

1. Slow Neutron Physics and Neutron Scattering

Papers

Characterization of electroless nickel-phosphorus plating for ultracold-neutron storage

Akatsuka H., Andalib T., Bell B., Berean-Dutcher J., Bernier N., Bidinosti C.P., Cude-Woods C., Currie S.A., Davis C.A., Franke B., Gaur R., Giampa P., Hansen-Romu S., Hassan M.T., Hatanaka K., Higuchi T., Gibson C., Ichikawa G., Ide I., Imajo S., Ito T.M., Jamieson B., Kawasaki S., Kitaguchi M., Klassen W., Korkmaz E., Kuchler F., Lang M., Lavvaf M., Lindner T., Makela M., Mammei J., Mammei R., Martin J.W., Matsumiya R., Miller E., Mishima K., Momose T., Morawetz S., Morris C.L., Ong H.J., O'Shaughnessy C.M., Pereira-Wilson M., Picker R., Piermaier F., Pierre E., Schreyer W., Sidhu S., Stang D., Tiepo V., Vanbergen S., Wang R., Wong D., Yamamoto N.

Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 1049 (2023) 168106 (doi) 10.1016/j.nima.2023.168106

Ring compaction as a mechanism of densification in amorphous silica

Salmon Philip S., Zeidler Anita, Shiga Motoki, Onodera Yohei, Kohara Shinji

Physical Review B 107(14) (2023) 144203 (doi) 10.1103/PhysRevB.107.144203

Development of Neutron Interferometer Using Multilayer Mirrors and Measurements of Neutron-Nuclear Scattering Length with Pulsed Neutron Source

Fujiie Takuhiro, Hino Masahiro, Hosobata Takuya, Ichikawa Go, Kitaguchi Masaaki, Mishima Kenji, Seki Yoshichika, Shimizu Hirohiko M., Yamagata Yutaka

Physical Review Letters 132(2) (2024) 023402 (doi) 10.1103/PhysRevLett.132.023402

Study of the boundary friction of high-strength steel during the cold rolling

Shimura Masahiro, Yamashita Naoki, Hino Masahiro, Otsuka Takayuki, Hirayama Tomoko

Tribology - Materials, Surfaces & Interfaces (2024) (doi) 10.1177/17515831231216387

Proceedings

Confronting the Standard Model of particle physics by precision measurements of low-energy systems.

Takashi Higuchi

Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31- Feb. 1, 2024) 51-53 (In Japanese)

Photothermal 癌治療増感剤 ICG-リポゾームの分光研究

Norio Miyoshi, Keita Iwasaki, Hidetoshi Sato, Kotaro Tsutsumi

第 21 回医用分光学会年会 Kansei Gakuin (Oct. 30-31, 2023) 34-36 (In Japanese)

2. Nuclear Physics and Nuclear Data

Papers

Gamma-Ray Spectrum Measurement from Capture Reactions of Uranium-238 for Thermal and Resonance Energy Neutrons

Nauchi Yasushi, Hori Jun-ichi, Terada Kazushi, Sano Tadaumi

EPJ Web of Conferences 284 (2023) 08010 (doi) 10.1051/epjconf/202328408010

Neutron Filtering System for Neutron Capture Cross Section Measurement at the ANNRI beamline of MLF/J-PARC

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

EPJ Web of Conferences 284 (2023) 06007 (doi) 10.1051/epjconf/202328406007

Measurements of the Neutron Capture Cross Section of Am-243 with the ANNRI beamline, MLF/J-PARC

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

EPJ Web of Conferences 284 (2023) 01024 (doi) 10.1051/epjconf/202328401024

Development of a non-destructive carbon quantification method in iron by negative muon lifetime measurement

Ninomiya Kazuhiko, Kubo Michael Kenya, Inagaki Makoto, Yoshida Go, Takeshita Soshi, Tampo Motonobu, Shimomura Koichiro, Kawamura Naritoshi, Strasser Patrick, Miyake Yasuhiro, Ito Takashi U., Higemoto Wataru, Saito Tsutomu

Journal of Radioanalytical and Nuclear Chemistry (2024) (doi) 10.1007/s10967-023-09289-2

Nuclear Resonance Vibrational Spectroscopy Definition of Peroxy Intermediates in Catechol Dioxygenases: Factors that Determine Extra- versus Intradiol Cleavage

Babicz Jeffrey T., Rogers Melanie S., DeWeese Dory E., Sutherlin Kyle D., Banerjee Rahul, Böttger Lars H., Yoda Yoshitaka, Nagasawa Nobumoto, Saito Makina, Kitao Shinji, Kurokuzu Masayuki, Kobayashi Yasuhiro, Tamasaku Kenji, Seto Makoto, Lipscomb John D., Solomon Edward I.

Journal of the American Chemical Society 145(28) (2023) 15230 (doi) 10.1021/jacs.3c02242

Helium gas cell with RF wire carpets for KEK Isotope Separation System

Hirayama Y., Mukai M., Schury P., Watanabe Y.X., Iimura S., Ishiyama H., Jeong S.C., Miyatake H., Niwase T., Rosenbusch M., Takamine A., Taniguchi A., Wada M.

Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 1058 (2024) 168838 (doi) 10.1016/j.nima.2023.168838

Activation cross sections of alpha-particle-induced reactions on natural tungsten for osmium and rhenium radionuclides
Ukon Naoyuki, Aikawa Masayuki, Saito Moemi, Hagiwara Masayuki, Yashima Hiroshi, Komori Yukiko, Haba Hiromitsu, Takács Sándor, Ditrói Ferenc, Szűcs Zoltán

Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms 539 (2023) 95-101 (doi) 10.1016/j.nimb.2023.03.032

Direct observations of spin fluctuations in hedgehog–anti-hedgehog spin lattice states in $\text{MnSi}_{1-x}\text{Ge}_x$ ($x=0.6$ and 0.8) at zero magnetic field

Aji Seno, Oda Tatsuro, Fujishiro Yukako, Kanazawa Naoya, Saito Hiraku, Endo Hitoshi, Hino Masahiro, Itoh Shinichi, Arima Taka-hisa, Tokura Yoshinori, Nakajima Taro

Physical Review B 108(5) (2023) 054445 (doi) 10.1103/PhysRevB.108.054445

Search for particle-stable tetra-neutrons in thermal fission of U^{235}

Fujioka Hiroyuki, Tomomatsu Ryutaro, Takamiya Koichi

Physical Review C 108(5) (2023) 054004 (doi) 10.1103/PhysRevC.108.054004

Monte Carlo perturbation method for optimum surface geometry due to sloshing motion

Yamamoto Toshihiro, Sakamoto Hiroki

Progress in Nuclear Energy 160 (2023) 104715 (doi) 10.1016/j.pnucene.2023.104715

Neutron phase imaging by a Talbot–Lau interferometer at Kyoto University Reactor

Seki Yoshichika, Shinohara Takenao, Hino Masahiro, Nakamura Riichiro, Samoto Tetsuo, Momose Atsushi

Review of Scientific Instruments 94(10) (2023) 103701 (doi) 10.1063/5.0157494

Proceedings

In-gas-cell laser ionization spectroscopy at KISS

Hirayama Yoshikazu, Mukai Momo, Watanabe Yutaka, Schury Peter, Niwase Toshitaka, Choi Hyunsuk, Hashimoto Takashi, Iimura Shun, Jeong SunChan, Miyatake Hiroari, Moon Jun Young, Nakada Hitoshi, Oyaizu Michihiro, Rosenbusch Marco, Takamine Aiko, Tajima Minori, Taniguchi Akihiro, Wada Michiharu

HYPERFINE 2023 Nara, Japan (Mar. 14-17, 2024) 1-13 (doi) 10.1007/s10751-024-01886-1

Experimental study on local interfacial parameters in gas-liquid two-phase flow within a plate-type fuel element

Vikrant Siddharudh Chalgeri, Xiuzhong Shen, Toshihiro Yamamoto

Proceedings of the 58th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 31- Feb. 1, 2024) 33

Void fraction and interfacial area concentration of two-phase flow in a rod bundle fuel assembly

Jiaxu Zuo, Xiuzhong Shen, Vikrant Siddharudh Chalgeri, Toshihiro Yamamoto

Proceedings of the 58th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 31- Feb. 1, 2024) 34

Design of a microwave spectrometer for high-precision Lamb shift spectroscopy of antihydrogen atoms

Tanaka T. A., Blumer P., Janka G., Ohayon B., Regenfus C., Asari M., Tsukida R., Higuchi T., Tanaka K. S., Crivelli P., Kuroda N.

