

II. PUBLICATION LIST

(APRIL 2021 – MARCH 2022)

1. Slow Neutron Physics and Neutron Scattering

Papers

Overscreening Induced by Ionic Adsorption at the Ionic Liquid/Electrode Interface Detected Using Neutron Reflectometry with a Rational Material Design

Nishi Naoya, Uchiyashiki Junya, Oda Tatsuro, Hino Masahiro, Yamada Norifumi L.

Bulletin of the Chemical Society of Japan **94**(12) (2021) 2914-2918 (doi) 10.1246/bcsj.20210328

Direct observation of magnetic Friedel oscillation at Fe(001) surface

Mitsui Takaya, Sakai Seiji, Li Songtian, Ueno Tetsuro, Watanuki Tetsu, Kobayashi Yasuhiro, Masuda Ryo, Seto Makoto, Akai Hisazumi

Hyperfine Interactions **242** (2021) 37 (doi) 10.1007/s10751-021-01772-0

Muon-Induced Single-Event Upsets in 20-nm SRAMs: Comparative Characterization with Neutrons and Alpha Particles

Kato Takashi, Tampo Motonobu, Takeshita Soshi, Tanaka Hiroki, Matsuyama Hideya, Hashimoto Masanori, Miyake Yasuhiro

IEEE Transactions on Nuclear Science **68**(7) (2021) 1436-1444 (doi) 10.1109/TNS.2021.3082559

Pure Nuclear Bragg Reflection due to Combined Magnetic and Quadrupole Interaction in Fe₃O₄

Nakamura Shin, Mitsui Takaya, Kurokuzu Masayuki, Shimomura Susumu

Journal of the Physical Society of Japan **90**(10) (2021) 104713 (doi) 10.7566/JPSJ.90.104713

Element-specific magnetic hysteresis loops observed in hexagonal ErFeO₃ thin films

Yokota Hiroko, Kobori Yu, Jitsukawa Shunsuke, Sakai Seiji, Takeda Yukiharu, Mitsui Takaya, Kobayashi Yasuhiro, Kitao Shinji

Materials Research Express **8**(8) (2021) 086402 (doi) 10.1088/2053-1591/ac1aa9

Quasielastic Neutron Scattering for Analyzing Transport Dynamics of Chemically-Bound Hydrogen in Minerals
Takuo OKUCHI

Nihon Kessho Gakkaishi **2** (2021) 129-134 (in Japanese) (doi) 10.5940/jcrsj.63.129

Double-focusing geometry for phase correction in neutron resonance spin-echo spectroscopy

Funama F., Tasaki S., Hino M., Oda T., Endo H.

Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment **1010** (2021) 165480 (doi) 10.1016/j.nima.2021.165480

Phase correction method in a wide detector plane for MIEZE spectroscopy with pulsed neutron beams

Oda Tatsuro, Endo Hitoshi, Ohshita Hidetoshi, Seya Tomohiro, Yasu Yoshiji, Nakajima Taro, Hino Masahiro, Kawabata Yuji

Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment **1012** (2021) 165616 (doi) 10.1016/j.nima.2021.165616

Neutron flat-panel detector using In–Ga–Zn–O thin-film transistor

Fujiwara Takeshi, Miyoshi Hiroaki, Mitsuya Yuki, Yamada Norifumi L., Wakabayashi Yasuo, Otake Yoshie, Hino Masahiro, Kino Koichi, Tanaka Masahito, Oshima Nagayasu, Takahashi Hiroyuki

Review of Scientific Instruments **93**(1) (2022) 013304 (doi) 10.1063/5.0066557

Neutron reflectometry-based in situ structural analysis of an aligning agent additive for the alignment of nematic liquid crystals on solid substrates

Nemoto Fumiya, Yamada Norifumi L., Hino Masahiro, Aoki Hiroyuki, Seto Hideki

Soft Matter **18**(3) (2021) 545-553 (doi) 10.1039/d1sm01355f

Proceedings

Conceptual design of neutron source driven by the proton cyclotron at Institution for Integrated Radiation and Nuclear Science, Kyoto University.

Riichiro Nakamura, Masahiro Hino, Hiroki Tanaka, Yasutoshi Kuriyama, Yoshihisa Iwashita

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) **25** (in Japanese)

Present Status of Source Development of Various-Element Mössbauer Spectroscopy using KUR and LINAC at KURNS

Shinji Kitao, Yasuhiro Kobayashi, Masayuki Kurokuzu, Makoto Seto, Hiroyuki Tajima, Hiroyuki Yamashita, Taku Fujihara, Takumi Kubota

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 34 (in Japanese)

Structural Analysis of Additives in Lubricants by Means of Small Angle X-Ray Scattering

Tomoko Hirayama, Shoei Nanbo, Wataru Yagi, Yoriyuki Takashima, Nobuhiro Sato, Masaaki Sugiyama

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 38 (in Japanese)

Structural analysis of DLC films using positron, soft x-ray and high energy ion beams

Kazuhiro Kanda, Tomohiro Mishima, Fuminobu Hori, Atsushi Yabuuchi, Atsushi Kinomura

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 41 (in Japanese)

Understanding relationship between structure and property in disordered materials via topological analyses

Yohei Onodera

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 64-66 (in Japanese)

Improvement of Spectral Resolution for β -NMR Spectroscopy in Liquids

M. Mihara, K. Matsuta, M. Fukuda, R. Wakabayashi, Y. Otani, Y. Kimura, M. Fukutome, G. Takayama, T. Minamisono, D. Nishimura, H. Takahashi, T. Izumikawa, T. Ohtsubo, N. Noguchi, M. Ogoe, M. Sato, K. Takatsu, S. Momota, A. Ozawa, T. Nagatomo, A. Kitagawa, and S. Sato

Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei VIII" Online, (Jan. 15, 2021) 41-44 (in Japanese)

Others

中性子の波紋と超高分解能写真フィルム(原子核乾板)で重力を撮る

Naotaka Naganawa

名古屋大学アイソトープ総合センターTracer 71 (2022) 3-8 (in Japanese)

2. Nuclear Physics and Nuclear Data

Papers

Tritium release behavior from neutron-irradiated FLiNaBe mixed with titanium powder

Kubo Kaito, Katayama Kazunari, Oya Makoto, Tsukahara Katsuya, Fukada Satoshi, Tanaka Teruya, Sagara Akio, Yagi Juro, Inuma Yuto

Fusion Engineering and Design 171 (2021) 112558 (doi) 10.1016/j.fusengdes.2021.112558

Proton radiation hardness of x-ray SOI pixel sensors with pinned depleted diode structure

Hayashida Mitsuki, Hagino Kouichi, Kohmura Takayoshi, Kitajima Masatoshi, Yajima Keigo, Oono Kenji, Negishi Kousuke, Tsuru Takeshi G., Tanaka Takaaki, Uchida Hiroyuki, Kayama Kazuho, Kodama Ryota, Mori Koji, Takeda Ayaki, Nishioka Yusuke, Hida Takahiro, Yukumoto Masataka, Arai Yasuo, Kurachi Ikuo, Kitamura Hisashi, Kawahito Shoji, Yasutomi Keita

Journal of Astronomical Telescopes, Instruments, and Systems 7(3) (2021) 036001

(doi) 10.1117/1.JATIS.7.3.036001

Measurements of the neutron capture cross section of ^{243}Am around 23.5 keV

Kodama Yu, Katabuchi Tatsuya, Rovira Gerard, Kimura Atsushi, Nakamura Shoji, Endo Shunsuke, Iwamoto Nobuyuki, Iwamoto Osamu, Hori Jun-ichi, Shibahara Yuji, Terada Kazushi, Nakano Hideto, Sato Yaoki

Journal of Nuclear Science and Technology 58(11) (2021) 1159-1164 (doi) 10.1080/00223131.2021.1943557

Thermal-neutron capture cross-section measurement of Tantalum-181 using graphite thermal column at KUR

Nakamura Shoji, Shibahara Yuji, Endo Shunsuke, Kimura Atsushi

Journal of Nuclear Science and Technology 58(10) (2021) 1061 (doi) 10.1080/00223131.2021.1908187

Nuclear Resonance Vibrational Spectroscopic Definition of the Fe(IV)_2 Intermediate Q in Methane Monooxygenase and Its Reactivity

Jacobs Ariel Benjamin, Banerjee Rahul, Dewese Dory Ellen, Braun Augustin, Babicz Jeffrey Thomas, Gee Leland Bruce, Sutherlin Kyle David, Böttger Lars Hendrik, Yoda Yoshitaka, Saito Makina, Kitao Shinji, Kobayashi Yasuhiro, Seto Makoto, Tamasaku Kenji, Lipscomb John D., Park Kiyoun, Solomon Edward I.
Journal of the American Chemical Society **143**(39) (2021) **16007-16029** (doi) 10.1021/jacs.1c05436

Development of All-in-one Phantom Dosimeter to Measure Multidimensional Dose Distribution for Co-60 Radiotherapy Unit

H. Y. Shin, J. H. Kim, S. W. Song, J. H. Kim, B. Lee, J. H. Moon and C. H. Pyeon

JOURNAL OF THE KOREAN PHYSICAL SOCIETY **78** (2021) **829-836**

(doi) 10.1007/s40042-021-00129-8

Neutron beam filter system for fast neutron cross-section measurement at the ANNRI beamline of MLF/J-PARC
Rovira Gerard, Kimura Atsushi, Nakamura Shoji, Endo Shunsuke, Iwamoto Osamu, Iwamoto Nobuyuki, Katabuchi Tatsuya, Terada Kazushi, Kodama Yu, Nakano Hideto, Hori Jun-ichi, Shibahara Yuji

Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment **1003** (2021) **165318** (doi) 10.1016/j.nima.2021.165318

Effect of neutron-photon converter materials (Cd, Gd, and Sm) on the positron production in a reactor-based slow positron beamline

Atsushi Yabuuchi

Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms **513** (2022) **44-49** (doi) 10.1016/j.nimb.2021.12.008

Enhancement of the parity-violating energy difference of H₂X₂ molecules by electronic excitation

Kuroda Naoya, Oho Takumi, Senami Masato, Sunaga Ayaki

Physical Review A **105**(1) (2022) **12820** (doi) 10.1103/PhysRevA.105.012820

Enforced stripping of negative muons from μHe^+ ions to stimulate muon-catalyzed fusion by cyclotron resonance acceleration

Yoshiharu Mori

Progress of Theoretical and Experimental Physics **2021**(9) (2021) **093G01** (doi) 10.1093/ptep/ptab111

Proceedings

⁶¹Ni Mössbauer Spectroscopy for Hofmann-like Coordination Polymers

T. Kitazawa, H. Okada, D. Ueda, Y. Kobayashi, S. Kitao, T. Kubota and M. Seto

Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei VII" Online, (Jan. 15, 2021) 10-15 (in Japanese)

Development of Time- and Energy-Resolved Mössbauer Spectroscopy

S. Kitao, R. Masuda, H. Taniguchi, H. Tajima, Y. Yoda, and M. Seto

Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei VII" Online, (Jan. 15, 2021) 1-3 (in Japanese)

Mössbauer spectroscopy in Fe-Ag Hofmann-type SCO complex

K. Kitase, M. Takahashi and T. Kitazawa

Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei VII" Online, (Jan. 15, 2021) 4-9 (in Japanese)

Observation of Dynamic Behavior of Indium Doped SrTiO₃ Studied by Means of the Perturbed Angular Correlation Method

S. Komatsuda, W. Sato, and Y. Ohkubo

Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei VII" Online, (Jan. 15, 2021) 49-53 (in Japanese)

Synchrotron-Radiation-Based Mössbauer Spectroscopy on High-Energy Resonant Nuclei using a He-free Cryostat

S. Tsutsui

Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei VII" Online, (Jan. 15, 2021) 16-21 (in Japanese)

Experimental plan for displacement damage cross sections using 120-GeV protons at Fermi National Accelerator Laboratory

Yosuke IWAMOTO, Makoto YOSHIDA, Shin-ichiro MEIGO, Katsuya YONEHARA, Taku ISHIDA, Keita NAKANO, Shin-ichiro ABE, Hiroki IWAMOTO, T. SPINA, K. AMMIGAN, N. MOKHOV, Atsushi YABUUCHI, and Toshimasa YOSHIIE

Symposium on Nuclear Data 2020 (SND2020) Wako, Japan, (Jan. 26-27, 2020) 138-143

Books

Measurements of Displacement Cross Section of Tungsten under 389-MeV Proton Irradiation and Thermal Damage Recovery

Iwamoto Yosuke, Yoshida Makoto, Matsuda Hiroki, Meigo Shin Ichiro, Satoh Daiki, Yashima Hiroshi, Yabuuchi Atsushi, Shima Tatsushi

Materials Science Forum Vol. 1024

Prof. Kenji Kikuchi

Trans Tech Publications, Ltd. (2021) (doi) 4028/www.scientific.net/MSF.1024.95

Others

Neutron filtering system for fast neutron cross-section measurement at ANNRI

G. Rovira, O. Iwamoto, A. Kimura, S. Nakamura, N. Iwamoto, S. Endo, T. Katabuhi, K. Terada, Y. Kodama, H. Nakano, J. Hori, Y. Shibahara

JAEA-conf20211 (2022)

Thermal-neutron capture cross-section measurement of ^{237}Np using graphite thermal columnS.

Nakamura, S. Endo, A. Kimura, Y. Shibahara

KURNS Progress Report 2020 (2021) 94

3. Reactor Physics and Reactor Engineering

Papers

Rapid Discrimination of Extracellular Vesicles by Shape Distribution Analysis

Ryuzaki Sou, Yasui Takao, Tsutsui Makusu, Yokota Kazumichi, Komoto Yuki, Paisrisarn Piyawan, Kaji Noritada, Ito Daisuke, Tamada Kaoru, Ochiya Takahiro, Taniguchi Masateru, Baba Yoshinobu, Kawai Tomoji

Analytical Chemistry 93(18) (2021) 7037-7044 (doi) 10.1021/acs.analchem.1c00258

Application of dynamic mode decomposition to exponential experiment for spatial decay constant determination
Yamamoto Toshihiro, Sakamoto Hiroki

Annals of Nuclear Energy 162 (2021) 108506 (doi) 10.1016/j.anucene.2021.108506

First demonstration experiment of the neutron rotation method for detecting nuclear material

Komeda M., Toh Y., Tanabe K., Kitamura Y., Misawa T.

