

VII. PUBLICATIONS
(APRIL 2009 – MARCH 2010)

VII. PUBLICATIONS

Since 1967, the institute published the Annual Report of the KURRI, containing the original papers written by researchers of the institute and users of other organizations. It played an important role in showing the activities of the institute. However, due to a variety of research fields covered by researchers in the institute, it became difficult to contain all the original papers. Therefore, the Annual Report was discontinued in 1995. The Progress Report of the KURRI has been issued from 1991 in English and summarizes the abstracts of the published papers, reviews, book titles and current research activities of the KURRI. The Technical Report of the KURRI (KURRI-TR) has been issued occasionally from 1965. It contains technical data in Japanese with English summaries. The KUR Report (KURRI-KR), issued in Japanese since 1996, is the proceedings of symposia and technical meetings held at the institute. Furthermore, the CD-ROM version (KURRI-KR(CD)) has been issued from 2004.

The Technical Report of the KURRI(KURRI-TR)

- KURRI-TR-439 The Educational Documents of Operation Management for the Kyoto-University Nuclear Reactor Facility (Experience of Operation and Management for 40 years (No.3)) (2010)
- KURRI-TR-440 Neutronics, Dynamics and Criticality Safety Evaluation for Low-Enriched Uranium Cores of Kyoto University Research Reactor (KUR)
- KURRI-TR-441 Siting Evaluation for Kyoto University Research Reactor (KUR) with Low-Enriched Uranium Cores based on the Serious and Hypothetical Accidents
- KURRI-TR-442 Safety Assessment of KUR Low-Enriched Uranium Silicide Core

The KUR Report (KURRI-KR)

- KURRI-KR-149 Proceedings of the Specialist Research Meeting on "Restart of KUR and Neutron Activation Analysis"
- KURRI-KR-150 Proceedings of the Specialist Research Meeting on Radioactive Wastes Management (2010)
- KURRI-KR-151 Proceedings of the 18th Technical Meeting on Nuclear Reactor and Radiation for KURRI Engineers and the 9th Technical Official Group Section V Meeting in Kyoto University (2010)
- KURRI-KR-152 Proceedings of the Specialist Research Meeting on "Condensed Matter Physics Research Using Short-Lived Nuclei and Radiations" (2010)
- KURRI-KR-153 Proceedings of the Specialist Research Meeting on the Movement and Transfer of C-14 in the Environment (2010)
- KURRI-KR-154 Proceedings of the Meeting on the Future Project of Kyoto University Research Reactor Institute (2009)
- KURRI-KR-155 Proceedings of the Specialist Research Meeting on "Abnormal Protein Aggregation and the Folding Diseases, and Their Protection and Repair System" (2010)

The KUR Report (CD) (KURRI-KR (CD))

- KURRI-KR(CD)-23 Proceedings of the Specialist Meeting on Positron Annihilation Study for Science and Engineering 2008
- KURRI-KR(CD)-24 Proceedings of the Workshop on Clarification of Materials Irradiation Effects and Improvement of Irradiation Techniques
- KURRI-KR(CD)-25 Proceedings of the 3rd Specialist Research Meeting on MIEZE/N(R)SE Spectroscopy
- KURRI-KR(CD)-26 Proceedings of the Specialist Meeting on Positron Annihilation Study for Science and Engineering 2009
- KURRI-KR(CD)-27 Proceedings of the Workshop on Materials Irradiation Effects and Application
- KURRI-KR(CD)-28 Specialists' Meeting on Neutron Imaging
- KURRI-KR(CD)-29 Proceedings of the Workshop on the Development and Applications of Devices for Neutrons III

Publication List (April 2009—March 2010)

(* The Results of Research that an Outside Researcher Carried out Originally in RRI.)