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In-beam Mössbauer Spectra of ^{57}Fe Obtained After ^{57}Mn Implantation into Ammonia Borane
S. Kimoto, M. Yoshida, M. Ito, Y. Kobayashi, Y. Watanabe, M. K. Kubo, M. Mihara, W. Sato, J. Miyazaki, T. Nagatomo, S. Sato, and A. Kitagawa

Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei IX" Online (Jan. 11, 2023)13-16 (In Japanese)

Measurement of excitation level of nuclei generated by muon nuclear absorption reaction
K. Ninomiya, S. Asari, I. Chiu, T. Yoshimura, A. Sato, A. Amato, S. Biswas, L. Gerchow, C. Vigo, C. Wang, C. Mielke, D. Das, F. Hotz, T. Prokscha, T. Shiroka, Z. Salman, Z. Guguchia, H. Luetkens, K. Schoeler, M. Niikura, G. Janka and N. Ritjoh
Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei IX" Online (Jan. 11, 2023) 31 (In Japanese)

Nuclear Excitation of Gd-155 Isotope with Synchrotron Radiation
S. Tsutsui, T. Kanetomo, R. Taniai, M. Enomoto, T. Ishida, M. Kadowaki, F. Iga, F. Honda, N. Nagasawa, Y. Yoda, Y. Kobayashi

Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei IX" Online (Jan. 11, 2023) 26-30 (In Japanese)

Vacuum Ultraviolet Search from Thorium-229 Isomer in Crystal Toward Solid-State Nuclear Clock
Takatori S., Fukunaga Y., Guan M., Hiraki T., Masuda T., Ogake R., Okai K., Sasao N., Shimizu K., Uetake S., Yoshimi A., Yoshimura K., Yoshimura M., Tamazaki K., Kasamatsu Y., Yasuda Y., Beeks K., Schaden F., Schumm T., Kitao S., Seto M., Fujimoto H., Watanabe T., Konashi K., Watanabe M., Haba H., Shigekawa Y., Yamaguchi A., Nagasawa N., Yoda Y.
2023 Joint Conference of the European Frequency and Time Forum and IEEE International Frequency Control Symposium (EFTF/IFCS) Toyama, Japan (May 15-19, 2023) (doi) 10.1109/EFTF/IFCS57587.2023.10272086

Reviews

Trends in radiation standard Neutron standards - present and future -
Tetsuro Matsumoto, Hideki Harano, Akihiko Masuda, Seiya Manabe
Journal of the Atomic Energy Society of Japan 66(1) (2024) 37 (In Japanese)

3. Reactor Physics and Reactor Engineering

Papers

Calculation scheme for thermal neutron scattering cross-sections of hydrogenous molecules in liquid and solid phases by molecular dynamics
Abe Y., Funama F., Tasaki S., Hino M.
Annals of Nuclear Energy 194 (2023) 110101 (doi) 10.1016/j.anucene.2023.110101

Modeling noise experiments performed at AKR-2 and CROCUS zero-power reactors
Hursin M., Zoia A., Rouchon A., Brighenti A., Zmijarevic I., Santandrea S., Vinai P., Mylonakis A., Yi H., Demazière C., Lamirand V., Ambrozic K., Yamamoto T., Hübner S., Knospe A., Lange C., Yum S., Macian R., Vidal A., Ginestar D., Verdú G.
Annals of Nuclear Energy 194 (2023) 110066 (doi) 10.1016/j.anucene.2023.110066

Verification of Feynman- α formula including the effect of delayed neutrons
Yamamoto Toshihiro, Sakamoto Hiroki
Annals of Nuclear Energy 194 (2023) 110090 (doi) 10.1016/j.anucene.2023.110090

Measurement of ^{233}U -HU Substitution Reactivity Worth in KUCA for Integral Validation of ^{233}U Nuclear Data
Sano Tadafumi, Hori Jun-ichi, Takahashi Yoshiyuki, Terada Kazushi, Yashima Hiroshi, Kanda Takashi, Unesaki Hironobu
EPJ Web of Conferences 284 (2023) 08013 (doi) 10.1051/epjconf/202328408013

Development of capacitance sensor for void fraction measurement in a packed bed of spheres
Ito Daisuke, Odaira Naoya, Ito Kei, Saito Yasushi
Flow Measurement and Instrumentation 90 (2023) 102330 (doi) 10.1016/j.flowmeasinst.2023.102330

Multi-dimensional characteristics of upward bubbly flows in a vertical large-size square channel
Sun Haomin, Kunugi Tomoaki, Yokomine Takehiko, Shen Xiuzhong, Hibiki Takashi
International Journal of Heat and Mass Transfer 211 (2023) 124214 (doi) 10.1016/j.ijheatmasstransfer.2023.124214

A spurious-count effect observed in Rossi- α and Feynman- α analysis using fission counter for Kyoto University Reactor
Hohara Sin-Ya, Sano Tadafumi, Hori Jun-Ichi, Sakon Atsushi, Nakajima Kunihiro, Takahashi Yoshiyuki, Hashimoto Kengo
Journal of Nuclear Science and Technology 60(10) (2023) 1292-1300 (doi) 10.1080/00223131.2023.2177762

Relationship between neutron moderator and time-dependent background for neutron time-of-flight measurement
Lee Jaehong, Hironaka Kota, Ito Fumiaki, Koizumi Mitsuo, Hori Jun-Ichi, Sano Tadafumi
Journal of Nuclear Science and Technology (2023) 1-8 (doi) 10.1080/00223131.2023.2224330

Measurement of neutron spectra for various thicknesses of concrete and steel shielding at 24-GeV/c proton beam facility using Bonner sphere spectrometer
Matsumoto Tetsuro, Masuda Akihiko, Lee Eunji, Sanami Toshiya, Oyama Takahiro, Kajimoto Tsuyoshi, Nakao Noriaki, Yashima Hiroshi, Nagaguro Seiji, Uwamino Yoshitomo, Manabe Seiya, Shigyo Nobuhiro, Harano Hideki, Froeschl Robert, Iliopoulou Elpida, Infantino Angelo, Roesler Stefan, Brugger Markus
Journal of Nuclear Science and Technology 61(1) (2024) 98-110 (doi) 10.1080/00223131.2023.2274933

Measurement and simulations of high-energy neutrons through a various thickness of concrete and steel shields using activation detectors at CHARM and CSBF
Nakao Noriaki, Sanami Toshiya, Kajimoto Tsuyoshi, Yashima Hiroshi, Froeschl Robert, Bozzato Davide, Iliopoulou Elpida, Infantino Angelo, Lee Eunji, Oyama Takahiro, Hagiwara Masayuki, Nagaguro Seiji, Matsumoto Tetsuro, Masuda Akihiko, Uwamino Yoshitomo, Devienne Arnaud, Pozzi Fabio, Tisi Marco, Lorenzon Tommaso, Mena Nabil, Vincke Heinz, Roesler Stefan, Brugger Markus
Journal of Nuclear Science and Technology (2023) 1-19 (doi) 10.1080/00223131.2023.2239243

Development of a critical heat flux correlation based on an annular film dryout mechanistic model under the annular flow conditions
Yodo Tadakatsu, Odaira Naoya, Ito Daisuke, Ito Kei, Saito Yasushi
Journal of Nuclear Science and Technology 60(10) (2023) 1182-1193 (doi) 10.1080/00223131.2023.2177761

Visualization of local two-phase flow structure in a packed bed of spheres
Ito D, Odaira N, Ito K, Saito Y
Journal of Physics: Conference Series 2605 (2023) 012032 (doi) 10.1088/1742-6596/2605/1/012032

Measurements of gas-liquid two-phase flow dynamics using high-speed neutron imaging
Ito D, Odaira N, Ito K, Saito Y, Kurita K, Iikura H
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Development of Tracer Particles for Thermal Hydraulic Experiment by Neutron Imaging
Saito Y, Ito D, Odaira N, Kurita K, Iikura H
Journal of Physics: Conference Series 2605 (2023) 012028 (doi) 10.1088/1742-6596/2605/1/012028

Monte Carlo simulations for gamma-ray spectroscopy using bismuth nanoparticle-containing plastic scintillators with spectral subtraction
Lim Taeseob, Song Siwon, Kim Seunghyeon, Park Jae Hyung, Kim Jinhong, Pyeon Cheol Ho, Lee Bongsoo
Nuclear Engineering and Technology 55(9) (2023) 3401-3408 (doi) 10.1016/j.net.2023.05.030

Feasibility study on fiber-optic inorganic scintillator array sensor system for multi-dimensional scanning of radioactive waste
Park Jae Hyung, Song Siwon, Kim Seunghyeon, Kim Jinhong, Cho Seunghyun, Pyeon Cheol Ho, Lee Bongsoo
Nuclear Engineering and Technology 55(9) (2023) 3206-3212 (doi) 10.1016/j.net.2023.06.002

Sensitivity of a control rod worth estimate to neutron detector position by time-dependent Monte Carlo simulations of the rod drop experiment
Park Jong Min, Pyeon Cheol Ho, Shim Hyung Jin
Nuclear Engineering and Technology 56(3) (2024) 916-921 (doi) 10.1016/j.net.2023.11.008

