initio Hartree–Fock study on surface desorption process in tritium release, M. Taniguchi and S. Tanaka 258–263 (1998) 531
- Study on interaction of hydrogen isotopes with radiolysis products in lithium oxide, V. Grišmanovs, M. Taniguchi, S. Tanaka and T. Yoneoka 258–263 (1998) 537
- Anomalous exchange of deuterium implanted into an oxide ceramic for protium in air vapor, B. Tsuchiya, E. Iizuka, K. Soda, K. Morita and H. Iwahara 258–263 (1998) 555
- Derivation of hydrogen transport parameters in carbon fibre composites by modelling transient release in isovolumetric desorption experiments, L.A. Sedano, S. Alberici, A. Perujo, J. Camposilvan and K. Douglas 258–263 (1998) 662
- Oxidation induced release of deuterium from carbon based plasma facing materials, S. Alberici, J.P. Coad, H.-K. Hinssen, R. Moormann, P. Wienhold and C.H. Wu 258–263 (1998) 764
- Overview of EU CFCs development for plasma facing materials, C.H. Wu, C. Alessandrini, P. Bonal, H. Grote, R. Moormann, M. Rödig, J. Roth, H. Werle and G. Vieider 258–263 (1998) 833
- Tritium retention study of tungsten using various hydrogen isotope irradiation sources, S. O'hira, A. Steinér, H. Nakamura, R. Causey, M. Nishi and S. Willms 258–263 (1998) 990
- Hydrogen and deuterium transport and inventory parameters in a Cu–0.65Cr–0.08Zr alloy for fusion reactor applications, E. Serra and A. Perujo 258–263 (1998) 1028
- Implantation driven permeation behavior of deuterium through stainless steel type 316L, H. Nakamura, T. Hayashi, S. O'hira, M. Nishi and K. Okuno 258–263 (1998) 1050
- Influence of coexisting hydrogen isotopes on diffusion of tritium in niobium, K. Sakamoto, T. Higuchi, K. Hashizume and M. Sugisaki 258–263 (1998) 1073

- Study of the retention of hydrogen isotopes implanted in Mo, K. Yamaguchi, M. Okada, O. Onoue, F. Ono and M. Yamawaki 258–263 (1998) 1104
- Quantitative visualization of tritium distribution in vanadium by tritium radioluminography, H. Saitoh, T. Hishi, T. Misawa, T. Ohnishi, Y. Noya, T. Matsuzaki and T. Watanabe 258–263 (1998) 1404
- The effect of tritium and low-temperature neutron irradiation at 77 K on the structure and mechanical properties of reactor steels, B.N. Goshchitskii, V.V. Sagardze, V.L. Arbutov, S.S. Lapin, Yu.N. Zuev, I.V. Podgornova, V.D. Parkhomenko, A.V. Kozlov 258–263 (1998) 1681
- Deuterium trapping in deep traps of differently oriented pyrolytic graphite exposed to D<sub>2</sub> gas at 1473 K, V.N. Chernikov, W.R. Wampler, A.P. Zakharov and A.E. Gorodetsky 264 (1999) 180
- Aging characteristics of Zr–V–Fe getters as observed by Mössbauer spectroscopy, L. Rodrigo and J.A. Sawicki 265 (1999) 208
- D–T experiments in the JET tokamak, M. Keilhacker, M.L. Watkins and JET Team 266–269 (1999) 1
- Tritium retention in tungsten exposed to intense fluxes of 100 eV tritons, R. Causey, K. Wilson, T. Venhaus and W.R. Wampler 266–269 (1999) 467
- Tritium behavior in lithium ceramics, C.E. Johnson 270 (1999) 212
- Tungsten, Tungsten Alloys and Compounds**
- The kinetics of formation and growth of TiC precipitates in Ti-modified stainless steel studied by positron annihilation spectroscopy, P. Gopalan, R. Rajaraman, B. Viswanathan, K.P. Gopinathan and S. Venkadesan 256 (1998) 229
- Development of tungsten armor and bonding to copper for plasma-interactive components, I. Smid, M. Akiba, G. Vieider and L. Plöchl 258–263 (1998) 160
- Effects of interface edge configuration on residual stress in the bonded structures for a divertor application, K. Kitamura, K. Nagata, M. Shibui, N. Tachikawa and M. Araki 258–263 (1998) 275
- Assessment of tungsten for use in the ITER plasma facing components, J.W. Davis, V.R. Barabash, A. Makhankov, L. Plöchl and K.T. Slattery 258–263 (1998) 308
- A review of the US joining technologies for plasma facing components in the ITER fusion reactor, B.C. Odegard Jr., C.H. Cadden, R.D. Watson and K.T. Slattery 258–263 (1998) 329
- Divertor materials evaluation system (DiMES), C.P.C. Wong, D.G. Whyte, R.J. Bastasz, J. Brooks, W.P. West and W.R. Wampler 258–263 (1998) 433
- Material damage to beryllium, carbon, and tungsten under severe thermal shocks, J. Linke, R. Duwe, A. Gervash, R.H. Qian, M. Rödiger and A. Schuster 258–263 (1998) 634
- Analysis of the mechanism and source of contamination of diagnostic windows in fusion devices, V.S. Voitsenya 258–263 (1998) 658
- High-heat-flux-exposure-experiments of a tungsten-test-limiter at TEXTOR-94, M. Wada, T. Tanabe, V. Philipps, B. Unterberg, A. Pospieszczyk, B. Schweer, J. Rapp, Y. Ueda, K. Ohya, T. Ohgo and N. Noda 258–263 (1998) 853
- Experiments with tungsten limiters in TEXTOR-94, V. Philipps, A. Pospieszczyk, A. Huber, A. Kirschner, J. Rapp, B. Schweer, P. Wienhold, G. van Oost, G. Sergienko, T. Tanabe, K. Ohya, M. Wada, T. Ohgo and M. Rubel 258–263 (1998) 858
- Deuterium retention in tungsten for fusion use, A.A. Haasz, J.W. Davis, M. Poon and R.G. Macaulay-Newcombe 258–263 (1998) 889
- Hydrogen retention in high-Z materials with various contents of carbon, A. Atsumi and T. Tanabe 258–263 (1998) 896
- Erosion of W and deposition of C due to bombardment with D and CH<sub>3</sub>, W. Eckstein, K. Krieger and J. Roth 258–263 (1998) 912