Annals of Nuclear Energy 159 (2021) 108300 (doi) 10.1016/j.anucene.2021.108300

Novel Method of Search for Transparent Optical Materials with Extremely High Melting Point

Kurashima Yutaro, Kurosawa Shunsuke, Murakami Rikito, Yamaji Akihiro, Ishikawa Shiori, Pejchal Jan, Kamada Kei, Yoshino Masao, Toyoda Satoshi, Sato Hiroki, Yokota Yuui, Ohashi Yuji, Yoshikawa Akira

Crystal Growth & Design 21(1) (2021) 572-578 (doi) 10.1021/acs.cgd.0c01396

SiC p+n Junction Diodes Toward Beam Monitor Applications

Kishishita Tetsuichi, Kosugi Ryoji, Fujita Yowichi, Fukao Yoshinori, Kojima Kazutoshi, Masumoto Keiko, Nishiguchi Hajime, Tanaka Manobu M., Tanaka Yasunori

IEEE Transactions on Nuclear Science 68(12) (2021) 2787-2793 (doi) 10.1109/TNS.2021.3118788

Role of Al Substitution in the Enhancement of High-Temperature Thermoelectric Properties of ZnO Compound
Pilasuta Panida, Paengson Supasit, Singsoog Kunchit, Seetawan Tosawat

Integrated Ferroelectrics 222(1) (2022) 28-37 (doi) 10.1080/10584587.2021.1961513

Flow regime and void fraction predictions in vertical rod bundle flow channels

Han Xu, Shen Xiuzhong, Yamamoto Toshihiro, Nakajima Ken, Sun Haomin, Hibiki Takashi

International Journal of Heat and Mass Transfer 178 (2021) 121637

(doi) 10.1016/j.ijheatmasstransfer.2021.121637

Evaluation of Gas Entrainment Flow Rate by Free Surface Vortex

TORIKAWA Tomoaki, ODAIRA Naoya, ITO Daisuke, ITO Kei, SAITO Yasushi, MATSUSHITA Kentaro, EZURE Toshiki, TANAKA Masaaki

JAPANESE JOURNAL OF MULTIPHASE FLOW 36(1) (2022) 63-69 (in Japanese)

(doi) 10.3811/jjmf.2022.004

Pressure Drop of Single-/Two-Phase Flow in Fin-Type Heat Sink

ZHANG Huanran, ODAIRA Naoya, TO Daisuke, ITO Kei, SAITO Yasushi, SHINOZAKI Masaru

JAPANESE JOURNAL OF MULTIPHASE FLOW 36(1) (2022) 37-46 (in Japanese) (doi) 10.3811/jjmf.2022.001

Exact Monte Carlo calculation method for K-eigenvalue change using perturbation source method

Yamamoto Toshihiro, Sakamoto Hiroki

Journal of Nuclear Science and Technology 58(8) (2021) 886-898 (doi) 10.1080/00223131.2021.1883144

KeV-neutron capture cross-section measurement of ^{197}Au with a Cr-filtered neutron beam at the ANNRI beamline of MLF/J-PARC

Rovira Gerard, Kimura Atsushi, Nakamura Shoji, Endo Shunsuke, Iwamoto Osamu, Iwamoto Nobuyuki, Katabuchi Tatsuya, Kodama Yu, Nakano Hideto, Sato Yaoki, Hori Jun-ichi, Shibahara Yuji, Terada Kazushi

Journal of Nuclear Science and Technology 59(5) (2021) 647-655 (doi) 10.1080/00223131.2021.1997666

Monte Carlo Analyses of Light-Water-Moderated and Light-Water-Reflected Cores with Highly-Enriched Uranium Fuel at Kyoto University Critical Assembly

C. H. Pyeon and K. Morioka

Journal of Nuclear Science and Technology 59 (2022) 257-265 (doi) 10.1080/00223131.2021.1961636

Uncertainty Quantification of Lead and Bismuth Sample Reactivity Worth at Kyoto University Critical Assembly

C. H. Pyeon, M. Yamanaka and M. Fukushima

Journal of Nuclear Science and Technology 195(8) (2021) 877-889 (doi) 10.1080/00295639.2020.1870861

Thermal-hydraulic characteristics of upward two-phase flows in vertical large size square channels

Hibiki Takashi, Katono Kenichi, Shen Xiuzhong

Nuclear Engineering and Design 384 (2021) 111490 (doi) 10.1016/j.nucengdes.2021.111490

Comparison of Theoretical and Machine Learning Models to Estimate Gamma Ray Source Positions using Plastic Scintillating Optical Fiber Detector

J. H. Kim, S. H. Kim, S. W. Song, J. H. Park, J. H. Kim, T. S. Lim, C. H. Pyeon and B. Lee

Nuclear Engineering and Technology 53(10) (2021) 3431-3437 (doi) 10.1016/j.net.2021.04.019

Development of a multiwire proportional chamber with good tolerance to burst hits

Teshima N., Aoki M., Higashino Y., Ikeuchi H., Komukai K., Nagao D., Nakatsugawa Y., Natori H., Seiya Y., Truong N.M., Yamamoto K.

Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 999 (2021) 165228 (doi) 10.1016/j.nima.2021.165228

Applicability of Dynamic Mode Decomposition to Estimate Fundamental Mode Component of Prompt Neutron Decay Constant

F. Nishioka, T. Endo, A. Yamamoto, M. Yamanaka and C. H. Pyeon

Nuclear Science and Engineering 196 (2022) 133-143 (doi) 10.1080/00295639.2021.1968225

Experimental Analyses of ^{243}Am and ^{235}U Fission Reaction Rates at Kyoto University Critical Assembly

C. H. Pyeon, A. Oizumi and M. Fukushima

Nuclear Science and Engineering 195 (2021) 1144-1153 (doi) 10.1080/00295639.2021.1932220

Gamma-ray Spectroscopy using Inorganic Scintillator Coated with Reduced Graphene Oxide in Fiber-Optic Radiation Sensor

J. H. Kim, S. H. Kim, S. W. Song, T. S. Lim, J. H. Park, J. H. Kim, C. H. Pyeon, S. W. Hwang, B. S. Lee

Photonics 12 (2021) 543-543 (doi) 10.3390/photonics8120543

Deterministic and stochastic methods for sensitivity analysis of neutron noise
Yamamoto Toshihiro, Sakamoto Hiroki
Progress in Nuclear Energy 145 (2022) 104130 (doi) 10.1016/j.pnucene.2022.104130

Proceedings

Characteristics of Two-Phase Flow in Packed Bed Systems
Yasugi Noriaki, Fujitsu Akito, Odaira Naoya, Ito Daisuke, Ito Kei, Saito Yasushi
2021 28th International Conference on Nuclear Engineering, Online (Aug. 4-6, 2021) V004T14A066
(doi) 10.1115/ICONE28-64955

COMPARISON OF NEUTRON NOISE SOLVERS BASED ON NUMERICAL BENCHMARKS IN A 2-D SIMPLIFIED UOX FUEL ASSEMBLY

P.Vinai, H. Yi, A. Mylonakis, C. Demaziere B. Gasse, A. Rouchon, A. Zoia, A. Vidal-Ferrandiz, G. Verdu, T. Yamamoto

Proceedings of International Conference on Mathematics and Computational Methods Applied to Nuclear Science and Engineering (M&C2021) Online (Jan. 3-7, 2021)

Evaluation of Gas Entrainment Flow Rate by Free Surface Vortex
Tomoaki Torikawa, Naoya Odaira, Daisuke Ito, Kei Ito, Yasushi Saito

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 18 (in Japanese)

Evaluation of interfacial area concentration for gas-liquid two-phase flow in coolant flow channels of MTR-type fuel assembly

Xiuzhong Shen, Toshihiro Yamamoto, Takashi Hibiki

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 46 (in Japanese)

Measurement of current induced on triaxial cables under gamma-ray irradiation

Yasuhiro Gotoh, Nobuhiro Sato, Yasuki Okuno, Masafumi Akiyoshi, Mitsuru Imaizumi, Tomohiro Kobayashi, Tamotsu Okamoto

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 17 (in Japanese)

Pressure drop of two-phase flow in fin-type heat sink

Huanran Zhang, Naoya Odaira, Daisuke Ito, Kei Ito, Yasushi Saito

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 35 (in Japanese)

Reviews

Issues on Criticality Safety Control of Fuel Debris

Ken Nakajima

Insights Concerning the Fukushima Daiichi Nuclear Accident 2 (2021) 191-198

Issues for regulatory compliance for nuclear fuel and RI facilities at universities

Mitsuru Uesaka, Masami Uno, Takumi Saito, Sato Nobuaki, Tatsuya Suzuki, Takehiko Tsukahara, Ken Nakakjima, Toshiaki Hiyama, Hiroaki Muta

Journal of the Atomic Energy Society of Japan 63(4) (2021) 353-357 (in Japanese)

Task and recommendation for nuclear fuel and RI facilities at universities

Masami Uno, Kozo Katsuyama, Takumi Saito, Nobuaki Sato, Tatsuya Suzuki, Takehiko Tsukahara, Ken Nakakjima, Toshiaki Hiyama, Fiminori Honda, Hiroaki Muta, Tomoo Yamamura

Journal of the Atomic Energy Society of Japan 64(2) (2022) 110-114 (in Japanese)

Books

Part V 原子力教育・人材育成（分担執筆）

中島健（計 63 名による共著）

The Nuclear Almanac 2022

山脇道夫（「原子力年鑑 2022」編集委員会）

日刊工業新聞社 (2021) (in Japanese)

Others

事故耐性の高い軽水炉用制御棒の開発(4)京大炉による新型中性子吸収材の照射試験
太田 宏一, 中村 勤也, 佐野 忠史, 高橋 佳之
日本原子力学会 2021 年春の年会 2K03 (2021) (in Japanese)

4. Material Science and Radiation Effects

Papers

Enhancement of Thermoelectric Properties of n-Type $\text{Bi}_2\text{Te}_{3-x}\text{Se}_x$ by Energy Filtering Effect
Kawajiri Yuhei, Tanusilp Sora-at, Kumagai Masaya, Ishimaru Manabu, Ohishi Yuji, Tanaka Junya, Kurosaki Ken
ACS Applied Energy Materials 4(10) (2021) 11819-11826 (doi) 10.1021/acsaem.1c02560

Flexible Thermoelectric Paper and Its Thermoelectric Generator from Bacterial Cellulose/ Ag_2Se Nanocomposites
Palaporn Dulyawich, Mongkolthanaruk Wiyada, Faungnawakij Kajornsak, Kurosaki Ken, Pinitsoontorn Supree
ACS Applied Energy Materials 5(3) (2022) 3489-3501 (doi) 10.1021/acsaem.1c04042

A simple method for fabricating flexible thermoelectric nanocomposites based on bacterial cellulose nanofiber and Ag_2Se
Dulyawich Palaporn, Wiyada Mongkolthanaruk, Sora-at Tanusilp, Ken Kurosaki, and Supree Pinitsoontorn
Applied Physics Letters 120 (2022) 073901-1-073901-7 (doi) 10.1063/5.0077137

Effect of silica-nanoparticle fillers on the Johari-Goldstein- β process in polymer nanocomposites
Saito Makina, Mashita Ryo, Kanaya Toshiji, Kishimoto Hiroyuki, Yoda Yoshitaka, Seto Makoto
Hyperfine Interactions 242 (2021) 58 (doi) 10.1007/s10751-021-01784-w

Mössbauer spectroscopy with polarized synchrotron beams at Fe/Au (111) interface
Okabayashi Jun, Li Songtian, Sakai Seiji, Kobayashi Yasuhiro, Fujiwara Kosuke, Mitsui Takaya, Mitani Seiji
Hyperfine Interactions 242(1) (2021) 59 (doi) 10.1007/s10751-021-01788-6

Crystallographic hydride phase analysis and hydrogenation properties of Gd_2Co_7 with Ce_2Ni_7 - and Er_2Co_7 -type structures
Iwase Kenji, Ishida Shuhei, Mori Kazuhiro
International Journal of Hydrogen Energy 45(51) (2021) 27413-27420 (doi) 10.1016/j.ijhydene.2020.07.045

Anisotropy and stability of the mechanical properties of the W alloy plate reinforced with Y-Zr-O particles and prepared by a wet chemical method
Zhao Zhi-Hao, Yao Gang, Luo Lai-Ma, Zan Xiang, Xu Qiu, Wu Yu-Cheng
International Journal of Refractory Metals and Hard Materials 99 (2021) 105597 (doi) 10.1016/j.jrmhm.2021.105597

Gamma-ray irradiation effects on CdTe solar cell dosimeter
Okamoto Tamotsu, Igari Tomoya, Fukui Takahiro, Tozawa Ryuto, Gotoh Yasuhito, Sato Nobuhiro, Okuno Yasuki, Kobayashi Tomohiro, Imaizumi Mitsuru, Akiyoshi Masafumi
Japanese Journal of Applied Physics 60 (2021) SBBF02-1-SBBF02-5 (doi) 10.35848/1347-4065/abd6d8

Effects of dislocations and hydrogen concentration on hydrogen embrittlement of austenitic 316 stainless steels
Ye Fengjiao, Zhu Te, Mori Kazuhiro, Xu Qiu, Song Yamin, Wang Qianqian, Yu Runsheng, Wang Baoyi, Cao Xingzhong
Journal of Alloys and Compounds 876 (2021) 160134 (doi) 10.1016/j.jallcom.2021.160134

Influence of hydrogen behaviors on tensile properties of equiatomic FeCrNiMnCo high-entropy alloy
Zhu T., Zhong Z.H., Ren X.L., Song Y.M., Ye F.J., Wang Q.Q., Ngan Alfonso H.W., Wang B.Y., Cao X.Z., Xu Q.
Journal of Alloys and Compounds 892 (2022) 162260 (doi) 10.1016/j.jallcom.2021.162260

Investigation of irradiation resistance characteristics of precipitation strengthened high-entropy alloy ($\text{CoCrFeNi}_{95}\text{Ti}_1\text{Nb}_1\text{Al}_3$) using slow positron beam
Xu Q., Zhu T., Zhong Z.H., Cao X.Z., Tsuchida H.
Journal of Alloys and Compounds 888 (2021) 161518 (doi) 10.1016/j.jallcom.2021.161518

