

PUBLICATIONS

2017

H. Tsuchida, N. Nitta, Y. Yanagita, Y. Okumura, R. Murase, Fibrous structure in GaSb surfaces irradiated with fast Cu cluster ions, *J. Appl. Phys.* 123, 161548 (2018).

H. Minagawa, S. Nakanishi, M. Maekawa, A. Kawasuso, H. Tsuchida, Effect of beam flux on radiation damage accumulation in ion-bombarded Si, *Jpn. J. Appl. Phys. Conf. Proc.* 2018 (in print).

K. Kitajima, T. Majima, T. Nishio, Y. Oonishi, S. Mizutani, J. Kohno, M. Saito, H. Tsuchida, Mass spectrometric study of the negative and positive secondary ions emitted from ethanol microdroplets by MeV-energy heavy ion impact, *Nucl. Instrum. Meth. Phys. Res. B* 424, 10-16 (2018).

S. Minemoto, H. Shimada, K. Komatsu, W. Komatsubara, T. Majima, T. Mizuno, S. Owada, H. Sakai, T. Togashi, S. Yoshida, M. Yabashi, A. Yagishita, Ar 3p photoelectron sideband spectra in two-color XUV + NIR laser fields, *J. Phys. B: At., Mol. Opt. Phys.* 51, 075601(1-8) (2018).

M. Saito, A. Chikaoka, T. Majima, M. Imai, H. Tsuchida, Y. Haruyama, Radiative lifetime measurements of ${}^2\text{P}_{3/2}$ and ${}^2\text{P}_{1/2}$ metastable levels in triply charged xenon using electrostatic ion beam trap, *Nucl. Instrum. Methods Phys. Res. B* 414, 68-73 (2018).

S. Nomura, H. Tsuchida, A. Kajiwara, S. Yoshida, T. Majima, M. Saito, Dissociation of biomolecules in liquid environments during fast heavy-ion irradiation, *J. Chem. Phys.* 147, 225103(1-8) (2017).

T. Majima, T. Murai, S. Yoshida, M. Saito, H. Tsuchida, A. Itoh, Fragmentation of Multiply Ionized $\text{CF}_3\text{--CH}_2\text{F}$ Induced by Charge-Changing Collisions with Fast Carbon Ions, *Int. J. Mass Spectrom.*, 421, 25-32 (2017).

S. Yoshida, T. Majima, T. Asai, M. Matsubara, H. Tsuchida, M. Saito, A. Itoh, Kinetic Energy Distributions of Product Ions from Singly and Multiply Ionized C_2H_2 Molecules Induced by 0.8 MeV C^+ Collisions, *Nucl. Instrum. Methods Phys. Res. B* 408, 203–208 (2017).

M. Saito, N. Ojima, T. Majima, M. Imai, H. Tsuchida, Y. Haruyama, Radiative Lifetime Measurement of ${}^1\text{S}_0$ Metastable State of Ar^{2+} Using Electrostatic Ion Beam Trap, *Nucl. Instrum. Methods Phys. Res. B* 408, 194–197 (2017).

B. Jenčič, L. Jeromel, N. Ogrinc Potočnik, K. Vogel-Mikuš, P. Vavpetič, Z. Rupnik, K. Bučar, M. Vencelj, M. Kelemen, J. Matsuo, M. Kusakari, Z. Siketić, M. Al-Jalali, A. Shaltout, P. Pelicon, Molecular imaging of alkaloids in khat (*Catha edulis*) leaves with MeV-SIMS, *Nucl. Instrum. Methods Phys. Res. B* 404, 2017, 140-145.

T. Seki, H. Yamamoto, T. Kozawa, T. Shojo, K. Koike, T. Aoki, J. Matsuo, Angled etching of Si by $\text{ClF}_3\text{-Ar}$ gas cluster injection, *Jpn. J. Appl. Phys.*, 56 (6), 2017, 06HB02.

T. Seki, H. Yamamoto, T. Kozawa, K. Koike, T. Aoki, J. Matsuo, Fabrication of a Si lever structure made by double-angled etching with reactive gas cluster injection, *Appl. Phys. Lett.*, 110 (18), 2017, 182105.

S. Soma, T. Kunugi, Water evaporation in parallel plates, *Int. J. Heat Mass Transfer*, 110, 2017, 778-782.

Y. Yonemoto, T. Kunugi, Analytical consideration of liquid droplet impingement on solid surfaces, *Sci. Rep.* 7, 2362 (2017).

J. Knaster et al. (included T. Yokomine), Overview of the IFMIF/EVEDA project, *Nucl. Fusion*, 57 (10).

Y. Yonemoto, T. Kunugi, Effect of solid surface property on geometric variations of micro-to millimeter-sized water droplets during volume reduction process, *Atomization and Sprays*, 27, 2017 Issue 6.

Y. Yamamoto, N. Osawa, T. Kunugi, A New RANS Model in Turbulent Channel Flow Imposed Wall-Normal Magnetic Field with Heat Transfer, *Fusion Sci. Technol.*, 72:4, 601-608.

K. Kusumi, T. Kunugi, T. Yokomine, Z. Kawara, E. Kolemen, H. Ji & E. P. Gilson, Study on Thermal Mixing of MHD Liquid Metal Free-Surface Film Flow, *Fusion Sci. Technol.*, 72:4, 796-800.

T. Kato, I. Takagi, K. Sakamoto, M. Aomi, Hydrogen Diffusivity in Oxide Layers Formed in Zr Alloy in Air or Steam, *J. Nucl. Mater.* 494 (2017) 79-86.

Y. Goto, H. Tsuji, M. Nagao, M. Akiyoshi, I. Takagi, System for Evaluation of Electron Emission Properties of Field Emitter Arrays under X-ray Irradiation, *J. Vac. Soc. Jpn.* 60 (2017) 328-333.

A. Kuzmin, H. Zushi, I. Takagi, S.K. Sharma, M. Kobayashi, Y. Hirooka, T. Onchi, K. Hanada, N. Yoshida, K. Nakamura, A. Fujisawa, H. Idei, Y. Nagashima, M. Hasegawa, T. Mutoh, K. Mishra, H. Ohwada, Spatial Distribution of Atomic and Ion Hydrogen Flux and its Effect on Hydrogen Recycling in Long Duration Confined and Non-confined Plasmas, *Nucl. Mater. Ener.* 12 (2017) 627-632.

K. Hanada, N. Yoshida, T. Honda, Z. Wang, A. Kuzmin, I. Takagi, T. Hirata, Y. Oya, M. Miyamoto, H. Zushi, M. Hasegawa, K. Nakamura, A. Fujisawa, H. Idei, Y. Nagashima, O. Watanabe, T. Onchi, K. Kuroda, H. Long, H. Watanabe, K. Tokunaga, A. Higashijima, S. Kawasaki, T. Nagata, Y. Takase, A. Fukuyama, O. Mitarai, Investigation of hydrogen recycling in longduration discharges and its modification with a hot wall in the spherical tokamak QUEST, *Nucl. Fusion* 57 (2017) 126061.

T. Kobayashi, T. Sasaki, Solubility of $\text{Zr(OH)}_4\text{(am)}$ and the formation of Zr(IV) carbonate complexes in carbonate solutions containing 0.1-5.0 mol \cdot dm $^{-3}$ NaNO_3 , *J. Solution Chem.*, 46, 1741-1759 (2017).

T. Sasaki, T. Koukami, T. Kobayashi, A. Kirishima, H. Murakami, Y. Amano, T. Mizuno, T. Iwatsuki, H. Sasamoto, K. Miyakawa, Determination of natural thorium and uranium concentrations in Horonobe, Mizunami Underground Research Laboratory groundwater and its thermodynamic analysis, *J. Nucl. Sci. Technol.*, 54, 373-381 (2017).

- C. Ding, T. Nohira, R. Hagiwara, $\text{TiO}_2\text{-Fe}_2\text{O}_3$ Nanocomposites as High-capacity Negative Electrode Materials for Rechargeable Sodium-ion Batteries, *Sustainable Energy & Fuels*, 1, 371-376 (2017).
- C. Ding, T. Nohira, R. Hagiwara, Electrochemical Performance of $\text{Na}_2\text{Ti}_3\text{O}_7/\text{C}$ Negative Electrode in Ionic Liquid Electrolyte for Sodium Secondary Batteries, *J. Power Sources*, 354, 10-15 (2017).
- H. Usui, Y. Domi, K. Fujiwara, M. Shimizu, T. Yamamoto, T. Nohira, R. Hagiwara, H. Sakaguchi, Charge-Discharge Properties of a Sn_4P_3 Negative Electrode in Ionic Liquid Electrolyte for Na-Ion Batteries, *ACS Energy Lett.*, 2, 1139-1143 (2017).
- K. Matsumoto, E. Nishiwaki, T. Hosokawa, S. Tawa, T. Nohira, R. Hagiwara, Thermal, Physical, and Electrochemical Properties of $\text{Li}[\text{N}(\text{SO}_2\text{F})_2] - [1\text{-Ethyl-3-methylimidazolium}] [\text{N}(\text{SO}_2\text{F})_2]$ Ionic Liquid Electrolytes for Li Secondary Batteries Operated at Room and Intermediate Temperatures, *J. Phys. Chem. C*, 121, 9209-9219 (2017).
- M. A. Ab Rani, J. Hwang, K. Matsumoto, R. Hagiwara, Poly(vinyl chloride) Ionic Liquid Polymer Electrolyte Based on Bis(fluorosulfonyl)Amide for Sodium Secondary Batteries, *J. Electrochem. Soc.*, 164, H5031-H5035 (2017).
- K. Yasuda, T. Shimao, R. Hagiwara, T. Homma, T. Nohira, Electrolytic Production of Silicon Using Liquid Zn Alloy in Molten CaCl_2 , *J. Electrochem. Soc.*, 164, H5049-H5056 (2017).
- Y. Katasho, K. Yasuda, T. Nohira, Behaviors of Si, B, Al, and Na during Electrochemical Reduction of Borosilicate Glass in Molten CaCl_2 , *J. Electrochem. Soc.*, 164, D478-D485 (2017).
- T. Yamamoto, T. Yamaguchi, T. Nohira, R. Hagiwara, A. Fukunaga, S. Sakai, K. Nitta, Structural and Electrochemical Properties of Hard Carbon Negative Electrodes for Sodium Secondary Batteries Using the $\text{Na}[\text{FSA}]\text{-}[\text{C}_3\text{C}_1\text{pyrr}]\text{[FSA]}$ Ionic Liquid Electrode, *Electrochem.*, 85, 391-396 (2017).
- T. Yamamoto, K. Matsumoto, R. Hagiwara; T. Nohira, Physicochemical and Electrochemical Properties of $\text{K}[\text{N}(\text{SO}_2\text{F})_2]\text{-}[\text{N-Methyl-N-propylpyrrolidinium}]\text{[N}(\text{SO}_2\text{F})_2]$ Ionic Liquids for Potassium-Ion Batteries *J. Phys. Chem. C*, 121, 18450-18458 (2017).
- J. Hwang, K. Matsumoto, T. Nohira, R. Hagiwara, Electrochemical Sodiation-desodiation of Marcite NaFePO_4 in Ionic Liquid Electrolyte, *Electrochem.*, 85, 675-679 (2017).
- Y. Wang, G. Veryasov, K. Matsumoto, R. Hagiwara, Structural and Thermal Properties of Air-Stable $[\text{Mg}(1\text{-methylimidazole})_6][\text{N}(\text{SO}_2\text{CF}_3)_2]_2$, *Eur. J. Inorg. Chem.*, 2017, 5656-5662 (2017).
- J. Hwang, K. Matsumoto, Y. Orikasa, M. Katayama, Y. Inada, T. Nohira, R. Hagiwara, Crystalline marcite NaFePO_4 as a positive electrode material for sodium secondary batteries operating at intermediate temperature, *J. Power Sources*, 377, 80-86 (2018).
- M. Zhong, X. Yang, K. Yasuda, T. Homma, T. Nohira, Effect of Si Addition on the Electrochemical Reduction Rate of SiO_2 Granules in Molten CaCl_2 , *Mater. Trans. B*, 49, 341-348 (2018).
- H. Kadowaki, Y. Katasho, K. Yasuda, T. Nohira, Direct Electrochemical Reduction of Al_2O_3 in Molten CaCl_2 , *J. Electrochem. Soc.*, 165, D83-D89 (2018).
- M. Zhong, K. Yasuda, T. Homma, T. Nohira, Purity of Si Ingot and Carrier Lifetime of Si Wafer Produced by Direct Electrolytic Reduction of SiO_2 , *Electrochim.*, 86, 77-81 (2018).
- K. Nakajima, S. Nakanishi, M. Lisal, K. Kimura, Surface structures of binary mixture of ionic liquid, *J. Mol. Liq.* 230 (2017) 542-549.
- Y. Gotoh, W. Ohue, H. Tsuji, Work functions of hafnium nitride thin films as emitter material for field emitter arrays, *J. Appl. Phys.*, Vol. 121, Issue 23(2017) 234503/1-12.
- S. Murai, R. Kamakura, K. Fujita, Y. Daido, K. Tanaka, Preparation of Nb-doped Anatase Type TiO_2 Epitaxial Thin Films and Excitation of Surface Plasmon Polaritons, *J. Jpn. Soc. Powder Powder Metallurgy* 64 (2017) 23-27.
- R. Kamakura, S. Murai, S. Ishii, T. Nagao, K. Fujita, K. Tanaka, Plasmonic-Photonic Hybrid Modes Excited on Titanium Nitride Nanoparticle Array in the Visible Region, *ACS Photonics* 4 (2017) 815-822.
- Y. Kawachiya, S. Murai, M. Saito, H. Sakamoto, K. Fujita, K. Tanaka, Collective Plasmonic Modes Excited in Al Nanocylinder Arrays in the UV Spectral Region, *Opt. Express* 26 (2018) 5970-5982.
- M. Saito, S. Murai, H. Sakamoto, M. Yamamoto, R. Kamakura, T. Nakanishi, K. Fujita, Y. Hasegawa, K. Tanaka, Effect of Cylinder Height on Directional Photoluminescence from Highly Luminous Thin Films on Periodic Plasmonic Arrays, *MRS Advances* 2 (2017) 173-178.
- M. Onaka, I. Takagi, T. Kobayashi, T. Sasaki, A. Kuzmin, H. Zushi, Characteristics of a PdCu membrane as atomic hydrogen probe for QUEST, *Nucl. Mater. Energy*, Vol 9, 104-108 (2017).
- T. Kobayashi, T. Teshima, T. Sasaki, A. Kitamura, Thermodynamic model for Zr solubility in the presence of gluconic acid and isosaccharinic acid, *J. Nucl. Sci. Technol.*, 54, 233-241 (2017).
- ## 2016
- T. Majima, T. Murai, S. Yoshida, M. Saito, H. Tsuchida, A. Itoh, Fragmentation of multiply ionized $\text{CF}_3\text{-CH}_2\text{F}$ induced by charge-changing collisions with fast carbon ion *Int. J. Mass Spectrom.* 421, 25-32 (2017).
- S. Nomura, H. Tsuchida, R. Furuya, T. Majima, A. Itoh, Fast Heavy-Ion Radiation Damage of Glycine in Aqueous Solution, *Nucl. Instrum. Methods Phys. Res.*, B389-390, 28-32 (2016).
- S. Minemoto, T. Teramoto, H. Akagi, T. Fujikawa, T. Majima, K. Nakajima, K. Niki, S. Owada, H. Sakai, T. Togashi, K.

- Tono, S. Tsuru, K. Wada, M. Yabashi, S. Yoshida, A. Yagishita, Structure Determination of Molecules in an Alignment Laser Field by Femtosecond Photoelectron Diffraction Using an X-ray Free-Electron Laser, *Sci. Rep.*, 6, 38654(1-9) (2016).
- M. Imai, Electron capture cross section scalings for low-q heavy ions, *NIFS-PROC-99*, 42-47 (2016).
- M. Takahashi, M. Imai, S. Obara, T. Ogawa, Resurrection of Fukushima, M. Kanno, Y. Tao, K. Iijima, T. Ishikawa, S. Sasaki, Environmental radioactivity study towards resurrection of Iitate. -Radiation survey and its shielding effects in living environment, *KEK Proceedings 2016-8*, 269-274 (2016).
- T. Satoh, H. Niimi, N. Kikuchi, M. Fujii, T. Seki, J. Matsuo, Solvent-free silver-nanoparticle surface-assisted laser desorption/ionization imaging mass spectrometry of the Irganox 1010 coated on polystyrene, *Int. J. Mass Spectrom.*, 404, 1-7 (2016/6).
- M. Fujii, R. Shishido, T. Satoh, S. Suzuki, J. Matsuo, Effects of Molecular Weight and Cationization Agent on the Sensitivity of Bi Cluster SIMS, *Rapid Commun. Mass Spectrom.*, 30, 1722-1726 (2016/7).
- T. Seki, Y. Yoshino, T. Senoo, Kunihiko Koike, Takaaki Aoki, Jiro Matsuo, Reactive etching by ClF₃-Ar neutral cluster beam with scanning, *Jpn. J. Appl. Phys.*, 55, Number 6S2 (2016).
- T. Aoki, T. Seki, J. Matsuo, Molecular dynamics simulations study of nano particle migration by cluster impact, *Surf. Coat. Technol.* (10.1016/j.surfcoat.2016.04.053) (2016).
- K. Suzuki, M. Kusakari, M. Fujii, T. Seki, T. Aoki, J. Matsuo, Development of Low-vacuum SIMS instruments with large cluster Ion beam, *Surf. Interface Anal.*, 48[11] (2016) 1119-1121.
- T. Norimatsu, O. Kotyaev, Y. Shimada, S. Kurahashi, S. Motokoshi, K. Mikami, K. Sasaki, T. Jitsuno, K. Yamanoi, H. Furukawa, T. Kunugi, Relaxation of Surface Tension Waves on a Liquid Metal Mirror for a Fast-Ignition Laser Fusion Plant, *Fusion Sci. Technol.*, 70, 417-422 (2016).
- S. H. Pham, T. Kunugi, Annular flow in rod-bundle: Effect of spacer on disturbance waves, *Flow Meas. Instrum.* 50 280-288 (2016).
- Y. Yamamotoa, T. Kunugi, MHD effects on turbulent dissipation process in channel flows with an imposed wall-normal magnetic field, *Fusion Eng Des.*, 109-111, Part B, 1137-1142 (2016).
- T. Yokomine, K. Oohara, T. Kunugi, Experimental investigation on heat transfer of HEMJ type divertor with narrow gap between nozzle and impingement surface, *Fusion Eng. Des.*, 109-111, Part B, 1543-1548 (2016).
- K. Kusumi, T. Kunugi, T. Yokomine, Z. Kawara, J. A. Hinojosa, E. Kolemen, H. Ji, E. Gilson, Study on thermal mixing of liquid-metal free-surface flow by obstacles installed at the bottom of a channel, *Fusion Eng. Des.*, 09-111, Part B, 1193-1198 (2016).
- T. Kori, S. Sato, K. Nagata, T. Yokomine, Reactivity of cesium and fly ash under hydrothermal conditions with NaOH solution, *Trans. Mater. Res. Soc. Jpn.*, 41, 29-33 (2016).
- Y. Cao, Z. Kawara, T. Yokomine, T. Kunugi, Experimental and numerical study on nucleate bubble deformation in subcooled flow boiling, *Int. J. Multiphase Flow*, 82, 93-105 (2016).
- M. Kondo, Y. Nakajima, T. Tanaka, T. Nozawa, T. Yokomine, Experimental study on chemical behaviors of non-metal impurities in Pb, Pb-Bi and Pb-Li by temperature programmed desorption mass spectrometer analysis, *Plasma Fus. Res.*, 11, 2405076 (9 pages) (2016).
- K. Takano, Y. Hashimoto, T. Kunugi, T. Yokomine, Z. Kawara, Subcooled boiling-induced vibration of a heater rod located between two metallic walls, *Nucl. Eng. Des.* 308, 312-321 (2016).
- Y. Cao, Z. Kawara, T. Yokomine, T. Kunugi, Visualization study on bubble dynamical behavior in subcooled flow boiling under various subcooling degree and flowrates, *Int. J. Heat Mass Transf.*, 93, 839-852 (2016).
- M. Nakamura, K. Watanabe, K. Tobita, Y. Someya, H. Tanigawa, H. Utoh, Y. Sakamoto, T. Kunugi, T. Yokomine, W. Gulden, Thermo hydraulic analysis of accident scenarios of a fusion DEMO reactor based on water-cooled ceramic breeder blanket: Analysis of LOCAs and LOVA, *IEEE Trans. Plasma Sci.*, 44, 1689-1699 (2016).
- T. Kobayashi, T. Sasaki, I. Takagi, H. Moriyama, Effect of solid phase transformation on the solubility product of thorium hydrous oxide at 363K, *J. Nucl. Sci. Technol.*, 53, 1787-1793 (2016).
- D. Rai, A. Kitamura, K. M. Rosso, T. Sasaki, T. Kobayashi, Issues Concerning the Determination of Solubility Products of Sparingly Soluble Crystalline Solids: Solubility of HfO₂(cr), *Radiochim. Acta*, 104, 583-592 (2016).
- M. Rajib, T. Kobayashi, C. T. Oguchi, T. Sasaki, Oxidation of Solid Phase and Ionic Strength Effect to the Cesium Adsorption on Pumice Tuff, *J. Geoscience Environ. Prot.*, 4, 64-73 (2016).
- T. Kobayashi, T. Uemura, T. Sasaki, I. Takagi, H. Moriyama, The Solubilities and Solubility Products of Zirconium, Hydroxide and Oxide after Aging at 278, 313, and 333 K, *Radiochim. Acta*, 104 183-193 (2016).
- T. Sasaki, K. Ueda, T. Saito, N. Aoyagi, T. Kobayashi, I. Takagi, T. Kimura, Y. Tachi, Sorption of Eu³⁺ on Na-montmorillonite studied by time-resolved laser fluorescence spectroscopy and surface complexation modeling, *J. Nucl. Sci. Technol.*, 53, 592-601 (2016).
- T. Sasaki, Y. Takeno, T. Kobayashi, A. Kirishima, N. Sato, Leaching behavior of gamma-emitting fission products and Np from neutron-irradiated UO₂-ZrO₂ solid solutions in non-filtered surface seawater, *J. Nucl. Sci. Technol.*, 53, 303-311 (2016).
- T. Okamoto, T. Igari, Y. Gotoh, N. Sato, M. Akiyoshi, I.

- Takagi, Gamma-ray tolerance of CdS/CdTe photodiodes for radiation tolerant compact image sensor with field emitter array, *Physica Status Solidi C*, 13 (2016) 635-638.
- A. Kuzmin, H. Zushi, I. Takagi, S.K. Sharma, Y. Hirooka, M. Kobayashi, M. Sakamoto, K. Hanada, T. Onchi, Y. Oyama, N. Yoshida, K. Nakamura, A. Fujisawa, H. Idei, Nagashima, M. Hasegawa, K. Mishra, Hydrogen flux measurements with permeation probes in spherical tokamak QUEST, *Vacuum*, 129 (2016) 178-182.
- A. Kirishima, A. Kuno, H. Amamiya, T. Kubota, S. Kimuro, Y. Amano, K. Miyakawa, T. Iwatsuki, T. Mizuno, T. Sasaki, N. Sato, Interaction of rare earth elements and components of the Horonobe deep groundwater, *Chemosphere*, 168 (2017) 798-806.
- A. Fukunaga, T. Nohira, R. Hagiwara, K. Numata, E. Itani, S. Saka, K. Nitta, Performance validation of sodium-ion batteries using an ionic liquid electrolyte, *J. Appl. Electrochem.*, 46, 487-496 (2016).
- T. Hosokawa, K. Matsumoto, T. Nohira, R. Hagiwara, A. Fukunaga, S. Sakai, K. Nitta, Stability of Ionic Liquids against Sodium Metal: A Comparative Study of 1-Ethyl-3-methylimidazolium Ionic Liquids with Bis (fluorosulfonyl) amide and Bis (trifluoromethylsulfonyl) amide, *J. Phys. Chem. C*, 120, 9628-9636 (2016).
- T. Yamamoto, T. Nohira, R. Hagiwara, A. Fukunaga, S. Sakai, K. Nitta, Electrochemical behavior of Sn-Fe alloy film negative electrodes for a sodium secondary battery using inorganic ionic liquid Na[FSA]-K[FSA], *Electrochim. Acta*, 211, 234-244 (2016).
- A. Harada, H. Yamaoka, S. Tojo, K. Watanabe, A. Sakaguchi, K. Kinoshita, S. Kishida, Y. Fukaya, K. Matsumoto, R. Hagiwara, H. Sakaguchi, T. Nokami, T. Itoh, Improved performance of a conducting-bridge random access memory using ionic liquids, *J. Mater. Chem. C*, 4, 7215-7222 (2016).
- T. Yamamoto, T. Nohira, R. Hagiwara, A. Fukunaga, S. Sakai, K. Nitta, Charge-discharge behavior of Sn-Ni alloy film electrodes in an intermediate temperature ionic liquid for the electrolyte of a sodium secondary battery, *Electrochim. Acta*, 193, 275-283 (2016).
- X. Yang, K. Yasuda, T. Nohira, R. Hagiwara, T. Homma, Cathodic Potential Dependence of Electrochemical Reduction of SiO₂ Granules in Molten CaCl₂, *Mater. Trans. E*, 3, 145-155 (2016).
- Y. Katasho, X. Yang, K. Yasuda, T. Nohira, Electrochemical Reduction Behavior of Borosilicate Glass in Molten CaCl₂, *J. Electrochem. Soc.*, 163, D622-D627 (2016).
- K. Yasuda, Y. Kashitani, S. Kizaki, K. Takeshita, T. Fujita, S. Shimosaki, Thermodynamic Analysis of Silicon Monoxide Negative Electrode for Lithium Ion Batteries, *J. Power Sources*, 329, 462-472 (2016).
- C. Y. Chen, T. Kiko, T. Hosokawa, K. Matsumoto, T. Nohira, R. Hagiwara, Ionic liquid electrolytes with high sodium ion fraction for high-rate and long-life sodium secondary batteries, *J. Power Sources*, 332, 51-59 (2016).
- P. Kiatkittikul, J. Yamaguchi, T. Nohira, R. Hagiwara, Catalytic activities of Pt-Metal Alloys on Oxygen Reduction Reaction in Fluorohydrogenate Ionic Liquid, *Electrochim.*, 84, 766-768 (2016).
- C. Ding, T. Nohira, R. Hagiwara, A new sodiation-desodiation mechanism of the titania-based negative electrode for sodium-ion batteries, *PCCP* 18, 30770-30776 (2016).
- K. Yasuda, K. Maeda, R. Hagiwara, T. Homma, T. Nohira, Silicon Electrodeposition in a Water-Soluble KF-KCl Molten Salt: Utilization of SiCl₄ as Si Source, *J. Electrochem. Soc.*, 164, D67-D71 (2017).
- K. Matsumoto, R. Nonaka, Y. Wang, G. Veryasov, R. Hagiwara, Formation of a solid solution between [N(C₂H₅)₄][BF₄] and [N(C₂H₅)₄][PF₆] in crystal and plastic crystal phases, *PCCP* 19, 2053-2059 (2017).
- C. Ding, T. Nohira, R. Hagiwara, Charge-discharge performance of Na_{2/3}Fe_{1/3}Mn_{2/3}O₂ positive electrode in an ionic liquid electrolyte at 90 °C for sodium secondary batteries, *Electrochim. Acta*, 231, 412-416 (2017).
- Y. Norikawa, K. Yasuda, T. Nohira, Electrodeposition of Titanium in Water-soluble KF-KCl Molten Salt, *Mater. Trans.*, 58(3), 390-394 (2017).
- G. Veryasov, U. Harinaga, K. Matsumoto, R. Hagiwara, Crystallographic Insight into the Mg²⁺ Coordination Mode and N(SO₂CF₃)₂⁻ Anion Conformation in Mg[N(SO₂CF₃)₂]₂ and Its Adducts, *Eur. J. Inorg. Chem.*, 2017, 1087-1099.
- K. Nakajima, S. Nakanishi, Z. Chval, M. Lísal, K. Kimura, Surface segregation in a binary mixture of ionic liquids: Comparison between high-resolution RBS measurements and molecular dynamics simulations, *J. Chem. Phys.*, 145 (2016) 184704(1-6).
- K. Nakajima, Z. Enkhbayar, T. Ohashi, M. Lísal, K. Kimura, Perfect Composition Depth Profiling of Ionic Liquid Surfaces Using High-resolution RBS/ERDA, *Anal. Sci.*, 32 (2016) 1089-1094.
- Y. Gotoh, S. Fujiwara, H. Tsuji, Work functions of hafnium nitride thin films as emitter material for field emitter arrays, *J. Vac. Sci. Technol. B*, Volume 34, Issue 3 (2016) 031401/1-7.
- S. Murai, M. Saito, H. Sakamoto, M. Yamamoto, R. Kamakura, T. Nakanishi, K. Fujita, M. A. Verschuur, Y. Hasegawa, K. Tanaka, Directional Outcoupling of Photoluminescence from Eu(III)-complex Thin Films by Plasmonic Array, *APL Photonics*, 2 (2017) 026104-1-10.
- Y. Nakatsuka, K. Pollok, T. Wieduwilt, F. Langenhorst, M. A. Schmidt, K. Fujita, S. Murai, K. Tanaka, L. Wondraczek, Giant Faraday Rotation through Ultrasmall Fe⁰_n Clusters in Superparamagnetic FeO-SiO₂ Vitreous Films, *Adv. Sci.* (2017) 1600299-1-6.
- Y. Nakatsuka, S. Murai, K. Fujita, K. Tanaka, Instability of Spin Glass Phase in Divalent Iron Phosphate Glass under a Magnetic Field, *J. Phys.: Condens. Matter* 29 (2017) 025802-1-5.

S. Yao, R. Kamakura, S. Murai, K. Fujita, K. Tanaka, Faraday Effect of Polycrystalline Bismuth Iron Garnet Thin Film Prepared by Mist Chemical Vapor Deposition Method, *J. Magn. Magn. Mater.* 42 (2017) 100-104.

S. Murai, S. Uno, R. Kamakura, S. Ishii, T. Nagao, K. Fujita, K. Tanaka, Plasmonic Mesostructures with Aligned Hotspots on Highly Oriented Mesoporous Silica Films, *Opt. Mater. Express* 6 (2016) 2824-2833.

S. Murai, H. Sakamoto, K. Fujita, K. Tanaka, Mesoporous Silica Layer on Plasmonic Array: Light Trapping in a Layer with a Variable Index of Refraction, *Opt. Mater. Express* 6 (2016) 2736-2744.

2015

H. Tsuchida, S. Mizuno, H. Tsutsumi, A. Kinomura, R. Suzuki, A. Itoh, Time-resolved positron annihilation spectroscopy study of relaxation dynamics of ion damage in fused quartz, *Mater. Res. Express* 3 (2016) 055201.

H. Minagawa, H. Tsuchida, R. Murase, A. Itoh, In situ X-ray diffraction study of irradiation-induced lattice expansion in Al foils by MeV-energy heavy ions, *Nucl. Instrum. Methods Phys. Res., B* 372 (2016) 38-43.

S. Nomura, H. Tsuchida, R. Furuya, K. Miyahara, T. Majima, A. Itoh, Effects of radiation scavengers on aqueous solutions exposed to heavy-ion irradiation using the liquid microjet technique, *Nucl. Instrum. Methods Phys. Res., B* 365 (2015) 611-615.

N. Ojima, S. Itoi, M. Saito, Y. Haruyama, Radiative lifetime of the metastable 1S_0 level in Kr^{2+} measured using an electrostatic ion trap, *J. Phys.: Conf. Ser.*, 635, 042002(2015).

K. Yasuda, H. Tsuchida, T. Majima, Measurements of recoil cross section in $\alpha+14N$ elastic scattering for TOF-ERDA with He beam, *Nucl. Instrum. Methods Phys. Res. B* 343, 1-4 (2015).

T. Furukawa, G. Ito, M. Goto, T. Majima, H. Tanuma, J. Matsumoto, H. Shiromaru, K. Hansen, T. Azuma, Cooling dynamics of photo-excited negative carbon cluster ions stored in an ion storage ring, *Nucl. Instrum. Methods Phys. Res. B* 354, 192-196 (2015).

K. Nakajima, T. Teramoto, H. Akagi, T. Fujikawa, T. Majima, S. Minemoto, K. Ogawa, H. Sakai, T. Togashi, K. Tono, S. Tsuru, K. Wada, M. Yabashi, A. Yagishita, Photoelectron diffraction from laser-aligned molecules with X-ray free-electron laser pulses, *Scientific Reports*, 5, 14065(1-11) (2015).

T. Majima, K. Kitajima, T. Nishio, H. Tsuchida, A. Itoh, Secondary ion emission from ethanol microdroplets induced by fast heavy ions, *J. Phys.: Conf. Ser.*, 635, 012021(1-6) (2015).

H. Shiromaru, T. Furukawa, G. Ito, N. Kono, H. Tanuma, J. Matsumoto, M. Goto, T. Majima, A. E. K. Sundén, K. Najafian, M. S. Pettersson, B. Dynefors, K. Hansen, T. Azuma, Cooling dynamics of carbon cluster anions, *J. Phys.: Conf. Ser.*, 635, 012035(1-8) (2015).

M. Imai, M. Satake, M. Matsuda, S. Okayasu, K. Kawatsura, K. Takahiro, K. Komaki, H. Shibata, K. Nishio, Equilibrium and non-equilibrium charge-state distributions of 2.0 MeV/u carbon ions passing through carbon foils, *Nucl. Instrum. Methods B* 354, 172-176 (2015).

Y. Yokoyama, S. Aoyagi, M. Fujii, J. Matsuo, J. S. Fletcher, N. P. Lockyer, J. C. Vickerman, I. S. Gilmore, R. Havelund, M. P. Seah, Peptide fragmentation and structural analysis by means of ToF-SIMS using huge cluster ion sources, *Anal. Chem.*, 88, 3592-3597, (2016.2).

M. Kusakari, M. Fujii, T. Seki, J. Matsuo, Observation of Liquid water with Ambient SIMS, *Trans. Mater. Res. Soc. Japan*. 41[3] (2016) 309-311.

M. Kusakari, M. Fujii, T. Seki, T. Aoki, J. Matsuo, Development of ambient SIMS using mega-electron-volt-energy ion probe, *J. Vac. Sci. Technol. B* 34 (3), 034H111 (2016).

T. Seki, M. Kusakari, M. Fujii, T. Aoki, J. Matsuo, Ambient analysis of liquid materials with Wet-SIMS, *Nucl. Instrum. Methods Phys. Res., B* 371, 189-193 (2016).

H. Yamamoto, T. Seki, J. Matsuo, K. Koike, T. Kozawa, High-aspect-ratio patterning by ClF₃-Ar neutral cluster etching, *Microelectron. Eng.* 141, 145-149 (2015).

R. Shishido, M. Fujii, T. Seki, T. Aoki, J. Matsuo, S. Suzuki, Yields and Images of Secondary Ions from Organic Materials by Different Primary Bi ions in Time-of-Flight Secondary Ion Mass Spectrometry, *Rapid Commun. Mass Spectrom.* Wiley, 30, 476-482 (2016).

H. Gnaser, M. Kusakari, M. Fujii, T. Seki, T. Aoki, J. Matsuo, Secondary ion emission from leucine and isoleucine under argon gas-cluster ion bombardment, *J. Vac. Sci. Technol. B* 34, 03H102 (2016).

M. Kusakari, H. Gnaser, M. Fujii, T. Seki, T. Aoki, J. Matsuo, Molecular cluster emission in sputtering of amino acids by argon gas-cluster ions, *Int. J. Mass Spectrom.*, 383-384, 31-37, (2015).

T. Sasaki, H. Yoshida, S. Aoyama, T. Kobayashi, I. Takagi, H. Moriyama, Discrete fragment model for apparent formation constants of actinide ions with humic substances, *Radiochim. Acta* (2015) 103, 411-421.

T. Sasaki, M. Rajib, M. Akiyoshi, T. Kobayashi, I. Takagi, T. Fujii, Md. M. Zaman, Laboratory Enrichment of Radioactive Assemblages and Estimation of Thorium and Uranium Radioactivity in Fractions Separated from Placer Sands in Southeast Bangladesh, *Nat. Resour. Res.* (2015) 24, 209-220.

I. Takagi, S. Nomura, T. Minamimoto, M. Akiyoshi, T. Kobayashi, T. Sasaki, Hydrogen-deuterium exchange on plasma-exposed W and SS surface, *J. Nucl. Mater.* (2015) 463, 1125-1128.

A. Kirishima, M. Hirano, T. Sasaki, N. Sato, Leaching of actinide elements from simulated fuel debris into seawater, *J. Nucl. Sci. Technol.* (2015) 52, 1240-1246.