1. Slow Neutron Physics and Neutron Scattering

Papers

Interfacial Width in Polymer Bilayer Films Prepared by Double-Spin-Coating and Flotation Methods

Y. Fujii, H. Atarashi, M. Hino, T. Nagamura and K. Tanaka

ACS Appl. Mater. Interfaces., **1** (2009) 1856-1859.

Comprehensive Structural Study of Glassy and Metastable Crystalline BaTi₂O₅

J. Yu, S. Kohara, K. Itoh, S. Nozawa, S. Miyoshi, Y. Arai, A. Masuno, H. Taniguchi, M. Itoh, M. Takata, T. Fukunaga, S. Koshihara, Y. Kuroiwa and S. Yoda

Chem. Mater., **21**(2009) 259-263.

Pulsed Neutron Diffraction Study of NaNO₂ and KNO₂ Pure Melts

Y. Iwadate, T. Harada, T. Okubo, K. Fukushima, M. Misawa, T. Fukunaga and K. Itoh

Electrochem., **77** (2009) 741-744.

Structural Investigation on Supercritical Carbon Dioxide and Its Mixture with Alcohol

T. Sato, M. Sugiyama, M. Misawa, K. Hamada, K. Itoh, K. Mori and T. Fukunaga

J. Mol. Liq., **147** (2009) 102-109.

Structural Study of Amorphous LaNi₅D_x: *In situ* Neutron and X-ray Diffraction Experiments in Deuterium Gas

K. Itoh, T. Shoumura, M. Sugiyama, K. Mori and T. Fukunaga

J. Alloys Compd., **474** (2009) 4-8.

Heating Rate Dependence of T_g and T_x in Zr-Based BMGs with Characteristic Structures

E. Matsubara, T. Ichitsubo, K. Itoh, T. Fukunaga, J. Saida, N. Nishiyama, H. Kato and A. Inoue

J. Alloys Compd., **483** (2009) 8-13.

Structural Study on Zr_{0.39}Ni_{0.61} and (Zr_{0.39}Ni_{0.61})D_{0.59} Amorphous Alloys by Neutron and X-ray Diffraction

K. Itoh, T. Watanabe, T. Otomo, M. Sugiyama, K. Mori and T. Fukunaga

J. Alloys Compd., **483** (2009) 213-216.

Structure of Mg₅₀Ni₅₀ Amorphous Alloy Studied by Using X-ray Diffraction and Reverse Monte Carlo Modeling

K. Itoh, T. Otomo, M. Sugiyama, K. Mori and T. Fukunaga

J. Phys Conf Ser., **144** (2009) 012107.

Assembly State of Proteasome Activator 28 in an Aqueous Solution as Studied by Small-Angle Neutron Scattering

M. Sugiyama, E. Kurimoto, Y. Morimoto, H. Sahashi, E. Sakata, K. Hamada, K. Itoh, K. Mori, T. Fukunaga, Y. Minami and K. Kato

J. Phys. Soc. Jpn., **78** (2009) 124802 (1-6).

Rietveld Analysis Software for J-PARC

R. Oishi, M. Yonemura, Y. Nishimaki, S. Torii, A. Hoshikawa, T. Ishigaki, T. Morishima, K. Mori and T. Kamiyama

Nucl. Instr. Meth. A, **600** (2009) 94-96.

Design and Performance Analyses of the New Time-of-Flight Smaller-Angle Neutron Scattering Instrument at J-PARC

T. Shinohara, S. Takata, J. Suzuki, T. Oku, K. Suzuya, K. Aizawa, M. Arai, T. Otomo and M. Sugiyama
Nucl. Instr. Meth. A, **600** (2009) 111-113.

SANS Simulation of Aggregated Protein in Aqueous Solution

M. Sugiyama, K. Hamada, K. Kato, E. Kurimoto, K. Okamoto, Y. Morimoto, S. Ikeda, S. Naito, M. Furusaka, K. Itoh, K. Mori and T. Fukunaga
Nucl. Instr. Meth. A **600** (2009) 272-274.

