

**II. PUBLICATION LIST**  
**(APRIL 2015 – MARCH 2016)**

## 1. Slow Neutron Physics and Neutron Scattering

### Papers

Direct observation of fast lithium-ion diffusion in a superionic conductor:  $\text{Li}_7\text{P}_3\text{S}_{11}$  metastable crystal  
K. Mori, K. Enjuji, S. Murata, K. Shibata, Y. Kawakita, M. Yonemura, Y. Onodera, T. Fukunaga  
Physical Review Applied **4** (2015) 54008.

Figure correction of a metallic ellipsoidal neutron focusing mirror  
J.Guo, Y.Yamagata, S.Morita, S.Takeda, J.Kato, M.Hino, M.Furusaka  
Review of Scientific Instruments **86** (2015) 63108-9.

Local structure of lithium ion conducting germanium sulfide glass:  $(\text{Li}_2\text{S})_{40}(\text{GeS}_2)_{60}$   
K. Furuta, K. Mori, Y. Onodera, T. Fukunaga  
JPS Conference Proceedings **8** (2015) 310040.

Pulsed neutron-beam focusing by modulating a permanent-magnet sextupole lens  
M.Yamada, Y.Iwashita, M.Ichikawa, Y.Fuwa, H.Tongu, H.M.Shimizu, K.Mishima, N.L. Yamada, K.Hirota, Y.Otake, Y.Seki, Y.Yamagata, M.Hino, M.Kitaguchi, U.Garbe, S.J. Kennedy, W.T.Lee, K.H. Andersen, B.Guerard, G.Manzin, P.Geltenbort  
Prog. Theor. Exp. Phys NA (2015) 043G01-22.

Pulsed ultra-cold neutron production using a Doppler shifter at J-PARC  
S.Imajo, K.Mishima, M.Kitaguchi, Y.Iwashita, N.L.Yamada, M.Hino, T.Oda, T.Ino, H.M.Shimizu, S.Yamashita, R. Katayama  
Progress of Theoretical and Experimental Physics NA (2016) 013C02-22.

Structural and electronic features of binary  $\text{Li}_2\text{S}-\text{P}_2\text{S}_5$  glasses  
K. Ohara, A. Mitsui, M. Mori, Y. Onodera, S. Shiotani, Y. Koyama, Y. Orikasa, M. Murakami, K. Shimoda, K. Mori, T. Fukunaga, H. Arai, Y. Uchimoto, Z. Ogumi  
Scientific Reports **6** (2016) 21302.

Structure and conductivity of Na-P-S superionic conducting glasses studied by neutron and X-ray diffraction  
Y. Onodera, H. Nakashima, K. Mori, T. Otomo, T. Fukunaga  
JPS Conference Proceedings **8** (2015) 31013.

The ion beam sputtering facility at KURRI: Coatings for advanced neutron optical devices  
Hino Masahiro, Oda Tatsuro, Kitaguchi Masaaki, Yamada Norifumi L., Tasaki Seiji, Kawabata Yuji  
Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment **797** (2015) 265-270.

Three-dimensional structures and lithium-ion conduction pathways of  $(\text{Li}_2\text{S})_x(\text{GeS}_2)_{100-x}$  superionic glass  
K. Mori, K. Furuta, Y. Onodera, K. Iwase, T. Fukunaga  
Solid State Ionics **280** (2015) 44-50.

Wear mechanisms of silicon carbide subjected to ultrasonic nanocrystalline surface modification technique  
Amanov, J.H.Kim, Y.S.Pyun, T.Hirayama, M.Hino  
WEAR **332-333** (2015) 891-899.

### Reviews

Neutron Imaging and Small Angle Neutron Scattering Instruments at KUR  
齊藤 泰司, 大場 洋次郎, 日野 正裕  
波紋 : Neutron network news **25** (2015) 225-230. (in Japanese)

Development of Neutron Multilayer Mirror and the Application  
日野 正裕  
波紋 : Neutron network news **25** (2015) 126-130. (in Japanese)

Development of neutron reflective optical device and its application  
日野 正裕  
放射線 = Ionizing radiation **41** (2015) 27-33. (in Japanese)

## 2. Nuclear Physics and Nuclear Data

### Papers

Accuracy Improvement of Neutron Nuclear Data on Minor Actinides

Hideo HARADA, Osamu IWAMOTO, Nobuyuki IWAMOTO, Atsushi KIMURA, Kazushi TERADA, Taro NAKAO, Shoji NAKAMURA, Kazuhito MIZUYAMA, Masayuki IGASHIRA, Tatsuya KATABUCHI, Tadafumi SANO, Yoshiyuki TAKAHASHI, Koichi TAKAMIYA, Cheol Ho PYEON, Satoshi FUKUTANI, Toshiyuki FUJII, Jun-ichi HORI, Takahiro YAGI, and Hiroshi YASHIMA  
EPJ Web of Conferences **93** (2015) 6001.