A. Kuzmin, H. Zushi, I. Takagi, S.K. Sharma, A. Rusinov, Y.

- Inoue, Y. Hirooka, H. Zhou, M. Kobayashi, M. Sakamoto, K. Hanada, N. Yoshida, K. Nakamura, A. Fujisawa, K. Matsuoka, H. Idei, Y. Nagashima, M. Hasegawa, T. Onchi, S. Banerjee, K. Mishra, Global gas balance and influence of atomic hydrogen irradiation on the wall inventory in steady-state operation of QUEST tokamak, *J. Nucl. Mater.* (2015), 463, 1087-1090.
- M. Rajib, T. Kobayashi, C. T. Oguchi, T. Sasaki, Strontium dissolution effect on the adsorption experiment with rhyolitic pumice tuff, *Geochem. J.* (2015) 49, 539-548.
- K. Yasuda, K. Maeda, T. Nohira, R. Hagiwara, T. Homma, Silicon Electrodeposition in Water-Soluble KF-KCl Molten Salt: Optimization of Electrolysis Conditions at 923 K, *J. Electrochem. Soc.*, 163(3), D95-D99 (2016).
- X. Yang, K. Yasuda, T. Nohira, R. Hagiwara, T. Homma, The Role of Granule Size on the Kinetics of Electrochemical Reduction of SiO₂ Granules in Molten CaCl₂, *Metall. Mater. Trans. B*, 47(1), 788-797 (2016).
- K. Yasuda, K. Kondo, S. Kobayashi, T. Nohira, R. Hagiwara, Selective Formation of Rare-Earth–Nickel Alloys via Electrochemical Reactions in NaCl–KCl Molten Salt, *J. Electrochem. Soc.*, 163(5), D140-D145 (2016).
- G. Veryasov, K. Matsumoto, R. Hagiwara, Homoleptic octahedral coordination of CH₃CN to Mg²⁺ in the Mg[N(SO₂CF₃)₂]²⁻CH₃CN system, *Dalton Trans.*, 45, 2810–2813 (2016).
- K. Yasuda, Development of Electrolytic Production Process of Silicon Utilizing Liquid Zn Alloy, *Yoyuen Oyobi Koon Kagaku*, Vol. 58, No. 1, 20-27 (2015) (in Japanese).
- A. Kitada, Y. Kang, K. Matsumoto, K. Fukami, R. Hagiwara, K. Murase, Room temperature magnesium electrodeposition from glyme-coordinated ammonium amide electrolytes, *J. Electrochem. Soc.* 162, D389-D396 (2015).
- K. Maeda, K. Yasuda, T. Nohira, R. Hagiwara, T. Homma, Silicon Electrodeposition in Water-Soluble KF-KCl Molten Salt: Investigations on the Reduction of Si(IV) Ions, *Electrochem.*, 162(9), D444-D448 (2015).
- Chih-Yao Chen, K. Matsumoto, T. Nohira, R. Hagiwara, Improved electrochemical performance of NaVOPO₄ positive electrodes at elevated temperature in an ionic liquid electrolyte, *J. Electrochem. Soc.*, 162, A2093–A2098 (2015).
- C.A. Zarzana, G.S. Groenewold, M.T. Benson, J. Delmore, T. Tsuda, R. Hagiwara, Iron Fluoroanions and Their Clusters by Electrospray Ionization of a Fluorinating Ionic Liquid, *J. Am. Soc. Mass Spectrom.*, 26, 1559-1569 (2015).
- C. Ding, T. Nohira, R. Hagiwara, A. Fukunaga, S. Sakai, K. Nitta, Electrochemical performance of hard carbon negative electrodes for ionic liquid-based sodium ion batteries over a wide temperature range, *Electrochim. Acta*, 176, 344-349 (2015).
- P. Kiatkittikul, T. Nohira, R. Hagiwara, Advantages of a Polyimide Membrane Support in Nonhumidified Fluorohydrogenate-Polymer Composite Membrane Fuel Cells, *Fuel Cells*, 15 (4) 604-609 (2015).
- C. Ding, T. Nohira, R. Hagiwara, A high-capacity TiO₂/C negative electrode for sodium secondary battery with ionic liquid electrolyte, *J. Mater. Chem.*, A3, 20767 - 20771(2015).
- G. Veryasov, K. Matsumoto, R. Hagiwara, The Discrete AlF₅²⁻ Fluoroaluminate Anion in the Structure of [Tetraethylammonium]₂[AlF₅](H₂O)₂, *Eur. J. Inorg. Chem.*, 2015, 5306 - 5310.
- K. Nakajima, S. Nakanishi, M. Lisal, K. Kimura, Surface structure of imidazolium-based ionic liquids: Quantitative comparison between simulations and high-resolution RBS measurements, *J. Chem. Phys.* 141 (2016) 114702.
- H. Hayashi, T. Kitayama, S. Matsuzaki, K. Nakajima, K. Narumi, Y. Saitoh, M. Tsujimoto, M. Toulemonde, K. Kimura, Evaluation of local temperature around the impact points of fast ions, *Nucl. Instrum. Methods Phys. Res. B* 365 (2015) 569–572.
- T. Kitayama, Y. Morita, K. Nakajima, K. Narumi, Y. Saitoh, M. Matsuda, M. Satake, M. Toulemonde, K. Kimura, Sputtering of amorphous silicon nitride irradiated with energetic C₆₀ ions: Preferential sputtering and synergy effect between electronic and collisional sputtering, *Nucl. Instrum. Methods Phys. Res. B* 365 (2015) 490–495.
- T. Kitayama, Y. Morita, K. Nakajima, K. Narumi, Y. Saitoh, M. Matsuda, M. Satake, M. Tsujimoto, S. Isoda, M. Toulemonde, K. Kimura, Formation of ion tracks in amorphous silicon nitride films with MeV C₆₀ ions, *Nucl. Instrum. Methods Phys. Res. B* 356 (2015) 22–27.
- M. Takeuchi, Y. Hoshida, H. Ryuto, G. H. Takaoka, Sputtering of silicon and glass substrates with polyatomic molecular ion beams generated from ionic liquids, *J. Vac. Sci. Technol. A* 34, (2016) 02D108.
- S. Murai, K. Fujita, Y. Daido, R. Yasuhara, R. Kamakura, K. Tanaka, Plasmonic Arrays of Titanium Nitride Nanoparticles Fabricated from Epitaxial Thin Films, *Opt. Express* 24 (2016) 1143-1153.
- S. Murai, T. Sato, S. Yao, R. Kamakura, K. Fujita, K. Tanaka, Fabrication of Cerium-Doped Yttrium Aluminum Garnet Thin Films by a Mist CVD Method, *J. Lumin.* 170 (2016) 808–811.
- G. Bouilly, T. Yajima, T. Terashima, W. Yoshimune, K. Nakano, C. Tassel, Y. Kususe, K. Fujita, K. Tanaka, T. Yamamoto, Y. Kobayashi, H. Kageyama, Electrical Properties of Epitaxial Thin Films of Oxyhydrides ATiO_{3-x}H_x(A = Ba and Sr), *Chem. Mater.* 27 (2015) 6354–6359.
- S. Yao, T. Sato, K. Kaneko, S. Murai, K. Fujita, K. Tanaka, Faraday Effect of Bismuth Iron Garnet Thin Film Prepared by Mist CVD Method, *Jpn. J. Appl. Phys.* 54 (2015) 063001 (1-6).
- H. Nasu, M. Hasegawa, T. Hashimoto, A. Ishihara, K. Fujita, K. Tanaka, Preparation and Properties of Sol–Gel Derived CuFeO₂ Thin Films by Dip-Coating Technique, *J. Ceram. Soc. Jpn.* 123 (2015) 448-451.
- T. Yamamoto, R. Yoshii, G. Bouilly, Y. Kobayashi, K. Fujita,

Y. Kususe, Y. Matsushita, K. Tanaka, H. Kageyama, An Antiferro-to-Ferromagnetic Transition in EuTiO₃_xH_x Induced by Hydride Substitution, *Inorg. Chem.* 54 (2015) 1501-1507.

I. Takagi, S. Nomura, T. Minamimoto, M. Akiyoshi, T. Kobayashi, T. Sasaki, Hydrogen-deuterium exchange on plasma-exposed W and SS surface, *J. Nucl. Mater.* 463 (2015) 1125-1128.

M. Akiyoshi, I. Takagi, T. Yoshiie, Xu Qiu, K. Sato, T. Yano, Effect of annealing on thermal diffusivity in ceramics irradiated by electrons and neutrons, *Prog. Nucl. Energy*, 71 (2015) 320-327.

T. Sasaki, M. Rajib, M. Akiyoshi, T. Kobayashi, I. Takagi, T. Fujii, M.M. Zaman, Laboratory enrichment of radioactive assemblages and estimation of thorium and uranium radioactivity in fractions separated from placer sands in southeast Bangladesh, *Nat. Resour. Res.*, 24 (2015) 209-220.

2014

M. Saito, N. Ojima, S. Itoi, Y. Haruyama, Radiative lifetime of the ¹S₀ metastable state in doubly charged Kr ions, *Phys. Rev. A* 91 012508 (2015).

T. Yoshida, T. Fujiwara, M. Saito, Y. Haruyama, K. Yasuda, Concentration and distribution measurements of fluorine in tea leaves by micro-PIGE, *Int. J. PIXE* 23, 119 (2013).

M. Saito, T. Tanabe, K. Noda, M. Lintuluoto, Photodissociation of chlorophyll monoanions studied using an electrostatic storage ring, *J. Phys.: Conf. Ser.* 488 (2014) 022004.

S.S. Huang, K. Sato, Q. Xu, T. Yoshiie, H. Tsuchida, A. Itoh, Positron annihilation and TEM studies on ion irradiated Fe and Fe-Cr model alloys of ferritic/martensitic steel, *J. Nucl. Mater.* 455 (2014) 122-125.

B. Tsuchiya, K. Morita, S. Nagata, T. Kato, Y. Iriyama, H. Tsuchida, T. Majima, Dynamic measurements of Li depth profiles in a Li-ion battery system under charging condition by means of ERD and RBS techniques, *Surf. Interface Anal.* 46 (2014) 1187-1191.

H. Tsuchida, H. Tsutsumi, M. Akiyoshi, T. Iwai, In situ observation of damage evolution in polycarbonate under ion irradiation with positrons, *Jpn. J. Appl. Phys. Conf. Proc.* 2 (2014) 011103.

M. Imai, Y. Iriki, Y. Ohta, T. Majima, H. Tsuchida, H. Shibata, A. Itoh, Single-electron-capture cross-section scaling for low-q heavy ions at low energy, *J. Phys. Conf. Ser.* 488, (2014) 082010.

M. Imai, M. Satake, K. Kawatsura, K. Takahiro, K. Komaki, K. Nishio, H. Shibata, S. Okayasu, Charge state distribution of tungsten ions after penetration of C-foil targets, *JAEA-Review* 2013-057, 45-46 (2014).

G. Ito, T. Furukawa, H. Tanuma, J. Matsumoto, H. Shiromaru, T. Majima, M. Goto, T. Azuma, K. Hansen, Cooling dynamics of photo-excited C₆⁻ and C₆H⁻ *Phys. Rev. Lett.* 112, (2014) 183001(1-5).

T. Majima, T. Murai, T. Kishimoto, Y. Adachi S. O. Yoshida H. Tsuchida, A. Itoh, Correlation between multiple ionization and fragmentation of C₂H₆ in charge-changing collisions of 580 keV C⁺. *Phys. Rev. A*, 90, (2014) 062711(1-8).

G. Ito, T. Furukawa, H. Tanuma, J. Matsumoto, H. Shiromaru, T. Majima, M. Goto, T. Azuma, K. Hansen, Difference in cooling dynamics between photo-excited C₆⁻ and C₆H⁻. *J. Phys.: Conf. Ser.* 488 (2014) 022036.

M. Nojima, M. Suzuki, M. Fujii, T. Seki, J. Matsuo, Development of organic SIMS system with Ar-GCIB and IMS-4f, *Surf. Interface Anal.* 46, 368-371(2014).

M. Fujii, M. Kusakari, K. Matsuda, N. Man, T. Seki, T. Aoki, J. Matsuo, Lipid compounds analysis with MeV-SIMS apparatus for biological applications, *Surf. Interface Anal.* 46, 353-356 (2014).

M. Suzuki, M. Nojima, M. Fujii, T. Seki, J. Matsuo, Mass analysis by Ar-GCIB-dynamic SIMS for organic materials, *Surf. Interface Anal.* 46, 1212-1214 (2014).

M. Kusakari, M. Fujii, T. Seki, T. Aoki, J. Matsuo, Low Vacuum SIMS Measurements of Higher Alcohols with MeV-energy Heavy Ion Beam, *Trans. Mater. Res. Soc. Jpn.* 39 (3), 265-268 (2014).

M. Fujii, S. Nakagawa, T. Seki, T. Aoki, J. Matsuo, Quantitative analysis of lipids with argon gas cluster ion beam secondary ion mass spectrometry, *Surf. Interface Anal.* 46, 1129-1132 (2014).

T. Seki, M. Fujii, M. Kusakari, S. Nakagawa, T. Aoki, J. Matsuo, Analysis of liquid materials in low vacuum with Wet-SIMS, *Surf. Interface Anal.* 46, 1133-1136 (2014).

J. Matsuo, S. Torii, K. Yamauchi, K. Wakamoto, M. Kusakari, S. Nakagawa, M. Fujii, T. Aoki, T. Seki, Novel SIMS system with focused massive cluster ion source for mass imaging spectrometry with high lateral resolution, *Appl. Phys. Express.* 7 (5), 056602 (2014).

M. Fujii, S. Nakagawa, K. Matsuda, N. Man, T. Seki, T. Aoki, J. Matsuo, Study on the detection limits of a new argon gas cluster ion beam secondary ion mass spectrometry apparatus using lipid compound samples, *Rapid commun. mass spectrum.* 28 (8), 917-920 (2014).

Y. Yonemoto, T. Kunugi, Experimental investigation on variations in geometric variables of a droplet on a low-surface-energy solid, *Int. J. Heat Mass Transfer* 73 (2014) 810-818.

Y. Imaizumi, T. Kunugi, T. Yokomine, Z. Kawara, Viscoelastic Fluid Behaviors around A Rising Bubble via A New Method of Mesh Deformation Tracking, *Chem. Eng. Sci.*, 120 (2014) 167-173.

H. Zhang, H. Sun, T. Yokomine, T. Kunugi, Liquid velocity profile of turbulent bubbly flow in a large square duct Part-I: Formation of the typical M-shaped profile and two layers, *Jpn. J. Multiphase Flow*, 28(2), (2014) 212-219.

H. Zhang, H. Sun, T. Yokomine, T. Kunugi, Liquid velocity profile of turbulent bubbly flow in a large square duct Part-II:

- Flow characteristics in two layers, Jpn. J. Multiphase Flow, 28(2), (2014) 220-226.
- K. Ito, T. Kunugi, S. Ohno, H. Kamide, H. Ohshima, A High-precision Calculation Method for Interface Normal and Curvature on An Unstructured Grid, J. Comput. Phys., 273 (2014) 38-53.
- T. Kunugi, Y. Ose, T. Enomoto, S. Urata, Numerical Study on Mass Transfer of a Vapor Bubble Rising in Very High Viscous Fluid, J. Comput. Multiphase Flows, 6(3), (2014) 217-281.
- T. Sakabe, T. Yokomine, T. Kunugi, Z. Kawara, Y. Ueki, T. Tanaka, Gas absorption and discharge behaviors of lead-lithium, Fusion Eng. Des. 89 (2014) 1417–1420.
- H. Zhang, H. Sun, T. Yokomine, T. Kunugi, Void fraction effect on bubble deformation of turbulent bubbly flow in a large square duct, Therm. Sci. Eng., 22(4) (2014) 73-84.
- Y. Ose, T. Kunugi, Numerical Study on Bubble Behavior and Heat Transfer Characteristics of Subcooled Pool Boiling Based on Non-empirical Boiling and Condensation Model, J. Comput. Multiphase Flows, 6(4) (2014) 419-429.
- Y. Yamamoto, T. Kunugi, Direct numerical simulation of MHD heat transfer in high Reynolds number turbulent channel flows for Prandtl number of 25, Fusion Eng. Des. 90 (2015) 17–22.
- S. Suehiro, J. Sugimoto, A. Hidaka, H. Okada, S. Mizokami, K. Okamoto, Development of the source term PIRT Based on findings during Fukushima Daiichi NPPs accident, Nucl. Eng. Des. 286 (2015), 163-174.
- T. Sasaki, M. Rajib, M. Akiyoshi, T. Kobayashi, I. Takagi, T. Fujii, Md-M. Zaman, Laboratory Enrichment of Radioactive Assemblages and Estimation of Thorium and Uranium Radioactivity in Fractions Separated from Placer Sands in Southeast Bangladesh, Nat. Resour. Res., 23 (2014).
- T. Sasaki, Y. Takeno, A. Kirishima, N. Sato, Leaching Test of Gamma-Emitting Cs, Ru, Zr and U from Neutron-Irradiated UO₂/ZrO₂ Solid Solutions in Non-Filtered Surface Seawater, J. Nucl. Sci. Technol., 52 (2015) 147.
- A. Kirishima, T. Sasaki, N. Sato, Solution Chemistry Study of Radioactive Sr on Fukushima Daiichi NPS site, J. Nucl. Sci. Technol., 52 (2015) 152.
- K. Ohara, Y. Umebayashi, T. Ichitsubo, K. Matsumoto, R. Hagiwara, H. Arai, M. Mori, Y. Oriksasa, S. Okamoto, M. Oishi, Y. Aiso, T. Nohira, Y. Uchimoto, Z. Ogumi, E. Matsubara, Structural modification by adding Li cations into Mg/Cs-TFSA molten salt facilitating Mg electrodeposition, RSC Adv., 5, 3063-3069 (2015).
- C.Y. Chen, K. Matsumoto, T. Nohira, R. Hagiwara, Full utilization of superior charge- discharge characteristics of Na_{1.56}Fe_{1.22}P₂O₇ positive electrode by using ionic liquid electrolyte, J. Electrochem. Soc., 162, A176-A180 (2015).
- C. Ding, T. Nohira, A. Fukunaga, R. Hagiwara, Charge-discharge performance of an ionic liquid-based sodium secondary battery in a wide temperature range, Electrochem., 83, 91-94 (2015).
- K. Matsumoto, Y. Okamoto, T. Nohira, R. Hagiwara, Thermal and Transport Properties of Na[N(SO₂F)₂]-[N-methyl-N-propylpyrrolidinium][N(SO₂F)₂] Ionic ayashi, Liquids for Na Secondary Batteries, J. Phys. Chem. C, 119, 7648-7655(2015).
- K. Matsumoto, T. Matsui, T. Nohira, R. Hagiwara, Crystal structure of Na[N(SO₂CF₃)₂] and coordination environment of alkali metal cation in the M[N(SO₂CF₃)₂] (M⁺ = Li⁺, Na⁺, K⁺, and Cs⁺) structures, J. Fluorine Chem., 174, 42-48 (2015).
- K. Matsumoto, R. Taniki, T. Nohira, R. Hagiwara, Inorganic–Organic Hybrid Ionic Liquid Electrolytes for Na Secondary Batteries, J. Electrochem. Soc., 162, A1409-A1414 (2015).
- R. Taniki, K. Matsumoto, R. Hagiwara, Effects of HF content in the (FH)_nF⁻ anion on the formation of ionic plastic crystal phases of N-ethyl-N-methylpyrrolidinium and N,N-dimethylpyrrolidinium fluorohydrogenate salts, Phys. Chem. Chem. Phys., 16, 1522-1528 (2014).
- G.S. Groenewold, J.E. Delmore, M.T. Benson, T. Tsuda, R. Hagiwara, Generation of gas-phase zirconium fluoroanions by electrospray of an ionic liquid, Rap. Commun. Mass Spectrom. 28, 1233-1242 (2014).
- M. Oishi, T. Ichitsubo, S. Okamoto, S. Toyoda, E. Matsubara, T. Nohira, R. Hagiwara, Electrochemical Behavior of Magnesium Alloys in Alkali Metal-TFSA Ionic Liquid for Magnesium-Battery Negative Electrode, J. Electrochem. Soc. 161 A943-A947 (2014).
- C.Y. Chen, K. Matsumoto, T. Nohira, C. Ding, T. Yamamoto, R. Hagiwara, Charge-discharge behavior of a Na₂FeP₂O₇ positive electrode in an ionic liquid electrolyte between 253 and 363 K, Electrochim. Acta, 133, 583-588 (2014).
- K. Matsumoto, T. Hosokawa, T. Nohira, R. Hagiwara, A. Fukunaga, K. Numata, E. Itani, S. Sakai, K. Nitta, S. Inazawa, The Na[FSA]-[C₂C₁im][FSA] (C₂C₁im⁺ : 1-ethyl-3-methylimidazolium and FSA - : bis (fluorosulfonyl)amide) ionic liquid electrolytes for sodium secondary batteries, J. Power Sources, 265, 36-39 (2014).
- K. Yasuda, K. Kondo, T. Nohira, R. Hagiwara, Electrochemical Formation of Pr-Ni Alloys in LiF-CaF₂-PrF₃ and NaCl-KCl-PrCl₃ Melts, J. Electrochem. Soc., 161, D3097-D3104 (2014).
- T. Yamamoto, T. Nohira, R. Hagiwara, A. Fukunaga, S. Sakai, K. Nitta, S. Inazawa, Improved cyclability of Sn-Cu film electrode for sodium secondarybattery using inorganic ionic liquid electrolyte, Electrochim. Acta, 135, 60-67 (2014).
- C. Ding, T. Nohira, R. Hagiwara, K. Matsumoto, Y. Okamoto, A. Fukunaga, S. Sakai, K. Nitta, S. Inazawa, Na[FSA]-[C₃C₁pyrr][FSA] ionic liquids as electrolytes for sodium secondary batteries: Effects of Na ion concentration and operation temperature, J. Power Sources, 269, 124–128 (2014).
- P. Kiatkittikul, J. Yamaguchi, R. Taniki, K. Matsumoto, T. Nohira, R. Hagiwara. Influence of cationic structures on

oxygen reduction reaction at Pt electrode in fluorohydrogenate ionic liquids, *J. Power Sources*, 266, 193–197 (2014).

C.Y. Chen, K. Matsumoto, T. Nohira, R. Hagiwara, Na₂MnSiO₄ as a positive electrode material for sodium secondary batteries using an ionic liquid electrolyte *Electrochim. Commun.* 45, 63-66 (2014).

K. Matsumoto, U. Harinaga, R. Tanaka, A. Koyama, R. Hagiwara, K. Tsunashima, The structural classification of the highly disordered crystal phases of [N_n][BF₄], [N_n][PF₆], [P_n][BF₄], and [P_n][PF₆] salts (N_n⁺ = tetraalkylammonium and P_n⁺ = tetraalkylphosphonium), *Phys. Chem. Chem. Phys.* 16, 23616-23626, (2014).

X. Yang, K. Yasuda, T. Nohira, R. Hagiwara, T. Homma, Reaction Behavior of Stratified SiO₂ Granules during Electrochemical Reduction in Molten CaCl₂, *Metall. Mater. Trans. B*, 45, 1337-1344 (2014).

K. Nakajima, J. Lienemann, P. Eberlein, K. Kimura, K. Maass, H. Winter, Emission of secondary ions after grazing impact of keV ions on solid surfaces, *Nucl. Instrum. Methods in Phys. Res. B*340 (2014) 67-71.

K. Nakajima, M. Miyashita, M. Suzuki, K. Kimura, Surface sensitivity of secondary ion mass spectroscopy in the electronic sputtering regime, *Nucl. Instrum. Methods in Phys. Res. B*332 (2014) 373–376.

S. Hogyoku, S. Fujiwara, H. Tsuji, Y. Gotoh, Field ion microscope observation of tungsten surface processed in ethanol, *Nucl. Instrum. Methods Phys. Res. B*332 (2014) 168-171.

Y. Nakatsuka, H. Akamatsu, S. Murai, K. Fujita, K. Tanaka, Superspin Glass Behavior of Amorphous FeO–SiO₂ Thin Films, *Jpn. J. Appl. Phys.* 53 (2014) 05FB11-(1-5).

S. Yao, T. Sato, K. Kaneko, S. Murai, K. Fujita, K. Tanaka, Preparation of Yttrium Iron Garnet Thin Films by Mist Chemical Vapor Deposition Method and Their Magneto-Optical Properties, *Jpn. J. Appl. Phys.* 53 (2014) 05FB17-(1-5).

Y. Kususe, H. Murakami, K. Fujita, I. Kakeya, M. Suzuki, S. Murai, K. Tanaka, Magnetic and Transport Properties of EuTiO₃ Thin Films Doped with Nb, *Jpn. J. Appl. Phys.* 53 (2014) 05FJ07-(1-6).

H. Akamatsu, K. Fujita, T. Kuge, A. S. Gupta, A. Togo, S. Lei, F. Xue, G. Stone, J. M. Rondinelli, Long-Qing Chen, I. Tanaka, V. Gopalan, K. Tanaka, Inversion Symmetry Breaking by Oxygen Octahedral Rotations in the Ruddlesden-Popper Na_RTiO₄ Family, *Phys. Rev. Lett.* 112 (2014) 187602-(1-5).

T. Nakanishi, Y. Suzuki, Y. Doi, T. Seki, H. Koizumi, K. Fushima, K. Fujita, Y. Hinatsu, H. Ito, K. Tanaka, Y. Hasegawa, Enhancement of Optical Faraday Effect of Nonanuclear Tb(III) Complexes, *Inorg. Chem.* 53 (2014) 7635-7641.

M. Nishijima, T. Ootani, Y. Kamimura, T. Sueki, S. Esaki, S. Murai, K. Fujita, K. Tanaka, K. Ohira, Y. Koyama, I. Tanaka, Accelerated Discovery of Cathode Materials with Prolonged

Cycle Life for Lithium-ion Battery, *Nat. Commun.* 5 (2014) 4553-(1-7).

K. Sato, Q. Xu, X.Z. Cao, P. Zhang, B.Y. Wang, H. Tsuchida, Formation of Cu precipitates in a high-energy-particle-irradiated and thermally aged Fe-0.6%Cu alloy, *J. Phys.: Conf. Ser.*, Vol. 505 (2014) 012011.

2013

T. Mizuno, A. Itoh, Fragmentation of molecules under charge-changing collisions of a few MeV heavy ions, *J. Phys.: Conf. Ser.* 488 (2014) 012027.

C. Champion, M. E. Galassi, P. F. Weck, C. Abdallah, Z. Francis, M. A. Quinto, O. Fojón, R. D. Rivarola, J. Hanssen, Y. Iriki, A. Itoh, Ionization induced by protons on isolated molecules of adenine: theory, modelling and experiment, *J. Phys.: Conf. Ser.* 488 (2014) 012038.

M. Imai, Y. Iriki, A. Itoh, Target dependence of single-electron-capture cross sections for slow Be, C, C, Fe, Ni, and W ions colliding with atomic and molecular targets, *Fusion Sci. Technol.*, 63 (2013) 392-399.

J. Yokoe, H. Tsuchida, K. Nishimura, R. Murakoshi, S. Mori, M. Naitoh, T. Majima, A. Itoh, Charge-state distributions of fast diatomic carbon ions and dissociated fragments passing through microcapillaries, *J. Phys. B: At. Mol. Opt. Phys.* 46 (2013) 115201 (5pp).

H. Tsuchida, T. Majima, S. Tomita, K. Sasa, K. Narumi, Y. Saitoh, A. Chiba, K. Yamada, K. Hirata, H. Shibata, A. Itoh, Transmission properties of C₆₀ ions through micro- and nano-capillaries, *Nucl. Instrum. Methods Phys. Res., Sect. B*315 (2013) 336-340.

C. Champion, M.E. Galassi, P.F. Weck, S. Incerti, R.D. Rivarola, O. Fojon, J. Hanssen, Y. Iriki, A. Itoh, Proton-induced ionization of isolated uracil molecules: A theory/experiment confrontation, *Nucl. Instrum. Methods Phys. Res., Sect. B*314 (2013) 66-70.

A. Itoh, Y. Iriki, M. Imai, C. Champion, R. D. Rivarola, Cross sections for ionization of uracil by MeV-energy-proton impact, *Phys. Rev. A*88 (2013) 052711.

M. Goto, J. Matsumoto, H. Shiromaru, Y. Achiba, T. Majima, H. Tanuma, T. Azuma, Laser-induced thermal detachment of hot, large molecular ions under multiphoton-absorption conditions, *Phys. Rev. A*87, 033406(1-8) (2013).

B. Tsuchiya, K. Morita, Y. Iriyama, T. Majima, H. Tsuchida, ERD measurement of depth profiles of H and Li in Pt-coated LiCoO₂ thin films, *Nucl. Instrum. Methods Phys. Res., B*315 (2013) 341-344.

H. Gnaser, M. Fujii, S. Nakagawa, T. Seki, T. Aoki, J. Matsuo, Prolific cluster emission in sputtering of phenylalanine by argon-cluster ion bombardment, *Int. J. Mass Spectrom.*, 360, 54-57 (2014).

T. Tadic, I. B. Radovic, Z. Siketic, D. D. Cosic, N. Skukan, M. Jaksic, J. Matsuo, Development of a TOF SIMS setup at the Zagreb Heavy Ion Microbeam Facility, *Nucl. Instrum. Methods Phys. Res., B* (2014).

- T. Seki, Y. Wakamatsu, S. Nakagawa, T. Aoki, A. Ishihara, J. Matsuo, Biomaterial imaging with MeV-energy heavy ion beams, *Nucl. Instrum. Methods Phys. Res. Sect. B* (2014).
- K. Ichiki, J. Tamura, T. Seki, T. Aoki, J. Matsuo, Development of gas cluster ion beam irradiation system with an orthogonal acceleration TOF instrument, *Surf. Interface Anal.*, 45(1), 522–524 (2013).
- K. Ichiki, J. Tamura, T. Seki, T. Aoki, J. Matsuo, Peptide dissociation patterns in secondary ion mass spectrometry under large argon cluster ion bombardment, *Rapid Commun. Mass Spectrom.* 27, 1490–1496 (2013).
- T. Aoki, T. Seki, J. Matsuo, Molecular dynamics simulation study of damage formation and sputtering with huge fluorine cluster impact on silicon, *Nucl. Instrum. Methods Phys. Res. B* 303 170–173 (2013).
- T. Seki, S. Shitomoto, S. Nakagawa, T. Aoki, J. Matsuo, An electrostatic quadrupole doublet focusing system for MeV heavy ions in MeV-SIMS, *Nucl. Instrum. Methods Phys. Res. B* 315, 356–359 (2013).
- Y. Ueki, M. Hirabayashi, T. Kunugi, K. Nagai, K. Ara, Oxygen influence on ultrasonic Doppler velocimetry of lead–lithium flow using titanium transducer, *Fusion Eng. Des.* 89(1), 77–81 (2014).
- H. Sun, T. Kunugi, X. Shen, D. Wu, H. Nakamura, Upward air–water bubbly flow characteristics in a vertical square duct, *J. Nucl. Sci. Technol.* 51(3), 267–281 (2014).
- S. H. Pham, Z. Kawara, T. Yokomine, T. Kunugi, Detailed observations of wavy interface behaviors of annular two-phase flow on rod bundle geometry, *Int. J. Multiphase Flow* 59, 135–144 (2014).
- T. Kunugi, S. H. Pham, Z. Kawara, T. Yokomine, The Annular Two-phase Flow on Rod Bundle: The Effects of Spacers, *Bul. Am. Phys. Soc.*, 58(18) 24–26, (2013).
- H. Sun, T. Kunugi, D. Wu, Visualization Study on Bubbly Turbulent Flow in a Small Square Duct, *Green Energy and Technol.* 2013, 277–283 (2013).
- M. Yamamoto, F. Arbeiter, T. Yokomine, E. Wakai, J. Theile, A. Garcia, D. Rapisarda, N. Casal, A. Mas, P. Gouat, W. Leysen, Current status of the engineering design of the test modules for the IFMIF, *Fusion Eng. Des.* 88 746–750 (2013).
- T. Yokomine, Heat transfer between pebbles by taking self-heating of each pebble into consideration, *Fusion Eng. Des.* 88, 2280–2283 (2013).
- S. H. Pham, Z. Kawara, T. Kunugi, Application of Very High Speed Camera in Measurement of Liquid Film Flow on Nuclear Rod Bundle in Micro-Scale, *Green Energy and Technol.* 2013, 231–237 (2013).
- K. Ito, T. Kunugi, H. Ohshima, T. Kawamura, A volume-conservative PLIC algorithm on three-dimensional fully unstructured meshes, *Comput. & Fluids* 88, 15, 250–261 (2013).
- L-F Jiao, T. Kunugi, F-C Li, The Rheological Characters of Surfactant Viscoelastic Solutions at Low Shear Rate, *Green Energy and Technol.* 2013, 261–268 (2013).
- H-N Zhang, T. Kunugi, F-C Li, Characteristics of Velocity Fields and Polymers' Elongation in Elastic Turbulent Flow, *Green Energy and Technol.* 2013, 269–275 (2013).
- K. Ito, T. Kunugi, H. Ohshima, High-Precision Numerical Scheme for Vortical Flow, *Appl. Math.* 4 No.10A, 17–25 (2013).
- J. Sugimoto, Perspective on Post-Fukushima Severe Accident Research, *Nucl. Saf. Simul.* 4, 3, 179–185 (2013).
- K. Une, K. Sakamoto, I. Takagi, K. Sawada, H. Watanabe, M. Aomi, Deuterium diffusion in oxide layers of Zr-2.5Nb alloy, *J. Nucl. Mater.* 439 (2013) 84–92.
- V.Kh. Alimov, Y. Hatano, B. Tyburska, K. Sugiyama, I. Takagi, Y. Furuta, J. Dorner, M. Fusseider, K. Isobe, T. Yamanishi, M. Matsuyama, Deuterium retention in tungsten damaged with W ions to various damage levels, *J. Nucl. Mater.* 441 (2013) 280–285.
- Y. Hatano, M. Shimada, V.Kh. Alimov, J. Shi, M. Hara, T. Nozaki, Y. Oya, M. Kobayashi, K. Okuno, T. Oda, G. Cao, N. Yoshida, N. Futagami, K. Sugiyama, J. Roth, B. Tyburska, J. Dorner, I. Takagi, M. Hatakeyama, H. Kurishita, M.A. Sokolov, Trapping of hydrogen isotopes in radiation defects formed in tungsten by neutron and ion irradiations, *J. Nucl. Mater.* 438 (2013) S114–S119.
- I. Takagi, T. Komura, M. Akiyoshi, K. Moritani, T. Sasaki, H. Moriyama, Hydrogen traps in ion-irradiated F82H steel observed by NRA, *J. Nucl. Mater.* 442 (2013) S33–S37.
- I. Takagi, K. Yamamichi, Y. Furuta, M. Akiyoshi, T. Sasaki, H. Tsuchida, Y. Hatano, In situ observation of deuterium trapping in self-ion irradiated tungsten, *J. Nucl. Mater.* 442 (2013) S246–S250.
- I. Takagi, K. Matsuoka, T. Tanaka, M. Akiyoshi, T. Sasaki, Hydrogen trapping in 3He-irradiated Fe, *Nucl. Instrum. Methods Phys. Res. B* 314 (2013) 117–121.
- Y. Furuta, I. Takagi, S. Kawamura, K. Yamamichi, T. Sasaki, M. Akiyoshi, T. Kobayashi, In situ deuterium observation in deuterium-implanted tungsten, *Nucl. Instrum. Methods Phys. Res. B* 315 (2013) 121–125.
- K. Muller, T. Sasaki, Complex formation of Np(V) with fulvic acid at tracer metal concentration, *Radiochim. Acta*, 101 (2013) 1–6.
- T. Kobayashi, A.C. Scheinost, D. Fellhauer, X. Gaona, M. Altmaier, Redox behavior of Tc(VII)/Tc(IV) under various reducing conditions in 0.1 M NaCl solutions, *Radiochim. Acta* 101 (2013) 323–332.
- T. Kobayashi, D. Bach, M. Altmaier, T. Sasaki, H. Moriyama, Effect of temperature on the solubility and solid phase stability of zirconium hydroxide, *Radiochimica Acta*, 101 (2013) 645–651.
- A. Rueanngoen, K. Kanazawa, M. Akiyoshi, M. Imai, K.

- Yoshida, T. Yano, Effects of neutron irradiation on polymorphs of silicon nitride and SiAlON ceramics, *J. Nucl. Mater.*, 442 (2013) S349-S398.
- K. Matsumoto, D. Minori, K. Takagi, R. Hagiwara, Expansion of tetrachloroaluminate-graphite intercalation compound by reaction with anhydrous hydrogen fluoride, *Carbon*, 67, 434-439 (2014).
- A. Fukunaga, T. Nohira, R. Hagiwara, K. Numata, E. Itani, S. Sakai, K. Nitta, S. Inazawa, A safe and high-rate negative electrode for sodium-ion batteries: Hard carbon in NaFSA-C₁C₃pyrFSA ionic liquid at 363 K, *J. Power Sources*, 246, 387-391 (2014).
- C.Y. Chen, K. Matsumoto, T. Nohira, R. Hagiwara, Y. Orikasa, Y. Uchimoto, Pyrophosphate Na₂FeP₂O₇ as a low-cost and high-performance positive electrode material for sodium secondary batteries utilizing an inorganic ionic liquid, *J. Power Sources*, 246, 783-787 (2014).
- R. Taniki, K. Matsumoto, T. Nohira, R. Hagiwara, All solid-state electrochemical capacitors using N,N-dimethylpyrrolidinium fluorohydrogenate as ionic plastic crystal electrolyte, *J. Power Sources*, 245, 758-763 (2014).
- X. Yang, K. Yasuda, T. Nohira, R. Hagiwara, T. Homma, Kinetic Characteristics of Electrochemical Reduction of SiO₂ Granules in Molten CaCl₂, *J. Electrochem. Soc.*, 161, D3116-D3119 (2014).
- G. S. Groenewold, J. E. DelmoreMichael T. Benson, T. Tsuda, R. Hagiwara, Fluorohydrogenate Cluster Ions in the Gas Phase: Electrospray Ionization Mass Spectrometry of the[1-Ethyl-3-methylimidazolium⁺][F(HF)_{2.3}⁻] Ionic Liquid, *J. Phys. Chem. A*117, 14191-14199 (2013).
- R. Taniki, K. Matsumoto, R. Hagiwara, Synthesis and Characterization of Fluorohydrogenate Ionic Liquids Based on Azoniastriro-type Cations, *Chem. Lett.*, 42, 1469-1471 (2013).
- Y. Nakamori, N. Suzuki, K. Tanaka, T. Aoki, T. Nohira, R. Hagiwara, Effect of CO and oxygen on anode degradation in polymer electrolyte fuel cell, *J. Power Sources*, 242, 421-424 (2013).
- T. Toba, K. Yasuda, T. Nohira, X. Yang, R. Hagiwara, K. Ichitsubo, K. Masuda, T. Homma, Electrolytic Reduction of SiO₂ Granules in Molten CaCl₂, *Electrochem.*, 81, 559-565 (2013).
- C. Ding, T. Nohira, K. Kuroda, R. Hagiwara, A. Fukunaga, S. Sakai, K. Nitta, S. Inazawa, NaFSA-C₁C₃pyrFSA ionic liquids for sodium secondary battery operating over a wide temperature range, *J. Power Sources*, 238, 296-300 (2013).
- Y. Kado, T. Goto, R. Hagiwara, Thermodynamic and Kinetic Properties of Oxide Ions in a LiCl-KCl-CsCl Eutectic Melt, *J. Electrochem. Soc.*, 160, E90-E93 (2013).
- K. Yasuda, S. Kobayashi, T. Nohira, R. Hagiwara, Electrochemical Formation of Dy-Ni Alloys in Molten NaCl-KCl-DyCl₃, *Electrochim. Acta*, 106, 293-300 (2013).
- K. Yasuda, T. Nohira, K. Kobayashi, N. Kani, T. Tsuda, R. Hagiwara, Improving Purity and Process Volume during Direct Electrolytic Reduction of Solid SiO₂ in Molten CaCl₂ toward Production of Solar-grade Silicon, *Energy Technol.*, 1, 245-252 (2013).
- T. Yamamoto, T. Nohira, R. Hagiwara, A. Fukunaga, S. Sakai, K. Nitta, S. Inazawa, Thermodynamic studies on Sn-Na alloy in an intermediate temperature ionic liquid NaFSA-KFSA at 363 K, *J. Power Sources*, 237, 98-103 (2013).
- C.Y. Chen, K. Matsumoto, T. Nohira, R. Hagiwara, A. Fukunaga, S. Sakai, K. Nitta, S. Inazawa, Electrochemical and structural investigation of NaCrO₂ as a positive electrode for sodium secondary battery using inorganic ionic liquid NaFSA-KFSA, *J. Power Sources*, 237, 52-57 (2013).
- K. Nakajima, K. Nagano, M. Suzuki, K. Narumi, Y. Saitoh, K. Hirata, K. Kimura, Transmission secondary ion mass spectrometry using 5 MeV C₆₀⁺ ions, *Appl. Phys. Lett.* 104 (2014) 114103.
- K. Nakajima, M. Miyashita, M. Suzuki, K. Kimura, Surface structures of binary mixtures of imidazolium-based ionic liquids using high-resolution Rutherford backscattering spectroscopy and time of flight secondary ion mass spectroscopy, *J. Chem. Phys.* 139 (2013) 224701.
- Y. Morita, K. Nakajima, M. Suzuki, K. Narumi, Y. Saitoh, N. Ishikawa, K. Hojou, M. Tsujimoto, S. Isoda, K. Kimura, Surface effect on ion track formation in amorphous Si₃N₄ films, *Nucl. Instrum. Methods B*315 (2013) 142-145.
- Y. Gotoh, Y. Yasutomo, H. Tsuji, Vacuum Frequency Mixer with a Field Emitter Array, *J. Vac. Sci. Technol. B*31, 050601-(1-6) (2013).
- Gotoh, W. Ohue, H. Tsuji, Energy Dependence of non-Rutherford Proton Elastic Scattering Spectrum for Hafnium Nitride Thin Films, *J. Nucl. Instrum. Methods Phys. Res. B*315, 68-71 (2013).
- H. Hojo, K. Fujita, H. Ikeno, T. Matoba, T. Mizoguchi, I. Tanaka, T. Nakamura, Y. Takeda, T. Okane, K. Tanaka, Magnetic Structures of FeTiO₃-Fe₂O₃ Solid Solution Thin Films Studied by Soft X-Ray Magnetic Circular Dichroism and ab initio Multiplet Calculations, *App. Phys. Lett.* 104 (2014) 112408-(1-5).
- T. Kawamoto, K. Fujita, H. Akamatsu, T. Nakamura, T. Kinoshita, M. Mizumaki, N. Kawamura, M. Suzuki, Y. Kususe, S. Murai, K. Tanaka, Ferromagnetic Amorphous Oxides in EuO-TiO₂ System Studied by Faraday Effect in the Visible Region and X-ray Magnetic Circular Dichroism at the Eu *M*_{4.5}- and *L*_{2,3}-Edges, *Phys. Rev. B*88 (2013) 024405-(1-9).
- X. Meng, A. V. Kildishev, K. Fujita, K. Tanaka, V. M. Shalaev, Wavelength-Tunable Spasing in the Visible, *Nano Lett.* 13 (2013) 4106-4112.
- T. Nakanishi, M. Maeda, A. Kawashima, S. Kamiya, K. Fushimi, K. Fujita, K. Tanaka, Y. Hasegawa, Novel Opto-Magnetic Silicate Glass with Semiconductor EuS Nanocrystals, *J. Alloys Comp.* 562 (2013) 123-127.