Controlled thermal expansion and thermoelectric properties of Mg₂Si/Si composites
Fu Jiahui, Tanusilp Sora-at, Kumagai Masaya, Ohishi Yuji, Kurosaki Ken
Journal of Applied Physics **130(3)** (2021) 035105 (doi) 10.1063/5.0057137

Change in nanoindentation hardness of polycrystalline tungsten irradiated with Fe ions or electrons by hydrogen gas charging
Sato Koichi, Kasada Ryuta, Kiyohara Atsushi, Hirabaru Masashi, Nakano Kenichi, Yabuuchi Kiyohiro, Hatakeyama Masahiko, Xu Qiu
Journal of Nuclear Materials **560** (2022) 153483 (doi) 10.1016/j.jnucmat.2021.153483

Effect of He on the irradiation resistance of equiatomic CoCrFeMnNi high-entropy alloy
Huang S.S., Guan H.Q., Zhong Z.H., Miyamoto M., Xu Q.
Journal of Nuclear Materials **561** (2022) 153525 (doi) 10.1016/j.jnucmat.2022.153525

Evaluating surface damage behavior of W-(Y_{0.9}La_{0.1})₂O₃ composites during spark plasma sintering process improvement
Yao Gang, Liu Xue-Peng, Zhao Zhi-Yuan, Zhao Zhi-Hao, Luo Lai-Ma, Cheng Ji-Gui, Zan Xiang, Xu Qiu, Wu Yu-Cheng
Journal of Nuclear Materials **558** (2021) 153322 (doi) 10.1016/j.jnucmat.2021.153322

Radiation-enhanced diffusion of copper in iron studied by three-dimensional atom probe
Toyama T., Zhao C., Yoshiie T., Yamasaki S., Uno S., Shimodaira M., Miyata H., Suzudo T., Shimizu Y., Yoshida K., Inoue K., Nagai Y.
Journal of Nuclear Materials **556** (2021) 153176 (doi) 10.1016/j.jnucmat.2021.153176

Tensile fracture behavior and texture evolution of a hot-rolled W–Y₂ (Zr)O₃ alloy
Zhao Zhi-Hao, Yao Gang, Luo Lai-Ma, Zan Xiang, Xu Qiu, Wu Yu-Cheng
Journal of Nuclear Materials **554** (2021) 153080 (doi) 10.1016/j.jnucmat.2021.153080

The superior thermal stability and irradiation resistance capacities of tungsten composites synthesized by simple second-phase particle component modulation
Yao Gang, Chen Hong-Yu, Zhao Zhi-Hao, Luo Lai-Ma, Ma Yong, Cheng Ji-Gui, Zan Xiang, Xu Qiu, Wu Yu-Cheng
Journal of Nuclear Materials **561** (2022) 153522 (doi) 10.1016/j.jnucmat.2022.153522

Neutron capture and total cross-section measurements and resonance parameter analysis of niobium-93 below 400 eV
Endo Shunsuke, Kimura Atsushi, Nakamura Shoji, Iwamoto Osamu, Iwamoto Nobuyuki, Rovira Gerard, Terada Kazushi, Meigo Shin-ichiro, Toh Yosuke, Segawa Mariko, Maeda Makoto, Tsuneyama Masayuki
Journal of Nuclear Science and Technology **59(3)** (2021) 318-333 (doi) 10.1080/00223131.2021.1970040

Electrochemical, Thermal, and Structural Features of BaF₂–SnF₂ Fluoride-Ion Electrolytes
Mori Kazuhiro, Mineshige Atsushi, Emoto Takuro, Sugiura Maiko, Saito Takashi, Namba Kaoru, Otomo Toshiya, Abe Takeshi, Fukunaga Toshiharu
Journal of Physical Chemistry C **125(23)** (2021) 12568-12577 (doi) 10.1021/acs.jpcc.1c03326

Electron and hole capture processes in Cu-doped glass exhibiting radiophotoluminescence
Hashikawa Ryo, Takada Yuya, Nishi Yusaku, Kinomura Atsushi, Saito Takeshi, Okada Arifumi, Wakasugi Takashi, Kadono Kohei
Journal of Physics: Condensed Matter **34(2)** (2021) 025701 (doi) 10.1088/1361-648X/ac2fd5

Structure of disordered materials under ambient to extreme conditions revealed by synchrotron x-ray diffraction techniques at SPring-8-recent instrumentation and synergic collaboration with modelling and topological analyses
Ohara Koji, Onodera Yohei, Murakami Motohiko, Kohara Shinji
Journal of Physics: Condensed Matter **33(38)** (2021) 383001 (doi) 10.1088/1361-648X/ac0193

Dynamic properties on ⁹⁹Mo adsorption and ^{99m}Tc elution with alumina columns
Fujita Y, Seki M, Sano T, Fujihara Y, Suzuki T, Yoshinaga H, Hori J, Suematsu H, Tsuchiya K
Journal of Physics: Conference Series **2155** (2022) 012018 (doi) 10.1088/1742-6596/2155/1/012018

Effect of Fe Content on Steady-State Grain Size in Ni–Fe Alloys
Sato H., Tasaki A., Fujita R., Adachi N., Todaka Y., Kobayashi Y.

Journal of the Japan Institute of Metals and Materials 86(3) (2022) 43-51 (in Japanese)
(doi) 10.2320/jinstmet.J2021047

X-ray Crystal Structure Analysis of Magnetoelectric Metal UNi₄B
Tabata Chihiro, Sagayama Hajime, Saito Hiraku, Nakao Hironori, Amitsuka Hiroshi
Journal of the Physical Society of Japan 90(6) (2021) 064601 (doi) 10.7566/JPSJ.90.064601

Effects of He-D Interaction on Irradiation-Induced Swelling in Fe₉Cr Alloys
Wu Haibiao, Wang Zhen, Zhu Te, Xu Qiu, Wang Baoyi, Xiao Detao, Cao Xingzhong
Materials 14(21) (2021) 6669 (doi) 10.3390/ma14216669

Excellent performance of W–Y₂O₃ composite via powder process improvement and Y₂O₃ refinement
Yao Gang, Liu Xuepeng, Zhao Zhihao, Luo Laima, Cheng Jigui, Zan Xiang, Wang Zumin, Xu Qiu, Wu Yucheng
Materials & Design 212 (2021) 110249 (doi) 10.1016/j.matdes.2021.110249

Damage evolutions of completely recrystallized W–Y₂O₃ composite evaluated using the dual effects of electron beam thermal shock and helium ion irradiation
Yao Gang, Zhao Zhi-Hao, Luo Lai-Ma, Cheng Ji-Gui, Zan Xiang, Xu Qiu, Wu Yu-Cheng
Materials Chemistry and Physics 271 (2021) 124947 (doi) 10.1016/j.matchemphys.2021.124947

Age-hardening mechanisms of heterogeneous-nanostructured SUS316LN stainless steel fabricated by heavy cold rolling
Miura Hiromi, Watanabe Chihiro, Aoyagi Yoshiteru, Oba Yojiro, Kobayashi Masakazu, Yoshinaga Naoki
Materials Science and Engineering: A 833 (2022) 142531 (doi) 10.1016/j.msea.2021.142531

Ultrafast olivine-ringwoodite transformation during shock compression
Okuchi Takuo, Seto Yusuke, Tomioka Naotaka, Matsuoka Takeshi, Albertazzi Bruno, Hartley Nicholas J., Inubushi Yuichi, Katagiri Kento, Kodama Ryosuke, Pikuz Tatiana A., Purevjav Narangoo, Miyanishi Kohei, Sato Tomoko, Sekine Toshimori, Sueda Keiichi, Tanaka Kazuo A., Tange Yoshinori, Togashi Tadashi, Umeda Yuhei, Yabuuchi Toshinori, Yabashi Makina, Ozaki Norimasa
Nature Communications 12(1) (2021) 4305 (doi) 10.1038/s41467-021-24633-4

X-ray study of ferroic octupole order producing anomalous Hall effect
Kimata Motoi, Sasabe Norimasa, Kurita Kensuke, Yamasaki Yuichi, Tabata Chihiro, Yokoyama Yuichi, Kotani Yoshinori, Ikhlas Muhammad, Tomita Takahiro, Amemiya Kenta, Nojiri Hiroyuki, Nakatsuji Satoru, Koretsune Takashi, Nakao Hironori, Arima Taka-hisa, Nakamura Tetsuya
Nature Communications 12(1) (2021) 5582 (doi) 10.1038/s41467-021-25834-7

Stability of scattered hydrogen signals from a-C:H films during He-induced elastic recoil detection analysis
Kinomura A., Nakao S., Suzuki K., Kuzuya Y., Nakajima M., Yasuda K.
Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms 502 (2021) 54-58 (doi) 10.1016/j.nimb.2021.05.019

Iron nitride, α' -Fe₁₆N₂, around interstitial type dislocation loops in neutron-irradiated iron
Yoshiie T., Inoue K., Yoshida K., Toyama T., Satoh Y., Nagai Y.
Philosophical Magazine 101(10) (2021) 1202-1213 (doi) 10.1080/14786435.2021.1891317

Large anharmonicity and low lattice thermal conductivity of thermoelectric Sn(SbTe₂)₂
Sora-at Tanusilp, Masaya Kumagai, Yuji Ohishi, Naoki Sadayori, and Ken Kurosaki
Phys. Status Solidi RRL 16(1) (2022) 2100482-1-2100482-5 (doi) 10.1002/pssr.202100482

Hugoniot equation-of-state and structure of laser-shocked polyimide C₂₂H₁₀N₂O₅
Katagiri K., Ozaki N., Murayama D., Nonaka K., Hironaka Y., Inubushi Y., Miyanishi K., Nakamura H., Okuchi T., Sano T., Seto Y., Shigemori K., Sueda K., Togashi T., Umeda Y., Yabashi M., Yabuuchi T., Kodama R.
Physical Review B 105(5) (2022) 054103 (doi) 10.1103/PhysRevB.105.054103

Microscopic observation of hidden Johari-Goldstein- β process in glycerol
Saito Makina, Kurokuzu Masayuki, Yoda Yoshitaka, Seto Makoto
Physical Review E 105(1) (2022) L012605 (doi) 10.1103/PhysRevE.105.L012605

Liquid Structure of Tantalum under Internal Negative Pressure

K. Katagiri, N. Ozaki, S. Ohmura, B. Albertazzi, Y. Hironaka, Y. Inubushi, K. Ishida, M. Koenig, K. Miyanishi, H. Nakamura, M. Nishikino, T. Okuchi, T. Sato, Y. Seto, K. Shigemori, K. Sueda, Y. Tange, T. Togashi, Y. Umeda, M. Yabashi, T. Yabuuchi, and R. Kodama

Physical Review Letters **126**(17) (2021) 175503 (doi) 10.1103/PhysRevLett.126.175503

Relationship between Viscosity and Acyl Tail Dynamics in Lipid Bilayers

Nagao Michihiro, Kelley Elizabeth G., Faraone Antonio, Saito Makina, Yoda Yoshitaka, Kurokuzu Masayuki, Takata Shinichi, Seto Makoto, Butler Paul D.

Physical Review Letters **127**(7) (2021) 78102 (doi) 10.1103/PhysRevLett.127.078102

The influence of Gd₂O₃ on shielding, thermal and luminescence properties of WO₃-Gd₂O₃-B₂O₃ glass for radiation shielding and detection material

E. Kaewnuam, N. Wantana, S. Tanusilp, K. Kurosaki, P. Limkitjaroenporn, and J. Kaewkhao

Radiation Physics and Chemistry **190** (2022) 109805-1-109805-9 (doi) 10.1016/j.radphyschem.2021.109805

Relationship between diffraction peak, network topology, and amorphous-forming ability in silicon and silica

Kohara Shinji, Shiga Motoki, Onodera Yohei, Masai Hirokazu, Hirata Akihiko, Murakami Motohiko, Morishita Tetsuya, Kimura Koji, Hayashi Kouichi

Scientific Reports **11**(1) (2021) 22180 (doi) 10.1038/s41598-021-00965-5

Structure of alumina glass

Hashimoto Hideki, Onodera Yohei, Tahara Shuta, Kohara Shinji, Yazawa Koji, Segawa Hiroyo, Murakami Motohiko, Ohara Koji

Scientific Reports **12**(1) (2022) 516 (doi) 10.1038/s41598-021-04455-6

Vacancy migration energies in CrMnFeCoNi, CrFeCoNi, and CrFeNi alloys and their effect on atomic diffusion

Sugita Kazuki, Ogawa Ryusei, Mizuno Masataka, Araki Hideki, Yabuuchi Atsushi

Scripta Materialia **208** (2022) 114339-1-114339-5 (doi) 10.1016/j.scriptamat.2021.114339

Gamma-ray induced photo emission from ZnO single crystal wafer: Comparison with GaN

Nakamura Toshihiro, Nishimura Tomoaki, Kuriyama Kazuo, Nakamura Tohru, Kinomura Atsushi

Solid State Communications **336** (2021) 114413 (doi) 10.1016/j.ssc.2021.114413

Synthesis and thermoelectric properties of Si-YbSi₂ nanocomposite sintered pack

Akinori Nishide, Sora-at Tanusilp, Yuji Ohishi, Hiroaki Muta, Jun Hayakawa, Ken Kurosaki

The Journal of the Thermoelectrics Society of Japan **17**(3) (2022) 127-133 (in Japanese)

Highly Swollen Adsorption Layer Formed by Polymeric Friction Modifier Providing Low Friction at Higher Temperature

Yamashita Naoki, Hirayama Tomoko, Yamada Norifumi L., Watanabe Honami, Onodera Ko, Sato Takehisa

Tribology Letters **69**(2) (2022) 65 (doi) 10.1007/s11249-021-01443-9

Proceedings

Advancement of materials irradiation and defect characterization

Atsushi Kinomura, Koji Inoue, Koichi Sato, Toshihiro Nakamura, Tomoaki Nishimura, Masafumi Akiyoshi, Kazuhiro Kanda and Setsuo Nakao

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 56-59 (in Japanese)

Experimental Study on planetary materials under high pressure conditions using laser shock technique

Yuhei Umeda, Norimasa Okazaki, Tosinori Sekine, Alessandra Benuzzi-Mounaix, Marco Guarguaglini, Yuichi Inubushi, Keiya Fukui, Nobuki Kamimura, Kento Katagiri, Ryosuke Kodama, Takeshi Matsuoka, Kohei Miyanishi, Alessandra Ravasio, Takayoshi Sano, Keiichi Sueda, Tadashi Togashi, Makina Yabashi, Toshinori Yabuuchi, Takuo Okuchi

