

Department of Mathematics

Research Area : Algebra

(URL : <http://www.math.okayama-u.ac.jp/~yoshino/index.html>, <http://www.math.okayama-u.ac.jp/~hashimoto/hasimoto-e.html>)

Yuji YOSHINO, Professor

Mitsuyasu HASHIMOTO, Professor

Masao ISHIKAWA, Professor

Katsumi TANAKA, Professor

Takeshi SUZUKI, Associate Professor

Yoshihiro ISHIKAWA, Assistant Professor

Research Themes :

- 》 Commutative Algebra, Cohen-Macaulay representation theory [Yoshino]
- 》 Commutative Algebra, Study of ring-theoretic properties of rings of invariants [Hashimoto]
- 》 Mathematical Logic, Groups of finite Morley rank [Tanaka]
- 》 Representation Theory, Algebraic and Enumerative Combinatorics [M. Ishikawa]
- 》 Representation Theory, Algebraic Lie Theory [Suzuki]
- 》 Number Theory, Arithmetic of Automorphic Form [Y. Ishikawa]

Representative Publication :

- M. Hashimoto,
F-rationality of the ring of modular invariants, *J. Algebra* 484 (2017), 207-223.
- Y. Yoshino,
Cohen-Macaulay modules over Cohen-Macaulay rings. London Mathematical Society, Lecture Notes Series vol. 146, Cambridge University Press, 1990.
- O. Iyama and Y. Yoshino,
Mutations in triangulated categories and rigid Cohen-Macaulay modules, *Inventiones Mathematicae*, vol. 172 (2008) no. 1, 117-168.
- M. Ishikawa,
Minor summation formula and a proof of Stanley's open problem. *Ramanujan J.* 16, 211-234 (2008).
- T. Suzuki and M. Vazirani,
Tableaux on periodic skew diagrams and irreducible representations of the degenerate double affine Hecke algebras of type A, *Int. Math. Res. Not.* 27 (2005), 1621-1656.
- K. Tanaka,
Some local properties of ω -stable groups, *Archiv for Mathematical Logic*, 27, 45-47 (1988).
- Y. Ishikawa,
Towards rationality of critical values of the standard L-functions for $U(2,1)$, *RIMS Kôkyûroku* **1934**, 40-51, RIMS Kyoto, (2015).

Research Area : Geometry

(URL: <http://www.math.okayama-u.ac.jp/~fujimori/index.html>)

Kazuyoshi KIYOHARA, Professor

Takeshi TORII, Professor

Shoichi FUJIMORI, Professor

Naoyuki MONDEN, Associate Professor

Research Themes:

- 》 Riemannian Geometry, Integrable Geodesic Flow [Kiyohara]
- 》 Algebraic Topology, Stable Homotopy Theory, Generalized Cohomology [Torii]
- 》 Differential Geometry of Submanifolds, Surface Theory [Fujimori]
- 》 Low dimensional topology [Monden]

Representative Publication:

- Jin-ichi Itoh and Kazuyoshi Kiyohara,
The Cut Loci on Ellipsoids and Certain Liouville Manifolds, *Asian J. Math.* 14, No. 2 (2010), 257-290.
- Takeshi Torii,
Comparison of power operations in Morava E-theories, *Homology Homotopy Appl.* 19 (2017), no. 1, 59-87.
- Shoichi Fujimori and Toshihiro Shoda,
Minimal surfaces with two ends which have the least total absolute curvature, *Pacific Journal of Mathematics*, 282 (2016), 107-144.

Research Area : Analysis

(URL: <http://www.math.okayama-u.ac.jp/~kawabi/index.html>, <http://www.math.okayama-u.ac.jp/~taniguchi/>)

Hiroshi KAWABI, Professor

Masaharu TANIGUCHI, Professor

Yoshihito OSHITA, Associate Professor

Seiichiro KUSUOKA, Associate Professor

Harunori MONOBE, Associate Professor

Research Themes :

- 》 Stochastic Analysis [Kawabi]
- 》 Partial Differential Equation [Taniguchi]
- 》 Nonlinear Partial Differential Equation [Oshita]
- 》 Probability Theory, Stochastic Analysis, Stochastic Differential Equation [Kusuoka]
- 》 Free Boudary Problem, Interface Equation [Monobe]

Representative Publication :