A. Kawashima, T. Nakanishi, T. Shibayama, S. Watanabe, K. Fujita, K. Tanaka, H. Koizumi, K. Fushima, Y. Hasegawa, Enhanced Magneto-Optical Properties of Semiconductor Eu Nanocrystals Assisted by Surface Plasmon Resonance of Gold Nanoparticles, *Chem. Eur. J.* 19 (2013) 14438-14445.

K. Ito, K. Hamasaki, K. Kohama, Y. Shirai, M. Murakami, Low-Temperature Synthesis of High-Adhesion Cu(Mg) Alloy Films on Glass Substrates, *J. Electron. Mater.* 43 (2014) 2540-2547.

A. Heya, N. Matsuo, M. Takahashi, K. Ito, K. Kanda, Crystallization of Si_{1-x}Gex Multilayer by Soft X-ray Irradiation, *Appl. Phys. Express* 6 (2013) 065501.

2012

H. Tsuchida, T. Iwai, M. Awano, N. Oshima, R. Suzuki, K. Yasuda, C. Batchuluum, A. Itoh, Radiation damage in nanocrystalline Ni under irradiation studied using positron annihilation spectroscopy, *J. Nucl. Mater.* 442, S856-S860 (2013).

T. Iwai, H. Tsuchida, In situ positron beam Doppler broadening measurement of ion-irradiated metals - Current status and potential, *NIM B*, 285, 18-23 (2012).

H. Tsuchida, S. Tomita, K. Nishimura, R. Murakoshi, M. Naitoh, K. Sasa, S. Ishii, A. Yogo, A. Itoh, Properties of fast carbon cluster microbeams produced with a tapered capillary, *NIM B*, 293, 6-10 (2012).

T. Majima, G. Santambrogio, C. Bartels, A. Terasaki, T. Kondow, J. Meinen, T. Leisner, Spatial distribution of ions in a linear octopole radio-frequency ion trap in the space-charge limit, *Phys. Rev. A* 85, 053414(1-7) (2012).

S. Masunaga, Y. Sakurai, H. Tanaka, R. Hirayama, Y. Matsumoto, A. Uzawa, M. Suzuki, N. Kondo, M. Narabayashi, A. Maruhashi, K. Ono, Radiosensitivity of pimonidazole-unlabelled intratumour quiescent cell population to γ -rays, accelerated carbon ion beams and boron neutron capture reaction, *Br. J. Radiol.* 86, 2013, 20120302.

S. Masunaga, Y. Sakurai, H. Tanaka, M. Suzuki, N. Kondo, M. Narabayashi, K. Tano, A. Maruhashi, K. Ono, Usefulness of daily fractionated administration of Wortmannin combined with γ -ray irradiation in terms of local tumor response and lung metastasis, *World J. Oncol.* 4, 2013, 26-36.

S. Masunaga, Y. Sakurai, H. Tanaka, M. Suzuki, N. Kondo, M. Narabayashi, A. Maruhashi, K. Ono, Wortmannin efficiently suppresses the recovery from radiation-induced damage in pimonidazole-unlabeled quiescent tumor cell population, *J. Radiat. Res.* 54, 2013, 221-229.

Y. Liu, M. Suzuki, S. Masunaga, Y.-W. Chen, G. Kashino, H. Tanaka, Y. Sakurai, M. Kirihata, K. Ono, Effect of bevacizumab treatment on p-boronophenylalanine distribution in murine tumor, *J. Radiat. Res.* 54, 2013, 260-267.

S. Masunaga, S. Kimura, T. Harada, K. Okuda, Y. Sakurai, H. Tanaka, M. Suzuki, N. Kondo, A. Maruhashi, H. Nagasawa, K. Ono, Evaluating the usefulness of a novel ¹⁰B-carrier conjugated with cyclic RGD peptide in boron neutron capture

therapy, *World J. Oncol.* 3, 2012, 103-112.

M. Suzuki, O. Suzuki, Y. Sakurai, H. Tanaka, N. Kondo, Y. Kinashi, S. Masunaga, A. Maruhashi, K. Ono, Reirradiation for locally recurrent lung cancer in the chest wall with boron neutron capture therapy (BNCT), *Int. Canc. Conf.* J. 1, 2012, 235-238.

S. Masunaga, Y. Liu, Y. Sakurai, H. Tanaka, M. Suzuki, N. Kondo, A. Maruhashi, K. Ono, Usefulness of combined treatment with continuous administration of tirapazamine and mild temperature hyperthermia in γ -ray irradiation in terms of local tumor response and lung metastatic potential, *Int. J. Hyperthermia* 28, 2012, 636-644.

J. Matsuo, K. Ichiki, Y. Yamamoto, T. Seki, T. Aoki, Depth profiling analysis of damaged arginine films with Ar cluster ion beams, *Surf. Interface Anal.* 44 [6], 729-731 (2012).

M. Hada, J. Matsuo, Ultrafast X-ray sources for time-resolved measurements, *X-Ray Spectrom.*, 41, 188-194 (2012).

Y. Yamamoto, K. Ichiki, T. Seki, T. Aoki, J. Matsuo, Ion-induced damage evaluation with Ar cluster ion beams, *Surf. Interface Anal.* 45, 167-170 (2012).

T. Aoki, T. Seki, J. Matsuo, Molecular dynamics study of crater formation by core-shell structured cluster impact, *Nucl. Instrum. Methods Phys. Res.* B282, 29-32 (2012).

M. Hada, D. Zhang, A. Casandru, R.J.D. Miller, Y. Hontani, J. Matsuo, R.E. Marvel and R.F. Haglund Jr., Hot electron injection driven phase transitions, *Phys. Rev. B* 86, 134101 (2012).

H. N. Zhang, F. C. Li, Y. Cao, T. Kunugi, B. Yu, Direct numerical simulation of elastic turbulence and its mixing-enhancement effect in a straight channel flow, *Chin. Phys. B* 22[2], 024703 (2013).

E. Wakai, T. Kikuchi, T. Yokomine, M. Yamamoto, M. Soldaini, A. Polato, Analysis of test matrix and data acquisition plans in PIE facility of IFMIF, *Fusion Sci. Technol.*, 62(1), 246-251 (2012).

S. Smolentsev, T. Kunugi, K. Messadek, T. Yokomine, J. Young, K. Yuki, Y. Ueki, T. Sketchley, F.-C. Li, N. Morley, M. Abdou, Status of TITAN Task 1-3 Flow Control and Thermofluid Modeling, *Fusion Eng. Des.*, 87, 777-781 (2012).

S. Satake, K. Sone, K. Furumi, T. Kunugi, Direct numerical simulation of turbulent mixed convection in a vertical channel in a wall-normal magnetic field, *Fusion Eng. Des.*, 87, 798-802 (2012).

G. Epinosa-Paredes, L. B. Miracle, A. Nuñez-Carrera, J. Sugimoto, Severe Accident Analysis in Nuclear Power Plants, *Sci. Technol. Nucl. Installations*, 1-2 (2012).

伊藤 啓, 功刀 資彰, 大島宏之, 非構造格子系における高精度気液界面勾配計算法, 混相流, 26(1), 52-59 (2012).

伊藤 啓, 功刀 資彰, 大島 宏之, 高精度渦流れ計算スキ

一ムの開発と検証, 日本機械学会論文集B編, 78巻, 786号, 254-262 (2012).

K. Une, I. Takagi, K. Sawada, S. Miyamura, M. Aomi, Deuterium diffusion in LiOH-water-corroded oxide layer of zirconium alloys, *Prog. Nucl. Energy*, 57 (2012) 93.

K. Une, K. Sakamoto, M. Aomi, J. Matsunaga, Y. Etoh, I. Takagi, S. Miyamura, T. Kobayashi, K. Ito, Hydrogen absorption mechanism of zirconium alloys based on characterization of oxide layer, *J. ASTM Int.* 8 (2011) JAI 102950.

T. Sasaki, H. Yoshida, T. Kobayashi, I. Takagi, H. Moriyama, Determination of Apparent Formation Constants of Eu(III) with Humic Substances by Ion Selective Liquid Membrane Electrode, *Am. J. Anal. Chem.*, 3 (2012) 462-469.

T. Maruyama, K. Uda, K. Moritani, T. Sasaki, H. Moriyama, Electromotive force measurement of lanthanides in liquid lead, *J. Nucl. Sci. Technol.*, 49 (2012) 466-471.

T. Sasaki, S. Aoyama, H. Yoshida, Y.M. Kulyako, M. Samsonov, T. Kobayashi, I. Takagi, B.F. Myasoedov, H. Moriyama, Apparent formation constants of Pu(IV) and Th(IV) with humic acids determined by solvent extraction method, *Radiochim. Acta*, 100 (2012) 737-745.

M. Akiyoshi, H. Tsuchida, I. Takagi, T. Yoshiie, Xu Qiu, K. Sato, T. Yano, Irradiation effects on thermal diffusivity and positron annihilation lifetime induced by neutron and 30MeV electron, *J. Nucl. Sci. Technol.*, 49 (2012) 595-601.

R. Taniki, N. Kenmochi, K. Matsumoto, R. Hagiwara, Effects of the polyfluoroalkyl side-chain on the properties of 1-methyl-3-polyfluoroalkylimidazolium fluorohydrogenate ionic liquids, *J. Fluorine Chem.*, 149-118, (2013).

R. Taniki, K. Matsumoto, T. Nohira, R. Hagiwara, Evaluation of Double Layer and Redox Capacitances on Activated Carbon Electrodes in *N*-ethyl-*N*-methylpyrrolidinium fluorohydrogenate Ionic Liquid, *J. Electrochem. Soc.*, 160, 4, A734-A738.

K. Yasuda, S. Kobayashi, T. Nohira, R. Hagiwara, Electrochemical Formation of Dy-Ni Alloys in Molten NaCl-KCl-NdCl₃, *Electrochim. Acta*. 92(1), 349-355 (2013).

S. Kobayashi, T. Nohira, K. Kobayashi, K. Yasuda, R. Hagiwara, T. Oishi, H. Konishi, Electrochemical Formation of Dy-Ni Alloys in Molten LiF-CaF₂-DyF₃, *J. Electrochem. Soc.*, 159[12], E193-E197.

F. Xu, K. Matsumoto, R. Hagiwara, The first crystallographic example of a face-sharing fluoroaluminate anion Al₂F₉³⁻, *Dalton Trans.*, 42, 6, 1965-1968 (2013).

R. Taniki, K. Matsumoto, R. Hagiwara, Highly conductive plastic crystals based on fluorohydrogenate anions, *J. Phys. Chem. B*, 117(3), 955-960 (2013).

T. Tsuda, T. Sakamoto, Y. Nishimura, S. Seino, A. Imanishi, K. Matsumoto, R. Hagiwara, T. Uematsu, S. Kuwabata, Preparation of gold nanoparticle using reactive species produced in room-temperature ionic liquid by accelerated electron beam irradiation, *RSC Advances*, 2(31),

11801-11807(2013).

K. Matsumoto, T. Oka, T. Nohira, R. Hagiwara, Inorg. Polymorphism of alkali bis(fluorosulfonyl)amides (M[N(SO₂F)₂]), M = Na, K, and Cs), *Chem.*, 52(2), 568-576 (2013).

K. Matsumoto, K. Takagi, R. Hagiwara, Electrochemical synthesis of graphite-tetrafluoroaluminate intercalation compounds, submitted to *J. Electrochem. Soc.*, 159[11], H876-H880 (2012).

P. Kiatkittikul, T. Nohira, R. Hagiwara, Nonhumidified fuel cell using *N*-ethyl-*N*-methylpyrrolidinium fluorohydrogenate ionic liquid-polymer composite membranes, *J. Power Sources*, 220, 10-14 (2012).

F. Xu, K. Matsumoto, R. Hagiwara, Phase behavior of 1-dodecyl-3-methylimidazolium fluorohydrogenate salts (C₁₂MIm(FH)_nF, n = 1.0-2.3) and their anisotropic ionic conductivity as ionic liquid crystal electrolytes, *J. Phys. Chem. B*, 116[33], 10106-10112 (2012).

T. Yamamoto, T. Nohira, R. Hagiwara, A. Fukunaga, S. Sakai, K. Nitta, S. Inazawa, Charge-discharge behavior of Sn negative electrode for a sodium secondary battery using intermediate temperature ionic liquid NaFSA-KFSA, *J. Power Sources*, 217, 479-484 (2012).

K. Nakajima, S. Oshima, M. Suzuki, K. Kimura, Surface structures of equimolar mixtures of imidazolium-based ionic liquids using high-resolution Rutherford backscattering spectroscopy, *Surf. Sci.* 606(21-22) (2012) 1693-1699.

K. Sasakawa, K. Nakajima, M. Suzuki, K. Kimura, Effect of multiple scattering on high-resolution Rutherford backscattering spectroscopy, *Nucl. Instrum. Methods B* 285 (2012) 1-5.

G.H. Takaoka, H. Ryuto, M. Takeuchi, Surface irradiation and materials processing using polyatomic cluster ion beams, *J. Mater. Res.* 27 (2012) 806.

X. Meng, U. G. Alexander V. Kildishev, K. Fujita, K. Tanaka, V. M. Shalaev, Unidirectional Spaser in Symmetry-Broken Plasmonic Core-Shell Nanocavity, *Sci. Rep.* 3 (2013) 1241-(1-5).

H. Akamatsu, Y. Kumagai, F. Oba, K. Fujita, K. Tanaka, I. Tanaka, Strong Spin-Lattice Coupling through Oxygen Octahedral Rotation in Divalent Europium Perovskites, *Adv. Funct. Mater.* 23 (2013) 1864-1872.

R. Yasuhara, S. Murai, K. Fujita, K. Tanaka, Atomically Smooth and Single Crystalline Indium Tin Oxide Thin Film with Low Optical Loss, *Phys. Status Solidi C* 9 (2012) 2533-2536.

S. Murai, S. Yao, T. Nakamura, T. Kawamoto, K. Fujita, K. Yano, K. Tanaka, Modified Faraday Rotation in a Three-Dimensional Magnetophotonic Opal Crystal Consisting of Maghemite/Silica Composite Spheres, *Appl. Phys. Lett.* 101 (2012) 151121-(1-4).

Y. Hasegawa, M. Kumagai, A. Kawashima, T. Nakanishi, K. Fujita, K. Tanaka, K. Fushimi, First Synthesis of EuS

Nanoparticle Thin Film with Wide Energy Gap and Giant Magneto-optical Efficiency on Glass Electrode, *J. Phys. Chem. C* 116 (2012) 19590-19596.

S. Murai, Y. Tokuda, K. Fujita, K. Tanaka, Tuning the Wavelength of Amplified Spontaneous Emission Coupled to Localized Surface Plasmon, *Appl. Phys. Lett.* 101 (2012) 031117-(1-3).

X.Z. Cao, Q. Xu, K. Sato, P. Zhang, H. Tsuchida, G.D. Cheng, H.B. Wu, X.P. Jiang, R.S. Yu, B.Y. Wang, L. Wei, Study of Cu Precipitates in Fe Ion Irradiated Fe-Cu Alloys Using Positron Annihilation Techniques, *J. Phys.: Conf. Ser.*.

2011

M. Shimizu, T. Hayakawa, K. Hisano, M. Kaneda, H. Tsuchida, A. Itoh, Stopping cross sections of liquid ethanol for swift He ions, *Nucl. Instrum. Methods Phys. Res., B* 269 (2011) 810-812.

Y. Nakai, T. Majima, T. Mizuno, H. Tsuchida, A. Itoh, C60 fragmentation in charge-changing collisions of slow and high-Z Au⁺ ions, *Phys. Rev. A* 83 (2011) 053201(1-6).

Y. Iriki, Y. Kikuchi, M. Imai, A. Itoh, Absolute doubly differential cross sections for ionization of adenine by 1.0 MeV protons, *Phys. Rev. A* 84 (2011) 032704(1-7).

Y. Iriki, Y. Kikuchi, M. Imai, A. Itoh, Proton-impact ionization cross sections of adenine measured at 0.5 and 2.0 MeV by electron spectroscopy, *Phys. Rev. A* 84 (2011) 052719.

T. Kamomae, Y. Miyabe, A. Sawada, O. Matoba, M. Nakata, S. Yano, T. Takakura, T. Mizowaki, A. Itoh, M. Hiraoka, Simulation for improvement of system sensitivity of radiochromic film dosimetry with different band-pass filters and scanner light intensities, *Radiol. Phys. Technol.* (2011) 4:140-147.

T. Shiinoki, K. Shibuya, M. Nakamura, A. Nakamura, Y. Matsuo, M. Nakata, A. Sawada, T. Mizowaki, A. Itoh, M. Hiraoka, Interfractional Reproducibility in Pancreatic Position Based on Four Dimensional Computed Tomography, *Int. J. Radiat. Oncol. Biol. Phys.*, 80[5] (2011) 1567-1572.

M. Kobayashi, H. Ohashi, S. Sasaki, H. Shibata, T. Iwai, M. Fujii, K. Nogami, H. Kimura, M. H. Nakamura, T. Hirai, R. Srama, E. Grün, A Future Observational Plan of Dust Particles around the Moon by LDM (Lunar Dust Monitor) Onboard the Orbiter of the Next Japanese Lunar Mission, *Earth Planet. Sci.* 63 1113-1117 (2011).

G. Moriena, M. Hada, G. Sciaiani, J. Matsuo, R.J.D. Miller, Femtosecond electron diffraction: Preparation and characterization of (110)-oriented bismuth films, *J. Appl. Phys.* 111, 043504 (2012).

H. Gnaser, K. Ichiki, J. Matsuo, Strongly reduced fragmentation and soft emission processes in sputtered ion formation from amino acid films under large Ar_n⁺(n≤2200) cluster ion bombardment, *Rapid Commun. Mass Spectrom.* 26[1], 1–8 (2012).

T. Seki, T. Aoki, J. Matsuo, Etching of Metallic Materials

with Cl₂ Gas Cluster Ion Beam, *Surf. Coat. Technol.* 206[5], 789-791 (2011).

M. Hada, S. Ibuki, Y. Hontani, Y. Yamamoto, K. Ichiki, S. Ninomiya, T. Seki, T. Aoki, J. Matsuo, Low Damage Milling of an Amino Acid thin film with Cluster Ion Beam, *J. Appl. Phys.*, 110, 094701 (2011).

Y. Wakamatsu, H. Yamada, S. Ninomiya, B. N. Jones, T. Seki, T. Aoki, R. Webb, J. Matsuo, Highly Sensitive Molecular Detection with Swift Heavy Ions, *Nucl. Instrum. Methods Phys. Res. B* 269, 2251-2253(2011).

Y. Yamamoto, K. Ichiki, T. Seki, T. Aoki, J. Matsuo, Evaluation of damage depth on arginine films with molecular depth profiling by Ar cluster ion beam, *Trans. MRS-J* 36[3] 313-316 (2011).

K. Ichiki, S. Ninomiya, T. Seki, , T. Aoki, J. Matsuo, The effects of cluster size on sputtering and surface smoothing of PMMA with gas cluster ion beams, *Trans. MRS-J* 36[3] 309-312 (2011).

M. Hada, J. Matsuo, Evaluation of lattice motion in CdTe single crystal using in-air tabletop time-resolved X-ray diffractometer, *IOP Conf. Ser.: Mater. Sci. Eng.* 24 012010 (2011).

M. Hada, K. Okimura, J. Matsuo, Photo-induced lattice softening of excited-state VO₂, *Appl. Phys. Lett.* 99, 051903 (2011).

T. Aoki, T. Seki, J. Matsuo, Molecular dynamics simulations of large fluorine cluster impact on silicon with supersonic velocity, *Nucl. Instrum. Methods Phys. Res. B* 269, 1582-1585 (2011).

Y. Ose, T. Kunugi, Development of A Boiling and Condensation Model on Subcooled Pool Boiling, *Energy Procedia*, 9, 605-618 (2011).

Y. Ose, T. Kunugi, Numerical Study on Subcooled Pool Boiling, *Prog. Nucl. Sci. Technol.*, 2, 125-129 (2011).

T. Yokomine, Experimental Investigation on Anisotropic Effective Thermal Conductivity of Pebble Bed, *Fusion Sci. Technol.*, 60, 840-844 (2011).

Y. Yamamoto, T. Kunugi, Direct numerical simulation of a high-Froude number turbulent open-channel flow, *Phys. Fluids*, 23, pp.1-11 (2011).

Y. Yamamoto, T. Kunugi, Discussion on heat transfer correlation in turbulent channel flow imposed wall-normal magnetic field, *Fusion Eng. Des.*, 86, 2886-2890 (2011).

Y. Yamamoto, T. Kunugi, Direct Numerical Simulation of Turbulent Channel Flow with Deformed Bubbles, *Prog. Nucl. Sci. Technol.*, 2, 543-549 (2011).

Y. Yamamoto, T. Kunugi, Direct Numerical Simulation of MHD Turbulent Flows with High-Pr Heat Transfer, *Prog. Nucl. Sci. Technol.*, 2, 550-555(2011).

Y. Yamamoto, T. Kunugi, Y. Tsuji, Study on the Essential Spatial-Resolution for DNS of Turbulent Heat Transfer in a

Channel Flow with High Prandtl Number (In case of medium-High Prandtl Number, Therm. Sci. Eng. 19, 59-70 (2011).

Y. Ueki, K. Nagai, T. Kunugi, M. Hirabayashi, K. Ara, Y. Yonemoto, T. Hinoki, Contact Angle Measurement of Molten Lead-Lithium on Silicon Carbide Surfaces, Fusion Eng. Des., 86, 2297-2300 (2011).

Y. Ueki, M. Hirabayashi, T. Kunugi, K. Nagai, J. Saito, K. Ara, N.B. Morley, Velocity Profile Measurement of Lead-Lithium Flows by High-Temperature Ultrasonic Doppler Velocimetry, Fusion Sci. Technol., 60, 506-510 (2011).

H. Sun, Z. Kawara, Y. Ueki, T. Naritomi, T. Kunugi, Consideration of Heat Transfer Enhancement Mechanism of Nano- and Micro-scale Porous Layer via Flow Visualization, Heat Transfer Eng., 32, 968-973 (2011).

E. Wakai, M. Yamamoto, J. Molla, T. Yokomine, S. Nogami, Design plan and requirement of test module and testing items in IFMIF, Fusion Eng. Des., 86, 712-715 (2011).

Y. Ose, T. Kunugi, Numerical Simulation on Subcooled Pool Boiling, Bulletin of the American Physical Society DFD 2011, 59 (18), American Physical Society, 318 (2011).

Y. Yamamoto, T. Kunugi, Interaction between turbulent dynamical processes and statistics in deformed air-liquid interfaces via DNS, Turbulent Shear Flow Phenomena 7, Paper No.3 B3P (OTTAWA), (2011).

Y. Yamamoto, T. Kunugi, MHD heat transfer assessment under blanket design condition utilized molten salt coolant by means of new improved RANS simulation, ISFNT-10 (2011).

I. Takagi, R. Imade, Y. Ikegami, M. Akiyoshi, K. Moritani, T. Sasaki, H. Moriyama, Deuterium recombination coefficients on tungsten exposed to RF plasma, J. Nuc. Mater. 417 (2011) 564-567.

T. Sasaki, H. Yoshida, Y. Kitatsuji, I. Takagi, H. Moriyama, Formation Constants of Eu(III)-carboxylates Determined by Ion Selective Liquid Membrane Electrode, Chem. Lett., 40 (2011) 870-871.

T. Kobayashi, T. Sasaki, I. Takagi, H. Moriyama, Solubility and Solubility-Limiting Solid Phase in M(IV)-OH-Dicarboxylate Ternary Aqueous System, J. Nucl. Sci. Technol., 48 (2011) 993-1003.

M. Rajib, T. Sasaki, T. Kobayashi, Y. Miyauchi, I. Takagi, H. Moriyama, Analysis of Sorption Behavior of Cesium and Iodide Ions on Pumice Tuff, J. Nucl. Sci. Technol., 48 (2011) 950-957.

M. Akiyoshi, H. Tsuchida, T. Yano, Thermal diffusivity of ceramics during neutron irradiation, Advances in Ceramics - Characterization, Raw Materials, Processing, Properties, Degradation and Healing, ISBN 978-953-307-504-4, InTech, 2011, 39-58.

T. Yano, T. Yamagami, K. Yoshida, M. Akiyoshi, Neutron-irradiation-induced crystalline defects in b-silicon nitride and their thermal stability, J. Nuc. Mater. 417 (2011)

430-434.

T. Sawabe, M. Akiyoshi, K. Yoshida, T. Yano, Estimation of neutron-irradiation-induced defect in 3C-SiC from change in XRD peak shift and DFT study, J. Nuc. Mater. 417 (2011) 972-975.

F. Xu, S. Matsubara, K. Matsumoto, R. Hagiwara, Effects of alkyl chain length on properties of N-alkyl-N-methylpyrrolidinium fluorohydrogenate ionic liquid crystals, J. Fluorine Chem., 135, 344-349 (2012).

T. Nohira, T. Ishibashi, R. Hagiwara, Properties of an intermediate temperature ionic liquid NaTFSA-CsTFSA and charge-discharge properties of NaCrO₂ positive electrode at 423 K for a sodium secondary battery, J. Power Sources, 205, 506-509 (2012).

K. Kubota, T. Nohira, R. Hagiwara, New inorganic ionic liquids possessing low melting temperatures and wide electrochemical windows: Ternary mixtures of alkali bis(fluorosulfonyl)amides, Electrochim. Acta, 66, 320-324 (2012).

F. Xu, K. Matsumoto, R. Hagiwara, Effects of alkyl chain length and anion size on thermal and structural properties for 1-alkyl-3-methylimidazolium hexafluorocomplex salts (C_xMImAF₆, x = 14, 16 and 18; A = P, As, Sb, Nb and Ta), Dalton Trans., 41, 3494-3502 (2012).

R. Taniki, K. Matsumoto, R. Hagiwara, Trialkylsulfonium Fluorohydrogenate Giving the Highest Conductivity in Room Temperature Ionic Liquids, Electrochim. Solid-State Lett. 15, F13-F15 (2012).

A. Fukunaga, T. Nohira, Y. Kozawa, R. Hagiwara, S. Sakai, K. Nitta, S. Inazawa, Intermediate-temperature ionic liquid NaFSA-KFSA and its application to sodium secondary batteries, J. Power Sources, 209, 52-56 (2012).

K. Matsumoto, T. Okawa, R. Hagiwara, The crystal to plastic crystal phase transition of tetraethylammonium difluorophosphate and tetrafluoroborate, Chem. Lett., 41, 394-396 (2012).

Y. Nishimura, T. Nohira, Y. Mizutani, R. Hagiwara, Simple fabrication of silicon nanowires by zinc-thermal reduction of silicon tetrachloride at 773 K, Electrochim. Solid-State Lett. 14, K63-K65 (2011).

S. Kobayashi, K. Kobayashi, T. Nohira, R. Hagiwara, T. Oishi, H. Konishi, Electrochemical Formation of Nd-Ni Alloys in Molten LiF-CaF₂-NdF₃, J. Electrochem. Soc., 158, E142-E146 (2011).

T. Tsuda, M. Baba, Y. Sato, R. Sakao, K. Matsumoto, R. Hagiwara, S. Kuwabata, Nonvolatile RTIL-Based Artificial Muscle: Actuation Mechanism Identified by In Situ EDX Analysis, Chem. Eur. J., 17, 11122-11126 (2011).

T. Enomoto, K. Matsumoto, R. Hagiwara, Properties of fluorosulfate-based ionic liquids and geometries of (FO₂SOH)OSO₂F⁻ and (FO₂SOH)₂O₂SOF⁻ Dalton Trans., 40, 12491-12499 (2011).

T. Kanatani, K. Matsumoto, T. Nohira, R. Hagiwara,

Electrochemical behavior of hexafluoroniobate, heptafluorotungstate, and oxotetrafluorovanadate anions in N-butyl-N-methylpyrrolidinium bis(trifluoromethylsulfonyl)amide room temperature ionic liquid, *J. Fluorine Chem.*, 132 (2011) 673-678.

T. Enomoto, S. Kanematsu, K. Tsunashima, K. Matsumoto, R. Hagiwara, Physicochemical properties and plastic crystal structures of phosphonium fluorohydrogenate salts, *PCCP*, 13 (2011) 12536-12544.

Y. Tani, T. Nohira, T. Enomoto, K. Matsumoto, R. Hagiwara, Solubility and diffusion coefficient of oxygen in 1-ethyl-1-methylpyrrolidinium fluorohydrogenate room temperature ionic liquid at 298–373 K, *Electrochim. Acta*, 56, 3852-3856 (2011).

Y. Nishimura, T. Nohira, K. Kobayashi, R. Hagiwara, Formation of Si nanowires by direct electrolytic reduction of porous SiO_2 pellets in molten CaCl_2 , *J. Electrochem. Soc.*, 158, E55-E59 (2011).

R. Hagiwara, T. Nohira, A. Fukunaga, S. Sakai, K. nitta, S. Inazawa, Application of low melting molten salts for sodium secondary batteries, *Electrochem.*, 80, 98-103 (2012).

H. Hashimoto, K. Nakajima, M. Suzuki, K. Sasakawa, K. Kimura, Improvement of sensitivity in high-resolution Rutherford backscattering spectroscopy, *Rev. Sci. Instrum.* 82 (2011) 063301.

M. Sakata, K. Nakajima, M. Suzuki, K. Kimura, Grazing scattering of 1-2 MeV HeH^+ ions from $\text{KCl}(001)$: Effect of surface track potential, *Nucl. Instrum. Methods B* 269(9) (2011) 795-798.

K. Ito, K. Kohama, K. Hamasaki, Y. Sonobayashi, N. Sasaki, Y. Shirai, M. Murakami, Oxygen-Induced Barrier Failure in Ti-Based Self-Formed and Ta/TaN Barrier for Cu Interconnects, *Jpn. J. Appl. Phys.* 51 (2012) 04DB06.

K. Kohama, K. Ito, T. Matsumoto, Y. Shirai, M. Murakami, Role of Cu Film Texture in Grain Growth Correlated with Twin Boundary Formation, *Acta Mater.*, 60 (2012) 588-595.

K. Kohama, K. Ito, Y. Sonobayashi, K. Ohmori, K. Mori, K. Maekawa, Y. Shirai, M. Murakami, Structure Analyses of Ti-Based Self-Formed Barrier Layers, *Jpn. J. Appl. Phys.*, 50 (2011) 04DB03.

H. Akamatsu, K. Fujita, H. Hayashi, T. Kawamoto, Y. Kumagai, Y. Zong, K. Iwata, F. Oba, I. Tanaka, K. Tanaka, Crystal and Electronic Structure and Magnetic Properties of Divalent Europium Perovskite Oxides EuMO_3 ($\text{M} = \text{Ti}, \text{Zr}$, and Hf): Experimental and First-Principles Approaches, *Inorg. Chem.* 51 (2012) 4560-4567.

Y. Zong, K. Fujita, H. Akamatsu, S. Nakashima, S. Murai, K. Tanaka, Local Structure of Amorphous EuO-TiO_2 Thin Films Probed by X-Ray Absorption Fine Structure, *J. Am. Ceram. Soc.* 84 (2012) 716-720.

H. Akamatsu, J. Kawabata, K. Fujita, S. Murai, K. Tanaka, Magnetic Properties of Oxide Glasses Containing Iron and Rare-Earth Ions, *Phys. Rev. B* 84 (2011) 144408-(1-8).

Y. Zong, K. Fujita, H. Akamatsu, S. Murai, K. Tanaka, Ferromagnetic Properties with Reentrant Spin-Glass Behavior in Amorphous EuZrO_3 , *Phys. Stat. Sol. (c)* 8 (2011) 3051-3054.

H. Akamatsu, Y. Kumagai, F. Oba, K. Fujita, H. Murakami, K. Tanaka, I. Tanaka, Antiferromagnetic Superexchange via 3d States of Titanium in EuTiO_3 As Seen from Hybrid Hartree-Fock Density Functional Calculations, *Phys. Rev. B* 82 (2011) 224421-(1-6).

2010

A. Itoh, M. Kaneda, M. Shimizu, T. Hayakawa, Y. Iriki, H. Tsuchida, New method of stopping power measurement for fast particles in metals and liquids, *Vacuum*, 84 (2010) 999-1001.

M. Shimizu, T. Hayakawa, M. Kaneda, H. Tsuchida, A. Itoh, Stopping cross sections of liquid water for 0.3-2.0 MeV protons, *Vacuum*, 84 (2010) 1002-1004.

T. Mizuno, T. Yamada, H. Tsuchida, Y. Nakai, A. Itoh, Measurement of kinetic energy release in CO fragmentation by charge-changing collisions of fast heavy ions, *Phys. Rev. A*, 81 (2010) 012704.

M. Kaneda, M. Shimizu, T. Hayakawa, Y. Iriki, H. Tsuchida, A. Itoh, Positive and negative cluster ions from liquid ethanol by fast ion bombardment, *J. Chem. Phys.* 132 (2010) 144502(1-6).

A. Itoh, Micro-ion beam accelerator at QSEC of Kyoto University, *J. Particle Accel. Soc. Jpn.*, 7 (2010) 119-123.

T. Mizuno, T. Yamada, H. Tsuchida, Y. Nakai, A. Itoh, Kinetic energy release in N_2 -fragmentation by charge-changing collisions of 2MeV C^+ ions, *Phys. Rev. A*, 82 (2010) 054702(1-3).

A. Itoh, T. Mizuno, T. Majima, Multiple ionization and fragmentation of polyatomic molecules by fast heavy ions, *J. Phys. Conf. Series*, Vol.288, (2010) 012027(1-10).

T. Shiinoki, A. Sawada, M. Nakamura, Y. Miyabe, Y. Matsuo, K. Takayama, T. Mizowaki, A. Itoh, M. Hiraoka, Variations of Monitor Unit on Swing Irradiation using a Gimbaled X-ray Head of MHI-TM2000 System: A Simulation Study, *Int. J. Radiat. Oncol. Biol. Phys.* 78[3], Suppl. 1, 2010, S834.

S. Takechi, S. Morinaga, A. Kurozumi, T. Uno, T. Miyachi, O. Okudaira, M. Fujii, N. Hasebe, H. Shibata, T. Murakami, Y. Uchihori, N. Okada, Response of Lead Zirconate Titanate without Poling to High-Energy Heavy-Ion Beam, *Jpn. J. Appl. Phys.* 49 (2010) 068002.

T. Miyachi, M. Fujii, N. Hasebe, O. Okudaira, S. Takechi, A. Kurozumi, S. Morinaga, T. Uno, H. Shibata, M. Kobayashi, T. Murakami, Y. Uchihori, N. Okada, Study of the characteristics of a piezoelectric lead zirconate titanate radiation detector using a pulsed xenon source, *J. Appl. Phys.* 107 (2010) 104902.

S. Takechi, S. Morinaga, A. Kurozumi, T. Miyachi, M. Fujii, N. Hasebe, H. Shibata, T. Murakami, Y. Uchihori, N. Okada,

- Interaction of piezoelectric lead zirconate titanate with 400 MeV/n xenon beam, *Radiat. Phys. Chem.* 79 (2010) 603-605.
- K. Nogami, M. Fujii, H. Ohashi, T. Miyachi, S. Sasaki, S. Hasegawa, H. Yano, H. Shibata, T. Iwai, S. Minami, S. Takechi, E. Gruen, R. Srama, Development of the Mercury dust monitor (MDM) onboard the BepiColombo mission, *Planet. Space Sci.* 58 (2010) 108-115.
- S. Ninomiya, K. Ichiki, H. Yamada, Y. Nakata, T. Seki, T. Aoki, J. Matsuo, The effect of incident energy on molecular depth profiling of polymers with large Ar cluster ion beams, *Surf. Interface Anal.* 43[1-2] 221-224 (2011).
- S. Ninomiya, K. Ichiki, H. Yamada, Y. Nakata, T. Seki, T. Aoki, J. Matsuo, Analysis of organic semiconductor multilayers with Ar cluster secondary ion mass spectrometry, *Surf. Interface Anal.* 43[1-2] 95-98 (2011).
- M. Hada, S. Ninomiya, T. Seki, T. Aoki, J. Matsuo, Using ellipsometry for the evaluation of surface damage and sputtering yield in organic films with irradiation of argon cluster ion beams, *Surf. Interface Anal.* 43[1-2] 84-87 (2011).
- K. Ichiki, S. Ninomiya, Y. Nakata, H. Yamada, T. Seki, T. Aoki, J. Matsuo, Surface morphology of PMMA surfaces bombarded with size-selected gas cluster ion beams, *Surf. Interface Anal.* 43[1-2] 120-122 (2011).
- H. Yamada, Y. Nakata, S. Ninomiya, T. Seki, T. Aoki, J. Tamura, J. Matsuo, MeV-Energy Probe SIMS Imaging of Major Components in Washed and Fractured Animal Cells, *Surf. Interface Anal.* 43[1-2] 363-366 (2011).
- M. Hada, K. Ichiki, J. Matsuo, Characterization of vapor-deposited L-leucine nanofilm, *Thin Solid Films* 519, 1993-1997 (2011) 10.1016/j.tsf.2010.10.011.
- H. Yamada, K. Ichiki, Y. Nakata, S. Ninomiya, T. Seki, T. Aoki, J. Matsuo, Processing Techniques of Biomaterials: Using Gas Cluster Ion Beam for Imaging Mass Spectrometry, *Trans. MRS-J* 35 [4] 793-796 (2010).
- K. Ichiki, S. Ninomiya, T. Seki, T. Aoki, J. Matsuo, Sputtering Properties of Si by Size-Selected Ar Gas Cluster Ion Beam, *Trans. MRS-J* 35 [4] 789-792 (2010).
- S. Ninomiya, K. Ichiki, H. Yamada, Y. Nakata, T. Seki, T. Aoki, J. Matsuo, SIMS Depth Profiling of Organic Materials with Ar Cluster Ion Beam, *Trans. MRS-J* 35 [4] 785-788 (2010).
- B. N. Jones, J. Matsuo, Y. Nakata, H. Yamada, J. Watts, S. Hinder, V. Palitsin, R. Webb, Comparison of MeV monomer ion and keV cluster ToF-SIMS, *Surf. Interface Anal.* 43[1-2], 249-252 (2011).
- J. Matsuo, S. Ninomiya, H. Yamada, K. Ichiki, Y. Wakamatsu, M. Hada, T. Seki, T. Aoki, SIMS with highly excited primary beams for molecular depth profiling and imaging for organic and biological materials, *Surf. Interface Anal.* 42 [10-11], 1612-1615 (2010).
- J. Matsuo, T. Seki, T. Aoki, Recent Progress in Cluster Ion Beam Technology, *J. Surf. Sci. Soc. Jpn.*, 31[11], 564-571 (2010).
- M. Hada, K. Okimura, J. Matsuo, Characterization of structural dynamics of VO₂ thin film on c-Al₂O₃ using in-air time-resolved X-ray diffraction, *Phys. Rev. B* 82, 153401 (2010).
- H. Yamada, K. Ichiki, Y. Nakata, S. Ninomiya, T. Seki, T. Aoki, J. Matsuo, MeV-Energy Probe SIMS Imaging of Major Components in Animal Cells Etched Using Large Gas Cluster Ions, *Nucl. Instrum. Methods Phys. Res., B* 268, 1736-1740 (2010).
- J. Matsuo, T. Kitagawa, T. Seki, T. Aoki, Nano Processing with Gas Cluster Ion Beams, *Tribologist*, 55[11], 776-782 (2010).
- J. Matsuo, T. Seki, S. Ninomiya, T. Aoki, Surface Smoothing with Energetic Cluster Ion Beams, *J. Jpn. Soc. Abras. Technol.*, 54[5], 272-275 (2010).
- J. Matsuo, Novel SIMS Techniques for Organic and Biological Materials with High-Density Excited Primary Ion Beams, *OYO BUTSURI*, 79[2], 326-330 (2010).
- Y. Ose, Z. Kawara, T. Kunugi, Estimation of Bubble Shape for Visualization Experiments of Subcooled Pool Boiling, *Jpn. J. Multiphase Flow*, 24[3], 289-296 (2010).
- Y. Ueki, T. Kunugi, N.B. Morley, M.A. Abdou, Electrical Insulation Test of Alumina Coating Fabricated by Sol-gel Method in Molten PbLi Pool, *Fusion Eng. Des.* 85 (2010) 1826-1830.
- Z. Kawara, K. Yamamoto, T. Kunugi, T. Norimatsu, Investigation of Liquid-Film Formation along First Wall of Laser-Fusion Reactor, *Fusion Eng. Des.* 85 (2010) 2181-2186.
- Y. Yamamoto, T. Kunugi, Direct Numerical Simulation of the High-Froud Number Turbulent Open-Channel Flow, *Jpn. J. Multiphase Flow*, 24[2], 169-178 (2010).
- T. Sasaki, O. Nakaoka, R. Arakawa, T. Kobayashi, I. Takagi, H. Moriyama, Detection of Polynuclear Zirconium Hydroxide Species in Aqueous Solution by Desktop ESI-MS, *J. Nucl. Sci. Technol.*, 47 (2010) 1211-1218.
- S. K. Sharma, H. Zushi, I. Takagi et al., Study of the plasma driven permeation of hydrogen through a nickel membrane in RF and ohmic plasmas in the spherical tokamak QUEST, *J. Plasma Fusion Res.* 9 (2010) 142.
- S. K. Sharma, H. Zushi, I. Takagi et al., Measurement of hydrogen permeation due to atomic flux using permeation probe in the spherical tokamak QUEST, *Fusion Eng. Des.* 85 (2010) 950-955.
- T. Kanatani, K. Matsumoto, T. Nohira, R. Hagiwara, Electrochemical behavior of the hexafluorouranate anion in 1-butyl-3-methylimidazolium bis(trifluoromethylsulfonyl)amide room temperature ionic liquid, *Electrochim. Solid-State Lett.* 14 (3) F1-F3 (2011).
- T. Enomoto, Y. Nakamori, K. Matsumoto, R. Hagiwara, Ion-Ion Interactions and Conduction Mechanism of Highly Conductive Fluorohydrogenate Ionic Liquids, *J. Phys. Chem. C* 115 (10), 4324-4332 (2011).