- Tungsten self-sputtering yield with different incidence angles and target temperatures, V. Bandourko, R. Jimbou, K. Nakamura and M. Akiba 258–263 (1998) 917
- Performance of tungsten coatings as plasma facing components used in ASDEX Upgrade, H. Maier, S. Kötterl, K. Krieger, R. Neu, M. Balden and ASDEX Upgrade-Team 258–263 (1998) 921
- Transmutation and induced radioactivity of W in the armor and first wall of fusion reactors, T. Noda, M. Fujita and M. Okada 258–263 (1998) 934
- Response of dynamically compacted tungsten to high fluence neutron irradiation at 423–600°C in FFTF, J. Megusar and F.A. Garner 258–263 (1998) 940
- Static and dynamic erosion behavior of TiC coated graphite in high heat flux plasma, S. Takamura, K. Hayashi, N. Ohno and K. Morita 258–263 (1998) 961

- Tritium retention study of tungsten using various hydrogen isotope irradiation sources, S. O'hira, A. Steinér, H. Nakamura, R. Causey, M. Nishi and S. Willms 258–263 (1998) 990
- High heat load properties of tungsten coated carbon materials, K. Tokunaga, N. Yoshida, N. Noda, T. Sogabe and T. Kato 258–263 (1998) 998
- Effects of plasma impurities on materials erosion and mixing in a steady state magnetic fusion device, Y. Hirooka 258–263 (1998) 1045
- Ion reflection and sputtering at tungsten surface exposed to edge plasmas in TEXTOR, K. Ohya, J. Kawata, T. Tanabe, M. Wada, Y. Ueda, V. Philipps, B. Unterberg, A. Pospieszczyk, B. Schweer, F. Weschenfelder and N. Noda 258–263 (1998) 1055
- Retention and re-emission of deuterium implanted into tungsten monocarbide, T. Horikawa, B. Tsuchiya and K. Morita 258–263 (1998) 1087
- Ion beam analysis of deuterium-implanted  $\text{Al}_2\text{O}_3$  and tungsten, R.G. Macaulay-Newcombe and D.A. Thompson 258–263 (1998) 1109
- Hydrogen generation from steam reaction with tungsten, G.R. Smolik, K.A. McCarthy, D.A. Petti and K. Coates 258–263 (1998) 1979
- Investigation of plasma exposed W–1%  $\text{La}_2\text{O}_3$  tungsten in a high ion flux, low ion energy, low carbon impurity plasma environment for the International Thermonuclear Experimental Reactor, F.C. Sze, R.P. Doerner and S. Luckhardt 264 (1999) 89
- Review of recent works in development and evaluation of high-Z plasma facing materials, N. Yoshida 266–269 (1999) 197
- Tritium retention in tungsten exposed to intense fluxes of 100 eV tritons, R. Causey, K. Wilson, T. Venhaus and W.R. Wampler 266–269 (1999) 467
- Determination of angle resolved velocity distributions of sputtered tungsten atoms, A. Goehlich, N. Niemöller and H.F. Döbele 266–269 (1999) 501
- Hot spot formation on electron-emissive target plate with plasma potential variation across magnetic field, M.Y. Ye, K. Kudose, T. Kuwabara, N. Ohno and S. Takamura 266–269 (1999) 742
- Study on energy distribution of reflected particles from plasma facing materials, Y. Hasegawa, S. Masuzaki, N. Noda, N. Ohyabu, A. Sagarra, H. Suzuki, A. Komori, T. Morisaki, O. Motojima and V.S. Voitsenya 266–269 (1999) 1072
- Uranium, Uranium Alloys and Compounds**
- Deterioration of ZrC-coated fuel particle caused by failure of pyrolytic carbon layer, K. Minato, K. Fukuda, H. Sekino, A. Ishikawa and E. Oeda 252 (1998) 13
- Temperature and fission rate effects on the rim structure formation in a  $\text{UO}_2$  fuel with a burnup of 7.9% FIMA, M. Kinoshita, T. Kameyama, S. Kitajima and Hj. Matzke 252 (1998) 71
- Modeling of chemical interactions of fuel rod materials at high temperatures. I. Simultaneous dissolution of  $\text{UO}_2$  and  $\text{ZrO}_2$  by molten Zr in an oxidizing atmosphere, M.S. Veshchunov and A.V. Berdyshev 252 (1998) 98
- Modeling of chemical interactions of fuel rod materials at high temperatures. II. Investigation of downward relocation of molten materials, M.S. Veshchunov and A.V. Palagin 252 (1998) 110
- Mechanistic interpretations of  $\text{UO}_2$  oxidation, D.R. Olander 252 (1998) 121
- The effect of rare-earth fission products on the rate of  $\text{U}_3\text{O}_8$  formation on  $\text{UO}_2$ , R.J. McEachern, D.C. Doern and D.D. Wood 252 (1998) 145
- Comments on 'Behaviour of inert gas bubbles under chemical concentration gradients' by G.P. Tiwari, J.H. Evans and A. van Veen 252 (1998) 156
- Reply to 'Comments on 'Behaviour of inert gas bubbles under chemical concentration gradients'', G.P. Tiwari 252 (1998) 162
- Investigations of systems  $\text{ThO}_2\text{--MO}_2\text{--P}_2\text{O}_5$  (M = U, Ce, Zr, Pu). Solid solutions of thorium–plutonium (IV) phosphate–diphosphates, N. Dacheux, R. Podor, V. Brandel and M. Genet 252 (1998) 179
- Low volatile fission-product release and fuel volatilization during severe reactor accident conditions, B.J. Lewis, B.J. Corse, W.T. Thompson, M.H. Kaye, F.C. Iglesias, P. Elder, R. Dickson and Z. Liu 252 (1998) 235
- A new internal gelation process for fuel microsphere preparation without cooling initial solutions, S. Yamagishi 254 (1998) 14
- Fission product release from trace irradiated  $\text{UO}_{2+x}$ , M.A. Mansouri and D.R. Olander 254 (1998) 22
- Thermal stability and vapor pressure studies on  $\text{UTe}_3\text{O}_9(\text{s})$  and  $\text{UTeO}_5(\text{s})$ , K. Krishnan, G.A. Rama Rao, K.D. Singh Mudher and V. Venugopal 254 (1998) 49