Neutron resonance fission neutron analysis for nondestructive fissile material assay
Hironaka K., Lee J., Koizumi M., Ito F., Hori J., Terada K., Sano T.
Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 1054 (2023) 168467 (doi) 10.1016/j.nima.2023.168467

Experimental Analyses of Capture Reaction Rates for Epithermal and Resonance Neutrons in Source-Driven Subcritical Cores
Aizawa Naoto, Pyeon Cheol Ho
Nuclear Science and Engineering 198(3) (2023) 658-672 (doi) 10.1080/00295639.2023.2212580

Void Reactivity in Lead and Bismuth Sample Reactivity Experiments at Kyoto University Critical Assembly
Pyeon Cheol Ho, Katano Ryota, Oizumi Akito, Fukushima Masahiro
Nuclear Science and Engineering 197(11) (2023) 2902-2919 (doi) 10.1080/00295639.2023.2172311

Optical and scintillation properties of Yb-doped $\text{La}_2\text{Hf}_2\text{O}_7$ crystal grown by core heating method for fiber reading remote-dosimetry system

Ishizawa Satoshi, Kurosawa Shunsuke, Kurashima Yutaro, Kodama Shohei, Morishita Yuki, Yamaji Akihiro, Ohno Maki, Ishikawa Shiori, Hayashi Masateru, Sasano Makoto, Makita Taisuke, Fujiwara Chihaya, Kochurikhin Vladimir, Yoshikawa Akira, Takata Takushi, Tanaka Hiroki

Optical Materials 142 (2023) 113941 (doi) 10.1016/j.optmat.2023.113941

High-pressure xenon gas time projection chamber with scalable design and its performance around the Q value of ^{136}Xe double-beta decay

Yoshida Masashi, Nakamura Kazuhiro, Akiyama Shinichi, Ban Sei, Hikida Junya, Hirose Masanori, Ichikawa Atsuko K, Iwashita Yoshihisa, Kashino Yukimasa, Kikawa Tatsuya, Minamino Akihiro, Miuchi Kentaro, Nakajima Yasuhiro, Nakamura Kiseki D, Nakaya Tsuyoshi, Obara Shuhei, Sakashita Ken, Sekiya Hiroyuki, Shinagawa Hibiki, Sugashima Bungo, Urano Soki

Progress of Theoretical and Experimental Physics 2024(1) (2024) 013H01 (doi) 10.1093/ptep/ptad146

Neutron reflectometry under high shear in narrow gap for tribology study

Yamashita Naoki, Hirayama Tomoko, Hino Masahiro, Yamada Norifumi L.

Scientific Reports 13 (2023) 18268 (doi) 10.1038/s41598-023-45161-9

High-performance thermoelectric properties of Cu_2Se fabricated via cold sintering process

Piyasin Piyawat, Palaporn Dulyawich, Kurosaki Ken,

Pinitsoontorn Supree Solid State Sciences 149 (2024) 107448 (doi) 10.1016/j.solidstatesciences.2024.107448

Proceedings

Capabilities of the converted KUCA cores for HALEU criticality studies

Hironobu Unesaki, Yoshiyuki Takahashi, Yasunori Kitamura, Tsuyoshi Misawa

2023 RERTR International Meeting (RERTR-2023) Denver, Colorado, USA (Nov. 5 - 8, 2023) 1

Estimation of ^{235}U enrichment by neutron induced gamma ray spectroscopy

Y. Nauchi, S. Sato, M. Suzuki, T. Sano, H. Unesaki

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Current status of new fabrication technique of absorption gratings for Talbot-Lau interfer-ometer

Mugeng Li, Masashiro Hino, Takuya Hosobata, Yoshichika Seki

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Effect of fin arrangement on pressure drop characteristics of two-phase flow in a finned rectangular channel.

Shori Okunaka, Naoya Odaira, Daisuke Ito, Kei Ito, Yasushi Saito

Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31- Feb. 1, 2024) 46 (In Japanese)

Effect of interfacial drag term on pressure drop in gas-liquid two-phase flow within a packed bed of spheres.

Tomohiro Mizuno, Naoya Odaira, Daisuke Ito, Kei Ito, Yasushi Saito

Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31- Feb. 1, 2024) 40 (In Japanese)

Recent progress on neutron devices fabricated by KUR-IBS instrument

Masahiro Hino

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Physics and engineering of unstable nuclei

Yoshichika Seki, Masahiro Hino, Mugeng Li

Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31- Feb. 1, 2024) 38 (In Japanese)

Towards neutron imaging for oscillating magnetic field by using neutron spin interferometry

Ryuto Fujitani, Takaya Suzuki, Seiji Tasaki, Masahiro Hino, Masaaki Kitaguchi, Tatsuro Oda, Riichiro Nakamura

Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31- Feb. 1, 2024) 24 (In Japanese)

Evaluation of burnable poison reactivity worth at The KUCA Graphite-Moderated System
Yamasaki Seiji, Moriya Soichiro, Simanullang Irwan L., Fujimoto Nozomu, Sakon Atsushi, Sano Tadafumi, Takahashi Yoshiyuki

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First nuclear reactor physics experiment in subcritical pile using U-7Mo LEU fuel at KUCA
Yoshiyuki Takahashi, Koki Wakabayashi, Yasunori Kitamura, Hironobu Unesaki and Tsuyoshi Misawa
The European Research Reactor Conference (RRFM-2023) Antwerpen, Belgium (Apr. 16 - 20, 2023) 1-6

Measurement of internal conversion electron of ^{234m}Np using PIN diode at JAEA-ISOL
T. Miyazawa, M. Shibata, M. Asai, K. Tsukada, T. K. Sato, Y. Ito, and R. Aoki
Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei IX" Online (Jan. 11, 2023) 39-43 (In Japanese)

Reviews

Path forward for development of advanced reactor and nuclear fuel cycle technologies (1)
Ken Kurosaki
Journal of the Atomic Energy Society of Japan 66(1) (2024) 11-14 (In Japanese)

Recent Efforts and International Trends in Reduction of Uranium Enrichment for Research Reactors
Hironobu Unesaki
Journal of the Atomic Energy Society of Japan 65(10) (2023) 608-612 (In Japanese)

4. Material Science and Radiation Effects

Papers

Mechanical Compatibility between $\text{Mg}_3(\text{Sb,Bi})_2$ and MgAgSb in Thermoelectric Modules
Sun Yifan, Fu Jiahui, Ohishi Yuji, Toh Keita, Suekuni Koichiro, Kihou Kunihiro, Anazawa Ushin, Lee Chul-Ho, Kurosaki Ken
ACS Applied Materials & Interfaces 15(19) (2023) 23246-23254 (doi) 10.1021/acsami.3c02544

Effect of Sintering Temperature on the Thermoelectric Properties of Ag_2Se Fabricated by Spark Plasma Sintering with High Compression
Palaporn Dulyawich, Kurosaki Ken, Pinitsoontorn Supree
Advanced Energy and Sustainability Research 4(10) (2023) 2300082 (doi) 10.1002/aesr.202300082

Porous Ag_2Se Fabricated by a Modified Cold Sintering Process with the Average zT Around Unity Near Room Temperature
Palaporn Dulyawich, Pinitsoontorn Supree, Kurosaki Ken, Snyder G. Jeffrey
Advanced Materials Technologies 9(1) (2024) 2301242 (doi) 10.1002/admt.202301242

Single-crystal elasticity of (Al,Fe)-bearing bridgmanite up to 82 GPa
Fu Suyu, Zhang Yanyao, Okuchi Takuo, Lin Jung-Fu
American Mineralogist 108(4) (2023) 719-730 (doi) 10.2138/am-2022-8435

Low-Temperature Hydrogenation of CO_2 to Methanol in Water on ZnO-Supported CuAu Nanoalloys
Mosrati Jawaher, Ishida Tamao, Mac Hung, Al-Yusufi Mohammed, Honma Tetsuo, Parliniska-Wojtan Magdalena, Kobayashi Yasuhiro, Klyushin Alexander, Murayama Toru, Abdel-Mageed Ali M.
Angewandte Chemie International Edition 62(51) (2023) e202311340 (doi) 10.1002/anie.202311340

Quasi-elastic neutron scattering studies on fast dynamics of water molecules in tetra-n-butylammonium bromide semicathrate hydrate
Shimada Jin, Tani Atsushi, Yamada Takeshi, Sugahara Takeshi, Hirai Takayuki, Okuchi Takuo
Applied Physics Letters 123(4) (2023) 44104 (doi) 10.1063/5.0157560

Development of an event-by-event based Li-ZnS(Ag) neutron imaging detector with selective neutron detection capability
Yamamoto Seiichi, Yoshino Masao, Nakanishi Kohei, Kamada Kei, Yoshikawa Akira, Tanaka Hiroki, Kataoka Jun
Applied Radiation and Isotopes 204 (2024) 111084 (doi) 10.1016/j.apradiso.2023.111084