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 53-55 (in Japanese)

Interaction of defects with hydrogen and helium in SUS316L

Yutaro Suzuki, Hidetsugu Tsuchida, Qiu Xu

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 11 (in Japanese)

Synthesis and characterization of base metal alloy nanoparticles by irradiation reduction method
Kemeng Zhu, Tomoko Yamada, Toshiyuki Matsui, Akihiro Iwase, Noboru Taguchi, Shingo Tanaka, Fuminobu Hori

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 20 (in Japanese)

Non-destructive identification of chemical state for iron compounds by muon

K. Ninomiya, M. Kajino, A. Nanbu, M. Inagaki, T. Kudo, K. Terada, A. Sato, D. Tomono, Y. Kawashima, Y. Sakai, T. Takayama and A. Shinohara

Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei VII" Online, (Jan. 15, 2021) 24 (in Japanese)

Present status of nuclear spectroscopic experiments using KISS and MRTOF

Y. Watanabe

Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei VII" Online, (Jan. 15, 2021) 28-30 (in Japanese)

Probing the Open Spaces in MOFs with Positronium Lifetime Spectroscopy

Daiki Ueda, Kiminori Sato, and Takafumi Kitazawa

Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei VII" Online, (Jan. 15, 2021) 25-27 (in Japanese)

Temperature dependence of spin-lattice relaxation time of ^{19}O in oxide fuel cell material YSZ

Y. Otani, M. Mihara, K. Matsuta, M. Fukuda, R. Wakabayashi, N. Okimoto, M. Fukutome, Y. Kimura, G. Takayama, T. Izumikawa, N. Noguchi, M. Ogose, Y. Sato, K. Takatsu, T. Ohtsubo, D. Nishimura, H. Takahashi, S. Sugawara, A. Gladkov, A. Kitagawa, S. Sato, S. Momota, H. Okumura, T. Moriguchi, and A. Ozawa

Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei VII" Online, (Jan. 15, 2021) 45-48 (in Japanese)

Trial productions of β -detector for a 4π clover detector and On-Line experiment using KUR-ISOL Y. Ishikawa, Y. Irie, M. Kanaji, M. Shibata and A. Taniguchi

Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei VII" Online, (Jan. 15, 2021) 31-36 (in Japanese)

Reviews

Investigations on Adsorption of Inorganic Ions in Aqueous Solution to Some Metal Oxides, Hydroxides and a Carbonate by the X-Ray Spectroscopic Method

OHASHI Hironori, YONEZU Kotaro, KAWAMOTO Daisuke, YOKOYAMA Takushi

Analytical Sciences 37(10) (2021) 1321-1330

Direct Observation of Magnetic Friedel Oscillation at the Fe (001) Surface

Takaya Mitsui, Seiji Sakai, Makoto Seto, and Hisazumi Akai

Butsuri 77(1) (2022) 23-28 (in Japanese)

New Glasses Exhibiting Radiophotoluminescence for Dosimeter

Kadono Kohei

Cchemical Industry 72(6) (2021) 367-372 (in Japanese)

ガラス構造のトポロジカル解析—無秩序に潜む秩序抽出へのデータ駆動型アプローチ

Y. Onodera

Ceramics Japan 57 (2022) 171-177 (in Japanese)

Structure and dynamics of hydrogen in materials of Earth and planetary interiors

Takuo OKUCHI

Japanese Magazine of Mineralogical and Petrological Sciences 50(2) 31-42 (2021) (in Japanese)

Quasielastic Neutron Scattering for Analyzing Transport Dynamics of Chemically-Bound Hydrogen in Minerals
Takuo Okuchi

Nihon Kessho Gakkaishi 63(2) (2021) 129-134 (in Japanese)

Laboratory planetary sciences using high-power lasers
Takuo OKUCHI, Norimasa OZAKI
Optronics 41(1) (2022) 61-66 (in Japanese)

Understanding diffraction patterns of disordered materials
S.Kohara, Y.Onodera, O.Sakata
SPRING-8 Research Frontiers 2020 (2021) 44-45

Ultrafast in-situ Measurement of Crystal Structure Transformation during Hypervelocity Collisions of Asteroids
OKUCHI Takuo
SPRING8/SACLA Information 26(4) (2021) 341-348 (in Japanese)

Ultrafast In-Situ Analysis of Shock-Compressed Planetary Materials
Takuo OKUCHI, Norimasa OZAKI
The Review of High Pressure Science and Technology 31(3) (2021) 166-171 (in Japanese)

Others

金属間化合物合金における空孔型欠陥と水素原子の相互作用に関する研究
堀史説
九州大学応用力学研究所共同利用研究成果報告書 24 (2021) 117 (in Japanese)

事故耐性の高い軽水炉用制御棒の開発 (6) 新型中性子吸収材と炭化ケイ素の高温共存性
中村勤也, 太田宏一
日本原子力学会 2022 春の年会 3J11 (2022) (in Japanese)

照射還元を用いた卑金属系合金ナノ微粒子合成制御およびその特性評価
朱科蒙, 山田智子, 松井利之, 堀史説, 徐虬, 田中慎吾, 田口昇
2021 年度放射線施設共同利用報告書 (2021) 7 (in Japanese)

鉄系合金における水素捕獲挙動に対する電子線照射効果
大友彦卓, 大林浩也, 金野泰幸, 堀史説, 徐虬
2021 年度放射線施設共同利用報告書 (2021) 17 (in Japanese)

5. Geochemistry and Environmental Science

Papers

Relationship of ^{137}Cs with Fungal Spore Tracers in the Ambient Aerosols from Fukushima after the 2011 Nuclear Accident, East Japan
Kawamura Kimitaka, Kunwar Bhagawati, Kita Kazuyuki, Hayashi Naho, Igarashi Yasuhito
Atmosphere 13(3) (2022) 413 (doi) 10.3390/atmos13030413

Reassessment of the radiocesium resuspension flux from contaminated ground surfaces in eastern Japan
Kajino Mizuo, Watanabe Akira, Ishizuka Masahide, Kita Kazuyuki, Zaizen Yuji, Kinase Takeshi, Hirai Rikuya, Konnai Kakeru, Saya Akane, Iwaoka Kazuki, Shiroma Yoshitaka, Hasegawa Hidenao, Akata Naofumi, Hosoda Masahiro, Tokonami Shinji, Igarashi Yasuhito
Atmospheric Chemistry and Physics 22(2) (2022) 783-803 (doi) 10.5194/acp-22-783-2022

Determination of halogens in geological reference materials using neutron irradiation noble gas mass spectrometry
Kobayashi Masahiro, Sumino Hirochika, Saito Takehiko, Nagao Keisuke
Chemical Geology 582 (2021) 120420 (doi) 10.1016/j.chemgeo.2021.120420

Tumor microenvironment and radioresistance
Suwa Tatsuya, Kobayashi Minoru, Nam Jin-Min, Harada Hiroshi
Experimental & Molecular Medicine 53(6) (2021) 1029-1035 (doi) 10.1038/s12276-021-00640-9

Ab initio and steady-state models for uranium isotope fractionation in multi-step biotic and abiotic reduction
Sato Ataru, Bernier-Latmani Rizlan, Hada Masahiko, Abe Minori
Geochimica et Cosmochimica Acta **307** (2021) 212-227 (doi) 10.1016/j.gca.2021.05.044

Investigation of the source region of the lunar-meteorite group with the remote sensing datasets: Implication for the origin of mare volcanism in Mare Imbrium
Nagaoka Hiroshi, Ohtake Makiko, Shirai Naoki, Karouji Yuzuru, Kayama Masahiro, Daket Yuko, Hasebe Nobuyuki, Ebihara Mitsuru
Icarus **370** (2021) 114690 (doi) 10.1016/j.icarus.2021.114690

Cretaceous to Miocene NW Pacific Plate Kinematic Constraints: Paleomagnetism and Ar–Ar Geochronology in the Mineoka Ophiolite Mélange (Japan)
Ganbat Ariuntsetseg, Pastor-Galán Daniel, Hirano Naoto, Nakamura Norihiro, Sumino Hirochika, Yamaguchi Yuji, Tsujimori Tatsuki
Journal of Geophysical Research: Solid Earth **5** (2021) e2020JB021492 (doi) 10.1029/2020JB021492

Transfer of ^{137}Cs to web-building spiders, *Nephila clavata*, and its pathways: a preliminary study using stable carbon and nitrogen isotope analyses
Tanaka Sota, Kakinuma Hotaru, Adati Tarô, Atarashi-Andoh Mariko, Koarashi Jun
Journal of Nuclear Science and Technology **58(4)** (2021) 507-514 (doi) 10.1080/00223131.2021.1894255

Multiple shock events recorded in the Northwest Africa 2139 LL6 chondrite: Implications for collisional histories of the LL chondrite parent body
Takenouchi Atsushi, Sumino Hirochika, Shimodate Karin, Yamaguchi Akira
Meteoritics & Planetary Science **56(12)** (2021) 2230-2249 (doi) 10.1111/maps.13768

Petrology, geochemistry, and geochronology of plutonic rocks from the present Southwest Indian Ridge: Implications for dropstone distribution in the Indian Ocean
Sato Hiroshi, Machida Shiki, Senda Ryoko, Sato Keiko, Kumagai Hidenori, Hyodo Hironobu, Yoneda Shigekazu, Kato Yasuhiro
Polar Science **29** (2021) 100725 (doi) 10.1016/j.polar.2021.100725

Atmospheric resuspension of insoluble radioactive cesium-bearing particles found in the difficult-to-return area in Fukushima
Tang Peng, Kita Kazuyuki, Igarashi Yasuhito, Satou Yukihiro, Hatanaka Koutarou, Adachi Kouji, Kinase Takeshi, Ninomiya Kazuhiko, Shinohara Atsushi
Progress in Earth and Planetary Science **9(1)** (2022) 17 (doi) 10.1186/s40645-022-00475-6

Temporal change of $^{236}\text{U}/^{238}\text{U}$ and $^{235}\text{U}/^{238}\text{U}$ isotopic ratios in atmospheric deposition in Tokyo and Akita from 1963 to 1979
Ohno Takeshi, Sato Naoki, Shikimori Junko, Ijichi Yuta, Fukami Yusuke, Igarashi Yasuhito
Science of The Total Environment **810** (2022) 151292 (doi) 10.1016/j.scitotenv.2021.151292

Proceedings

Mass balance trend of organochlorine in a sediment core from Beppu Bay
Ito. K., Fujimori. T., Mukai. K., Anh. H.Q., Fukutani. S., Takaoka. M., Takahashi. S.
29th Symposium on Environmental Chemistry, Osaka, Japan (Jun. 1-3, 2021)

Mass balance trend of organobromine in a sediment core from Beppu Bay, Japan
Ito. K., Fujimori. T., Mukai. K., Anh. H.Q., Fukutani. S., Takaoka. M., Takahashi. S.
DIOXIN2021, Tianjin, China (Jan. 8-11, 2021)

Estimation of trace elements in foods and amounts of intake of wild monkey (*Macaca fuscata*)
Michiko Fukushima, Yamato Tsuji, and Yuto Iinuma
Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 32 (in Japanese)

Long term change in soil elements of the atmospheric coarse particle observed at Sakai, Osaka
Norio Ito and Akira Mizohata
Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 21 (in Japanese)

Decontamination of Radioactive Cesium and the Redox State of Iron in the Soil

S. Nakashima, T. Basuki, and K. Inada

Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei VII" Online, (Jan. 15, 2021) 22-23 (in Japanese)

Design of Veterinary Epidemiological Survey to Understand Disaster-Related Deaths

Masahiko Takahagi

Proceedings of the Symposium on the expansion of boron neutron capture therapy to the field of veterinary medicine.-Challenges and potential for interdisciplinary research- Online, (Mar. 4, 2021) 96-99 (in Japanese)

Reviews

Activity Report of the Task Group on Parameters Used in Biospheric Dose Assessment Models for Radioactive Waste Disposal

TAKAHASHI Tomoyuki, FUKAYA Yukiko, IIMOTO Takeshi, UNI Yasuo, KATO Tomoko, SUN Siyi, TAKEDA Seiji, NAKAI Kunihiro, NAKABAYASHI Ryo, UCHIDA Shigeo, TAGAMI Keiko, HIRAYAMA Makoto

Japanese Journal of Health Physics 56(4) (2021) 288-305 (in Japanese)

Inexpensive in-situ Filtration Systems: Biological Filtration Utilizing Iron Bacteria, Soil Percolation, and Filtration with Fibrous Material

Yoko Fujikawa

Journal of environmental conservation engineering 50(4) (2021) 186-189 (in Japanese)

Theory of Deep Filtration From Iwasaki

Hiroaki Ozaki, Yoko Fujikawa

Journal of environmental conservation engineering 50(4) (2021) 180-185 (in Japanese)

環境の分析技術・データ解析・モデル化講座Ⅱ. 環境のデータ解析・モデル化ーR によるデータ加工とグラフ作成の自動化

Yoko Fujikawa

Journal of environmental conservation engineering 50(3) (2021) 166-171 (in Japanese)

水のろ過ー古典的なろ過から最新のろ過までー

Yoko Fujikawa

Journal of environmental conservation engineering 50(4) (2021) 179 (in Japanese)

Books

2.4.2 安全でおいしい水のための浄水技術 鉄バクテリア法

Yoko Fujikawa

Encyclopedia of Water Environment

Japan Society on Water Environment

朝倉書店 (2021) (in Japanese)

6. Life Science and Medical Science

Papers

Characterization of a Conformation-Restricted Amyloid β Peptide and Immunoreactivity of Its Antibody in Human AD brain

Kageyama Yusuke, Irie Yumi, Matsushima Yuka, Segawa Tatsuya, Bellier Jean-Pierre, Hidaka Kumi, Sugiyama Hiroshi, Kaneda Daita, Hashizume Yoshio, Akatsu Hiroyasu, Miki Kunio, Kita Akiko, Walker Douglas G., Irie Kazuhiro, Tooyama Ikuro

ACS Chemical Neuroscience 12(18) (2021) 3418-3432 (doi) 10.1021/acscchemneuro.1c00416

TLC-based MS Imaging Analysis of Glycosphingolipids and Glycerin Fatty Acid Esters after 1,2-Dichloroethane Washing