Structural and electrochemical properties of $\text{La}_{0.8}\text{Sr}_{0.2}\text{Ga}_{1-x}\text{Fe}_x\text{O}_3$

K. Mori, Y. Onodera, R. Kiyonagi, J. W. Richardson Jr., K. Itoh, M. Sugiyama, T. Kamiyama and T. Fukunaga
Nucl. Instr. Meth. A **600** (2009) 328-331.

Design of Neutron Beamline for Fundamental Physics at J-PARC BL05

K. Mishima, T. Ino, K. Sakai, T. Shinohara, K. Hirota, K. Ikeda, H. Sato, Y. Otake, H. Ohmori, S. Muto, N. Higashi, T. Morishima, M. Kitaguchi, M. Hino, H. Funahashi, T. Shima, J. Suzuki, K. Niita, K. Taketani and Y. Seki
Nucl. Instr. Meth. A, **600** (2009) 342-345.

Polarized Neutron Reflectometer SUIREN at JRR-3

D. Yamazaki, M. Takeda, I. Tamura, R. Maruyama, A. Moriai, M. Hino and K. Soyama
Physica B., **404** (2009) 2557-2560.

Development of Neutron Resonance Spin Flipper for High Resolution Spin Echo Spectrometer

M. Kitaguchi, M. Hino, Y. Kawabata, S. Tasaki, H. Hayashida, R. Maruyama and T. Ebisawa
Physica B., **404** (2009) 2590-2593.

A Beam Divergence Correction Mirror for Neutron Resonance Spin Echo

R. Maruyama, M. Hino, H. Hayashida, M. Kitaguchi, N. Achiwa, D. Yamazaki, T. Ebisawa and K. Soyama
Physica B., **404** (2009) 2594-2599.

Development of Neutron Spin Phase Contrast Imaging

M. Kageyama, S. Tasaki, M. Hino, T. Ebisawa, D. Yamazaki, H. Hayashida and Y. Abe
Physica B., **404** (2009) 2615-2619.

A Small Angle Neutron Scattering (SANS) Experiment Using Very Cold Neutrons (VCN)

M. Bleuel, J.M. Carpenter, B.J. Micklich, P. Geltenbort, K. Mishima, H.M. Shimizu, Y. Iwashita, K. Hirota, M. Hino, S.J. Kennedy and J. Lal
Physica B., **404** (2009) 2629-2632.

Design of a Neutron Polarizer Using Polarizing Super Mirrors for the TOF-SANS Instrument at the J-PARC

T. Shinohara, J. Suzuki, T. Oku, S. Takata, H. Kira, K. Suzuya, K. Aizawa, M. Arai, T. Otomo and M. Sugiyama
Physica B., **404** (2009) 2640-2642.

Highly Polarized Very Cold Neutrons through a Permanent Magnet Quadrupole

K. Taketani, K. Mishima, T. Ino, T. Yoshioka, S. Muto, T. Morishima, H.M. Shimizu, T. Oku, J. Suzuki, T. Shinohara, K. Sakai, H. Sato, K. Hirota, Y. Otake, M. Kitaguchi, M. Hino, Y. Seki, Y. Iwashita, M. Yamada, M. Ichikawa, T. Sugimoto, S. Kawasaki, S. Komamiya, Y. Kamiya, H. Otono, S. Yamashita and P. Geltenbort
Physica B., **404** (2009) 2643-2645.

Structure of Na₂S-GeS₂ Glasses Studied by Using Neutron and X-ray Diffraction and Reverse Monte Carlo Modeling

K. Itoh and T. Fukunaga

Solid State Ionics., **180** (2009) 351-355.

Structure Property Relationships of Fast Copper Ion Conductor Cubic CuI

D. S. Adipranoto, F. Shikanai, M. Yonemura, K. Mori, J. G. Park, K. Itoh, T. Kamiyama

Solid State Ionics., **180** (2009) 492-496.