- Microwave synthesis of solid solutions of urania and thoria – a comparative study, V. Chandramouli, S. Anthonysamy, P.R. Vasudeva Rao, R. Divakar and D. Sundaraman 254 (1998) 55
- Effect of physical vapor deposition on microstructure and properties of uranium–6 wt% niobium alloy, A.J. Sunwoo, T.S. Chow and C.J. Long 254 (1998) 65
- Irradiation behavior of high uranium-density alloys in the plate fuels, M. Ugajin, A. Itoh, M. Akabori, N. Ooka and Y. Nakakura 254 (1998) 78
- A review of the oxidation of uranium dioxide at temperatures below 400°C, R.J. McEachern and P. Taylor 254 (1998) 87
- Liquid immiscibility in a (O, U, Zr) model corium, C. Guéneau, V. Dauvois, P. Pérodeaud, C. Gonella and O. Dugne 254 (1998) 158
- Effect of additives (Cr<sub>2</sub>O<sub>3</sub>, Al<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, MgO) on diffusional release of <sup>133</sup>Xe from UO<sub>2</sub> fuels, S. Kashibe and K. Une 254 (1998) 234
- Étude du système U–Ca–O par diffractométrie de rayons X à haute température, A. Pialoux and B. Touzelin 255 (1998) 14
- Oxidation state of uranium: an XPS study of alkali and alkaline earth uranates, S. Bera, S.K. Sali, S. Sampath, S.V. Narasimhan and V. Venugopal 255 (1998) 26
- Kinetics of UO<sub>2</sub> oxidation in stem atmosphere, B.V. Dobrov, V.V. Likhanskii, V.D. Ozrin, A.A. Solodov, M.P. Kissane and H. Manenc 255 (1998) 59
- Thermal treatment of uranium oxide irradiated in pressurized water reactor: Swelling and release of fission gases, I. Zacharie, S. Lansart, P. Combette, M. Trotabas, M. Coster and M. Groos 255 (1998) 85
- Microstructural analysis and modeling of intergranular swelling of an irradiated UO<sub>2</sub> fuel treated at high temperature, I. Zacharie, S. Lansart, P. Combette, M. Trotabas, M. Coster and M. Groos 255 (1998) 92
- Thermal diffusion and Soret effect in (U,Me)O<sub>2+δ</sub>: the heat of transport of oxygen, J. Janek and H. Timm 255 (1998) 116
- Extension of the TRANSURANUS burnup model to heavy water reactor conditions, K. Lassmann, C.T. Walker and J. van de Laar 255 (1998) 222
- The influence of nitrogen dioxide on the oxidation of UO<sub>2</sub> in air at temperature below 275°C, R.J. McEachern, S. Sunder, P. Taylor, D.C. Doern, N.H. Miller and D.D. Wood 255 (1998) 234
- Reaction of hydrogen with uranium catalyzed by platinum clusters, M. Balooch and W.J. Siekhaus 255 (1998) 263
- Investigation of production conditions of ThO<sub>2</sub>–UO<sub>3</sub> microspheres via the sol–gel process for pellet type fuels, H. Tel, M. Eral and Y. Altaş 256 (1998) 18
- Effects of heat treatment on grain refinement in cast uranium–0.25 wt% vanadium alloy, A.J. Sunwoo, R.N. Accardo and W.H. Gourdin 256 (1998) 53
- Characterization of corroded metallic uranium fuel plates, T.C. Totemier, R.G. Pahl, S.L. Hayes and S.M. Frank 256 (1998) 87
- Deuterium release from plasma-exposed beryllium during thermal desorption, J. Won, R.P. Doerner and R.W. Conn 256 (1998) 96
- Vaporization behaviour and Gibbs energy of formation of UTeO<sub>5</sub> and UTe<sub>3</sub>O<sub>9</sub> by transpiration, R. Mishra, P.N. Nambodiri, S.N. Tripathi, S.R. Bharadwaj and S.R. Dharwadkar 256 (1998) 139
- High-temperature Knudsen cell studies of cesium iodide in hyperstoichiometric uranium dioxide, J. McFarlane and J.C. LeBlanc 256 (1998) 145
- Dynamic behavior of hydrogen atoms with a boronized wall, K. Tsuzuki, N. Inoue, A. Sagara, N. Noda, O. Motojima, T. Mochizuki, T. Hino and T. Yamashina 256 (1998) 166
- A simple thermodynamical model to describe the control of the dissolution of uranium dioxide in granitic groundwater by secondary phase formation, P. Trocellier, C. Cachoir and S. Guilbert 256 (1998) 197
- Microstructure of boron nitride coated on nuclear fuels by plasma enhanced chemical vapor deposition, H.H. Durmazucar, G. Gündüz and C. Toker 256 (1998) 207
- Microstructure of boron nitride coated on nuclear fuels by plasma enhanced chemical vapor deposition, H.H. Durmazucar, G. Gündüz and C. Toker 256 (1998) 207
- Effect of oxygen on the operation of a single-cell thermionic fuel element, D.V. Paramonov and M.S. El-Genk 256 (1998) 218
- High magnification SEM observations for two types of granularity in a high burnup PWR fuel rim, N. Lozano, L. Desgranges, D. Aymes and J.C. Niepce 257 (1998) 78

- Validation of an electrochemical model for the oxidative dissolution of used CANDU fuel, D.W. Shoosmith, S. Sunder and J.C. Tait 257 (1998) 89
- Uranium molybdenum silicide  $U_3MoSi_2$  and phase equilibria in the U–Mo–Si system, M. Ugajin, A. Itoh, S. Okayasu and Y. Kazumata 257 (1998) 145
- A study on the reaction of yttria ( $Y_2O_3$ ) in flowing uranium hexafluoride ( $UF_6$ ) gas at 900°C, Z.E. Erkmen 257 (1998) 152
- First study of uranium self-diffusion in  $UO_2$  by SIMS, A.C.S. Sabioni, W.B. Ferraz and F. Millot 257 (1998) 180
- A feasibility study of the preparation of (U,Gd) $_3O_8$  solid solutions by thermal decomposition of co-precipitated carbonate mixtures, P.V. Ravindran, K.V. Rajagopalan and P.K. Mathur 257 (1998) 189