- S. Ishiwata, H. Kawabi and M. Kotani,
Long time asymptotics of non-symmetric random walks on crystal lattices, *J. Funct. Anal.* 272 (2017), no. 4, 1553–1624. ata, H. Kawabi and M. Kotani
- Masaharu Taniguchi,
An (N-1)-dimensional convex compact set gives an N-dimensional traveling front in the Allen--Cahn equation, *SIAM Journal on Mathematical Analysis*, Vol. 47, No. 1 (2015), pp. 455--476.
- Jaeyoung Byeon, Ohsang Kwon and Yoshihito Oshita,
Standing wave concentrating on compact manifolds for nonlinear Schrödinger equations, *Commun. Pure Appl. Anal.* 14 (2015), no. 3, 825-842.
- S. Kusuoka,
Hölder continuity and bounds for fundamental solutions to non-divergence form parabolic equations, *Analysis & PDE*, Vol. 8, No. 1 (2015), 1-32.
- M. Iida, H. Monobe, H. Murakawa and H. Ninomiya,
+Vanishing, moving and immovable interfaces in fast reaction limits, *Journal of Differential Equations*, 263 (2017), 2715-2735.

Research Area : Discrete Mathematics

(URL: <http://www.ems.okayama-u.ac.jp/appl/morimoto/>)

Masaharu MORIMOTO, Professor

Research Themes:

- 》 Geometric Discrete Invariants [Morimoto]
- 》 Transformation Groups on Manifolds [Morimoto]

Representative Publication:

- M. Morimoto,
One-fixed-point actions on spheres and Smith sets, *Osaka J. Math.* 53 (2016), no 4, 1003--1013.
- M. Morimoto,
Tangential representations of one-fixed-point actions on spheres and Smith equivalence, *J. Math. Soc. Japan* 67 (2015), no 1, 195--205.

Department of Physics

Research Area : Quantum Structural Physics in Correlated Matter

(URL: http://www.physics.okayama-u.ac.jp/nogami_homepage/n/)

Yoshio NOGAMI, Professor

Ryusuke KONDO, Associate Professor

Research Themes :

- » Competition among Magnetism and CDW in RNiC₂ without the inversion symmetry.
- » Anomalous phase neighboring the CO Phase in Organics.
- » Development of Novel Material with the Variation of Spin-Orbit Coupling.

Representative Publication :

- N.Hanasaki, S.Shimomura, M.Mikami, Y.Nogami, H.Nakao, and H.Onodera: Interplay between charge-density wave and antiferromagnetic order in GdNiC₂, *Phys. Rev. B* **95**, (2017)085103. (5 pages)
- H. Matsuzaki, M. Ohkura, Yu Ishige, Y. Nogami and H. Okamoto: Photoinduced switching to metallic states in the two-dimensional organic Mott insulator dimethylphenazine-tetrafluorotetracyanoquinodimethane with anisotropic molecular stacks, *Phys. Rev. B* **91**(2015)245140. (10 pages)
- N. Yamamoto, R. Kondo, H. Maeda, and Y. Nogami: Interplay of Charge-Density Wave and Magnetic Order in Ternary Rare-Earth Nickel Carbides, RNiC₂ (R=Pr and Nd), *J. Phys. Soc. Jpn.* **82** (2013) 123701. (5 pages)

Research Area : Quantum Physics in Correlated Matter

(URL: http://www.physics.okayama-u.ac.jp/mino/index_e.html)

Michinobu MINO, Professor

Research Themes:

- » Spatiotemporal Chaos and Nonequilibrium Pattern Formation in a Magnetic Material.
- » Spin-Wave Relaxation.

Representative Publication:

- M.Mino and Y.Yamamoto, Chaotic Motion of a Magnetic Domain Structure under an Alternating Field, *J.Kor.Phys.Soc.*, pp. 605-607(2013).
- M.Mino, M.Tsukamoto, K.Fujikawa and Y.Ono, Microwave radiation from parametrically excited YIG, *J.Magn.Magn.Mater.*, **310**, pp. e549-e551(2007).

