

## **II. PUBLICATION LIST**

### **(APRIL 2024 – MARCH 2025)**

## 1. Slow Neutron Physics and Neutron Scattering

### Papers

Development of non-destructive isotope measurement of the natural galena (PbS) using negative muon beams  
Terada K., Ninomiya K., Sato A., Tomono D., Kawashima Y., Inagaki M., Nambu A., Kudo T., Osawa T., Kubo M. K.  
**Journal of Analytical Science and Technology** 15(1) (2024) 28 (doi)10.1186/s40543-024-00440-6

Polarized Cold-neutron Reflectometry at JRR-3/MINE2 for the Development of Ultracold-neutron Spin Analyzers for a Neutron EDM Experiment at TRIUMF

Higuchi Takashi, Akatsuka Hiroaki, Brossard Alexis, Fujimoto Derek, Giampa Pietro, Hansen-Romu Sean, Hatanaka Kichiji, Hino Masahiro, Ichikawa Go, Imajo Sohei, Jamieson Blair, Kawasaki Shinsuke, Kitaguchi Masaaki, Mammei Russell, Matsumiya Ryohei, Mishima Kenji, Picker Rüdiger, Schreyer Wolfgang, Shimizu Hirohiko M., Sidhu Steve, Vanbergen Sean

**Journal of the Physical Society of Japan**, 93(9) (2024) 091009 (doi)10.7566/JPSJ.93.091009

Demonstration with very-cold neutrons of developments in Fourier time-of-flight

Neulinger Thomas, Bernert Karina, Fierlinger Peter, Filter Hanno, Hino Masahiro, Jenke Tobias, Lapeyre Franck, Zimmer Oliver

**Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment**, 1066 (2024) 169570 (doi)10.1016/j.nima.2024.169570

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** 34 (2025) 912-913 (doi)10.1177/17515831231216387

### Proceedings

Development of neutron focusing mirrors and the application for neutron beam optics in the new research reactor at "Monju" site

Masahiro Hino, Takuya Hosobata, Masahiro Takeda, Yutaka Yamagata, Takashi Higuchi, Ryuto Fujitani, Hitoshi Endo

**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025)** 57 (in Japanese)

The measurement of a traversal time by neutron spin interferometry

Ryuto Fujitani, Masahiro Hino, Takashi Higuchi

**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025)** 42 (in Japanese)

Towards the design of cold neutron source for new research reactor to be constructed on the "Monju" site

Yudai Takita, Mizuki Iriyama, Seiji Tasaki, Yutaka Abe, Masahiro Hino, Masasi Arai

**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025)** 39 (in Japanese)

高速度中性子 CT の実用性に関する検討

Naoya Odaira, Daisuke Ito, Yasushi Saito

**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025)** 43 (in Japanese)

## 2. Nuclear Physics and Nuclear Data

### Papers

Microscopic Observation of the Anisotropy of the Johari–Goldstein- $\beta$  Process in Cross-Linked Polybutadiene on Stretching by Time-Domain Interferometry

Mashita Ryo, Saito Makina, Yoda Yoshitaka, Nagasawa Nobumoto, Bito Yasumasa, Kikuchi Tatsuya, Kishimoto Hiroyuki, Seto Makoto, Kanaya Toshiji

**ACS Macro Letters** 13(7) (2024) 847-852 (doi)10.1021/acsmacrolett.4c00274

Cd-content and temperature dependences of hyperfine fields in  $\text{Cd}_x\text{Fe}_{3-x}\text{O}_4$

Sato W., Fujii M., Konaka M., Ito T., Hirahara H., Komatsuda S., Taniguchi A., Ohkubo Y.

**Applied Radiation and Isotopes** 209 (2024) 111320 (doi)10.1016/j.apradiso.2024.111320

An introduction to Spent Nuclear Fuel decay heat for Light Water Reactors: a review from the NEA WPNCs

Rochman Dimitri, Algora Alejandro, Álvarez-Velarde Francisco, Bardelay Aurélie, Bremnes Øystein, Cabellos Oscar, Cano-Ott Daniel, Capponi Luigi, Carmouze Coralie, Caruso Stefano, Cummings Andrew, Dagan Ron, Fallot Muriel, Fiorito Luca, Giot Lydie, Govers Kevin, Häkkinen Silja, Hannstein Volker, Hoefer Axel, Huynh Tan Dat, Ichou Raphaëlle, Ilas Germina, Juutilainen Pauli, Koszuc Lukasz, Kromar Marjan, Lahaye Sébastien,

Lam James, Laugier Frédéric, Launay Agnès, Léger Vincent, Lecarpentier David, Leppanen Jaakko, Malouch Fadhel, Martin Julie-Fiona, McGinnes David, Mills Robert William, Minato Futoshi, Nauchi Yasushi, Ortego Pedro, Petkov Plamen, Romojaro Pablo, Sato Shunsuke, Seidl Marcus, Shama Ahmed, Simeonov Teodosi, Sjöland Anders, Solans Virginie, Sommer Fabian, Tittelbach Sven, Tsilanizara Aimé, Vlassopoulos Efstathios, Vallet Vanessa, Vasiliev Alexander, Watanabe Tomoaki, Žerovnik Gašper  
**EPJ Nuclear Sciences & Technologies 10 (2025) 9 (doi)10.1051/epjn/2024010**

Spectroscopy of neutron-rich nuclei produced by multinucleon transfer reactions at KISS  
Watanabe Yutaka, Hirayama Yoshikazu, Mukai Momo, Niwase Toshitaka, Schury Peter, Rosenbusch Marco, Ishiyama Hironobu, Jeong Sun-Chan, Miyatake Hiroari, Wada Michiharu, Kimura Sota, Iimura Shun, Moon Jun Young, Hashimoto Takashi, Taniguchi Akihiro  
**EPJ Web of Conferences 306 (2024) 01016 (doi)10.1051/epjconf/202430601016**

Quasi-elastic  $\gamma$ -ray scattering study of  $\alpha$  process under stretching in crosslinked rubber filled with silica via Mössbauer time-domain interferometry  
Mashita Ryo, Yoda Yoshitaka, Bito Yasumasa, Kishimoto Hiroyuki, Seto Makoto, Kanaya Toshiji, Saito Makina  
**Interactions 245 (2024) 314 (doi)10.1007/s10751-024-02171-x**

Synchrotron based conversion electron Mössbauer spectroscopy  
Mitsui Takaya, Fujiwara Kosuke, Sakai Seiji, Li Songtian, Okabayashi Jun, Kobayashi Yasuhiro, Seto Makoto  
**Interactions 245 (2024) 347 (doi)10.1007/s10751-024-02195-3**

Thermal Stability of Retained Austenite with Heterogeneous Composition and Size in Austempered Fe-2Mn-1.5Si-0.4C Alloy  
Watanabe Miku, Miyamoto Goro, Zhang Yongjie, Morooka Satoshi, Harjo Stefanus, Kobayashi Yasuhiro, Furuhashi Tadashi  
**ISIJ International 64(9) (2025) 1464-1476 (doi)10.2355/isijinternational.ISIJINT-2024-044**

Thermal behavior of open-volume defects and absorbed hydrogen atoms in palladium  
Sato W., Furumoto M., Shimizu H., Ohkubo Y.  
**Journal of Applied Physics 135(24) (2024) 245103 (doi)10.1063/5.0207064**

Neural network potential for molecular dynamics calculation of  $\text{UO}_2$   
Konashi Kenji, Kato Nobuhiko, Mori Kazuki, Kurosaki Ken  
**Journal of Nuclear Materials 607 (2025) 155660 (doi)10.1016/j.jnucmat.2025.155660**

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 333 (2024) 3445-3450 (doi)10.1007/s10967-023-09289-2**

Controlling  $^{229}\text{Th}$  isomeric state population in a VUV transparent crystal  
Hiraki Takahiro, Okai Koichi, Bartokos Michael, Beeks Kjeld, Fujimoto Hiroyuki, Fukunaga Yuta, Haba Hiromitsu, Kasamatsu Yoshitaka, Kitao Shinji, Leitner Adrian, Masuda Takahiko, Guan Ming, agasawa Nobumoto, Ogake Ryoichiro, Pimon Martin, resseller Martin, Sasao Noboru, Schaden Fabian, Schumm Thorsten, Seto Makoto, Shigekawa Yudai, Shimizu Kotaro, Sikorsky Tomas, Tamasaku Kenji, Takatori Sayuri, Watanabe Tsukasa, Yamaguchi Atsushi, Yoda Yoshitaka, Yoshimi Akihiro, Yoshimura Koji  
**Nature Communications 15(1) (2024) 5536 (doi)10.1038/s41467-024-49631-0**

Development of a phoswich imaging detector to simultaneously acquire neutron and gamma photon images  
Yamamoto Seiichi, Yoshino Masao, Nakanishi Kohei, Kamada Kei, Yoshikawa Akira, Tanaka Hiroki, Kataoka Jun  
**Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 1065 (2024) 169484 (doi)10.1016/j.nima.2024.169484**

Giant dipole resonance photofission and photoneutron reactions in  $\text{U}^{238}$  and  $\text{Th}^{232}$   
Filipescu D., Gheorghe I., Goriely S., Tudora A., Nishio K., Ohtsuki T., Wang H., Fan G., Stopani K., Suzaki F., Hirose K., Inagaki M., Lui Y.-W., Ari-izumi T., Miyamoto S., Otsuka T., Utsunomiya H.  
**Physical Review C 109(4) (2024) 044602 (doi)10.1103/PhysRevC.109.044602**

Measurement system requirements for photofission signal detection with coincidence neutron counting method  
K. W. Chin, H. Sagara, J. Hori, Y. Takahashi  
**Progress in Nuclear Science and Technology 7 (2025) 91-96 (doi)10.15669/pnst.7.91**

## Proceedings

Current Status of Neutron In-beam Mössbauer spectroscopy

M. Yoshida, Y. Kobayashi, M. K. Kubo, S. Kimoto, W. Sato, M. Mihara, J. Miyazaki, T. Nagatomo, Y. Watanabe, I. Chui, and T. Osawa

**Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei X", Online (Feb. 7, 2024) 41-46 (in Japanese)**

Development of a combined neutron resonance analysis technique as a nondestructive assay for fissile material quantification

F. Rossi, J. Lee, Y. Kodama, K. Hironaka, M. Koizumi, J. Hori, K. Terada, and T. Sano

**65th Annual Meeting of the Institute of Nuclear Materials Management, Portland, U.S.A. (Jul. 21-25, 2024)**

Identification of  $\beta$ -delayed  $\gamma$ -rays of a short-lived fission product  $^{157}\text{Nd}$  using an Isotope

S. Sakakibara, T. Kuga, M. Shibata and A. Taniguchi

**Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei X", Online (Feb. 7, 2024) 38-42 (in Japanese)**

Laser spectroscopy at KISS

Y. Hirayama, M. Mukai, Y.X. Watanabe, P. Schury, H. Choi, J.Y. Moon, T. Hashimoto, S. Iimura, M. Oyaizu, S.C. Jeong, T. Niwase, M. Tajima, A. Taniguchi, M. Wada, and H. Miyatake

**Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei X", Online (Feb. 7, 2024) 32-37 (in Japanese)**

Local states of oxide ions in yttria stabilized zirconia (YSZ)

M. Mihara, Y. Otani, M. Ogura, K. Matsuta, M. Fukuda, M. Fukutome, Y. Kimura, G. Takayama, T. Sugisaki, R. Taguchi, T. Izumikawa, N. Noguchi, T. Ohtsubo, D. Nishimura, H. Takahashi, A. Kitagawa, S. Sato, S. Momota

**Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei X", Online (Feb. 7, 2024) 8-11(in Japanese)**

Mixed-Valence State of Binuclear Ferrocene Derivatives

S. Nakashima

**Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei X", Online (Feb. 7, 2024) 12-17 (in Japanese)**

Recoilless Fraction on  $^{197}\text{Au}$  Mössbauer Spectroscopy

Y. Kobayashi, H. Ohashi and M. Seto

**Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei X", Online (Feb. 7, 2024) 1-4 (in Japanese)**

## Others

Gamma ray spectroscopy for event out of phase of pulsed neutron source for short lived fission products

Y. Nauchi, J. Hori, K. Terada, T. Sano

**Symposium on Nuclear Data 2024 (2024)**

Development of a High-Voltage Output DAC System for Fast Ion-Shuttling

T. Oshio, R. Nishimoto, T. Higuchi, K. Hayasaka, K. Koike, S. Morisaka, T. Miyoshi, R. Ohira, U. Tanaka

**arXiv (2025) (doi)10.48550/arXiv.2412.07363**

Precision Spectroscopy of Antiprotonic Atoms for Investigation of Low-energy Antinucleon-nucleus Interactions

Takashi Higuchi, Hiroyuki Fujioka

**arXiv (2025) (doi)10.48550/arXiv.2501.08759**

Towards Precision Spectroscopy of Antiprotonic Atoms for Probing Strong-field QED

Gonalo Baptista, Shikha Rath, Michael Roosa, Quentin Senetaire, Jonas Sommerfeldt, Toshiyuki Azuma, Daniel Becker, Francois Butin, Ofir Eizenberg, Joseph Fowler, Hiroyuki Fujioka, Davide Gamba, Nabil Garroum, Mauro Guerra, Tadashi Hashimoto, Takashi Higuchi, Paul Indelicato, Jorge Machado, Kelsey Morgan, Francois Nez, Jason Nobles, Ben Ohayon, Shinji Okada, Daniel Schmidt, Daniel Swetz, Joel Ullom, Pauline Yzombard, Marco Zito, Nancy Paul