- Thermodynamic modelling of the U–Zr system, P.Y. Chevalier and E. Fischer 257 (1998) 213
- An analysis of density distribution in  $UO_2$  green pellet by finite element method, K. Yanai, M. Hirai, T. Ishikawa, J. Ishizaki and H. Saitoh 257 (1998) 318
- Weldability of neutron irradiated austenitic stainless steels, K. Asano, S. Nishimura, Y. Saito, H. Sakamoto, Y. Yamada, T. Kato and T. Hashimoto 264 (1999) 1
- Behaviour of fission gas in the rim region of high burn-up  $UO_2$  fuel pellets with particular reference to results from an XRF investigation, M. Mogensen, J.H. Pearce and C.T. Walker 264 (1999) 99
- Preshock-induced phase transition in spalled U–0.75 wt% Ti, A.K. Zurek 264 (1999) 155
- Molar Gibbs energy formation of  $KUO_3(s)$ , K. Jayanthi, V.S. Iyer, G.A. Rama Rao and V. Venugopal 264 (1999) 263
- Temperature programmed decomposition of uranyl nitrate hexahydrate, S. Dash, M. Kamruddin, S. Bera, P.K. Ajikumar, A.K. Tyagi, S.V. Narasimhan and B. Raj 264 (1999) 271
- Characterization of U–Nb–Zr dispersion fuel prepared by centrifugal atomization process, J.-M. Park, K.-øH. Kim, D.-S. Sohn, C.-K. Kim and G.L. Hofman 265 (1999) 38
- New model of equiaxed grain growth in irradiated  $UO_2$ , O.V. Khoruzhii, S.Y. Kourtchatov and V.V. Likhanskii 265 (1999) 112
- Electron energy-loss spectroscopy (EELS) study of oxidation states of Ce and U in pyrochlore and uraninite – natural analogues for Pu and U-bearing waste forms, H. Xu and Y. Wang 265 (1999) 117
- Vaporization study on lanthanum–uranium and cerium–uranium alloys by mass-spectrometric method, Y. Shoji, T. Matsui, K. Nakamura and T. Inoue 265 (1999) 134
- Solid state reactions of  $CeO_2$ ,  $ThO_2$  and  $PuO_2$  with ammonium sulphate, K.D. Singh Mudher, M. Keskar and V. Venugopal 265 (1999) 146
- Oxygen potential of solid solution  $Eu_{1-y}U_{1-y}O_{2+x}$ , T. Fujino, N. Sato, K. Yamada, S. Nakama, K. Fukuda, H. Serizawa and T. Shiratori 265 (1999) 154
- Modelling of high temperature superionic transition of uranium dioxide crystals, L.V. Matveev and M.S. Veshchunov 265 (1999) 285
- Steam oxidation of fuel in defective LWR rods, D.R. Olander, Y.S. Kim, W.-E Wang and S.K. Yagnik 270 (1999) 11
- Fission product release mechanisms during reactor accident conditions, F.C. Iglesias, B.J. Lewis, P.J. Reid and P. Elder 270 (1999) 21
- Range, energy loss, energy straggling and damage production for  $\alpha$ -particles in uranium dioxide, H.J. Matzke 270 (1999) 49
- Artificial neural network models for volatile fission product release during severe accident conditions, W.S. Andrews, B.J. Lewis and D.S. Cox 270 (1999) 74
- Ramp test behavior of high O/U fuel, J.H. Davies, E.V. Hoshi and D.L. Zimmerman 270 (1999) 87
- Thermodynamics of uranium volatilization in steam, D.R. Olander 270 (1999) 187
- Current knowledge on core degradation phenomena, a review, P. Hofmann 270 (1999) 194
- Uranium dioxide reaction in  $CF_4/O_2$  RF plasma, Y.-S. Kim, J.-Y. Min, K.-k. Bae and M.-s. Yang 270 (1999) 253
- Vaporization properties of  $Cs_2U_4O_{12}$  in LWR severe accident simulating conditions, J. Huang, M. Yamawaki, K. Yamaguchi, F. Ono, M. Yasumoto, H. Sakurai and J. Sugimoto 270 (1999) 259
- Vanadium, Vanadium Alloys and Compounds**
- Neutron irradiation and intergranular fracture in vanadium–20 wt% titanium alloys undoped and doped with phosphorus and sulfur, J. Kameda, T.E. Bloomer, A.H. Swanson and D.Y. Lyu 252 (1998) 1
- Internal friction and anelastic properties of vanadium and V–Ti–Cr al-



- loys, V.M. Chernov, B.K. Kar-dashev, L.M. Krjukova, L.I. Mamaev, O.A. Plaksin, A.E. Rusanov, M.I. Solonin, V.A. Stepanov, S.N. Votinov and L.P. Zaviatski 257 (1998) 263
- The challenge of developing structural materials for fusion power systems, E.E. Bloom 258–263 (1998) 7
- Materials science problems of blankets in Russian concept of fusion reactor, M.I. Solonin 258–263 (1998) 30
- Materials integration issues for high performance fusion power systems, D.L. Smith, M.C. Billone, S. Majumdar, R.F. Mattas and D.-K. Sze 258–263 (1998) 65
- The influence of neutron spectrum and irradiation history on microstructural evolution in fusion structural materials, T. Muroga, S. Ohnuki, F.A. Garner and S.J. Zinkle 258–263 (1998) 130
- Research and development on vanadium alloys for fusion applications, S.J. Zinkle, H. Matsui, D.L. Smith, A.F. Rowcliffe, E. van Osch, K. Abe and V.A. Kazakov 258–263 (1998) 205
- Development and performance of aluminum nitride insulating coatings for application in a lithium environment, K. Natesan, C.B. Reed, D.L. Rink and R.C. Haglund 258–263 (1998) 488
- Effect of hydrogen and oxygen on the tensile properties of V-4Cr-4Ti, H.D. Röhrig, J.R. DiStefano and L.D. Chitwood 258–263 (1998) 1356
- Effect of small additional elements on DBTT of V-4Cr-4Ti irradiated at low temperatures, T. Shibayama, I. Yamagata, H. Kayano and C. Namba 258–263 (1998) 1361
- Development of techniques for welding V-Cr-Ti alloys, M.L. Grossbeck, J.F. King, D.J. Alexander, P.M. Rice and G.M. Goodwin 258–263 (1998) 1369
- Grain boundary chemistry and heat treatment effects on the ductile-to-brittle transition behavior of vanadium alloys, R.J. Kurtz, M.L. Hamilton and H. Li 258–263 (1998) 1375