Crystal Structure of Fe-Doped Lanthanum Gallate for Oxygen Partial Pressures Studied by Neutron Powder Diffraction

K. Mori, R. Kiyonagi, J. W. Richardson Jr., J. Fieramosca, Y. Onodera, K. Itoh, M. Sugiyama, T. Kamiyama and T. Fukunaga

Solid State Ionics., **180** (2009) 541-545.

Swelling Structure of Thin Poly(methyl methacrylate) Films in Various Alkyl Length Alcohols

H. Atarashi, H. Morita, D. Yamazaki, M. Hino, T. Nagamura and K. Tanaka

J. Phys. Chem. Lett., **1** (2010) 881-885.

Development of a Pixel Detector for Ultra-Cold Neutrons,

S. Kawasaki, G. Ichikawa, M. Hino, Y. Kamiya, M. Kitaguchi, S. Komamiya, T. Sanuki and S. Sonoda

Nucl. Inst. Meth. A, **615** (2010) 42-47.

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Functional Aberration of Myofibrils by Cardiomyopathy-Causing Mutations in the Coiled-Coil Region of the Troponin-Core Domain

F. Matsumoto, K. Maeda, T. Chatake, Y. Maeda and S. Fujiwara

Biochem. Biophys. Res. Commun., **382** (2009) 205-209.

Thickness of Additive Layer on Metal Surfaces Measured by Neutron Reflectometry and Its Effect to Tribological Properties

T. Torii, T. Kashihara, T. Hirayama, M. Kazuko, I., D. Yamazaki, M. Hino

Extended Abstract of ICMDT 2009, Jeju Island (2009).

Direct Determination of Protonation States of Histidine Residues in a 2Å Neutron Structure of Deoxy-Human Normal Adult Hemoglobin and Implications for the *Bohr Effect*

A. Kovalevsky, T. Chatake, T. Ishikawa, N. Shibayama, S.-Y. Park, M. Mustyakimov, P. Langan and Y. Morimoto

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SANS Investigation of Packing Structure of Proteasome Activator 28 with Deuterated Subunit

M. Sugiyama, E. Kurimoto, Y. Morimoto, K. Ito, K. Mori, T. Fukunaga and K. Kato SAS2009,

Oxford, Sep 2009

Structure and Surface Properties of High-density Polyelectrolyte Brushes at the Interface of Aqueous

M. Kobayashi, H. Yamaguchi, Y. Terayama, Z. Wang, K. Ishihara, M. Hino, A. Takahara

Solution, Macromol. Symp., **279** (2009) 79-87.

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Y. Kawabata

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Reviews

Structure of Chalcogen Glasses and Carbon Compounds Prepared by Mechanical Alloying

T. Fukunaga

Ceramics., **44** (2009) 843-847.

2. Nuclear Physics and Nuclear Data

Papers

Muon Spectroscopy with Trace Alkaline-Earth and Rare-Earth Isotopes Implanted in Solid D₂

P. Strasser, A. Taniguchi, T. Matsuzaki, K. Ishida, Y. Matsuda, S. Ohya, M. Iwasaki and K. Nagamine

Hyperfine Interact., **193** (2009) 121-127.

Q_β-Measurements with a Total Absorption Detector Composed of Through-Hole HPGe Detector and Anti-Compton BGO

H. Hayashi, M. Shibata, I. Miyazaki, O. Suematsu, Y. Kojima, K. Kawade, and A. Taniguchi

Nucl. Instr. Meth. A, **606** (2009) 484-489.

Half-Life and Magnetic Moment of the First Excited State in ¹³²I

M. Tanigaki, S. Izumi, H. Ouchi, A. Sasaki, Y. Miyashita, N. Sato, S. Hoshino, K. Shimada, T. Wakui, T. Shinozuka, and Y. Ohkubo

Phys. Rev., C **80** (2009) 034304(1-6).