**arXiv (2025) (doi)10.48550/arXiv.2501.08893**

Novel concept for low-energy antineutron production and its application for antineutron scattering experiments  
Alessandra Filippi, Hiroyuki Fujioka, Takashi Higuchi, Luca Venturelli  
**arxiv (2025) (doi)10.48550/arXiv.2503.06972**

### 3. Reactor Physics and Reactor Engineering

#### Papers

Evaluation of existing correlations and development of a new correlation for single-phase friction factor in rod bundle assembly

Chalgeri Vikrant Siddharudh, Shen Xiuzhong, Yamamoto Toshihiro

**Annals of Nuclear Energy 201 (2024) 110456-110456 (doi)10.1016/j.anucene.2024.110456**

Neutron transmission measurements for silica glass at the KURNS-LINAC

Lee Jaehong, Rossi Fabiana, Kodama Yu, Hironaka Kota, Koizumi Mitsuo, Sano Tadafumi, Matsuo Yasunori, Hori Jun-ichi

**Annals of Nuclear Energy 211 (2025) 111017 (doi)10.1016/j.anucene.2024.111017**

Nuclear education programs with reactor laboratory experiments at zero-powered research reactor facilities in Japan

Pyeon Cheol Ho, Endo Tomohiro, Chiba Go, Watanabe Kenichi, Wakabayashi Genichiro

**Annals of Nuclear Energy 204 (2024) 110531 (doi)10.1016/j.anucene.2024.110531**

Sensitivity and perturbation analysis of alpha-eigenvalue with time-dependent Monte Carlo perturbation techniques  
Yamamoto Toshihiro, Sakamoto Hiroki

**Annals of Nuclear Energy 208 (2024) 110756 (doi)10.1016/j.anucene.2024.110756**

Extraction method for superimposed coherent transition radiation using Fresnel reflection in a ring-type resonator  
Sei Norihiro, Takahashi Toshiharu

**Applied Optics 63(18) (2024) 5000 - 5005 (doi)10.1364/AO.525707**

Long-Term Estimation of Depositions on Heating Surface During Boiling of Long-Life Coolant

Shinozaki M., Ito D., Odaira N., Ito K., Saito Y. ASME

**Journal of Heat and Mass Transfer 146(11) (2024) 111602 (doi)10.1115/1.4065844**

Experimental investigation on local flow structures of upward cap-bubbly flows in a vertical large-size square channel  
Sun Haomin, Kunugi Tomoaki Yokomine Takehiko, Shen Xiuzhong, Hibiki Takashi

**Experimental Thermal and Fluid Science 154 (2024) 111171 (doi)10.1016/j.expthermflusci.2024.111171**

Experimental investigation of tritium release behavior from neutron irradiated LiAlO<sub>2</sub> with Zr for tritium production in a high-temperature gas-cooled reactor

Isogawa Hiroki, Katayama Kazunari, Kobayashi Seiyo, Matsuura Hideaki, Iinuma Yuto

**Fusion Engineering and Design 208 (2024) 114657 (doi)10.1016/j.fusengdes.2024.114657**

A full-flow-range drift-flux model for adiabatic and boiling two-phase flows in vertical narrow rectangular flow channels  
Shen Xiuzhong, Yamamoto Toshihiro, Nakajima Ken, Hibiki Takashi

**International Journal of Thermal Sciences 202 (2024) 109086 (doi)10.1016/j.ijthermalsci.2024.109086**

Development of Capacitance Void Fraction Sensor Using X-ray Transmission Imaging

ITO Daisuke, ADACHI Takuya, ODAIRA Naoya, ITO Kei, SAITO Yasushi

**JAPANESE JOURNAL OF MULTIPHASE FLOW 39(1) (2025) 47-52 (in Japanese) (doi)10.3811/jjmf.2025.002**

Fusion neutron source and array of particle detectors for nondestructive interrogation of special nuclear materials  
Masuda Kai, Takahashi Yoshiyuki, Misawa Tsuyoshi, Yamakawa Norio, Scott Thomas B., Bakr Mahmoud

**Journal of Applied Physics 136(11) (2024) 114503 (doi)10.1063/5.0225179**

Measurements of neutron capture cross-section for nuclides of interest in decommissioning (II): <sup>58</sup>Fe(n,γ)<sup>59</sup>Fe  
Nakamura Shoji, Shibahara Yuji, Endo Shunsuke, Rovira Gerard, Kimura Atsushi

**Journal of Nuclear Science and Technology 62(3) (2025) 300-307 (doi)10.1080/00223131.2024.2427244**

Uncertainty quantification of criticality in light-water-moderated and graphite-reflected core with highly enriched uranium fuel at university teaching and research reactor

Shiga Hiroshi, Watanabe Kenichi, Takeda Satoshi, Wakabayashi Genichiro, Yamanishi Hirokuni, Pyeon Cheol Ho

**Journal of Nuclear Science and Technology 62(2) (2025) 224-232 (doi)10.1080/00223131.2024.2402363**

A Study of Oscillating Magnetic Fields with Neutron Spin Interferometry  
Suzuki Takaya, Fujitani Ryuto, Tasaki Seiji, Hino Masahiro, Kitaguchi Masaaki, Oda Tatsuro, Nakamura Riichiro  
**Journal of the Physical Society of Japan 93(9) (2024) 091008 (doi)10.7566/JPSJ.93.091008**

Uncertainty Quantification of  $^{237}\text{Np}$ ,  $^{241}\text{Am}$ , and  $^{243}\text{Am}$  Reaction Rates in Highly Enriched Uranium Fuel Cores at Kyoto University Critical Assembly  
Pyeon Cheol Ho, Oizumi Akito, Katano Ryota, Fukushima Masahiro  
**Nuclear Science and Engineering 199(3) (2025) 429-444 (doi)10.1080/00295639.2024.2380624**

Nondestructive and active interrogation system for special nuclear material: proof of principle and initial results  
Bakr Mahmoud, Masuda Kai, Takahashi Yoshiyuki, Misawa Tsuyoshi, Yamakawa Norio, Scott Tomas  
**Nuclear Science and Techniques 35(5) (2024) 87 (doi)10.1007/s41365-024-01458-6**

Perovskite Nanocrystal-Coated Inorganic Scintillator-Based Fiber-Optic Gamma-ray Sensor with Higher Light Yields  
Jegal Seokhyeon, Song Siwon, Park Jae Hyung, Kim Jinhong, Kim Seunghyeon, Lee Sangjun, Pyeon Cheol Ho, Kim Sin, Lee Bongsoo  
**Photonics 11(10) (2024) 936 (doi)10.3390/photonics11100936**

Vortex-induced vibration of double cylinders under different tandem spacing  
Guangyun Min  
**Physics of Fluids 37(2) (2025) 025172 (doi)10.1063/5.0253155**

Monte Carlo iterative k-source method for fixed-source calculations in nearly critical subcritical systems  
Yamamoto Toshihiro, Sakamoto Hiroki  
**Progress in Nuclear Energy 173 (2024) 105264 (doi)10.1016/j.pnucene.2024.105264**

Performance of the Fully Equipped Spin Flip Chopper for the Neutron Lifetime Experiment at J-PARC  
Mishima K, Ichikawa G, Fuwa Y, Hasegawa T, Hino M, Hosokawa R, Ino T, Iwashita Y, Kitaguchi M, Matsuzaki S, Mogi T, Okabe H, Oku T, Okudaira T, Seki Y, Shimizu H E, Shimizu H M, Takahashi S, Tanida M, Yamashita S, Yokohashi M, Yoshioka T  
**Progress of Theoretical and Experimental Physics 2024(9) (2024) 093G01 (doi)10.1093/ptep/ptae123**

Compact and transportable system for detecting lead-shielded highly enriched uranium using  $^{252}\text{Cf}$  rotation method with a water Cherenkov neutron detector  
Tanabe Kosuke, Komeda Masao, Toh Yosuke, Kitamura Yasunori, Misawa Tsuyoshi, Tsuchiya Ken'ichi, Sagara Hiroshi  
**Scientific Reports 14(1) (2024) 18828 (doi)10.1038/s41598-024-69526-w**

Application of interface-tracking method into condensation simulation  
ITO Kei, ODAIRA Naoya, ITO Daisuke, SAITO Yasushi  
**JAPANESE JOURNAL OF MULTIPHASE FLOW 39(1) (2025) 41-46 (in Japanese) (doi)10.3811/jjmf.2025.001**

Effect of fin arrangement on pressure drop characteristics of two-phase flow in a finned rectangular channel.  
OKUNAKA Shori, SHINOZAKI Masaru, ODAIRA Naoya, ITO Daisuke, ITO Kei, SAITO Yasushi  
**JAPANESE JOURNAL OF MULTIPHASE FLOW 38(3) (2024) 289-298 (in Japanese) (doi)10.3811/jjmf.2024.013**

## Proceedings

Active Shield for Environmental Magnetic Fields  
K. Matsuta, Y. Masuda, M. Mihara  
**Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei X", Online (Feb. 7, 2024) 22-25 (in Japanese)**

Development of Muon Spin Imaging Spectroscopy  
T. Sugisaki, K. M. Kojima, M. Mihara, Y. Kimura, Y. Mizoi, G. Takayama, D. Nishimura, M. Tanaka, S. Ishitani, G. Morris, D. Arseneau, R. Abasalti, D. Vyas, M. Fukuda, W. Sato, R. Yasuda, R. Taguchi  
**Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei X", Online (Feb. 7, 2024) 26-31 (in Japanese)**

Reduced enrichment project for KUCA fuel and future plan  
Tsuyoshi Misawa, Hironobu Unesaki, Yasunori Kitamura and Yoshiyuki Takahashi  
**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025) 67-69 (in Japanese)**



Reevaluation of Neutron Energy Spectrum in Heavy-Water Neutron Irradiation Facility Using Multifoil Activation Method  
Jakkrit Prateepkaew, and Yoshinori Sakurai  
**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025) 33 (in Japanese)**

## Books

Reactor Laboratory Experiments at Kyoto University Critical Assembly  
Pyeon Cheol Ho, Chiba Go, Endo Tomohiro, Watanabe Kenichi  
**Springer Nature Singapore (2024) (ISBN)9789819780693 (doi)10.1007/978-981-97-8070-9**

## 4. Material Science and Radiation Effects

### Papers

Discovery of collective nonjumping motions leading to Johari–Goldstein process of stress relaxation in model ionic glass  
Saito Makina, Araki Takeaki, Onodera Yohei, Ohara Koji, Seto Makoto, Yoda Yoshitaka, Wakabayashi Yusuke  
**Acta Materialia 284 (2025) 120536 (doi)10.1016/j.actamat.2024.120536**

Three-dimensional surface analysis of iron-based materials using synchrotron Mössbauer source  
Fujiwara Kosuke, Mitsui Takaya, Hasegawa Noboru, Nishikino Masaharu, Kobayashi Yasuhiro, Mibu Ko, Shinoda Keiji, Masuda Ryo, Seto Makoto  
**Applied Physics Express 17(8) (2024) 082002 (doi)10.35848/1882-0786/ad67a8**

Extraordinary <sup>99</sup>Mo adsorption: utilizing spray-dried mesoporous alumina for clinical-grade generator development  
Alowasheir Azhar, Eguchi Mihar, Fujita Yoshitaka, Tsuchiya Kunihiro, Wakabayashi Ryutaro, Kimura Tatsuo, Ariga Katsuhiko, Hatano Kentaro, Fukumitsu Nobuyoshi, Yamauchi Yusuke  
**Bulletin of the Chemical Society of Japan 97(10) (2024) uoae099 (doi)10.1093/bulcsj/uoae099**

Charge-entropy-stabilized selenide Ag<sub>x</sub>Sn<sub>1-x</sub>Se  
Oudah Mohamed, Takegami Daisuke, Kitao Shinji, Lado Jose L., Meléndez-Sans Anna, Christovam Denise S., Yoshimura Masato, Tsuei Ku-Ding, McNally Graham, Isobe Masahiko, Küster Kathrin, Seto M., Keimer Bernhard, Bonn D. A., Tjeng Liu Hao, Sawatzky George, Takagi Hidenori  
**Communications Materials 6(1) (2025) 58 (doi)10.1038/s43246-025-00778-3**

Achieving effective bonding between W-75Cu composite and CuCrZr alloy via spark plasma sintering  
Sang Changcheng, Xu Dang, Fu Kaichao, Chen Ruizhi, Chen Pengqi, Lu Yingwei, Xia Yonghong, Xu Qiu, Cheng Jigui  
**Fusion Engineering and Design 211 (2025) 114791 (doi)10.1016/j.fusengdes.2024.114791**

The correlation of the gamma ray waveform with the vibration phase of the resonant absorber  
Yamashita Hiroyuki, Kitao Shinji, Kobayashi Yasuhiro, Seto Makoto  
**Interactions 245 (2024) 366 (doi)10.1007/s10751-024-02214-3**

Investigation of vacancy-type defects in diamond-like carbon films using slow positron beam  
Kanda Kazuhiro, Mishima Tomohiro, Akasaka Hiroki, Hori Fuminobu, Yabuuchi Atsushi, Kinomura Atsushi  
**Japanese Journal of Applied Physics 63(4) (2024) 045503 (doi)10.35848/1347-4065/ad327f**

Direct measurement of lattice behavior during femtosecond laser-driven shock front formation in copper  
Egashira Naoya, Matsuda Tomoki, Okuchi Takuo, Seto Yusuke, Ito Yusuke, Shobu Takahisa, Nakanii Nobuhiko, Inubushi Yuichi, Togashi Tadashi, Miyanishi Kohei, Mashimo Tsutomu, Sano Tomokazu  
**Journal of Applied Physics 137 (2025) 105903 (doi)10.1063/5.0253150**

Effects of Gamma-ray and neutron irradiation on infrared optical properties of ZnSe and ZnS for ITER divertor thermography  
Ushiki Tomohiko, Imazawa Ryota, Kitazawa Sin-Ichi, Ishikawa Masao, Murakami Hidetoshi, Shimizu Kosuke, Sugie Tatsuo, Okazaki Hiroyuki, Seki Masaya, Buenavidez Butch, Kasano Naoto, Katayanagi Yuzi, Nunoya Yoshihiko  
**Journal of Nuclear Materials 595 (2024) 155047 (doi)10.1016/j.jnucmat.2024.155047**

Formulation of high-temperature strength equation of 9Cr-ODS tempered martensitic steels using the Larson–Miller parameter and life-fraction rule for rupture life assessment in steady-state, transient, and accident conditions of fast reactor fuel  
Miyazawa Takeshi, Tanno Takashi, Imagawa Yuya, Hashidate Ryuta, Yano Yasuhide, Kaito Takeji, Ohtsuka Satoshi, Mitsuhashi Masatoshi, Toyama Takeshi, Ohnuma Masato, Nakashima Hideharu

**Journal of Nuclear Materials 593 (2024) 155008 (doi)10.1016/j.jnucmat.2024.155008**

He irradiation resistance performance in CrNiCo, CrFeNiCo, and CrFeMnNiCo multi-principal element alloys  
Xu Q., Guan H.Q., Huang S.S., Zhong Z.H., Miyamoto M., Yasunaga K., Yabuuchi A.