- Y. Nakata, K. Kohara, K. Matsumoto, R. Hagiwara, Thermal properties of ionic liquid + water binary systems applied to heat pipes, *J. Chem. Eng. Data*, ACS ASAP (2011).
- K. Matsumoto, R. Hagiwara, Elimination of AsF₃ from anhydrous HF using AgFAsF₆ as a mediator, *J. Fluorine Chem.* 131 (7), 805-808 (2010).
- K. Kubota, T. Nohira, R. Hagiwara, Thermal Properties of Alkali Bis(fluorosulfonyl)amides and Their Binary Mixtures, *J. Chem. Eng. Data* 55 (9) 3142-3146 (2010).
- K. Kubota, T. Nohira, R. Hagiwara, Thermal Properties of Alkali Bis(pentafluoroethylsulfonyl)amides and Their Binary Mixtures, *J. Chem. Eng. Data* 55 (7) 2546-2549 (2010).
- K. Nitta, T. Nohira, R. Hagiwara, M. Majima, S. Inazawa, Characteristics of a tungsten film electrodeposited in a KF-B₂O₃-WO₃ melt and preparation of W-Cu-W three-layered films for heat sink application, *J. Appl. Electrochem.* 40 (8) 1443-1448 (2010).
- Y. Kado, T. Goto, R. Hagiwara, Thermodynamics of the O₂/O²⁻ redox couple in molten (LiCl + KCl + Li₂O) systems, *J. Chem. Thermodyn.* 42 (10) 1230-1233 (2010).
- Fei Xu, K. Matsumoto, R. Hagiwara, Effects of Alkyl Chain Length on Properties of 1-Alkyl-3-methylimidazolium Fluorohydrogenate Ionic Liquid Crystals, *Chem. Eur. J.* 16 (43) 12970-12976 (2010).
- R. Hagiwara, Development and application of high functional ionic liquid. (Academic Award), *Electrochem.* (Tokyo, Japan) 78 (7) 626 (2010).
- K. Kubota, T. Nohira, R. Hagiwara, H. Matsumoto, Thermal Properties of Alkali (Fluorosulfonyl) (trifluoromethylsulfonyl) amides, *Chem. Lett.* 39 (12) 1303-1304 (2010).
- T. Nohira, S. Kobayashi, K. Kobayashi, R. Hagiwara, T. Oishi, H. Konishi, Electrochemical formation of Nd-Ni alloys in molten LiF-CaF₂-NdF₃, *ECS Trans.* 32 (7, Molten Salts and Ionic Liquids 17) 205-212 (2010).
- K. Matsumoto, K. Takahashi, A. Senda, T. Nohira, R. Hagiwara, Electrochemical capacitors using fluorohydrogenate ionic liquid electrolytes, *ECS Trans.* 32 (7, Molten Salts and Ionic Liquids 17) 421-427 (2010).
- K. Nakajima, M. Sakata, M. Suzuki, K. Kimura, Direct evidence of the surface track potential, *Phys. Rev. A* 82 (2) (2010) 022901.
- K. Kimura, K. Nakajima, T. Conard, W. Vandervorst, A. Bergmaier, G. Dollinger, Precise nitrogen depth profiling by high-resolution RBS in combination with angle-resolved XPS, *Nucl. Instrum. Methods B* 268 (11-12) (2010) 1960-1963.
- K. Ikeda, W. Ohue, K. Endo, Y. Gotoh, H. Tsuji, Development of a vacuum transistor using hafnium nitride field emitter arrays, *J. Vac. Sci. Technol. B* 29[2], 2B116-(1-6) (2011).
- N. Arai, H. Tsuji, M. Harada, M. Hattori, T. Satoh, M. Ohsaki, H. Kotaki, T. Ishibashi, Y. Gotoh, J. Ishikawa, Luminescence of SiO₂ Film Implanted with Ge Negative Ions, *Trans. Mater. Res. Soc. Jpn.* 35[4], 773-776 (2010).
- S. Uehara, K. Ito, K. Kohama, T. Onishi, Y. Shirai, M. Murakami, Growth of Ti-Based Interface Layer in Cu(Ti)/Glass Samples, *Mater. Trans.* 52 (2011) 491-497.
- K. S. Uehara, K. Ito, K. Kohama, T. Onishi, Y. Shirai, M. Murakami, Resistivity Reduction and Adhesion Increase Induced by Surface and Interface Segregation of Ti Atoms in Cu(Ti) Alloy Films on Glass Substrates, *Mater. Trans.* 51 (2010) 1627-1632.
- K. Ohmori, K. Mori, K. Maekawa, K. Kohama, K. Ito, T. Ohnishi, M. Mizuno, K. Asai, M. Murakami, H. Miyatake, Ti-Rich Barrier Layer Self-Formed on Porous-Low-k Layers Using Cu(1 at.%Ti) Alloy Films, *Jpn. J. Appl. Phys.*, 49 (2010) 05FD01.
- K. Ito, K. Kohama, T. Tanaka, K. Mori, K. Maekawa Y. Shirai, M. Murakami, Performance of Cu Dual-Damascene Interconnects Using a Thin Ti-Based Self-Formed Barrier Layer for 28-nm Node and Beyond, *J. Electron. Mater.* 39 (2010) 1326-1333.
- K. Kohama, K. Ito, Y. Sonobayashi, T. Tanaka, K. Mori, K. Maekawa Y. Shirai, M. Murakami, Effects of Pore Sealing on Self-Formation of Ti-Rich Barrier Layers in Cu(Ti)/Porous-Low-k Samples, *Jpn. J. Appl. Phys.*, 49 (2010) 04DB09.
- H. Akamatsu, K. Fujita, Y. Zong, N. Takemoto, S. Murai, K. Tanaka, Impact of Amorphization on the Magnetic Properties of EuO-TiO₂ System, *Phys. Rev. B* 82 (2010) 224403-(1-8).
- Y. Zong, K. Kugimiya, K. Fujita, H. Akamatsu, K. Hirao, K. Tanaka, Preparation and Magnetic Properties of Amorphous EuTiO₃ Thin Films, *J. Non-Cryst. Solids* 356 (2010) 2389-2392.
- T. Kolodiaznyi, K. Fujita, L. Wang, Y. Zong, K. Tanaka, Y. Sakka, E. Takayama-Muromachi, Magnetodielectric Effect in EuZrO₃, *Appl. Phys. Lett.* 96 (2010) 252901-(1-3).
- ## 2009
- T. Mizuno, T. Yamada, H. Tsuchida, Y. Nakai, A. Itoh, Structure deformation dynamics of acetylene molecules following electron loss and capture collisions of 6 MeV O⁴⁺ ions, *J. Phys. Conference Series*, 163 (2009) 012039-1-4.
- M. Kaneda, M. Shimizu, T. Hayakawa, A. Nishimura, Y. Iriki, H. Tsuchida, M. Imai, H. Shibata, A. Itoh, Mass spectrometric study of collision interactions of fast charged particles with water and NaCl solutions, *Nucl. Instrum. Methods Phys. Res. B* 267 (2009) 908-911.
- M. Shimizu, M. Kaneda, T. Hayakawa, H. Tsuchida, A. Itoh, Stopping cross sections of liquid water for MeV energy protons, *Nucl. Instrum. Methods Phys. Res. B* 267 (2009) 2667-2670.
- S. Takechi, K. Nogami, T. Miyachi, M. Fujii, N. Hasebe, T. Iwai, S. Sasaki, H. Ohashi, H. Shibata, E. Grün, R. Srama, N. Okada, Estimating the impact parameters of cosmic dust particles using a piezoelectric lead zirconate titanate detector,

- J. Atmos. Solar-Terrestrial Phys. 71 (2009) 191-193.
- S. Takechi, T. Onishi, S. Minami, T. Miyachi, M. Fujii, N. Hasebe, K. Mori, K. Nogami, H. Ohashi, S. Sasaki, H. Shibata, T. Iwai, E. Grün, R. Srama, N. Okada, Characteristics of piezoelectric lead zirconate titanate multilayered detector bombarded with hypervelocity iron particles, Adv. Space Res. 43 (2009) 455-459.
- S. Takechi, K. Nogami, T. Miyachi, M. Fujii, N. Hasebe, T. Iwai, S. Sasaki, H. Ohashi, H. Shibata, E. Grün, R. Srama, N. Okada, Laboratory calibration measurements of a piezoelectric lead zirconate titanate cosmic dust detector at low velocities, Adv. Space Res. 43 (2009) 905-909.
- S. Takechi, S. Morinaga, A. Kurozumi, T. Miyachi, M. Fujii, N. Hasebe, H. Shibata, T. Murakami, Y. Uchihori, N. Okada, Detection of high-energy heavy ions using piezoelectric lead zirconate titanate, J. Appl. Phys. (2009) 105 084903.
- S. Takechi, S. Morinaga, A. Kurozumi, T. Miyachi, M. Fujii, N. Hasebe, H. Shibata, T. Murakami, Y. Uchihori, N. Okada, Behaviour of piezoelectric lead zirconate titanate irradiating with high-energy xenon ions, Nucl. Instrum. Methods Phys. Res. A609 (2009) 272-275.
- S. Takechi , S. Morinaga, A. Kurozumi, T. Miyachi, M. Fujii, N. Hasebe, H. Shibata, T. Murakami, Y. Uchihori, N. Okada, Dependence of Thickness of Lead Zirconate Titanate Material Used as Radiation Detector, Jpn. J. Appl. Phys. 48 (2009) 108003.
- T. Aoki, T. Seki, J. Matsuo, Molecular dynamics simulations for gas cluster ion beam processes, Vacuum, 84 (2010) 994-998.
- M. Hada, S. Ibuki, S. Ninomiya, T. Seki, T. Aoki, J. Matsuo, Evaluation of Damage Layer in an Organic Film with Irradiation of Energetic Ion Beams, Jpn. J. Appl. Phys. 49 (2010) 036503_1-5.
- M. Hada, J. Matsuo, Effects of ambient pressure on Cu K α X-ray radiation with millijoule and high-repetition-rate femtosecond laser, Appl. Phys. B 99, 173-179 (2010).
- M. Hada, J. Matsuo, Development of femtosecond X-ray source in helium atmosphere with millijoule high-repetitiotn-rate femtosecond laser, Trans. MRS-J 34 [4] 621-626 (2009).
- J. L. S. Lee, S. Ninomiya, J. Matsuo, I. S. Gilmore, M. P. Seah, A. G. Shard, Organic Depth Profiling of a Nanostructured Delta Layer Reference Material Using Large Argon Cluster Ions, Anal. Chem., 82[1], 98-105 (2010).
- K. Ichiki, S. Ninomiya, T. Seki, T. Aoki, J. Matsuo, Sputtering Yield Measurements with Size-selected Gas Cluster Ion Beams, MRS Symp. Proc. (2009 MRS Spring Meetings) 1181-DD13-25, (2009).
- T. Aoki, T. Seki, J. Matsuo, Study of density effect of large gas cluster impact by molecular dynamics simulations, Nucl. Instrum. Methods Phys. Res. B267, 2999-3001 (2009).
- S. Ninomiya, K. Ichiki, H. Yamada, Y. Nakata, T. Seki, T. Aoki, J. Matsuo, Molecular depth profiling of multilayer structures of organic semiconductor materials by secondary ion massspectrometry with large argon cluster ion beams, Rapid Commun. Mass Spectrom. 23, 3264-3268 (2009).
- S. Ninomiya, K. Ichiki, T. Seki, T. Aoki, J. Matsuo, The emission process of secondary ions from solids bombarded with large gas cluster ions, Nucl. Instrum. Methods Phys. Res. B267, 2601-2604 (2009).
- T. Seki, Nano-processing with gas cluster ion beams, Surf. Coat. Technol. 203 Issues 17-18 2446-2451 (2009).
- H. Yamada, K. Ichiki, Y. Nakata, S. Ninomiya, T. Seki, T. Aoki, J. Matsuo, A Processing Technique for Cell Surfaces Using Gas Cluster Ions for Imaging Mass Spectrometry, J. Mass Spectrom. Soc. Jpn. 57[3], 117-121 (2009).
- Y. Nakata, H. Yamada, Y. Honda, S. Ninomiya, T. Seki, T. Aoki, J. Matsuo, Imaging Mass Spectrometry with Nuclear Microprobes for Biological Applications, Nucl. Instrum. Methods Phys. Res. B267, 2144-2148 (2009).
- T. Seki, T. Aoki, J. Matsuo, High-speed processing with Cl₂ cluster ion beam, Nucl. Instrum. Methods Phys. Res. B267, 1444-1446 (2009).
- T. Aoki, T. Seki, S. Ninomiya, K. Ichiki, J. Matsuo, Study of crater formation and sputtering process with large gas cluster impact by molecular dynamics simulations, Nucl. Instrum. Methods Phys. Res. B267, 1424-1427 (2009).
- S. Ninomiya, K. Ichiki, H. Yamada, Y. Nakata, T. Seki, T. Aoki, J. Matsuo, Precise and fast secondary ion mass spectrometry depth profiling of polymer materials with large Ar cluster ion beams, Rapid Commun. Mass Spectrom. 23, 1601-1606 (2009).
- T. Nagatake, Z. Kawara, T. Kunugi, Development of Surface-Volume Tracking Method Based on MARS, Comput. Fluid Dyn. 2008, 559-564, 2009.
- Y. Ueki, M. Hirabayashi. T. Kunugi, T. Yokomine, K. Ara, Acoustic Properties of Pb-17Li Alloy for Ultrasonic Doppler Velocimetry, Fusion Sci. Technol., 56[2], 846-850 (2009).
- Y. Ose, Z.Kawara, T.Kunugi, Numerical Simulation on Subcooled boiling bubble behavior, Progress in multiphase flow research 4, 29-36(2009).
- Y. Yamamoto, T.Kunugi, Drag fluctuations on deformed bubbles in a turbulent shear flow by means of DNS, Turbulent shear flow phenom. 6 (2009) 2, 984-989.
- I. Takagi, T. Kobayashi, Y. Ueyama, H. Moriyama, M. Nakamichi, H. Nakamura, K. Hayashi, Deuterium diffusion in a chemical densified coating observed by NRA, J. Nucl. Mater. 386-388 (2009) 682-684.
- T. Sasaki, T. Kobayashi, I. Takagi, H. Moriyama, A. Fujiwara, Y.M. Kulyako, S.A. Perevalov B.F. Myasoedov, Complex formation and solubility of Pu(IV) with malonic and succinic acids, Radiochim. Acta, 97 (2009) 193-197.
- K. Moritani, J. Takemoto, I. Takagi, M. Akiyoshi, H. Moriyama, Reaction kinetics of radiation-induced defects in vitreous silica under ion beam irradiation, J. Nucl. Mater. 384

(2009) 19-24.

M. Akiyoshi, Thermal diffusivity of ceramics at the neutron irradiation temperature estimated from post-irradiation measurements at 123-413 K, *J. Nucl. Mater.* 386-388 (2009) 303-306.

T. Kobayashi, T. Sasaki, I. Takagi, H. Moriyama, Solubility of Thorium(IV) in the Presence of Oxalic and Malonic Acids, *J. Nucl. Sci. Technol.*, 46 (2009) 1085-1090.

T. Kobayashi, T. Sasaki, I. Takagi, H. Moriyama, Solid phase precipitates in (Zr,Th)-OH-(oxalate, malonate) ternary aqueous system, *Radiochim. Acta*, 97 (2009) 237-241.

K. Kubota, K. Tamaki, T. Nohira, T. Goto, R. Hagiwara, Electrochemical properties of alkali bis(trifluoromethylsulfonyl)amides and their eutectic mixtures, *Electrochim. Acta*, 55, 1113-1119 (2010)

O. Raz, Z. Shmueli, R. Hagiwara, Y. Ein-Eli, Porous silicon formation in fluorohydrogenate ionic liquids, *J. Electrochem. Soc.*, 157, H281-H286 (2010)

T. Kanatani, K. Matsumoto, R. Hagiwara, Syntheses and physicochemical properties of low melting salts based on VOF_4^- and MoOF_5^- , and the molecular geometries of the dimeric $(\text{VOF}_4^-)_2$ and $\text{Mo}_2\text{O}_4\text{F}_6^{2-}$ anions, *Eur. J. Inorg. Chem.*, 2010, 1049-1055 (2010).

A. Senda, K. Matsumoto, T. Nohira, R. Hagiwara, Effect of the cationic structures of fluorohydrogenate ionic liquid electrolytes on the electric double layer capacitance, *J. Power Sources*, 195, 4414-4417 (2010).

K. Matsumoto, R. Hagiwara, Electrochemical properties of 1-ethyl-3-methylimidazolium difluorophosphate ionic liquid as an electrolyte for electric double layer capacitors, *J. Electrochem. Soc.*, 157, A578-A581 (2010).

K. Nitta, T. Nohira, R. Hagiwara, M. Majima, S. Inazawa, Electrodeposition of tungsten from $\text{ZnCl}_2\text{-NaCl-KCl-WO}_3$ melt and investigation on tungsten species in the melt, *Electrochim. Acta*, 55, 1278-1281 (2010).

T. Nohira, K. Kitagawa, R. Hagiwara, K. Nitta, M. Majima, S. Inazawa, Electrodeposition of tungsten from EMPyrCl-ZnCl₂ melts at 150°C, *Trans. Mater. Res. Soc. Jpn.* 35, 35-37 (2010).

Y. Nishimura, T. Nohira, K. Yasuda, Y. Fukunaka, R. Hagiwara, Direct electrolytic reduction of amorphous SiO_2 powder refined from diatomaceous earth, *Trans. Mater. Res. Soc. Jpn.* 35, 47-49 (2010).

M. Yamagata, S. Konno, K. Matsumoto, R. Hagiwara, Room-temperature fluorohydrogenate ionic liquids of alkylpyridinium cations and allylated quaternary cyclic ammonium cations, *Electrochim. Solid-State Lett.* 12, F9-F12 (2009).

B. Ozmen-Monkul, M. Lerner, R. Hagiwara, Electrochemical preparation of graphite intercalation compounds containing a cyclic amide, $[\text{CF}_2(\text{CF}_2\text{SO}_2)_2\text{N}]^-$, *J. Fluorine Chem.*, 130, 581-585 (2009).

J. Ohtsuki, K. Matsumoto, R. Hagiwara, Physical and electrochemical properties of 1-ethyl-3-methylimidazolium ionic liquids of mixed anions, $(\text{FH})_n\text{F}^-$, BF_4^- , and $\text{N}(\text{SO}_2\text{CF}_3)_2$, *Electrochim.*, 77, 624-626 (2009)

T. Nohira, K. Kitagawa, R. Hagiwara, K. Nitta, M. Majima, S. Inazawa, Physicochemical properties of EMPyrCl-ZnCl₂ melts and electrodeposition of molybdenum from the equimolar melt at 150 °C, *Electrochim.*, 77, 687-689 (2009).

Y. Nishimura, T. Nohira, T. Morioka, R. Hagiwara, Electrochemical reduction of silicon tetrachloride in an intermediate-temperature ionic liquid, *Electrochim.*, 77, 683-686 (2009).

K. Nitta, M. Majima, S. Inazawa, T. Nohira, R. Hagiwara, Electrodeposition of tungsten from $\text{Li}_2\text{WO}_4\text{-Na}_2\text{WO}_4\text{-K}_2\text{WO}_4$ based melts, *Electrochim.* 77, 621-623 (2009).

K. Nitta, T. Nohira, R. Hagiwara, M. Majima, S. Inazawa, Physicochemical properties of $\text{ZnCl}_2\text{-NaCl-KCl}$ eutectic melt, *Electrochim. Acta*, 54, 4898-4902 (2009).

K. Matsumoto, R. Hagiwara, A new series of ionic liquids based on the difluorophosphate anion, *Inorg. Chem.*, 48, 7350-7358 (2009).

S. Kanematsu, K. Matsumoto, R. Hagiwara, Electrochemically stable fluorohydrogenate ionic liquids based on quaternary phosphonium cations, *Electrochim. Commun.* 11, 1312-1315 (2009).

T. Kanatani, R. Ueno, K. Matsumoto, T. Nohira, R. Hagiwara, Thermal properties of *N*-alkyl-*N*-methylpyrrolidinium and *N*-butylpyridinium fluorometallates and physicochemical properties of their melts, *J. Fluorine Chem.*, 130, 979-984 (2009).

T. Kanatani, K. Matsumoto, R. Hagiwara, Syntheses and physicochemical properties of new ionic liquids based on the hexafluorouranate anion, *Chem. Lett.* 38, 714-715 (2009).

G. Cohn, D. Starovetsky, R. Hagiwara, D. MacDonald, Y. Ein-Eli, Silicon-air batteries, *Electrochim. Commun.* 11, 1916-1918 (2009).

Y. Nishimura, T. Nishida, Y. Fukunaka, C. Miranda, T. Nohira, R. Hagiwara, Measurement of the SiCl_4 diffusion coefficient in a room-temperature ionic liquid by an optical Moire-pattern technique, *ECS Transactions*, 16, 13-23 (2009).

Y. Nishimura, Y. Fukunaka, C. Miranda, T. Nishida, T. Nohira, R. Hagiwara, In situ Raman spectroscopy studies of the electrolyte-substrate interface during electrodeposition of silicon in a room-temperature ionic liquid, *ECS Transactions*, 16, 1-6 (2009).

K. Kubota, T. Nohira, T. Goto, R. Hagiwara, Binary and ternary mixtures of MFSA ($M = \text{Li}, \text{K}, \text{Cs}$) as new inorganic ionic liquids, *ECS Transactions*, 16, 91-98 (2009).

H. Hashimoto, A. Ohno, K. Nakajima, M. Suzuki, H. Tsuji, K. Kimura, Surface characterization of imidazolium ionic liquids by high-resolution Rutherford backscattering spectroscopy and X-ray photoelectron spectroscopy, *Surf. Sci.*

604 (2010) 464-469.

K. Kimura, K. Kimura, T. Conard, W. Vandervorst, A. Bergmaier, G. Dollinger, Analysis of Ultra-Thin HfO₂/SiON/Si(001): Comparison of Three Different Techniques, *Anal. Sci.* 26 (2010) 223-226.

N. Arai, H. Tsuji, M. Hattori, M. Ohsaki, H. Kotaki, T. Ishibashi, Y. Gotoh, J. Ishikawa, Luminescence properties of Ge implanted SiO₂:Ge and GeO₂:Ge films, *Appl. Surf. Sci.* 256 (2009) 954-957.

K. Ito, Y. Uchida, S. Lee, S. Tsukimoto, Y. Ikemoto, M. Murakami, Effects of TiN Buffer Layer Thickness on GaN Growth, *J. Electron. Mater.* 38 (2009) 511-517.

K. Kohama, K. Ito, K. Mori, K. Maekawa, Y. Shirai, M. Murakami, Rutherford Backscattering Spectrometry Analysis of Self-Formed Ti-Rich Interface Layer Growth in Cu(Ti)/Low-k Samples, *J. Electron. Mater.* 38 (2009) 1913-1920.

Z. Wang, S. Tsukimoto, M. Saito, K. Ito, M. Murakami, Y. Ikuhara, Ohmic contacts on silicon carbide: The first monolayer and its electronic effect, *Phys. Rev. B* 80 (2009) 245303.

Y. Zong, K. Fujita, H. Akamatsu, S. Murai, K. Tanaka, Antiferromagnetism of Perovskite EuZrO₃, *J. Solid State Chem.* 183 (2010) 168-172.

H. Akamatsu, K. Fujita, S. Murai, K. Tanaka, Ferromagnetic Eu²⁺-Based Oxide Glasses with Re-Entrant Spin Glass Behavior, *Phys. Rev. B* 81 (2010) 014423.

T. Matoba, K. Fujita, S. Murai, K. Tanaka, Low-Temperature Growth of Highly Crystallized FeTiO₃-Fe₂O₃ Solid Solution Thin Films with Smooth Surface Morphology, *J. Phys.: Conf. Series* 200 (2010) 062011.

H. Murase, K. Fujita, S. Murai, K. Tanaka, Epitaxial Growth of Ferrimagnetic Semiconductor 0.4Fe₃O₄-0.6Fe₂TiO₄ Solid Solution Thin Films on MgO(100) Substrates, *J. Phys.: Conf. Series* 200 (2010) 062013.

H. Murase, K. Fujita, S. Murai, K. Tanaka, Epitaxial Growth of Room-Temperature Ferrimagnetic Semiconductor Thin Films Based on Fe₃O₄-Fe₂TiO₄ Solid Solution, *Mater. Trans.* 50 (2009) 1076-1080.

H. Hojo, K. Fujita, T. Mizoguchi, K. Hirao, I. Tanaka, K. Tanaka, Y. Ikuhara, Magnetic Properties in Ilmenite-Hematite Solid Solution Thin Films: Direct Observation of Antiphase Boundaries and Their Correlation with Magnetism, *Phys. Rev. B* 80 (2009) 075414.

H. Akamatsu, S. Oku, K. Fujita, S. Murai, K. Tanaka, Magnetic Properties of Mixed-Valence Iron Phosphate Glasses, *Phys. Rev. B* 80 (2009) 134408.

2008

K. Ohya, K. Inai, A. Nisawa, A. Itoh, Emission statistics of X-ray induced photoelectrons and its comparison with electron- and ion-induced electron emissions, *Nucl. Instrum. Methods Phys. Res., B* 266 (2008) 541-548.

T. Mizuno, H. Tsuchida, T. Majima, Y. Nakai, A. Itoh, Multiple ionization of C60 by fast Si^{q+} ions, *Phys. Rev. A* 78 (2008) 053202(1-6).

S. Takechi, T. Miyachi, M. Fujii, N. Hasebe, K. Mori, H. Shibata, T. Murakami, Y. Uchihori, N. Okada, Radiation detector based on piezoelectric lead zirconate titanate material, *Nucl. Instrum. Methods Phys. Res., A* 586 (2008) 309-313.

T. Miyachi, G. Kuraza, A. Nagashima, M. Fujii, N. Hasebe, N. Yamashita, K. Nogami, T. Iwai, H. Ohashi, H. Shibata, S. Minami, S. Takechi, T. Onishi, E. Grün, R. Srama, N. Okada, Position Sensitive Element for Hypervelocity Microparticles Using a Piezoelectric Plate, *Jpn. J. App. Phys.* 47 (2008) 3772-3775.

S. Takechi, T. Onishi, S. Minami, T. Miyachi, M. Fujii, N. Hasebe, K. Mori, K. Nogami, H. Ohashi, S. Sasaki, H. Shibata, T. Iwai, E. Grün, R. Srama, N. Okada, Investigation on piezoelectric lead zirconate titanate detector bombarded obliquely with hypervelocity iron particles, *Planet. Space Sci.* 56 (2008) 1309-1313.

S. Takechi, T. Onishi, S. Minami, T. Miyachi, M. Fujii, N. Hasebe, K. Nogami, H. Ohashi, S. Sasaki, H. Shibata, T. Iwai, E. Grün, R. Srama, N. Okada, Measurement of incident position of hypervelocity particles on piezoelectric lead zirconate titanate detector, *Rev. Sci. Instrum.* 79 (2008) 043303.

T. Miyachi, M. Fujii, N. Hasebe, G. kuraza, K. Mori, O. Okudaira, N. Yamashita, S. Sasaki, T. Iwai, K. Nogami, H. Matsumoto, H. Ohashi, H. Shibata, S. Minami, S. Takechi, T. Onishi, E. Grün, R. Srama, N. Okada, Response of a pentagonal PZT element as a component of a 4 pi-real-time detector, *Adv. Space Res.* 41 (2008) 1147-1151.

T. Miyachi, M. Fujii, N. Hasebe, M. Miyajima, O. Okudaira, S. Takechi, T. Onishi, S. Minami, H. Shibata, H. Ohashi, T. Iwai, K. Nogami, S. Sasaki, E. Grün, R. Srama, N. Okada, Measurement of temperature after hypervelocity collision of microparticles in the range from 10 to 40 km/s, *Appl. Phys. Lett.* 93 (2008) 174107.

S. Takechi, T. Miyachi, M. Fujii, N. Hasebe, K. Mori, H. Shibata, T. Murakami, Y. Uchihori, N. Okada, Characteristics of piezoelectric lead zirconate titanate fourteen-layered detector bombarded with high-energy xenon beam, *Sensors and Actuators A* 147 (2008) 365-368.

S. Takechi, T. Onishi, S. Minami, T. Miyachi, M. Fujii, N. Hasebe, K. Mori, K. Nogami, H. Ohashi, S. Sasaki, H. Shibata, T. Iwai, E. Grün, R. Srama, N. Okada, Response of piezoelectric lead zirconate titanate detector to oblique impact with hypervelocity iron particles, *Earth, Planets, and Space* 60 (2008) 1187-1190.

J. Matsuo, S. Ninomiya, Y. Nakata, Y. Honda, K. Ichiki, T. Seki, T. Aoki, What size of cluster is most appropriate for SIMS? *Appl. Surf. Sci.* 255, 1235-1238.

T. Aoki, T. Seki, S. Ninomiya, J. Matsuo, MD simulation study of the sputtering process by high-energy gas cluster impact, *Appl. Surf. Sci.* 255, 944-947.

- S. Ninomiya, K. Ichiki, Y. Nakata, Y. Honda, T. Seki, T. Aoki, J. Matsuo, Secondary ion emission from Si bombarded with large Ar cluster ions under UHV conditions, *Appl. Surf. Sci.* 255, 880-882.
- K. Ichiki, S. Ninomiya, Y. Nakata, Y. Honda, T. Seki, T. Aoki, J. Matsuo, High sputtering yields of organic compounds by large gas cluster ions, *Appl. Surf. Sci.* 255, 1148-1150.
- S. Ninomiya, Y. Nakata, Y. Honda, K. Ichiki, T. Seki, T. Aoki, J. Matsuo, A Fragment-free ionization technique for organic mass spectrometry with large Ar cluster ions, *Appl. Surf. Sci.* 255, 1588-1590.
- Y. Nakata, Y. Honda, S. Ninomiya, T. Seki, T. Aoki, J. Matsuo, Yield Enhancement of Molecular Ion with MeV-Ion Induced Electronic Excitation, *Appl. Surf. Sci.* 255, 1591-1594.
- T. Seki, T. Aoki, J. Matsuo, High-Speed Nano-Processing with Cluster Ion Beams, *Trans. MRS-J* 33 [4], 1019-1022.
- S. Ninomiya, J. Matsuo, K. Ichiki, H. Yamada, Y. Nakata, Y. Honda, T. Seki, T. Aoki, Low Damage Etching and SIMS Depth Profiling with Large Ar Cluster Ions, *Trans. MRS-J* 33 [4], 1043-1046.
- Y. Honda, Y. Nakata, S. Ninomiya, T. Seki, T. Aoki, J. Matsuo, SIMS Analysis of Biological Mixtures with Fast Heavy Ion Irradiation, *Trans. MRS-J* 33 [4], 1039-1041.
- S. Ninomiya, K. Ichiki, H. Yamada, Y. Nakata, T. Seki, T. Aoki, J. Matsuo, Low Damage Etching of Polymer Materials for Depth Profile Analysis Using Large Ar Cluster Ion Beam, *J. Surf. Anal.* 15[3], 275-278.
- Y. Nakata, Y. Honda, S. Ninomiya, T. Seki, T. Aoki, J. Matsuo, Matrix-free high-resolution imaging mass spectrometry with high-energy ion projectiles, *J. Mass Spectrom.* 2009, 44, 128-136.
- S. Satake, T. Anraku, H. Kanamori, T. Kunugi, K. Sato, T. Ito, Study on high speed parallel algorithm using PC grid environment for visualization measurements by Digital Holographic Particle Tracking Velocimetry, *Comput. Phys. Commun.* 178, 1, 1-7 (2008).
- S. Satake, T. Anraku, H. Kanamori, T. Kunugi, K. Sato, T. Ito, Measurements of three-dimensional flow in micro-channel with complex shape by micro-digital-holographic particle tracking velocimetry, *J. Heat Transfer* 130, 4, 042413 (2008).
- Y. Abe, N. Masuda, H. Wakabayashi, Y. Kazo, T. Ito, S. Satake, T. Kunugi, K. Sato, Special purpose computer system for flow visualization using holography technology, *Optics Express* 16, 11, 7686-7692 (2008).
- J. Takeuchi, S. Satake, N. B. Morley, T. Kunugi, T. Yokomine, M. A. Abdou, Experimental study of MHD effects on turbulent flow of Flibe simulant fluid in circular pipe, *Fusion Eng. Des.* 83, 1082-1086 (2008).
- S. Satake, N. Yoshida, T. Kunugi, K. Takase, Y. Ose, T. Kano, DNS of turbulent heat transfer under a uniform magnetic field at high Reynolds number, *Fusion Eng. Des.* 83, 1092-1096 (2008).
- Y. Yamamoto, T. Kunugi, S. Satake, S. Smolentsev, DNS and K-epsilon model simulation of MHD turbulent channel flows with heat transfer, *Fusion Eng. Des.* 83, 1309-1312 (2008).
- T. Kunugi, T. Nakai, Z. Kawara, T. Norimatsu, Y. Kozaki, Investigation of cascade-type falling liquid-film along first wall of laser-fusion reactor, *Fusion Eng. Des.* 2008, 83, 11888-1892 (2008).
- K. Abe, A. Kohyama, S. Tanaka, C. Namba, T. Terai, T. Kunugi, T. Muroga, A. Hasegawa, A. Sagara, S. Berk, S.J. Zinkle, D.K. Sze, D.A. Petti, M.A. Abdou, N.B. Morley, R.J. Kurtz, L.L. Snead, N.M. Ghoniem, Development of advanced blanket performance under irradiation and system integration through JUPITER-II project, *Fusion Eng. Des.* 83, 842-849 (2008).
- Y. Yonemoto, H. Yanagisawa, Z. Kawara, T. Kunugi, Coalescence of Microbubble, *Journal of JSEM*, 8, 1, 33-44 (2008).
- K. Ito, T. Kunugi, H. Ohshima, T. Kawamura, Formulations and Validations of a High-precision Volume-of-fluid Algorithm on Non-orthogonal Meshes for Numerical Simulations of Gas Entrainment Phenomena, *J. Nucl. Sci. Technol.* 46, 4, 366-373 (2008).
- K. Moritani, Y. Teraoka, I. Takagi, M. Akiyoshi, H. Moriyama, Production and Reaction Kinetics of Radiation-induced Defects in alpha-alumina and Sapphire under Ion Beam Irradiation, *J. Nucl. Mater.* 373 (2008) 157-163.
- J. Takemoto, K. Moritani, I. Takagi, M. Akiyoshi, H. Moriyama, Electron Spin Resonance Measurement of Radiation-induced Defects and Reactions in Vitreous Silica Irradiated with Ion Beams, *J. Nucl. Mater.* 374 (2008) 293-297.
- T. Sasaki, T. Kobayashi, I. Takagi, H. Moriyama, Discrete Fragment Model for Complex Formation of Europium (III) with Humic Acid, *J. Nucl. Sci. Technol.*, 45 (2008) 718-724.
- T. Sasaki, T. Kobayashi, I. Takagi, H. Moriyama, Hydrolysis Constant and Coordination Geometry of Zirconium(IV), *J. Nucl. Sci. Technol.*, 45 (2008) 735-739.
- T. Sasaki, Y. Takaoka, T. Kobayashi, T. Fujii, I. Takagi, H. Moriyama, Hydrolysis constants and complexation of Th(IV) with carboxylates, *Radiochim. Acta*, 96 (2008) 799-803.
- A. Watarai, K. Kubota, M. Yamagata, T. Goto, T. Nohira, R. Hagiwara, K. Ui, N. Kumagai, A rechargeable lithium metal battery operating at intermediate temperatures using molten alkali bis(trifluoromethylsulfonyl)amide mixture as an electrolyte, *J. Power Sources*, 183, 724-729(2008).
- K. Yasuda, A. Ghicov, T. Nohira, N. Kani, R. Hagiwara, P. Schmuki, Preparation of Organized Ti Nanorods by Successive Electrochemical Processes in Aqueous Solution and Molten Salt, *Electrochim. Solid-State Lett.* 11, C51-C54 (2008).
- S. Kohara, M. Takata, K. Matsumoto, R. Hagiwara, K. Suzuya, H. Morita, E. Siewenie Joan, J. Benmore Chris, Very strong hydrogen bonds in a bent chain structure of

- fluorohydrogenate anions in liquid Cs(FH)_{2.3}F, J. Chem. phys., 129, 014512 (2008).
- K. Kubota, T. Nohira, T. Goto, R. Hagiwara, Novel inorganic ionic liquids possessing low melting temperatures and wide electrochemical windows: Binary mixtures of alkali bis(fluorosulfonyl)amides, Electrochim. Commun. 10, 1886-1888 (2008).
- K. Kubota, T. Nohira, T. Goto, R. Hagiwara, Ternary Phase Diagrams of Alkali Bis(trifluoromethylsulfonyl)amides, J. Chem. Eng. Data, 53, 2144-2147 (2008).
- Y. Nishimura, Y. Fukunaka, T. Nishida, T. Nohira, R. Hagiwara, Electrodeposition of Si Thin Film in a Hydrophobic Room-Temperature Molten Salt, Electrochim. Solid-State Lett. 11, D75-D79 (2008).
- Y. Nishimura, Y. Fukunaka, T. Nohira, T. Goto, K. Hachiya, T. Nishida, R. Hagiwara, XPS study and optical properties of Si films electrodeposited in a room-temperature ionic liquid, ECS Transactions, 13, 37-52 (2008).
- Y. Kado, T. Goto, R. Hagiwara, Dissolution Behavior of Lithium Oxide in Molten LiCl-KCl Systems, J. Chem. Eng. Data, 53, 2816-2819 (2008).
- Y. Kado, T. Goto, R. Hagiwara, Electrochemical Behavior of Oxide Ion in a LiCl-NaCl-CaCl₂ Eutectic Melt, J. Electrochim. Soc., 155, E85-E89 (2008).
- Y. Nishimura, Y. Fukunaka, T. Nohira, R. Hagiwara, Electrochemical processing of nanoscale Si thin film in a hydrophobic room-temperature molten salt, ECS Transactions, 11, 13-24 (2008).
- T. Goto, T. Nohira, R. Hagiwara, Y. Ito, Selected topics of molten fluorides in the field of nuclear engineering, J. Fluorine Chem., 130, 102-107 (2009).
- K. Kimura, K. Nakajima, Surface analysis using high-resolution Rutherford backscattering spectroscopy, J. Vac. Soc. Jpn. 51 (2008) 613-617.
- K. Nakajima, K. Kimura, Characterization of surfaces and interfaces by high-resolution RBS, J. Surf. Finish. Soc. Jpn. 59 (2008) 882-886.
- K. Nakajima, A. Ohno, M. Suzuki, K. Kimura, Surface structure of an ionic liquid with high-resolution Rutherford backscattering spectroscopy, Nucl. Instrum. Methods B 267 (2009) 605-609.
- H. Ryuto, K. Sugiyama, R. Ozaki, G. H. Takaoka, Low-Damage and High-Rate Sputtering of Silicon Surfaces by Ethanol Cluster Ion Beam, Appl. Phys. Expr. 2 (2009) 016504
- K. Kohama, K. Ito, S. Tsukimoto, K. Mori, K. Maekawa, M. Murakami, Characterization of Self-Formed Ti-Rich Interface Layers in Cu(Ti)/Low-k Samples, J. Electron. Mater. 37 (2008) 1148-1157.
- K. Kohama, K. Ito, S. Tsukimoto, K. Mori, K. Maekawa, M. Murakami, Effects of Substrate Materials on Self-Formation Kinetics of Ti-Rich Barrier Layers in Cu(1at.%Ti)/Low-k Samples, Mater. Trans., 49 (2008) 1987-1993.
- H. Akamatsu, Y. Zong, Y. Fujiki, K. Kamiya, K. Fujita, S. Murai, K. Tanaka, Structural and Magnetic Properties of CdFe₂O₄ Thin Films Fabricated via Sputtering Method, IEEE Trans. Magnetics, 44 (2008) 2796-2799.
- H. Akamatsu, K. Fujita, S. Murai, K. Tanaka, Magneto-Optical Properties of Transparent Divalent Iron Phosphate Glasses, Appl. Phys. Lett. 92 (2008) 251908.
- S. Nakashima, K. Fujita, A. Nakao, K. Tanaka, Y. Shimotsuma, K. Miura, K. Hirao, Enhanced Magnetization and Ferrimagnetic Behavior of Normal Spinel ZnFe₂O₄ Thin Film Irradiated with Femtosecond Laser, Appl. Phys. A, 94 (2009) 83-88.
- K. Tanaka, K. Fujita, S. Nakashima, H. Hojo, T. Matoba, Magnetic Properties of Disordered Ferrite and Ilmenite-Hematite Thin Films, J. Magn. Magn. Mater. 321 (2009) 818-821.
- K. Fujita, N. Wakasugi, S. Murai, Y. Zong, K. Tanaka, High-Quality Antiferromagnetic EuTiO₃ Epitaxial Thin Films on SrTiO₃ Prepared by Pulsed Laser Deposition and Post-Annealing, Appl. Phys. Lett. 94 (2009) 062512.
- ## 2007
- A. Yogo, H. Daido, A. Fukumi, Z. Li, K. Ogura, A. Sagisaka, A. S. Pirozhkov, S. Nakamura, Y. Iwashita, T. Shirai, A. Noda, Y. Oishi, T. Nayuki, T. Fujii, K. Nemoto, I. W. Choi, J. H. Sung, D. K. Ko, J. Lee, M. Kaneda, A. Itoh, Laser prepulse dependency of proton-energy distributions in ultraintense laser-foil interactions with an online time-of-flight technique, Phys. Plasmas, 14 (2007) 0432104(1-6).
- T. Mizuno, D. Okamoto, T. Majima, Y. Nakai, H. Tsuchida, A. Itoh, Impact-parameter-dependent multifragmentation of C₆₀ in charge-changing collisions with 2-MeV C⁺ ions, Phys. Rev. A, 75 (2007) 063203.
- K. Ishii, A. Itoh, K. Okuno, Charge changing cross sections in collisions of O⁷⁺ with He at energies below 1keV/u, J. Phys.: Conf. Series, 58 (2007) 279-282.
- K. Ishii, Y. Inoue, H. Ogawa, A. Itoh, S. Sakamoto, Energy gain spectroscopy of multiply charged light ions in collisions with hydrogen at 50 eV/u, J. Phys.: Conf. Series, 58 (2007) 275-278.
- T. Mizuno, T. Majima, H. Tsuchida, Y. Nakai, A. Itoh, Molecular orientation effects in CO fragmentation induced by charge-changing collisions of 6 MeV O⁴⁺ ions, J. Phys.: Conf. Series, 58 (2007) 173-176.
- H. Tsuchida, T. Iwai, M. Awano, M. Kishida, I. Katayama, S. C. Jeong, H. Ogawa, N. Sakamoto, M. Komatsu, A. Itoh, Observation of transient lattice vacancies produced during high-energy ion irradiation of Ni foils, J. Phys.: Condens. Matter, 19 (2007) 136205 (1-8).
- S. Sato, Z. He, M. Kaneda, M. Imai, H. Tsuchida, A. Itoh, Electron energy spectra from various amino acids bombarded by 2.0 MeV He⁺ ions, Nucl. Instrum. Methods Phys. Res. B256 (2007) 506-509.