$\beta^-$  decay of  $^{150}\text{Ce}$  to odd-odd  $^{150}\text{Pr}$

Y. Kojima, K. Kosuga, Y. Shima, A. Taniguchi, H. Hayashi and M. Shibata  
J. Phys. Soc. Jpn. **84** (2015) 054201(1-8).

Current activities and future plans for nuclear data measurements at J-PARC

A. Kimura, H. Harada, S. Nakamura, O. Iwamoto, Y. Toh, M. Koizumi, F. Kitatani, K. Furutaka, M. Igashira, T. Katabuchi, M. Mizumoto, J. Hori, K. Kino, Y. Kiyonagi  
European Phys. J.A **51** (2015) 180.

Defect structures of F82H irradiated at SINQ using positron annihilation spectroscopy

Sato K., Ikemura K., Krsjak V., Vieh C., Brun R., Xu Q., Yoshiie T., Dai Y.  
Journal of Nuclear Materials **648** (2016) 281-284.

Excitation energy dependence of fragment-mass distributions from fission of  $^{180,190}\text{Hg}$  formed in fusion reactions of  $^{36}\text{Ar}+^{144,154}\text{Sm}$

K.Nishio, A.N.Andreyev, R.Chapman, X.Derckx, Ch.E.Dullmann, L.Ghys, F.P.Hesberger, K.Hirose, H.Ikezoe, J.Khuyagbaatar, B.Kindler, B.Lommel, H.Makii, I.Nishinaka, T.Ohtsuki, S.D.Pain, R.Sagaidak, I.Tsekhanovich, M.Venhardt, Y.Wakabayashi, S.Yan.  
Physics Letter B **748** (2015) 89-94.

Fission study of actinide nuclei using multi-nucleon transfer reactions

K. Nishio, K. Hirose, R. Leguillon, H. Makii, I. Nishinaka, R. Orlandi, J. Smallcombe, K. Tsukada, S. Chiba, T. Ohtsuki, R. Tatsuzawa, N. Takaki  
Physics Procedia **64** (2015) 140-144.

IV Practical Aspects of Air Dose Rate Measurements in the Environment

TSUDA Shuichi, YOSHIDA Tadayoshi, ANDOH Masaki, MATSUDA Norihiro, MIKAMI Satoshi, TANIGAKI Minoru, OKUMURA Ryo, TAKAMIYA Koichi, SATO Nobuhiro, SEKI Akiyuki, TAKEMIYA Hiroshi, SAITO Kimiaki  
RADIOISOTOPES **64** (2015) 275-289.

Measurements of production cross sections of  $^{10}\text{Be}$  and  $^{26}\text{Al}$  by 120 GeV and 392 MeV proton bombardment of  $^{89}\text{Y}$ ,  $^{159}\text{Tb}$ , and  $^{nat}\text{Cu}$  targets

S. Sekimoto, S. Okumura, H. Yashima, Y. Matsushi, H. Matsuzaki, H. Matsumura, A. Toyoda, K. Oishi, N. Matsuda, Y. Kasugai, Y. Sakamoto, H. Nakashima, D. Boehnlein, R. Coleman, G. Lauten, A. Leveling, N. Mokhov, E. Ramberg, A. Soha, K. Vaziri, K. Ninomiya, T. Omoto, T. Shima, N. Takahashi, A. Shinohara, M.W. Caffee, K.C. Welten, K. Nishiizumi, S. Shibata, T. Ohtsuki  
Nuclear Instruments and Methods in Physics Research B **361** (2015) 685-688.

Neutron Capture Cross Section Measurement on  $^{91}\text{Zr}$  at J-PARC/MLF/ANNRI

J. Hori, H. Yashima, S. Nakamura, K. Furutaka, K. Y. Hara, H. Harada, K. Hirose, M. Igashira, T. Katabuchi, A. Kimura, K. Kino, F. Kitatani, Y. Kiyonagi, M. Koizumi, M. Mizumoto, T. Sano, Y. Takahashi, Y. Toh  
EPJ Web of Conferences **93** (2015) 2004.