**Journal of Nuclear Materials 603 (2025) 155432 (doi)10.1016/j.jnucmat.2024.155432**

Improving interfacial microstructure and mechanical properties of ODS-W/Cu joints via anodization treatment and spark plasma sintering

Xu Dang, Fu Kaichao, Sang Changcheng, Chen Ruizhi, Chen Pengqi, Lu Yingwei, Zhu Dahuan, Xu Qiu, Cheng Jigui

**Journal of Nuclear Materials 601 (2024) 155351 (doi)10.1016/j.jnucmat.2024.155351**

Thermophysical characterization of UFe<sub>3</sub>B<sub>2</sub> and USiNi: An experimental study

Sun Yifan, Miyawaki Yuji, Kumagai Masaya, Fujieda Shun, Muta Hiroaki, Kurosaki Ken, Ohishi Yuji

**Journal of Nuclear Materials 595 (2024) 155048 (doi)10.1016/j.jnucmat.2024.155048**

Creep deformation and rupture behavior of 9Cr-ODS steel cladding tube at high temperatures from 700°C to 1000°C  
Imagawa Yuya, Hashidate Ryuta, Miyazawa Takeshi, Onizawa Takashi, Ohtsuka Satoshi, Yano Yasuhide, Tanno Takashi, Kaito Takeji, Ohnuma Masato, Mitsuhashi Masatoshi, Toyama Takeshi

**Journal of Nuclear Science and Technology 61(6) (2024) 762-777 (doi)10.1080/00223131.2023.2269178**

Water extraction of technetium-99m from neutron irradiated porous molybdenum dioxide pellet

Hu Xiangrong, Fujita Yoshitaka, Tsuchiya Kunihiro, Fukutani Satoshi, Hori Jun-ichi, Suzuki Tatsuya

**Journal of Radioanalytical and Nuclear Chemistry 333(11) (2024) 6057-6063 (doi)10.1007/s10967-024-09529-z**

Diffraction for element-specific analysis on local structures using a combination of X-ray fluorescence holography and anomalous X-ray scattering

Tajiri Hiroo, Kohara Shinji, Kimura Koji, Halubai Sekhar, Morimoto Haruto, Happon Naohisa, Stellhorn Jens R., Onodera Yohei, Qiao Xvsheng, Urushihara Daisuke, Hu Peidong, Wakihara Toru, Kinoshita Toyohiko, Hayashi Koichi

**Journal of Synchrotron Radiation 32(1) (2025) 125-132 (doi)10.1107/S1600577524011366**

Evaluation of the effect of composition and firing temperature on pore size distribution of ceramics by SANS measurement  
Sugita Tsuyoshi, Yoshida Hirokazu, Kodama Hiroto, Ishigaki Toru, Oba Yojiro

**Journal of the Ceramic Society of Japan 132(9) (2024) 548-554 (doi)10.2109/jcersj.2.24064**

Enhancing Mechanical and Thermal Shock Resistance Properties of W/W-10Cu Joints through a Novel Pre-oxidation Treatment and Infiltration Method

Xu Dang, Zhou Rui, Fu Kaichao, Chen Pengqi, Xu Qiu, Cheng Jigui

**Journal of the Japan Society of Powder and Powder Metallurgy 72(Supplement) (2025) S1487-S1493 (doi)10.2497/jjspm.16P-T10-01**

Thermoelectric materials for space explorations

Palaporn Dulyawich, Tanusilp Sora-at, Sun Yifan, Pinitsoontorn Supree, Kurosaki Ken

**Materials Advances 5(13) (2024) 5351-5364 (doi)10.1039/D4MA00309H**

Characterization of  $\delta$ -Ni<sub>2</sub>Si Precipitates in Cu-Ni-Si Alloy by Small-Angle X-ray Scattering, Small-Angle Neutron Scattering, and Atom Probe Tomography

Sasaki Hirokazu, Akiya Syunta, Mihara Kuniteru, Oba Yojiro, Onuma Masato, Uzuhashi Jun, Ohkubo Tadakatsu  
**MATERIALS TRANSACTIONS 66(1) (2025) 44-49 (doi)10.2320/matertrans.MT-D2024005**

Direct observation of the atomic density fluctuation originating from the first sharp diffraction peak in SiO<sub>2</sub> glass  
Hirata Akihiko, Sato Shuya, Shiga Motoki, Onodera Yohei, Kimoto Koji, Kohara Shinji

**NPG Asia Materials 16(1) (2024) 25 (doi)10.1038/s41427-024-00544-w**

Formation of a zirconium oxide crystal nucleus in the initial nucleation stage in aluminosilicate glass investigated by X-ray multiscale analysis

Onodera Yohei, Takimoto Yasuyuki, Hijiya Hiroyuki, Li Qing, Tajiri Hiroo, Ina Toshiaki, Kohara Shinji

**NPG Asia Materials 16(1) (2024) 22 (doi)10.1038/s41427-024-00542-y**

High-energy extension of the gamma-ray band observable with an electron-tracking Compton camera

Oka Tomohiko, Ogio Shingo, Abe Mitsuru, Hamaguchi Kenji, Ikeda Tomonori, Kubo Hidetoshi, Kurosawa Shunsuke, Miuchi Kentaro, Mizumura Yoshitaka, Nakamura Yuta, Sawano Tatsuya, Takada Atsushi, Takemura Taito, Tanimori Toru, Yoshikawa Kei



**Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 1063 (2024) 169242 (doi)10.1016/j.nima.2024.169242**

Effects of precipitates on defect formation and irradiation resistance in CoCrFeNi alloy

Yabuuchi A., Zhong Z.H., Yasunaga K., Watanabe H., Tokitani M., Xu Q.

**Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms 555 (2024) 165481 (doi)10.1016/j.nimb.2024.165481**

Measurements of displacement cross sections of metals for 120-GeV proton beam irradiation

Iwamoto Yosuke, Matsuda Hiroki, Meigo Shin-ichiro, Yonehara Katsuya, Pellemoine Frederique, Liu Zunping, Lynch Kevin, Yoshida Makoto, Yabuuchi Atsushi, Yoshiie Toshimasa, Hashimoto Shintaro

**Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms 557 (2024) 165543 (doi)10.1016/j.nimb.2024.165543**

Mechanical Properties and Hydrogen Embrittlement Resistance of the High-Entropy Alloy CrFeMnNiCo and Its Subsystems

Xu Qiu, Guan Huaqing, Huang Shaosong, Zhong Zhihong, Yabuuchi Atsushi, Sato Koichi

**physica status solidi (b) 2024 (2024) 2400162 (doi)10.1002/pssb.202400162**

Experimental electronic structures of the Fe<sup>IV</sup>=O bond in S=1 heme vs. nonheme sites: Effect of the porphyrin ligand  
Braun Augustin, Gee Leland B., Waters Max D. J., Jose Anex, Baker Michael L., Mara Michael W., Babicz Jeffrey T., Ehudin Melanie A., Quist David A., Zhou Ang, Kroll Thomas, Titus Charles J., Lee Sang-Jun, Nordlund Dennis, Sokaras Dimosthenis, Yoda Yoshitaka, Kobayashi Yasuhiro, Tamasaku Kenji, Hedman Britt, Hodgson Keith O., Karlin Kenneth D., Que Lawrence, Solomon Edward I.

**Proceedings of the National Academy of Sciences 122(8) (2025) e2420205122 (doi)10.1073/pnas.2420205122**

Damage caused by He and D plasma exposure in Mo/Zr-added W-Y<sub>2</sub>O<sub>3</sub> composites

Ren X.L., Yao G., Luo L.M., Xu Y., Yabuuchi A., Xu Q.

**Radiation Effects and Defects in Solids 179(9-10) (2024) 1233-1249 (doi)10.1080/10420150.2024.2332216**

Advancing neutron imaging techniques to highest resolution with fluorescent nuclear track detectors

Muneem Abdul, Yoshida Junya, Saito Takehiko R., Ekawa Hiroyuki, Hino Masahiro, Hirota Katsuya, Ichikawa Go, Kasagi Ayumi, Kitaguchi Masaaki, Mishima Kenji, Nabi Jameel-Un, Nakagawa Manami

**Scientific Reports 15(1) (2025) 2103 (doi)10.1038/s41598-024-84591-x**

Gamma-ray induced luminescence from diamonds

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

**Solid State Communications 396 (2025) 115770 (doi)10.1016/j.ssc.2024.115770**

## Proceedings

Desorption-induced changes in vacancy-type defects in highly hydrogenated DLC films

Kazuhiro Kanda, Daisuke Niwa, Tomohiro Mishima, Koji Nakanishi, Naoki Fukumuro, Fuminobu Hori, Atsushi Yabuuchi, and Atsushi Kinomura

**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025) 23 (in Japanese)**

Development of gas-flow humidity sample environment for neutron scattering experiments

Hiroshi Arima

**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025) 8-9 (in Japanese)**

Development of Thin-film Targets for Precision X-ray Spectroscopy of Antiprotonic Calcium Atoms

Takashi Higuchi, Masahiro Hino, Hiroyuki Fujioka

**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025) 25 (in Japanese)**

Dynamics of Hydrogen Atoms and Open-volume Defects in Palladium

W. Sato, M. Furumoto, H. Shimizu, and Y. Ohkubo

**Proceedings of the Specialists' Meeting on "Nuclear Spectroscopy and Condensed Matter Physics Using Short-Lived Nuclei X", Online (Feb. 7, 2024) 5-7 (in Japanese)**

Effect of Pulse Irradiation by Charged Particles on Damage Structures in Metals (2)

T. Yoshiie, A. Kinomura, F. Hori, T. Nishimura

**Proceedings of the 43rd Symposium on Materials Science and Engineering Research Center of Ion Beam Technology, Hosei University, Koganei, Tokyo (Dec. 12, 2024) 42-45**

Fundamental Resratch on Decommissioning of Reactor Facility

Jun-ichi Hori, Tadafumi Sano, Koichi Takamiya, Satoshi Fukutani, Shoji Nakamura, Yasushi Nauchi, Hiroshi Yashima, Yoshiyuki Takahashi, Kazushi Terada, Jian Zhang, Yasuyuki Fujihara, Ryo Okumura, Hisao Yoshinaga, Yuto Inuma, Yuji Shibahara, Shunsuke Endo, Rovira Gerard, Atsushi Kimura, Shunsuke Sato

**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025) 10-14 (in Japanese)**

High-pressure synthesis of hydrous SiO<sub>2</sub> glass and structural analysis at multiple scales

Shuto Takahashi, Yohei Onodera, Tetsu Kogiso, Rintaro Inoue, Masaaki Sugiyama, Kenji Shimizu, Takayuki Ushikubo, Naotaka Tomioka, Takuo Okuchi

**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025) 48 (in Japanese)**

Interaction between hydrogen and defects introduced by H<sup>+</sup> irradiation in B2 type Fe-Al alloy

J. TIAN, S. Miyazumi, Q. Xu, K. Ohsawa, K. Yasunaga, Y. Saito, F. Hori

**The 33rd Annual Meeting of MRS-J, Yokohama, Japan (Nov. 14-16, 2024) E3-O17-008**

Multiple hydrogen trapping in vacancies introduced by electron irradiation in FeAl alloys

Fuminobu Hori, Shouta Hirayama, Tian Jiaxin, Qiu Xu, Atsushi Yabuuchi, Atsushi Kinomura, Kazuhito Ohsawa, Kazufumi Yasunaga, Sakurai, Minoru Suzuki

**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025) 28 (in Japanese)**

合成高分子の分子状態オペランド計測と新機能創生

Hidehito Nakamura, Maiko Ikegami, Takumi Kubota, Yoshiyuki Shirakawa, Hisashi Kitamura

**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025) 20 (in Japanese)**

## Reviews

ダイヤモンドライクカーボン膜の国際標準規格制定と低速陽電子線を用いた新しい構造解析

神田 一浩

**陽電子科学 24 (2025) 9-18 (in Japanese)**

## 5. Geochemistry and Environmental Science

### Papers

Atomistic Mechanism of Al Substitution Effects on the Ferroelastic Post-stishovite Transition by High-Pressure Single-Crystal X-Ray Diffraction