Research Area: Physics in Advanced functional materials

(URL: <https://ikedalaboratory.wordpress.com>)

(URL: http://www.physics.okayama-u.ac.jp/nogami_homepage/k/)

Naoshi IKEDA, Professor

Takashi KAMBE, Associate Professor

Yasushi MATSUSHIMA, Senior Assistant Professor

Research Themes:

- » Condensed Matter Physics in which Non-trivial Quantum Parameter Appears
- » Novel Ferroelectricity
- » Novel Organic Superconductors and Magnets
- » Organic Electronic Devices
- » Study of Mechanically-alloyed Magnetic Powders

Representative Publication:

- Magnetoelectric Effect Driven by Magnetic Domain Modification in LuFe₂O₄
T. Kambe, Y. Fukada, J. Kano, T. Nagata, H. Okazaki, T. Yokoya, S. Wakimoto, K. Kakurai, N. Ikeda
Phys. Rev. Lett. **110** 117602 (2013).
- Exchange Bias in Multiferroic RFe₂O₄ (R = Y, Er, Tm, Yb, Lu, and In)
K. Yoshii, N. Ikeda, Y. Nishihata, D. Maeda, R. Fukuyama, T. Nagata, J. Kano, T. Kambe, Y. Horibe, S. Mori, *J. Phys. Soc. Jpn.* **81**, 033704 (2012).
- Synthesis and physical properties of metal-doped picene solids
T. Kambe, X. He, Y. Takahashi, Y. Yamanari, K. Teranishi, H. Mitamura, S. Shibasaki, K. Tomita, R. Eguchi, H. Goto,
Y. Takabayashi, T. Kato, A. Fujiwara, T. Kariyado, H. Aoki, Y. Kubozono
Physical Review B, **86**, 214507 (2012) [Selected as editors' suggestion]

Research Area : Materials Physics in Extreme Environments

(URL: http://www.physics.okayama-u.ac.jp/kobayashi_homepage/index-en.html)

Tatsuo C. KOBAYASHI, Professor

Yoshihiko INADA, Professor

Shingo ARAKI, Associate Professor

Research Themes :

- 》 Pressure-induced Quantum Phase Transitions in Strongly Correlated Electron Systems
- 》 Field-induced Phase Transition in Condensed Molecular Oxygen
- 》 Exotic Phases under High Pressure in Simple Systems

Representative Publication :

- Novel phase of solid oxygen induced by ultrahigh magnetic fields, T. Nomura, Y. H. Matsuda, J. L. Her, S. Takeyama, A. Matsuo, K. Kindo, T. C. Kobayashi, Phys. Rev. Lett. **112**, 247201 (2014)
- Valence crossover of Ce ions in CeCu₂Si₂ under high pressure –Pressure dependence of the unit cell volume and the NQR Frequency–, T. C. Kobayashi, K. Fujiwara, K. Takeda, H. Harima, Y. Ikeda, T. Adachi, Y. Ohishi, C. Geibel, F. Steglich, J. Phys. Soc. Jpn. **82** (2013) 114701.
- Pressure-temperature-field phase diagram in a ferromagnet U3P4, S. Araki, M. Hayashida, N. Nishiumi, H. Manabe, Y. Ikeda, T. C. Kobayashi, K. Murata, Y. Inada, P. Wisniewski, D. Aoki, Y. Onuki, E. Yamamoto, Y. Haga, J. Phys. Soc. Jpn. **84**, 024705 (2015).

Research Area : Temperature Condensed Matter Physics

(URL: http://www.physics.okayama-u.ac.jp/zheng_homepage/)

Guo-qing ZHENG, Professor

Shinji KAWASAKI, Associate Professor

Kazuaki MATANO, Assistant Professor

Research Themes:

- 》 Synthesis and NMR/NQR Study of Topological Superconductors and Semimetals
- 》 NMR/NQR Study on Noncentrosymmetric Superconductors
- 》 NMR/NQR Study on Heavy Fermion Superconductivity at High Pressure and Low Temperature
- 》 NMR study of High-*T_c* superconductivity in copper oxides at very high magnetic fields.
- 》 NMR/NQR Study of Magnetism and Superconductivity in Iron-pnictide Superconductors

Representative Publication:

- Charge-density-wave order takes over antiferromagnetism in Bi₂Sr_{2-x}La_xCuO₆ superconductors, S. Kawasaki, Z. Li, M. Kitahashi, C. T. Lin, P. L. Kuhns, A. P. Reyes, and Guo-qing Zheng, Nature Communications **8**, 1267 (2017).
- Spin-rotation symmetry breaking in the superconducting state of Cu_xBi₂Se₃, K. Matano, M. Kriener, K. Segawa, Y. Ando, Guo-qing Zheng, Nature Physics **12**, 852 (2016).
- Doping-enhanced antiferromagnetism in Ca_{1-x}La_xFeAs₂, S. Kawasaki, T. Mabuchi, S. Maeda, T. Adachi, T. Mizukami, K. Kudo, M. Nohara, and G.-q. Zheng, Phys. Rev. B **92**, 180508(R) (2015).