- T. Mizuno, T. Majima, Y. Nakai, H. Tsuchida, A. Itoh, Electronic stopping and velocity effect on multiple ionization and fragmentation of C₆₀ in swift heavy ion impacts, Nucl. Instrum. Methods Phys. Res. B256 (2007) 101-104.
- M. Kaneda, S. Sato, M. Shimizu, Z. He, K. Ishii, H. Tsuchida, A. Itoh, Energy loss and small angle scattering of swift protons passing through liquid ethanol target, Nucl. Instrum. Methods Phys. Res. B256 (2007) 97-100.
- H. Ogawa, H. Geissel, A. Fettou, S. Fritzsche, M. Portillo, C. Scheidenberger, V.P. Shevelko, A. Surzhykov, H. Weick, F. Becker, D. Boutin, B. Kindler, R.K. Knobel, J. Kurcewicz, W. Kurcewicz, Y.A. Litvinov, B. Lommel, G. Munzenberg, W.R. Plass, N. Sakamoto, J. Stadtmann, H. Tsuchida, M. Winker, N. Yao, Gas-solid difference in charge-changing cross sections for bare and H-like nickel ions at 200 MeV/u, Phys. Rev. A, 75 (2007) 020703 1-4.
- M. Imai, M. Satake, K. Kawatsura, K. Takahiro, K. Komaki, H. Shibata, H. Sugai, K. Nishio, Charge state evolution of 2 MeV/u sulfur ion passing through thin carbon foil, Nucl. Instrum. Methods Phys. Res. B256 (2007) 11-15.
- H. Shibata, Y. Kohno, K. Shibata, T. Sato, M. Oikawa, J. Haga, T. Sakai, Nuclear Reaction Microanalysis of Boron Doped Steels, Nucl. Instrum. Methods Phys. Res. B260 (2007) 321-324.
- S. Takechi, T. Onishi, S. Minami, T. Miyachi, M. Fujii, N. Hasebe, K. Mori, H. Shibata, T. Murakami, Y. Uchihori, N. Okada, Comparison between Two Piezoelectric Lead-Zirconate-Titanate Detectors Bombarded with High-Energy Xenon Beam, Jpn. J. Appl. Phys. 46 1704-1706 (2007).
- S. Takechi, T. Onishi, S. Minami, T. Miyachi, M. Fujii, N. Hasebe, K. Mori, H. Shibata, T. Murakami, Y. Uchihori, N. Okada, Detection of acoustic wave excited in chloroform bombarded with high-energy xenon beam, Nucl. Instrum. Methods. Phys. Res. A577 (2007) 729-733.
- S. Takechi, T. Onishi, S. Minami, T. Miyachi, M. Fujii, N. Hasebe, K. Mori, H. Shibata, T. Murakami, Y. Uchihori, N. Okada, Evaluation of piezoelectric lead-zirconate-titanate multilayered detector by Fourier analysis, Nucl. Instrum. Methods. Phys. Res. A577 (2007) 741-744.
- I. Kanno, A. Uesaka, S. Nomiya, H. Onabe, Energy Measurement of X-rays in Computed Tomography for Detecting Contrast Media, J. Nucl. Sci. and Technol., 45, 15-24 (2008).
- I. Kanno, S. Hishiki, Y. Kogetsu, T. Nakamura, M. Katagiri, Fast Response of InSb Schottky Detector, Rev. Sci. Instrum., 78, 056103-1-3 (2007).
- I. Kanno, A. Uesaka, S. Nomiya, H. Onabe, Comparison of Current and Energy X-ray Measurement Methods in Contrast Media Detection, Nucl. Instrum. Meth. Phys. Res. A580, 534-536 (2007).
- S. Hishiki, Y. Kogetsu, I. Kanno, H. Yamana, Bulk Growth of InSb Crystals for Radiation Detectors, Jpn. J. Appl. Phys., 46, 5030-5032 (2007).
- A. Uesaka, I. Kanno, S. Nomiya, H. Onabe, Comparison of Current and Energy Methods in X-ray Transmission Measurement with CdZnTe Detector, Ionizing Radiation, 33, 159-163 (2007). (in Japanese).
- J. Matsuo, S. Ninomiya, T. Aoki, T. Seki, Recent progress in cluster ion beam –Toward Nano-Processing and advanced material analysis, J. Surf. Anal. 14[3], 196-203 (2008).
- J. Matsuo, S. Ninomiya, Y. Nakata, K. Ichiki, T. Aoki, T. Seki, Size effect in cluster collision on solid surfaces, Nucl. Instrum. Methods Phys. Res. B257 (2007) 627-631.
- T. Seki, J. Matsuo, High-speed processing with high-energy SF₆ cluster ion beam, Nucl. Instrum. Methods Phys. Res. B257 (2007) 666-669.
- T. Aoki, J. Matsuo, Molecular dynamics simulations of surface smoothing and sputtering process with glancing angle gas cluster ion beams, Nucl. Instrum. Methods Phys. Res. B257 (2007) 645-648.
- A. Suzuki, E. Bourelle, A. Sato, T. Seki, J. Matsuo, Effect of oblique irradiation of gas cluster ion beam on surface properties of gold mirrors, Nucl. Instrum. Methods Phys. Res. B257 (2007) 649-652.
- H. Tokioka, H. Yamarin, T. Fujino, M. Inoue, T. Seki, J. Matsuo, Low-damage surface smoothing of laser crystallized polycrystalline silicon using gas cluster ion beam, Nucl. Instrum. Methods Phys. Res. B257 (2007) 658-661.
- S. Kakuta, S. Sasaki, T. Hirano, K. Ueda, T. Seki, S. Ninomiya, M. Hada, J. Matsuo, Low damage smoothing of magnetic material films using a gas cluster ion beam, Nucl. Instrum. Methods Phys. Res. B257 (2007) 677-682.
- T. Aoki, T. Seki, S. Ninomiya, J. Matsuo, Molecular dynamics study of monomer and dimer emission processes with high energy gas cluster ion impact, Surf. Coat. Technol. 201 (2007) 8427-8430.
- T. Seki, J. Matsuo, Surface processing with high-energy gas cluster ion beams, Surf. Coat. Technol. 201 (2007) 8464-8469.
- S. Kakuta, S. Sasaki, K. Furusawa, T. Seki, T. Aoki, J. Matsuo, Low damage smoothing of magnetic materials using off-normal gas cluster ion beam irradiation, Surf. Coat. Technol. 201 (2007) 8632-8636.
- T. Aoki, J. Matsuo, Molecular dynamics study of glancing angle gas cluster irradiation on irregular-structured surfaces, Nucl. Instrum. Methods Phys. Res. B261 (2007) 639-642.
- T. Seki, J. Matsuo, Energy distribution of high-energy cluster ion beams, Nucl. Instrum. Methods Phys. Res. B261 (2007) 647-650.
- S. Ninomiya, K. Ichiki, Y. Nakata, T. Seki, T. Aoki, J. Matsuo, The Effect of Incident Cluster Ion Size on Secondary Ion Yields Produced from Si, Trans. of the MRS-J 32 [4] 895-898 (2007).
- Y. Nakata, Y. Honda, S. Ninomiya, J. Matsuo, Ion-Induced Emission of Amino Acid Molecular Ions from Thin Films, Trans. of the MRS-J 32 [4] 899-901 (2007).

- T. Aoki, J. Matsuo, Molecular dynamics study of surface modification with a glancing angle gas cluster ion beam, Nucl. Instrum. Methods Phys. Res. B255 (2007) 265-268.
- K. Ichiki, S. Ninomiya, T. Seki, T. Aoki, J. Matsuo, Surface oxidation of Si assisted by irradiation with large gas cluster ion beam in an oxygen atmosphere, Nucl. Instrum. Methods Phys. Res. B256 (2007) 350-353.
- Y. Nakata, S. Ninomiya, J. Matsuo, Secondary ion emission from bio-molecular thin films under ion bombardment, Nucl. Instrum. Methods Phys. Res. B256 (2007) 489-492.
- S. Ninomiya, Y. Nakata, K. Ichiki, T. Seki, T. Aoki, J. Matsuo, Measurements of secondary ions emitted from organic compounds bombarded with large gas cluster ions, Nucl. Instrum. Methods Phys. Res. B256 (2007) 493-496.
- S. Ninomiya, K. Ichiki, Y. Nakata, T. Seki, T. Aoki, J. Matsuo, The effect of incident cluster ion energy and size on secondary ion yields emitted from Si, Nucl. Instrum. Methods Phys. Res. B256 (2007) 528-531.
- M. Akiyoshi, T. Yano, Neutron-Irradiation Effect in Ceramics Evaluated from Macroscopic Property Changes in As-irradiated and Annealed Specimens, Prog. Nucl. Energy, 50 (2008) 567-574.
- I. Takagi, M. Akiyoshi, N. Matsubara, T. Nishiuchi, K. Moritani, T. Sasaki, H. Moriyama, Characteristics of traps for hydrogen in helium-irradiated copper, J. Nucl. Mater. 367-370 (2007) 489-493.
- I. Takagi, N. Matsubara, M. Akiyoshi, T. Sasaki, K. Moritani, H. Moriyama, Production and annihilation of deuterium traps in He-irradiated vanadium, J. Nucl. Mater. 363-365 (2007) 955-959.
- T. Sasaki, Y. Terakado, T. Kobayashi, I. Takagi, H. Moriyama, Analysis of sorption behavior of cesium ion on mineral components of granite, J.Nucl.Sci.Technol., 44 (2007) 641-648.
- H. Moriyama, D. Yamada, K. Moritani, T. Sasaki, et al., Diffusion behavior of actinide and lanthanide elements in molten salt for reductive extraction, J. Alloys Comp., 444-445 (2007) 557-560.
- M. Akiyoshi, T. Yano, Y. Tachi, H. Nakano, Saturation in degradation of thermal diffusivity of neutron-irradiated ceramics at $3 \times 10^{26} \text{n/m}^2$, J. Nucl. Mater. 367-370 (2007) 1023-1027.
- T. Kobayashi, T. Sasaki, I. Takagi, H. Moriyama, Solubility of Zirconium(IV) Hydrous Oxides, J. Nucl. Sci. Technol., 44 (2007) 90-94.
- R. Hagiwara, K. Tamaki, K. Kubota, T. Goto, T. Nohira, Thermal Properties of Mixed Alkali Bis(trifluoromethylsulfonyl)amides, J. Chemi. Eng. Data, 53,355-358 (2008).
- T. Nohira, T. Goto, R. Hagiwara, Development of new intermediate temperature molten salts and their electrochemical applications, Yoyuen oyobi Koon Kagaku, 51,148-154 (2008).
- T. Tsuda, R. Hagiwara, Chemistry in heterocyclic ammonium fluorohydrogenate room-temperature ionic liquid, J. Fluorine Chem., 129,4-13 (2008).
- T. Tsuda, T. Nohira, K. Amezawa, K. Hachiya, R. Hagiwara, O. Raz, Y. Ein-Eli, Anodic electrode reaction of p-type silicon in 1-ethyl-3-methylimidazolium fluorohydrogenate room-temperature ionic liquid, Electrochim. Acta, 53, 3650-3655 (2008).
- K. Amezawa, T. Goto, H. Tsujimura, Y. Uchimoto, R. Hagiwara, Y. Tomii, Y. Ito, Morphologic and crystallographic studies on electrochemically formed chromium nitride films, Electrochim. Acta, 53,122-126 (2007).
- K. Hachiya, T. Goto, R. Hagiwara, Optical properties of thin-film magnesium silicide prepared by electrochemical process, Electrochim. Acta, 53, 46-49 (2007).
- J. S. Lee, T. Nohira, R. Hagiwara, Novel composite electrolyte membranes consisting of fluorohydrogenate ionic liquid and polymers for the unhumidified intermediate temperature fuel cell, J. Power Sources, 171,535-539 (2007).
- K. Matsumoto, R. Hagiwara, Structural characteristics of alkylimidazolium-based salts containing fluoro anions, J. Fluorine Chem., 128, 317-331 (2007).
- K. Matsumoto, R. Hagiwara, Z. Mazej, P. Benkic, B. Zemva, Crystal structures of frozen room temperature ionic liquids, 1-ethyl-3-methylimidazolium tetrafluoroborate (EMImBF₄), hexafluoronobiobate (EMImNbF₆) and hexafluorotantalate (EMImTaF₆), determined by low-temperature X-ray diffraction, Solid State Sci., 9, 761 (2007).
- Z. Mazej, R. Hagiwara, Hexafluoro-, heptafluoro-, and octafluoro-salts, and [MnF_{5(n+1)}]⁻ (n = 2, 3, 4) polyfluorometallates of singly charged metal cations, Li⁺-Cs⁺, Cu⁺, Ag⁺, In⁺ and Tl⁺, J. Fluorine Chem., 128, 423-437 (2007).
- T. Murakami, T. Nohira, Y. Araki, T. Goto, R. Hagiwara, Y. H. Ogata, Electrolytic synthesis of ammonia from water and nitrogen under atmospheric pressure using a boron-doped diamond electrode as a nonconsumable anode, Electrochim. Solid-State Lett., 10, E4-E6 (2007).
- H. Nakajima, T. Nohira, R. Hagiwara, K. Nitta, S. Inazawa, K. Okada, Electrodeposition of metallic tungsten films in ZnCl₂-NaCl-KCl-WO₃ melt at 250 °C, Electrochim. Acta, 53, 24-27 (2007).
- K. Nitta, S. Inazawa, K. Okada, H. Nakajima, T. Nohira, R. Hagiwara, Analysis of tungsten film electrodeposited from a ZnCl₂-NaCl-KCl melt, Electrochim. Acta, 53, 20-23 (2007).
- S. Shiraishi, T. Miyauchi, R. Sasaki, N. Nishina, A. Oya, R. Hagiwara, Electric Double Layer Capacitance of Activated Carbon Nanofibers in Ionic Liquid: EMImBF₄, Electrochim., 75, 619-621 (2007).
- K. Yasuda, T. Nohira, R. Hagiwara, Y. H. Ogata, Diagrammatic Representation of Direct Electrolytic Reduction of SiO₂ in Molten CaCl₂, J. Electrochim. Soc., 154, E95-E101 (2007).

- K. Yasuda, T. Nohira, R. Hagiwara, Y. H. Ogata, Direct electrolytic reduction of solid SiO₂ in molten CaCl₂ for the production of solar grade silicon, *Electrochim. Acta*, 53, 106-110 (2007).
- T. Goto, Application of electrochemistry to high temperature fused salt related fields, *Electrochim. Acta*, 75, 901-905 (2007).
- R. Hagiwara, J. S. Lee, Ionic liquids for electrochemical devices, *Electrochemistry*, 75, 23-34 (2007).
- O. Raz, D. Starosvetsky, T. Tsuda, T. Nohira, R. Hagiwara, Y. Ein-Eli, Macroporous silicon formation on n-Si in room-temperature fluorohydrogenate ionic liquid, *Electrochim. Solid-State Lett.* 10, D25-D28 (2007).
- Y. Yoshida, M. Sakata, G. Saito, K. Matsumoto, R. Hagiwara, New α' -Type ET Salt (ET)H₂F₃ by Electrocristallization Using Ionic Liquid, *Chem. Lett.* 36, 226-227 (2007).
- K. Nakajima, A. Fujiyoshi, M. Zhao, M. Suzuki, K. Kimura, In situ observation of oxygen gettering by titanium overlayer on HfO₂/SiO₂/Si using high-resolution Rutherford backscattering spectroscopy, *J. Appl. Phys.* 102 (2007) 064507.
- Y. Tanaka, Shih Hsiu Hsiao, Y. Morimoto, A. Nakao, Ari Ide-Ektessabi, The influence of the properties of evaporation source on the discharge characteristics of MgO film, *Nucl. Instrum. Methods Phys. Res.* B261 (2007) 209-212.
- K. Tanaka, H. Akamatsu, S. Nakashima, K. Fujita, Magnetic Properties of Disordered Oxides with Iron and Manganese Ions, *J. Non-Crystal. Solids* 354 (2008) 1346.
- H. Akamatsu, S. Murai, K. Fujita, K. Tanaka, Magnetic Properties of Amorphous Fe₂O₃-R₂O₃ (R = La, Gd and Tb) Thin Films Fabricated by Sputtering Method, *Adv. Mater. Res.* 39-40 (2008) 207.
- H. Akamatsu, K. Tanaka, K. Fujita, S. Murai, Magnetic Phase Transitions in Fe₂O₃-Bi₂O₃-B₂O₃ Glasses, *J. Phys.: Condens. Matter* 20 (2008) 235216.
- S. Nakashima, K. Fujita, K. Tanaka, K. Hirao, T. Yamamoto, I. Tanaka, First-Principles XANES Simulations of Spinel Zinc Ferrite with a Disordered Cation Distribution, *Phys. Rev. B* 75 (2007) 174443.
- H. Hojo, K. Fujita, K. Tanaka, K. Hirao, Fabrication of p-type ferrimagnetic semiconductor thin films based on FeTiO₃-Fe₂O₃ solid solution, *J. Magn. Magn. Mater.* 310 (2007) 2105.
- S. Nakashima, K. Fujita, K. Tanaka, K. Hirao, T. Yamamoto, I. Tanaka, Thermal annealing effect on magnetism and cation distribution in disordered ZnFe₂O₄ thin films deposited on glass substrates, *J. Magn. Magn. Mater.* 310 (2007) 2543.
- K. Kugimiya, K. Fujita, K. Tanaka, K. Hirao, Preparation and magnetic properties of oxygen deficient EuTiO_{3- δ} thin films, *J. Magn. Magn. Mater.* 310 (2007) 2268.
- 2006**
- A. Yogo, A. Itoh, Secondary-ion emission from a C₆₀ film bombarded by fast heavy ions, *J. Phys. Soc. Jpn.*, 75 (2006) 104301(1-6).
- H. Tsuchida, I. Katayama, S.C. Jeong, H. Ogawa, N. Sakamoto, A. Itoh, Thermo-elastic deformation of a titanium foil by ion irradiation, *Nucl. Instrum. Methods Phys. Res.* B245 (2006) 137-140.
- M. Imai, T. Shirai, M. Manabu, Y. Haruyama, A. Itoh, N. Imanishi, F. Fukuzawa, H. Kubo, Production and compilation of charge changing cross sections of ion-atom and ion-molecule collisions, *J. Plasma Fusion Res.* 7 (2006) 323-326.
- A. Itoh, M. Kaneda, S. Satoh, K. Ishii, H. Tsuchida, Energy loss of swift protons in water and ethanol, *Nucl. Instrum. Methods Phys. Res.* B245 (2006) 76-79.
- T. Majima, Y. Nakai, T. Mizuno, H. Tsuchida and A. Itoh, Fragmentation processes of C₆₀ in multiple electron loss and capture collisions of 2-MeV Si²⁺, *Phys. Rev. A* 74 (2006) 033201 1-7.
- S. Kamakura, N. Sakamoto, H. Ogawa, H. Tsuchida, M. Inokuti, ean excitation energies for stopping power of atoms and molecules evaluated from oscillator-strength spectra, *J. Appl. Phys.*, 100 (2006) 064905 1-12.
- K. Kawatsura, K. Takahiro, M. Satake, M. Imai, K. Komaki, H. Sugai, H. Shibata, Ejected-electron spectra from Rydberg states in high-energy collisions of O³⁺ ions with He, *Nucl. Instrum. Methods Phys. Res.* B245 44-46 (2006).
- T. Miyachi, Y. Nakamura, G. Kuraza, M. Fujii, A. Nagashima, N. Hasebe, M.N. Kobayashi, S. Kobayashi, M. Miyajima, O. Okudaira, N. Yamashita, H. Shibata, T. Murakami, Y. Uchihori, N. Okada and T. Tou, Response of acoustic signals generated in water by energetic xenon ions, *Nucl. Instrum. Methods Phys. Res.* A560 606-612 (2006).
- M. Imai, M. Satake, K. Kawatsura, K. Takahiro, K. Komaki, H. Shibata, High Resolution Zero Degree Electron Spectroscopy of Argon Ions through Carbon Foil, *Brazilian J. Phys.*, 36 541-545 (2006).
- T. Miyachi, Y. Nakamura, G. Kuraza, M. Fujii, A. Nagashima, N. Hasebe, M.N. Kobayashi, S. Kobayashi, M. Miyajima, K. Mori, O. Okudaira, N. Yamashita, H. Shibata, T. Murakami, Y. Uchihori, N. Okada, Acoustic signals generated in piezoelectric lead-zirconate-titanate elements by direct bombardment with xenon ions, *Nucl. Instrum. Methods Phys. Res.* A568 760-766 (2006).
- I. Kanno, Energy Subtraction Method with Filtered X-rays for Low Exposure Radiography, *Ionizing Radiation*, 32, 49-59 (2006) (in Japanese).
- S. Hishiki, Y. Kogetsu, I. Kanno, T. Nakamura, M. Katagiri, First Detection of Gamma Ray Peaks by an Undoped InSb Schottky Detector, *Nucl. Instrum. Methods Phys. Res., Sect. A*, 599 558-560 (2006).
- I. Kanno, M. Yamashita, S. Nomiya, H. Onabe, Interface Resistivity of Directly Bonded Si Wafers, *Jpn. J. Appl. Phys.*, 45, 7938-7943 (2006).

- I. Kanno, M. Takahashi, H. Aoki, H. Onabe, Energy Subtraction Method with Filtered X-rays for the Detection of Contrast Media, *Nucl. Instrum. Methods Phys. Res. A* 567 154-157 (2006).
- I. Kanno, S. Hishiki, O. Sugiura, R. Xiang, T. Nakamura and M. Katagiri, InSb Cryogenic Radiation Detectors, *Nucl. Instrum. Methods Phys. Res., A* 568 416-420 (2006).
- I. Kanno, S. Hishiki, Y. Kogetsu, T. Nakamura and M. Katagiri, Fast Response of InSb Schottky Detector, *Rev. Sci. Instrum.*, 78, 056103-1-3 (2006).
- T. Seki, T. Murase, J. Matsuo, Cluster size dependence of sputtering yield by cluster ion beam irradiation, *Nucl. Instrum. Methods Phys. Res. B* 242 (2006) 179-181.
- T. Aoki, J. Matsuo, Molecular dynamics simulations of surface modification and damage formation by gas cluster ion impacts, *Nucl. Instrum. Methods Phys. Res. B* 242 (2006) 517-519.
- T. Aoki, J. Matsuo, Molecular dynamics study of particle emission by reactive cluster ion impact, *Appl. Surf. Sci.*, 252 (2006) 6466-6469.
- S. Ninomiya, T. Aoki, T. Seki, J. Matsuo, High-intensity Si cluster ion emission from a silicon target bombarded with large Ar cluster ions, *Appl. Surf. Sci.*, 252 (2006) 6550-6553.
- S. Ninomiya, T. Aoki, T. Seki, J. Matsuo, Secondary ion measurements for oxygen cluster ion SIMS, *Appl. Surf. Sci.*, 252 (2006) 7290-7292.
- T. Kunugi, Y. Okamoto, Z. Kawara, S. Muko, S. Wakamori, M. Shibahara, Thermal characteristic near nano- & micro-scale porous wall in a parallel plate flow channel, *Proc. of 2nd Int. Symp. on Micro and Nano Technology* 341-344 (2006).
- S. Shibata, Y. Okuda, K. Takamiya, Y. Oki, T. Sasaki et al., Measurement of ^{26}Al in terrestrial silicate rock, Revised., *J. Nucl. Radiochem. Sci.*, 7 (2006) 33-35.
- T. Sasaki, S. Kubo, T. Kubota, I. Takagi, H. Moriyama, Complex formation of lanthanides(III) and actinides(III) with dicarboxylates containing soft donor groups, *J. Alloys Comp.*, 408-412 (2006) 1283-1286.
- T. Sasaki, T. Kobayashi, I. Takagi, H. Moriyama, Solubility Measurement of Zirconium(IV) Hydrous Oxide, *Radiochim. Acta*, 94 (2006) 489-494.
- H. Moriyama, D. Yamada, K. Moritani, T. Sasaki, et al., Reductive extraction kinetics of actinide and lanthanide elements in molten chloride and liquid cadmium system, *J. Alloys Comp.*, 408-412 (2006) 1003-1007.
- H. Moriyama, T. Sasaki, T. Kobayashi, I. Takagi, Systematics of polymeric hydrolysis constants of actinide ions, *J. Alloys Comp.*, 408-412 (2006) 1302-1306.
- M. Akiyoshi, I. Takagi, T. Yano, N. Akasaka, Y. Tachi, Thermal conductivity of ceramics during irradiation, *Fusion Eng. Des.*, 81 (2006) 321-325.
- I. Takagi, M. Akiyoshi, N. Matsubara, K. Moritani, H. Moriyama, Experiments on deuterium trapping in helium-irradiated copper, *Fusion Eng. Des.* 81 (2006) 785-789.
- K. Matsumoto, R. Hagiwara, Z. Mazej, P. Benkic, B. Zemva, Crystal structures of frozen room temperature ionic liquids, 1-ethyl-3-methylimidazolium tetrafluoroborate (EMImBF₄), hexafluoroniobate (EMImNbF₆) and hexafluorotantalate (EMImTaF₆), determined by low-temperature X-ray diffraction, *Solid State Sci.*, 8, 1250-1257(2006).
- K. Matsumoto, R. Hagiwara, O. Tamada, Coordination environment around the lithium cation in solid Li₂(EMIm)(N(SO₂CF₃)₂)₃ (EMIm=1-ethyl-3-methylimidazolium): Structural clue of ionic liquid electrolytes for lithium batteries, *Solid State Sci.*, 8, 1103-1107(2006).
- K. Matsumoto, J. Ohtsuki, R. Hagiwara, S. Matsubara, Cesium fluorohydrogenate, Cs(FH)_{2.3}F, *J. Fluorine Chem.*, 127, 1339-1343(2006).
- H. Nakajima, T. Nohira, R. Hagiwara, Electrodeposition of metallic molybdenum films in ZnCl₂-NaCl-KCl-MoCl₃ systems at 250 °C, *Electrochim. Acta*, 51, 3776-3780(2006).
- M. Sakata, Y. Yoshida, M. Maesato, G. Saito, K. Matsumoto, R. Hagiwara, Preparation of Superconducting (TMTSF)₂NbF₆ by Electrooxidation of TMTSF Using Ionic Liquid as Electrolyte, *Mol. Cryst. Liq. Cryst.*, 452, 103-112 (2006).
- H. Nakajima, T. Nohira, Y. Ito, S. Kjelstrup, D. Bedeaux, The surface adsorption of hydride ions and hydrogen atoms on Zn studied by electrochemical impedance spectroscopy with a non-equilibrium thermodynamic formulation, *J. Non-Equilib. Thermodyn.* 31, 231-255(2006).
- T. Goto, Electrochemical behaviors of oxides and nitrides in molten halides, *Yoyuen oyobi Koon Kagaku*, 49, 75-81 (2006).
- T. Goto, Y. Ogawa, Optimization of plasma performance for a helical fusion reactor, *Fusion Eng. Des.* 81, 1251-1255 (2006).
- K. Toyoura, T. Goto, K. Hachiya, R. Hagiwara, Structural and Optical Properties of LiZnN Prepared by Electrochemical Formation in a LiCl-KCl-Li₃N Melt, *J. Electrochem. Soc.*, 153, G83-G86 (2006).
- K. Nakajima, A. Nakamoto, M. Suzuki, K. Kimura, Convoy electrons emitted by 2-MeV He⁺ ions at grazing incidence on KCl(001), *Nucl. Instrum. Methods Phys. Res. B* 248 (2006) 21-24.
- R. Fujii, Y. Gotoh, M.Y. Liao, H. Tsuji, J. Ishikawa, Work function measurement of transition metal nitride and carbide films, *Vacuum* 80[7], 882-885, 2006.
- M. Shimada, M. Moriyama, K. Ito, S. Tsukimoto, M. Murakami, Electrical resistivity of polycrystalline Cu interconnects with nano-scale linewidth, *J. Vac. Sci. Technol. B* 24 (2006) 190-194.

- Y. Uchida, K. Ito, S. Tsukimoto, Y. Ikemoto, K. Hirata, N. Shibata, M. Murakami, Epitaxial growth of GaN layers on metallic TiN buffer layers, *J. Electron. Mater.* 35 (2006) 1806-1811.
- K. Ito, S. Tsukimoto, M. Murakami, Effects of Al ion implantation to 4H-SiC on the specific contact resistance of TiAl-based contact materials., *Sci. Tech. Adv. Mater.*, 7 (2006) 496-501.
- H. Hojo, K. Fujita, K. Tanaka, K. Hirao, Epitaxial growth of room-temperature ferrimagnetic semiconductor thin films based on the ilmenite-hematite solid solution, *Appl. Phys. Lett.*, 89 (2006) 082509.
- K. Tanaka, S. Nakashima, K. Fujita, K. Hirao, Large Faraday effect in a Short Wavelength Range for Disordered Zinc Ferrite Thin Films, *J. Appl. Phys.*, 99 (2006) 106103.
- H. Hojo, K. Fujita, K. Tanaka, K. Hirao, Room-temperature ferrimagnetic semiconductor thin films based on the ilmenite-hematite solid solution, *Appl. Phys. Lett.*, 89 (2006) 142503.
- ## 2005
- A. Itoh, K. Nose, Y. Hamamoto, T. Mizuno, K. Ishii, Charge-changing cross sections of fast $\text{H}^{0.1+}$ and $\text{He}^{0.1+, 2+}$ projectiles in C_60 , *Phys. Rev. A*, 72 (2005) 052718(7).
- M. Imai, M. Satake, K. Kawatsura, K. Takahiro, K. Komaki, H. Shibata, H. Sugai, K. Nishio, Charge state distribution and its equilibration of 2 MeV/u sulfur ions passing through carbon foils, *Nucl. Instrum. Methods B* 230 63-67 (2005).
- T. Miyachi, M. Fujii, N. Hasebe, M. Kobayashi, G. Kuraza, A. Nagashima, Y. Nakamura, K. Nogami, T. Iwai, S. Sasaki, K. Muranaga, H. Ohashi, S. Hasegawa, H. Yano, H. Shibata, E. Grün and R. Srama, N. Okada, T. Tou, Velocity-dependent wave forms of piezoelectric elements undergoing collisions with iron particles having velocities ranging from 5 to 63 km/s, *Appl. Phys. Lett.* 86 234102 (2005).
- T. Miyachi, M. Fujii, N. Hasebe, M. Kobayashi, G. Kuraza, A. Nagashima, Y. Nakamura, O. Okudaira, N. Yamashita, K. Nogami, T. Iwai, S. Sasaki, H. Ohashi, S. Hasegawa, H. Yano, H. Shibata, N. Okada, T. Tou, Response from piezoelectric elements appearing immediately after collisions with silver particles, *J. Appl. Phys.* 98 014110 (2005).
- S. Seki, S. Tsukuda, K. Maeda, S. Tagawa, H. Shibata, M. Sugimoto, K. Jimbo, I. Hashitomi, A. Kohyama, Effects of Backbone Configuration of Polysilanes on Nanoscale Structures Formed by Single-Particle Nanofabrication Technique, *Macromol.* 38 10164-10170 (2005).
- T. Miyachi, M. Fujii, N. Hasebe, M.N. Kobayashi, G. Kuraza, A. Nagashima, Y. Nakamura, K. Nogami, T. Iwai, S. Sasaki, H. Ohashi, S. Hasegawa, H. Yano, H. Shibata, Velocity dependent response of a piezoelectric element to hypervelocity microparticles, *Adv. Space Res.* 35 1263-1269 (2005).
- I. Kanno, S. Hishiki, O. Sugiura, R. Xiang, T. Nakamura, M. Katagiri, Photon Detection by a Cryogenic InSb Detector, *Rev. Sci. Instr.*, 76, 023102-1-3 (2005).
- R. Nouchi, I. Kanno, Friction of C₆₀ Molecules at Noble Metal Surfaces Detected by Change in DC Resistivity, *Jpn. J. Appl. Phys.*, 44, 948-950 (2005).
- R. Nouchi, I. Kanno, Charge Transfer and Formation of Conducting C₆₀ Monolayers at C₆₀/Noble Metal Interfaces, *J. Appl. Phys.*, 97, 103716-1-7 (2005).
- S. Hishiki, I. Kanno, O. Sugiura, R. Xiang, T. Nakamura, M. Katagiri, Undoped InSb Schottky Detector for Gamma Ray Measurements, *IEEE Trans. Nucl. Sci.*, 52, 3172-3175 (2005).
- S. Ninomiya, C. Imada, M. Nagai, Y. Nakata, T. Aoki, J. Matsuo, N. Imanishi, Total sputtering yields of solids under MeV-energy Si ion bombardment, *Nucl. Instrum. Methods B* 230, 483-488, (2005).
- F. C. Li, T. Kunugi, A. Serizawa, MHD effect on flow structures and heat transfer characteristics of liquid metal-gas annular flow in a vertical pipe, *Int. J. Heat Mass Transfer*, 48 (2005) 2571-2581.
- M. Shibahara, T. Kunugi, K. Katsuki, Molecular dynamics study on effects of surface structures in nanometer scale on energy transfer from fluid to surface, *Heat Trans. Asian Res.*, vol.34 (3) 171-179 (2005).
- M. Shibahara, T. Kunugi, K. Muko, M. Katsuki, A Study on Effects of Surface Structure Clearance in Nanometer Scale on Energy transfer at an Interface, *Bulletin of JSME*, Ser. B, 71 (2005) 2108-2111.
- M. Shibahara, T. Kunugi, K. Muko, M. Katsuki, A Study on Effects of Surface Structure Clearance in Nanometer Scale on Molecular Behavior in the Vicinity of a Liquid-Solid Interface, *Bulletin of JSME*, Ser. B, 71 (2005) 2112-2116.
- T. Sasaki, S. Kubo, T. Kobayashi, A. Kirishima, T. Kimura, T. Kubota, I. Takagi, H. Moriyama, Study on stabilization effect of neutral soft donor on trivalentlanthanide and actinide dicarboxylate complexes by time-resolved laser-induced fluorescence spectroscopy, *J. Nucl. Radiochem.Sci.* 6[1] (2005) 51-54.
- T. Sasaki, S. Kubo, T. Kobayashi, I. Takagi, H. Moriyama, Measurement and analysis of formation constants of Europium with carboxylates, *J. Nucl. Sci. Technol.* 42[8] (2005) 724-731.
- H. Moriyama, T. Sasaki, T. Kobayashi, I. Takagi, Systematics of hydrolysis constants of tetravalent actinide ions, *J. Nucl. Sci. Techno.* 42[7] (2005) 626-635.
- I. Takagi, N. Matsubara, M. Akiyoshi, K. Moritani, T. Sasaki, H. Moriyama, Deuterium trapping near vanadium surface bombarded with hydrogen ions, *Nucl. Instrum. Methods B* 232 (2005) 327-332.
- M. Akiyoshi, H. Sakamoto, R. Haraguchi, K. Moritani, I. Takagi, H. Moriyama, TOF measurement of electron volt energy hydrogen atoms reflected by stainless-steel surface, *Nucl. Instrum. Methods B* 232 (2005) 173-177.
- K. Moritani, Y. Teraoka, I. Takagi, H. Moriyama, Electron spin resonance measurement of irradiation defects produced in quartz crystal, *Nucl. Instrum. Methods B* 232 (2005)

317-321.