Zhang Yanyao, Chariton Stella, Prakapenka Vitali B., Okuchi Takuo, Lin Jung-Fu

**American Mineralogist 110 (2025) (doi)10.2138/am-2023-9257**

Hydrogen incorporation mechanism in the lower-mantle bridgmanite

Purevjav Narangoo, Tomioka Naotaka, Yamashita Shigeru, Shinoda Keiji, Kobayashi Sachio, Shimizu Kenji, Ito Motoo, Fu Suyu, Gu Jesse, Hoffmann Christina, Lin Jung-Fu, Okuchi Takuo

**American Mineralogist 109(6) (2024) 1036-1044 (doi)10.2138/am-2022-8680**

Single-crystal X-ray diffraction on the structure of (Al, Fe)-bearing bridgmanite in the lower mantle

Fu Suyu, Chariton Stella, Zhang Yanyao, Okuchi Takuo, Prakapenka Vitali B., Lin Jung-Fu

**American Mineralogist 109(5) (2024) 872 - 881 (doi)10.2138/am-2023-8969**

Tritium concentration in the modern commercial D<sub>2</sub>O reagents

Ohta Tomoko, Fukutani Satoshi, Kubota Takumi, Mahara Yasunori

**Analytical Sciences 40(10) (2024) 1927 - 1930 (doi)10.1007/s44211-024-00615-6**

Positive correlations between <sup>137</sup>Cs and fungal tracers in Fukushima aerosols: Implication for enhanced nighttime fungal spore emission with radioactivity from forest soil to the atmosphere

Kawamura Kimitaka, Kunwar Bhagawati, Kita Kazuyuki, Hayashi Naho, Igarashi Yasuhito

**Atmospheric Pollution Research 16(3) (2025) 102407 (doi)10.1016/j.apr.2025.102407**

Microtremor Full-Wavefield Modeling of Effective Phase Velocity and Horizontal-to-Vertical Spectral Ratio at Kyoto Reference Borehole Site: Comparison with Surface-Wavefield Modeling Based on a Velocity Structure with a Cap Layer

Uebayashi Hirotooshi, Arai Hiroshi, Cho Ikuo, Yoshida Kunikazu, Ohori Michihiro, Yamada Koji  
**Bulletin of the Seismological Society of America 114(4) (2024) 2099-2117 (doi)10.1785/0120230067**

Origin of Philippine Sea Basins During Subduction Initiation in the Western Pacific  
Ishizuka, O., Tani, K., Taylor, R. N., Umino, S., Sakamoto, I., Yokoyama, Y., Ogitsu, I., Shimoda, G., Harigane, Y., Sato, T., Ohara, Y., Conway, C.E., Perez, A., Fujii, M., Kusano, Y., Yagi, M., Sekimoto S.  
**Geochemistry, Geophysics, Geosystems 25(5) (2024) e2023GC011291 (doi)10.1029/2023GC011291**

In-situ gamma-ray measurement to estimate depth distribution of <sup>137</sup>Cs in farmland in Fukushima Prefecture  
Momota Sadao, Okuda Yoshihiro, Tanigaki Minoru, Ohkubo Yoshitaka, Saito Takashi  
**Journal of Environmental Radioactivity 282 (2025) 107610 (doi)10.1016/j.jenvrad.2024.107610**

Hydrogen Dissolution Mechanisms in Bridgmanite by First-Principles Calculations and Infrared Spectroscopy  
Zhang Yanyao, Tsuchiya Jun, Li ChingChien, Ye Zefang, Yan Wei, Okuchi Takuo, Karato Shun-ichiro, Kung Jennifer, Lin Jung-Fu  
**Journal of Geophysical Research: Solid Earth 130(1) (2025) e2024JB030403 (doi)10.1029/2024JB030403**

Artificial formation of alpha recoil tracks using an americium source  
Nakashima Taiki, Hasebe Noriko, Yokoyama Akihiko, Yamada Norihiro, Takamiya Koichi, Inuma Yuto  
**Radiation Measurements 173 (2024) 107087 (doi)10.1016/j.radmeas.2024.107087**

## Proceedings

Aerosols in radiation facilities  
Yuichi Oki  
**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025) 70-71 (in Japanese)**

Concentration distribution on the particle size for Al, Ca in the Kosa particle  
Norio Ito, Hisao Yoshinaga  
**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025) 22 (in Japanese)**

Current Status of Radiation Monitoring Based on KURAMA-II  
Minoru Tanigaki  
**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025) 19 (in Japanese)**

Detailed provenancial studies of excavated low-fired ceramics by INAA  
Makoto Tomii, Koichi Takamiya, Makoto Inagaki, Atsushi Ito, Masaaki Kidachi, Yutaka Chiba, and Hideo Yoshii  
**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025) 34 (in Japanese)**

Search for uranium-containing particles originated from the Hiroshima Atomic Bomb  
Koichi Takamiya, Naoki Toe, Makoto Inagaki, Yuichi Oki, Satoshi Fukutani, Hiroshi Yashima, Yuji Shibahara, Tomohiro Adachi, Yasuhito Igarashi  
**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025) 18 (in Japanese)**

## 6. Life Science and Medical Science

### Papers

Physical Isolation of Single Protein Molecules within Well-Defined Coordination Cages to Enhance Their Stability  
Ebihara Risa, Nakama Takahiro, Morishima Ken, Yagi-Utsumi Maho, Sugiyama Masaaki, Fujita Daishi, Sato Sota, Fujita Makoto  
**Angewandte Chemie International Edition 64(7) (2025) e202419476 (doi)10.1002/anie.202419476**

Induction of Paraptotic Cell Death in Cancer Cells by Triptycene–Peptide Hybrids and the Revised Mechanism of Paraptosis II  
Nii Mayuka, Yamaguchi Kohei, Tojo Toshifumi, Narushima Nozomi, Aoki Shin  
**Biochemistry 63(17) (2024) 2111-2130 (doi)10.1021/acs.biochem.4c00085**

Changing the gravity vector direction by inverted culture enhances radiation-induced cell damage  
Mizoguchi Yuma, Kamimura Masao, Kitabatake Kazuki, Uchiumi Fumiaki, Aoki Shin, Tsukimoto Mitsutoshi  
**Biochemistry and Biophysics Reports 39 (2024) 101792 (doi)10.1016/j.bbrep.2024.101792**

- Charge manipulation of the human insulin B chain C-terminal to shed light on the complex mechanism of insulin fibrillation  
Shahsavani Mohammad Bagher, Hoshino Masaru, Kumar Ashutosh, Yousefi Reza  
**Biochimica et Biophysica Acta (BBA) - General Subjects** 1868(4) (2024) 130578 (doi)10.1016/j.bbagen.2024.130578
- Amodiaquine Analogs Are Potent Inhibitors of Interleukin-6 Production Induced by Activation of Toll-Like Receptors Recognizing Pathogen Nucleic Acids  
Takenaka Yohei, Tanaka Tomohiro, Otaki Shotaro, Kanbe Azusa, Morita Tomoe, Yokoi Kenta, Sekiguchi Saki, Nakamura Koki, Satoh Hidetoshi, Tojo Toshifumi, Uchiumi Fumiaki, Kitabatake Kazuki, Aoki Shin, Tsukimoto Mitsutoshi  
**Biological and Pharmaceutical Bulletin** 47(12) (2024) 2101 - 2118 (doi)10.1248/bpb.b24-00639
- Structure–Activity Relationship Analysis of Fluoxetine for Suppression of Inflammatory Cytokine Production  
Takenaka Yohei, Tanaka Ryu, Kitabatake Kazuki, Uchiumi Fumiaki, Aoki Shin, Kuramochi Kouji, Tsukimoto Mitsutoshi  
**Biological and Pharmaceutical Bulletin** 47(5) (2024) 946-954 (doi)10.1248/bpb.b24-00083
- Synthesis of new functionalized bioactive S-substituted indolyl-triazoles as cytotoxic and apoptotic agents through multi-targeted kinase inhibition  
Boraie Ahmed T.A., Nafie Mohamed S., Barakat Assem, Tanaka Tomohiro, Kawano Kosu, Tojo Toshifumi, Aoki Shin, Sarhan Ahmed A.M.  
**Bioorganic Chemistry** 156 (2025) 108154 (doi)10.1016/j.bioorg.2025.108154
- Revealing an origin of temperature-dependent structural change in intrinsically disordered proteins  
Inoue Rintaro, Oda Takashi, Nakagawa Hiroshi, Tominaga Taiki, Ikegami Takahisa, Konuma Tsuyoshi, Iwase Hiroki, Kawakita Yukinobu, Sato Mamoru, Sugiyama Masaaki  
**Biophysical Journal** 124(3) (2025) 540-548 (doi)10.1016/j.bpj.2024.12.022
- Deciphering the sub-Golgi localization of glycosyltransferases via 3D super-resolution imaging  
Yagi Hirokazu, Tateo Seigo, Saito Taiki, Ohta Yusaku, Nishi Emiko, Obitsu Saemi, Suzuki Tatsuya, Seetaha Supaphorn, Hellec Charles, Nakano Akihiko, Tojima Takuro, Kato Koichi  
**Cell Structure and Function** 49(2) (2024) 47-55 (doi)10.1247/csf.24008
- Comprehensive Search for Genes Involved in Thalidomide Teratogenicity Using Early Differentiation Models of Human Induced Pluripotent Stem Cells: Potential Applications in Reproductive and Developmental Toxicity Testing  
Kato Yu, Inaba Takeshi, Shinke Koudai, Hiramatsu Noriko, Horie Tetsuhiro, Sakamoto Takuya, Hata Yuko, Sugihara Eiji, Takimoto Tetsuya, Nagai Noriaki, Ishigaki Yasuhito, Kojima Hajime, Nagano Osamu, Yamamoto Naoki, Saya Hideyuki  
**Cells** 14(3) (2025) 215 (doi)10.3390/cells14030215
- NDT-C11 as a Viable Novel Detergent for Single Particle Cryo-EM  
Jiko Chimari, Li Jiannan, Moon Youngsun, Tanaka Yoshito, Gopalasingam Chai C., Shigematsu Hideki, Chae Pil Seok, Kurisu Genji, Gerle Christoph  
**ChemPlusChem** 89(10) (2024) e202400242 (doi)10.1002/cplu.202400242
- Structural basis of sugar recognition by SCF<sup>FBS2</sup> ubiquitin ligase involved in NGLY1 deficiency  
Satoh Tadashi, Yagi-Utsumi Maho, Ishii Nozomi, Mizushima Tsunehiro, Yagi Hirokazu, Kato Ryuichi, Tachida Yuriko, Tateno Hiroaki, Matsuo Ichiro, Kato Koichi, Suzuki Tadashi, Yoshida Yukiko  
**FEBS Letters** 598(18) (2024) 2259-2268 (doi)10.1002/1873-3468.15003
- Identification of potential C1-binding sites in the immunoglobulin CL domains  
Yanaka Saeko, Kodama Atsuji, Nishiguchi Shigetaka, Fujita Rina, Shen Jiana, Boonsri Pornthip, Sung Duckyoung, Isono Yukiko, Yagi Hirokazu, Miyanoiri Yohei, Uchihashi Takayuki, Kato Koichi  
**International Immunology** 36(8) (2024) 405-412 (doi)10.1093/intimm/dxae017
- Molecular Characterization of the MoxR AAA+ ATPase of *Synechococcus* sp. Strain NKBG15041c  
Mano Kota, Noi Kentaro, Oe Kumiko, Mochizuki Takahiro, Morishima Ken, Inoue Rintaro, Sugiyama Masaaki, Noguchi Keiichi, Shinohara Kyosuke, Yohda Masafumi, Yamada Akiyo  
**International Journal of Molecular Sciences** 25(18) (2024) 9955 (doi)10.3390/ijms25189955

Molecular tag for promoting N-glycan maturation in the cargo receptor-mediated secretion pathway  
Yagi Hirokazu, Yamada Rino, Saito Taiki, Honda Rena, Nakano Rio, Inutsuka Kengo, Tateo Seigo, Kusano Hideo, Nishimura Kumiko, Yanaka Saeko, Tojima Takuro, Nakano Akihiko, Furukawa Jun-ichi, Yagi-Utsumi Maho, Adachi Shungo, Kato Koichi  
**iScience 27(12) (2024) 111457 (doi)10.1016/j.isci.2024.111457**

Profile of miRNAs in small extracellular vesicles released from glioblastoma cells treated by boron neutron capture therapy  
Kondo Natsuko, Kinouchi Tadatoshii, Natsumeda Manabu, Matsuzaki Juntaro, Hirata Eishu, Sakurai Yoshinori, Okada Masayasu, Suzuki Minoru  
**Journal of Neuro-Oncology 168(1) (2024) 91-97 (doi)10.1007/s11060-024-04649-8**

Single-Molecule Kinetic Observation of Antibody Interactions with Growing Amyloid  $\beta$  Fibrils  
Yagi-Utsumi Maho, Kanaoka Yui, Miyajima Shogo, Itoh Satoru G., Yanagisawa Katsuhiko, Okumura Hisashi, Uchihashi Takayuki, Kato Koichi  
**Journal of the American Chemical Society 146(46) (2024) 31518 (doi)10.1021/jacs.4c08841**