Systematic effects on cross-section data derived from reaction rates at a cold neutron beam

Žerovnik G., Becker B., Belgya T., Genreith C., Harada H., Kopecky S., Radulović V., Sano T., Schillebeeckx P., Trkov A.

Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment **739** (2015) 29-36.

### Proceedings

Development of Resonance Neutron Imaging Based on Glass-GEM

K. Ito, H. Tomita, Y. Ichinose, T. Fujiwara, J. Kawarabayashi, T. Iguchi, J. Hori, T. Matsumoto  
IEEE Nuclear Science Symposium 2015 Santa Fe, USA in printing (Oct. 31- Nov. 7 2015)

## Reviews

KURAMA-IIの開発とその利用について  
谷垣 実  
Isotope News **734** (2015) 68-72. (in Japanese)

## 3. Reactor Physics and Reactor Engineering

### Papers

Benchmark models for criticalities of FCA-IX assemblies with systematically changed neutron spectra  
Masahiro Fukushima, Yasunori Kitamura, Teruhiko Kugo & Shigeaki Okajima  
Journal of Nuclear Science and Technology Online (2015) 1-19.

Bubbly-to-cap bubbly flow transition in a long-26m vertical large diameter pipe at low liquid flow rate  
Shen, Xiuzhong; Hibiki, Takashi; Nakamura, Hideo  
International Journal of Heat and Fluid Flow **52** (2015) 140-155.

CFD simulation of an unbaffled stirred tank reactor driven by a magnetic rod: assessment of turbulence models  
Li, Jiajia; Deng, Baoqing; Zhang, Bing; Shen, Xiuzhong; Kim, Chang Nyung  
Water Science and Technology **72** (2015) 1308-1318.

CFD simulation on hydrodynamics in fluidized beds: assessment of gradient approximations and turbulence models  
Guo, Yuan; Deng, Baoqing; Ge, Daqiang; Shen, Xiuzhong  
Heat and Mass Transfer **51** (2015) 1067-1074.

Concept of capture credit based on neutron-induced gamma ray spectroscopy  
Yasushi Nauchi, Hirokazu Ohta, Hironobu Unesaki, Tadafumi Sano, Takahiro Yagi  
Journal of Nuclear Science and Technology **52** (2015) 1-10.

Count-loss effect in subcriticality measurement by pulsed neutron source method, (II) proposal for utilization of neutron detection system operated in current mode  
Yasunori Kitamura, Masahiro Fukushima  
Journal of Nuclear Science and Technology **52** (2015) 801-810.

Dynamic Monte Carlo calculation method by solving frequency domain transport equation using the complex-valued weight Monte Carlo method  
T.Yamamoto, H.Sakamoto  
Annals of Nuclear Energy **85** (2015) 426-433.

Gas-liquid bubbly flow structure in a vertical large-diameter square duct  
Shen, Xiuzhong; Sun, Haomin; Deng, Baoqing; Hibiki, Takashi; Nakamura, Hideo  
Progress in Nuclear Energy, Vol. **89** (2016), pp. -,May **89**140-158.

Interfacial area concentration in gas-liquid bubbly to churn flow regimes in large diameter pipes  
Shen, Xiuzhong; Hibiki, Takashi  
International Journal of Heat and Fluid Flow **54** (2015) 107-118.

Monte Carlo Perturbation Analysis of Isothermal Temperature Reactivity Coefficient in Kyoto University Critical Assembly  
B. K. Jeon, C. H. Pyeon and H. J. Shim  
Nucl. Technol. **191** (2015) 174-184.

Natural Convection Cooling Transfer Characteristics in a Plate Type Fuel assembly of Kyoto University Research Reactor during Loss of Coolant Accident  
Daisuke Ito and Yasushi Saito  
Annals of Nuclear Energy **90** (2016) 1-8.

Neutron Characteristics of Solid Targets in Accelerator-Driven System with 100 MeV Protons at Kyoto University Critical Assembly  
C. H. Pyeon, H. Nakano, M. Yamanaka, T. Yagi and T. Misawa  
Nucl. Technol. **192** (2015) 181-190.

Perspectives of Research and Development of Accelerator-Driven System in Kyoto University Research Reactor Institute  
C. H. Pyeon, T. Yagi, Y. Takahashi, T. Sano, D. Ito, Y. Saito and K. Nakajima  
Prog. Nucl. Energy **82** (2015) 22-27.