Control System for the FFAG Complex at KURRI

M. Tanigaki, K. Takamiya, H. Yoshino, N. Abe, T. Takeshita, and A. Osanai

Nucl. Instr. Meth. A, **612** (2010) 354-359.

Proceedings

Neutron Capture Cross Section Measurement on ²⁴³Am with a 4π Ge spectrometer

J. Hori, M. Oshima, H. Harada, F. Furutaka, M. Koizumi, F. Kitatani, Y. Toh, S. Nakamura, A. Kimura, M. Igashira, M. Mizumoto, T. Ohsaki and T. Katabuchi

Proc. the 2008 Symposium on Nuclear Data, Ibaraki, Japan, Nov. 20-21, 2008, JAEA-Conf 2009-004, 123-128 (2009).

3. Reactor Physics and Reactor Engineering

Papers

Experimental Analysis for Neutron Multiplication by Using Reaction Rate Distribution in Accelerator-Driven System

H. Shahbunder, C. H. Pyeon, T. Misawa and S. Shiroya

Ann. Nucl. Energy., **37** [4] (2010) 592-597.

Measurement of Two-Phase Flow in a Vertical Large Diameter Pipe using Hot-Film Anemometer

X. Shen, K. Mishima and H. Nakamura

Jpn. J. Multiph. Flow., **23** (2010) 605-613(in Japanese).

Shape Measurement of Bubble in a Liquid Metal

Y. Saito, X. Shen, K. Mishima and M. Matsubayashi

Nucl. Instr. Meth. A, **605** (2009) 192-196.

Reaction Rate Analyses for an Accelerator-Driven System with 14 MeV Neutrons in the

Kyoto University Critical Assembly

C. H. Pyeon, H. Shiga, T. Misawa, T. Iwasaki and S. Shiroya,

J. Nucl. Sci. Technol., **46**[10] (2009) 965-972.

First Injection of Spallation Neutrons Generated by High-Energy Protons into the Kyoto University Critical Assembly

C. H. Pyeon, T. Misawa, J.Y. Lim, H. Unesaki, Y. Ishi, Y. Kuriyama, T. Uesugi, Y. Mori, M. Inoue, K. Nakajima, K. Mishima and S. Shiroya

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CHF in a Circumferentially Non-Uniformly Heated Tube under Low-Pressure and Low-Mass-Flux Condition : Inclined Upward Flow(<Special Issue>Challenge to Ultimate Cooling Technique Using Phase Change Process)

T. Ami, H. Umekawa, M. Ozawa, K. Mishima and Y. Saito

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Determination of Lambda-Mode Eigenvalue Separation of a Thermal Accelerator-Driven System from Pulsed Neutron Experiment

H. Tanaka, K. Hashimoto, C.H. Pyeon, T. Sano, T. Misawa and T. Ohsawa

J. Nucl. Sci. Technol., **47**[4] (2010) 367-383.

Research on Consequence Analysis Method for Probabilistic Safety Assessment of Nuclear Fuel Facilities (V) Evaluation Method and Trial Evaluation of Criticality Accident

Y. Yamane, K. Nakajima, H. Abe, Y. Hayashi, J. Arisawa and S. Hayami

Trans. Atomic Energy Society of Japan., **9**[1] (2010) 96-107 (in Japanese).

Proceedings

Outline of Advanced Nuclear Energy Research

K. Nakajima

Proc. ZERO CARBON ENERGY KYOTO 2009 –Advanced Nuclear Energy , Kyoto, Japan, Aug. 20-21, (2009).

Critical Experiments in Kyoto University Critical Assembly for Development of >5wt% Enrichment Erbia Bearing Super High Burnup Fuel

T. Endo, M. Yamasaki, T. Kuroishi, H. Unesaki, T. Sano and A. Yamamoto

Proc. Int. Meeting of the ANS Nuclear Criticality Safety Division, Richland, Washington USA, Sep. 13-17, (2009) paper 24.