Human F-ATP synthase as a drug target  
Gerle Christoph, Jiko Chimari, Nakano Atsuki, Yokoyama Ken, Gopalasingam Chai C., Shigematsu Hideki, Abe Kazuhiro  
**Pharmacological Research 209 (2024) 107423 (doi)10.1016/j.phrs.2024.107423**

Characterization of different-sized human  $\alpha$ A-crystallin homomers and implications to Asp151 isomerization  
Sun Jiayue, Matsubara Toshiya, Koide Tamaki, Lampi Kirsten J., David Larry L., Takata Takumi  
**PLOS ONE 33(7) (2024) e0306856 (doi)10.1371/journal.pone.0306856**

Asymmetric fluctuation of overlapping dinucleosome studied by cryoelectron microscopy and small-angle X-ray scattering  
Shimizu Masahiro, Tanaka Hiroki, Nishimura Masahiro, Sato Nobuhiro, Nozawa Kayo, Ehara Haruhiko, Sekine Shun-ichi, Morishima Ken, Inoue Rintaro, Takizawa Yoshimasa, Kurumizaka Hitoshi, Sugiyama Masaaki  
**PNAS Nexus 3(11) (2024) 484 (doi)10.1093/pnasnexus/pgae484**

Characterization of  $\beta$  B2-crystallin tryptophan mutants reveals two different folding states in solution  
Sun Jiayue, Morishima Ken, Inoue Rintaro, Sugiyama Masaaki, Takata Takumi  
**Protein Science 33(7) (2024) e5092 (doi)10.1002/pro.5092**

Crystal structure of GTP-dependent dephospho-coenzyme A kinase from the hyperthermophilic archaeon, *Thermococcus kodakarensis*  
Akiko Kita, Yuna Ishida, Takahiro Shimosaka, Yuta Michimori, Kira Makarova, Eugene Koonin, Haruyuki Atomi, and Kunio Miki  
**Proteins: Structure, Function, and Bioinformatics 92(6) (2024) 768-775 (doi)10.1002/prot.26666**

Dynamics of side chains in poly(quinoxaline-2,3-diyl)s studied via quasielastic neutron scattering  
Inoue R., Nagata Y., Tominaga T., Sato S., Kawakita Y., Yamawaki T., Morishima K., Sugimoto M., Sugiyama M.  
**The Journal of Chemical Physics 161(5) (2024) 054905 (doi)10.1063/5.0215603**

## Proceedings

Analysis of minerals in the gum which consumed by small primates.  
Hiroo Imai, Arisa Ishimura, Takashi Hayakawa, Leonardo Melo, Valdir Luna, Maria Adélia, Michiko Fukushima  
**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025) 40 (in Japanese)**

Competitive complex formation of cyanobacterial circadian clock proteins  
Ken Morishima, Ritsuki Sakamoto, Masaaki Sugiyama  
**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025) 31 (in Japanese)**

Crystal structure of the complex between extradiol dioxygenase and its inhibitor  
Akiko Kita, Tetsuo Ishida, Hiroyuki Tanaka, Kihachiro Horiike, and Kunio Miki  
**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025) 29 (in Japanese)**

Development of a Nanogel-Based Neutron Capture Therapy Agent Utilizing a Gadolinium-Thiacalixarene Complex as a Physical Crosslinker  
Nanaho Shindo, Ryota Sawamura, Ryunosuke Karashimada, Minoru Suzuki, Nobuhiko Iki  
**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025) 35 (in Japanese)**



Development of new rice variety using boron neutron capture reaction (tentative name: RONOHIKARI)  
Tadatoshi Kinouchi, Yoshihide Hattori, Shuhei Segami, Yuki Oba, Hiroshi Yashima, Yasuhito Igarashi, Yoko Fujikawa, Mitsunori Kiriata

**Proceedings of the 59th KURNS Scientific Meeting, Kumatori, Japan/Online (Jan. 30-31, 2025) 47 (in Japanese)**

Improvement of Mo-SAXS

Yojiro Oba, Rintaro Inoue, Ken Morishima, Masaaki Sugiyama

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 32 (in Japanese)**

Mechanism of amyloid fibril formation by serum amyloid protein A

Masaru Hoshino, Taishi Okunish, Ken Morishima, Rintaro Inoue, Masaaki Sugiyama

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 30 (in Japanese)**

Practical Application Strategy for Protein Ligation with Enzyme

Aya Okuda, Masahiro Shimizu, Rintaro Inoue, Reiko Urade, and Masaaki Sugiyama

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 55 (in Japanese)**

Response of cyanobacterial circadian rhythm to external environments and the origin of its robustness.

Ritsuki Sakamoto, Ken Morishima, Masahiro Shimizu, Rintaro Inoue, Masaaki Sugiyama

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 38 (in Japanese)**

SAXS for the nucleosomes containing histones of malaria parasite

Shoko Sato, Mariko Dacher, Ken Morishima, Rintaro Inoue, Kankichi Murayama, Mistuo Ogasawara, Naoki Horikoshi, Yoshimasa Takizawa, Masaaki Sugiyama, Hitoshi Kurumizaka

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 56 (in Japanese)**

Structural analysis of a multidomain protein from hyperthermophilic archaea at physiological temperature

Takashi Oda, Rintaro Inoue, Ken Morishima, Naoki Aizawa, Aya Okuda, Takayuki Oku, Mamoru Sato, Masaaki Sugiyama

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 44 (in Japanese)**

Study on the temperature dependent oligomer dissociation of sHsps from methanogens

Masafumi Yohda, Nina Kurokawa, Mima Ogawa, Wakaba Naka, Ken Morishima, Rintaro Inoue, Masaaki Sugiyama

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 21 (in Japanese)**

## Reviews

Beyond “Switch ON”

Ken MORISHIMA

**POLYMERS 73(1) (2024) 27 (doi)10.1295/kobunshi.73.1\_27 (in Japanese)**

Ensemble Modeling of Biomolecules by Small-angle X-ray Scattering and Coarse-grained Molecular Dynamics Simulation

Masahiro SHIMIZU, Masaaki SUGIYAMA

**Seibutsu Butsuri 64(4) (2024) 209 - 213 (doi)10.2142/biophys.64.209 (in Japanese)**

Investigation of Crystallin Folding Pathway Using Spontaneous Fluorescence

Takumi Takata

**The Journal of The Japanese Society for Cataract Research 36(1) (2024) 74-81 (doi)10.14938/cataract.36-022 (in Japanese)**

## Others

Conserved loop of a phase modifier endows protein condensates with fluidity

Honoka Kawamukai, Motonori Matsusaki, Takanari Tanimoto, Mai Watabe, Ken Morishima, Shunsuke Tomita, Yoichi Shinkai, Tatsuya Niwa, Taro Mannen, Hiroyuki Kumeta, Hitoki Nanaura, Kotona Kato, Takuya Mabuchi, Yuichiro Aiba, Takeru Uehara, Noriyoshi Isozumi, Yoshika Hara, Shingo Kanemura, Hiroyoshi Matsumura, Kazuma Sugie, Koichiro Ishimori, Takahiro Muraoka, Masaaki Sugiyama, Masaki Okumura, Eiichiro Mori, Takuya Yoshizawa, Tomohide Saio  
**bioRxiv (2024) (doi)10.1101/2024.07.03.601791**



## 7. Neutron Capture Therapy

### Papers

Extracellular Vesicles Comprising Carborane Prepared by a Host Exchanging Reaction as a Boron Carrier for Boron Neutron Capture Therapy

Kawasaki Riku, Oshige Ayano, Kono Nanami, Yamana Keita, Hirano Hidetoshi, Miura Yamato, Yorioka Ryuji, Bando Kaori, Tabata Anri, Yasukawa Naoki, Sadakane Masahiro, Sanada Yu, Suzuki Minoru, Takata Takushi, Sakurai Yoshinori, Tanaka Hiroki, Yimeti Dilimulati, Miyaki Shigeru, Adachi Nobuo, Mizuta Ryosuke, Sasaki Yoshihiro, Akiyoshi Kazunari, Hattori Yoshihide, Kiriha Mitsunori, Nagasaki Takeshi, Ikeda Atsushi  
**ACS Applied Materials & Interfaces** 16(36) (2024) 47137-47149 (doi)10.1021/acsami.4c07650

A Water-Soluble Small Molecule Boron Carrier Targeting Biotin Receptors for Neutron Capture Therapy

Nishimura Kai, Tanaka Shota, Miura Kazuki, Okada Satoshi, Suzuki Minoru, Nakamura Hiroyuki  
**ACS Omega** 9(52) (2024) 51631-51640 (doi)10.1021/acsomega.4c09388

4H-SiC 64 pixels CMOS image sensors with 3T/4T-APS arrays

Meguro Tatsuya, Tsutsumi Masayuki, Takeyama Akinori, Ohshima Takeshi, Tanaka Yasunori, Kuroki Shin-Ichiro  
**Applied Physics Express** 17(8) (2024) 081005 (doi)10.35848/1882-0786/ad665f

Accelerator neutron sources for BNCT: Current status and some pointers for future development

Green Stuart, Phoenix Ben, Nakamura Satoshi, Liu Yuan Hao, Shu Diyun, Hu Naonori, Suzuki Shunsuke, Koivunoro Hanna, Kumada Hiroaki, Tanaka Hiroki

**Applied Radiation and Isotopes** 217 (2025) 111656 (doi)10.1016/j.apradiso.2025.111656

Potential of boron neutron capture therapy (BNCT) for myxofibrosarcoma

Fujimoto Takuya, Andoh Tooru, Sudo Tamotsu, Fujita Ikuo, Sakurai Yoshinori, Takata Takushi, Tanaka Hiroki, Kawamoto Teruya, Yahiro Shunsuke, Nakamura Shotaro, Hara Hitomi, Fukase Naomasa, Akisue Toshihiro, Ichikawa Hideki, Kuroda Ryosuke, Suzuki Minoru

**Applied Radiation and Isotopes** 217 (2025) 111603 (doi)10.1016/j.apradiso.2024.111603

BNCT pancreatic cancer treatment strategy with glucose-conjugated boron drug

Fujimoto Takuya, Teraishi Fuminori, Kanehira Noriyuki, Tajima Tomoyuki, Sakurai Yoshinori, Kondo Natsuko, Yamagami Masahiro, Kuwada Atsushi, Morihara Akira, Kitamatsu Mizuki, Fujimura Atsushi, Suzuki Minoru, Takaguchi Yutaka, Shigeyasu Kunitoshi, Fujiwara Toshiyoshi, Michiue Hiroyuki

**Biomaterials** 309 (2024) 122605 (doi)10.1016/j.biomaterials.2024.122605

Evaluating optimal quality assurance and quality control conditions of activation measurements at the accelerator-based boron neutron capture therapy system employing a lithium target

Suzuki Shunsuke, Yagihashi Takayuki, Nitta Kazunori, Yamanaka Masashi, Sato Naoki, Gotoh Shinichi, Sugimoto Satoru, Shiba Shintaro, Nagata Hironori, Tanaka Hiroki

**Biomedical Physics & Engineering Express** 10(4) (2024) 045028 (doi)10.1088/2057-1976/ad4b1e

Evaluation of dose calculation method with a combination of Monte Carlo method and removal-diffusion equation in heterogeneous geometry for boron neutron capture therapy

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

**Biomedical Physics & Engineering Express** 11(2) (2025) 025045 (doi)10.1088/2057-1976/ada7fe

Preliminary outcomes of boron neutron capture therapy for head and neck cancers as a treatment covered by public health insurance system in Japan: Real-world experiences over a 2-year period

Takeno Satoshi, Yoshino Yuki, Aihara Teruhito, Higashino Masaaki, Kanai Yasukazu, Hu Naonori, Kakino Ryo, Kawata Ryo, Nihei Keiji, Ono Koji

**Cancer Medicine** 13(11) (2024) e7250 (doi)10.1002/cam4.7250

Boron neutron capture therapy delays the decline in neurological function in a mouse model of metastatic spinal tumors Fujikawa Yoshiki, Kawabata Shinji, Tsujino Kohei, Yamada Hironori, Kashiwagi Hideki, Yagi Ryokichi, Hiramatsu Ryo, Nonoguchi Naosuke, Takami Toshihiro, Sasaki Akinori, Hu Naonori, Takata Takushi, Tanaka Hiroki, Suzuki Minoru, Wanibuchi Masahiko

**Cancer Science** 115(8) (2024) 2774 - 2785 (doi)10.1111/cas.16245

Overcoming immunotherapy resistance and inducing abscopal effects with boron neutron immunotherapy (B-NIT)

Fujimoto Takuya, Yamasaki Osamu, Kanehira Noriyuki, Matsushita Hirokazu, Sakurai Yoshinori, Kenmotsu Naoya, Mizuta Ryo, Kondo Natsuko, Takata Takushi, Kitamatsu Mizuki, Igawa Kazuyo, Fujimura Atsushi, Otani

Yoshihiro, Shirakawa Makoto, Shigeyasu Kunitoshi, Teraishi Fuminori, Togashi Yosuke, Suzuki Minoru, Fujiwara Toshiyoshi, Michiue Hiroyuki

**Cancer Science 115(10) (2024) 3231-3247 (doi)10.1111/cas.16298**

Novel Drug Delivery Particles Can Provide Dual Effects on Cancer “Theranostics” in Boron Neutron Capture Therapy  
Fithroni Abdul Basith, Inoue Haruki, Zhou Shengli, Hakim Taufik Fatwa Nur, Tada Takashi, Suzuki Minoru, Sakurai Yoshinori, Ishimoto Manabu, Yamada Naoyuki, Sauriasari Rani, Sauerwein Wolfgang A. G., Watanabe Kazunori, Ohtsuki Takashi, Matsuura Eiji