Research Area : Quantum Physics in Condensed Matter

(URL: http://www.physics.okayama-u.ac.jp/nohara_homepage/index_e.html)

Minoru NOHARA, Professor

Kazutaka KUDO, Associate Professor

Sin-ya AYUKAWA, Assistant Professor

Research Themes :

- 》 Exotic Superconductors with High Transition Temperature
- 》 High-performance Thermoelectric Materials

Representative Publication :

- M. Nohara and K. Kudo, *Arsenic chemistry of iron-based superconductors and strategy for novel superconducting materials*, *Advances in Physics: X* **2**, 450 (2017).
- K. Kudo, H. Ishii, and M. Nohara, *Composition-induced structural instability and strong coupling superconductivity in $Au_{1-x}Pd_xTe_2$* , *Physical Review B* **93**, 140505(R) (2016).
- K. Kudo, Y. Kitahama, K. Fujimura, T. Mizukami, H. Ota, and M. Nohara, *Superconducting transition temperatures of up to 47 K from simultaneous rare-earth element and antimony doping of 112-type $CaFeAs_2$* , *Journal of the Physical Society of Japan* **83**, 093705 (2014).

Research Area : Physics of Solid Surfaces and Interfaces

(URL:http://film.rlss.okayama-u.ac.jp/index_eng.html, http://www.okayama-u.ac.jp/user/akimitsu/top_eng.html)

Takayoshi YOKOYA, Professor

Yuji MURAOKA, Associate Professor

Kaya KOBAYASHI, Associate Professor

Research Themes:

- 》 Photoemission Study of Electronic Structure of Functional Materials
- 》 Spinodal Decomposition in Oxide Thin Films
- 》 New Superconductor in Diamond Related Films
- 》 Novel superconductors
- 》 Layered superconductors

Representative Publication:

- Evolution of the remnant Fermi-surface state in the lightly doped correlated spin-orbit insulator $Sr_{2-x}La_xIrO_4$, K. Terashima, M. Sunagawa, H. Fujiwara, T. Fukura, M. Fujii, K. Okada, K. Horigane, K. Kobayashi, R. Horie, J. Akimitsu, E. Golias, D. Marchenko, A. Varykhalov, N. L. Saini, T. Wakita, Y. Muraoka, and T. Yokoya, *Phys. Rev. B* **96**, 041106(R) (1007).
- Observation of a Hidden Hole-Like Band Approaching the Fermi Level in K-Doped Iron Selenide Superconductor, M. Sunagawa, K. Terashima, T. Hamada, H. Fujiwara, T. Fukura, A. Takeda, M. Tanaka, H. Takeya, Y. Takano, M. Arita, K. Shimada, H. Namatame, M. Taniguchi, K. Suzuki, H. Usui, K. Kuroki, T. Wakita, Y. Muraoka, and T. Yokoya, *J. Phys. Soc. Jpn.* **85**, 073704 (2016).
- Effect of aliovalent dopants on the kinetics of spinodal decomposition in rutile-type TiO_2-VO_2 , M. Ogata, K. Kadowaki, M. Ijiri, Y. Takemoto, K. Terashima, T. Wakita, T. Yokoya, and Y. Muraoka, *J. Eur. Ceram. Soc.* **37**, 3177 (2017).
- Unusual upper critical field behavior in Nb-doped bismuth selenides, K. Kobayashi, T. Ueno, H. Fujiwara, T. Yokoya, and J. Akimitsu, *Phys. Rev. B* **95**, 180503(R) (2017).
- Observation of current-induced bulk magnetization in elemental tellurium, T. Furukawa, Y. Shimokawa, K. Kobayashi, and T. Itou, *Nature Commun.* **8**, 954 (2017).