Relationship between size distribution of synthesized nanoparticles and flow and thermal fields in a flow-type reactor for supercritical hydrothermal synthesis

Sugioka K.-I., Ozawa K., Kubo M., Tsukada T., Takami S., Adschiri T., Sugimoto K., Takenaka N., Saito Y.  
Journal of Supercritical Fluids **109** (2016) 43-50.

Statistical Error Estimation of the Feynman- $\alpha$  Method using the Bootstrap Method

T. Endo, A. Yamamoto, T. Yagi, C.H. Pyeon  
J. Nucl. Sci. Technol. (2016)

Study of Neutron Irradiation on F82H Alloys by Mössbauer Spectroscopy

S.S. Huang, S. Kitao, Y. Kobayashi, T. Yoshiie, Q. Xu, K. Sato, M. Seto  
J. Nucl. Mater. **456** (2015) 266-271.

The tolerance of  $Ti_3SiC_2$  to hydrogen-induced embrittlement: A first principles calculation

Zhang H.F., Yao B.D., Zhang J.Y., Xu Q., Feng Y.J., Wang Y.X.  
Materials Letters **166** (2016) 93-96.

Validation of Pb nuclear data by Monte Carlo analyses of sample reactivity experiments at Kyoto University Critical Assembly

PYEON Cheol Ho, FUJIMOTO Atsushi, SUGAWARA Takanori, YAGI Takahiro, IWAMOTO Hiroki, NISHIHARA Kenji, TAKAHASHI Yoshiyuki, NAKAJIMA Ken, TSUJIMOTO Kazufumi  
J Nucl Sci Technol **53** (2016) 602-612.

## Proceedings

Application of Data Assimilation based on Bayesian Theory to Subcriticality Measurements using Area Ratio Method

K. Maeno, T. Endo, A. Yamamoto  
ANS 2015 Winter MeetingMarriott Wardman Park, Washington, D.C. (Nov. 8-12, 2015) 1282.

Comparative Analysis of Neutronics Parameters by Calculations based on MCNP Code and Experimental Measurements for Accelerator-Driven System of Kyoto University Critical Assembly

W. K. Kim, D. J. Lee and C. H. Pyeon  
Proc. Int. Congress Adv. Nucl. Power Plants (ICAPP'15) Nice, France (May. 3-6, 2015).

Evaluation of interfacial area transport equation in coupled two-fluid model computation

Schlegel, Joshua P., Hibiki, Takashi, Shen, Xiuzhong, Appathurai, S., Subramani, H.  
Proceeding of the 16th International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-16) HyattNURETH16 No13363 (Aug. 30- Sep. 4, 2015).

Innovative TRU Burning Fast Reactor Cycle Using Uranium-free TRU Metal Fuel (1) Overview and Progress of Core Design Study

Kazuo Arie, Yasushi Tsuboi, Mitsuaki Yamaoka, Yasuyuki Moriki, Kazuhito Asano, Rei Kimura, Yuji Arita, Hironobu Unesaki, Masatoshi Iizuka  
GLOBAL 2015: 21st International Conference & Exhibition: "Nuclear Fuel Cycle For a Low-Carbon Future"Paris (Sep. 20-24, 2015).

Proposal of Accelerator-Driven System for Neutron Source in Kyoto University Research Reactor Institute

C. H. Pyeon, T. Sano, Y. Fujihara, H. Yashima, Y. Saito and Y. Kawabata  
Proc. Winter Mtg. of the Am. Nucl. Soc. Washington, US (Nov. 8-12, 2015) 1275-1277.

Theoretical Expression of Area Ratio Method Using Detected-Neutron Multiplication Factor

T. Endo, A. Yamamoto  
ANS 2015 Winter MeetingMarriott Wardman Park, Washington, D.C. (Nov. 8-12, 2015) 1208-1211.

Two-group interfacial area concentration correlations of two-phase flows in large diameter pipes

Shen, Xiuzhong, Hibiki, Takashi  
Proceeding of the 23rd International Conference on Nuclear Engineering (ICONE-23) MakuhariICONE23No1795 (May. 17-21, 2015).

## Others

Application of Cherenkov Light Observation to Reactor Measurements (2)

- Design and Trial Fabrication of Cherenkov Light Estimation System -  
K. Yamamoto, T. Takeuchi, T. Hayashi, F. Kosuge, T. Sano and K. Tsuchiya  
JAEA-Testing2015 -001-2015.