Redox-controlled differential weathering of andesitic pumice: Possible catalytic effects of ferrous/ferric iron on rapid halloysite accumulation in a Holocene tephra layer
FUKUI Hirokazu, MATSUSHI Yuki, WATANABE Tetsuhiro, LYU Han, KITAO Shinji, KOBAYASHI Yasuhiro, SHINODA Keiji
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Tritium and deuterium release behavior of $\text{Li}_2\text{TiO}_3\text{-}0.5\text{Li}_4\text{SiO}_4\text{-Pb}$ ceramic
Zhou Qilai, Li Sicheng, Hirata Shiori, Sanfukuji Asahi, Tan Guangfan, Taguchi Akira, Oya Yasuhisa
Ceramics International 49(16) (2023) 26778-26785 (doi) 10.1016/j.ceramint.2023.05.214

Siliceous zeolite-derived topology of amorphous silica
Masai Hirokazu, Kohara Shinji, Wakihara Toru, Shibasaki Yuki, Onodera Yohei, Masuno Atsunobu, Sukenaga Sohei, Ohara Koji, Sakai Yuki, Haines Julien, Levelut Claire, Hébert Philippe, Isambert Aude, Keen David A., Azuma Masaki
Communications Chemistry 6(1) (2023) 269 (doi) 10.1038/s42004-023-01075-1

Ring-originated anisotropy of local structural ordering in amorphous and crystalline silicon dioxide
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$\beta\text{-MoO}_3$ Whiskers in $^{99}\text{Mo}/^{99\text{m}}\text{Tc}$ Radioisotope Production and $^{99}\text{Mo}/^{99\text{m}}\text{Tc}$ Extraction Using Hot Atoms
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Shinji Kitao, Yasuhiro Kobayashi, Takumi Kubota, Masayuki Kurokuzu, Hiroyuki Tajima, Hiroyuki Yamashita, Hidetoshi Ota, Keiji Shinoda, Hiroshi Fujii, Yoko Akiyama, Izumi Mashino, Yuki Matsushi, Hironori Ohashi,

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Preliminary Analysis of Spherical Iron-rich Particles Extracted from Moto-Ujina Beach Sand as a Possible Tracer for the Hiroshima Black Rain

Satoru Endo, Tsuyoshi Kajimoto, Kenichi Tanaka, Hiroki Higuchi, Satoshi Fukutani, Koichi Takamiya, Makoto Maeda, Yasuhito Igarashi

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Direct imaging of shock wave splitting in diamond at Mbar pressure

Makarov Sergey, Dyachkov Sergey, Pikuz Tatiana, Katagiri Kento, Nakamura Hirotaka, Zhakhovsky Vasily, Inogamov Nail, Khokhlov Victor, Martynenko Artem, Albertazzi Bruno, Rigon Gabriel, Mabey Paul, Hartley Nicholas J., Inubushi Yuichi, Miyanishi Kohei, Sueda Keiichi, Togashi Tadashi, Yabashi Makina, Yabuuchi Toshinori, Okuchi Takuo, Kodama Ryosuke, Pikuz Sergey, Koenig Michel, Ozaki Norimasa

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Development of a dose estimation system for external exposure assessment at the late phase for individuals living in areas affected by the Fukushima nuclear accident

Yajima Kazuaki, Hasegawa Shin, Takahashi Tomoyuki, Aono Tatsuo

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Transfer of ^{137}Cs and ^{90}Sr from soil-to-potato: Interpretation of the association from global fallout in Aomori to accidental release in Fukushima and Chernobyl

Tsukada Hirofumi, Takeda Akira, Takahashi Tomoyuki, Fukutani Satoshi, Akashi Makoto, Takahashi Junko, Uematsu Shinichiro, Chyzyevskiy Ihor, Kirieiev Serhii, Kashparov Valery, Zheleznyak Mark

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Record of ^3H and ^{36}Cl from the Fukushima nuclear accident recovered from soil water in the unsaturated zone at Koriyama

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レイリー波とラブ波位相速度を併用した地下構造モデルの推定精度

吉田邦一, 上林宏敏

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1995 年兵庫県南部地震時の「震災の帯」における地震動評価と表面波各成分への分離

金山京香, 上林宏敏, 劉虹, 永野正行

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京都盆地基準ボーリング地点における微動の位相速度と水平上下スペクトル比の全波動場モデリングによる評価

上林宏敏, 吉田邦一, 長郁夫, 新井洋, 大堀道広, 山田浩二, 小割啓史

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Characterization of Ultra Fine Bubbles Using Various Measurement Techniques

UEDA Yoshikatsu, TOKUDA Yomei, TANIGAKI Minoru, AKAMATSU Shigenori, HATA Takashi

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R. TERASHI, K. YONEZU, S. JUHRI, K. MORI, S. SATO, E. WATANABE, T. YOKOYAMA

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Electrical conductivity measurements of iron-bearing enstatite glasses up to Mbar pressure: Insight into silicate melts at the bottom of the Earth's mantle

I. Mashino, T. Yoshino, S. Kitao, T. Mitsui, R. Masuda and M. Seto

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6. Life Science and Medical Science

Papers

Self-Folding Macromolecular Drug Carrier for Cancer Imaging and Therapy

Gao Shan, Miura Yutaka, Sumiyoshi Akira, Ohno Satoshi, Ogata Keisuke, Nomoto Takahiro, Matsui Makoto, Honda Yuto, Suzuki Minoru, Iiyama Megumi, Osada Kensuke, Aoki Ichio, Nishiyama Nobuhiro

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Principles, Recent Developments and Perspectives in Boron Neutron Capture Therapy (BNCT) Sauerwein

Wolfgang A.G., Fischer Thomas, Sancey Lucie, Verry Camille, Matsuura Eiji, Moss Raymond L., Wittig Andrea

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Understanding the structural and functional changes and biochemical pathomechanism of the cardiomyopathy-associated p.R123W mutation in human α B-crystallin

Somee Leila Rezaei, Barati Anis, Shahsavani Mohammad Bagher, Hoshino Masaru, Hong Jun, Kumar Ashutosh, Moosavi-Movahedi Ali Akbar, Amanlou Massoud, Yousefi Reza

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Genome-wide mapping and cryo-EM structural analyses of the overlapping tri-nucleosome composed of hexasome-hexasome-octasome moieties

Nishimura Masahiro, Fujii Takeru, Tanaka Hiroki, Maehara Kazumitsu, Morishima Ken, Shimizu Masahiro, Kobayashi Yuki, Nozawa Kayo, Takizawa Yoshimasa, Sugiyama Masaaki, Ohkawa Yasuyuki, Kurumizaka Hitoshi

Communications Biology 7 (2024) 61 (doi) 10.1038/s42003-023-05694-1

Optical Resolution of Carboxylic Acid Derivatives of Homoleptic Cyclometalated Iridium(III) Complexes via Diastereomers Formed with Chiral Auxiliaries

A. Kanbe, K. Yokoi, Y. Yamada, M. Tsurui, Y. Kitagawa, Y. Hasegawa, D. Ogata, J. Yuasa and S. Aoki

Inorganic Chemistry 62(29) (2023) 11325-11341 (doi) 10.1021/acs.inorgchem.3c00685

Design and Synthesis of Poly(2,2'-Bipyridyl) Ligands for Induction of Cell Death in Cancer Cells: Control of Anticancer Activity by Complexation/Decomplexation with Biorelevant Metal Cations

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

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Unveiling the structural and functional consequences of the p.D109G pathogenic mutation in human α B-Crystallin responsible for restrictive cardiomyopathy and skeletal myopathy

Hosseini Jafari Mehrnaz, Shahsavani Mohammad Bagher, Hoshino Masaru, Hong Jun, Saboury Ali Akbar, Moosavi-Movahedi Ali Akbar, Yousefi Reza

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Current trends in the promising immune checkpoint inhibition and radiotherapy combination for locally advanced and metastatic urothelial carcinoma

Sano Takeshi, Saito Ryoichi, Aizawa Rihito, Watanabe Tsubasa, Murakami Kaoru, Kita Yuki, Masui Kimihiko, Goto Takayuki, Mizowaki Takashi, Kobayashi Takashi

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Jiko Chimari, Morimoto Yukio, Tsukihara Tomitake, Gerle Christoph

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K. Banshoya, Y. Kaneko, M. Shirakawa, Y. Hieda, A. Machida, M. Ohnishi, T. Tanaka

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Yuzu Keisuke, Imamura Hiroshi, Nozaki Takuro, Fujii Yuki, Badawy Shaymaa Mohamed Mohamed, Morishima Ken, Okuda Aya, Inoue Rintaro, Sugiyama Masaaki, Chatani Eri

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Dynamic action of an intrinsically disordered protein in DNA compaction that induces mycobacterial dormancy

Nishiyama Akihito, Shimizu Masahiro, Narita Tomoyuki, Kodera Noriyuki, Ozeki Yuriko, Yokoyama Akira, Mayanagi Kouta, Yamaguchi Takehiro, Hakamata Mariko, Shaban Amina Kaboso, Tateishi Yoshitaka, Ito Kosuke, Matsumoto Sohkichi

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Internal dynamics of multidomain protein as revealed by an optimized neutron spin echo measurement and all-atom molecular dynamics simulation

Inoue Rintaro, Oroguchi Tomotaka, Oda Takashi, Farago Bela, Martel Anne, Porcar Lionel, Sato Mamoru, Sugiyama Masaaki

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Site-specific relaxation of peptide bond planarity induced by electrically attracted proton/deuteron observed by neutron crystallography

Chiba Kaori, Matsui Takuro, Chatake Toshiyuki, Ohhara Takashi, Tanaka Ichiro, Yutani Katsuhide, Niimura Nobuo

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Proximity estimation and quantification of ionizing radiation-induced DNA lesions in aqueous media using fluorescence spectroscopy

Ken Akamatsu, Katsuya Satoh, Naoya Shikazono, and Takeshi Saito

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Eye lens β -crystallins are predicted by native ion mobility-mass spectrometry and computations to form compact higher-ordered heterooligomers

Rolland Amber D., Takata Takumi, Donor Micah T., Lampi Kirsten J., Prell James S.