Research Area : Condensed Matter Physics

(URL: http://www.physics.okayama-u.ac.jp/cmp/index_e.html)

Kozo OKADA, Professor

Yoshihiro NISHIYAMA, Assistant Professor

Research Themes :

- 》 Theoretical Studies on High-energy Spectroscopy for Highly-correlated Electron Systems
- 》 Phase Transition and Critical Phenomena
- 》 Mathematical Physics

Representative Publication :

- Y. Nishiyama, *Universal scaled Higgs-mass gap for the bilayer Heisenberg model in the ordered phase*, Eur. Phys. J. B **89** (2016) 31/1-5.
- Y. Nishiyama, *Magnon-bound-state hierarchy for the two-dimensional transverse-field Ising model in the ordered phase*, Physica A **463** (2016) 303-309.
- K. Okada and K. Takahashi, *Resonant Inelastic X-ray Scattering at the Ti K Absorption Edge of SrTiO₃*, J. Phys. Soc. Jpn. **85**, (2016) Article ID: 044702.
- K. Okada and Y. Takeuchi, *Nonlocal Screening Effects on the Ni 2p Core Level Photoemission of the Linear-Chain Nickelate Y₂BaNiO₅*, J. Phys. Soc. Jpn., **86** (2017) Article ID: 064701.

Research Area : Quantum Many-Body Physics

(URL: <http://www.physics.okayama-u.ac.jp/mp/index.eng.html>)

(URL: http://www.physics.okayama-u.ac.jp/jeschke_homepage/research.html)

Masanori ICHIOKA, Professor

Harald O. JESCHKE, Professor

Seiichiro ONARI, Associate Professor

Hiroto ADACHI, Associate Professor

Nayuta TAKEMORI, Assistant Professor

Research Themes:

- 》 Theory of Vortex States in Superconductors
- 》 Theory of Electric-field-Induced Surface Superconductivity
- 》 First Principles Theory for Complex Magnets and Superconductors
- 》 Theory for Electronic and Magnetic Properties of Strongly Correlated Materials
- 》 Theory of Novel Spin Transport Phenomena

Representative Publication:

- M. Nabeta, K.K. Tanaka, S. Onari, and M. Ichioka, *Pair breaking of multigap superconductivity under parallel magnetic fields in the electric-field-induced surface metallic state*, Phys. Rev. B **96**, 094522(1-8) (2017).
- H. C. Kandpal, I. Ophale, Y.-Z. Zhang, H. O. Jeschke, and R. Valenti, *Revision of Model Parameters for κ -Type Charge Transfer Salts: An Ab Initio Study*, Phys. Rev. Lett. **103**, 067004(1-4) (2009).
- S. Onari, Y. Yamakawa, and H. Kontani, *Sign-Reversing Orbital Polarization in the Nematic Phase of FeSe due to the C₂ Symmetry Breaking in the Self-Energy*, Phys. Rev. Lett. **116**, 227001(1-6) (2016).
- M. Inoue, M. Ichioka, and H. Adachi, *Spin pumping into superconductors: A new probe of spin dynamics in a superconducting thin film*, Phys. Rev. B **96**, 024414(1-9) (2017).
- N. Takemori and A. Koga, *Local Electron Correlations in a Two-Dimensional Hubbard Model on the Penrose Lattice*, J. Phys. Soc. Jpn. **84**, 023701(1-5) (2015).

Research Area : Astroparticle Physics

(URL: <http://www.physics.okayama-u.ac.jp/~ishino/index.html>)

(URL: http://www.physics.okayama-u.ac.jp/~sakuda/index_e.html)

Hirokazu ISHINO, Professor

Makoto SAKUDA, Professor

Research Themes :

- 》 Astroparticle Physics using Neutrinos from Supernova Explosion
- 》 Cosmic Microwave Background
- 》 Dark Matter Search with Superconducting Detectors
- 》 Study of Neutrino-Nucleus Interactions

Representative Publication :

- K.Abe, H. Ishino, M. Sakuda et al., Real-time supernova neutrino burst monitor at Super-Kamiokande, *Astropart. Phys.* 81 (2016) 39-48.
- D. T. Hoang, G. Patanchon, M. Bucher, T. Matsumura, R. Banerji, H. Ishino, M. Hazumi, J. Delabrouille: Bandpass mismatch error for satellite CMB experiments I: estimating the spurious signal, *J. Cosmology and Astropart. Phys.* 12 (2017) 015 (27 pages).
- S.X.Nakamura, Y.Hayato, M.Hirai, W.Horiuchi, H.Kamano, S.Kumano, T.Murata, K.Saito, M.Sakuda, T.Sato, Towards a Unified Model for the Neutrino-Nucleus Reactions, *Rep. Prog. Phys.* 80 (2017) 056301 -1-38(38Pages)
- A.Ankowski, O.Benhar and M.Sakuda, Improving the accuracy of neutrino energy reconstruction in charged-current quasielastic scattering off nuclear targets, *Phys.Rev.D91(2015) 033005-1-11(11pages)*