**Cells 14(1) (2025) 60 (doi)10.3390/cells14010060**

Therapeutic Effect of Boron Neutron Capture Therapy on Boronophenylalanine Administration via Cerebrospinal Fluid Circulation in Glioma Rat Models

Kusaka Sachie, Voulgaris Nikolaos, Onishi Kazuki, Ueda Junpei, Saito Shigeyoshi, Tamaki Shingo, Murata Isao, Takata Takushi, Suzuki Minoru

**Cells 13(19) (2024) 1610 (doi)10.3390/cells13191610**

Boron Agent Delivery Platforms Based on Natural Products for Boron Neutron Capture Therapy

Kawasaki Riku, Miura Yamato, Kono Nanami, Fujita Seiya, Yamana Keita, Ikeda Atsushi

**ChemMedChem 19(21) (2024) e202400571 (doi)10.1002/cmdc.202400323**

Comparison of lifetime attributable risk of post-irradiation secondary cancer of boron neutron capture therapy, proton beam therapy, and X-ray therapy for pediatric and adolescent and young adult patients

Suzuki Shunsuke, Shiba Shintaro, Tanaka Hiroki, Yamanaka Masashi, Matsumoto Kazuki, Tokuyue Koichi, Omura Motoko

**Clinical and Translational Radiation Oncology 51 (2025) 100921 (doi)10.1016/j.ctro.2025.100921**

Albumin nanoparticle electrostatically loaded with highly anionic Gd-thiacalixarene complex for MRI-guided neutron capture therapy

Ohama Kohei, Komiya Miku, Yamatoya Takumi, Sawamura Ryota, Karashimada Ryunosuke, Gao Shan, Ozawa Yoshikazu, Osada Kensuke, Aoki Ichio, Nagasaki Takeshi, Suzuki Minoru, Iki Nobuhiko

**Colloids and Surfaces A: Physicochemical and Engineering Aspects 699 (2024) 134579 (doi)10.1016/j.colsurfa.2024.134579**

Experimental designs for radiobiological characterization of an accelerator-based BNCT system in preclinical studies  
Masutani Mitsuko, Imamichi Shoji, Nakamura Satoshi, Shimada Kenji, Itami Jun, Okamoto Hiroyuki, Ishiai Masamichi, Suzuki Minoru, Igaki Hiroshi

**Health and Technology 14(5) (2024) 1023-1028 (doi)10.1007/s12553-024-00866-3**

Two Years of Clinical Experience with Accelerator-Based Boron Neutron Capture Therapy for Head and Neck Cancer  
Takeno S., Yoshino Y., Aihara T., Higashino M., Kanai Y., Hu N., Kakino R., Kawata R., Nihei K., Ono K. **International Journal of Radiation Oncology\*Biophysics** 120 (2, Supplement) (2024) e794 (doi)10.1016/j.ijrobp.2024.07.1744

The Early Response After Radiation Therapy on Three-Dimensional Oral Cancer Model Using Patient-Derived Cancer-Associated Fibroblasts

Yamamoto I, Igawa K, Kondo N, Sakurai Y, Fujimura A, Takabatake K, Huang P, Michiue H, Ibaragi S, Izumi K.

**International Journal of Translational Medicine 5(1) (2025) 12 (doi)10.3390/ijtm5010012**

Implementation of optically simulated luminescent dosimeter for quality control of gamma ray dose of an accelerator-based neutron source

Hu Naonori, Nakamura Taiki, Kataura Ryusuke, Suga Keita, Mukawa Tetsuya, Akita Kazuhiko, Sasaki Akinori, Nojiri Mai, Matsubayashi Nishiki, Takata Takushi, Tanaka Hiroki, Nihei Keiji, Ono Koji

**Journal of Applied Clinical Medical Physics 25(11) (2024) e14493 (doi)10.1002/acm2.14493**

Potential for boron neutron capture therapy (BNCT) with ASCT2-targeted boron agents.

Eza Kenichiro, Tsujino Kohei, Kawabata Shinji, Fujikawa Yoshiki, Kashiwagi Hideki, Hutamura Gen, Hiramastu Ryo, Miyatake Sinichi, Tanaka Hiroki, Suzuki Minoru, Wanibuchi Masahiko, Nakamura Hiroyuki, Araki Tomoyuki, Morita Taiki

**Journal of Clinical Oncology 42(23\_suppl) (2024) 233 (doi)10.1200/JCO.2024.42.23**

Active control of pharmacokinetics using light-responsive polymer-drug conjugates for boron neutron capture therapy  
Tokura Daiki, Konarita Kakeru, Suzuki Minoru, Ogata Keisuke, Honda Yuto, Miura Yutaka, Nishiyama Nobuhiro, Nomoto Takahiro

**Journal of Controlled Release 371 (2024) 445-454 (doi)10.1016/j.jconrel.2024.06.006**

Poly(vinyl alcohol) potentiating an inert d-amino acid-based drug for boron neutron capture therapy  
Konarita Kakeru, Kanamori Kaito, Suzuki Minoru, Tokura Daiki, Tanaka Shota, Honda Yuto, Nishiyama Nobuhiro, Nomoto Takahiro  
**Journal of Controlled Release** 377 (2025) 385-396 (doi)10.1016/j.jconrel.2024.11.017

A national survey of medical staffs' required capability and workload for accelerator-based boron neutron capture therapy  
Nakamura Satoshi, Tanaka Hiroki, Kato Takahiro, Akita Kazuhiko, Takemori Mihiro, Kasai Yusaku, Kashiwara Tairo, Takai Yoshihiro, Nihei Keiji, Onishi Hiroshi, Igaki Hiroshi  
**Journal of Radiation Research** 65(5) (2024) 712-724 (doi)10.1093/jrr/rrae058

Characterization of acrylic phantom for use in quality assurance of BNCT beam output procedure  
Matsubayashi Nishiki, Hu Naonori, Takata Takushi, Sasaki Akinori, Kumada Hiroaki, Nakamura Satoshi, Masuda Akihiko, Tanaka Hiroki  
**Journal of Radiation Research** 66(1) (2025) 10-15 (doi)10.1093/jrr/rrae089

Effect of neutron beam properties on dose distributions in a water phantom for boron neutron capture therapy  
Ishikawa Akihisa, Tanaka Hiroki, Nakamura Satoshi, Kumada Hiroaki, Sakurai Yoshinori, Watanabe Kenichi, Yoshihashi Sachiko, Tanagami Yuki, Uritani Akira, Kiyanagi Yoshiaki  
**Journal of Radiation Research** 65(6) (2024) 765-775 (doi)10.1093/jrr/rrae076

Dynamic Expression Profiles of HMGB1 after BNCT and  $\gamma$ -Irradiation in Cancer Cells.  
Ying Tong, Shoji Imamichi, Lichao Chen, Satoshi Nakamura, Akira Sato, Yu Sanada, Hiroshi Igaki, Minoru Suzuki, Jun Itami, Masamichi Ishiai, Shinichiro Masunaga, Mitsuko Masutani  
**Journal on Oncology** 4(2) (2024) 1163 (doi)10.52768/2692-563X/1163

Application of stoichiometric CT number calibration method for dose calculation of tissue heterogeneous volumes in boron neutron capture therapy  
Hu Naonori, Nakao Minoru, Ozawa Shuichi, Takata Takushi, Tanaka Hiroki, Nihei Keiji, Ono Koji, Suzuki Minoru  
**Medical Physics** 51(6) (2024) 4413 - 4422 (doi)10.1002/mp.17093

Neutron flux evaluation algorithm with a combination of Monte Carlo and removal-diffusion calculation methods for boron neutron capture therapy  
Nojiri Mai, Takata Takushi, Hu Naonori, Sakurai Yoshinori, Suzuki Minoru, Tanaka Hiroki  
**Medical Physics** 51(5) (2024) 3711-3724 (doi)10.1002/mp.16931

TMET-13. SPATIAL METABOLOMIC CHANGES OF NUCLEOTIDE IN THE BRAINS OF ORTHOTOPIC MOUSE GLIOMA MODEL AFTER BORON NEUTRON CAPTURE THERAPY (BNCT)  
Kondo Natsuko, Kobayashi Nao, Sakurai Yoshinori, Suzuki Minoru, Yamaguchi Shinichi, Ikegawa Masaya  
**Neuro-Oncology** 26(Supplement\_8) (2024) viii290 (doi)10.1093/neuonc/noae165.1151

Nonclinical pharmacodynamics of boron neutron capture therapy using direct intratumoral administration of a folate receptor targeting novel boron carrier  
Tsujino Kohei, Kashiwagi Hideki, Nishimura Kai, Fujikawa Yoshiki, Kayama Ryo, Fukuo Yusuke, Hiramatsu Ryo, Nonoguchi Naosuke, Takata Takushi, Tanaka Hiroki, Suzuki Minoru, Hu Naonori, Ono Koji, Wanibuchi Masahiko, Nakai Kei, Nakamura Hiroyuki, Kawabata Shinji  
**Neuro-Oncology Advances** 6(1) (2024) vdae062 (doi)10.1093/oaajnl/vdae062

Clinical evaluation of performance, stability, and longevity of an accelerator system designed for boron neutron capture therapy utilising a beryllium target  
Hu Naonori, Kakino Ryo, Sasaki Akinori, Yoshikawa Syuushi, Akita Kazuhiko, Takeno Satoshi, Yoshino Yuki, Aihara Teruhito, Nihei Keiji, Nojiri Mai, Matsubayashi Nishiki, Takata Takushi, Tanaka Hiroki, Suzuki Minoru, Ono Koji  
**Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment** 1072 (2025) 170126 (doi)10.1016/j.nima.2024.170126

Developing and validating measurement methods combining  $^6\text{LiF}$  sintered capsule and  $\text{Mg}_2\text{SiO}_4\text{: Tb}$  (TLD-MSO-S) for  $\gamma$ -ray dose evaluation at accelerator-based BNCT system  
Suzuki Shunsuke, Yagihashi Takayuki, Nitta Kazunori, Yamanaka Masashi, Shimo Takahiro, Sato Naoki, Matsubayashi Nishiki, Takata Takushi, Sugimoto Satoru, Hashimoto Harumitsu, Shiba Shintaro, Gotoh Shinichi, Nagata Hironori, Tanaka Hiroki  
**Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment** 1064 (2024) 169443 (doi)10.1016/j.nima.2024.169443

Experimental verification of liquid multilayer spectrometer in neutron irradiation field for boron neutron capture therapy  
Prateepkaew Jakkrit, Takata Takushi, Tanaka Hiroki, Sakurai Yoshinori

**Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 1065 (2024) 169534 (doi)10.1016/j.nima.2024.169534**

Thickness-dependent neutron detection efficiency of LiF-Si-based active neutron detector for boron neutron capture therapy

Takada Masashi, Endo Satoru, Kajimoto Tsuyoshi, Horiguchi Tetsuo, Yamanishi Hirokuni, Yagi Natsumi, Masuda Akihiko, Matsumoto Tetsuro, Tanaka Hiroki, Nunomiya Tomoya, Aoyama Kei, Narita Masataka, Nakamura Takashi

**Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 1064 (2024) 169352 (doi)10.1016/j.nima.2024.169352**

Reevaluation of neutron energy spectrum in Heavy-Water neutron irradiation facility of Kyoto University research Reactor using multifoil activation method

Prateepkaew Jakkrit, Sakurai Yoshinori

**Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms 557 (2024) 165555 (doi)10.1016/j.nimb.2024.165555**

Peptide-functionalized gold nanoparticles for boron neutron capture therapy with the potential to use in Glioblastoma treatment

Zhang Zhicheng, Wang Xin, Dai Qi, Qin Yaxin, Sun Xiaoyan, Suzuki Minoru, Ying Xiaoying, Han Min, Wei Qichun

**Pharmaceutical Development and Technology 29(8) (2024) 862-873 (doi)10.1080/10837450.2024.2406044**

New technologies for beam spectrometry, quality assurance, real-time monitoring and microdosimetry in BNCT  
Kumada Hiroaki, Masuda Akihiko, Tanaka Hiroki, Takada Masashi, Hu Naonori

**Radiation Measurements 177 (2024) 107276 (doi)10.1016/j.radmeas.2024.107276**

Preliminary study of a compact epithermal neutron absolute flux intensity measurement system for real-time in-vivo dose monitoring in boron neutron capture therapy

Qiu Jiye, Hatano Daisuke, Ge Yulin, Voulgaris Nikolaos, Sagara Kohei, Qiao Zhaopeng, Tamaki Shingo, Kusaka Sachie, Takata Takushi, Murata Isao

**Radiation Measurements 178 (2024) 107308 (doi)10.1016/j.radmeas.2024.107308**

Translational research of boron neutron capture therapy for spinal cord gliomas using rat model

Kayama Ryo, Tsujino Kohei, Kawabata Shinji, Fujikawa Yoshiki, Kashiwagi Hideki, Fukuo Yusuke, Hiramatsu Ryo, Takata Takashi, Tanaka Hiroki, Suzuki Minoru, Hu Naonori, Miyatake Shin-Ichi, Takami Toshihiro, Wanibuchi Masahiko

**Scientific Reports 14(1) (2024) 8265 (doi)10.1038/s41598-024-58728-x**

Investigation of converter for assuring beam component fluence by imaging plate in boron neutron capture therapy - Combination with gamma-ray shield to detect fast neutrons

K. Tanaka, T. Kajimoto, Y. Sakurai, T. Takata, H. Tanaka, G. Bengua, S. Endo,

**Bulletin of Kyoto Pharmaceutical University 5(1) (2024) 100 -109**

## Proceedings

A characterization of LCV micelle gel dosimeters for boron neutron capture therapy

Narita Ryosuke, Hayashi Shin-ichiro, Sakurai Yoshinori

**13th International Conference on 3D Dosimetry (IC3DDose 2024), Aarhus, Denmark (Jun.17-19, 2024) 012009 (doi)10.1088/1742-6596/2799/1/012009**

Assessment of the effects of activation by BNCT on the treatment of companion animals

Yuya Ishikawa, Sachiko Yoshihashi, Atsushi Yamazaki, Akira Uritani, Ryota Iwasaki

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 24 (in Japanese)**

Basic research to expand BNCT indications for companion animals Minoru Suzuki, Yusuke Wada, Masashi Yanagawa, Riku Kawasaki, Hiroe Kusaka, Sachiko Yoshihashi Ryota Iwasaki, Ken Nagasaki,

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 59-61 (in Japanese)**

Basic research to expand BNCT indications for companion animals

Minoru Suzuki, Natsuko Kondo, Ryota Iwasaki, Jun Arima

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 62-63 (in Japanese)**

Boiling two-phase flow dynamics measurement using neutron imaging

Daisuke Ito

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 64-66 (in Japanese)**

Development of real-time thermal neutron detector for progress of BNCT

Nishiki Matsubayashi, Hiroki Tanaka, Shunsuke Kurosawa, Akihiro Yamaji, Yoshinori Sakurai, Takushi Takata.