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Chatake Toshiyuki, Yanagisawa Yasuhide, Murakami Risa, Ohsugi Tadanori, Sumi Hiroyuki, Takata Takumi, Okuda Aya, Morishima Ken, Inoue Rintaro, Sugiyama Masaaki

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Akiko Kita, Yuna Ishida, Takahiro Shimosaka, Yuta Michimori, Kira Makarova, Eugene Koonin, Haruyuki Atomi, and Kunio Miki

Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31- Feb. 1, 2024) 39

Development a fast scanner for bioimaging by HS-AFM

Masahiro Shimizu

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Development of a novel purification method and structural analysis of mammalian FoF1ATP synthase

Chimari Jiko, Atsuki Nakano, Yuko Misumi, Eiki Yamashita, Genji Kurisu, Yukio Morimoto, Tomitake Tsukihara, Ken Yokoyama, Christoph Gerle,

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DNA damage with the neutrons from reactor

Hiroaki Terato, Tadashi Hanafusa, Midori Isobe, Yoshinori Sakurai, Takushi Takata, Takeshi Saito

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Multi-step protein ligation with the ligation enzyme, OaAEP

Aya Okuda

Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31- Feb. 1, 2024) 57 (In Japanese)

Non-equivalent out of the Equivalence – a limit for protein crystallography –

Yukio Morimoto

Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31- Feb. 1, 2024) 63-65 (In Japanese)

Structural analysis of clock protein complex in solution with small angle scattering and analytical ultracentrifugation

Ken Morishima, Masahiro Shimizu, Yasuhiro Yunoki, Liuel Porcar, Anne Martel, Rintaro Inoue, Masaaki Sugiyama

Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31- Feb. 1, 2024) 26 (In Japanese)

Study of protein hydration

Toshiyuki Chatake, Tomoko Sunami, Satoru Fujiwara, Ichiro Tanaka, Katsuhiro Kusaka

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Study of water-soluble vitamin K₂ from Bacillus subtilis natto

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

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Study on the function and structure of Dpdc, the causative factor of primary ciliary dyskinesia

Masafumi Yohda, Hinako Koeda, Kentaro Noi, Masaaki Sugiyama, Rintaro Inoue, Ken Morishima, Masato Kikumoto

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The analysis of the solution structure and dynamics of multi-domain protein by integrated solution scattering

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The compactification of intrinsically disordered proteins from hyperthermophilic archaeon under high temperatures.

Takashi Oda, Rintaro Inoue, Taiki Tominaga, Hiroshi Nakagawa, Ken Morishima, Hiroki Iwase, Tsuyoshi Konuma, Takahisa Ikegami, Sonoko Ishino, Yoshizumi Ishino, Takayuki Oku, Mamoru Sato, Masaaki Sugiyama

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アカモクフコイダンのアミロイド凝集抑制機構の解析

Masaru Hoshino, Ken Morishima, Rintaro Inoue, Masaaki Sugiyama and Hisashi Yagi

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Reviews

Oral Fibrinolytic Therapy : Nattokinase in Health and Disease Prevention

須見 洋行, 柳澤 泰任, 茶竹 俊行, 満尾 正, 井上 浩義, 島谷 和弘, 内藤 佐和, 矢田貝 智恵子

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放射線損傷を利用した年代測定 : 開発と応用 金沢大学疾患総合モデル

Noriko Hasebe

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7. Neutron Capture Therapy

Papers

Tumor Eradication by Boron Neutron Capture Therapy with ¹⁰B-enriched Hexagonal Boron Nitride Nanoparticles Grafted with Poly(Glycerol)

Zhang Yucai, Kang Heon Gyu, Xu Hua-zhen, Luo Honghui, Suzuki Minoru, Lan Qing, Chen Xiao, Komatsu Naoki, Zhao Li

Advanced Materials 35(35) (2023) 2301479 (doi) 10.1002/adma.202301479

Carcinogenesis Observed in the Spleens of Balb/c Mice After Head-neutron Irradiation

KINASHI YUKO, TAKATA TAKUSHI, SAKURAI YOSHINORI, TANAKA HIROKI

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Investigation of the usability of cone-beam computed tomography images using digital radiography equipment for boron neutron capture therapy treatment planning in the sitting position

Sato Hiroyuki, Takata Takushi, Sakurai Yoshinori

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Sato Hiroyuki, Takata Takushi, Suzuki Minoru, Sakurai Yoshinori

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Initial evaluation of accelerator-based neutron source system at the Shonan Kamakura General Hospital

Suzuki Shunsuke, Nitta Kazunori, Yagihashi Takayuki, Eide Paul, Koivunoro Hanna, Sato Naoki, Gotoh Shinichi, Shiba Shintaro, Omura Motoko, Nagata Hironori, Tanaka Hiroki

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Terada Shinichi, Tsunetoh Satoshi, Tanaka Yoshimichi, Tanaka Tomohito, Kashiwagi Hideki, Takata Takushi, Kawabata Shinji, Suzuki Minoru, Ohmichi Masahide

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Evaluation of the Effectiveness of Boron Neutron Capture Therapy with Iodophenyl-Conjugated closo-Dodecaborate on a Rat Brain Tumor Model

Fujikawa Yoshiki, Fukuo Yusuke, Nishimura Kai, Tsujino Kohei, Kashiwagi Hideki, Hiramatsu Ryo, Nonoguchi Naosuke, Furuse Motomasa, Takami Toshihiro, Hu Naonori, Miyatake Shin-Ichi, Takata Takushi, Tanaka Hiroki, Watanabe Tsubasa, Suzuki Minoru, Kawabata Shinji, Nakamura Hiroyuki, Wanibuchi Masahiko

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Development and evaluation of dose calculation algorithm with a combination of Monte Carlo and point-kernel methods for boron neutron capture therapy

Nojiri Mai, Takata Takushi, Hu Naonori, Sakurai Yoshinori, Suzuki Minoru, Tanaka Hiroki

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Development of the Follow-Up Human 3D Oral Cancer Model in Cancer Treatment

Igawa Kazuyo, Izumi Kenji, Sakurai Yoshinori

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Strategies for Preclinical Studies Evaluating the Biological Effects of an Accelerator-Based Boron Neutron Capture Therapy System

Kondo Natsuko, Masutani Mitsuko, Imamichi Shoji, Matsumoto Yoshitaka, Nakai Kei

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Systems Biology Approach to Investigate Biomarkers, Boron-10 Carriers, and Mechanisms Useful for Improving Boron Neutron Capture Therapy

Perico Davide, Di Silvestre Dario, Imamichi Shoji, Sanada Yu, Masutani Mitsuko, Mauri Pier Luigi

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Monti Hughes Andrea, Hu Naonori

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Proteomic Characterization of SAS Cell-Derived Extracellular Vesicles in Relation to Both BPA and Neutron Irradiation Doses

Perico Davide, Tong Ying, Chen Lichao, Imamichi Shoji, Sanada Yu, Ishiai Masamichi, Suzuki Minoru, Masutani Mitsuko, Mauri Pierluigi

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Phospholipid-Coated Boronic Oxide Nanoparticles as a Boron Agent for Boron Neutron Capture Therapy

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HER-2-Targeted Boron Neutron Capture Therapy with Carborane-integrated Immunoliposomes Prepared via an Exchanging Reaction

Kawasaki Riku, Oshige Ayano, Yamana Keita, Hirano Hidetoshi, Nishimura Kotaro, Miura Yamato, Yorioka Ryuji, Sanada Yu, Bando Kaori, Tabata Anri, Yasuhara Kazuma, Miyazaki Yusuke, Shinoda Wataru, Nishimura Tomoki, Azuma Hideki, Takata Takushi, Sakurai Yoshinori, Tanaka Hiroki, Suzuki Minoru, Nagasaki Takeshi, Ikeda Atsushi

