

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
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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.

β^- decay of ^{150}Ce to odd-odd ^{150}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
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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.
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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.
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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}Be and ^{26}Al by 120 GeV and 392 MeV proton bombardment of ^{89}Y , ^{159}Tb , and ^{nat}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
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Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment **739** (2015) 29-36.

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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
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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
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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
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Shen, Xiuzhong; Sun, Haomin; Deng, Baoqing; Hibiki, Takashi; Nakamura, Hideo
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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
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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
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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.
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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
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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
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Theoretical Expression of Area Ratio Method Using Detected-Neutron Multiplication Factor

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Others

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4. Material Science and Radiation Effects

Papers

⁵⁷Fe 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
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⁶¹Ni Synchrotron Radiation-Based Mössbauer Spectroscopy of Nickel-Based Nanoparticles with Hexagonal Structure
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Makina Saito, Yasuhiro Kobayashi, Ryo Masuda, Masayuki Kurokuzu, Shinji Kitao, Yoshitaka Yoda, Makoto Seto

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Y. Yamamoto, T. Kishino, T. Ishiyama, A. Iwase, F. Hori

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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 ⁶¹Ni Mössbauer Spectroscopic Study of Li(Ni_{1/3}Mn_{1/3}Co_{1/3})O₂ Cathode Materials of Lithium Ion Rechargeable Battery

Takashi Segi, Ryo Masuda, Yasuhiro Kobayashi, Takayuki Tsubota, Yoshitaka Yoda, and Makoto Seto

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トランスジェンダーとトラウマ

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