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 45 (in Japanese)**

Fundamental Study for Dosimetry of BNCT Field Using PVA-GTA-I Gel Dosimeter Ousuke Suzuki, Sachiko Yoshihashi, Atsushi Yamazaki, Akira Uritani, Shin-ichiro Hayashi, Yoshinori Sakurai

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 26 (in Japanese)**

Fundamental study of BNCT to the field of veterinary medicine

Sachiko Yoshihashi, Akira Niimi, Kazuki Tsuchimoto, Noritaka Kawai, Ryota Iwasaki, Atsushi Yamazaki, Akira Uritani, Yoshinori Sakurai, Minoru Suzuki

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 27 (in Japanese)**

Measurement of fast neutron flux intensity in Heavy-water neutron irradiation facility of Kyoto University research Reactor

Kohei Sagara, Haruka Asano, Isao Murata, Takushi Takata

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 52 (in Japanese)**

## Others

2 方向の中性子照射と患者体位変換で実現した高悪性度髄膜腫へのホウ素中性子捕捉療法

柏木 秀基、川端 信司、辻野 晃平、竹内 孝治、平松 亮、野々口 直助、古瀬 元雅、呼 尚徳、櫻井 良憲、田中 浩基、近藤 夏子、鈴木 実、小野 公二、宮武 伸一、鰐淵 昌彦

**日本癌治療学会学術集会抄録集 62 (2024) O87~3 (in Japanese)**

ASCT2 標的とした BNCT における悪性神経膠腫の治療

江座 健一郎、辻野 晃平、川端 信司、藤川 喜貴、柏木 秀基、二村 元、平松 亮、田中 浩基、鈴木 実、宮武 伸一、荒木 倫之、盛田 大輝、中村 浩之、鰐淵 昌彦

**日本癌治療学会学術集会抄録集 62 (2024) O87~1 (in Japanese)**

ホウ素中性子捕捉療法の進歩と将来展望 転移性脊椎腫瘍に対する新規治療選択肢としてのホウ素中性子捕捉療法の橋渡し研究

藤川 喜貴、川端 信司、辻野 晃平、山田 浩徳、柏木 秀基、二村 元、平松 亮、高田 卓志、鈴木 実、呼 尚徳、宮武 伸一、高見 俊宏、鰐淵 昌彦

**日本癌治療学会学術集会抄録集 62 (2024) CCWS5~5 (in Japanese)**

脊髄神経膠腫に対するホウ素中性子捕捉療法の適応拡大に向けての橋渡し研究

辻野 晃平、香山 諒、川端 信司、藤川 喜貴、柏木 秀基、福尾 祐介、平松 亮、高田 卓志、田中 浩基、鈴木 実、呼 尚徳、宮武 伸一、高見 俊宏、鰐淵 昌彦

**日本癌治療学会学術集会抄録集 62 (2024) O87~2 (in Japanese)**

## 8. Neutron Radiography and Radiation Application

### Papers

Impact of high-energy electron beam irradiation on piezoelectric properties of lead zirconate titanate

Takechi Seiji, Maeda Shoki, Tominaga Shuhei, Naruse Ryusei, Takahashi Ayano, Katayama Shinya, Miyachi Takashi, Kobayashi Masanori, Okudaira Osamu, Okada Nagaya, Takahashi Toshiharu, Abe Naoya

**Japanese Journal of Applied Physics 63(7) (2024) 078002 (doi)10.35848/1347-4065/ad5e28**

Measurement of the response of a  $^6\text{Li}$ -glass detector to gamma rays by a coincidence method

Ito Fumiaki, Lee Jaehong, Hironaka Kota, Takahashi Tone, Suzuki Satoshi, Mochimaru Takanori, Hori Jun-ichi, Terada Kazushi, Koizumi Mitsuo

**Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment 1064 (2024) 169465 (doi)10.1016/j.nima.2024.169465**



Development of a method for distinguishing alpha particles from other types of radiation using a high-resolution alpha imager

Morishita Yuki, Sagawa Naoki, Fujisawa Makoto, Kurosawa Shunsuke, Sasano Makoto, Hayashi Masateru, Tanaka Hiroki

**Radiation Measurements 181 (2025) 107371 (doi)10.1016/j.radmeas.2024.107371**

コンクリートの水分状態が爆裂現象に与える影響

堀合航太、西尾悠平、金準鎬、兼松学

**日本建築学会大会学術講演梗概集・建築デザイン発表梗概集 2024 (2024) 69-70 (in Japanese)**

## Proceedings

Evaluation and development of novel neutron scintillators in KUR

Shunsuke Kurosawa, Hiroki Tanaka, Takushi Takata, Nishiki Matsubayashi, Yusuke Urano, Chihaya Fujiwara, Akihiro Yamaji

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 58 (in Japanese)**

Measurement of two-phase flow in a finned rectangular channel by X-ray imaging.

Syuto Kondo, Naoya Odaira, Daisuke Ito, Kei Ito, Yasushi Saito

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 50 (in Japanese)**

## 9. TRU and Nuclear Chemistry

### Papers

Activation imaging of gold nanoparticles for versatile drug visualization: An in vivo demonstration

Koshikawa N., Kikuchi Y., Tanaka K. S., Tokoi K., Mitsukai A., Aoto H., Kadonaga Y., Toyoshima A., Kato H., Ooe K., Takamiya K., Kataoka

**Applied Physics Letters 126(10) (2025) 103702 (doi)10.1063/5.0251048**

Impact of MA Temporary Storage Process on the Reduction of Final Disposal Burden in the Advanced Nuclear Fuel Cycle

Tomohiro Okamura, Masahiko Nasase, Kenji Takeshita, Takashi Shimada, Yuki Konishi, Keisuke Nishimura, Hitomi Ishida, Tomoo Yamamura

**EPJ Web of Conferences 317 (2025) 01009 (doi)10.1051/epjconf/202531701009**

Relativistic CASPT2/RASPT2 Program along with DIRAC Software

Masuda Yasuto, Noda Kohei, Iwamuro Sumika, Hada Masahiko, Nakatani Naoki, Abe Minoru

**Journal of Chemical Theory and Computation 21(3) (2025) 1249-1258 (doi)10.1021/acs.jctc.4c01589**

Measurements of neutron capture cross-sections for nuclides of interest in decommissioning:  $^{45}\text{Sc}$ ,  $^{63}\text{Cu}$ ,  $^{64}\text{Zn}$ ,  $^{109}\text{Ag}$ , and  $^{113}\text{In}$

Nakamura Shoji, Shibahara Yuji, Endo Shunsuke, Rovira Gerard, Kimura Atsushi

**Journal of Nuclear Science and Technology 61(11) (2024) 1415-1430 (doi)10.1080/00223131.2024.2346347**

Radium separation from thorium and manufacturing of targets by precipitation method

Yin Feng, Fukutani Satoshi, Toyama Mari, Yamamura Tomoo, Suzuki Tatsuya

**Journal of Radioanalytical and Nuclear Chemistry 333(11) (2024) 6039-6046 (doi)10.1007/s10967-024-09496-5**

Solvent extraction of selenium in nitric acid: evaluation of multiple extractants and proposal of a novel separation process

Ito K. T. M., Kawakami T., Kato C., Fukutani S., Matsumura T., Fujii T.

**Journal of Radioanalytical and Nuclear Chemistry 333(10) (2024) 5183-5189 (doi)10.1007/s10967-024-09681-6**

Solvent extraction of tin in nitric acids: evaluation of multiple extractants

Ito K. T. M., Takahashi S., Kato C., Fukutani S., Matsumura T., Fujii T.

**Journal of Radioanalytical and Nuclear Chemistry 334(3) (2025) 2467-2475 (doi)10.1007/s10967-025-10003-7**

Electron correlation effects on uranium isotope fractionation in  $\text{U(vi)}\text{--U(vi)}$  and  $\text{U(iv)}\text{--U(vi)}$  equilibrium isotopic exchange systems

Sato Ataru, Hada Masahiko, Abe Minoru

**Physical Chemistry Chemical Physics 26(21) (2024) 15301-15315 (doi)10.1039/D4CP01149J**

Solvent Extraction Behaviors of Rhodium and Palladium in Nitric Acid Solutions Using Amide Extractants  
ITO Kengo T. M., MORITA Misaki, ARAKI Yuta, KATO Chizu, FUKUTANI Satoshi, MATSUMURA Tatsuro, FUJII Toshiyuki  
**Solvent Extraction Research and Development, Japan 32(1) (2025) 53-62 (doi)10.15261/serdj.32.53**

## Proceedings

Chemical and electronic properties of Actinide compounds and their applications  
Tomoo Yamamura, Yuji Shibahara, Satoshi Fukutani, Minori Abe, Masahiko Nakase, Kenji Shirasaki, Naoto Ishikawa, Ta-tsuya Suzuki, Masanobu Nogami, Takumi Kubota, Yoshinori Haga, Chihiro Tabata, Tsuyoshi Yaita, Shinsaku Kambe, Toru Kobayashi  
**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 1 - 4 (in Japanese)**

Isotope fractionation of zinc using a chemical exchange method with Aza-Crown Ether  
Seiya Akamatsu, Kousuke Otsu, Takuma Mototani, Keisuke Nakata, Kazuki Okada, Yuya Nihei, Koutarou Kakutani, Kouki Tamai, Satoshi Fukutani, Ryoichi Nakada, Kazuya Nagaishi, Shigeyuki Wakaki, Akihiro Uehara, Chizu Kato, Toshiyuki Fujii  
**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 17 (in Japanese)**

Leaching of europium from calcined cements  
Yuya Nihei, Kousuke Otsu, Seiya Akamatsu, Takuma Mototani, Keisuke Nakata, Kazuki Okada, Riku Yanobe, Hiroki Goto, Tatsuro Matsumura, Satoshi Fukutani, Kengo Ito, Chizu Kato, Toshiyuki Fujii  
**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 37 (in Japanese)**

Malonate Precipitation and Coprecipitation of Group 2 Elements for Coprecipitation Experiments of Nobelium  
Miyu Konno, Masashi Kaneko, Hiroyuki Kazama, Kojiro Nagata, Ryohei Nakanishi, Ruilin Wang, Yudai Itakura, Enni Khult, Kyosuke Shibamoto, Ryotaro Masuda, Koichi Takamiya, Makoto Inagaki, Hiromitsu Haba, Akihiro Nambu, Yoshitaka Kasamatsu  
**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 41 (in Japanese)**

Production of medical RI by reactor irradiation  
Tomoo Yamamura, Ryo Okumura, Yuji Nakamoto, Yoichi Shimizu, Hiroyuki Kimura, Kazuma Ogawa, Kenji Shirasaki, Koshin Washiyama, Chihiro Tabata  
**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 5-7 (in Japanese)**

Solid-liquid extraction experiments of group 2 elements using dithiophosphoric acid with Sr resin system toward the chemical study on element 102, nobelium.  
Ruilin Wang, Eisuke Watanabe, Miyu Konno, Yudai Itakura, Enni Khult, Kyosuke Shibamoto, Koichi Takamiya, Hiromitsu Haba, Yudai Shigekawa, Akihiro Nambu, Yousuke Kanayama, Masashi Kaneko, Hiroyuki Kazama, Kojiro Nagata, Yoshitaka Kasamatsu  
**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 51 (in Japanese)**

Solubility and solid phase analysis of coprecipitated M(IV) amorphous hydroxides  
Taishi Kobayashi, Yuki Yoshikawa, Daiju Matsumura, Atsushi Ikeda-Ohno, Takayuki Sasaki  
**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 36 (in Japanese)**

Study of dynamic isotope effects in molybdenum Kazuki Okada, Ryoichi Nakada, Kazuya Nagaishi, Satoshi Fukutani, Akihiro Uehara, Chizu Kato, Toshiyuki Fujii  
**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 46 (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 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 49 (in Japanese)**

## 10. Health Physics and Waste Management

### Papers

Improved data analysis techniques for calculating more accurate radon and thoron exhalation rates from building interior solid walls  
Sakoda Akihiro, Ishimori Yuu, Jin Qianhao, Iimoto Takeshi  
**Applied Radiation and Isotopes 207 (2024) 111180 (doi)10.1016/j.apradiso.2024.111180**