- Microstructural examination of irradiated V-(4–5%)Cr-(4–5%)Ti, D.S. Gelles, P.M. Rice, S.J. Zinkle and H.M. Chung 258–263 (1998) 1380
- Effect of thickness and loading mode on the fracture properties of V-4Cr-4Ti at room temperature, H. Li, R.J. Kurtz and R.H. Jones 258–263 (1998) 1386
- Dynamic finite element analysis of third size charpy specimens of V-4Cr-4Ti, M.R. Lansberry, R.J. Kurtz, A.S. Kumar and G.E. Mueller 258–263 (1998) 1392
- Helium-vacancy clustering in V-4Cr-4Ti at elevated temperatures, A.V. Fedorov, A. van Veen and A.I. Ryazanov 258–263 (1998) 1396
- Influence of thermal treatment on helium trapping at fine-size precipitates in V-4Cr-4Ti, A. van Veen, A.V. Fedorov and A.I. Ryazanov 258–263 (1998) 1400
- Quantitative visualization of tritium distribution in vanadium by tritium radioluminography, H. Saitoh, T. Hishi, T. Misawa, T. Ohnishi, Y. Noya, T. Matsuzaki and T. Watanabe 258–263 (1998) 1404
- Effect of neutron irradiation on swelling, elastic modulus and thermal conductivity of V-Ga alloys, A.I. Dediurin, Y.M. Platov, M.I. Zakharova, I.V. Borovitskaja and N.A. Artemov 258–263 (1998) 1409
- Temperature dependence of the radiation damage microstructure in V-4Cr-4Ti neutron irradiated to low dose, P.M. Rice and S.J. Zinkle 258–263 (1998) 1414
- Metallurgical bonding development of V-4Cr-4Ti alloy for the DIII-D radiative divertor program, J.P. Smith, W.R. Johnson and P.W. Trester 258–263 (1998) 1420
- Fabrication of a 1200 kg ingot of V-4Cr-4Ti alloy for the DIII-D radiative divertor program, W.R. Johnson and J.P. Smith 258–263 (1998) 1425
- Swelling behavior of V-Fe binary and V-Fe-Ti ternary alloys, K. Fukumoto, A. Kimura and H. Matsui 258–263 (1998) 1431
- Microstructure of V-4Cr-4Ti alloy after low-temperature irradiation by ions and neutrons, J. Gazda, M. Meshii and H.M. Chung 258–263 (1998) 1437
- Tensile and impact properties of vanadium-base alloys irradiated at <430°C, H.M. Chung and D.L. Smith 258–263 (1998) 1442
- Mechanical properties and microstructural characteristics of laser and electron-beam welds in V-4Cr-4Ti, H.M. Chung, J.-H. Park, R.V. Strain, K.H. Leong, D.L. Smith 258–263 (1998) 1451
- Experience in irradiation testing of low-activation structural materials in fast reactor BOR-60, V.A. Kazakov, H.-C. Tsai, V.P. Chakin, F.W. Wiffen, A.F. Rowcliffe, D.L. Smith, A.E. Rusanov, A.A. Teikovtsev, N.V. Markina and L.R. Greenwood 258–263 (1998) 1458
- Performance of V-4Cr-4Ti material exposed to the DIII-D tokamak environment, H. Tsai, W.R. John-

- son, D.L. Smith, J.P. Smith and H.M. Chung 258–263 (1998) 1466
- Irradiation creep of vanadium-base alloys, H. Tsai, H. Matsui, M.C. Billone, R.V. Strain and D.L. Smith 258–263 (1998) 1471
- Effects of oxygen and oxidation on tensile behavior of V–4Cr–4Ti alloy, K. Natesan, W.K. Soppet and M. Uz 258–263 (1998) 1476
- Grain boundary segregation of impurities in neutron irradiated and thermally aged vanadium alloys, J. Kameda, T.E. Bloomer and D.Y. Lyu 258–263 (1998) 1482
- Compatibility of vanadium alloys and its weld joints in homogeneous and heterogeneous liquid lithium systems, V.A. Evtikhin, I.E. Lyublinski and A.V. Vertkov 258–263 (1998) 1487
- Tensile properties and fracture behaviour of V–Cr–Ti alloys after neutron irradiation at 330°C, V.A. Kazakov, V.P. Chakin and Y.D. Goncharenko 258–263 (1998) 1492
- Tensile properties of a series of V–4Ti–4Cr alloys containing small amounts of Si, Al and Y, and the influence of helium implantation, T. Matsushima, M. Satou, A. Hasegawa, K. Abe and H. Kayano 258–263 (1998) 1497
- Radiation hardening of V–C, V–O, V–N alloys neutron-irradiated to high fluences, T. Chuto, M. Satou and K. Abe 258–263 (1998) 1502
- Rapid oxidation and its effects on mechanical properties of V–Ti–Cr–Si type alloys, M. Fujiwara, M. Satou, A. Hasegawa and K. Abe 258–263 (1998) 1507
- Effects of helium on void swelling in boron doped V–5Fe alloys, T. Iwai, N. Sekimura and F.A. Garner 258–263 (1998) 1512
- Analysis and measurement of residual stress distribution of vanadium/ceramics joints for fusion reactor applications, Y. Nemoto, K. Ueda, M. Satou, A. Hasegawa and K. Abe 258–263 (1998) 1517
- Revision of the tensile database for V–Ti and V–Cr–Ti alloys tested at ANL, M.C. Billone, H.M. Chung and D.L. Smith 258–263 (1998) 1523
- Influence of neutron irradiation on mechanical properties of vanadium/ceramics joints, R. Yasuda, M. Satou, A. Hasegawa and K. Abe 258–263 (1998) 1528
- Concentration limits of natural elements in low activation fusion materials, E.T. Cheng 258–263 (1998) 1767
- Analysis of V–Cr–Ti alloys in terms of activation of impurities, M.L. Grossbeck, R.L. Klueh, E.T. Cheng, J.R. Peterson, M.R. Woolery and E.E. Bloom 258–263 (1998) 1778
- Low-activation characteristics of V-alloys and SiC composites, E.V. Dyomina, P. Fenici, V.P. Kolotov and M. Zucchetti 258–263 (1998) 1784
- Vitrification**
- Vitrification of radioactive waste by reaction sintering under pressure, W.L. Gong, W. Lutze, A. Abdelouas and R.C. Ewing 265 (1999) 12
- Wastes**