## 4. Material Science and Radiation Effects

### Papers

<sup>57</sup>Fe Polarization-Dependent Synchrotron Mössbauer Spectroscopy Using a Diamond Phase Plate and an Iron Borate Nuclear Bragg Monochromator  
T. Mitsui, Y. Imai, R. Masuda, M. Seto, K. Mibu  
*J. Synchrotron Rad.* (2015) 22427-435.

<sup>61</sup>Ni Synchrotron Radiation-Based Mössbauer Spectroscopy of Nickel-Based Nanoparticles with Hexagonal Structure  
Ryo Masuda, Yasuhiro Kobayashi, Shinji Kitao, Masayuki Kurokuzu, Makina Saito, Yoshitaka Yoda, Takaya Mitsui, Kohei Hosoi, Hirokazu Kobayashi, Hiroshi Kitagawa, and Makoto Seto  
*Scientific Reports* (2016) 20861.

A Ferromagnetic Quantum Critical Point in Heavy-Fermion Iron Oxypnictide CeFe<sub>1-x</sub>Cr<sub>x</sub>PO  
T. Okano, S. Kitao, M. Seto, T. Atou, M. Itoh, M. Matoba, Y. Kamihara  
*J. Appl. Phys.* **117** (2015) 17E123.

Atomic level observation of Ag-ion hopping motion in AgI  
W. Sato, S. Komatsuda, R. Mizuuchi, N. Irioka, S. Kawata, and Y. Ohkubo  
*Hyperfine Interact.* **231** (2015) 107-113.

Attempt to Measure Magnetic Hyperfine Fields in Metallic Thin Wires under Spin Hall Conditions Using Synchrotron-Radiation Mössbauer Spectroscopy  
Ko Mibu, Takaya Mitsui, Masaaki Tanaka, Ryo Masuda, Shinji Kitao, Yasuhiro Kobayashi, Yoshitaka Yoda, and Makoto Seto  
*J. Appl. Phys.* **117** (2015) 17E126.

Coherent Transition Radiation Light Source Using High-Energy Electron Beam and the Evaluation of Its Characteristics  
Shuichi Okuda and Toshiharu Takahashi  
*Journal of the Japan Society of Infrared Science and Technology* **25** (2016) 191-196.

Corrosion of copper in water and colloid formation under intense radiation field  
K. Bessho, Y. Oki, N. Akimune, H. Matsumura, K. Masumoto, S. Sekimoto, N. Osada, N. Kinoshita, H. Monjushiro, S. Shibata  
*Journal of Radioanalytical and Nuclear Chemistry* **303** (2015) 1117-1121.

Crystal structure analysis of La<sub>2</sub>Ni<sub>6</sub>CoD<sub>x</sub> during deuterium absorption process  
K. Iwase, K. Mori, S. Tashiro, H. Yokota, T. Suzuki  
*Inorg Chem.* **54** (2015) 8650-8655.

Detection and characterisation of sub-critical nuclei during reactive Pd metal nucleation by X-ray absorption spectroscopy  
S.-Y. Chang, Y. Gründer, S. G. Booth, L. B. Molleta, A. Uehara, J. F. W. Mosselmans, G. Cibin, V.-T. Pham, L. Nataf, R. A. W. Dryfe and S. L. M. Schroeder  
*Cryst. Eng. Comm.* **18** (2016) 674-682.

Diffusivity and Solubility of Cu in a Reactor Pressure Vessel Steel Studied by Atom Probe Tomography  
M. Shimodaira, T. Toyama, F. Takahama, N. Ebisawa, Y. Nozawa, Y. Shimizu, K. Inoue, Y. Nagai  
*Mater. Trans.* **56** (2015) 1513-1516.

Dynamics of Iodine Anions in KI and LiI Aqueous Solutions Studied by <sup>127</sup>I Nuclear Resonant Quasi-Elastic Scattering  
Rie Haruki, Masanori Koshimizu, Fumihiko Nishikido, Ryo Masuda, Yasuhiro Kobayashi, Makoto Seto, Yoshitaka Yoda, and Shunji Kishimoto  
*Hyperfine Interact.* **237** (2015) 71.

Early aggregation preceding the nucleation of insulin amyloid fibrils as monitored by small angle X-ray scattering  
E. Chatani, R. Inoue, H. Imamura, M. Sugiyama, Mi. Kato, M. Yamamoto, K. Nishida, and T. Kanaya,  
*Scientific Reports* **5** (2015) 15485.