Seasonal Variations in Radon and Thoron Exhalation Rates from Solid Concrete Interior Walls Observed Using In Situ Measurements

Sakoda Akihiro, Ishimori Yuu, Hasan Md. Mahamudul, Jin Qianhao, Iimoto Takeshi

**Atmosphere 15(6) (2024) 701 (doi)10.3390/atmos15060701**

Advancing Sustainable Development Goals through Enhanced Literacy in Nuclear Science and Technology: Emphasizing Hands-On Experiences

Saengkaew Phannee, Chanyotha Supitcha, Pengvanich Phongphaeth, Srijaroen Benjawan, Phruksarojanakun Phiphat, Cherdchu Chainarong, Takaki Rieko, Iimoto Takeshi

**Perspectives on Global Development and Technology 23(1-2) (2024) 32-44 (doi)10.1163/15691497-12341672**

Practical cut-off value for radon concentration in indoor air using an activated-charcoal radon collector

Yasuoka Yumi, Takemoto June, Omori Yasutaka, Kawamoto Nanaho, Goda Nao, Nagahama Hiroyuki, Muto Jun, Tokonami Shinji, Hosoda Masahiro, Iimoto Takeshi, Mukai Takahiro

**Radiation Protection Dosimetry 200(16-18) (2024) 1701-1705 (doi)10.1093/rpd/nae108**

Consideration of Reasonable Protection for Naturally Occurring Radioactive Materials Based on an Actual Case Study  
Hiromi Koike, Takeshi Iimoto

**RADIOISOTOPES 74(1) (2025) 55-62 (in Japanese) (doi)10.3769/radioisotopes.740101**

## Reviews

Review of Articles Related to the Accident of TEPCO's Fukushima Daiichi Nuclear Power Station Published in the Japanese Journal of Health Physics: Overview (Secondary Publication)

Yokoyama Sumi, Nabatame Kuniaki, Suzuki Akira, Iimoto Takeshi

**Journal of Radiation Protection and Research 49(4) (2024) 151-155 (doi)10.14407/jrpr.2024.00038**

The complexities in interpreting Argon isotopes Assis

Fernandes Vera, Burgess Ray, Sumino Hirochika

**Methods and Applications of Geochronology (2024) 297-343 (doi)10.1016/B978-0-443-18803-9.00006-7**

第1回国際原子力科学オリンピック(INSO)開催！ 背景、目的、成果と所感

Yuichi TSUNOYAMA, Yu IGARASHI, Takeshi IIMOTO

**FBNews 577 (2025) 13 - 17 (in Japanese)**

## 11. Accelerator Physics

### Papers

Development of a strip-shaped X-ray mapping system for 9-cell superconducting cavities

Kuriyama Y., Iwashita Y., Fuwa Y., Tongu H., Hayano H., Geng R.L.

**Journal of Instrumentation 19(9) (2024) P09037 (doi)10.1088/1748-0221/19/09/P09037**

Negative muon beam generation with muon catalyzed fusion

Mori Yoshiharu, Uesugi Tomonori, Ishi Yoshihiro

**Journal of Instrumentation 19(5) (2024) P05001 (doi)10.1088/1748-0221/19/05/P05001**

Accuracy verification of protoacoustic measurements in a heterogeneous phantom by an optical hydrophone

Chen Ye, Kasamatsu Koki, Kuriyama Yasutoshi, Uesugi Tomonori, Ishi Yoshihiro, Murakami Taichi, Hidani Sena, Caulfield Michael, Unlu Mehmet Burcin, Rohringer Wolfgang, Matsuura Taeko

**Medical Physics 52(3) (2025) 1893-1902 (doi)10.1002/mp.17575**

Beam stacking experiment at a fixed field alternating gradient accelerator

Uesugi T., Ishi Y., Kuriyama Y., Mori Y., Jolly C., Kelliher D. J., Lagrange J.-B., Letchford A. P., Machida S., de Boer D. W. Posthuma, Rogers C. T., Yamakawa E., Topp-Mugglestone M.

**Physical Review Accelerators and Beams 28(1) (2025) 012803 (doi)10.1103/PhysRevAccelBeams.28.012803**

Muonic x-ray measurement for the nuclear charge distribution: The case of stable palladium isotopes

Saito T. Y., Niikura M., Matsuzaki T., Sakurai H., Igashira M., Imao H., Ishida K., Katabuchi T., Kawashima Y., Kubo M. K., Miyake Y., Mori Y., Ninomiya K., Sato A., Shimomura K., Strasser P., Taniguchi A., Tomono D., Watanabe Y.

**Physical Review C 111(3) (2025) 034313 (doi)10.1103/PhysRevC.111.034313**

## Proceedings

Development of UHDR irradiation field in KURNS-LINAC

Nishiki Matsubayashi, Hiroki Tanaka, Toshiharu Takahashi, Naoya Abe, Tsubasa Watanabe

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 15-16 (in Japanese)**

Evaluation of the fast neutron intensity from the target using the time-of-flight method with He-3 detector at KUANS.  
Mizuki Iriyama, Seiji Tasaki

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 53 (in Japanese)**

Improving Beam Commissioning by Fast Computation of Magnetic Field of Accelerator Magnets Considering Magnetic Hysteresis

Onchi Yoshitake, Sugahara Kengo, Ahagon Akira, Ishi Yoshihiro, Hane Yoshiki

**2024 IEEE 21st Biennial Conference on Electromagnetic Field Computation (CEFC) Jeju, Korea (Jun. 2-5, 2024) 01-02 (doi)10.1109/CEFC61729.2024.10586120**

Plan for equipment related to neutron activation analysis and radioisotope production in the new research reactor at Monju site

Makoto Inagaki, Koichi Takamiya, Tsutomu Miura, Kohshin Washiyama, Kazuhiko Akiyama, Takahito Osawa, Yoshitaka Kasamatsu, Naoki Shirai, Kunihiko Tsuchiya, Go Yoshida, Nobuhiro Sato

**Proceedings of the 59th KURNS Scientific Meeting Kumatori, Japan/Online (Jan. 30-31, 2025) 54 (in Japanese)**

Plan for terahertz-wave source of superimposed coherent transition radiation using ring-type resonator at LEBRA  
N. Sei, H. Ogawa, K. Hayakawa, T. Sakai, T. Tanaka, Y. Hayakawa, Y. Takahashi, T. Takahashi

**Proceedings of the 32nd Linear Accelerator Conference Chicago (Aug. 25-30, 2024) 709-712.**

## 12. Other

### Papers

Quantitative Analysis of Total Fluorine in ABS Resin (for Perfluoroalkyl Substance Analysis: NMIJ CRM 8155-a)  
Nobuyasu HANARI, Eriko YAMAZAKI, Keisuke NAKAMURA, Ayaka WADA, Tsutomu MIURA

**BUNSEKI KAGAKU 74(1-2) (2025) 7-11 (in Japanese) (doi)10.2116/bunsekikagaku.74.7**

Nuclear power, resilience, and energy security under a vulnerability-based approach

Shoki Kosai and Hironobu Unesaki

**Cleaner Energy Systems 7 (2024) 100107 (doi)10.1016/j.cles.2024.100107**

Thermally Stable Heteroleptic Trans-Bis(Chelate) Ruthenium(II) Complex Bearing 2,2'-Bipyridine and Acetylacetonato: Synthesis, Isomerization, and Crystal Structure

Toyama Mari, Fujimoto Daichi, Kawakami Yusuke, Tanaka Shiho

**European Journal of Inorganic Chemistry 27(32) (2024) e202400243 (doi)10.1002/ejic.202400243**

Bayesian Flow Network Framework for Chemistry Tasks

Tao Nianze, Abe Minori

**Journal of Chemical Information and Modeling 65(3) (2025) 1178-1187 (doi)10.1021/acs.jcim.4c01792**

Development and characterization of magnetic-based biodegradable periodic mesoporous organosilica nanoparticles for enhanced biomedical applications

Ta Hanh Kieu Thi, Mai Ngoc Xuan Dat, Nguyen Hanh-Vy Tran, Matsumoto Kotaro, Phan Thang Bach, Tamanoi Fuyuhiko, Doan Tan Le Hoang

**Journal of Industrial and Engineering Chemistry 142 (2025) 563-569 (doi)10.1016/j.jiec.2024.07.061**

Complexes exhibiting trans (Cl)-RuCl<sub>2</sub>(dmso-S)<sub>2</sub> geometry with methyl-picolinate-type neutral N,O-ligands: Synthesis, structural characterization, and chemical behavior analysis in aqueous solutions

Toyama Mari, Onishi Yuto, Tanaka Nobuyoshi, Nagao Noriharu

**Journal of Molecular Structure 1321(Part 2) (2025) 139964 (doi)10.1016/j.molstruc.2024.139964**

Towards an Integrated Verification Scheme for the FM(C)T

Hirokazu Kumekawa, Hironobu Unesaki

**Journal of Nuclear Material Management 51(3) (2024) 4-19**

Quantification of bulk elemental composition for C-type asteroid Ryugu samples with nondestructive elemental analysis using muon beam

Ninomiya Kazuhiko, Osawa Takahito, Terada Kentaro, Wada Taiga, Nagasawa Shunsaku, Chiu I-Haun, Nakamura Tomoki, Takahashi Tadayuki, Miyake Yasuhiro, Kubo M. Kenya, Takeshita Soshi, Taniguchi Akihiro, Umegaki Izumi, Watanabe Shin, Azuma Toshiyuki, Katsuragawa Miho, Minami Takahiro, Mizumoto Kazumi, Shimomura Koichiro, Takeda Shin'ichiro, Morita Tomoyo, Kikuri Mizuha, Amano Kana, Kagawa Eiichi, Furukawa Yoshihiro, Yurimoto Hisayoshi, Noguchi Takaaki, Okazaki Ryuji, Yabuta Hikaru, Naraoka Hiroshi, Sakamoto Kanako, Tachibana Shogo, Yada Toru, Nishimura Masahiro, Nakato Aiko, Miyazaki Akiko, Yogata Kasumi, Abe Masanao, Okada Tatsuki, Usui Tomohiro, Yoshikawa Makoto, Saiki Takanao, Tanaka Satoshi, Terui Fuyuto, Nakazawa Satoru, Watanabe Sei-ichiro, Tsuda Yuichi

**Meteoritics & Planetary Science 59(8) (2024) 2044-2057 (doi)10.1111/maps.14135**

Purity Determination of High-Purity BeO using Gravimetric Analysis with Stepwise Conversions of Weighing Form of Be

Tsutomu Miura

**Talanta Open 11 (2024) 100307 (doi)10.1016/j.talo.2024.100307**

A Systematic Consolidation of Talking Points for Negotiation toward the Realization of FMCT

Hirokazu KUMEKAWA, Hironobu UNESAKI

**Transactions of the Atomic Energy Society of Japan 23(4) (2024) 130-148 (in Japanese) (doi)10.3327/taesj.J24.001**

Relationship between friction reduction effect and solubility in base oil of organic friction modifiers

Gu Haiyang, Hirayama Tomoko, Yamashita Naoki, Xu Jimin, Yamada Masako

**Tribology International 22 (2025) 110304 (doi)10.1016/j.triboint.2024.110304**

森林土壌における水溶態安定セシウムの鉛直分布について

寺島龍平、池上麻衣子、福谷哲

**環境衛生工学研究 38 (2024) 144-146 (in Japanese)**

森林土壌における Cs-137 の鉛直分布について

寺島龍平、池上麻衣子、福谷哲

**Symposium on Soil and Groundwater Contamination and Radiation 29 (2024) 320-325 (in Japanese)**

## Proceedings

Towards Lamb shift spectroscopy of antihydrogen atoms at the GBAR  $\bar{H}$  beam line

Tanaka T. A., Blumer Philipp Peter, Janka Gianluca, Ohayon Ben, Regenfus Christian, Crivelli Paolo, Kuroda Naofumi, Tsukida Rin, Higuchi Takashi, Tanaka Kazuo S.

**International Conference on Exotic Atoms and Related Topics and Conference on Low Energy Antiprotons (EXA/LEAP 2024) Vienna (Aug 26-30, 2024) 044 (doi) 10.1063/5.0251048**

## Reviews

From the Discovery of Radiation and Radioactivity to the Beginning of World War II—Surveying Original Papers—  
Tetsuji Imanaka

**RADIOISOTOPES 74(1) (2024) 39-54 (in Japanese)**

原子力の未来に向けて、原子の灯ふたたび

Ken Kurosaki

**Journal of the Atomic Energy Society of Japan 66(5) (2024) 228-229 (doi)10.3327/jaesjb.66.5\_228 (in Japanese)**

中性子放射化分析法

三浦勉

**Bunseki 9 (2024) 329-330 (in Japanese)**

## Others

Provenancial study by neutron activation analysis on the roof-tiles with stamp impression excavated from the garrison of the Tosa domain in Kyoto

富井眞、高宮幸一、伊藤淳史、木立雅朗、千葉豊、吉井秀夫



**Annual Meeting of the Japan Society for Scientific Studies on Cultural Property Abstracts (2024) 178-179  
(in Japanese)**

機器中性子放射化分析による幕末京都の土佐藩白川邸から出土した刻印瓦の胎土分析  
富井眞、高宮幸一、稲垣誠、伊藤淳史、木立雅朗、千葉豊、吉井秀夫  
**京都大学構内遺跡調査研究年報 2024 (2025) (in Japanese)**

[空虚]の中のメモリー 浪江、大熊、双葉一福島第一原発事故  
高垣雅緒、香川則子  
**PASKEN JOURNAL 33 (2024) 23-33 (in Japanese)**