MATSUSHITA Shoko, HASEGAWA Takuma, HIRAOA Marina, HAYASHI Aki, SUZUKI Yusuke

Analytical Sciences 37(11) (2021) 1491-1495 (doi) 10.2116/analsci.21C009

Terahertz Imaging for Formalin Fixed Malignant Liver Tumors Using Two-Band Beamline at the Accelerator Facility of Nihon University

Kawashima Yusuke, Masaaki Suemitsu, Kuyama Kayo, Sakai Takeshi, Hayakawa Yasushi, Kaneda Takashi, Sei Norihiro

Applied Sciences 12(4) (2022) 2229 (doi) 10.3390/app12042229

Dynamic interactions in the l-lactate oxidase active site facilitate substrate binding at pH4.5

Furubayashi Naoki, Inaka Koji, Kamo Masayuki, Umena Yasufumi, Matsuoka Takeshi, Morimoto Yukio

Biochemical and Biophysical Research Communications 568 (2021) 131-135

(doi) 10.1016/j.bbrc.2021.06.078

Tumor-targeting hyaluronic acid/fluorescent carborane complex for boron neutron capture therapy

Yamana Keita, Kawasaki Riku, Sanada Yu, Tabata Anri, Bando Kaori, Yoshikawa Kouhei, Azuma Hideki, Sakurai Yoshinori, Masunaga Shin-ichiro, Suzuki Minoru, Sugikawa Kouta, Nagasaki Takeshi, Ikeda Atsushi

Biochemical and Biophysical Research Communications 559 (2021) 210-216

(doi) 10.1016/j.bbrc.2021.04.037

Conformational dynamics of a multidomain protein by neutron scattering and computational analysis

Nakagawa Hiroshi, Saio Tomohide, Nagao Michihiro, Inoue Rintaro, Sugiyama Masaaki, Ajito Satoshi, Tominaga Taiki, Kawakita Yukinobu

Biophysical Journal 120(16) (2021) 3341-3354 (doi) 10.1016/j.bpj.2021.07.001

APOE ε4 allele advances the age-dependent decline of amyloid β clearance in the human cortex

Saito Atsushi, Kageyama Yusuke, Pletnikova Olga, Rudow Gay L., An Yang, Irie Yumi, Kita Akiko, Miki Kunio, Li Ling, Southall Pamela, Irie Kazuhiro, Troncoso Juan C.

bioRxiv (2021) (doi) 10.1101/2021.04.07.438832

Overall structure of fully assembled cyanobacterial KaiABC circadian clock complex by an integrated experimental-computational approach

Yunoki Yasuhiro, Matsumoto Atsushi, Morishima Ken, Martel Anne, Porcar Lionel, Sato Nobuhiro, Yogo Rina, Tominaga Taiki, Inoue Rintaro, Yagi-Utsumi Maho, Okuda Aya, Shimizu Masahiro, Urade Reiko, Terauchi Kazuki, Kono Hidetoshi, Yagi Hirokazu, Kato Koichi, Sugiyama Masaaki

Communications Biology 5(1) (2022) 184 (doi) 10.1038/s42003-022-03143-z

Design and Synthesis of Supramolecular Phosphatases Formed from a Bis(Zn²⁺-Cyclen) Complex, Barbitol-Crown-K⁺ Conjugate and Cu²⁺ for the Catalytic Hydrolysis of Phosphate Monoester

Rahman Akib Bin, Okamoto Hirokazu, Miyazawa Yuya, Aoki Shin

European Journal of Inorganic Chemistry 13 (2021) 1213-1223 (doi) 10.1002/ejic.202001009

Synthesis and Anticancer Properties of Bis- and Mono(cationic peptide) Hybrids of Cyclometalated Iridium(III) Complexes: Effect of the Number of Peptide Units on Anticancer Activity

Haribabu Jebiti, Tamura Yuichi, Yokoi Kenta, Balachandran Chandrasekar, Umezawa Masakazu, Tsuchiya Koji, Yamada Yasuyuki, Karvembu Ramasamy, Aoki Shin

European Journal of Inorganic Chemistry 2021(18) (2021) 1796-1814 (doi) 10.1002/ejic.202100154

Mefloquine, a Potent Anti-severe Acute Respiratory Syndrome-Related Coronavirus 2 (SARS-CoV-2) Drug as an Entry Inhibitor in vitro

Shionoya Kaho, Yamasaki Masako, Iwanami Shoya, Ito Yusuke, Fukushi Shuetsu, Ohashi Hirofumi, Saso Wakana, Tanaka Tomohiro, Aoki Shin, Kuramochi Kouji, Iwami Shingo, Takahashi Yoshimasa, Suzuki Tadaki, Muramatsu Masamichi, Takeda Makoto, Wakita Takaji, Watashi Koichi

Frontiers in Microbiology 12 (2021) 651403 (doi) 10.3389/fmicb.2021.651403

Isorhamnetin Promotes 53BP1 Recruitment through the Enhancement of ATM Phosphorylation and Protects Mice from Radiation Gastrointestinal Syndrome

Nishiyama Yuichi, Morita Akinori, Tatsuta Shogo, Kanamaru Misaki, Sakaue Masahiro, Ueda Kenta, Shono Manami, Fujita Rie, Wang Bing, Hosoi Yoshio, Aoki Shin, Sugai Takeshi

Genes 12(10) (2021) 1514 (doi) 10.3390/genes12101514

Synthesis and antiproliferative activity of novel organometallic cobalt(III) complex encapsulated in polydiacetylene-phospholipid nanoformulation

Mounica Arangasamy, Balachandran Chandrasekar, Gopalakrishnan Durairaj, Sivasakthi Pandiyan, Prakash Muthuramalingam, Aoki Shin, Ganeshpandian Mani

Inorganica Chimica Acta 530 (2022) 120701 (doi) 10.1016/j.ica.2021.120701

Oligomeric Structural Transition of HspB1 from Chinese Hamster

Kurokawa Nina, Midorikawa Rio, Nakamura Manami, Noguchi Keiichi, Morishima Ken, Inoue Rintaro, Sugiyama Masaaki, Yohda Masafumi

International Journal of Molecular Sciences 22(19) (2021) 10797 (doi) 10.3390/ijms221910797

Evaluation of sodium orthovanadate as a radioprotective agent under total-body irradiation and partial-body irradiation conditions in mice

Nishiyama Yuichi, Morita Akinori, Wang Bing, Sakai Takuma, Ramadhani Dwi, Satoh Hidetoshi, Tanaka Kaoru, Sasatani Megumi, Ochi Shintaro, Tominaga Masahide, Ikushima Hitoshi, Ueno Junji, Neno Mitsuru, Aoki Shin

International Journal of Radiation Biology 97(9) (2021) 1241-1251 (doi) 10.1080/09553002.2021.1941377

Potential anti-COVID-19 agents, cepharanthine and nelfinavir, and their usage for combination treatment

Ohashi Hirofumi, Watashi Koichi, Saso Wakana, Shionoya Kaho, Iwanami Shoya, Hirokawa Takatsugu, Shirai Tsuyoshi, Kanaya Shigehiko, Ito Yusuke, Kim Kwang Su, Nomura Takao, Suzuki Tateki, Nishioka Kazane, Ando Shuji, Ejima Keisuke, Koizumi Yoshiki, Tanaka Tomohiro, Aoki Shin, Kuramochi Kouji, Suzuki Tadaki, Hashiguchi Takao, Maenaka Katsumi, Matano Tetsuro, Muramatsu Masamichi, Saijo Masayuki, Aihara Kazuyuki, Iwami Shingo, Takeda Makoto, McKeating Jane A., Wakita Takaji

iScience 24(4) (2021) 102367 (doi) 10.1016/j.isci.2021.102367

SPINK1 as a plasma marker for tumor hypoxia and a therapeutic target for radiosensitization

Suwa Tatsuya, Kobayashi Minoru, Shirai Yukari, Nam Jin-Min, Tabuchi Yoshiaki, Takeda Norihiko, Akamatsu Shusuke, Ogawa Osamu, Mizowaki Takashi, Hammond Ester M., Harada Hiroshi

JCI Insight 6(21) (2021) e148135 (doi) 10.1172/jci.insight.148135

Structural and thermodynamical insights into the binding and inhibition of FIH-1 by the N-terminal disordered region of Mint3

Ten Tensho, Nagatoishi Satoru, Maeda Ryo, Hoshino Masaru, Nakayama Yoshiaki, Seiki Motoharu, Sakamoto Takeharu, Tsumoto Kouhei

Journal of Biological Chemistry 297(5) (2021) 101304 (doi) 10.1016/j.jbc.2021.101304

A Novel RNA Synthesis Inhibitor, STK160830, Has Negligible DNA-Intercalating Activity for Triggering A p53 Response, and Can Inhibit p53-Dependent Apoptosis

Morita Akinori, Ochi Shintaro, Satoh Hidetoshi, Ujita Shohei, Matsushita Yosuke, Tada Kasumi, Toyoda Mihiro, Nishiyama Yuichi, Mizuno Kosuke, Deguchi Yuichi, Suzuki Keiji, Tanaka Yoshimasa, Ueda Hiroshi, Inaba Toshiya, Hosoi Yoshio, Aoki Shin

Life 11(10) (2021) 1087 (doi) 10.3390/life11101087

Cyclometalated Iridium(III) Complex–Cationic Peptide Hybrids Trigger Paraptosis in Cancer Cells via an Intracellular Ca²⁺ Overload from the Endoplasmic Reticulum and a Decrease in Mitochondrial Membrane Potential

Balachandran Chandrasekar, Yokoi Kenta, Naito Kana, Haribabu Jebiti, Tamura Yuichi, Umezawa Masakazu, Tsuchiya Koji, Yoshihara Toshitada, Tobita Seiji, Aoki Shin

Molecules 26(22) (2021) 7028 (doi) 10.3390/molecules26227028

Isomerization of Asp is essential for assembly of amyloid-like fibrils of α A-crystallin-derived peptide

Magami Kosuke, Hachiya Naomi, Morikawa Kazuo, Fujii Noriko, Takata Takumi

PLOS ONE 16(4) (2021) e0250277 (doi) 10.1371/journal.pone.0250277

Direct coordination of pterin to Fe^{II} enables neurotransmitter biosynthesis in the pterin-dependent hydroxylases

Iyer Shyam R., Tidemand Kasper D., Babicz Jeffrey T., Jacobs Ariel B., Gee Leland B., Haahr Lærke T., Yoda Yoshitaka, Kurokuzu Masayuki, Kitao Shinji, Saito Makina, Seto Makoto, Christensen Hans E. M., Peters Günther H. J., Solomon Edward I.

Proceedings of the National Academy of Sciences 118(15) (2021) e2022379118

(doi) 10.1073/pnas.2022379118

Formation of clustered DNA damage in vivo upon irradiation with ionizing radiation: Visualization and analysis with atomic force microscopy

Nakano Toshiaki, Akamatsu Ken, Tsuda Masataka, Ujimoto Ayane, Hirayama Ryoichi, Hiromoto Takeshi, Tamada Taro, Ide Hiroshi, Shikazono Naoya

Proceedings of the National Academy of Sciences 119(13) (2022) e2119132119

(doi) 10.1073/pnas.2119132119

Pro108Ser mutation of SARS-CoV-2 3CL^{pro} reduces the enzyme activity and ameliorates the clinical severity of COVID-19

Abe Kodai, Kabe Yasuaki, Uchiyama Susumu, Iwasaki Yuka W., Ishizu Hirotsugu, Uwamino Yoshifumi, Takenouchi Toshiki, Uno Shunsuke, Ishii Makoto, Maruno Takahiro, Noda Masanori, Murata Mitsuru, Hasegawa Naoki, Saya Hideyuki, Kitagawa Yuko, Fukunaga Koichi, Amagai Masayuki, Siomi Haruhiko, Suematsu Makoto, Kosaki Kenjiro,

Scientific Reports 12(1) (2022) 1299 (doi) 10.1038/s41598-022-05424-3

Proceedings

Radioresistance mechanism of Escherichia coli acquired by adaptive evolution using gamma rays as a selective pressure

Takeshi Saito

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 42 (in Japanese)

A study of small neutron source using proton accelerator for generation of intensity collimated neutron beam

Masahiro Hino, Riichiro Nakamura, Yutaka Abe

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 14 (in Japanese)

Deuterated/undeuterated positions in denatured/refolded hen egg lysozyme

Akiko Kita and Yukio Morimoto

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 31 (in Japanese)

Dynamics of a multi-domain protein studied by small angle X-ray scattering and molecular dynamics simulations

Masahiro Shimizu, Aya Okuda, Ken Morishima, Yasuhiro, Yunoki, Rintaro Inoue, Nobuhiro Sato, Reiko Urade, Masaaki Sugiyama

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 48(in Japanese)

Hydrogen trapping in Fe-Al Intermetallic Compounds with supersaturated vacancies

Hikotaku Otomo, Yasuyuki Kaneno, Akihiro Iwase, Kazuhito Ohsawa, Qiu Xu, Masaki Maekawa, Atsuo Kawasuso and Fuminobu Hori

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 15 (in Japanese)

Integrated approach for structural analysis of protein in polydisperse solution with small angle scattering and analytical ultracentrifugation (AUC-SAS)

Ken Morishima, Rintaro Inoue, Yasuhiro Yunoki, Masahiro Shimizu, Aya Okuda, Nobuhiro Sato, Reiko Urade, Masaaki Sugiyama

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 16 (in Japanese)

Overall structure of a fully assembled complex in the cyanobacterial circadian clock analyzed by an integrated biophysical and computational approach

Hirokazu Yagi, Yasuhiro Yunoki, Atsushi Matsumoto, Ken Morishima, Rintaro Inoue, Koichi Kato, Hidetoshi Kono, and Masaaki Sugiyama

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 22 (in Japanese)

Preparation of deuterated wheat proteins for small-angle neutron scattering measurements

Nobuhiro Sato, Reiko Urade, Aya Okuda, Yasuhiro Yunoki, Masahiro Shimizu, Ken Morishima, Rintaro Inoue and Masaaki Sugiyama

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 33 (in Japanese)

Solution structure of multi-domain protein ER-60

Aya Okuda

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 8-9 (in Japanese)

Structural analysis of GATA3-nucleosome complex in solution

Hiroki Tanaka, Yoshimasa Takizawa, Aya Okuda, Ken Morishima, Nobuhiro Sato, Rintaro Inoue, Masaaki Sugiyama, Hitoshi Kurumizaka