- The effect of rare-earth fission products on the rate of  $U_3O_8$  formation on  $UO_2$ , R.J. McEachern, D.C. Doern and D.D. Wood 252 (1998) 145
- Investigations of systems  $ThO_2$ – $MO_2$ – $P_2O_5$  (M = U, Ce, Zr, Pu). Solid solutions of thorium–uranium (IV) and thorium–plutonium (IV) phosphate–diphosphates, N. Dacheux, R. Podor, V. Brandel and M. Genet 252 (1998) 179
- X-ray absorption fine structure of aged, Pudoped glass and ceramic waste forms, N.J. Hess, W.J. Weber and S.D. Conradson 254 (1998) 175
- Analytical electron microscopy study of surface layers formed on the French SON68 nuclear waste glass during vapor hydration at 200°C, W.L. Gong, L.M. Wang, R.C. Ewing, E. Vernaz, J.K. Bates and W.L. Ebert 254 (1998) 249
- Microstructure of boron nitride coated on nuclear fuels by plasma enhanced chemical vapor deposition, H.H. Durmazucar, G. Gündüz and C. Toker 256 (1998) 207
- Evaluation of stainless steel–zirconium alloys as high-level nuclear waste forms, S.M. McDevitt, D.P. Abraham and J.Y. Park 257 (1998) 21
- Validation of an electrochemical model for the oxidative dissolution of used CANDU fuel, D.W. Shoemsmith, S. Sunder and J.C. Tait 257 (1998) 89
- Investigation of the system  $ThO_2$ – $NpO_2$ – $P_2O_5$ . Solid solutions of thorium–neptunium (IV) phosphate–diphosphate, N. Dacheux, A.C. Thomas, V. Brandel and M. Genet 257 (1998) 108
- Modeling the structure of zircon ( $ZrSiO_4$ ): empirical potentials, ab initio electronic structure, J.-P. Crocombette and D. Ghaleb 257 (1998) 282
- Long-lived activity of elements: Effect of new activation cross-sections and their uncertainties on the selection of materials for IFE reactors, J. Sanz, C. González and J. Juan 258–263 (1998) 1700

- Advanced management concepts for fusion waste, P. Rocco and M. Zucchetti 258–263 (1998) 1773
- Analysis of V–Cr–Ti alloys in terms of activation of impurities, M.L. Grossbeck, R.L. Klueh, E.T. Cheng, J.R. Peterson, M.R. Woolery and E.E. Bloom 258–263 (1998) 1778
- Impact of low activation materials on fusion reactor design, Y. Seki, T. Tabara, I. Aoki, S. Ueda, S. Nishio and R. Kurihara 258–263 (1998) 1791
- Temperature programmed decomposition of uranyl nitrate hexahydrate, S. Dash, M. Kamruddin, S. Bera, P.K. Ajikumar, A.K. Tyagi, S.V. Narasimhan and B. Raj 264 (1999) 271
- Vitrification of radioactive waste by reaction sintering under pressure, W.L. Gong, W. Lutze, A. Abdelouas and R.C. Ewing 265 (1999) 12
- Electron energy-loss spectroscopy (EELS) study of oxidation states of Ce and U in pyrochlore and uraninite – natural analogues for Pu- and U-bearing waste forms, H. Xu and Y. Wang 265 (1999) 117
- Cs boltwoodite obtained by ion exchange from single crystals: Implications for radionuclide release in a nuclear repository, P.C. Burns 265 (1999) 218
- Stabilization of Rocky Flats Pu-contaminated ash within chemically bonded phosphate ceramics, A.S. Wagh, R. Strain, S.Y. Jeong, D. Reed, T. Krause and D. Singh 265 (1999) 295
- Oxidation kinetics of hydride-bearing uranium metal corrosion products, T.C. Totemeier, R.G. Pahl and S.M. Frank 265 (1999) 308
- Effect of particle size on the diffusion behavior of some radionuclides in compacted bentonite, T. Kozaki, Y. Sato, M. Nakajima, H. Kato, S. Sato and H. Ohashi 270 (1999) 265
- Welds**
- Radiation embrittlement of Mo–Re welds under low-temperature irradiation in the SM reactor, V.P. Chakin, F. Morito, V.A. Kazakov, Y.D. Goncharenko and Z.E. Ostrovsky 258–263 (1998) 883
- Fracture toughness of low activation ferritic steel (JLF-1) weld joint at room temperature, A. Nishimura, N. Inoue and T. Muroga 258–263 (1998) 1242
- Correlation between microstructure and hardness of a low activation ferritic steel (JLF-1) weld joint, N. Inoue, T. Muroga, A. Nishimura and O. Motojima 258–263 (1998) 1248
- Cr–Ni alloys for fusion reactors, M.I. Solonin, A.B. Alekseev, S.A. Averin, Y.A. Burenkov, V.M. Chernov, B.K. Kardashev, V.P. Kondrat'ev, A.V. Kozlov, V.N. Rechitsky and S.N. Votinov 258–263 (1998) 1762
- Yag laser welding of neutron irradiated stainless steels, S. Nishimura, R. Katsura, Y. Saito, W. Kono, H. Takahashi, M. Koshiishi, T. Kato and K. Asano 258–263 (1998) 2002
- Simulation of helium bubble behavior in neutron-irradiated stainless steel during welding, S. Kawano, R. Sumiya and K. Fukuya 258–263 (1998) 2008
- Effect of weld thermal cycle on helium bubble formation in stainless steel, F. Kano, S. Nakahigashi, H. Nakamura, N. Uesugi, T. Mitamura, M. Terasawa, H. Irie and K. Fukuya 258–263 (1998) 2013
- Weldability of helium-containing stainless steels using a YAG laser, S. Kawano, S. Nakahigashi, K. Uesugi, H. Nakamura, W. Kono, K. Fukuya, F. Kano, A. Hasegawa and K. Abe 258–263 (1998) 2018
- Zirconium, Zirconium Alloys and Compounds**
- Defect production due to displacement cascades in metals as revealed by computer simulation, D.J. Bacon, A.F. Calder and F. Gao 251 (1997) 1
- Deterioration of ZrC-coated fuel particle caused by failure of pyrolytic carbon layer, K. Minato, K. Fukuda, H. Sekino, A. Ishikawa and E. Oeda 252 (1998) 13
- Assessment of hydrogen levels in Zircaloy-2 by non-destructive testing, P.K. De, J.T. John, S. Banerjee, T. Jayakumar, M. Thavasimuthu and B. Raj 252 (1998) 43