Sensitivity Analysis of Neutronics Characteristics for Kyoto University Research Reactor with Low Enriched Fuel Core

T. Sano and K. Nakajima

Proc. Int. Group on Research Reactors (IGORR2009), Beijing, China, Oct. 28-30, (2009).

A New Uncertainty Reduction Method for Fuel Fabrication Process and PWR Cores with Erbium-Bearing Fuel
T. Sano
Proc. IAEA TM on Advanced Fuel Pellet Materials and Fuel Rod Designs for Water Cooled Reactors, PSI, Villigen, Switzerland, Nov. 23-26, (2009) paper INN5 (2009).

Books

Nuclear Reactor Physics Experiments
T. Misawa, H. Unesaki and Pyeon
Kyoto University Press (2010).

4. Material Science and Radiation Effects

Papers

Comparison of Interaction between Cu Precipitate and Vacancy in Fe Using First-principle Calculations and Empirical N-body Potential Calculations
K. Sato, T. Ihara, H. Sakurai, T. Yoshiie and Q. Xu
Comp. Mater. Sci., **47** (2009) 521–525.

Optical Vibronic Emission Spectra for Irradiation Induced F Aggregate Centers in Single Crystal-Al₂O₃
Rahman Abu Zayed Mohammad Saliqur, T. Awata, N. Yamashita, Q. Xu and K. Atobe
Radiat. Eff. Defects Solids., **164** (2009) 692-698.

¹²⁹I Mössbauer Spectroscopic Study of a Metallic MMX Chain System
A. Kobayashi, S. Kitao, M. Seto, R. Ikeda and H. Kitagawa
Inorg. Chem., **48** (2009) 8044-8049.

Anisotropic Phonon Density of States: the Application of Rietveld and Mössbauer Texture Analysis in Aligned Powders
A. I. Rykov, M. Seto, Y. Ueda, and K. Nomura
J. Appl. Cryst., **42** (2009) 496-501.

Positron Annihilation of Vacancy-type Defects in Neutron-irradiated 4H-SiC
Q. Xu, T. Yoshiie and M. Okada
J. Nucl. Mater., **386-388** (2009) 169-172.

Effects of Hydrogen and Helium Produced by Transmutation Reactions on Void Formation in Copper Isotopic Alloys Irradiated with Neutrons
Q. Xu, T. Yoshiie and K. Sato
J. Nucl. Mater., **386-388** (2009) 363-366.

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H. Kuroiwa, K. Fukumoto, M. Narui, H. Matsui and Q. Xu
J. Nucl. Mater., **386-388** (2009) 594-597.

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J. Nucl. Mater., **386-388** (2009) 203-205.

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Q. Xu, K. Sato, T. Yoshiie

J. Nucl. Mater., **390-391** (2009) 663-666.

Coherent THz Wave Induced Excitation in Superionic Conductors

T. Awano and T. Takahashi

J. Phys. Conf. Ser., **148** (2009) 012040.

A Spectrometer for Rayleigh Scattering of Mössbauer Radiation Using Synchrotron Radiation

R. Masuda, T. Mitsui, Y. Kobayashi, S. Higashitaniguchi and M. Seto

Jpn. J. Appl. Phys., **48** (2009) 120221 (3 pages).

Development of an Energy-Domain ⁵⁷Fe-Mössbauer Spectrometer Using Synchrotron Radiation and Its Application to Ultrahigh-Pressure Studies with a Diamond Anvil Cell

T. Mitsui, N. Hirao, Y. Ohishi, R. Masuda, Y. Nakamura, H. Enoki, K. Sakaki and M. Seto

J. Synchrotron Rad., **16** (2009) 723-729.

Positron Simulations of Defects in Tungsten Containing Hydrogen and Helium

T. Troev, E. Popov E, P. Staikov, N. Nankov and T. Yoshiie

Nucl. Instr. Meth. Phys. Res. B, **267** (2009) 535-541.