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 44 (in Japanese)

Structural analysis of water-soluble vitamin K2 derived from *Bacillus subtilis* natto

Toshiyuki Chatake, Yasuhide Yanagisawa, Aya Okuda, Ken Morishima, Rintaro Inoue, Masaaki Sugiyama

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 13 (in Japanese)

The molecular machine KaiC hexamer regulates circadian clock system

Yasuhiro Yunoki, Atsuji Kodama, Maho Yagi, Ken Morishima, Nobuhiro Sato, Aya Okuda, Yasuhiro Shimizu, Rintaro Inoue, Reiko Urade, Yasukazu Yagi, Koichi Kato, Masaaki Sugiyama

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 26 (in Japanese)

SHORT PULSED BEAM EXTRACTION IN KURNS FFAG

Tomonori Uesugi, Yoshihiro Ishi, Yasutoshi Kuriyama, Yoshiharu Mori

Proceedings of the 18th Annual Meeting of Particle Accelerator Society of Japan, Online (Aug. 9-10, 2021)
(in Japanese)

Combinatorial Construction of Metallosupramolecular Complexes to Mimic Natural Alkaline Phosphatases by the Self-assembly of Functionalized Building Block

Shin Aoki, Hirokazu Okamoto, Akib Bin Rahman, and Mohd Zulkefli

Thai Journal of Pharmaceutical Sciences (TJPS), Special Issue Malaysia, online (Sep. 28-29, 2021) 13-14

Design and Synthesis of Poly(2,2'-bipyridyl) Ligands Directed toward Chelation Therapy of Cancer

Masumi Hirose, Jun-Jie Zhu, Chandrasekar Balachandran, Tomohiro Tanaka, Yosuke Hisamatsu, Yasuyuki Yamada, and Shin Aoki

Thai Journal of Pharmaceutical Sciences (TJPS), Special Issue Malaysia, online (Sep. 28-29, 2021) 14-15

Design, Synthesis, and Anticancer Activity of Amphiphilic Anticancer Agents Having Cationic Peptides for the Induction of Programmed Cell Death in Cancer Cells

Kohei Yamaguchi, Kenta Yokoi, and Shin Aoki

Thai Journal of Pharmaceutical Sciences (TJPS), Special Issue Malaysia, online (Sep. 28-29, 2021) 11-12

Design, Synthesis, and Biological Evaluation of 2-Pyrolone Derivatives as Radio Protectors Regulating p53 Discovered in Phenotypic Screening

Hidetoshi Satoh, Shintaro Ochi, Kosuke Mizuno, Shohei Ujita, Miyu Toyoda, Yuichi Nishiyama, Kasumi Tada, Yosuke Matsushita, Yuichi Deguchi, Keiji Suzuki, Yoshimasa Tanaka, Hiroshi Ueda, Toshiya Inaba, Yoshio Hosoi, Akinori Morita, and Shin Aoki,

Thai Journal of Pharmaceutical Sciences (TJPS), Special Issue Malaysia, online (Sep. 28-29, 2021) 11

One-pot Synthesis of Cyclic Oligosaccharides by Means of Thioglycoside Donor/Acceptor Units

Gota Ishigami, Takehito Seki, Hidehisa Someya, Yasuyuki Yamada, and Shin Aoki,

Thai Journal of Pharmaceutical Sciences (TJPS), Special Issue Malaysia, online (Sep. 28-29, 2021) 11

Reviews

Recent Advances in Cataract Research Using D-Amino Acids as a Molecular Marker

Takumi Takata

Journal of The Japanese Society for Cataract Research 33(1) (2021) 59-61 (in Japanese)

The Post-Translational Modifications of Amino Acid in Crystallin and Their Contributions to Aged Lens

Noriko Fujii

Journal of The Japanese Society for Cataract Research 33(1) (2021) 12-24 (in Japanese)

トリプル四重極質量分析計を用いた 抗体医薬品の新しい品質管理指標に関する研究

Takumi Takata, Toshiya Matsubara, Tsuyoshi Nakanishi, Tetsuo Tanigawa

SHIMADZU Application Notes 71 (2021) 1-5 (in Japanese)

Post-complexation functionalization によるシクロメタレート型イリジウム(III)錯体の機能化と生命科学および材料科学への応用—金属錯体をビルディングブロックとする機能性分子の創製—

青木伸, 横井健汰, Chandrasekar Balachandran, 久松洋介
有機合成化学協会誌 79 (2021) 1113-1124 (in Japanese)

Books

Gota Ishigami, Takehito Seki, Hidehisa Someya, Yasuyuki Yamada, and Shin Aoki
薬学演習 I (スタンダード薬学シリーズ II -9) P195-200, P287-291, P479-480
日本薬学会
東京科学同人 (2021) (in Japanese)

Others

Transfer of silver, cesium, and rubidium from nutrient solution to radish (*Raphanus sativus* var. *sativus*)
T. Kubota, S. Fukutani, Y. Shibahara
KURNS Progress Report 2020 (2021) 152

Nanostructural Analysis of Hydrated Food Protein Assembly by Ultra-Small-Angle X-ray Scattering towards Development of Novel Functional Foods
Nobuhiro Sato, Reiko Urade, Masaaki Sugiyama
SPRING-8/SACLA Research Report (2022) 64-66 (in Japanese) (doi) 10.18957/rr.10.1.64

理科大の化学と生物学の研究力を活かした新型コロナウイルス治療薬の開発
倉持幸司, 渡士幸一, 大橋啓史, 青木伸, 田中智博
理大科学フォーラム 422 (2021) 10-13 (in Japanese)

7. Neutron Capture Therapy

Papers

Dodecaborate Conjugates Targeting Tumor Cell Overexpressing Translocator Protein for Boron Neutron Capture Therapy
Hattori Yoshihide, Ishimura Miki, Ohta Youichirou, Takenaka Hiroshi, Kawabata Shinji, Kirihata Mitsunori
ACS Medicinal Chemistry Letters 13(1) (2022) 50-54 (doi) 10.1021/acsmchemlett.1c00377

Development of a real-time neutron beam detector for boron neutron capture therapy using a thin silicon sensor
Takada Masashi, Nunomiya Tomoya, Masuda Akihiko, Matsumoto Tetsuro, Tanaka Hiroki, Nakamura Satoshi, Endo Satoru, Nakamura Masaru, Aoyama Kei, Ueda Osamu, Narita Masataka, Nakamura Takashi
Applied Radiation and Isotopes 176 (2021) 109856 (doi) 10.1016/j.apradiso.2021.109856

Extracellular Release of HMGB1 as an Early Potential Biomarker for the Therapeutic Response in a Xenograft Model of Boron Neutron Capture Therapy
Imamichi Shoji, Chen Lichao, Ito Tasuku, Tong Ying, Onodera Takae, Sasaki Yuka, Nakamura Satoshi, Mauri PierLuigi, Sanada Yu, Igaki Hiroshi, Murakami Yasufumi, Suzuki Minoru, Itami Jun, Masunaga Shinichiro, Masutani Mitsuko
Biology 11(3) (2022) 420 (doi) 10.3390/biology11030420

Salvage Boron Neutron Capture Therapy for Malignant Brain Tumor Patients in Compliance with Emergency and Compassionate Use: Evaluation of 34 Cases in Taiwan
Chen Yi-Wei, Lee Yi-Yen, Lin Chun-Fu, Pan Po-Shen, Chen Jen-Kun, Wang Chun-Wei, Hsu Shih-Ming, Kuo Yu-Cheng, Lan Tien-Li, Hsu Sanford P. C., Liang Muh-Lii, Chen Robert Hsin-Hung, Chang Feng-Chi, Wu Chih-Chun, Lin Shih-Chieh, Liang Hsiang-Kuang, Lee Jia-Cheng, Chen Shih-Kuan, Liu Hong-Ming, Peir Jinn-Jer, Lin Ko-Han, Huang Wen-Sheng, Chen Kuan-Hsuan, Kang Yu-Mei, Liou Shueh-Chun, Wang Chun-Chieh, Pai Ping-Ching, Li Chih-Wei, Chiek Daniel Quah Song, Wong Tai-Tong, Chiou Shih-Hwa, Chao Yee, Tanaka Hiroki, Chou Fong-In, Ono Koji
Biology 10(4) (2021) 334 (doi) 10.3390/biology10040334

Development of an irradiation method for superficial tumours using a hydrogel bolus in an accelerator-based BNCT

Sasaki Akinori, Tanaka Hiroki, Takata Takushi, Tamari Yuki, Watanabe Tsubasa, Hu Naonori, Kawabata Shinji, Kudo Yoshihiro, Mitsumoto Toshinori, Sakurai Yoshinori, Suzuki Minoru

Biomedical Physics & Engineering Express 8(1) (2021) 015015 (doi) 10.1088/2057-1976/ac3d73

Conjugation of Phenylboronic Acid Moiety through Multistep Organic Transformations on Nanodiamond Surface for an Anticancer Nanodrug for Boron Neutron Capture Therapy

Nishikawa Masahiro, Kang Heon Gyu, Zou Yajuan, Takeuchi Hidekazu, Matsuno Naoyoshi, Suzuki Minoru, Komatsu Naoki

Bulletin of the Chemical Society of Japan 94(9) (2021) 2302-2312 (doi) 10.1246/bcsj.20210200

A Novel Boron Lipid to Modify Liposomal Surfaces for Boron Neutron Capture Therapy

Shirakawa Makoto, Zaboronok Alexander, Nakai Kei, Sato Yuhki, Kayaki Sho, Sakai Tomonori, Tsurubuchi Takao, Yoshida Fumiyo, Nishiyama Takashi, Suzuki Minoru, Tomida Hisao, Matsumura Akira

Cells 10(12) (2021) 3421 (doi) 10.3390/cells10123421

Carboxyboranyl amino ethanol: unprecedented discovery of boron agents for neutron capture therapy in cancer treatment

Zhu Yinghui, Cai Jianghong, Hosmane Narayan S., Suzuki Minoru, Uno Kazuko, Zhang Yingjun, Takagaki Mao

Chemical Communications 79 (2021) 10174-10177 (doi) 10.1039/d1cc03034e

Suppression of Tumor Growth in a Rabbit Hepatic Cancer Model by Boron Neutron Capture Therapy With Liposomal Boron Delivery Systems

Yanagie Hironobu, Yanagawa Masashi, Morishita Yasuyuki, Shinohara Atsuko, Dewi Novriana, Nonaka Yasumasa, Furuya Yoshitaka, Mizumachi Ryouji, Murata Yuuji, Nakamura Hiroyuki, Suzuki Minoru, Sakurai Yoshinori, Tanaka Hiroki, Masunaga Shinichiro, Ono Koji, Sugihara Takumichi, Nashimoto Masayuki, Yamauchi Haruo, Ono Minoru, Nakajima Jun, Takahashi Hiroyuki

In Vivo 35(6) (2021) 3125-3135 (doi) 10.21873/in vivo.12607

HIF-1 α affects sensitivity of murine squamous cell carcinoma to boron neutron capture therapy with BPA

Sanada Yu, Takata Takushi, Tanaka Hiroki, Sakurai Yoshinori, Watanabe Tsubasa, Suzuki Minoru, Masunaga Shin-ichiro

International Journal of Radiation Biology 97(10) (2021) 1441-1449 (doi) 10.1080/09553002.2021.1956004

Prevention and early management of carotid blowout syndrome for patients receiving head and neck salvage boron neutron capture therapy (BNCT)

Lan Tien-Li, Chang Feng-Chi, Wang Chun-Wei, Igawa Kazuyo, Wu Szu-Hsien, Lo Wen-Liang, Chen Yi-Wei

Journal of Dental Sciences 16(3) (2021) 854-860 (doi) 10.1016/j.jds.2020.12.013

Measurement of spatial fluence distribution of neutrons and gamma rays using MAGAT-type gel detector doped with LiCl for BNCT at Kyoto University Reactor

Tanaka Kenichi, Kajimoto Tsuyoshi, Mitsuyasu Aruma, Ito Yuto, Hayashi Shin-ichiro, Sakurai Yoshinori, Tanaka Hiroki, Takata Takushi, Bengua Gerard, Endo Satoru

Journal of Physics: Conference Series 2167 (2022) 012006 (doi) 10.1088/1742-6596/2167/1/012006

Technical note: Optical imaging of lithium-containing zinc sulfate plate in water during irradiation of neutrons from boron neutron capture therapy (BNCT) system

Yamamoto Seiichi, Yabe Takuya, Hu Naonori, Kanai Yasukazu, Tanaka Hiroki, Ono Koji

Medical Physics 49(3) (2021) 1822-1830 (doi) 10.1002/mp.15424

Dodecaborate-Encapsulated Extracellular Vesicles with Modification of Cell-Penetrating Peptides for Enhancing Macropinocytotic Cellular Uptake and Biological Activity in Boron Neutron Capture Therapy

Hirase Shiori, Aoki Ayako, Hattori Yoshihide, Morimoto Kenta, Noguchi Kosuke, Fujii Ikuo, Takatani-Nakase Tomoka, Futaki Shiroh, Kiriha Mitsunori, Nakase Ikuhiko

Molecular Pharmaceutics 19(4) (2022) 1135-1145 (doi) 10.1021/acs.molpharmaceut.1c00882

Reactor-based boron neutron capture therapy for 44 cases of recurrent and refractory high-grade meningiomas with long-term follow-up

Takai Satoshi, Wanibuchi Masahiko, Kawabata Shinji, Takeuchi Koji, Sakurai Yoshinori, Suzuki Minoru, Ono Koji, Miyatake Shin-Ichi

Neuro-Oncology 24(1) (2022) 90-98 (doi) 10.1093/neuonc/noab108

Accelerator-based BNCT for patients with recurrent glioblastoma: a multicenter phase II study
Kawabata Shinji, Suzuki Minoru, Hirose Katsumi, Tanaka Hiroki, Kato Takahiro, Goto Hiromi, Narita Yoshitaka, Miyatake Shin-Ichi
Neuro-Oncology Advances 3(1) (2021) vdab067 (doi) 10.1093/noajnl/vdab067