Effect of Annealing on Thermal Diffusivity in Ceramics Irradiated by Electrons and Neutrons  
M. Akiyoshi, I. Takagi, T. Yoshiie, Q. Xu, K. Sato, T. Yano  
*Energy Procedia* **71** (2015) 320-327.

- Effect of Mg substitution on hydrogen absorption-desorption behavior and crystal structure of  $Gd_{2-x}Mg_xNi_7$   
Iwase K., Terashita N., Mori K., Tashiro S., Yokota H., Suzuki T.  
International Journal of Hydrogen Energy **41**(2) (2016) 1074-1079.
- Effect of neutron energy and fluence on deuterium retention behaviour in neutron irradiated tungsten  
H. Fujita, K. Yuyama, X. Li, Y. Hatano, T. Toyama, M. Ohta, K. Ochiai, N. Yoshida, T. Chikada and Y. Oya  
Phys. Scr.T **167** (2016) 14067
- Electrochemical Insight into the Brust-Schiffrin Synthesis of Au Nanoparticles  
Akihiro Uehara, Samuel G. Booth, Sin Yuen Chang, Sven L. M. Schroeder, Takahito Imai, Teruo Hashimoto, J. Frederick W. Mosselmans, and Robert A. W. Dryfe  
Journal of the American Chemical Society **137** (2015) 15135-15144.
- Gold Deposition at a Free-Standing Liquid/Liquid Interface: Evidence for the Formation of Au(I) by Microfocus X-ray Spectroscopy ( $\mu$ XRF and  $\mu$ XAFS) and Cyclic Voltammetry  
Samuel G. Booth, Akihiro Uehara, Sin Yuen Chang, J. Fred W. Mosselmans, Sven L. M. Schroeder, and Robert A. W. Dryfe  
Journal of Physical Chemistry **C119** (2015) 16785-16792.
- Hole size distributions in cardo-based polymer membranes deduced from the lifetimes of ortho-positronium  
Y. Kobayashi, A. Kinomura, S. Kazama, K. Inoue, T. Toyama, Y. Nagai, K. Haraya, H. F. M. Mohamed, B. E. O' Rourke, N. Oshima and R. Suzuki  
Journal of Physics Conference Series **674** (2016) 12017.
- Hydrogen interstitial in H-ion implanted ZnO bulk single crystals: Evaluation by elastic recoil detection analysis and electron paramagnetic resonance  
T. Kaida, K. Kamioka, T. Nishimura, K. Kuriyama, K. Kushida and A. Kinomura  
Nuclear Instruments and Methods in Physics Research B **365** (2015) 171-174.
- Local Structures at In Impurity Sites in ZnO Probed by the TDPAC Technique  
W. Sato, S. Komatsuda, Y. Yamada, and Y. Ohkubo  
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- Measurement of the displacement cross-section of copper irradiated with 125 MeV protons at 12 K  
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Journal of Nuclear Materials **458** (2015) 369-375.
- Molecular Assembly of Wheat Gliadins into Nanostructures: A Small-Angle X-Ray Scattering Study of Gliadins in Distilled Water over a Wide Concentration Range  
N. Sato, A. Matsumiya, Y. Higashino, S. Funaki, Y. Kitao, Y. Oba, R. Inoue, F. Arisaka, M. Sugiyama  
Journal of Agricultural and Food Chemistry **63** (2015) 8715-8721.
- Mössbauer Spectroscopy of the Magnetic-Field-Induced Ferroelectric Phase of  $CuFeO_2$   
Shin Nakamura, Yasuhiro Kobayashi, Shinji Kitao, Makoto Seto, Akio Fuwa, Noriki Terada  
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- New Quaternary Arsenide Oxides with Square Planar Coordination of Gold(I) – Structure,  $^{197}Au$  Mössbauer Spectroscopic, XANES and XPS Characterization of  $Nd_{10}Au_3As_8O_{10}$  and  $Sm_{10}Au_3As_8O_{10}$   
T. Bartsch, O. Niehaus, D. Johrendt, Y. Kobayashi, M. Seto, P. M. Abdala, M. Bartsch, H. Zacharias, R. Hoffmann, B. Gerke, U. Rodewald, R. Pöttgen  
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K. Sato, S. Ishioka, Q. Xu, T. Yoshiie, H. Tsuchida and A. Itoh  
Journal of Physics: Conference Series **674** (2016) 12009.
- Polysulfone as a scintillation material without doped fluorescent molecules  
H. Nakamura, H. Kitamura, N. Sato, M. Kanayama, Y. Shirakawa, and S. Takahashi  
Nuclear Instruments and Methods in Physics Research Section A **797** (2015) 206.
- Preparation, characterization and magnetic behavior of a spin-labelled physical hydrogel containing a chiral cyclic nitroxide radical unit fixed inside the gelator molecule  
Y. Takemoto, T. Yamamoto, N. Ikuma, Y. Uchida, K. Suzuki, S. Shimono, H. Takahashi, N. Sato, Y. Oba, R. Inoue, M. Sugiyama, H. Tsue, T. Kato, J. Yamauchi, and R. Tamura  
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T. Yopshiie, K. Sato, Q. Xu, Y. Nagai  
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Simultaneous Characterisation of Precipitates and Matrix in a Steel using Small-Angle Neutron Scattering and Bragg-Edge Transmission Analysis  
Y. Oba, S. Morooka, H. Sato, N. Sato, K. Ohishi, J. Suzuki, M. Sugiyama  
ISIJ International **55** (2015) 2618-2623.