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Cover Feature: Rational Design, Multistep Synthesis and in Vitro Evaluation of Poly(glycerol) Functionalized Nanodiamond Conjugated with Boron-10 Cluster and Active Targeting Moiety for Boron Neutron Capture Therapy

Nishikawa Masahiro, Yu Jie, Kang Heon Gyu, Suzuki Minoru, Komatsu Naoki

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Rational Design, Multistep Synthesis and in Vitro Evaluation of Poly(glycerol) Functionalized Nanodiamond Conjugated with Boron-10 Cluster and Active Targeting Moiety for Boron Neutron Capture Therapy

Nishikawa Masahiro, Yu Jie, Kang Heon Gyu, Suzuki Minoru, Komatsu Naoki

Chemistry – A European Journal 29(63) (2023) e202302073 (doi) 10.1002/chem.202302073

Pharmacokinetic Study of ¹⁴C-Radiolabeled p-Boronophenylalanine (BPA) in Sorbitol Solution and the Treatment Outcome of BPA-Based Boron Neutron Capture Therapy on a Tumor-Bearing Mouse Model

Watanabe Tsubasa, Yoshikawa Tomohiro, Tanaka Hiroki, Kinashi Yuko, Kashino Genro, Masunaga Shin-ichiro, Hayashi Toshimitsu, Uehara Koki, Ono Koji, Suzuki Minoru

European Journal of Drug Metabolism and Pharmacokinetics 48(4) (2023) 443-453 (doi) 10.1007/s13318-023-00830-y

Boron neutron capture therapy anti-tumor effect of nanostructured boron carbon nitride: A new potential candidate

Kaur Manjot, Meena Ramovatar, Nishimura Kai, Miura Kazuki, Nakamura Hiroyuki, Suzuki Minoru, Sharma Ram K., Kumar Akshay

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Carborane-Containing Hydroxamate MMP Ligands for the Treatment of Tumors Using Boron Neutron Capture Therapy (BNCT): Efficacy without Tumor Cell Entry

Flieger Sebastian, Takagaki Mao, Kondo Natsuko, Lutz Marlon R., Gupta Yash, Ueda Hiroki, Sakurai Yoshinori, Moran Graham, Kempaiah Prakasha, Hosmane Narayan, Suzuki Minoru, Becker Daniel P.

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Efficient neutron capture therapy of glioblastoma with pteroyl-closo-dodecaborate-conjugated 4-(p-iodophenyl)butyric acid (PBC-IP)

Nishimura Kai, Kashiwagi Hideki, Morita Taiki, Fukuo Yusuke, Okada Satoshi, Miura Kazuki, Matsumoto Yoshitaka, Sugawara Yu, Enomoto Takayuki, Suzuki Minoru, Nakai Kei, Kawabata Shinji, Nakamura Hiroyuki

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Feasibility study of one-dimensional imaging with an optical fiber for radiation dose-rate monitoring system in the decommissioning process

Matsukura Daisuke, Kurosawa Shunsuke, Fujiwara Chihaya, Yamaji Akihiro, Ohashi Yuji, Yokota Yuui, Kamada Kei, Sato Hiroki, Masao Yoshino, Hanada Takashi, Murakami Rikito, Horiai Takahiko, Yoshikawa Akira, Takata Takushi, Tanaka Hiroki

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- Imaging of gamma photons from activated gold wire using a high-energy gamma camera after irradiation of neutrons from boron neutron capture therapy (BNCT) system
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- A characterization of dye gel dosimeters for boron neutron capture therapy - dose response to gamma rays
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- Proposal of recommended experimental protocols for in vitro and in vivo evaluation methods of boron agents for neutron capture therapy
Hattori Yoshihide, Andoh Tooru, Kawabata Shinji, Hu Naonori, Michiue Hiroyuki, Nakamura Hiroyuki, Nomoto Takahiro, Suzuki Minoru, Takata Takushi, Tanaka Hiroki, Watanabe Tsubasa, Ono Koji
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- Experimentally determined relative biological effectiveness of cyclotron-based epithermal neutrons designed for clinical BNCT: in vitro study
Hu Naonori, Suzuki Minoru, Masunaga Shin-ichiro, Kashino Genro, Kinashi Yuko, Chen Yi-Wen, Liu Yong, Uehara Koki, Mitsumoto Toshinori, Tanaka Hiroki, Ono Koji
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- The effects of BPA-BNCT on normal bone: determination of the CBE value in mice
Iwasaki Ryota, Yoshikawa Ryutaro, Umeno Ryo, Seki Azusa, Matsukawa Takehisa, Takeno Satoshi, Yokoyama Kazuhito, Mori Takashi, Suzuki Minoru, Ono Koji
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- Relative biological effectiveness for epithermal neutron beam contaminated with fast neutrons in the linear accelerator-based boron neutron capture therapy system coupled to a solid-state lithium target
Nakamura Satoshi, Imamichi Shoji, Shimada Kenzi, Takemori Mihiro, Kanai Yui, Iijima Kotaro, Chiba Takahito, Nakayama Hiroki, Nakaichi Tetsu, Mikasa Shohei, Urago Yuka, Kashiwara Tairō, Takahashi Kana, Nishio Teiji, Okamoto Hiroyuki, Itami Jun, Ishiai Masamichi, Suzuki Minoru, Igaki Hiroshi, Masutani Mitsuko
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Kakino Ryo, Hu Naonori, Tanaka Hiroki, Takeno Satoshi, Aihara Teruhito, Nihei Keiji, Ono Koji
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Laird Mathilde, Matsumoto Kotaro, Higashi Yuya, Komatsu Aoi, Raitano Art, Morrison Kendall, Suzuki Minoru, Tamanai Fuyuhiko
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Watabe Hiroshi, Sato Tatsuhiko, Yu Kwan Ngok, Zivkovic Milena, Krstic Dragana, Nikezic Dragoslav, Kim Kyeong Min, Yamaya Taiga, Kawachi Naoki, Tanaka Hiroki, Haque A K F, Islam M Rafiqul, Shahmohammadi Beni Mehrdad

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Toshiaki Tani, Tomoya Fujita, Masaki Misawa, Naomi Tojo, Naoto Shikano, Minoru Suzuki, Ken Ohnishi

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Development of Albumin Nano Particles Installed with Gd(III)-Thiacalixarene Complex for Gd-NCT — Investigation of installing method and in vitro assay

Kohei Ohama, Miku Komiya, Ryota Sawamura, Ryunosuke Karashimada, Minoru Suzuki, Nobuhiko Iki

Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31 - Feb. 1, 2024) 20 (In Japanese)

Development of neutron dosimeters for accelerator-based BNCT irradiation field

ZHAO LIANG, Nishiki Matsubayashi, Mai Nojiri, Naonori Ko, Takushi Takata, Hiroki Tanaka,

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Measurement method with acrylic phantom for BNCT

Nishiki Matsubayashi, Naonori Hu, Takushi Takata, Yoshinori Sakurai, Hiroki Tanaka

Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31 - Feb. 1, 2024) 2

Chordoma Treatment with Boron Neutron Capture Therapy (BNCT): Experimental Insights

Y. Fujikawa, S. Kawabata, K. Tsujino, R. Kayama, H. Kashiwagi, Y. Fukuo, R. Hiramatsu, H. Tanaka, N. Hu, S-I. Miyatake, T. Takami and M. Wanibuchi

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Evaluation of the safety of folate receptor-targeted boron carrier in boron neutron capture therapy (BNCT) for malignant gliomas using CED administration

K. Tsujino, H. Kashiwagi, R. Kayama, Y. Fujikawa, Y. Fukuo, R. Hiramatsu, N. Nonoguchi, T. Takata, H. Tanaka, M. Suzuki, N. Hu, M. Wanibuchi, K. Nakai, K. Nishimura, H. Nakamura and S. Kawabata

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Exploring BNCT as a Novel Approach for Metastatic Spinal Tumor Management

Y. Fujikawa, S. Kawabata, K. Tsujino, R. Kayama, H. Kashiwagi, Y. Fukuo, R. Hiramatsu, T. Takata, H. Tanaka, M. Suzuki, N. Hu, S-I. Miyatake, T. Takami and M. Wanibuchi

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Strategies for Preclinical Studies Evaluating the Biological Effects of an Accelerator-Based Boron Neutron Capture Therapy System

Kondo Natsuko, Masutani Mitsuko, Imamichi Shoji, Matsumoto Yoshitaka, Nakai Kei

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Systems Biology Approach to Investigate Biomarkers, Boron-10 Carriers, and Mechanisms Useful for Improving Boron Neutron Capture Therapy

Perico Davide, Di Silvestre Dario, Imamichi Shoji, Sanada Yu, Masutani Mitsuko, Mauri Pier Luigi