- Atom probe analysis of Sn in Zr-based alloys, N. Sano and K. Takeda 252 (1998) 63
- Modeling of chemical interactions of fuel rod materials at high temperatures. I. Simultaneous dissolution of UO<sub>2</sub> and ZrO<sub>2</sub> by molten Zr in an oxidizing atmosphere, M.S. Veshchunov and A.V. Berdyshev 252 (1998) 98
- Modeling of chemical interactions of fuel rod materials at high temperatures. II. Investigation of downward relocation of molten materials, M.S. Veshchunov and A.V. Palagin 252 (1998) 110
- The electrical conductivity of zircaloy oxide films, M.M.R. Howlander, K. Shiiyama, C. Kinoshita, M. Kutsuwada and M. Inagaki 253 (1998) 149
- Thermal stability and brazing characteristics of Zr–Be binary amor-

- phous filler metals for zirconium alloy, C.-H. Park, Y.-S. Han, Y.-K. Kim, K.-J. Jang, J.-Y. Lee, C.-B. Choi and K.-S. Sim 254 (1998) 34
- Liquid immiscibility in a (O, U, Zr) model corium, C. Guéneau, V. Dauvois, P. Pérodeaud, C. Gonella and O. Dugne 254 (1998) 158
- A molecular dynamics study of high-energy displacement cascades in  $\alpha$ -zirconium, S.J. Wooding, L.M. Howe, F. Gao, A.F. Calder and D.J. Bacon 254 (1998) 191
- Effect of self-ion bombardment damage on high temperature oxidation behavior of Zircaloy-4, X.D. Bai, S.G. Wang, J. Xu, J. Bao, H.M. Chen and Y.D. Fan 254 (1998) 266
- The effect of the cracking plane crystallographic orientation on the stress corrosion cracking process, E. Ciocan, M. Ignat and E. Gheorghiu 255 (1998) 1
- Study on the precipitates in Zircaloy-4 by Mössbauer spectroscopy, W. Xiao and C. Ma 255 (1998) 67
- Influence of sulfur content on the thermal creep of zirconium alloy tubes at 400°C, D. Charquet, J. Senevat and J.P. Marcon 255 (1998) 78
- Texture and residual-stresses analysis in Zircaloy-4 cylindrical samples, R. Guillen, C. Cossu, M. François and E. Girard 255 (1998) 174
- Detection of hard intermetallics in  $\beta$ -quenched and thermally aged Zircaloy-2 using ultrasonic measurements, T. Jayakumar, P. Palanichamy and B. Raj 255 (1998) 243
- Modelling of hydrogen absorption by zirconium alloys during high temperature oxidation in steam, M.S. Veshchunov and A.V. Berdyshev 255 (1998) 250
- Iodine stress corrosion cracking of Zircaloy reactor cladding: iodine chemistry (a review), P.S. Sidky 256 (1998) 1
- Modelling of the mechanical behavior of the metal-oxide system during Zr alloy oxidation, M. Parise, O. Sicardy and G. Cailletaud 256 (1998) 35
- The influence of grain boundary movement on radiation-induced segregation in binary alloys, A.E. Volkov and A.I. Ryazanov 256 (1998) 108
- Hydride formation by high temperature cathodic hydrogen charging method and its effect on the corrosion behavior of Zircaloy-4 tubes in acid solution, Y. Choi 256 (1998) 124
- Oxidation of ceramic uranium dioxide in alkali metal carbonate-based melts: a study using various oxidants and comparison with UO<sub>2</sub> powder, V.A. Volkovich, T.R. Griffiths, D.J. Fray and M. Fields 256 (1998) 131
- The observation of enrichment of O and Zr and depletion of Nb in the near surface region of a  $\beta$ -(Zr-20%Nb) alloy, C. Zhang and P.R. Norton 257 (1998) 1
- Thermotransport of hydrogen in Zircaloy-4 and modified Zircaloy-4, H.S. Hong, S.J. Kim and K.S. Lee 257 (1998) 15
- Evaluation of stainless steel-zirconium alloys as high-level nuclear waste forms, S.M. McDevitt, D.P. Abraham and J.Y. Park 257 (1998) 21
- Hydrogen ingress through EDM surfaces of Zr-2.5Nb pressure-tube material, C.K. Chow, G.R. Brady, V.F. Urbanic and C.E. Coleman 257 (1998) 35
- Oxidation kinetics of Zircaloy-2 between 450°C and 600°C in oxidizing atmosphere, T. Arima, K. Moriyama, N. Gaja, H. Furuya, K. Idemitsu and Y. Inagaki 257 (1998) 67
- On the mechanism of Zircaloy cladding axial splits, V. Grigoriev and B. Josefsson 257 (1998) 99
- Thermodynamic modelling of the O-U-Zr system, P.Y. Chevalier and E. Fischer 257 (1998) 213
- Modeling the structure of zircon (ZrSiO<sub>4</sub>): empirical potentials, ab initio electronic structure, J.-P. Crocombette and D. Ghaleb 257 (1998) 282
- Improvement of hydriding properties of a Zr<sub>1</sub>Ni<sub>1</sub> alloy by adding third transition metals for tritium recovery, T. Kabutomori, Y. Wakisaka, K. Tsuchiya and H. Kawamura 258-263 (1998) 481
- Electrical properties of neutron-irradiated oxygen potential sensors using stabilized zirconia solid electrolyte, N. Hiura, Y. Endo, T. Yamaura, T. Hoshiya, M. Niimi, J. Saito, S. Sozawa, N. Ooka and M. Kobiyama 258-263 (1998) 2041
- Assessment of hydrogen embrittlement of Zircaloy-2 pressure tubes using unloading compliance and load normalization techniques for determining *J-R* curves, J.S. Dubey, S.L. Wadekar, R.N. Singh, T.K. Sinha and J.K. Chakravarty 264 (1999) 20
- Mössbauer spectroscopy of tin in unirradiated and neutron irradiated Zircalloys, J.A. Sawicki 264 (1999) 169
- A many body potential for  $\alpha$ -Zr. Application to defect properties, R.C. Pasianot and A.M. Monti 264 (1999) 198
- Quantitative determination of the bulk deuterium content of zirconium alloys using nuclear reaction analysis, Z. Qin, W.N. Lennard, C.-S.