Slow Dynamics in Glycerol: Collective de Gennes Narrowing and Independent Angstrom Motion  
Makina Saito, Yasuhiro Kobayashi, Ryo Masuda, Masayuki Kurokuzu, Shinji Kitao, Yoshitaka Yoda, Makoto Seto  
Hyperfine Interact. **237** (2016) 22.

Study on lattice defects in CeO<sub>2</sub> by means of positron annihilation measurements  
Y. Yamamoto, T. Kishino, T. Ishiyama, A. Iwase, F. Hori  
Journal of Physics: conference series **674** (2016) 12015.

Synchrotron Radiation Based Mössbauer Absorption Spectroscopy of Various Nuclides  
Ryo Masuda, Yasuhiro Kobayashi, Shinji Kitao, Masayuki Kurokuzu, Makina Saito, Yoshitaka Yoda, Takaya Mitsui, and Makoto Seto  
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Synchrotron Radiation-Based <sup>61</sup>Ni Mössbauer Spectroscopic Study of Li(Ni<sub>1/3</sub>Mn<sub>1/3</sub>Co<sub>1/3</sub>)O<sub>2</sub> Cathode Materials of Lithium Ion Rechargeable Battery  
Takashi Segi, Ryo Masuda, Yasuhiro Kobayashi, Takayuki Tsubota, Yoshitaka Yoda, and Makoto Seto  
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Synchrotron radiation-based Mössbauer spectra of <sup>174</sup>Yb measured with internal conversion electrons  
R. Masuda and M. Seto  
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A study on improvement method of dose distribution using bolus in boron neutron capture therapy for head and neck tumors

Y.Sakurai, H.Tanaka, T.Takata, N.Fujimoto, N.Kondo, Y.Nakagawa, T.Watanabe, M.Narabayashi, Y.Kinashi, S.Masunaga, M.Suzuki, K.Ono and A.Marubishi

Abstracts of IUPESM 2015 World Congress on Medical Physics and Biomedical Engineering (WC2015)Toronto, Canada (May. 7-6, 2015) 581.

A study on improvement of dose distribution using bolus in BNCT for head and neck tumors

Y.Sakurai, H.Tanaka, T.Takata, N.Fujimoto, N.Kondo, Y.Nakagawa, T.Watanabe, M.Narabayashi, Y.Kinashi, S.Masunaga, M.Suzuki, K.Ono and A.Marubishi

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Cyclotron-based epithermal neutron source (C-BENS) for boron neutron capture therapy

Hiroki Tanaka, Yoshinori Sakurai, Minoru Suzuki, Shin-ichiro Masunaga, Toshinori Mitsumoto, Akira Marubishi, and Koji Ono

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T.Takata, N.Fujimoto, H.Tanaka, Y.Sakurai and M.Suzuki

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Evaluation of relative biological effectiveness in SCID mice following thermal neutron irradiation for boron neutron capture therapy

Yuko Kinashi, Sentaro Takahashi, Hiroki Tanaka, Minoru Suzuki, Yoshinori Sakurai, Koji Ono

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S.Nakamura, A.Wakita, H.Igaki, M.Ito, M.Munehika, Y.Sakurai, H.Okamoto, T.Nishio and J.Itami