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特集 新たに注目される頭頸部癌治療 BNCT BNCT の原理と基礎

Minoru Suzuki

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The Combination Therapy Effects on Brain Tumor Cells and the Transplanted Mice Incorporated as a New Radio-photosensitizer and by Laser Light and Xrays (Hard- & Ionized-X-rays and Thermal Neutron Beam) in the Radiation Field

Miyoshi Norio, Okazaki Shigetoshi, Kondo Natsuko, Tanaka Hiroki, Sakurai Yoshinori

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ホウ素中性子捕捉療法(BNCT)の生物学研究の近況

Yu Sanada, Tsubasa Watanabe

放射線生物研究 58 (2) (2023) 175-184 (In Japanese)

8. Neutron Radiography and Radiation Application

Papers

Li₂HfBr₆ scintillator for neutron and gamma-ray dual detection

Fujiwara Chihaya, Kurosawa Shunsuke, Yamaji Akihiro, Yoshikawa Akira

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Kurita K, Iikura H, Tsuchikawa Y, Kai T, Shinohara T, Odaira N, Ito D, Saito Y, Matsubayashi M

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Activation imaging of drugs using wide-band X-rays and gamma rays

Nanase Koshikawa, Yuka Kikuchi, Jun Kataoka, Yuichiro Kardonaga, Atsushi Toyoshima, Koichi Takamiya

Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31 - Feb. 1, 2024) 18 (In Japanese)

Development of High-Dose Rate Real-Time Monitors with an Optical Fiber

Shunsuke Kurosawa, Hiroki Tanaka, Takushi Takada, Daisuke Matsukura, Yusuke Urano, Chihaya Fujiwara, Akihiro

Yamaji, Shohei Kodama

Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31 - Feb. 1, 2024) 48 (In Japanese)

Properties of Photo-detector with micro vacuum electron sources under gamma-ray irradiation

Yasuhito Gotoh, Yoichiro Neo, Nobuhiro Sato, Masayoshi Nagao, and Tamotsu Okamoto

Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31 - Feb. 1, 2024) 27 (In Japanese)

Development of imaging method using β -ray nuclear magnetic resonance

Fukuda, Y. Otani, M. Fukutome, R. Taguchi, S. Chen, S. Ishitani, R. Miyahara, K. Watanabe, T. Izumikawa, N. Noguchi,

K. Takatsu, T. Otsubo, D. Nishimura, H. Takahashi, A. Yano, H. Seki, K. Matsuta, A. Kitagawa, S. Sato, and S. Momota

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9. TRU and Nuclear Chemistry

Papers

Direct Measurement of the Internal Pressure of Ultrafine Bubbles Using Radioactive Nuclei

Tanigaki Minoru, Yamakura Takuya, Hayashi Daiju, Ueda Yoshikatsu, Taniguchi Akihiro, Ohkubo Yoshitaka, Tokuda Yomei
Chemical Engineering & Technology 46(9) (2023) 1773-1781 (doi) 10.1002/ceat.202300070

Edge-Driven Convection Melting Before the Emplacement of the Afar Mantle Plume Head Inferred From $^{40}\text{Ar}/^{39}\text{Ar}$ Dating
Yoshimura Yutaka, Ishizuka Osamu, Yamazaki Toshitsugu, Ahn Hyeon-Seon, Kidane Tesfaye, Yamamoto Yuhji, Sekimoto Shun, Sano Takashi, Otofujii Yo-ichiro

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A quantitative description of the compatibility of technetium-selective chromatographic technetium-99m separation with low specific activity molybdenum-99

Jang Jaewoong, Sekimoto Shun, Ohtsuki Tsutomu, Tatenuma Katsuyoshi, Tsuguchi Akira, Uesaka Mitsuru
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Kamei Y., Shimizu I., Teraoka Y., Yamamura T., Shirasaki K.

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Journal of Nuclear Materials 589 (2024) 154862 (doi) 10.1016/j.jnucmat.2023.154862

Experimental production of Ac-225 using an electron linear accelerator: Scaling up the production to MBq level and improving the quality

Mizuho Maeda, Takahiro Tadokoro, Yuichiro Ueno, Yuko Kani, Kento Nishida, Takuma Koiwai, Takahiro Sasaki, Takahiro Watanabe, Mitsuyoshi Yoshimoto, Kazunobu Ohnuki, Hirohumi Fujii, Hidetoshi Kikunaga, Shigeru Kashiwagi, Kenji Shirasaki, Shun Sekimoto, Tsutomu Ohtsuki, Makoto Inagaki, Satoshi Fukutani and Yuji Shibahara
Journal of Nuclear Medicine 64(SUPP1) (2023) 24

Neutron total and capture cross-section measurements of ^{155}Gd and ^{157}Gd in the thermal energy region with the Li-glass detectors and NaI(Tl) spectrometer installed in J-PARC·MLF·ANNRI

Kimura Atsushi, Nakamura Shoji, Endo Shunsuke, Rovira Gerard, Iwamoto Osamu, Iwamoto Nobuyuki, Harada Hideo, Katabuchi Tatsuya, Terada Kazushi, Hori Jun-ichi, Shibahara Yuji, Fujii Toshiyuki
Journal of Nuclear Science and Technology 60(6) (2023) 678-696 (doi) 10.1080/00223131.2022.2134224

Measurements of capture cross-section of ^{93}Nb by activation method and half-life of ^{94}Nb by mass analysis

Nakamura Shoji, Shibahara Yuji, Endo Shunsuke, Kimura Atsushi

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Utilization of different radionuclides for high-energy extended efficiency calibration of a HPGe for improved determination of calcium and sulfur using k0-INAA

Soliman Mohamed, Mindil Ahmed, Takamiya Koichi

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Enhancement of Parity-Violating Energy Difference of CHFCIBr , CHFCII , and CHFBrI by Breaking the Cancellation among Valence Orbital Contributions

Kuroda Naoya, Sunaga Ayaki, Senami Masato

Journal of the Physical Society of Japan 92(12) (2023) 124301 (doi) 10.7566/JPSJ.92.124301

An Evaluation of Three Halogens (Cl, Br, and I) Data from a Geological Survey of Japan Geochemical Reference Materials by Radiochemical Neutron Activation Analysis

Shirai Naoki, Sekimoto Shun, Ebihara Mitsuru

Minerals 14(3) (2024) 213 (doi) 10.3390/min14030213

Electron-capture decay rate of ^7Be in cluster and crystal forms of beryllium: A first-principles study
Be 7 in cluster and crystal forms of beryllium: A first-principles study
Kuwahara Riichi, Ohno Kaoru, Ohtsuki Tsutomu
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Radium Separation from Thorium and Manufacturing of Targets by Precipitation Method
Feng Yin, Satoshi Fukutani, Mari Toyama, Tomoo Yamamura, Suzuki Tatsuya
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A direct conversion method for the separation and temporary storage of MA
Tomoo Yamamura
Actinide Separations Conference Idaho Falls, ID INL Meeting Center (May 16-18, 2023) 30

Crystallographic and Magnetic Properties of Neutral and Cationic Uranium (IV) Phthalocyanine double-decker
Complexes synthesized down to mg samples from g
Takumi Saito, Mari Toyama, Kenji Shirasaki, Chihiro Tabata, Takamitsu Fukuda, Dexin Li, Tomoo Yamamura
Actinides 2023 Denver, Colorado, USA (Jun. 5-8, 2023) 134

First structural study on Thorium(IV) complexes with long-chained and cyclic polyethylenediamine
(methylphosphonate); EDTMP and DOTMP for nuclear medicine
Mari Toyama, Kenji Shirasaki, Chihiro Tabata, Koshin Washiyama, Tomoo Yamamura
Actinides 2023 Denver, Colorado, USA (Jun. 5-8, 2023) 149

Electrochemical investigation of complex formation between vanadium ion and benzoic acid
Takuma Mototani, Akihiro Uehara, Chizu Kato, Renki Sugiyama, Yuki Yokoyama, Yoshino Ikeda, Kim Taejune,
Toshiyuki Fujii
Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31 - Feb. 1, 2024) 30 (In Japanese)

Fundamental experiments for the formation of radionuclide endohedral fullerenes
Makoto Inagaki, Hiroki Nakada, Kazuhiko Akiyama, Tsutomu Ohtsuki
Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31 - Feb. 1, 2024) 45 (In Japanese)