Research Area : Elementary Particle Physics

(URL: http://www.physics.okayama-u.ac.jp/koshio/index_e.html)

Yusuke KOSHIO, Associate Professor

Shintaro ITO, Specially Appointed Assistant Professor

Research Themes :

- 》 Observation of Astro-Neutrinos (from core-collapse Supernovae, the Sun, etc.)
- 》 Neutrino physics at Accelerators
- 》 Search for Nucleon Decay
- 》 Study on Oxygen nucleus by proton and neutron beam

Representative Publication :

- K.Abe, Y.Koshio et al. (Super-Kamiokande Collaboration), Search for neutrinos in Super-Kamiokande associated with gravitational-wave events GW150914 and GW151226, *The Astrophysical Journal Letters*, 830:L11 (6pp), 2016.
- K.Abe, Y.Koshio et al. (T2K Collaboration), Combined Analysis of Neutrino and Antineutrino Oscillations at T2K, *Physical Review Letters*, 118, 151801, 2017.
- S. Ito et al., Determination of trace levels of uranium and thorium in high purity gadolinium sulfate using the ICP-MC with solid-phase chromatographic extraction resin, *Progress of Theoretical and Experimental Physics*, Vol. 2017, Issue 11, 1, 2017.

Research Area : Extreme Quantum Physics

(URL: <http://www.xqw.okayama-u.ac.jp/en>)

Koji YOSHIMURA, Professor

Akihiro YOSHIMI, Associate Professor

Research Themes :

- 》 Neutrino Mass Spectroscopy using Atoms and Molecules
- 》 Coherent nuclear photonics using ultra-low energy isomeric state of Thorium-229 nuclei
- 》 A new gamma-ray source using a quantum ion beam based on a novel principle.

Representative Publication :

- Nuclear resonant scattering experiment with fast time response: photonuclear excitation of ^{201}Hg , A. Yoshimi, H. Hara, T. Hiraki, T. Masuda, Y. Miyamoto, K. Okai, S. Okubo, R. Ozaki, N. Sasao, O. Sato, K. Suzuki, S. Uetake, K. Yoshimura, M. Yoshimura et al., *Phys. Rev. C* 97, 024607 (2018) [DOI: <https://doi.org/10.1103/PhysRevC.97.024607>].
- Fast x-ray detector system with simultaneous measurement of timing and energy for a single photon, T. Masuda, S. Okubo, H. Hara, T. Hiraki, S. Kitao, Y. Miyamoto, K. Okai, R. Ozaki, N. Sasao, M. Seto, S. Uetake, A. Yamaguchi, Y. Yoda, A. Yoshimi, and K. Yoshimura, *Rev. Sci. Instrum.* **88**, 063105 (2017) [DOI: 10.1063/1.4989405].
- Externally triggered coherent two-photon emission from hydrogen molecules, Y. Miyamoto, H.Hara, T.Masuda, N.Sasao, M. Tanaka, S. Uetake, A. Yoshimi, K. Yoshimura, M. Yoshimura, *Prog. Theor. Exp. Phys.*, Vol.2015, 081C01 (2015) [DOI:10.1093/ptep/ptv103].

Research Area : Physics of Quantum Universe

(URL: <http://www.science.okayama-u.ac.jp/~center-qu/>)

Satoshi UETAKE, Associate Professor

Research Themes :

- » Neutrino mass spectroscopy using atoms and molecules
- » Experimental proof of “Macro-coherent amplification” by observing paired super-radiance
- » Measurement of parity violation in the process of radiative emission of neutrino pair

Representative Publication :

- I₂ molecule for neutrino mass spectroscopy: ab initio calculation of spectral rate, M. Tashiro, M. Ehara, S. Kuma, Y. Miyamoto, N. Sasao, S. Uetake, M. Yoshimura, Progress of Theoretical and Experimental Physics, vol. 2014, 013B02 (2014)
- 4.8 μm difference-frequency generation using a waveguide-PPLN crystal and its application to mid-infrared Lamb-dip spectroscopy, S. Kuma, Y. Miyamoto, K. Tsutsumi, N. Sasao, and S. Uetake, Opt. Lett., vol. 38, 2825–2828 (2013)