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Improvement of Neutron Source for the Development of Non-destructive Methods Adapted for Integrity Test of Next Generation Nuclear Fuels at KURRI-LINAC

Y. TAKAHASHI, J. HORI, T. SANO, H. UNESAKI, K. NAKAJIMA, Y. KIYANAG

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Influence of p53 and MGMT status on the effects of BNCT in glioblastoma  
Tomoyuki Ikawa, Yuko Kinashi, Natsuya Yokomizo, Sentaro Takahashi  
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Kojic acid-appended carborane/hydroxypropyl- $\beta$ -cyclodextrin complex for melanoma-targeted boron neutron capture therapy  
T.Nagasaki, R.Kawasaki, Y.Hattori, S.Masunaga, Y.Sakurai, K.Tanaka, K.Ono and M.Kirihata  
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Study on the extended collimator for Cyclotron-Based Epithermal Neutron Source (C-BENS)  
H.Tanaka, Y.Sakurai, T.Takata, N.Fujimoto, M.Suzuki, S.Masunaga, T.Mitsumoto, A.Marubishi and K.Ono  
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Tumor growth suppression by gadolinium neutron capture therapy with multiple injections of Gd-DTPA-containing calcium phosphate-based nanoparticles  
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Image Enhancement for High frame-rate Neutron Radiography

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中性子ラジオグラフィを用いた着霜の評価 – 冷却平板での着霜量と物質伝達率の評価 –  
松本 亮介, 吉村 智也, 梅川 尚嗣, 網 健行, 伊藤 大介, 齊藤 泰司  
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93-94.

Visualization and Measurement of Adsorption and Desorption Process in Activated Carbon/Ethanol Pair Adsorber  
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$^{235}\text{U}/^{238}\text{U}$  Isotopic ratio in plant samples from Fukushima Prefecture  
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Laboratory Enrichment of Radioactive Assemblages and Estimation of Thorium and Uranium Radioactivity in Fractions Separated from Placer Sands in Southeast Bangladesh  
Takayuki SASAKI, Mohammad RAJIB, Masafumi AKIYOSHI, Taishi KOBAYASHI, Ikuji TAKAGI, Toshiyuki FUJII, and Md. Mashrur ZAMAN  
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Hidehito Nakamura, Yoshiyuki Shirakawa, Masaya Kanayama, Nobuhiro Sato, Hisashi Kitamura and Sentaro Takahashi  
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- Transfer of Tellurium and Cesium from nutrient solution to Radish (*Raphanus sativus* var. *sativus*) and their distribution in the plant  
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藤原慶子, 高橋知之, 高橋千太郎  
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M. Kawai, N. Yoshizawa, S. Hirakawa, K. Murakami, M. Takizawa, O. Sato, S. Takagi, H. Miyatake, T. Takahashi  
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Y. Fujikawa, H. Ozaki, X. Chen, S. Taniguchi, R. Takanami, A. Fujikawa, S. Sakurai, P. Lewtas  
Radiological Issues for Fukushima's Revitalized Future Fukushima, Japan (May. 10-11, 2015) 89-107.

Prediction of ambient dose equivalent rates for the next 30 years after the accident

S. Kinase, T. Takahashi, S. Sato, H. Yamamoto and K. Saito

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Tatsuya Date, Jun Kudo, Tomofumi Ichinomiya, Sho Nakamura, Toshiki Takahashi, Yusuke Bannai, Yoshihiro Ishi,  
Tomonori Uesugi, Masakazu Takayama, Takeshi Tomomura, Yuma Daikoku, Shou Hashimoto, Haruhisa Koguchi,  
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## 12. Others

### Papers

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Kamonphorn Kanchana, Hironobu Unesaki

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Decontamination Effects of Bark Washing with a High-pressure Washer on Peach [*Prunus persica* (L.) Batsch] and Japanese Persimmon (*Diospyros kaki* Thunb.) Contaminated with Radiocaesium during Dormancy

Mamoru Sato, Kazuhiro Abe, Hidetoshi Kikunaga, Daisuke Takata, Keitaro Tanoi, Tsutomu Ohtsuki, Yasuyuki Muramatsu  
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TANIGAKI Minoru

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M. Tanigaki, R. Okumura, K. Takamiya, N. Sato, H. Yoshino, H. Yoshinaga, Y. Kobayashi, A. Uehara, H. Yamana  
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