Fluorescent boron carbide quantum dots synthesized with a low-temperature solvothermal approach for boron neutron capture therapy
Singh Paviter, Kaur Manjot, Singh Kulwinder, Meena Ramovatar, Kumar Manjeet, Yun Ju-Hyung, Thakur Anup, Nakagawa Fumiko, Suzuki Minoru, Nakamura Hiroyuki, Kumar Akshay
Physica E: Low-dimensional Systems and Nanostructures 132 (2021) 114766
(doi) 10.1016/j.physe.2021.114766

First measured optical image of Cerenkov-light in water during irradiation of neutron beam from boron neutron capture therapy (BNCT) system
Yabe Takuya, Yamamoto Seiichi, Hu Naonori, Kanai Yasukazu, Tanaka Hiroki, Ono Koji
Radiation Measurements 146 (2021) 106633 (doi) 10.1016/j.radmeas.2021.106633

Evaluation of a treatment planning system developed for clinical boron neutron capture therapy and validation against an independent Monte Carlo dose calculation system
Hu Naonori, Tanaka Hiroki, Kakino Ryo, Yoshikawa Syuushi, Miyao Mamoru, Akita Kazuhiko, Isohashi Kayako, Aihara Teruhito, Nihei Keiji, Ono Koji
Radiation Oncology 16(1) (2021) 243 (doi) 10.1186/s13014-021-01968-2

First optical observation of ^{10}B -neutron capture reactions using a boron-added liquid scintillator for quality assurance in boron neutron capture therapy
Nohtomi Akihiro, Maeda Hideya, Sakamoto Naoya, Wakabayashi Genichiro, Takata Takushi, Sakurai Yoshinori
Radiological Physics and Technology 15(1) (2022) 37-44 (doi) 10.1007/s12194-021-00645-z

Chronic pathophysiological changes in the normal brain parenchyma caused by radiotherapy accelerate glioma progression
Tsuji Yuichiro, Nonoguchi Naosuke, Okuzaki Daisuke, Wada Yusuke, Motooka Daisuke, Hirota Yuki, Toho Taichiro, Yoshikawa Nobuhiko, Furuse Motomasa, Kawabata Shinji, Miyatake Shin-Ichi, Nakamura Hiroyuki, Yamamoto Ryohei, Nakamura Shota, Kuroiwa Toshihiko, Wanibuchi Masahiko
Scientific Reports 11 (2021) 22110 (doi) 10.1038/s41598-021-01475-0

Thermal Neutron Measurements Using Thermoluminescence Phosphor Cr-doped Al_2O_3 and Cd Neutron Converter
Oh Ryoken, Yanagisawa Shin, Tanaka Hiroki, Takata Takushi, Wakabayashi Genichiro, Tanaka Masaya, Sugioka Natsumi, Koba Yusuke, Shinsho Kiyomitsu
Sensors and Materials 33(6) (2021) 2129-2135 (doi) 10.18494/sam.2021.3328

Proceedings

Feasibility study on energy-dependent neutron flux monitor using multi-core SOF detector
M. Ishikawa, R. Ogawara, K. Baba, S. Ishiguri, H. Handa,
Proceedings of 19th International Congress of Neutron Capture Therapy, Granada, Spain (Sep. 5-10, 2021)

Development of ionization chamber for fast neutron monitoring in accelerator-based BNCT
Nishiki Matsubayashi, Akinori Sasaki, Takushi Takata, Yoshinori Sakurai, Hiroki Tanaka
Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 43 (in Japanese)

Development and experimental verification of dose calculation algorithm for boron neutron capture therapy
Mai Nojiri, Takushi Takata, Yoshinori Sakurai, Hiroki Tanaka
Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 24 (in Japanese)

Experimental verification of Absolute Epi-thermal and Fast Neutron Flux Intensity Detectors for BNCT
Shoya Tada, Kazushi Aoki, Daisuke Hatano, Shingo Tamaki, Sachie Kusaka, Hiroki Tanaka
Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 12 (in Japanese)

Study on improvement of neutron distribution by overlapping of irradiation fields using intensity modulators in accelerator-based BNCT

Akinori Sasaki, Takushi Takata, Naonori Hu, Nishiki Matsubayashi, Mai Nojiri, Yoshinori Sakurai, Minoru Suzuki, Hiroki Tanaka

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 30 (in Japanese)

The effect of boron neutron capture therapy on normal tissues

Minoru Suzuki

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 2 (in Japanese)

Advanced veterinary care at Hokkaido University veterinary teaching hospital and collaboration between human medicine and veterinary medicine

Mitsuyoshi Takiguchi

Proceedings of the Symposium on the expansion of boron neutron capture therapy to the field of veterinary medicine.-Challenges and potential for interdisciplinary research-, Online (2021 Mar. 4) 86-95 (in Japanese)

Boron Neutron Capture Therapy

Minoru Suzuki

Proceedings of the Symposium on the expansion of boron neutron capture therapy to the field of veterinary medicine.-Challenges and potential for interdisciplinary research-, Online (2021 Mar. 4) 1-5 (in Japanese)

Collaboration of Radiation Research between Medical and Veterinary Science at Gifu University

Masayuki Matsuo

Proceedings of the Symposium on the expansion of boron neutron capture therapy to the field of veterinary medicine.-Challenges and potential for interdisciplinary research-, Online (2021 Mar. 4) 71-85 (in Japanese)

Current status of cyclotron-based neutron source for BNCT

Hiroki Tanaka

Proceedings of the Symposium on the expansion of boron neutron capture therapy to the field of veterinary medicine.-Challenges and potential for interdisciplinary research-, Online (2021 Mar. 4) 6-13 (in Japanese)

Current status of PET medical care in small animals

Masahiro Natsuhori

Proceedings of the Symposium on the expansion of boron neutron capture therapy to the field of veterinary medicine.-Challenges and potential for interdisciplinary research-, Online (2021 Mar. 4) 52-62 (in Japanese)

Examination of route of boron administration to brain tumor for BNCT-Looking for clinical usefulness of the intracerebroventricular injection of BPA to brain tumor for rat-

Sachie Kusaka

Proceedings of the Symposium on the expansion of boron neutron capture therapy to the field of veterinary medicine.-Challenges and potential for interdisciplinary research-, Online (2021 Mar. 4) 100-103 (in Japanese)

Importance of ^{18}F -FBPA PET in BNCT

Kayako Isohashi

Proceedings of the Symposium on the expansion of boron neutron capture therapy to the field of veterinary medicine.-Challenges and potential for interdisciplinary research-, Online (2021 Mar. 4) 14-25 (in Japanese)

Radiation Therapy in Veterinary Medical Center in Yamaguchi University

Munekazu Nakaichi

Proceedings of the Symposium on the expansion of boron neutron capture therapy to the field of veterinary medicine.-Challenges and potential for interdisciplinary research-, Online (2021 Mar. 4) 41-51 (in Japanese)

The past, present and future of comparative oncology aimed at overcoming cancer in humans and animals

Kohji Maruo

Proceedings of the Symposium on the expansion of boron neutron capture therapy to the field of veterinary medicine.-Challenges and potential for interdisciplinary research-, Online (2021 Mar. 4) 63-70 (in Japanese)

Translational and clinical-veterinary studies of Boron Neutron Capture Therapy for Head and Neck cancer

Mandy Schwint

Proceedings of the Symposium on the expansion of boron neutron capture therapy to the field of veterinary medicine.-Challenges and potential for interdisciplinary research-, Online (2021 Mar. 4) 26-40

Reviews

Current Status of Accelerator-Based Boron Neutron Capture Therapy (BNCT)

Hiroki Tanaka

Japanese Journal of Medical Physics (Igakubutsuri) 41(3) (2021) 117-121 (in Japanese)

Realization of the World's First Accelerator BNCT System Using a Cyclotron

Hiroki Tanaka, Toshinori Mitsumoto, Koji Ono

Journal of the Particle Accelerator Society of Japan 17(2) (2021) 81-85 (in Japanese)

DOI: (doi) 10.50868/pasj.17.2_81

Activities on neutron measurement standards for BNCT

Akihiko Masuda, Tetsuro Masuda, Harano Hideki

JSAP Annual Meetings Extended Abstracts 46 (2021) 72-76 (in Japanese)

Progress of Boron Neutron Capture Therapy and Biological Problems

Natuko Kondo, Yoshinori Sakurai, Takushi Takata, Hiroki Tanaka, Minoru Suzuki

Radiation Biology Research Communications 57(1) (2022) 63-70 (in Japanese)

ポリビニルアルコールに秘められた可能性: ホウ素送達システムへの応用

Takahiro Nomoto

The Japanese Society for Biomaterials (JSB) 39(2) (2021) 128-129 (in Japanese)

放射線医学 頭頸部腫瘍に対するホウ素中性子捕捉療法の現状

Minoru Suzuki

医学のあゆみ 277(2) (2021) 182-183 (in Japanese)

8. Neutron Radiography and Radiation Application

Papers

Application of Machine Learning Methods to Neutron Transmission Spectroscopic Imaging for Solid-Liquid Phase Fraction Analysis

Kamiyama Takashi, Hirano Kazuma, Sato Hiroataka, Ono Kanta, Suzuki Yuta, Ito Daisuke, Saito Yasushi

Applied Sciences 11(13) (2021) 5988 (doi) 10.3390/app11135988

Efficacy of Boron Neutron Capture Therapy in Primary Central Nervous System Lymphoma: In Vitro and In Vivo Evaluation

Yoshimura Kohei, Kawabata Shinji, Kashiwagi Hideki, Fukuo Yusuke, Takeuchi Koji, Futamura Gen, Hiramatsu Ryo, Takata Takushi, Tanaka Hiroki, Watanabe Tsubasa, Suzuki Minoru, Hu Naonori, Miyatake Shin-Ichi, Wanibuchi Masahiko

Cells 10(12) (2021) 3398 (doi) 10.3390/cells10123398

Proof-of-principle Experiment of ^4He Excimer Cluster Generation via Neutron- ^3He Absorption Reaction for Visualization of Velocity Fields in Superfluid ^4He

Matsushita T., Sonnenschein V., Iguchi T., Ito D., Kitaguchi M., Kiyonagi Y., Guo W., Saito Y., Shinohara T., Shimizu H.M., Suzuki S., Tsuji Y., Tomita H., Hayashida H., Hishida M., Hiroi K., Hirota K., Maruyama T., Waki S., Wada N.

Hamon 30(4) (2021) 192-196 (in Japanese) (doi) 10.5611/hamon.30.4_192

Density Functional Study on Compounds to Accelerate the Electron Capture Decay of ^7Be

Yoshida Akira, Abe Minori, Hada Masahiko

Journal of Physical Chemistry A 125(29) (2021) 6356-6361 (doi) 10.1021/acs.jpca.1c01491

Proceedings

Effects of water accumulation in the proton exchange membrane and the gas diffusion layer on the power generation performance of PEFC

K. Mine, H. Murakawa, K. Sugimoto, H. Asano, D. Ito and Y. Saito

International Conference on Power Engineering2021, Online (Jan. 17-21, 2021) C224

Beam quality determination of a boron neutron capture therapy irradiation system using microdosimetry
Naonori Hu

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 50 (in Japanese)

Direct Observation of Lubricant Behaviour in Machine Elements by Means of Neutron Phase Imaging
Tomoko Hirayama, Sun Lin, Yoshichika Seki, Takenao, Shinohara, Masahiro Hino, Riichiro Nakamura

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 49 (in Japanese)

Effect of Internal Moisture Movement on Spalling for High-strength Concrete Exposed to High Temperature
Azusa Miyabe, Yuhei Nishio, Masamichi Tamura, Daisuke Ito, Kanematsu Manabu

Proceedings of the Concrete Structure Scenarios, JSMS 21 (Jan. 2021) 413-418 (in Japanese)

Verification of the Applicability of Water Cherenkov Detector to Active Neutron Method and Development of a Prototype Detector

K. Tanabe, M. Komeda, Y. Toh, Y. Kitamura, T. Misawa, H. Sagara

The 2021 IEEE Nuclear Science Symposium and Medical Imaging Conference, Yokohama, Japan (Jan. 16-23, 2021) (in Japanese)

Frost Deposition Distribution Estimated by X-ray and Neutron Cooperative Imaging

R. Kuroda, T. Makihara, Y. Oda, R. Matsumoto, N. Odaira, D. Ito, Y. Saito

The Second Asian Conference on Thermal Sciences, 2nd ACTS, Online (Jan. 3-7, 2021) ACTS-1314

Others

複合ラジオグラフィによる熱交換器の着霜評価

黒田 陸斗, 松本 亮介, 小田 豊, 榎原 拓郎, 斎藤 泰司, 伊藤 大介, 大平 直也

2021 年度日本冷凍空調学会年次大会講演論文集 (2021) A122 (in Japanese)

9. TRU and Nuclear Chemistry

Papers

Coprecipitation with samarium hydroxide using multitracer produced through neutron-induced fission of ^{235}U toward chemical study of heavy elements

Y. Kasamatsu, M. Nagase, H. Ninomiya, E. Watanabe, Y. Shigekawa, N. Kondo, K. Takamiya, T. Ohtsuki, N. Shiohara, A. Shinohara

Applied Radiation and Isotopes 179 (2022) 110006 (doi) 10.1016/j.apradiso.2021.110006

Supercritical hydrothermal synthesis of UO_{2+x} : stoichiometry, crystal shape and size, and homogeneity observed using ^{23}Na -NMR spectroscopy of $(\text{U}, \text{Na})\text{O}_{2+x}$

Tabata Chihiro, Shirasaki Kenji, Sunaga Ayaki, Sakai Hironori, Li Dexin, Konaka Mariko, Yamamura Tomoo
CrystEngComm 23(48) (2021) 8660-8672 (doi) 10.1039/d1ce00996f

Phase transformation of mixed lanthanide oxides in an aqueous solution

Md. Moniruzzaman, T. Kobayashi, T. Sasaki

Journal of Nuclear and Radiochemical Sciences 21 (2021) 15-27

Solubility of Mixed Lanthanide Hydroxide and Oxide Solid Solutions

Md. Moniruzzaman, T. Kobayashi, T. Sasaki

Journal of Nuclear Fuel Cycle and Waste Technology 19(3) (2021) 353-366

Solubility of $\text{PuO}_2(\text{am,hyd})$ and the Formation of Pu(IV) Carbonate Complexes in Carbonate Solutions Containing $0.1\text{--}5.0\text{ mol}\cdot\text{dm}^{-3}\text{ NaNO}_3$