K. Fujiwara, T. Sasaki, H. Moriyama, Solubility Product of Hexavalent Uranium Hydrous Oxide, *J. Nucl. Sci. Technol.* 42 2005 289-294.

K. Fujiwara, T. Sasaki, H. Moriyama, Solubility of uranium(IV) hydrous oxide in high pH solution under reducing condition, *Radiochim. Acta* 93 2005 347-350.

T. Goto, Y. Araki, R. Hagiwara, Oxygen gas evolution on boron-doped diamond electrode in molten chloride systems, *Electrochim. Solid State Lett.* 9, 2, D5 (2006).

K. Kobayashi, H. Nakajima, T. Goto, Y. Ito, Thermodynamics of the N₂/N³⁻ Redox Couple in a LiBr-KBr-CsBr Melt, *J. Phys. Chem. B*, 109, 23972-23975 (2005).

T. Goto, Y. Ito, Electrochemical nitriding of Sn in LiCl-KCl-Li₃N systems, *J. Phys. Chem. Solids*, Vol. 66/2, 418-421 (2005).

T. Goto, T. Iwaki, Y. Ito, Electrochemical formation of AlN in molten LiCl-KCl-Li₃N systems, *Electrochimica Acta*, vol. 50, 1283-1288 (2005).

K. Kobayashi, H. Nakajima, T. Goto, Y. Ito, Thermodynamic investigations of nitrogen electrode in a LiCl-KCl-CsCl melt, *J. Electrochim. Soc.*, vol.152, E207-E211 (2005).

Y. Ito, T. Goto, Electrochemistry of nitrogen and nitrides in molten salts, *J. Nucl. Mater.* 344, 128-135 (2005).

R. Fujita, H. Nakamura, K. Mizuguchi, M. Sato, T. Shibano, Y. Ito, T. Goto, T. Terai, S. Ogawa, Zirconium recovery process for spent zircaloy components from light water reactor (LWR) by electrorefining in molten salts, *Electrochim.*, 73, 751-753 (2005).

K. Toyoura, H. Tsujimura, T. Goto, K. Hachiya, R. Hagiwara, Y. Ito, Optical properties of zinc nitride formed by molten salt electrochemical process, *Thin Solid Films*, In Press, 492 (2005) 88-92.

K. Toyoura, T. Goto, K. Hachiya, R. Hagiwara, Structural and optical properties of magnesium nitride formed by a novel electrochemical process, *Electrochimica Acta*, 51, 56-60 (2005).

K. Matsumoto, R. Hagiwara, Z. Mazej, E. Goreshnik, B. Žemva, Anomalously large formula unit volume and its effect on the thermal behavior of LiBF₄, *J. Phys. Chem. (B)*, 110[5], 2138-2141 (2006).

Y. Sato, H. Watano, R. Hagiwara, Y. Ito, Reaction of layered carbon fluorides C_xF ($x = 2.5\text{-}3.6$) and hydrogen, *Carbon*, 44(4), 664-670 (2006).

H. Yoshino, K. Matsumoto, R. Hagiwara, Y. Ito, K. Oshima, S. Matsubara, Fluorination with ionic liquid EMIMF(HF)_{2.3} as mild HF source, *J. Fluor. Chem.*, 127, No. 1, 29-35 (2006).

H. Nakajima, T. Nohira, R. Hagiwara, K. Nitta, S. Inazawa, K. Okada, Electrodeposition of metallic molybdenum films in molten ZnCl₂-NaCl-KCl-MoCl₅ systems at 250°C, *J. Rare Earths*, 23, 16-20 (2005).

K. Yasuda, T. Nohira, K. Takahashi, R. Hagiwara, Y. H. Ogata, Electrolytic reduction of a powder-molded SiO₂ pellet in molten CaCl₂ and acceleration of reduction by Si addition to the pellet, *J. Electrochim. Soc.*, 152[12], D232-D237 (2005).

H. Nakajima, T. Nohira, R. Hagiwara, Electrodeposition of Metallic Tungsten in ZnCl₂-NaCl-KCl-WCl₄ Melt at 250°C, *Electrochim. Solid-State Lett.* 8(7), C91-C94 (2005).

K. Matsumoto, R. Hagiwara, A new room temperature ionic liquid of oxyfluorometallate anion:1-ethyl-3-methylimidazolium oxypentafluorotungstate (EMImWO₅), *J. Fluor. Chem.*, 126[7], 1095-1100 (2005).

S. Shiraishi, N. Nishina, A. Oya, R. Hagiwara, Electric double layer capacitance of activated carbon fibers in ionic liquid: EMImBF₄, *Electrochim.* 73(8), 593-596 (2005).

T. Tsuda, Charles L. Hussey, T. Nohira, Y. Ikoma, K. Yamauchi, R. Hagiwara, Y. Ito, Anodic hydrogen electrode reaction in aluminum chloride-1-ethyl-3- methylimidazolium chloride ionic liquids, *Electrochim.*, 73(8), 644-650 (2005).

K. Matsumoto, R. Hagiwara, Physical and electrochemical properties of a room temperature molten salt:1-ethyl-2,3-dimethylimidazolium fluorohydrogenate, *Electrochim.*, 73(8), 730-732, (2005).

R. Hagiwara, T. Nohira, K. Matsumoto, Y. Tamba, A fluorohydrogenate ionic liquid fuel cell operating without humidification, *Electrochim. Solid-State Lett.* 8[4], A231-A233 (2005).

H. Matsushima, T. Nohira, T. Kitabata, Y. Ito, A novel deuterium separation system by the combination of water electrolysis and fuel cell, *Energy*, 30, 2413-2423 (2005).

K. Yasuda, T. Nohira, K. Amezawa, Y. H. Ogata, Y. Ito, Mechanism of Direct Electrolytic Reduction of Solid SiO₂ to Si in Molten CaCl₂, *J. Electrochim. Soc.*, 152[4], D69-D74 (2005).

T. Nohira, H. Kambara, K. Amezawa, Y. Ito, Electrochemical Formation and Phase Control of Pr-Ni Alloys in a Molten LiCl-KCl-PrCl₃ System, *J. Electrochim. Soc.*, 152[4], C183-C189 (2005).

T. Murakami, T. Nohira, Y. H. Ogata, Y. Ito, Electrolytic Ammonia Synthesis in Molten Salts under Atmospheric Pressure Using Methane as a Hydrogen Source, *Electrochim. Solid-State Lett.* 8[4], D12-D14 (2005).

T. Murakami, T. Nishikiori, T. Nohira, Y. Ito, Investigation on The Anodic Reaction of The Electrolytic Ammonia Synthesis in Molten Salts under Atmospheric Pressure, *J. Electrochim. Soc.*, 152[5], D75-D78 (2005).

H. Nakajima, T. Nohira, Y. Ito, Electrochemical Impedance Spectroscopy Study of Hydrogen Electrode Reaction at a Zn Electrode in a Molten LiCl-KCl-LiH System, *J. Phys. Chem. B*, Vol. 109, 9645-9650 (2005).

T. Murakami, T. Nohira, Y. H. Ogata, Y. Ito, Electrochemical Synthesis of Ammonia and Coproduction of Metal Sulfides from Hydrogen Sulfide and Nitrogen under Atmospheric

- Pressure, J. Electrochem. Soc., 152[6], D109-D112 (2005).
- T. Murakami, T. Nishikiori, T. Nohira, Y. Ito, Electrolytic Ammonia Synthesis from Hydrogen Chloride and Nitrogen Gases with Simultaneous Recovery of Chlorine under Atmospheric Pressure, Electrochim. Solid-State Lett. 8[8], D19-D21 (2005).
- T. Nohira, D. Miura, Y. Ito, Novel electrochemical method of SiH₄ synthesis in molten LiCl-KCl systems, Part I: Reaction mechanism and an approach to a continuous SiH₄ evolution, Electrochim., 73[8], 692-699 (2005).
- T. Nohira, D. Miura, Y. Ito, Novel electrochemical method of SiH₄ synthesis in molten LiCl-KCl systems, Part II: Advantages of Si-Cu alloy anode, Electrochim., 73[8], 700-705 (2005).
- H. Nakajima, T. Nohira, Y. Ito, Dissolution of Hydrogen in Molten LiCl-KCl, Electrochim. 73[8], 733-735 (2005).
- T. Murakami, T. Nohira, T. Goto, Y. H. Ogata, Y. Ito, Electrolytic Ammonia Synthesis from Water and Nitrogen Gas in Molten Salt under Atmospheric Pressure, Electrochim. Acta, 50, 5423-5426 (2005).
- K. Yasuda, T. Nohira, Y. H. Ogata, Y. Ito, Electrochemical window of molten LiCl-KCl-CaCl₂ and the Ag⁺/Ag reference electrode, Electrochim. Acta, 51, 561-565 (2005).
- K. Yasuda, T. Nohira, Y. H. Ogata, Y. Ito, Direct Electrolytic Reduction of Solid Silicon Dioxide in Molten LiCl-KCl-CaCl₂ at 773 K, J. Electrochim. Soc., 152[11], D208-D212 (2005).
- K. Nakajima, M. Suzuki, K. Kimura, M. Yamamoto, A. Teramoto, T. Ohmi, T. Hattori, Lattice Distortion at SiO₂/Si(001) Interface Studied with High-Resolution Rutherford Backscattering Spectroscopy/Channeling, Jpn. J. Appl. Phys., 45[4A], 2006, 2467-2469.
- G. H. Takaoka, H. Shimatani, H. Noguchi, M. Kawashita, Interactions of Argon Cluster Ion Beams with Silicon Surfaces, Nucl. Instrum. Methods B232 (2005) 206-211.
- G. H. Takaoka, H. Noguchi, K. Makayama, Y. Hironaka, M. Kawashita, Fundamental Characteristics of Liquid Cluster Ion Source for Surface Modification, Nucl. Instrum. Methods B237 (2005) 402-405.
- G. H. Takaoka, Y. Nishida, T. Yamamoto, M. Kawashita, Development of Polyatomic Ion Beam System Using Liquid Organic Materials, Nucl. Instrum. Methods B237 (2005) 240-244.
- H. Tsuji, N. Arai, K. Ueno, T. Matsumoto, N. Gotoh, K. Adachi, H. Kotaki, Y. Gotoh, J. Ishikawa, Formation of mono-layered gold nanoparticles in shallow depth of SiO₂ thin film by low-energy negative-ion implantation, Nucl. Instrum. Methods B242, 125-128, 2006.
- H. Tsuji, N. Sakai, Y. Gotoh, J. Ishikawa, Photocatalytic properties of sol-gel titania film under fluorescent-light irradiation improved by silver negative-ion implantation, Nucl. Instrum. Methods B242, 129-132, 2006.
- N. Arai, H. Tsuji, K. Ueno, T. Matsumoto, N. Gotoh, K. Adachi, H. Kotaki, Y. Gotoh, J. Ishikawa, Formation of silver nanoparticles aligned near the bottom of SiO₂ film silicon substrate by negative-ion implantation and post-annealing, Nucl. Instrum. Methods B242, 217-220, 2006.
- M. Y. Liao, Y. Gotoh, H. Tsuji, J. Ishikawa, Deposition of vanadium carbide thin films using compound target sputtering and their field emission, J. Vac. Sci. Tech. A23(5), 1379-1383, 2005.
- J. Ishikawa, H. Tsuji, N. Arai, T. Matsumoto, K. Ueno, K. Adachi, H. Kotaki, Y. Gotoh, Formation of almost delta-layered nanoparticles in SiO₂ thin film on Si substrate by metal negative-ion implantation, Nucl. Instrum. Methods B237, 422-427, 2005.
- H. Tsuji, N. Sakai, H. Sugahara, Y. Gotoh, J. Ishikawa, Silver negative-ion implantation to sol-gel TiO₂ film for improving photocatalytic property under fluorescent light, Nucl. Instrum. Methods B237, 433-437, 2005.
- H. Tsuji, P. Sommuni, T. Muto, Y. Utagawa, S. Sakai, H. Sato, Y. Gotoh, J. Ishikawa, Immobilization of extracellular matrix on polymeric materials by carbon-negative-ion implantation, Nucl. Instrum. Methods B237, 459-464, 2005.
- H. Tsuji, N. Arai, T. Matsumoto, K. Ueno, K. Adachi, H. Kotaki, Y. Gotoh, J. Ishikawa, Delta layer formation of silver nanoparticles in thin silicon dioxide film by negative ion implantation, Surf. Coat. Technol. 196, 39-43, 2005.
- N. Arai, H. Tsuji, K. Ueno, T. Matsumoto, Y. Gotoh, K. Adachi, H. Kotaki, J. Ishikawa, Evaluation of nanoparticles embedded in thin silicon dioxide film by optical reflection property, Surf. Coat. Technol. 196, 44-49, 2005.
- N. Arai, H. Tsuji, N. Gotoh, T. Minotani, H. Nakatsuka, K. Kojima, T. Yanagitani, T. Okumine, H. Ohnishi, T. Sato, M. Harada, K. Adachi, H. Kotaki, Y. Gotoh, J. Ishikawa, Electrical properties of silicon dioxide thin film containing negative-ion-implantation induced germanium nanoparticles, J. Vac. Soc. Jpn., 49 (3), 180-182, 2006.
- Y. Tanaka, Y. Morimoto, A. Ide-Ektessabi, Investigation of rare-earth oxide supplementation MgO thin films, Jpn. Soc. Appl. Phys.
- M. Murakami, Y. Koide, M. Moriyama, S. Tsukimoto, Development of electrode materials for semiconductor devices, Mater. Sci. Forum, 475-479 (2005) 1705-1714.
- M. Moriyama, T. Morita, S. Tsukimoto, M. Shimada, M. Murakami, The effect of target purities on grain growth in sputtered copper thin films, Mater. Trans., 46 (2005) 1036-1041.
- S. Tsukimoto, T. Morita, M. Moriyama, K. Ito, M. Murakami, Formation of Ti diffusion barrier in thin Cu(Ti) alloy films, J. Electron. Mater. 34 (2005) 592-599.
- M. Murakami, M. Moriyama, S. Tsukimoto, K. Ito, Grain growth mechanism of Cu thin films, Mater. Trans., 46 (2005) 1737-1740.

S. Tsukimoto, T. Sakai, T. Onishi, K. Ito, M. Murakami, Simultaneous formation of p- and n-type ohmic contacts to 4H-SiC using the ternary Ni/Ti/Al system, *J. Electron. Mater.* 34 (2005) 1310-1312.

T. Watanabe, K. Ito, S. Tsukimoto, Y. Ushida, M. Moriyama, N. Shibata, M. Murakami, Growth of GaN on nitriding Ti buffer layers, *Mater. Trans.*, 46 (2005) 1975-1978.

2004

A. Itoh, T. Majima, Electron emission and fragmentation of C₆₀ in collisions with energetic particles, *Vacuum*, 73 (2004) 53-58.

A. Itoh, T. Takuya, Correlation between multiple ionization and fragmentation of C₆₀ in 2 MeV Si²⁺ collisions: Evidence for fragmentation induced by internal excitation, *Phys. Rev. A*, 69 (2004) 031202-1-4.

I. Sugai, Y. Takeda, M. Oyaizu, H. Kawakami, Y. Hattori, K. Kawasaki, K. Yoshida, A. Itoh, Lifetime improvement of nitrided carbon stripper foils by ion-beam sputtering with a binary gas mixture, *Nucl. Instrum. Methods A*, 521 (2004) 187-191.

M. Ikeda, M. Nakagawa, R. Mitsusue, S. Kondo, N. Imanishi, Hydrogen behavior in SiO₂ with high-density defects and locally concentrated silicon, *J. Appl. Phys.*, 95 (2004) 4655-4661.

S. Ninomiya, N. Imanishi, Material dependence of electronic sputtering induced by MeV-energy heavy ions, *Vacuum*, 73 (2004) 79-87.

T. Nakamura, M. Katagiri, Y. Aratono, I. Kanno, S. Hishiki, O. Sugiura, Y. Murase, Cryogenic Neutron Detector Comprising an InSb Semiconductor Detector and a Supercritical Helium-3 Gas Converter, *Rev. Sci. Instrum.*, 75 (2004) 340-344.

I. Kanno, S. Hishiki, H. Murakami, O. Sugiura, Y. Murase, T. Nakamura, M. Katagiri, Schottky and pn Junction Cryogenic Radiation Detector Made of p-InSb Compound Semiconductor, *Nucl. Instrum. Methods A*, 520 (2004) 93-95.

T. Nakamura, M. Katagiri, Y. Aratono, I. Kanno, S. Hishiki, O. Sugiura, Y. Murase, Cryogenic Neutron Detector by InSb Semiconductor Detector with High-density Helium-3 Gas Converter, *Nucl. Instrum. Methods A*, 520 (2004) 76-79.

Y. Kawabata, M. Hino, T. Horie, S. Tasaki, K. Yoshida, I. Kanno, M. Nakayama, Characteristics of Deuterated Diamond-like Carbon as Neutron Mirror, *Nucl. Instrum. Methods A*, 529 (2004) 84-86.

I. Kanno, A. Nakayama, S. Nomiya, H. Onabe, Resistivity Measurements of Directly Bonded Si Wafers, *Jpn. J. Appl. Phys.*, 43 (2004) 6996-6997.

T. Nakamura, M. Katagiri, Y. Aratono, I. Kanno, S. Hishiki, O. Sugiura, Y. Murase, Use of Liquid Helium-3 as a Neutron Converter for a Semiconductor-based Neutron Detector, *Nucl. Instrum. Methods A* 529 (2004) 399-401

T. Aoki, J. Matsuo, I. Yamada, Molecular dynamics

simulations of sequential cluster ion impacts, *Nucl. Instrum. Methods B* (2004).

H. Yoshino, S. Matsubara, K. Oshima, K. Matsumoto, R. Hagiwara, Y. Ito, Halofluorination of alkenes with ionic liquid EMIMF (HF)_{2,3}, *J. Fluor. Chem.*, 125, 455-458 (2004).

H. Matsushima, T. Nohira, I. Mogi, Y. Ito, Effects of magnetic fields on iron electrodeposition, *Surf. Coat. Technol.*, 179, 245-251 (2004).

M.Y. Liao, Y. Gotoh, H. Tsuji, J. Ishikawa, Crystallographic structure and composition of vanadium nitride films deposited by direct sputtering of a compound target, *J. Vac. Sci. Technol.* A22[1] (2004) 146-150.

M.Y. Liao, Y. Gotoh, H. Tsuji, J. Ishikawa, Growth and stress evolution of hafnium nitride films sputtered from a compound target, *J. Vac. Sci. Technol.* A22[1] (2004) 214-220.

N. Yasui, H. Nomura, Ari Ide-Ektessabi, Characteristics of ion beam modified magnesium oxidefilms, *Thin Solid Films* 447-448 (2004) 377-382.

Ari Ide-Ektessabi, H. Nomura, N. Yasui, Y. Tukuda, Ion beam processing of MgO thin films, *Thin Solid Films* 447-448 (2004) 383-387.

Ari Ide-Ektessabi, H. Uehara, S. Kamitani, Dry processing of thin film capacitors arrays using ion beam assisted deposition, *Thin Solid Films* 447-448 (2004) 388-391.

M. Yanaguchi, Ari Ide-Ektessabi, H. Nomura, N. Yasui, Characteristics of indium tin oxide thin films prepared using electron beam evaporation, *Thin Solid Films* 447-448 (2004) 115-118.

T. Sakai, K. Nitta, S. Tsukimoto, M. Moriyama, M. Murakami, Ternary TiAlGe ohmic contacts for p-type 4H-SiC, *J. Appl. Phys.* 95 (2004) 2187-2189.

M. Moriyama, M. Shimada, H. Masuda, M. Murakami, Determination of parameter to control electrical resistivities of nano-scale copper interconnects, *Trans. Mater. Res. Soc. Jpn.*, 29 (2004) 51-54.

M. Murakami, M. Moriyama, S. Tsukimoto, Development of Electrode Materials for Semiconductor Devices, *Trans. Mater. Res. Soc. Jpn.*, 29 (2004) 45-50.

2003

A. Yogo, T. Majima, A. Itoh, Energy and angular distributions of secondary ions from a C₆₀ surface induced by fast heavy ion impacts, *Nucl. Instrum. Methods B* 203 (2003) 141-145.

H. Tsuchida, I. Katayama, S. Jeong, H. Ogawa, N. Sakamoto, A. Itoh, Experimental evidence for no beam force effect on a foil deformation by irradiation of heavy ions at MeV energies, *Transactions of the Materials Research Society of Japan*, 28 (2003) 413-416.

A. Itoh, A. Yogo, Secondary ion emission from fullerene films bombarded by fast heavy ions, *Transactions of the Materials Research Society of Japan*, 28 (2003) 481-484.

- A. Itoh, Present status in ion-irradiation of materials, Nucl. Res. 48[5] (2003) 25-32.
- K. Moritani, I. Takagi, H. Moriyama, Production Behavior of Irradiation Defects in Vitreous Silica under Ion Beam Irradiation, J. Nucl. Mater. 312 (2003) 97-102.
- K. Fujiwara, H. Yamana, T. Fujii, H. Moriyama, Solubility Product of Pu (VI) Hydrous Oxide, Radiochim. Acta, 91 (2003) 81-85.
- K. Fujiwara, H. Yamana, T. Fujii, H. Moriyama, Determination of Uranium (IV) Hydrolysis Constants and Solubility Product of $\text{UO}_2 \cdot x\text{H}_2\text{O}$, Radiochim. Acta, 91 (2003) 345-350.
- T. Fujii, H. Moriyama, H. Yamana, Electronic Absorption Spectra of Lanthanides in a Molten Chloride, I Molar Absorptivity Measurement of Neodymium(III) in Molten Eutectic Mixture of LiCl-KCl, J. Alloys Compd., 351 (2003) L6-L9.
- S. Akahori, E. Tega, Y. Morimoto, K. Okuno, M. Nishikawa, K. Munakata, H. Moriyama, K. Kawamoto, M. Okada, Hot Atom Chemical Behavior of Tritium Produced by Li-6(n, alpha)H-3 in Li_4SiO_4 , J. Radioanal. Nucl. Chem., 255 (2003) 257-260.
- I. Takagi, K. Moritani, H. Moriyama, Asymmetric Surface Recombination of Hydrogen on Palladium Exposed to Plasma, J. Nucl. Mater. 313 (2003) 102-106.
- I. Takagi, S. Nagaoka, K. Shirai, K. Moritani, H. Moriyama, Trapping of Hydrogen in Tantalum Bombarded with Helium-3 Ions, Phys. Scr., T103 (2003) 121-124.
- K. Munakata, A. Koga, Y. Yokoyama, S. Kanjo, S. Beloglazov, D. Ianovski, T. Takeishi, R. D. Penzhorn, K. Kawamoto, H. Moriyama, Y. Morimoto, S. Akahori, K. Okuno, Effect of Water Vapor on Tritium Release from Ceramic Breeder Material, Fusion Eng. Des., 69 (2003) 27-31.
- T. Kataoka, E. Yunoki, T. Sasaki et al., Concentrations of ^{222}Rn , its Short-lived Daughters and ^{212}Pb and their Ratios under Complex Atmospheric Conditions and Topography, Boundary-Layer Meteorology, 107 (2003) 219-249.
- T. Sasaki, K. Takamiya, Liquid-liquid Micro Batch Extraction System for Rapid Separation, Chem. Lett., 32 (2003) 184-185.
- T. Sasaki, K. Takamiya, T. Ichihara, S. Shibata, Liquid-liquid Micro Batch Extraction System for Rapid Mutual Separation of Fission Products, Anal. Chim. Acta, 484 (2003) 139-144.
- H. Ito, Y. Hasegawa, Y. Ito, Electrode Kinetics of Hydrogen Reduction in Molten Alkali Chlorides, J. Electrochem. Soc., 150, E 244-E 250 (2003).
- H. Konishi, T. Nohira, Y. Ito, Kinetics of DyNi_2 film growth by electrochemical implantation, Electrochim. Acta, 48, 563-568 (2003).
- T. Iida, T. Nohira, Y. Ito, Electrochemical Formation of Sm-Co Alloy Films by Li Codeposition Method in A Molten LiCl-KCl-SmCl₃ System, Electrochim. Acta, 48, 901-906 (2003).
- H. Konishi, T. Nishikiori, T. Nohira, Y. Ito, Thermodynamic Properties of Dy-Ni Intermetallic Compounds, Electrochim. Acta, 48, 1403-1408 (2003).
- T. Kasajima, T. Nishikiori, T. Nohira, Y. Ito, Hydrogen Electrode Reactions in an Alkali Bromide Melt, Electrochim. Solid-State Lett. 5, E5-E9 (2003).
- T. Kasajima, T. Nishikiori, T. Nohira, Y. Ito, Electrochemical Intercalation/Deintercalation of Lithium at an Isotropic Graphite in a LiBr-KBr-CsBr Eutectic Melt, Electrochim. Solid-State Lett. 6(6), A109-A112 (2003).
- T. Iida, T. Nohira, Y. Ito, Electrochemical Formation of Yb-Ni Alloy Films by Li Codeposition Method in a Molten LiCl-KCl-YbCl₃ System, Electrochim. Acta, 48, 1531-1536 (2003).
- H. Qiao, T. Nohira, Y. Ito, Electrochemical formation of Pd-La alloy film in a LiF-NaF-KF-LaF₃ melt, J. Alloys Compd., 359, 230-235 (2003).
- T. Nohira, K. Yasuda, Y. Ito, Pinpoint and bulk electrochemical reduction of insulating silicon dioxide to silicon, Nat. Mater., 2, 397-401 (2003).
- H. Qiao, T. Nohira, Y. Ito, Electrochemical Behavior of Oxide Ion at a Glassy Carbon Electrode in a LiF-NaF-KF Eutectic Melt, Electrochim. 71 (7), 530-535 (2003).
- T. Iida, T. Nohira, Y. Ito, Electrochemical formation of Sm-Co alloys by codeposition of Sm and Co in a molten LiCl-KCl-SmCl₃-CoCl₂ system, Electrochim. Acta, 48, 2517-2521 (2003).
- Y. Sato, S. Shiraishi, Z. Mazej, R. Hagiwara, Y. Ito, Direct conversion mechanism of fluorine-GIC into poly (carbon monofluoride), $(\text{CF})_n$, Carbon, 41, 1971-1977 (2003).
- H. Tsujimura, T. Goto, Y. Ito, Electrochemical Surface nitriding of SUS 430 ferritic stainless steel, Mater. Sci. Eng., A355, 315-319 (2003).
- M. Ue, M. Takeda, A. Toriumi, A. Kominato, R. Hagiwara, Y. Ito, Application of low-viscosity ionic liquid to the electrolyte of double-layer capacitors, J. Electrochem. Soc., 150(4), A499-A502 (2003).
- T. Kasajima, T. Nishikiori, T. Nohira, Y. Ito, Thermodynamic Evaluation of Ti-H System at Medium-Temperatures by Molten Salt Electrochemical Technique, J. Electrochim. Soc., 150(7), E355-E359 (2003).
- T. Kasajima, T. Nishikiori, T. Nohira, Y. Ito, Electrochemical Behavior of Hydride Ion in a LiBr-KBr-CsBr Eutectic Melt, J. Electrochim. Soc., 150 (8), E403-E408 (2003).
- Y. Sato, R. Hagiwara, Y. Ito, Refluorination of pyrocarbon prepared from fluorine-GIC, Solid State Sciences, 5(9), 1285-1290 (2003).
- M. Kawase, Y. Mugikura, Y. Izaki, T. Watanabe, Y. Ito, Effects of fluoride on the performance of MCFCs, J. Power

Sources, 124, 52-58 (2003).

M. Kawase, Y. Ito, The electroformation of Zr metal, Zr-Al alloy and carbon films on ceramic, *J. Appl. Electrochem.*, 33, 785-793 (2003).

R. Hagiwara, K. Matsumoto, Y. Nakamori, T. Tsuda, Y. Ito, H. Matsumoto, K. Momota, Physicochemical properties of 1,3-Dialkylimidazolium Fluorohydrogenates Room Temperature Molten Salts, *J. Electrochem. Soc.*, 150(12), D 195-D 199 (2003).

Y. Gotoh, H. Tsuji, J. Ishikawa, Measurement of work function of transition metal nitride and carbide thin films, *J. Vac. Sci. Technol.* B21[4] (2003) 1607-1611.

Y. Gotoh, M.Y. Liao, H. Tsuji, J. Ishikawa, Formation and control of stoichiometric hafnium nitride thin films by direct sputtering of hafnium nitride target, *Jpn. J. Appl. Phys. Part2.*, 42[7A] (2003) L778-780.

M.Y.Liao, Y.Gotoh, H.tsuji, J.Ishikawa, Field electron emisision from nanostructured heterogeneous HfNxOy films, *Appl. Phys. Lett.* 83[8] (2003) 1626-1628

K. Kimura, K. Nakajima, H. Kobayashi, S. Miwa, K. Satori, SIMS and high-resolution RBS analysis of ultrathin SiOxNy films, *Appl. Surf. Sci.* 203/204 (2003) 418-422.

K. Kimura, Y. Oota, K. Nakajima, T. H. Buyuklimani, High-resolution depth profiling of ultrashallow boron implants in silicon using high-resolution RBS, *Curr. Appl. Phys.* 3 (2003) 9-11.

K. Kimura, K. Nakajima, Compositional transition layer in SiO₂/Si interface observed by high-resolution RBS, *Appl. Surf. Sci.* 216 (2003) 283-286.

K. Kimura, Y. Oota, K. Nakajima, M. Suzuki, T. Aoki, J. Matsuo, A. Agarwal, B. Freer, A. Stevenson, M. Ameen, Molecular effect on projected range in ultralow-energy ion implantation, *Nucl. Instrum. Methods* B211 (2003) 206-210.

I. Fujimoto, H. Asamizu, M. Shimada, M. Moriyama, N. Shibata, M. Murakami, Effects of Vacuum Annealing on Electrical Properties of GaN Contacts, *J. Electron. Mater.* 32 (2003) 957-963.

T. Aoki, J. Matsuo, G.H. Takaoka, Molecular Dynamics Study of Damage Formation Characteristics by Large Cluster Ion Impacts, *Nucl. Instrum. Methods Phys. Res.* B202 (2003) 278-282.

A. Nakai, T. Aoki, T. Seki, J. Matsuo, G.H. Takaoka, I. Yamada, Modeling of Surface Smoothing Process by Cluster Ion Beam Irradiation, *Nucl. Instrum. Methods Phys. Res.* B206 (2003) 842-845.

T. Aoki, J. Matsuo, G.H. Takaoka, N. Toyoda, I. Yamada, Defect Characteristics by Boron Cluster Ion Implantation, *Nuclese Instruments and Methods in Physics Research* B206 (2003) 855-860.

T. Aoki, J. Matsuo, G.H. Takaoka, I. Yamada, Cluster Species and Cluster Size Dependence of Damage Formation by Cluster Ion Impact, *Nucl. Instrum. Methods Phys. Res.* B206

(2003) 861-865.

O. Nakatsu, J. Matsuo, K. Omoto, T. Seki, G.H. Takaoka, I. Yamada, Titanium-Dioxide Film Formation Using Gas Cluster Ion Beam Assisted Deposition Technique, *Nucl. Instrum. Methods Phys. Res.* B206 (2003) 866-869.

T. Seki, J. Matsuo, G.H. Takaoka, I. Yamada, Generation of the Large Current Cluster Ion Beam, *Nucl. Instrum. Methods Phys. Res.* B206 (2003) 902-906.

2002

T. Majima, A. Yogo, F. Obata, H. Tsuchida, Y. Nakai, A. Itoh, The Role of Nuclear Stopping Power in Fast Heavy Ion Collisions with C₆₀, *Nucl. Instrum. Methods* B193 (2002) 209-213.

A. Yogo, T. Majima, A. Itoh, Damage and Polymerization of C₆₀ Films Irradiated by Fast Light and Heavy Ions, *Nucl. Instrum. Methods* B193 (2002) 229-304.

A. Itoh, T. Majima, F. Obata, Y. Hamamoto, A. Yogo, Secondary Electron Emission from Au by Medium Energy Atomic and Molecular Ions, *Nucl. Instrum. Methods* B193 (2002) 626-631.

A. Itoh, H. Tsuchida, Energy Loss of Fast Li and Si Projectiles in Electron Loss Collisions with C₆₀, *Nucl. Instrum. Methods* B195 (2002) 216-223.

I. Kanno, F. Yoshihara, R. Nouchi, O. Sugiura, T. Nakamura, M. Katagiri, Cryogenic InSb Detector for Radiation Measurement, *Rev. Sci. Instrum.*, 73, 2533-2536 (2002).

S. Ninomiya, N. Imanishi, J. Xue, S. Gomi, M. Imai, Material-Dependent Emission Mechanism of Secondary Atomic Ions from Solids under MeV-Energy Heavy Ion Bombardment, *Nucl. Instrum. Methods* B193 (2002) 745-750.

M. Imai, M. Satake, S. Kitazawa, K. Komaki, K. Kawatsura, H. Shibata, H. Tawara, T. Azuma, Y. Kanai, Y. Yamazaki, Angular Momentum Distributions of Rydberg State Electrons of Be-Like Sulfur Produced through Foil Penetration, *Nucl. Instrum. Methods* B193 (2002) 674-679.

M. Satake, M. Imai, K. Kawatsura, K. Komaki, H. Tawara, A. Vasilyev, U. I. Safranova, Comprehensive Theoretical and Experimental Analysis of Coster-Kronig Electron Spectra from 64-Mev S¹²⁺ Ions Excited through He Gas and C-Foil Targets, *Phys. Rev. A65* (2002) 052704.

S. Smolentsev, M. Abdou, N. Morley, A. Ying, T. Kunugi, "K-e" Model to Open Channel Flows in a Magnetic Field, *Appl. Int. J. Eng. Sci.*, 40 (2002) 693-711.

T. Kunugi, S. Satake, Approaches of Fusion Science to Global Warming from The Perspective of Thermofluid Research, *Fusion Eng. Des.* 63-64 (2002) 665-672.

K. Takase, Y. Ose, T. Kunugi, Numerical Study on Direct-Contact Condensation of Vapor in Cold Water, *Fusion Eng. Des.*, 63-64 (2002) 421-428

S. Satake, T. Kunugi, Direct Numerical Simulation of

- Turbulent Heat Transfer in an Axially Rotating Pipe Flow Reynolds Shear Stress and Scalar Flux Budgets, *Int. J. Numer. Methods Heat Fluid Flow*, 12[8] (2002) 958-1008.
- S. Satake, T. Kunugi, S. Smolentsev, Direct Numerical Simulations of Turbulent Pipe Flow in a Transverse Magnetic Field, *J. Turbulence*, 3 (2002) 20.
- S. Satake, T. Kunugi, S. Smolentsev, Advances in Direct Numerical Simulation for MHD Modeling of Free Surface Flows, *Fusion Eng. Des.* 61-62 (2002) 95-102.
- S. Smolentsev, M. Abdou, T. Kunugi, N. Morley, S. Satake, A. Ying, Modeling of Liquid Walls in Apex Study, *Int. J. Appl. Electro-magnetics Mech.*, 13 (2001/2002) 373-379.
- Y. Yamamoto, T. Kunugi, A. Serizawa, DNS of The Scalar Transfer Across The Free-Surface in a Wind-Driven Turbulent Flow, *Heat Transfer 2002*, 3 (2002) 45-50.
- T. Kunugi, N. Saito, Y. Fujita, A. Serizawa, Direct Numerical Simulation of Pool and Forced Convective Flow Boiling Phenomena, *Heat Transfer 2002*, 3 (2002) 497-502.
- I. Takagi, R. Sugiura, K. Shirai, K. Higashi, Deuterium Retention and Diffusion in ETP-10 Graphite Exposed to RF Plasma at Room Temperature, *Fusion Sci. Technol.* 41 (2002) 902-906.
- I. Takagi, S. Watanabe, S. Nagaoka, K. Higashi, Trapping of Hydrogen in Molybdenum Bombarded with Helium-3 Ions, *Fusion Sci. Technol.* 41 (2002) 897-901.
- K. Hachiya, Y. Ito, Transition-Metal-Like Interatomic Potentials for Aluminium, *J. Alloys Compd.* 337 (2002) 53-57.
- W. Hua, Y. Ito, T. Nohira, Qiao Huan, Numerical Simulation on Optimum Combination of Ceramic and Molten Salt for New Composite Heat Storage Materials, *Chin. J. Nonferrous Metals*, 12(3) (2002) 550-555.
- H. Tsujimura, T. Goto, Y. Ito, Electrochemical Formation and Control of Chromium Nitride Films in Molten LiCl-KCl-Li₃N Systems, *Electrochim. Acta*, 47 (2002) 2725-2731.
- T. Tsuda, T. Nohira, Y. Ito, Nucleation and Surface Morphology of Aluminum-Lanthanum Alloy Electrodeposited in a LaCl₃-Saturated AlCl₃-EtMeImCl Room Temperature Molten Salt, *Electrochim. Acta*, 47 (2002) 2817-2822.
- K. Matsumoto, R. Hagiwara, Y. Ito, Room Temperature Molten Fluorometallates: 1-Ethy1-3-Methylimidazolium Hexafluoro- niobate(V) and Hexafluorotantalate(V), *J. Fluor. Chem.*, 115 (2002) 133-135.
- H. Nakajima, T. Nohira, Y. Ito, Thermodynamic Investigations of a Hydrogen Electrode Reaction in a Molten LiCl-KCl-LiH System, *Electrochim. Solid-State Lett.* 5[5] (2002) E17-E20.
- T. Nohira, Y. Ito, Electrochemical Behavior of Hydride Ion in a LiCl-KCl Eutectic Melt, *J. Electrochim. Soc.*, 149[5] (2002) E159-E165.
- T. Tsuda, T. Nohira, Y. Nakamori, K. Matsumoto, R. Hagiwara, Y. Ito, A highly Conductive Composite Electrolyte Consisting of Polymer and Room Temperature Molten Fluorohydrogenates, *Solid State Ionics*, 149 (2002) 295-298.
- H. Konishi, T. Nohira, Y. Ito, Formation of Dy-Fe Alloy Films by Molten Salt Electrochemical Process, *Electrochim. Acta*, 47 (2002) 3533-3539.
- H. Ito, Y. Hasegawa, Y. Ito, Electrode Behavior of Hydride Ion in Molten Alkali Chlorides, *J. Electrochim. Soc.*, 149 (8) (2002) E273-E280.
- T. Oishi, T. Goto, Y. Ito, Formation of Transition Metal Sulfide Particles by Anode Discharge Electrolysis of Molten LiCl-KCl-KSCN System, *Electrochim.* 70 (2002) 697-700.
- T. Oishi, T. Goto, Y. Ito, Formation of Metal Oxide Particles by Anode Discharge Electrolysis of Molten LiCl-KCl-CaO System *J. Electrochim. Soc.*, 149 (2002) D155-D159.
- T. Oishi, H. Kawamura, Y. Ito, Formation and Size Control of Titanium Particles by Cathode Dischrge Electrolysis of Molten Chloride, *J. Appl. Electrochim.*, 32 (2002) 819-824.
- T. Oishi, T. Goto, Y. Ito, Foramtion of Carbon Nitride by Anode Discharge Electrolysis of Molten Salt, *J. Electrochim. Soc.*, 149 (2002) D178-181.
- H. Qiao, T. Nohira, Y. Ito, Electrochemical Formation of Au₂Na Alloy and The Characteristics of (Au₂Na+Au) Reference Electrode in a LiF- NaF-KF Eutectic Melt, *Electrochim. Acta*, 47 (2002) 4543-4549.
- H. Konishi, T. Nohira, Y. Ito, Morphology Control of Dy-Ni Alloy Films by Electrochemical Displantation, *Electrochim. Solid-State Lett.* 5 (2002) B37-39.
- R. Hagiwara, K. Matsumoto, T. Tsuda, Y. Ito, S. Kohara, K. Suzuya, H. Matsumoto, Y. Miyazaki, The Structures of Alkylimidazolium Fluorohydrogenate Molten Salts Studied by High-Energy X-Ray Diffraction, *J. Noncryst. Solids*, 312-314, (2002) 414-418.
- K. Matsumoto, R. Hagiwara, Y. Ito, O. Tamada, Synthetic, Structural and Thermal Studies of Ag(I)-XeF₂ Complex Salts, *Solid St. Sci.*, 4 (2002) 1465-1469.
- T. Oishi, T. Goto, Y. Ito, Anode Discharge Electrolysis of Molten LiCl-KCl System, *J. Electrochim. Soc.*, 150[1] (2003) D13-16.
- T. Murakami, T. Nishikiori, T. Nohira, Y. Ito, Electrolytic Synthesis of Ammonia in Molten Salts under Atmospheric Pressure, *J. Amer. Chem. Soc.*, 125[2] (2003) 334-335.
- K. Matsumoto, R. Hagiwara, Y. Ito, S. Kohara, K. Suzuya, Structural Analysis of 1-Ethyl-3-Methyl- imidazolium Bifluoride Melt, *Nucl. Instrum. Methods Phys. Res. B* 199 (2003) 29-33.
- Y. Sato, T. Kume, R. Hagiwara, Y. Ito, Reversible Intercalation of HF in Fluorine-GICs, *Carbon*, 41 (2003) 351-357.
- Y. Sato, S. Shiraishi, H. Watano, R. Hagiwara, Y. Ito, Pyrolytically Prepared Carbon from Fluorine-GIC, *Carbon*,

41 (2003) 1149-1156.