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T. Yoshiie, K. Sato and Q. Xu

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Detection of Hydrogen in Neutron-irradiated Nickel Using Positron Lifetime Spectroscopy

C. He, T. Yoshiie, Q. Xu, S. Peneva and T. D. Troev

Phil. Mag., **89** (2009) 1183-1195.

Optical Vibronic Spectra in Reactor Neutron Irradiated Al₂O₃

Rahman Abu Zayed Mohammad Saliqur, T. Awata, N. Yamashita, Y. Inada, K. Oshima, Q. Xu and K. Atobe

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A. I. Rykov, Y. Ueda, K. Nomura and M. Seto

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M. Seto, R. Masuda, S. Higashitaniguchi, S. Kitao, Y. Kobayashi, C. Inaba, T. Mitsui and Y. Yoda

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T. Troev, P. Staikov, E. Popov, N. Nankov, K. Sato and T. Yoshiie

Phys. Status Solidi. C, **6** (2009) 2316-2318.

Damage Structures in Austenitic Stainless Steels during Incubation Period of Void Swelling

T. Yoshiie, X. Cao, Q. Xu, K. Sato and T. D. Troev

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He Bubble Formation and Emission of He in Irradiated Fe

Q. Xu, X. Cao, K. Sato, T. Yoshiie and T. Iwai

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Migration Behavior of Vacancies in Electron Irradiated Fe-Cu Alloys

X. Cao, Q. Xu, K. Sato and T. Yoshiie

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M. Doyama, Y. Kogure¹, M. Inoue¹, T. Kurihara, Y. Miyake, K. Nishiyama, K. Shimomura, T. Yoshiie, Y. Hayashi, Q. Xu, X. Cao, M. Matsuya and M. Fujinami

Phys. Status Solidi. C, **6** (2009) 2471-2475.

Persistent Photoconductivity and Thermally Stimulated Current Related to Electron-irradiation Induced Defects in Single Crystal ZnO bulk

K. Kuriyama, K. Matsumoto, Y. Suzuki, K. Kushida and Q. Xu

Solid State Commun., **149** (2009)1347-1350.

Nuclear Resonant Time Spectra for ¹¹⁹Sn in Co₂TiSn Heusler Alloy Films

E. Suharyadi, T. Hori, K. Mibu, M. Seto, S. Kitao, T. Mitsui and Y. Yoda

J. Mag. Mag. Mater., **322** (2010) 158-162.

Electronic and Magnetic Phase Diagram of Superconductors, SmFeAsO_{1-x}F_x

Y. Kamihara, T. Nomura, M. Hirano, J. E. Kim, K. Kato, M. Takata, Y. Kobayashi, S. Kitao, S. Higashitaniguchi, Y. Yoda, M. Seto and H. Hosono

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29th Proc. Int. Conf. Phys. Semicond., Rio de Janeiro, Brazil, Jul. 27- Aug. 1 (2008) 89-90.

Far-infrared and Millimeter Wave Spectroscopy of Halides-Doped Silver Phosphate Glasses

T. Awano and T. Takahashi

J. Phys. Soc. Jpn. **79** Suppl., A (2010) 118-121.

Experimental Study for the Behaviors of Water Molecules by Using Coherent THz Radiation Light Sources

S. Okuda, D. Komatsu, R. Taniguchi, T. Kojima and T. Takahashi

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A. Kawaguchi

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T. Yoshiie

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5. Geochemistry and Environmental Science

Papers

- * Cathodoluminescence Characterization of Tridymite and Cristobalite: Effects of Electron Irradiation and Sample Temperature.

M. Kayama, H. Nishido and K. Ninagawa

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T. Nakano-Ohta, T. Kubota, A. Ando, T. Fujii, S. Fukutani, E. Nakata, T. Nakano and Y. Mahara

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