Kobayashi Taishi, Fellhauer David, Sasaki Takayuki

Journal of Solution Chemistry 50(4) (2021) 443-457 (doi) 10.1007/s10953-021-01080-9

Towards highly accurate calculations of parity violation in chiral molecules: relativistic coupled-cluster theory including QED-effects

Sunaga Ayaki, Saue Trond

Molecular Physics 119 (21-22) (2021) SI (doi) 10.1080/00268976.2021.1974592

Hydrofluorocarbon Diluent for CMPO Without Third Phase Formation: Extraction of Uranium(VI) and Lanthanide(III) Ions

Tabata Chihiro, Nakase Masahiko, Harigai Miki, Shirasaki Kenji, Sunaga Ayaki, Yamamura Tomoo
Separation Science and Technology 57(7) (2022) 1097-1110 (doi) 10.1080/01496395.2021.1970767

Proceedings

Crystal structure and magnetism of uranium phthalocyanine complex

Chihiro Tabata

GIMRT Joint International Symposium on Radiation Effects in Materials and Actinide Science (GIMRT-REMAS2020) Sendai, Japan, Online (Sep. 30- Oct. 3, 2020)

Isotope fractionation behavior of molybdenum in saturated calcium chloride solution

Kota Suzuki, Chizu Kato, Takeshi Ohno, Satoshi Fukutani, Toshiyuki Fujii

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 45 (in Japanese)

Development of measurement method for gas-liquid two-phase flow in a packed bed of spheres

Noriaki Yasugi, Naoya Odaira, Daisuke Ito, Kei Ito, Yasushi Saito

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 28 (in Japanese)

Study of Isotope Separation via Chemical Exchange Reaction

Ryuta Hazama, Takaaki Yoshimoto, Anawat Rittirong, Yoichi Sakuma, Toshiyuki Fujii, Satoshi Fukutani, Yuji Shibahara, Ayaki Sunaga

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 44-47 (in Japanese)

Chemical and electronic properties of Actinide compounds and their applications

Tomoo Yamamura, Chihiro Tabata, Yoshinori Haga, Tsuyoshi Yaita, Hiroshi Yamagami, Hiroshi Amitsuka, Kenji Ishida, Fusako Kon, Yuma Kaneko, Eikai Hayasaka, Tatsuya Suzuki, Z. Ma, F. H. Ikhwan, Rin Murayama, Irvin Mardongan, Yuji Shibahara, Satoshi Fukutani, Kenji Shirasaki, Hidetoshi Kikunaga, Kohshin Washiyama, Atsushi Shinohara, Takashi Yoshimura, Masanobu Nogami, Yokota Masayoshi, Kita Daiki, Minoru Abe, Masahiko Hada, Ayaki Sunaga, Ataru Sato, Rei Yoshida, Hiroki Shishido, Hidetoshi Hashizume, Masahiko Nakase, Miki Harigai, Hidetaka Nakai, Tohru Kobayashi

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 3-7 (in Japanese)

Effect of iron on dissolution behavior of pentavalent uranium solid phase

Ryutaro Tonna, Takayuki Sasaki, Taishi Kobayashi, Shun Sekimoto

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 39 (in Japanese)

Effect of oxalic acid on vanadium redox

Naoya Wada, Hideyuki Sugihara, Akihiro Uehara, Satoshi Fukutani, Chizu Kato, Toshiyuki Fujii

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 37 (in Japanese)

Revealing the origins of volatile elements in CAIs from Zn isotopes

Chizu Kato, Frédéric Moynier, Toshiyuki Fujii

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 19 (in Japanese)

Solid-liquid extraction experiment of Group 2 elements using crown ether toward the chemical study of nobelium.
Eisuke Watanabe, Yoshitaka Kasamatsu, Nakanishi Ryohei, Saki Otaka, Koichi Takamiya, and Atsushi Shinohara

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 10 (in Japanese)

Solvent extraction characteristics of tin from nitric acid solution

Shin Takahashi, Chizu Kato, Satoshi Fukutani, Tatsuro Matsumura, Hideya Suzuki, Toshiyuki Fujii

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 23 (in Japanese)

Review

アルファ線核医学治療のための薬剤開発の考察—その 5—IAEA Technical Meeting 報告: α 線核種ならびに TAT 薬剤の最新動向—

矢野恒夫, 長谷川功紀, 山村朝雄, 渡部直史, 巽光朗, 佐藤達彦, 角永悠一郎, 樺山一哉, 深瀬浩一, 平林容子, 藤井博史, 米倉義晴

Pharmaceutical and Medical Device Regulatory Science 52(2) (2021) 85-106 (in Japanese)

アルファ線核医学治療のための薬剤開発の考察(その 6)

矢野恒夫, 長谷川功紀, 石井明子, 渡部直史, 巽光朗, 角永悠一郎, 樺山一哉, 深瀬浩一, 米倉義晴, 平林容子, 佐藤達彦, 藤井博史

PharmTechJapan 37(11) (2021) 85-94 (in Japanese)

アルファ線核医学治療のための薬剤開発の考察(その 7)

矢野恒夫, 長谷川功紀, 石井明子, 渡部直史, 巽光朗, 角永悠一郎, 樺山一哉, 深瀬浩一, 米倉義晴, 平林容子, 佐藤達彦, 藤井博史

PharmTechJapan 38(1) (2022) 85-94 (in Japanese)

10. Health Physics and Waste Management

Papers

Behaviour of Fossil and Biogenic Carbon in Sewage Sludge Treatment Processes and Their Impacts on Greenhouse Gas Emissions

Liu C., Oshita K., Takaoka M., Fukutani S.

Chemical Engineering Transactions 89 (2021) 97-102

EXISTENCE FORMS OF RADIOACTIVE CS CONSIDERING SOIL PROPERTIES AND VERTICAL DISTRIBUTION IN FOREST SOIL

Maiko Ikegami, Satoshi Fukutani, Yoko Shimada, Tomoyuki Takahashi, Shu SATO, Minoru YONEDA

Journal of Japan Society of Civil Engineers, Ser. G (Environmental Research) 77(7) (2022) III_277-III_284 (in Japanese) (doi) 10.2208/jscejer.77.7_III_277

Fluorescence pulses derived from thin poly (ethylene terephthalate) in response to charged particles

Nakamura Hidehito, Mori Kazuhiro, Shirakawa Yoshiyuki

Physica Scripta 96(12) (2021) 125307 (doi) 10.1088/1402-4896/ac237f

ANALYSES OF H*(10) DOSE RATES MEASURED IN ENVIRONMENT CONTAMINATED BY RADIOACTIVE CAESIUM: CORRECTION OF DIRECTIONAL DEPENDENCE OF SCINTILLATION DETECTORS

Tsuda S, Tanigaki M, Yoshida T, Okumura R, Saito K

Radiation Protection Dosimetry 193(3-4) (2021) 228-236 (doi) 10.1093/rpd/ncab060

Proceedings

X-ray and neutron diffraction measurements of trivalent and tetravalent metal hydroxide solid phases

Reo Nanjo, Taishi Kobayashi, Takayuki Sasaki, Kazuhiro Mori

Proceedings of the 56th KURNS Scientific Meeting Online (2022 Feb. 9-10) 29 (in Japanese)

Reviews

Thoron and NORM for Past 30 Years in Japan

Takeshi Iimoto, Shinji Tokonami, Hidenori Yonehara, Sadaaki Furuta, Michikuni Shimo

Radiation Environment and Medicine 10(2) (2021) 55-66

11. Accelerator Physics

Papers

Technical Note: Range verification of pulsed proton beams from fixed - field alternating gradient accelerator by means of time - of - flight measurement of ionoacoustic waves

Nakamura Yuta, Takayanagi Taisuke, Uesaka Tomoki, Unlu Mehmet Burcin, Kuriyama Yasutoshi, Ishi Yoshihiro, Uesugi Tomonori, Kobayashi Masanori, Kudo Nobuki, Tanaka Sodai, Umegaki Kikuo, Tomioka Satoshi, Matsuura Taeko
Medical Physics 48(9) (2021) 5490-5500 (doi) 1002/mp.15060

Proceedings

Instrumentation R&D for the studies of SRF thin-film structures at KEK and Kyoto University

Y. Iwashita, Y. Kuriyama, H. Tongu, Y. Fuwa, H. Hayano

2021 International Conference on RF Superconductivity (SRF2021) Virtual Conference (Jun. 28 - Jly. 2, 2021)

Development of a Hybrid Detector for Simultaneous Measurement of Thermal Neutron Flux and γ -ray Dose Rate for Therapeutic

Hiroaki Kato, Nishiki Matsubayashi, Takushi Takata, Tetsuya Mukawa, Keita Suga, Yoshinori Sakurai, Hiroki Tanaka

Proceedings of the 56th KURNS Scientific Meeting Online (Feb. 9-10, 2022) 37 (in Japanese)

Evaluation of Radiation-Induced Demagnetization of Permanent Magnets using KUR

Yasuhiro Fuwa, Yasutoshi Kuriyama, Yoshihisa Iwashita, Koichi Takamiya, Tomohiro Takayanagi

Proceedings of the 56th KURNS Scientific Meeting Online (Feb. 9-10, 2022) 40 (in Japanese)

次世代粒子加速器に向けた多角的研究

Yasutoshi Kuriyama

Proceedings of the 56th KURNS Scientific Meeting Online (Feb. 9-10, 2022) 60-63 (in Japanese)

Towards an accelerator driven neutron source facility using a 30 MeV Cyclotron

Yasutoshi Kuriyama, Riichiro Nakamura, Hiroki Tanaka, Yoshihisa Iwashita, Masahiro Hino

Proceedings of the 56th KURNS Scientific Meeting Online (Feb. 9-10, 2022) 36 (in Japanese)

Development of a Small Beta-NMR System Using Halbach Array Permanent Magnet

Y. Kimura, M. Mihara, K. Matsuta, M. Fukuda, Y. Otani, G. Takayama, T. Izumikawa, N. Noguchi, M. Ogose, Y. Sato, K. Takatsu, T. Ohtsubo, H. Takahashi, S. Momota, H. Okumura, T. Moriguchi, A. Ozawa, A. Kitagawa, and S. Shinji

Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei VII", Online, 37-40 (2021 Jan. 15) (in Japanese)

12. Other

Papers

Nonlinear effects of hydration on high-pressure sound velocities of rhyolitic glasses

Gu Jesse T., Fu Suyu, Gardner James E., Yamashita Shigeru, Okuchi Takuo, Lin Jung-Fu

American Mineralogist 106(7) (2021) 1143-1152 (doi) 10.2138/am-2021-7597

Microtremor surveys based on rotational seismology: theoretical analysis with focus on separation of Rayleigh and Love waves in general wavefield of microtremors

Cho I, Yoshida K, Uebayashi H

Geophysical Journal International 228(1) (2022) 589-603 (doi) 10.1093/gji/ggab358

Isotope separation by DC18C6 crown-ether for neutrinoless double beta decay of ^{48}Ca

Rittirong A, Yoshimoto T, Hazama R, Kishimoto T, Fujii T, Sakuma Y, Fukutani S, Shibahara Y, Sunaga A
Journal of Physics: Conference Series 2147 (2022) 012015 (doi) 10.1088/1742-6596/2147/1/012015

TORSIONAL VIBRATION CHARACTERISTICS OF A SEISMICALLY-ISOLATED BUILDING CONSTRUCTED ON AN INCLINED BEARING LAYER INFERRED FROM RECORDED MOTIONS AND RESPONSE ANALYSES

TAKAHIRA Tomohiro, TOBITA Yoshinori, NISHIURA Ryo, UEBAYASHI Hirotooshi, WANG Xin, NAGANO Masayuki

Journal of Structural and Construction Engineering (Transactions of AIJ) 86(783) (2021) 706-716 (in Japanese) (doi) 10.3130/aijs.86.706

Chemical effect on muonic atom formation through muon transfer reaction in benzene and cyclohexane samples
Inagaki Makoto, Ninomiya Kazuhiko, Nambu Akihiro, Kudo Takuto, Terada Kentaro, Sato Akira, Kawashima Yoshitaka, Tomono Dai, Shinohara Atsushi

Radiochimica Acta 109(4) (2021) 319-326 (doi) 10.1515/ract-2020-0112

Proceedings

Design and Construction of an Intense Terahertz-Wave Source Based on Coherent Cherenkov Radiation Matched to Circle Plane Wave

N. Sei, K. Hayakawa, Y. Hayakawa, K. Nogami, H. Ogawa, T. Sakai, Y. Sumitomo, T. Takahashi, Y. Takahashi, T. Tanaka

12th International Particle Accelerator Conference, Online (May. 24-28, 2021) 2751-2754

Development of an AR Training Construction System Using Embedded Information in a Real Environment
Harazono Yuki, Tamura Taichi, Omoto Yusuke, Ishii Hirotake, Shimoda Hiroshi, Tanaka Yoshiaki, Takahashi Yoshiyuki

13th International Conference, VAMR 2021, Held as Part of the 23rd HCI International Conference, Online (Jly. 24-29, 2021) 614-625 (doi) 10.1007/978-3-030-77599-5_42

The FM(C)T - When And How To Realize It?

Hirokazu Kumekawa, Hiroshi Tsuboi and Hironobu Unesaki

INMM & ESARDA Joint Annual Meeting 2021, Web Online meeting (Aug. 23- Sep. 1, 2021) 1-10

Materials Informatics -development and applications of a large scale materials databases-

Masaya Kumagai

Proceedings of the 56th KURNS Scientific Meeting, Online (Feb. 9-10, 2022) 51-52 (in Japanese)

Reviews

Discussion of visions for nuclear energy in 2050 among the young experts

Murakami Kenta, Terada Kazushi, Takeda Satoshi, Hagura Naoto

Journal of the Atomic Energy Society of Japan 63(9) (2021) 665-668 (in Japanese)

Electron-Bunch Shape Unveiled by Coherent Edge Radiation

N. Sei

Journal of the Particle Accelerator Society of Japan 18(2) (2021) 72-80 (in Japanese)

Ten years of the collaborative research in Fukushima prefecture since the Great East Japan Earthquake

Ueda Yoshikatsu, Sugiyama Akifumi, Tokuda Yomei, Nihei Naoto, Tanigaki Minoru

Sustainable Humanosphere 17 (2021) 1-15 (in Japanese)

Foreword

Takuo OKUCHI

The Review of High Pressure Science and Technology 31(1) (2021) 1-2 (in Japanese)