K. Kimura, K. Nakajima, H. Kobayashi, S. Miwa, K. Satori, Release of Nitrogen from SiO_xN_y Films during RBS Measurement, Nucl. Instrum. Methods B190 (2002) 423-427.

K. Nakajima, N. Hosaka, T. Hattori, K. Kimura, Surface Segregation of Ge during Si Growth on Ge/Si(001) at Low Temperature Observed by High-Resolution RBS, Nucl. Instrum. Methods B190 (2002) 587-591.

K. Kimura, K. Nakajima, S. Yamanaka, M. Hasegawa, H. Okushi, Hydrogen Analysis of CVD Homoepitaxial Diamond Films by High-Resolution Elastic Recoil Detection, Nucl. Instrum. Methods B190 (2002) 689-692.

K. Kimura, S. Usui, K. Maeda, K. Nakajima, Ion Scattering on Crystalline Surfaces: Effects of Surface Track Potential on Secondary Electron Emission, Nucl. Instrum. Methods B193 (2002) 661-666.

A. M. Ektessabi, M. Hamdi, Characterization of Calcium Phosphate Bioceramic Films Using Ion Beam Analysis Techniques, Surf. Coat. Technol., 153 (2002) 10-15.

Ari Ide-Ektessabi, H. Nomura, N. Yasui, Y. Tsukuda, Ion Beam-Assisted Deposition of Magnesium Oxide Thin Film for PDP Applications, Surf. Coat. Technol., 163-164 (2003) 728-733.

M. Hamdi, A. Ide-Ektessabi, Preparation of Hydroxyapatite Layer by Ion Beam Assisted Simultaneous Vapor Deposition, Surf. Coat. Technol., 163-164 (2003) 362-367.

Y. Gotoh, K. Kagamimori, H. Tsuji, J. Ishikawa, Ion Beam Assisted Deposition of Tantalum Nitride Thin Films for Vacuum Microelectronics Devices, Surf. Coat. Technol., 158-159C (2002) 728-730.

2001

M. Satake, M. Imai, K. Kawatsura, K. Komaki, H. Tawara, A. Vasilyev, U. I. Safranova, Coster-Kronig Electrons from The autoionizing Rydberg States of 2 MeV/u Si⁵⁺ Ions Excited through a Thin C-Foil Target, J. Phys. B35 (2002) 267-281.

N. Imanishi, N. N. Nasonov, K. Yajima, Dynamical Diffraction Effects in the Transition Radiationof a Relativistic Electron Crossing a Thin Crystal, Nucl. Instrum. Methods B173 (2001) 227-237.

A. Itoh, H. Tsuchida, K. Miyabe, T. Majima, Y. Nakai, Fragment Ion Distribution in Charge-Changing Collisions of 2 MeV Si Ions with C60, Phys. Rev. A64 (2001) 032702(1-9).

Y. Nakai, T. Kambara, A. Itoh, H. Tsuchida, Y. Yamazaki, Production of Singly Charged Fullerenelike Fragment Ions in a Fast He²⁺-C60 Collision, Phys. Rev. A64 (2001) 043205(1-6).

A. Itoh, T. Majima, H. Tsuchida, Y. Nakai, T. Kambara, Charge-State Dependence of C60-Multifragmentation in Collisions of 30 MeV Ne²⁺⁹⁺ Ions, Phys. Scr. T92 (2001) 176-178.

T. Majima, A. Itoh, H. Tsuchida, A. Yogo, Y. Hamamoto, High-Resolution Measurements of Initial Kinetic Energy of Fragment Ions Produced in Fast Heavy Ions -C60, Phys. Scr. T92 (2001) 179-181.

I. Katayama, S. C. Jeong, H. Tsuchida, H. Ogawa, N. Sakamoto, A. Itoh, Direct Measurement of Beam Force Exerted to a Foil with Laser Displacement Meter, J. Chin. Chem. Soc., 48 (2001) 455-459.

H. Tsuchida, I. Katayama, S. C. Jeong, H. Ogawa, N. Sakamoto, A. Itoh, Measurement of Elastic Deformation of a Thin Foil by MeV-Energy Heavy Ion Irradiation, Application of Accelerators in Research and Industry CP 576, AIP press, New York (2001) 931-934.

I. Takagi, S. Shimada, D. Kawasaki, K. Higashi, A Simple Model for Hydrogen Re-distribution in Zr-lined Fuel Claddings, J. Nucl. Sci. Technol. 39 (2002) 71-75.

I. Takagi, Y. Koga, H. Fujita, K. Higashi, Influence of Hydrogen Surface Coverage on Atomic Particle Reflection, J. Nucl. Mater. 290-293 (2001) 501-504.

T. Tsuda, T. Nohira, Y. Ito, Electrodeposition of Lanthanum in Lanthanum Chloride Saturated AlCl₃-1-ethyl-3-methylimidazol- ium Chloride Molten Salts, Electrochim. Acta, 46 (2001) 1891-1897.

T. Iida, T. Nohira, Y. Ito, Electrochemical Formation of Sm-Ni Alloy Films in a Molten LiCl-KCl-SmCl₃ System, Electrochim. Acta, 46 (2001) 2537-2544.

H. Konishi, T. Nohira, Y. Ito, Formation and Phase Control of Dy Alloy Films by Electrochemical Implantation and Displantation, J. Electrochem. Soc. 148[7] (2001) C506-C511.

H. Qiao, T. Nohira, Y. Ito, Electrochemical Behavior of Deuteride Ion in a LiF-NaF-KF Eutectic Melt, Electrochim. 70[2] (2002) 122-125.

C. Fujisawa, R. Hagiwara, Y. Ito, Vibrational Analyses of Arsenic Pentafluoride in HF, J. Fluor. Chem. 107 (2001) 97-100.

Y. Sato, R. Hagiwara, Y. Ito, Thermal Decomposition Mechanism of Fluorine Graphite Intercalation Compounds, Carbon, 39 (2001) 954-956.

Y. Sato, R. Hagiwara, Y. Ito, Thermal Decomposition of 1st Stage Fluorine Graphite Intercalation Compounds, J. Fluorine Chem., 110 (2001) 31-36.

K. Matsumoto, R. Hagiwara, Y. Ito, Crystal Structures of AgAF₆ (A = P,As,Sb,Nb,Ta) at Ambient Temperatures, J. Fluorine Chem., 110 (2001) 117-122.

R. Hagiwara, T. Hirashige, T. Tsuda, Y. Ito, A Highly Conductive Room Temperature Molten Fluoride; EMIF-2.3HF, J. Electrochem. Soc. 149 (2002) D1-D6.

K. Matsumoto, R. Hagiwara, T. Tsuda, Y. Ito, O. Tamada, Structural Characteristics of 1-ethyl-3-methylimid- azolium Bifluoride: HF- Deficient Form of a Highly Conductive Room Temperature Molten Salt, Solid St. Sci., 4 (2002)

23-26.

T. Nishikiori, T. Nohira, Y. Ito, Electrochemical Evaluation of High Temperature Hydrogen Impermeability of TiN Films and Its Dependence on Film Thickness, Thin Solid Films, 408 (2002) 148-154.

K. Matsumoto, T. Tsuda, T. Nohira, R. Hagiwara, Y. Ito, O. Tamada, Tris (1-ethyl-3-methylimidazolium) hexafluorolanthan- anate, Acta Cryst. C58, Part 3 (2002) m186-187.

T. Nishikiori, T. Nohira, Y. Ito, Thermodynamic Investigation of Ti-H System by Molten Salt Electrochemical Technique, J. Electrochem. Soc. 148 (2001) E38-E43.

C. Fujisawa, R. Hagiwara, Y. Ito, Dissolution Equilibria of Arsenic Pentafluoride in Anhydrous Hydrogen Fluoride, J. Fluorine Chem. 107 (2001) 97-100

T. Nishikiori, T. Nohira, Y. Ito, Hydrogen Impermeability of TiN Films and Its Dependence on Nitrogen Concentration at High Temperatures, J. Electrochem. Soc. 148 (2001) E52-E59.

H. Matsumoto, T. Matsuda, T. Tsuda, R. Hagiwara, Y. Ito, Y. Miyazaki, The Application of Room Temperature Molten Salt with Low Viscosity to the Electrolyte for Dye- Sensitized Solar Cell, Chem. Lett., 2001 (2001) 26-27.

K. Nakajima, Y. Okazaki, K. Kimura, Initial Oxidation Process on Si(001) Studied by High-resolution Rutherford Backscattering Spectroscopy, Phys. Rev B63 (2001) 113314.

K. Kimura, K. Nakajima, S. Yamanaka, M. Hasegawa, H. Okushi, Hydrogen Depth Profiling in Chemical Vapor Deposited Diamond Films by High-Resolution Elastic Recoil Detection, Appl. Phys. Lett. 78 (2001) 1679-1681.

K. Kimura, K. Nakajima, Y. Okazaki, Oxidation of Si(001) Observed by High-Resolution RBS, Nucl. Instrum Methods B183 (2001) 166-170.

K. Nakajima, H. Toyofuku, K. Kimura, Anomalous Surface Amorphization of Si(001) Induced by 3 - 5 keV Ar⁺ Ion Bombardment, Jpn. J. Appl. Phys. 40 (2001) 2119-2122.

K. Nakajima, K. Kimura, A. Kurokawa, S. Ichimura, H. Fukuda, Nitrogen Profile in SiO_xN_y Prepared by Thermal Nitridation of Ozone Oxide, Jpn. J. Appl. Phys. 40 (2001) 4011-4012.

K. Kimura, K. Nakajima, Development of High-Resolution RBS System, J. Surf. Sci. Soc. Jpn. 22 (2001) 431-437.

M. Hamdi, A. M. Ektessabi, Electron Beam Deposition of Thin Bioceramics Film for Biomedical Implant, Thin Solid Films, 398/399 (2001) 385-390.

M. Hamdi, A. M. Ektessabi, Influence of Annealing Temperature on Simultaneous Vapor Deposited Calcium Phosphate Thin Films, J. Vac. Sci. Technol. A19 (2001) 1566 - 1570.

A. Ektessabi, S. Shikine, N. Kitamura, M. Rokkum, C. Johansson, Distribution and Chemical States of Iron and

Chromium Released from Orthopedic Implants into Human Tissues, X-ray Spectrom. 30 (2001) 44-48.

N. Kitamura, A. Ektessabi, XAFS in a Single Macrophage Cell, J. Synchrotron Radiat. 8 (2001) 981-983.

S. Yoshida, A. Ektessabi, S. Fujisawa, XANES Spectroscopy of a Single Neuron from a Patient with Parkinson's Disease, J. Synchrotron Radiat. 8 (2001) 998-1000.

A. Ide-Ektessabi, S. Fujisawa, K. Sugimura, Y. Kitamura, A. Gotoh, Quantitative Analysis of Zinc in the Prostate Cancer Tissues Using Synchrotron Radiation Micro Beams, X-Ray Spectrom., 31 (2002) 7-11.

A. Ide-Ektessabi, S. Fujisawa, S. Yoshida, Chemical State Imaging of Iron in Nerve Cells from a Patient with Parkinsonism-Dementia Complex, J. Appl. Phys., 91 (2002) 1613-1617.

A. Ide-Ektessabi, Y. Watanabe, Temperature Distribution in Polymeric Films during Ion Beam Irradiation, Rev. Sci. Instrum., 73 (2002) 849-851.

A. Ide-Ektessabi, N. Yasui, D. Okuyama, Characteristics of an Ion Beam Modification System with a Linear Ion Source, Rev. Sci. Instrum., 73 (2002) 10-15.

G.H. Takaoka, S. Nakamura, T. Seki, J. Matsuo, Interaction of SF₆ Cluster Ion Beams with Si Surface, Jpn. J. Appl. Phys., 40 (2001) L1384-L1386.

G.H. Takaoka, D. Yamazaki, J. Matsuo, High Quality ITO Film Formation by the Simutaneous Use of Cluster Ion Beam and Laser Irradiation, Materials Chemistry and Physics, 74 (2002) 104-108.

G. H. Takaoka, T. Seki, K. Tsumura, J. Matsuo, Scanning Tunneling Microscope Observations of Ge Deposition on Si(111)-7x7 Surfaces Irradiated by Xe Ions, Thin Solid Films, 405 (2002) 141-145.

H. Biederman, D. Slavinska, H. Boldyrev, G.H. Takaoka, J. Matsuo, H. Kinpara, J. Zemek, Modification of Polycarbonate and Polypropylene Surfaces by Argon Ion Cluster Beams, J. Vac. Sci. Technol. B19 (2001) 2050-2056.

Y. Gotoh, H. Tsuji, J. Ishikawa, Relationship between Work Function and Noise Power of Field Emitters: Use of S-K Chart for Evaluation of Work Function, J. Vac. Sci. Technol. B19 (2001) 992-994.

Y. Gotoh, Y. Kashiwagi, M. Nagao, H. Tsuji, J. Ishikawa, Fabrication of Gated Niobium Nitride Field Emitter Array, J. Vac. Sci. Technol. B19 (2001) 1373-1376.

T. Kimoto, N. Miyamoto, A. Schoner, A. Saitoh, H. Matsunami, K. Asano, Y. Sugawara, High-Energy (MeV) Al and B Ion Implantations into 4H-SiC and Fabrication of Pin Dinoes, J. Appl. Phys. 91 (2002) 4242-4248.

Y. Negoro, N. Miyamoto, T. Kimoto, H. Matsunami, Remarkable Lattice Recovery and Low Sheet Resistance of Phosphorus-Implanted 4H-SiC(11-20), Appl. Phys. Lett. 80 (2002) 240-242.

- Y. Negoro, N. Miyamoto, T. Kimoto, H. Matsunami, Phosphorus Ion Implantation into 4H-SiC(0001) and (11-20), Mater. Sci. Forum, 389-393 (2002) 783-786.
- T. Kimoto, H. Yano, S. Tamura, N. Miyamoto, K. Fujihira, Y. Negoro, H. Matsunami, Recent Progress in SiC Epitaxial Growth and Device Processing Technology, Mater. Sci. Forum, 353-356 (2001) 543-548.
- C. J. Ma, M. Kasahara, S. Tohno, H.-K. Kim, Characterization of the Winter Atmospheric Aerosols in Kyoto and Seoul Using PIXE and EAS Analyses, Atmos. Environ., 35/4 (2001) 747-752.
- C. J. Ma, M. Kasahara, R. Holler, T. Kamiya, Characteristics of Single Particles Sampled in Japan during the Asian Dust-Storm Period, Atmos. Environ. 35/15 (2001) 2707-2714.
- M. Kasahara, C. J. Ma, T. Kamiya, T. Sakai, Preliminary Studies on Applications of Micro-PIXE to Atmospheric Aerosols, Nucl. Instrum Methods, B181 (2001) 622-627.
- S. Tohno, T. Takano, M. Kasahara, Simultaneous Determination of Gas and Particle Dry Deposition onto Conditioned Surrogate Surfaces, Water, Air, and Soil Poll. 130 (2001) 535-540.
- C. J. Ma, M. Kasahara, S. Tohno, T. Kamiya, A New Approach for Characterization of Single Raindrops, Water, Air, and Soil Poll. 130 (2001) 1601-1606.
- C. J. Ma, M. Kasahara, K. C. Choi, Experimental Evaluation of the Separation Capacity of Cascade Impactor for Liquid Aerosol Study, J. Korea Soc. Atmos. Environment, 17 (2001) 9-16.
- C. J. Ma, M. Kasahara, K.C. Choi, Development of Polymeric Water Absorbent Film (PWAF) for the Collection of Size-Classified Fog Droplets, J. Korea Soc. Atmos. Environ. 17 (2001) 17-24.
- M. Kasahara, Bio-PIXE/Theory and Application, Chapter 9: Application of Environmental Science, (1), Determination of Trace Elements in Atmospheric Aerosols, Radioisotopes 50 (2001) 24-30.
- S. Tanaka, N. Arai, K. Yoshida, N. Baba, W. Sakamoto, Trace Element Analysis in Canine Teeth of Northern Fur Seals: Relationship between Mother and Fetus, Intern. J. PIXE, 10 (3&4) (2001).
- ## 2000
- N. Imanishi, M. Ogura, M. Ikeda, R. Mitsusue, A. Itoh, Effect of Implanted Silicon on Hydrogen Behavior in Aluminum and Nickel, Nucl. Instrum. Methods B161-163 (2000) 401-405.
- N. Imanishi, H. Ohta, S. Ninomiya, A. Itoh, Emission Energy Distribution of Secondary Ions Produced through the Electronic Sputtering Process under Heavy Ion Bombardment, Nucl. Instrum. Methods B164-165 (2000) 803-808.
- A. Itoh, H. Tsuchida, T. Majima, N. Imanishi, Multifragmentation of C_{60} by Fast Li^0 Atoms and Li^{1-3+} Ions in Electron Loss and Capture Collisions, Phys. Rev. A61 (2000) 012702.
- M. Kishimoto, M. Katagiri, T. Nakamura, M. Ohkubo, M. Ukibe, M. Kurakado, I. Kanno, H. Takahashi, H. Kraus, M. Nakazawa, Research of Superconducting Tunnel Junction X-ray Detectors with Direct Signal Observation Method using a Fast Current Readout System, Nucl. Instrum. Methods A444 (2000) 124-128.
- C. Tsuchiya, Y. Nakagome, H. Yamana, H. Moriyama, K. Nishio, I. Kanno, K. Shin, I. Kimura, Simultaneous Measurement of Prompt Neutrons and Fission Fragments for $^{239}Pu(n_{th},f)$, J. Nucl. Sci. Technol. 37, 941-948, 2000.
- C. Tsuchiya, Y. Nakagome, H. Yamana, H. Moriyama, K. Nishio, I. Kanno, K. Shin, I. Kimura, Irradiation Temperature Dependence of Production Efficiency of Defects Induced in Neutron-irradiated Silicon Carbides, J. Nucl. Sci. Technol., 37 (2000) 941-948.
- M. Okada, K. Atobe, M. Nakagawa, S. Kanazawa, I. Kanno, I. Kimura, Activities on the Development of Cryogenic Radiation Detectors made of Superconductor, Mono-crystal Semiconductor and Compound Semiconductor, Nucl. Instrum. Methods B166-167 (2000) 399-403.
- K. Kitashita, R. Hagiwara, Y. Ito, O. Tamada, Crystal Structures of Some Cubic Hexafluorophosphates at Ambient Temperatures, J. Fluor. Chem., 101 (2000) 173-179.
- K. Kitashita, R. Hagiwara, Y. Ito, O. Tamada, Crystal Structure of $AgPF_6$ and $AgAsF_6$ at Ambient Temperatures, Solid. St. Sci., 2 (2000) 237-242.
- H. Kawamura, Y. Ito, Electrodeposition of Cohesive Carbon Films on Aluminum in a $LiCl-KCl-K_2CO_3$ Melt, J. Applied electrochem., 30 (2000) 571-574.
- T. Goto, R. Obata, Y. Ito, Electrochemical Formation of Iron Nitride Film in a Molten $LiCl-KCl-Li_3N$ System, Electrochim. Acta, 45 (2000) 3367-3373.
- R. Hagiwara, Y. Ito, Room Temperature Ionic Liquids of Alkylimidazolium Cations and Fluoroanions, J. Fluor. Chem., 105 (2000) 221-227.
- T. Hirashige, R. Hagiwara, Y. Ito, Chemical Stability and Electrochemical Activity of Xenon Difluoride in Propylene Carbonate, J. Fluor. Chem., 106 (2000) 205-209.
- T. Nohira, Y. Ito, Electrode Behavior of Metal Grade Si and Evolution of SiH_4 in Molten Alkali Halide Systems, Prog. Molten Salt Chem., 1 (2000) 373-378.
- T. Tsuda, T. Nohira, R. Hagiwara, Y. Ito, Electrochmeical Behavior of Lanthanum Ion in Basic $AlCl_3$ -EMIC Melts, Prog. Molten Salt Chem., 1 (2000) 543-547.
- T. Nishikiori, T. Nohira, T. Goto, Y. Ito, Effect of Absorbed Hydrogen on Surface Nitriding by Molten Salt Electrochemical Process, Electrochim. Solid-State Letter, 3 (2000) 552-554.
- G. Andou, K. Nakajima, K. Kimura, Secondary Electron Emission from Surface Channeled Protons at a $KCl(001)$

- Surface, Nucl. Instrum Methods B160 (2000) 16-20.
- K. Kimura, S. Ooki, G. Andou, K. Nakajima, Secondary Electron Emission by MeV He Ions Reflected from a SnTe(001) Surface: Separation of Above and Below Surface Processes, Phys. Rev. A 61 (2000) 012901.
- B. Brijs, J. Deleu, T. Conard, H. De Witte, W. Vandervorst, K. Nakajima, K. Kimura, I. Genchev, A. Bergmaier, L. Goergens, P. Neumaier, G. Dollinger, M. Doebeli, Characterization of Ultra Thin Oxynitrides: A General Approach, Nucl. Instrum. Methods B161-163 (2000) 429 - 434.
- K. Kimura, G. Andou, K. Nakajima, Surface-Plasmon-Assisted Secondary-Electron Emission from an Atomically Flat LiF(001) Surface, Nucl. Instrum Methods B164-165 (2000) 933 - 937.
- K. Nakajima, Y. Okazaki, K. Kimura, Oxidation of Si(001) Surfaces Studied by High-Resolution Rutherford Backscattering Spectroscopy, Jpn. J. Appl. Phys. 39 (2000) 4481-4482.
- K. Kimura, K. Nakajima, Y. Okazaki, H. Kobayashi, S. Miwa, K. Satori, Nitrogen Depth Profiling in Ultrathin Silicon Oxynitride Films with High-Resolution Rutherford Backscattering Spectroscopy, Jpn. J. Appl. Phys. 39 (2000) 4463 - 4465.
- Y. Susuki, M. Fritz, K. Kimura, M. Mannami, R. Garcia-Molina, I. Abril, Energy Loss of Fragment Protons Dissociated from 0.2- and 0.5-MeV/amu H₂⁺ Ions Incident in Carbon Foils, Phys. Rev. A62 (2000) 012902.
- K. Kimura, S. Usui, K. Nakajima, Secondary-Electron Emission by 0.5-MeV/u H, He, and Li Ions Specularly Reflected from a SnTe(001) Surface: Possibility of The Surface Track Potential Reducing The Secondary-Electron Yield at a Semiconductor Surface, Phys. Rev. A62 (2000) 062902.
- M. Hamdi, S. Hakamata, A. Ektessabi, Coating of Hydroxyapatite Thin Film by Simultaneous Vapor Deposition, Thin Solid Films, 377-378 (2000) 484-489.
- A. Ektessabi, K. Yamaguchi, Changes in Chemical States of PET Films Due to Low and High Energy Oxygen Ion Beam, Thin Solid Films, 377-378 (2000) 793-797
- A. Ektessabi, S. Shikine, M. Hamdi, N. Kitamura, M. Rokkum, C. Johansson, Friction Wear and Dissolution of Orthopedic Implant Systems, Intern. J. PIXE, 10 (2000) 37-45.
- J. Matsuo, H. Katsumata, E. Minami, I. Yamada, O₂ Cluster Ion-Assisted Deposition for Tin-Doped Indium Oxide Films, Nucl. Instrum Methods B161-163 (2000) 952-957.
- N. Toyoda, N. Hagiwara, J. Matsuo, I. Yamada, Surface Smoothing Mechanism of Gas Cluster Ion Beams, Nucl. Instrum. Methods B161-163 (2000) 980-985.
- T. Seki, J. Matsuo, I. Yamada, UHV-STM Study on Ion-Assisted Deposition, Nucl. Instrum. Methods B161-163 (2000) 1007-1010.
- T. Aoki, J. Matsuo, I. Yamada, Molecular Dynamics Simulation of Fluorine Cluster Ion Impact, Nucl. Instrum. Methods B164-165 (2000) 546-552.
- T. Seki, T. Aoki, J. Matsuo, I. Yamada, STM Observation of Surface Vacancies Created by Ion Impact, Nucl. Instrum. Methods B164-165 (2000) 650-655.
- Y. Gotoh, H. Tsuji, J. Ishikawa, Molecular Ion Implanter Equipped with Liquid-Metal Alloy Ion Source, Rev. Sci. Instrum., 71 (2000) 780-782.
- Y. Gotoh, H. Tsuji, J. Ishikawa, Application of Compact Microwave Ion Source to Low Temperature Growth of Transition Metal Nitride Thin Films for Vacuum Microelectronics, Rev. Sci. Instrum., 71 (2000) 1002-1005.
- S. Tamura, T. Kimoto, H. Matsunami, M. Okada, S. Kanazawa, I. Kimura, Nuclear Transmutation Doping of Phosphorus into 6H-SiC, Mat. Sci. Forum, 338-342 (2000) 849-852.
- N. Miyamoto, A. Saitoh, T. Kimoto, H. Matsunami, Y. Hishida, M. Watanabe, Formation of Deep pn Junctions by MeV Al or B Ion Implantations into 4H-SiC and Reverse Characteristics, Mat. Sci. Forum, 338-342 (2000) 1347-1350.
- T. Hatayama, T. Yoneda, T. Nakata, M. Watanabe, T. Kimoto, H. Matsunami, Vanadium ion Implanted Guard Rings for High-Voltage 4H-SiC Schottky Rectifiers, Jpn. J. Appl. Phys. 39 (2000) L1216-L1218.
- C. J. Ma, M. Kasahara, S. Tohno, H.-K. Kim, Characterization of Single Particles Sampled in Japan during the Asian Dust-storm Period, Atmos. Environ., 35/15 (2001) 2707-2714.
- R. Höller, M. Kasahara, H. Horvath, Aerosol Single-Scattering Albedo Determined by Horizontal Extinction Closure, J. Aerosol Res., Japan., 15 (2000) 246-255.
- M. Kasahara, S. Akashi, C. J. Ma, S. Tohno, Fixation and chemical analysis of single liquid particle, Nucleation and Atmospheric Aerosols 2000, Am. Institute of Physics (2000) 736-739.
- M. Kasahara, S. Akashi, C. J. Ma, S. Tohno, Y. Ohnishi, Physicochemical Properties of Single Fog and Rain Drops, Environ. Technol., 29 (2000) 822-827.
- C.J. Ma, M. Kasahara, K.C. Hwang, K.C. Choi, S.B. Choi, J.J. Lee, Physicochemical Characteristics of Single Asian Dust Storm Particles, J. Korean Soc. Atmos. Environ., 16, E (2000) 29-38.
- 1999**
- A. Itoh, H. Tsuchida, T. Majima, N. Imanishi, Ionization and Fragmentation of C₆₀ in Charge-Transfer Collisions of 2-MeV Lithium Ions, Phys. Rev. A 59 (1999) 4428-4437.
- A. Itoh, H. Tsuchida, T. Majima, S. Anada, A. Yogo, N. Imanishi, Multifragmentation of C₆₀ by Fast Li⁰ Atoms and Li¹⁻³⁺ Ions in Electron Loss and Capture Collisions, Phys. Rev. A 61 (1999) 012702-1-8.

- H. Tsuchida, A. Itoh, K. Miyabe, Y. Bitoh, N. Imanishi, Strong Projectile Dependence of C₆₀ Fragmentation by MeV-Energy Heavy Ions, *J. Phys. B*32 (1999) 5289-5297.
- A. Itoh, H. Tsuchida, T. Majima, A. Yogo, H. Ogawa, Equilibrium Charge Distributions of Lithium Ions Emerging from a Carbon Foil, *Nucl. Instrum. Methods B*159 (1999) 22-27.
- K. Yajima, T. Awata, R. Koizumi, M. Imai, A. Itoh, N. Imanishi, Generation of Quasimonochromatic Transition Radiation X Rays Using a K-Shell Photoabsorption Edge, *Nucl. Instrum. Methods A*435 (1999) 490-494.
- A. Itoh, H. Tsuchida, K. Miyabe, T. Majima, N. Imanishi, Ionization Cross Sections of C₆₀ by Fast Electron Impact, *J. Phys. B*32 (1999) 277 - 286.
- M. Kohno, K. Yoshida, K. Moritani, K. Norizawa, K. Enami, H. Kasajima, D. Ueyama, J. Takada, R. Matsushita, Trace Element Analysis of the Otani Collection's Dunhuang and Turfan Manuscripts by PIXE, *Int. J. PIXE*, 9 (1999) 453-464.
- I. Takagi, H. Fujita, K. Higashi, Experiments on Potential Energy Diagram for Hydrogen Isotopes on Nickel Surface, *J. Nucl. Mater.* 266-269 (1999) 697.
- J. Kondoh, S. Kikuchi, Y. Tomii, Y. Ito, Aging and Composition Dependence of Electron Diffraction Patterns in Yttria-Stabilized Zirconia: Relationship between Crystal Structure and Conductivity, *Physica B*262 (1999) 177-189.
- K. Hachiya, Y. Ito, First-Nearest-Neighbour Interatomic Potentials for Light-Actinide Metals, *Physica B*262 (1999) 233-239.
- K. Amezawa, N. Yamamoto, Y. Tomii, Y. Ito, Thermodynamic Properties and Single-Electrode Peltier Heats of a Li-Al Alloy in a LiCl-KCl Eutectic Melt, *J. Electrochem. Soc.*, 146 (1999) 1069-1074.
- T. Nohira, Y. Ito, Electrode Behavior of Si and Evolution of SiH₄ in Molten LiCl-KCl-LiH Systems, *Electrochim. 67* (1999) 635-642.
- H. Qiao, T. Nohira, Y. Ito, Electrochemical Behavior of Hydride Ion in a LiF-NaF-KF Eutectic Melt, *Electrochim. 67* (1999) 643-648.
- T. Nishikiori, T. Nohira, T. Goto, Y. Ito, Acceleration of Electrochemical Titanium Nitride Growth by Addition of LiH in a Molten LiCl-KCl-Li₃N System, *Electrochim. Solid-State Lett. 2* (1999) 278-280.
- R. Hagiwara, T. Hirashige, T. Tsuda, Y. Ito, Acidic 1-Ethyl-3-Methyl Imidazolium Fluoride; A New Room Temperature Ionic Liquid, *J. Fluor. Chem.*, 99 (1999) 1-3.
- K. Hachiya, Y. Ito, Interatomic Potentials for Rare-Earth Metals, *J. Phys. Condens. Matter*, 11 (1999) 6543-6551.
- S. Terada, K. Higaki, I. Nagashima, Y. Ito, Addition of Potassium Tungstate to the Electrolyte of a Molten Carbonate Fuel Cell, *J. Power Sources*, 83 (1999) 178-185.
- S. Terada, K. Higaki, I. Nagashima, Y. Ito, Stability and Solubility of Electrolyte Matrix Support Material for Molten Carbonate Fuel Cells, *J. Power Sources*, 83 (1999) 227-230.
- K. Kimura, A. Agarwal, H. Toyofuku, K. Nakajima, H.-J. Gossmann, Amorphization of Si(001) by Ultra Low Energy (0.5 to 5 keV) Ion Implantation Observed with High-Resolution RBS, *Nucl. Instrum. Methods B*148 (1999) 284-288.
- A.M. Ektessabi, T. Sano, Sputtering and Thermal Effect During Ion Micro- Beam Patterning of Polymeric Films, *Rev. Sci. Instr.* 71 (1999).
- A.M. Ektessabi, S. Fujisawa, K. Takada, K. Yoshida, H. Murayama, R-W Shin, Analysis of the Brain Tissues from a Patient with Alzheimer's Disease and EFFECTS of Chelating Treatment, *Int. J. PIXE*, 9 (1999) 297-303.
- H. Katsumata, J. Matsuo, T. Nishihara, T. Tachibana, K. Yamada, M. Adachi, E. Minami, I. Yamada, Optical Thin Film Formation by Gas Cluster Ion Beam Assisted Deposition, Application of Accelerators in Research and Industry, AIP press, New York, (1999) 409-412.
- J. Matsuo, N. Toyoda, M. Saito, T. Aoki, T. Seki, I. Yamada, Novel Analysis Techniques Using Cluster Ion Beams, Application of Accelerators in Research and Industry, AIP press, New York, (1999) 429- 432.
- A. Nishiyama, M. Adachi, N. Toyoda, N. Hagiwara, J. Matsuo, I. Yamada, Surface Smoothing of CVD-Diamond Membrane for X-Ray Lithography by Gas Cluster Ion Beam, Application of Accelerators in Research and Industry, AIP press, New York, (1999) 421-424.
- I. Yamada, J. Matsuo, N. Toyoda, T. Aoki, Applications of Cluster Ion Implantation in Micro- Electronics Devices, Application of Accelerators in Research and Industry, AIP press, New York, (1999) 379-382.
- K. Murai, S. Tamura, M. Kiuchi, N. Umesaki, E. Minami, J. Matsuo, I. Yamada, Oxide Film Deposition by Gas-Cluster Ion Assisted Deposition, Application of Accelerators in Research and Industry, AIP press, New York, (1999) 425-428.
- Z. Insepov, I. Yamada, Surface Processing with Ionized Cluster Beams: Computer Simulation, *Nucl. Instrum. Methods B*153 (1999) 199-208.
- T. Aoki, T. Seki, J. Matsuo, Z. Insepov, I. Yamada, Cluster Size Dependence of the Impact Process on a Carbon Substrate, *Nucl. Instrum. Methods B*153 (1999) 264-269.
- K. Goto, J. Matsuo, Y. Tada, T. Sugii, I. Yamada, Decaborane (B₁₀H₁₄) Ion Implantation Technology for Sub-0.1μm PMOSFET's, *IEEE Trans. on Electron Devices*, 46 (1999) 683-689.
- I. Yamada, Low Energy Cluster Ion Beam Modification of Surfaces, *Nucl. Instrum. Methods B*148 (1999) 1-11.
- Z. Insepov, R. Manory, J. Matsuo, I. Yamada, Ionised Cluster Beam as a Hardness Measurement Tool, *Nucl. Instrum. Methods B*148 (1999) 47-52.
- Z. Insepov, I. Yamada, Surface Modification with Ionised

Cluster Beams: Modeling, Nucl. Instrum. Methods B148 (1999) 121-125.

N. Toyoda, N. Hagiwara, J. Matsuo, I. Yamada, Surface Treatment of Diamond Films with O₂ Cluster Ion Beams, Nucl. Instrum. Methods B148 (1999) 639-644.

H. Tsuji, S. Nakamura, Y. Gotoh, J. Ishikawa, Dependence of carbon Interatomic Bonds on Incident Ion Energy in Carbon Negative Ion Beam Deposited Films, Thin Solid Films, 343/344 (1999) 17-20.

H. Tsuji, T. Yoshihara, S. Nakamura, Y. Gotoh, J. Ishikawa, CN Molecular Negative-Ion Beam Deposition and Ion Energy Dependence of Atomic Bonds Between Carbon and Nitrogen in the Film, Nucl. Instrum. Methods B148 (1999) 650-654.

Y. Gotoh, M. Nagao, T. Ura, H. Tsuji, J. Ishikawa, Ion Beam Assisted Deposition of Niobium Nitride Thin Films for Vacuum Microelectronics Devices, Nucl. Instrum. Methods B148 (1999) 925-929.

H. Tsuji, H. Satoh, S. Ikeda, N. Ikemoto, Y. Gotoh, J. Ishikawa, Negative-Ion Beam Surface Modification of Tissue-Culture Polystyrene Dishes for Change Hydrophobic and Cell Attachment Property, Nucl. Instrum. Methods B148 (1999) 1136-1140.

Y. Gotoh, N. Fujita, H. Tsuji, J. Ishikawa, S. Nagamachi, M. Ueda, Self-Aligned Fabrication of Vertical-Type Micro Field Emitter with a Volcano-Shaped Gate Electrode Protruding towards the Cathode by Focused Ion Beam Sputter Etching and Deposition, J. Micromech. Microengng. 9 (1999) 64-368.

M. Nagao, Y. Gotoh, T. Ura, H. Tsuji, J. Ishikawa, Influence of the Composition of the NbN_x Thin Film Field Emitter Array on the Emission Characteristics, J. Vac. Sci. Technol. B 17 (1999) 623-626.

M. Kasahara, Characterization of Atmospheric Aerosols and Aerosol Studies Applying PIXE Analysis, Analytical Chemistry of Aerosols (1999) 145-171.

M. Kasahara, T. Chatani, S. Tohno, R. Höller, Physical and Chemical Characteristics of Atmospheric Aerosols in Kyoto, J. Aerosol Sci. 30 (1999) S257-S258.

Y. Ikeda, N. Arai, W. Sakamoto, T. Murayama, Occurrence of an Unusual Accessory Growth Center on the Statolith of the Japanese Common Squid *Todarodes pacificus*, Fisheries Sci., 65 (1999) 159-160.

Y. Ikeda, N. Arai, W. Sakamoto, M. Mitsuhashi, K. Yoshida, Preliminary Report on PIXE Analysis for Trace Elements of Octopus *Dofleini* Satoliths, Fisheries Sci., 65 (1999) 161-162.

N. Arai, Y. Mitani, W. Sakamoto, K. Yoshida, Y. Mokuno, N. Baba, PIXE Analysis of Trace Elements in Northern Fur Seal Teeth, Nucl. Instrum. Methods Phys. Res. B150 (1999) 267-271.

1998

N. Imanishi, S. Kyoh, A. Shimizu, M. Imai, A. Itoh,

Electronic Sputtering Process of SiO₂ under Heavy Ion Bombardment, Nucl. Instrum. Methods B135 (1998) 424-429.

N. Imanishi, T. Ohdaira, K. Hadano, A. Aratake, M. Imai, A. Itoh, Neutralization of Intermediate-Velocity Li Emerging from Cs- and Oxygen-Covered Si(100) and GaAs(110) Surfaces, Nucl. Instrum. Methods B135 (1998) 413-418.

N. Imanishi, K. Hadano, T. Ohdaira, M. Imai, A. Itoh, Crystallographic Azimuthal-Angle Dependence of the Neutral Fraction of Hydrogen Emerging from GaAs(110), Nucl. Instrum. Methods B136 (1998) 1135-1139.

M. Ogura, T. Higuchi, M. Imai, A. Itoh, N. Imanishi, The Dose Effect of Silicon Implantation on Hydrogen Trapping in Aluminum, Nucl. Instrum. Methods B136 (1998) 478-482.

M. Ogura, N. Yamaji, Higuchi, M. Imai, A. Itoh, N. Imanishi, K. Nakata, Thermal Behavior of Hydrogen in Helium-Implanted High-Purity SUS316L, Nucl. Instrum. Methods B136 (1998) 483-487.

H. Tsuchida, A. Itoh, Y. Nakai, K. Miyabe, N. Imanishi, Cross Sections for Ionization and Fragmentation of C₆₀ by Fast H⁺ Impact, J. Phys. B31 (1998) 5383-5391.