- Zhang, K. Griffiths and P.R. Norton 264 (1999) 228
- Deformation–corrosion interactions for Zr alloys during I-SCC crack initiation. Part I: Chemical contributions, P. Jacques, F. Lefebvre and C. Lemaignan 264 (1999) 239
- Deformation–corrosion interactions for Zr alloys during I-SCC crack initiation. Part II: Localised stress and strain contributions, P. Jacques, F. Lefebvre and C. Lemaignan 264 (1999) 249
- A mechanism for the hydrogen uptake process in zirconium alloys, B. Cox 264 (1999) 283
- Influence of stress developed due to oxide layer formation on the oxidation kinetics of Zr–2.5%Nb alloy, A.P. Zhilyaev and J.A. Szpunar 264 (1999) 327
- On the effects of heat treatment and surface orientation on corrosion and hydrogen ingress of Zr–2.5Nb pressure tube material, Y.-P. Lin and J. DeLuca 265 (1999) 1
- Vitrification of radioactive waste by reaction sintering under pressure, W.L. Gong, W. Lutze, A. Abdelouas and R.C. Ewing 265 (1999) 12
- Effect of Mo on recrystallization characteristics of Zr–Nb–(Sn)–Mo experimental alloys, Y.B. Chun, S.K. Hwang, M.H. Kim, S.I. Kwun and Y.S. Kim 265 (1999) 28
- A unified model of Zircaloy BWR corrosion and hydriding mechanisms, P. Rudling and G. Wikmark 265 (1999) 44
- Determination of the  $\beta/\beta + \gamma$  eutectoid transition temperature in  $ZrO_{2-x}$  at variable heating/cooling rates, P.J. Hayward and I.M. George 265 (1999) 60
- Dissolution of  $ZrO_2$  in molten Zircaloy-4, P.J. Hayward and I.M. George 265 (1999) 69
- Studies on hot hardness of Zr and its alloys for nuclear reactors, T.R.G. Kutty, K. Ravi and C. Ganguly 265 (1999) 91
- In situ measurement of electrical conductivity of Zircaloy oxides and their formation mechanism under electron irradiation, M.M.R. Howlader, C. Kinoshita, K. Shiiyama, M. Kutsuwada and M. Inagaki 265 (1999) 100
- Effect of oxygen content on the beta-quenched microstructure of modified Zircaloy-4, H.S. Hong, S.J. Kim and K.S. Lee 265 (1999) 108
- Helium implanted ZrHf as studied by time differential perturbed angular correlation and positron lifetime measurements, R. Govindaraj, G. Venugopal Rao, K.P. Gopinathan and B. Viswanathan 265 (1999) 139
- Synergistic effects of LiOH and  $F^-$  in accelerating the corrosion of Zircaloy-4, Y.-M. Wong, B. Cox, N. Ramasubramanian and V.C. Ling 265 (1999) 178
- Aging characteristics of Zr–V–Fe getters as observed by Mössbauer spectroscopy, L. Rodrigo and J.A. Sawicki 265 (1999) 208
- Low cycle fatigue properties and microscopic deformation structure of Zircaloy-4 in recrystallized and stress-relieved conditions, X. Lin and G. Haicheng 265 (1999) 213
- Influence of Ar ion bombardment on the uniform corrosion resistance of laser-surface-melted Zircaloy-4, J. Xu, X. Bai, F. He, S. Wang, X. He and Y. Fan 265 (1999) 240
- A hydrogen uptake micro-mechanism for Zr alloys, B. Cox and Y.-M. Wong 270 (1999) 134
- Kinetic studies on massive hydriding of commercial zirconium alloy tubing, Y.-S. Kim and S.-k. Kim 270 (1999) 147
- The effects of adsorbates on Zircaloy oxidation in air and steam, K. Park, Y. Cho and Y.-G. Kim 270 (1999) 154
- Crystallization and degradation of zirconium oxide in various pH solutions, Y.S. Kim and S.C. Kwon 270 (1999) 165
- Current knowledge on core degradation phenomena, a review, P. Hofmann 270 (1999) 194
- On the zirconium–oxygen–hydrogen ternary system, M. Miyake, M. Uno and S. Yamanaka 270 (1999) 233
- Amorphization of  $Zr_3Fe$  under electron irradiation, A.T. Motta, L.M. Howe and P.R. Okamoto 270 (1999) 174