Gallium concentrations in GSJ standard materials
Chizu Kato, Satoshi Fukutani, Toshiyuki Fujii
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Isotope fractionation of zinc using a chemical exchange method with Aza-crown ether
Seiya Akamatsu, Satoshi Fukutani, Shigeyuki Wakaki, Ryoichi Nakada, Kazuya Nagaishi
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Prediction and extraction experiments of alkaline earth metal toward the chemical study of nobelium
Yudai Itakura, Yoshitaka Kasamatsu, Koichi Takamiya, Masashi Kaneko, Kojiro Nagata, Ruilin Wang, Miyu Konno,
Kyosuke Shibamoto, Eisuke Watanabe, Saki Otaka, Ryohei Nakanishi, Atsushi Shinoahara
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Solubility and solid phases of trivalent lanthanide oxides and hydroxides
Taishi Kobayashi, Takayuki Sasaki
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Solvent extraction characteristics of Europium using new extractants, and separation and recovery by extraction
chromatography
Kosuke Otsu, Chizu Kato, Masaya Ikeno, Chuya Saiga, Yuya Nihei, Satoshi Fukutani, Tatsuro Matsumura, Toshiyuki Fujii
Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31 - Feb. 1, 2024) 41 (In Japanese)

Structural studies of Th(IV) complexes with cyclic polyethylenediamine (methylphosphonate) for nuclear medicine
Mari Toyama
Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31 - Feb. 1, 2024) 4-6 (In Japanese)

Study of Isotope Separation via Chemical Exchange Reaction

Ryuta Hazama, Takaaki Yoshimoto, Kumsut Pantiwa, Anawat Rittirong, Yoichi Sakuma, Toshiyuki Fujii, Satoshi Fukutani, Yuji Shibahara

Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31 - Feb. 1, 2024) 47 (In Japanese)

Structural studies of mononuclear Th(IV) complexes with cage-shaped acyclic or cyclic chelate ligands possessing a polyethylenediamine(methylphosphonate) moiety; EDTMP and DOTMP for nuclear medicine

Mari Toyama, Kenji Shirasaki, Tomoo Yamamura

The 73rd Conference of Japan Society of Coordination Chemistry Mito City, Japan (Sep. 21-23, 2023) 73 2B-06

遊離イオンに基づくコバルトキューバン型錯体の架橋ハロゲンの配列制御

Mari Toyama, Soichiro Uchida, Kenji Nagao, Tomoo Yamamura

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10. Health Physics and Waste Management

Papers

STEAM Educational Development of Risk Management Education Framework for Secondary School Students

SHUHARA Ai, MORIMOTO Ayako, NAKAYAMA Jo, HAYASHI Rumiko, TAKASHIMA Ryuta, IIMOTO Takeshi **Japanese Journal of Health Physics 58(1) (2023) 5-9 (doi) 10.5453/jhps.58.5**

A Source-Related Approach for Discussion on Using Radionuclide-Contaminated Materials in Post-accident Rehabilitation

Miwa Kazuji, Iimoto Takeshi

Journal of Radiation Protection and Research 48(2) (2023) 68-76 (doi) 10.14407/jrpr.2022.00045

Proceedings

Mass balance of radioactive cesium and stable cesium accumulated in wild animal bodies living in difficult-to-return zones in Fukushima Prefecture

Michiko Fukushima, Hitoshi Komatsu, Yuto Inuma, Yamato Tsuji, Yuya Sugawara, Shota Mochizuki, Takashi Sakata, Kimie Murakami, Kousuke Kanda

Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31 - Feb. 1, 2024) 25 (In Japanese)

プラスチックに基づく波長変換材に関する先駆的研究 ～環境レベルの放射線照射中における分子内電子状態その場計測の実現に向けて～

Hidehito Nakamura

Proceedings of the 58th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 31 - Feb. 1, 2024) 1 (In Japanese)

Reviews

日本保健物理学会「エックス線被ばく事故検討 WG」経過報告書(前半)

日本保健物理学会「エックス線被ばく事故検討 WG」(飯本武志他)

ESI-NEWS 41(1) -2023 3-10 (In Japanese)

The Combination Therapy Effects on Brain Tumor Cells and the Transplanted Mice Incorporated as a New Radio-photosensitizer and by Laser Light and Xrays (Hard- & Ionized-X-rays and Thermal Neutron Beam) in the Radiation Field

Norio Miyoshi, Shigetoshi Okazaki, Natsuko Kondo, Hiroki Tanaka, Yoshinori Sakurai

The Journal of Japan Society for Laser Surgery and Medicine 44(1) (2023) 45337 (In Japanese)

Review of Articles Related to the Accident of TEPCO's Fukushima Daiichi Nuclear Power Station Published on Japanese Journal of Health Physics: Risk Communication

Takeshi IIMOTO, Masahiro KATO, Nobuyuki HAMADA, Tsuyoshi MAEDA, Akira YOSHIDA

Japanese Journal of Health Physics 58(2) -2023 59-62 (In Japanese)

11. Accelerator Physics

Papers

Long-Axis Uniform Magnetic Field Generation Using Permanent Magnets

Iwashita Yoshihisa, Kuriyama Yasutoshi, Fuwa Yasuhiro

IEEE Transactions on Applied Superconductivity 5 (2024) 1-4 (doi) 10.1109/TASC.2024.3380588

Design Improvement of Bipolar Correction Magnet With Permanent Magnets

Kuriyama Yasutoshi, Iwashita Yoshihisa, Fuwa Yasuhiro, Terunuma Nobuhiro

IEEE Transactions on Applied Superconductivity 5 (2024) 1-5 (doi) 10.1109/TASC.2024.3365099

Electric field in the RF cavity with large beam duct for high current beam acceleration

Sako T., Ishi Y., Uesugi T., Kuriyama Y., Mori Y., Tsumori K., Ando A., Yonemura Y.

Journal of Instrumentation 18(11) (2023) P11019 (doi) 10.1088/1748-0221/18/11/P11019

Technical note: Application of an optical hydrophone to ionoacoustic range detection in a tissue-mimicking agar phantom

Sueyasu Shota, Kasamatsu Koki, Takayanagi Taisuke, Chen Ye, Kuriyama Yasutoshi, Ishi Yoshihiro, Uesugi Tomonori, Rohringer Wolfgang, Unlu Mehmet Burcin, Kudo Nobuki, Yokokawa Kohei, Takao Seishin, Miyamoto Naoki, Matsuura Taeko

Medical Physics 2023 (2023) 1-12 (doi) 10.1002/mp.16892

Neutron-production double-differential cross sections of ^{208}Pb and ^{209}Bi in proton-induced reactions near 100 MeV

Iwamoto Hiroki, Meigo Shin-ichiro, Satoh Daiki, Iwamoto Yosuke, Ishi Yoshihiro, Uesugi Tomonori, Yashima Hiroshi, Nishio Katsuhisa, Sugihara Kenta, Çelik Yurdunaz, Stankovskiy Alexey

Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms 544 (2023) 165107 (doi) 10.1016/j.nimb.2023.165107

Benchmark Experiments for Bulk and Maze Shielding Using Activation Detectors with 24-GeV/c Protons at CERN/CHARM

Nakao Noriaki, Sanami Toshiya, Kajimoto Tsuyoshi, Froeschl Robert, Bozzato Davide, Iliopoulou Elpida, Infantino Angelo, Yashima Hiroshi, Lee Eunji, Oyama Takahiro, Hagiwara Masayuki, Nagaguro Seiji, Matsumoto Tetsuro, Masuda Akihiko, Uwamino Yoshitomo, Roesler Stefan, Brugger Markus

Nuclear Science and Engineering 198(2) (2023) 336-347 (doi) 10.1080/00295639.2023.2196228

Heavy Ion Injection of Fixed-Field Alternating Gradient Accelerator

Yonemura Yujiro, Arima Hidehiko, Nishibata Hiroki, Teranishi Takashi, Wakasa Tomotsugu, Ikeda Nobuo, Watanabe Kenichi, Shigyo Nobuhiro, Iwamura Tatsunori, Adachi Kyosuke, Takamatsu Koki, Kotani Motoki, Tanaka Hisato, Matsunaga Rintaro, Matsumoto Taichi, Takenaka Kyohei, Kajihara Takafumi, Matsunaga Sotaro, Shinohara Yusuke, Mori Yoshiharu

Progress of Theoretical and Experimental Physics 2024(2) (2024) 023G01 (doi) 10.1093/ptep/ptae017

Development of a non-destructive depth-selective quantification method for sub-percent carbon contents in steel using negative muon lifetime analysis

Ninomiya Kazuhiko, Kubo Michael Kenya, Inagaki Makoto, Yoshida Go, Chiu I-Huan, Kudo Takuto, Asari Shunsuke, Sentoku Sawako, Takeshita Soshi, Shimomura Koichiro, Kawamura Naritoshi, Strasser Patrick, Miyake Yasuhiro, Ito Takashi U., Higemoto Wataru, Saito Tsutomu

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A conceptual design of FFA ring for super heavy element production adopting the ERIT mechanism

Yoshihiro Ishi, Uesugi Tomonori, Mori Yoshiharu

14th International Particle Accelerator Conference, Venice, Italy (May 7-12, 2023) 955-957

Development of EPICS-based data acquisition system for beam loss monitor and sX-Map

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

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Short pulsed beam extraction from Kurns FFAG

Uesugi Tomonori, Ishi Yoshihiro, Mori Yoshiharu

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