Y. Nakai, A. Itoh, T. Kambara, Y. Bitoh, Y. Awaya, Y. Yamazaki, Fragementation of C₆₀ in Close Collision with Fast Carbon Ions, RIKEN Review, 17 (1998) 55-56.

H. Tsuchida, A. Itoh, Y. Nakai, K. Miyabe, M. Imai, N. Imanishi, Effects of Collective Excitation on Ionization and Fragementation of C₆₀ by High Energy H⁺ Impacts, RIKEN Review, 17 (1998) 57-58.

K. Kawatsura, M. Sataka, S. Kitazawa, K. Komaki, Y. Yamazaki, T. Azuma, Y. Kanai, M. Imai, H. Shibata, H. Tawara, J. E. Hansen, I. Kadar, N. Stolterfoht, High Resolution L Auger Electron Spectra from Fast Projectile Ions Studied by Zero-Degree Electron Spectroscopy, J. Electron. Spectrosc. Relat. Phenom. 88-91 (1998) 83-86.

K. Kawatsura, M. Imai, M. Sataka, S. Kitazawa, K. Komaki, Y. Yamazaki, T. Azuma, H. Shibata, Y. Kanai, H. Tawara, N. Stolterfoht, Electron Spectra from Fast Projectile Si and S Ions Studied by Zero-Degree Electron Spectroscopy, J. Electron. Spectrosc. Relat. Phenom. 88-91 (1998) 87-90.

A. Itoh, H. Tsuchida, K. Miyabe, T. Majima, M. Imai, N. Imanishi, Electron Impact Ionization of C₆₀ Molecule, Atomic Collision Research in Japan, Progress Report 24 (1998) 23-25.

T. Majima, A. Itoh, S. Anada, A. Yogo, M. Imai, N. Imanishi, H. Tsuchida, Fragmentation of C₆₀ Molecule in Charge-Changing Collision with 2MeV Li²⁺, Atomic Collision Research in Japan, Progress Report 24 (1998) 49-50.

H. Ota, S. Ninomiya, M. Imai, A. Itoh, N. Imanishi, TOF Study on Electronic Sputtering of SiO₂ Bombarded by MeV Energy Heavy Ions, Atomic Collision Research in Japan, Progress Report 24 (1998) 52-53.

H. Tsuchida, A. Itoh, K. Miyabe, M. Imai, N. Imanishi, Y.

- Nakai, Cross Section Measurements in High-Energy H⁺ Impact Ionization and Fragmentation of C₆₀, Atomic Collision Research in Japan, Progress Report 24 (1998) 54-55.
- A. Itoh, H. Tsuchida, T. Majima, M. Imai, N. Imanishi, Fragmentation of C₆₀ in Collisions with 2 MeV Si⁽⁰⁻⁴⁾⁺ Ions Accompanying Charge-Changing Process, Atomic Collision Research in Japan, Progress Report 24 (1998) 56-57.
- T. Awata, K. Yajima, R. Koizumi, M. Imai, A. Itoh, N. Imanishi, T. Sugiyama, T. Shirai, A. Noda, Study of Resonant transition Radiation X Rays, Beam Sci. Technol. 3 (1998) 10-13.
- M. Imai, M. Satake, S. Kitazawa, K. Komaki, Y. Yamazaki, T. Azuma, K. Kawatsura, H. Shibata, Y. Kanai, H. Tawara, High-Resolution Zero-Degree Electron Spectroscopy (IV), JAERI Tandem & V.D.G. Annual Report 1997 (1998) 67-68.
- Z. Kawara, I. Kataoka, A. Serizawa, Y.J. Ko, O. Takahashi, Analysis of forced convective CHF based on two-fluid and three-fluid model, Heat Trans. 1998, Vol.2 (1998) 103-108.
- I. Takagi, K. Toyoda, M. Katayama, H. Fujita, K. Higashi, Experiment on Atomic Hydrogen Reflection by Use of a Permeation Probe, J. Nucl. Mater. 258-263(1998) 1082-1086.
- I. Takagi, H. Hashimoto, H. Fujita, K. Higashi, An Experimental Study on the Potential Energy Diagram for Hydrogen Isotopes on Copper Surfaces, Fusion Eng. Des. 41(1998) 73-78.
- K. Nasako, Y. Ito, N. Hiro, M. Osumi, Stress on a reaction vessel by the swelling of a hydrogen absorbing alloy, J. Alloys Compd. 264 (1998) 271-276
- R. Hagiwara, Y. Ito, Electrochemical behavior of a graphite anode in fluorousulfonic acid at -78°C, J. Fluorine Chem. 87 (1998) 185-188
- J. Kondoh, T. Kawashima, S. Kikuchi, Y. Tomii, Y. Ito, Effect of aging on yttria-stabilized zirconia I: A study of its electrochemical properties, J. Electrochim. Soc. 145, (1998) 1527-1536
- J. Kondoh, S. Kikuchi, Y. Tomii, Y. Ito, Effect of aging on yttria-stabilized zirconia II: A study of the effect of the microstructure on conductivity, J. Electrochim. Soc., 145 (1998) 1536-1550
- J. Kondoh, S. Kikuchi, Y. Tomii, Y. Ito, Effect of aging on yttria-stabilized zirconia III: A study of the effect of local structures on conductivity, J. Electrochim. Soc. 145 (1998) 1550-1560.
- R. Hagiwara, K. Tozawa, Y. Ito, Reactions of graphite hexafluoroarsenates with fluorobases in anhydrous hydrogen fluoride, J. Fluorine Chem. 88 (1998) 201-206.
- T. Nohira, Y. Ito, Thermodynamic Properties of Pd-Li Alloys, J. Electrochim. Soc. 145 (1998) 785-790.
- Y. Ito, T. Goto, Thermodynamic and Kinetic Properties of the N₂ Gas Electrode in a Moten LiCl-KCl-Li₃N System, Molten Salt Forum 5-6 (1998) 279-286.
- K. Amezawa, S. Kjelstrup, T. Norby, Y. Ito, Protonic and Native Conduction in Sr-Substituted LaPO₄ Studied by Thermoelectric Power Measurements, J. Electrochim. Soc. 145 (1998) 3313-3319.
- K. Nasako, Y. Ito, M. Osumi, Intermittent heat transport using hydrogen absorbing alloys, J. Hydrogen Energy 23 (1998) 815-824.
- K. Nasako, Y. Ito, M. Osumi, Long-distance heat transport system using a hydrogen compressor, J. Hydrogen Energy 23 (1998) 911-919.
- K. Nasako, Y. Ito, N. Hiro, M. Osumi, Relaxation of internal stress generated in hydrogen alloy vessels, J. Hydrogen Energy 23 (1998) 921-929.
- S. Terada, I. Nagashima, K. Higaki, Y. Ito, Stability of LiAlO₂ as electrolyte matrix for molten carbonate fuel cells, J. Power Sources, 75,x (1998) 185-188.
- T. Goto, Y. Ito, Electrochemical Reduction of Nitrogen Gas in a Molten Chloride System, Electrochim. Acta, 43 (1998) 3379-3384.
- H. Kawamura, K. Moritani, Y. Ito, Discharge electrolysis in molten chloride: formation of fine silver particles, Plasmas and Ions, 1 (1998) 3379-3384.
- K. Hachiya, Y. Ito, Molecular dynamics simulations of the self-diffusion phenomena in Ni₂Y intermetallic phase, J. Alloys Compd. 279 (1998) 171-178
- H. Kawamura, K. Moritani, Y. Ito, Formation of Fine Nickel Particles by Discharge Electrolysis in Molten Chloride System, J. Jpn. Soc. Powder Metall., 45 (1998) 1142-1147.
- G. Andou. S. Ooki, K. Nakajima, K. Kimura, Secondary electron emission from SnTe(001) and KCl(001) surfaces induced by specularly reflected protons, Application of accelerators in Research and Industry, AIP press, New York (1999) 204-207.
- K. Kimura, K. Nakajima, H. Imura, Hydrogen depth profiling with sub-nm resolution in high-resolution ERD, Nucl. Instrum. Methods B140 (1998) 397-401.
- K. Kimura, M. Mannami, Resonant coherent excitation of surface channeled ions, Phys. Rev. A57 (1998) 1121-1125.
- A. Ohtake, L.H. Kuo, K. Kimura, S. Miwa, T. Yasuda, C. Jin, T. Yao, K. Nakajima, K. Kimura, Defect generation in layer-by-layer-grown ZnSe films on Te-terminated GaAs(001) surfaces, Phys. Rev. B57 (1998) 1410-1413.
- K. Kimura, S. Ooki, G. Andou, K. Nakajima, M. Mannami, Secondary electron emission from specularly reflected MeV protons, Phys. Rev. A 58 (1998) 1282-1286.
- K. Nakajima, K. Kimura, M. Mannami, The (111) surface of PbTe observed by high-resolution RBS, Nucl. Instrum. Methods B135 (1998) 350-354.
- K. Kimura, S. Ooki, H. Ida, M. Mannami, Resonant coherent excitation of surface planar channeled B⁴⁺ ions, Nucl. Instrum. Methods B135 (1998) 419-423.

- K. Kimura, K. Nakajima, M. Mannami, Some applications of high-resolution RBS and ERD using a magnetic spectrometer, Nucl. Instrum. Methods B136/138 (1998) 1196-1202.
- Y. Hattori, K. Kobayashi, S. Kawasaki, F. Okino, K. Yanagiuchi, A. Tsuyoshi, M. Nakayama, K. Nakajima, K. Kimura, H. Touhara, Direct thermal fluorination of DLC surfaces, Carbon 36 (1998) 1399-1401.
- K. Kimura, G. Andou, K. Nakajima, Enhancement of secondary-electron production process in front of insulator surfaces, Phys. Rev. Lett. 81 (1998) 5438-5441.
- A.M. Ektessabi, M. Rokkum, C. Johansson, T. Albrektsson, L. Sennerby, H. Saisho, S. Honda, Application of synchrotron radiation in investigation of metal-ion release from a hip replacement prosthesis, J. Synchrotron Rad. 5 (1998) 1136-1138.
- T. Otsuka, A.M. Ektessabi, E. Ishikawa, H. Hoshi, Corrosion resistance and characteristics of oxide film of anodized Ti-6Al-7Nb for biomedical use, Jpn. J. Biomater. 16 (1998) 120.
- K. Komai, K. Minoshima, K. Tanaka, Influence of Electron Radiation on Tensile and Impact Fracture Mechanism of Carbon/PEEK Composite, Trans. Jpn. Soc. Mech. Eng., 64 (1998) 625.
- I. Yamada, Progress, Demands and Prospects for Advanced Ion Beam Processing, Mater. Chem. Phys. 54, (1998) 5-14.
- D. Takeuchi, T. Seki, T. Aoki, J. Matsuo, I. Yamada, Cluster Ion Bombardment on Atomically Flat Au(111) Solid Surfaces, Mater. Chem. Phys. 54 (1998) 76-79.
- N. Shimada, T. Aoki, J. Matsuo, I. Yamada, K. Goto, T. Sugui, Reduction of Boron Transient Enhanced Diffusion in Silicon by Low-Energy Cluster Ion Implantation, Mater. Chem. Phys. 54 (1998) 80-83.
- N. Toyoda, H. Kitani, N. Hagiwara, J. Matsuo, I. Yamada, Surface Smoothing Effects with Reactive Cluster Ion Beams, Mater. Chem. Phys. 54 (1998) 106-110.
- T. Aoki, T. Seki, J. Matsuo, Z. Insepov, I. Yamada, Molecular Dynamics Simulation of a Carbon Cluster Ion Impacting on a Carbon Surface, Mater. Chem. Phys. 54 (1998) 139-142.
- T. Seki, T. Aoki, M. Tanomura, J. Matsuo, I. Yamada, Energy Dependence of a Single Trace Created by C₆₀ Ion Impact, Mater. Chem. Phys. 54 (1998) 143-146
- Z. Insepov, I. Yamada, M. Sosnowski, Sputtering and Smoothing of Metal Surface with Energetic Gas Cluster Beams, Mater. Chem. Phys. 54 (1998) 234-237.
- M. Akizuki, J. Matsuo, W. Qin, T. Aoki, M. Harada, S. Ogasawara, K. Yodoshi, I. Yamada, Low-Temperature Formation of Perovskite PbTiO₃ Films by O₂ Cluster Ion-Assisted Deposition, Mater. Chem. Phys. 54 (1998) 255-257.
- W. Qin, R.P. Howson, M. Akizuki, J. Matsuo, G.H. Takaoka, I. Yamada, Indium Oxide Film Formation by O₂ Cluster Ion-Assisted Deposition, Mater. Chem. Phys. 54 (1998) 258-261.
- N. Toyoda, H. Kitani, N. Hagiwara, T. Aoki, J. Matsuo, I. Yamada, Angular Distributions of the Particles Sputtered with Ar Cluster Ions, Mater. Chem. Phys. 54 (1998) 262-265.
- I. Yamada, Cluster Ion Beam Processing, Surface Coatings for Advanced Materials, Mater. Sci. Forum 246 (1998) 239-260.
- I. Yamada, Gas Cluster Ion Beams for Processing New Materials, Physics of Clusters, 3 (1998) 74-85.
- Y. Gotoh, T. Ura, M. Nagao, H. Tsuji, J. Ishikawa, Properties of niobium nitride thin films as a candidate for cathode material of vacuum microelectronics devices, Shinku, 42[3] (1999) 305-308.
- M. Nagao, Y. Fujimori, Y. Gotoh, H. Tsuji, J. Ishikawa, Emission characteristics of ZrN thin film field emitter array fabricated with ion beam assisted deposition technique, J. Vac. Sci. Technol. B16 (1998) 829-832.
- H. Tsuji, H. Satoh, S. Ikeda, N. Ikemoto, Y. Gotoh, J. Ishikawa, Surface modification by silver-negative-ion implantation for controlling cell-adhesion property of polystyrene, Surf. Coat. Technol. 103/104 (1998) 124-128.
- H. Tsuji, J. Ishikawa, T. Tomita, T. Yoshihara, Y. Gotoh, Extraction of molecular negative-ion beams of CN from rf plasma-sputter-type heavy negative ion source for negative-ion beam deposition, Rev. Sci. Instrum. 69[2] II (1998) 884-886.
- H. Tsuji, S. Nakamura, Y. Gotoh, J. Ishikawa, Dependence of carbon interatomic bonds on incident ion energy in carbon negative ion beam deposited films, Thin Solid Films, 343-344 (1999) 17-20.
- T. Kimoto, O. Takemura, H. Matsunami, T. Nakata, M. Inoue, Al⁺ and B⁺ implantations into 6H-SiC epilayers and application to pn junction diodes, J. Electron. Mater. 27 (1998) 358-364.
- T. Kimoto, A. Itoh, N. Inoue, O. Takemura, T. Yamamoto, T. Nakajima, H. Matsunami (invited), Conductivity control of SiC by In-situ doping and ion implantation, Mater. Sci. Forum, 264-268 (1998) 675-680.
- O. Takemura, T. Kimoto, H. Matsunami, T. Nakata, M. Inoue, Implantation of Al and B acceptors into α -SiC and pn junction diodes, Mater. Sci. Forum 264-268 (1998) 705-708.
- M. Kasahara, Physical and chemical characteristics of atmosphericaerosols and their effects on the global environment, in Aerosols: Generation and role in medicine, industry and environment, Allied Pub. Lim., New Delhi, (1998) 207-223
- S. Chatani, M. Kasahara, K. Yamamoto S. Tohno, Characterization of atmospheric aerosols applying PIXE Analysis, J. Aerosol Res., 13[4] (1998) 354-360.
- T. Aoki, Y. Katayama, A. Kagawa, S. Koh, K. Yoshida, Measurement of trace elements in tree rings using the PIXE method, Nucl. Instrum. Methods B136-138 (1998) 919-922.

Y. Ikeda, N. Arai, W. Sakamoto, K. Yoshida, Microchemistry of statoliths of the Japanese common squid *todarodes pacificus* with special reference to its relation to the vertical temperature profiles of squid habitt, *Fisheries Sci.* 64 (1998) 179-184.

K. Moritani, T. Magari, H. Moriyama, Tritium Release Kinetics of Lithium Silicates with Irradiation Defects, *Fusion Eng. Design*, 39&40 (1998) 675-683.

H. Moriyama, S. Tanaka, K. Noda, Irradiation Effects in Ceramic Breeder Materials, *J. Nucl. Mater.* 258-263 (1998) 587-594.

K. Moritani, H. Moriyama, Production Behavior of Irradiation Defects in Ternary Lithium Ceramics under Ion Beam Irradiation, *J. Nucl. Mater.* 258-263 (1998) 525-530.

1997

A. Itoh, H. Tsuchida, K. Miyabe, M. Imai, N. Imanishi, Kinetic Energies of Fragment Ions Produced in Collisions of 2 MeV Si⁴⁺ with C₆₀, *Nucl. Instrum. Methods* B129 (1997) 363-368.

A. Itoh, H. Tsuchida, K. Miyabe, M. Imai, N. Imanishi, Kinetic Energies of Carbon Cluster Ions Produced in C₆₀-Multifragmentation by Heavy Ion Collisions, *Phys. Scr.* T73 (1997) 289-290.

M. Imai, M. Satake, Y. Yamazaki, K. Komaki, K. Kawatsura, Y. Kanai, Electron Spectra from Highly Excited Si Ions, *Phys. Scr.* T73 (1997) 93-95.

M. Ogura, N. Nakatani, N. Yamaji, M. Imai, A. Itoh, N. Imanishi, The Annealing Behavior of Hydrogen Implanted into Al-1.5%Si Alloy, *Radiat. Phys. Chem.* 49 (1997) 645-649.

M. Ogura, N. Yamaji, M. Imai, A. Itoh, N. Imanishi, Trapping of Hydrogen in Silicon-Implanted Aluminum, *Nucl. Instrum. Methods* B121 (1997) 470-473.

T. Awata, K. Yajima, T. Tanaka, M. Imai, A. Itoh, N. Imanishi, M. Oyamada, S. Urasawa, T. Nakazato, K. Yoshida, K. Nakayama, P. Potylitsin, Resonant Effects of Transition Radiation Emitted from Thin Foil Stacks Using Electron Beam, *Radiat. Phys. Chem.* 50 (1997) 207-212.

M. Saito, Y. Haruyama, K. Yoshida, A. Itoh, N. Imanishi, Projectile Scattering-Angle Dependence of Multiple Ionization Cross Sections in 2 MeV C³⁺ + Ar Collisions, *J. Phys. B30* (1997) 115-124.

M. Saito, Y. Haruyama, K. Yoshida, A. Itoh, N. Imanishi, Projectile Scattering angle dependence of multiple ionization cross sections in collisions of C³⁺ with Ar, *Phys. Scr.* T73 (1997) 221.

K. Kawatsura, M. Satake, M. Imai, K. Komaki, Y. Yamazaki, K. Kuroki, Y. Kanai, S. Arai, N. Stolterfoht, Low-Energy Rydberg Electron Spectra from 64 MeV S⁹⁺ + He and C-Foil Collisions Using Zero-Degree Electron Spectroscopy, *Nucl. Instrum. Methods* B124 (1997) 381-385.

Y. Nakai, A. Itoh, T. Kambara, Y. Bitoh, Y. Awaya, The

Fragment Ion Distribution of C₆₀ in Close Collision with Fast Carbon Ions, *J. Phys. B30* (1997) 3049.

K. Nishio, H. Yamamoto, I. Kanno, I. Kimura, Y. Nakagome, A system for correlation measurement of fission fragments and prompt neutrons for thermal neutron induced fission, *Nucl. Instrum. Methods* A385 (1997) 171.

S. Yamamoto, K. Kobayashi, M. Miyoshi, I. Kimura, I. Kanno, N. Shinohara, Y. Fujita, Fission cross-section measurements of 241Am between 0.1eV and 10keV with lead slowing-down spectrometer and at thermal neutron energy, *Nucl. Sci. Eng.* 126 (1997) 201.

M. Kohno et al., Origin of Bromine in Ancient Sutras of the Otani Collection - PIXE Application to Preservation of Cultural Assets -, *Intern. J. PIXE*, 7[3&4] (1997) 241-251.

I. Kataoka, S. Kodama, A. Tomiyama, A. Serizawa, Study on analytical prediction of forced convective CHF based on multi-fluid model, *Nucl. Eng. Des.* 175 (1997) 107-117

A. Serizawa, K. Huda, Y. Yamada, I. Kataoka, Experiment and numerical simulation of bubbly two-phase flow across horizontal and inclined rod bundles, *Nucl. Eng. Des.* 175 (1997) 131-146

I. Takagi, M. Hashizumi, A. Yamagami, K. Maehara, K. Higashi, Effects of the solid-solid interface on the thermal behavior of deuterium in zircaloy cladding tubes, *J. Nucl. Mater.* 248 (1997) 306-310.

T. Nohira, Y. Ito, Electrochemical Hydrogen Absorbing Behavior of Pd and Pd-Li Alloys in a Molten LiCl-KCl-LiH System, *J. Electrochem. Soc.* 144 (1997) 2290-2295.

T. Goto, M. Tada, Y. Ito, Electrochemical Behavior of Nitride Ions in a Molten Chloride System, *J. Electrochem. Soc.*, 144 (1997) 2271-2276.

J. Kondoh, S. Kikuchi, Y. Tomii, Y. Ito, Thin film quantitative microanalysis of the cation composition in ceramics with the ultrathin-window-type-energy-dispersive X-ray spectroscopy in a transmission electron microscope, *Philos. Mag. B76* (1997) 23-45.

K. Nakajima, Y. Fujii, K. Narumi, K. Kimura, M. Mannami, Oscillations of the intensity of scattered energetic ions from growing surface, Advances in the Understanding of Crystal Growth Mechanisms edited by T. Nishinaga et al., Elsevier Sci. B.V. (1997) 309-321.

A. Ohtake, L.H. Kuo, T. Yasuda, K. Kimura, S. Miwa, T. Yao, K. Nakajima, K. Kimura, Growth mode and defect generation in ZnSe heteroepitaxy on Te-terminated GaAs(001) surfaces, *J. Vac. Sci. Technol. B15* (1997) 1254 - 1259.

T. Yao, F. Lu, M.W. Cho, K.W. Koh, Z. Zhu, L.H. Kuo, T. Yasuda, A. Ohtake, S. Miwa, K. Kimura, K. Nakajima, K. Kimura, Heterovalent ZnSe/GaAs Interfaces, *Phys. Stat. Sol.* 202 (1997) 657-668.

M. Mannami, K. Narumi, F. Katoh, Y. Fujii, K. Kimura, Energy Loss of Scattered Ions at Glancing-angle Incidence on the Crystal Surface, *Radiat. Phys. Chem.* 49 (1997) 623-629.

- M. Mannami, K. Kimura, K. Narumi, M. Yamamoto, S. Naito, Surface channeling of fast ions, Nucl. Instrum. Methods B125 (1997) 97-101.
- K. Kimura, H. Ida, M. Fritz, M. Mannami, Resonant coherent excitation of surface channeled B^{4+} ions, Application of Accelerators in Research and Industry, AIP press, New York (1997) 149-152.
- K. Nakajima, K. Kimura, M. Mannami, Thermal vibration of surface atoms observed by high-resolution RBS, Application of Accelerators in Research and Industry, AIP press, New York (1997) 623-626.
- K. Kimura, M. Fritz, M. Mannami, Direct measurement of charge state distribution of 2-MeV carbon ions in the vicinity of a SnTe(001) surface, Phys. Scr., T73 (1997) 332-334.
- A.M. Ektessabi, J. Mouhyi, P. Louvette, L. Sennerby, Investigation f corrosion and ion release from titanium dental implant, Intern. J. PIXE, 7[3&4] (1997) 179.
- A.M. Ektessabi, K. Io, Y. Kakino, Variation of interface morphology of multilayers irradiated by high energy ion beams, J. Jpn Soc. Prec. Eng. 63 (1997) 997.
- J. Pan, C. Leygraf, D. Thierry, A.M. Ektessabi, Corrosion resistance for biomaterial application of TiO₂ films deposited on titanium and stainless steel by ion-beam-assisted sputtering, J. Biomed. Mat. Res. 35 (1997) 309.
- A. Wennerberg, A. Ektessabi, T. Albrektsson, C. Johansson, B. Andersson, A 1-year follow-up of implants of differing surfaces roughness placed in rabbit bone, Int. J. Oral & Maxillofacial Implants 12 (1997) 486.
- A.M. Ektessabi, Surface modification of biomedical implants using ion-beam assisted sputter deposition, Nucl. Instrum. Methods B127/128 (1998) 1008.
- ## 1996
- A.M. Ektessabi, Application of micro beam PIXE in biomedical implant research, Intern. J. PIXE 6 (1996) 167.
- Z. Insepov, I. Yamada, M. Sosnowski, Surface Smoothing with Energetic Cluster Beams, J. Vac. Sci. Technol. A15(3) (1997) 981-984.
- J. Matsuo, M. Akizuki, I. Yamada, Cluster Ion Assisted Thin Film Formation, Application of Accelerators in Research and Industry, CP392 (1997) 499-502.
- I. Yamada, Prospects of Materials Processing by Gas Cluster Ion Beams, Application of Accelerators in Research and Industry, CP392 (1997) 479-482.
- N. Toyoda, J. Matsuo, I. Yamada, The Sputtering Effects of Cluster Ion Beams, Application of Accelerators in Research and Industry, CP392 (1997) 483-486.
- D. Takeuchi, T. Aoki, J. Matsuo, I. Yamada, Non-Linear Effects in High Energy Cluster Ion Implantation, Application of Accelerators in Research and Industry, CP392 (1997) 491-494.
- Z. Insepov, M. Sosnowski, I. Yamada, Simulation of Cluster Impacts on Silicon Surface, Nucl. Instrum. Methods B127/128 (1997) 269-272.
- Z. Insepov, I. Yamada, Computer Simulation of Crystal Surface Modification by Accelerated Cluster Ion Impacts, Nucl. Instrum. Methods B121 (1997) 44-48.
- T. Aoki, J. Matsuo, Z. Insepov, I. Yamada, Molecular Dynamics Simulation of Damage Formation by Cluster Ion Impact, Nucl. Instrum. Methods B121 (1997) 49-52.
- M. Akizuki, J. Matsuo, I. Shin, M. Harada, S. Ogasawara, A. Doi, I. Yamada, Irradiation Effects of O₂ Cluster Ions for Oxide Film Formation, Nucl. Instrum. Methods B121 (1997) 166-169.
- D. Takeuchi, N. Shimada, J. Matsuo, I. Yamada, Shallow Junction Formation by Polyatomic Cluster Ion Implantation, Nucl. Instrum. Methods B121 (1997) 345-348.
- J. Matsuo, N. Toyoda, M. Akizuki, I. Yamada, Sputtering of Elemental Metals by Ar Cluyster Ions, Nucl. Instrum. Methods B121 (1997) 459-463.
- M. Tanomura, D. Takeuchi, J. Matsuo, G.H. Takaoka, I. Yamada, Fullerene Ion Irradiation to Silicon, Nucl. Instrum. Methods B121 (1997) 480-483.
- G.H. Takaoka, T. Hamano, K. Fukushima, J. Matsuo, I. Yamada, Preparation and Catalytic Activity of Nano-Scale Au Islands Supported on TiO₂, Nucl. Instrum. Methods B121 (1997) 503-506.
- K. Fukushima, G.H. Takaoka, J. Matsuo, I. Yamada, Effect on CO Oxidation Activity of Nano-Scale Au Islands and TiO₂ Support Prepared by the Ionized Cluster Beam Method, Jpn. J. Appl. Phys. 36 (1997) 813-818.
- N. Toyoda, H. Kitani, J. Matsuo, I. Yamada, Reactive Sputtering by SF₆ Cluster Ion Beams, Nucl. Instrum. Methods B121 (1997) 484-488.
- H. Kitani, N. Toyoda, J. Matsuo, I. Yamada, Incident Angle Dependence of Sputtering Effect by Ar Cluster Ion Bombardment, Nucl. Instrum. Methods B121 (1997) 489-492.
- D. Takeuchi, K. Fukushima, J. Matsuo, I. Yamada, Study of Ar Cluster Ion Bombardment of a Sapphire Surface, Nucl. Instrum. Methods B121 (1997) 493-497.
- T. Seki, T. Kaneko, D. Takeuchi, T. Aoki, J. Matsuo, Z. Insepov, I. Yamada, STM Observation of HOPG Surfaces Irradiated with Ar Cluster Ions, Nucl. Instrum. Methods B121 (1997) 498-502.
- M. Nagao, T. Kondo, Y. Gotoh, H. Tsuji, J. Ishikawa, K. Miyata, K. Kobashi, Influence of surface treatment and dopant concentration on field emission characteristics of boron doped diamond films, Appl. Phys. Lett. 71[19] (1997) 2806-2808.
- T. Kimoto, N. Inoue, H. Matsunami, Nitrogen ion implantation into a-SiC epitaxial layers, Phys. Stat. Sol. (a), 162 (1997) 263-276.

- N. Inoue, A. Itoh, T. Kimoto, H. Matsunami, T. Nakata, M. Inoue, Hot-implantation of nitrogen donors into p-type α -SiC and characterization of n⁺-p junction, *J. Electron. Mater.* 26 (1997) 165-171.
- M. Kasahara, Application of PIXE analysis to atmospheric environmental studies, *Radiation*, 23[4] (1997) 87-96.
- Y. Nagata, N. Arai, W. Sakamoto, Y. Tago, K. Yoshida, Effect of salinity on trace elements in otoliths of masou salmon, *Intern. J. PIXE*, 7 (1997) 153-145.
- Y. Mitani, N. Arai, W. Sakamoto, K. Yoshida, PIXE analysis of trace elements in cetacean teeth, *Intern. J. PIXE*, 7 (1997) 135-139.
- Y. Ikeda, N. Arai, W. Sakamoto, Arsenic deposition in the statolith of post-spawning Japanese common quid, so-call "Kawa-ike", *Fisheries Sci.* 60 (1997) 19-21.
- K. Moritani, H. Moriyama, In-situ Luminescence Measurement of Irradiation Defects in Ternary Lithium Ceramics under Ion Beam Irradiation, *J. Nucl. Mater.* 248 (1997) 132-139.
- T. Tanaka, H. Kitamura, Characteristics of Figure-8 Undulator Radiation, *J. Electr. Spectr. Related Phenom.* 80 (1996) 441-444.
- I. Yu. Tolstikhina, H. Tawara, U.I. Safranova, M. Imai, M. Satake, K. Kawatsura, K. Komaki, Y. Yamazaki, Coster-Kronig Electron Spectra from the Singlet and Triplet 1s²2pⁿ(n=9-20) States of S¹²⁺, *Phys. Scr.* 54 (1996) 188-196.
- M. Kohno *et al.*, Circumstances of Pollution by Radioactivity Released from Chernobyl in Japan and in Belarus, *Japanese Slavic and East European Studies*, 17 (1996) 53-66.
- M. Kohno *et al.*, Carbonized Treatment of Biological Samples for High Beam Current PIXE, *Intern. J. PIXE*, 6[1&2] (1996) 155-166.
- M. Kohno *et al.*, Loss of Elements in Ancient Red Chinese Ink on Japanese Paper through Proton-PIXE, *Intern. J. PIXE*, 6[3&4] (1996) 493-503.
- I. Takagi, T. Hattori, M. Hashizumi, K. Higashi, Deuterium radial redistribution in Zr-liner cladding tubes, *Nucl. Instrum. Methods B* 118 (1996) 238-241.
- T. Tsuboi, A. M. Ektessabi, L. Sennerby, T. Albrektsson, T. Otsubo, T. Iizuka, C. Johansson, A. Wennerberg, In Vivo Measurement of Titanium Release by PIXE, *Nucl. Instrum. Methods B* 109/110 (1996) 345.
- A. M. Ektessabi, T. Otsubo, T. Tsuboi, Y. Horino, Y. Mokuno, K. Fujii, T. Albrektsson, L. Sennerby, C. Johansson, Preliminary Experimental Results on Mapping of the Elemental Distribution of the Organic Tissues Surrounding Titanium-Alloy Implants, *Nucl. Instrum. Methods B* 109/110 (1996) 278.
- A. M. Ektessabi, H. Kimura, Y. Kakino, Surface observation and roughness analysis of AlO₃ thin films prepared by ion beam processing method using atomic force microscope, *J. Jpn Soc. Prec. Engng.* 62 (1996) 876-880.
- A.M. Ektessabi, A. Wennerberg, Effects of surface topology on titanium release form implants into rabbit bone after 1-year follow-up, *Intern. J. PIXE* 5 (1996) 145-152.
- Y. Ito, M. Tada, Surface modification with thin compound film by molten salt electrochemical process, *New Trends and Approaches in Electrochemical Technology*, Kodansha/VCH (1996) 335-359.
- R. Hagiwara, M. Ito, Y. Ito, Graphite intercalation compounds of lanthanide metals prepared in molten chlorides, *Carbon* 34[12] (1996) 1591-1593.
- M. Akizuki, M. Harada, Y. Miyai, A. Doi, T. Yamaguchi, J. Matsuo, G.H. Takaoka, C.E. Ascheron, I. Yamada, Low-Damage Surface Treatment by Gas Cluster-Ion Beams, *Surf. Rev. Lett.* 3[1] (1996) 891-895.
- J. Matsuo, M. Akizuki, J. Northby, G.H. Takaoka, I. Yamada, Sputtering with Gas Cluster-Ion Beams, *Surf. Rev. Lett.* 3[1] (1996) 1017-1021.
- Z. Insepov, I. Yamada, Molecular-Dynamics Simulation of Surface Sputtering by Energetic Rare-Gas Cluster Impact, *Surf. Rev. Lett.* 3[1] (1996) 1023-1027.
- C.E. Ascheron, M. Akizuki, J. Matsuo, Z. Insepov, G.H. Takaoka, I. Yamada, Cluster Ion Bombardment-Induced Surface Damage of Si, *Surf. Rev. Lett.* 3[1] (1996) 1045-1049.
- G.H. Takaoka, J. Matsuo, C.E. Ascheron, I. Yamada, Fundamental Aspects of the Ionized Cluster-Beam Deposition Process, *Surf. Rev. Lett.* 3[1] (1996) 1013-1016.
- M. Akizuki, J. Matsuo, M. Harada, S. Ogasawara, M. Harada, A. Doi, I. Yamada, Low-Temperature Oxidation of Silicon by O₂ Cluster Ion Beams, *Jpn. J. Appl. Phys.* 35, Pt.1, No.2B (1996) 1450-1453.
- M. Akizuki, J. Matsuo, I. Yamada, M. Harada, S. Ogasawara, A. Doi, SiO₂ Film Formation at Room Temperature by Gas Cluster Ion Beam Oxidation, *Nucl. Instrum. Methods B* 112 (1996) 83-85.
- J. Matsuo, D. Takeuchi, A. Kitani, I. Yamada, Investigation of Damage Formation by Gas Cluster Ion Bombardment, *Nucl. Instrum. Methods B* 112, (1996) 89-93.
- I. Yamada, Characteristics and Peculiarities of Surface Processing by Gas Cluster Ion Beams, *Nucl. Instrum. Methods B* 112 (1996) 242-247.
- Z. Insepov, I. Yamada, Molecular Dynamics Study of Shock Wave Generation by Cluster Impact on Solid Targets, *Nucl. Instrum. Methods B* 112 (1996) 16-22.
- I. Yamada, J. Matsuo, Z. Insepov, D. Takeuchi, M. Akizuki, N. Toyoda, Surface Processing by Gas Cluster Ion Beams at the Atomic (Molecular) Level, *J. Vac. Sci. Technol.*, A14 (3) (1996) 781-785.
- J. Matsuo, N. Toyoda, I. Yamada, Nanofabrication Technology by Gas Cluster Ion Beams, *J. Vac. Sci. Technol.* B14(6) (1996) 3951-3954.

- Y. Gotoh, T. Amioka, H. Tsuji, J. Ishikawa, Metal ion beam self-sputter deposition system, *Rev. Sci. Instr.* 67[5] (1996) 1996-1999.
- M. Nagao, M. Matsubara, K. Inoue, Y. Gotoh, H. Tsuji, J. Ishikawa, Influences of ambient gases on the emission characteristics of nickel-deposited field emitters for vacuum microelectronics, *Jpn. J. Appl. Phys.* 35 (1996) 5479-5484.
- Y. Gotoh, H. Yoshii, T. Amioka, K. Kameyama, H. Tsuji, J. Ishikawa, Structures and properties of copper thin films prepared by ion beam assisted deposition, *Thin Solid Films* 288[1] (1996) 300-308.
- J. Ishikawa, K. Inoue, S. Sadakane, Y. Gotoh, H. Tsuji, Cone-shaped metal-insulator-semiconductor electron tunneling cathodes for improved emission efficiency, *J. Vac. Sci. Technol. B* 14 (1996) 1970-1972.
- T. Kimoto, A. Itoh, H. Matsunami, T. Nakata, M. Watanabe, Aluminum and boron ion implantations into 6H-SiC epilayers, *J. Electron. Mater.* 25 (1996) 879-884.
- T. Kimoto, T. Nakajima, H. Matsunami, T. Nakata, M. Inoue, Formation of semi-insulating 6H-SiC layers by vanadium ion implantation, *Appl. Phys. Lett.* 69 (1996) 1113-1115.
- H. Wakimoto, T. Oku, Y. Koide, M. Murakami, Effects of Small Amounts of Silver Added to NiGe Ohmic Contacts to n-Type GaAs, *J. Electrochem. Soc.* 143 (1996) 1693.
- H. Horvath, M. Kasahara, P. Pesava, The size distribution and composition of the atmospheric aerosol at a rural and nearby urban location, *J. Aerosol Sci.* 27[3] (1996) 417-435.
- M. Kasahara, J.H. Park, K. Yamamoto, Characterization of atmospheric aerosols separated by particle size and water solubility using PIXE analysis, *Nucl. Instrum. Methods B* 109/110 (1996) 471-475.
- M. Kasahara, J.H. Park, S. Chatani, Size distribution and solubility of 15 elements in atmospheric aerosols, *Intern. J. PIXE*, 6[1-2] (1996) 299-310.
- T. Aoki, Y. Katayama, K. Yoshida, Fundamental investigation on trace element analysis in wood samples using the PIXE method, *Intern. J. PIXE* 6 (1996) 511-516.
- N. Arai, W. Sakamoto, K. Maeda, Correlation between ambient seawater and strontium-calcium concentration ratios in otoliths of red sea bream Pagrus major, *Fisheries Sci.* 62 (1996) 652-653.
- N. Arai, W. Sakamoto, K. Maeda, An attempt to analyze fish otoliths by in-air PIXE, *Nucl. Inst. Meth. Phys. Res., B* 109/110 (1996) 341-344.
- N. Arai, W. Sakamoto, K. Maeda, Correlation between seawater temperature and Sr/Ca ratios in otoliths of red sea bream Pagrus major, *RIKEN Accel. Prog. Rep.* 29 (1996) 203.
- Y. Koshikawa, N. Arai, W. Sakamoto, K. Yoshida, PIXE analysis of trace elements in clam shells marked with iron rusting, *Intern. J. PIXE* 6 (1996) 517-522.
- Y. Ikeda, N. Arai, W. Sakamoto, A. Nateewathane, T. Murayama, A. Yatsu, K. Yoshida, PIXE analysis of trace elements in squid statoliths: comparison between Ommastrephidae and Loliginidae, *Intern. J. PIXE* 6 (1996) 537-542.
- Y. Nagata, N. Arai, W. Sakamoto, Y. Tago, K. Yoshida, Trace elemental analysis of otoliths of anadromous fish, *Intern. J. PIXE* 6 (1996) 531-535.
- Y. Ikeda, N. Arai, W. Sakamoto, H. Kidokoro, K. Yoshida, Relationship between statoliths and environmental variables in Cephalopod, *Intern. J. PIXE* 6 (1996) 339-345.
- Y. Shirai, T. Murakami, N. Ogawa, M. Yamaguchi, Vacancies and Their Clusters in Ti₃Al Studied by Positron Lifetime Spectrometry, *Intermetallics* 4 (1996) 31.
- Y. Shirai, H. Kohda, T. Murakami, M. Yamaguchi, H. Kodama, Radiation Damage and the Recovery of Neutron-Irradiated TiAl Studied by Positron Lifetime Spectrometry, *Intermetallics* 4 (1996) 139.