

Faculty of Science

Nara Women's University

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Message from the Dean

Toshio Watanabe

Hello everyone. My name is Toshio Watanabe, and I'm the head of the Faculty of Science. My specialty is genetic function analysis using mice.

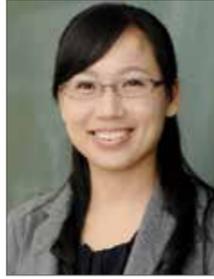
In current scientific research, rather than digging deep into a specific field as in the traditional "fox hole" method, we have moved into an era full of changes as new fields of study are born out of an organic linkage of differing fields. Here at Nara Women's University, in order to ensure that all of you living in this era full of change can make use of your specializations through activities in a variety of fields in the future, our program includes the fundamentals of physical sciences and courses designed to develop a broad perspective and applied skills that will be useful globally.

"Only those who can adapt will survive." This is a quote from "The Origin of Species" by the famous creator of the evolutionary theory, Darwin. To achieve an educational program that will produce students with the flexibility to handle changes, we have adopted a unique structure with just two departments and six courses in order to lower the barrier between fields. As a result, in addition to deep study of specialized fields, you can also learn about various advanced and diverse areas of fusion where multiple fields intersect. Our style of scientific research is driven by the idea of "I don't know so I'll give it a try." I truly hope that all of you will take this idea to heart and develop the ability to apply it to your studies. If you want to get a good look at the fairy of science, you need the eyes of a fairy. All I'll say is, the keys to success are courage and guts!



As one of just two national women's universities in Japan, Nara Women's University sends talented women out into the world, and we have been working hard for many years to achieve a gender-equal society where both sexes can respect each other and all people can make the most of their own unique sensibilities and skills. Unfortunately, the ratio of women in science and technology fields in this country is currently low. In response to these circumstances, we are currently undertaking various new initiatives to support female researchers and are working to enhance our education and research environment, making intense efforts to assure diversity in science fields for the future.

In these abundant natural surroundings of Nara (where there are even deer on campus) and this education and research environment designed with careful consideration for women, let us journey together into the wonderful world of science.



Three-manifold topology, knot theory

JANG Yeonhee / Associate Professor

yeonheejang@cc.nara-wu.ac.jp

EDUCATION: 2011 Division of Mathematics, Graduate School of Sciences, Hiroshima University
2008 Division of Mathematics, Graduate School of Sciences, Osaka University

ACADEMIC DEGREES: Ph.D. Hiroshima University

SUBJECT OF RESEARCH:

3-manifold, knots and links

SELECTED PUBLICATIONS:

1. A knot with destabilized bridge spheres of arbitrarily high bridge number

Jang Y, Kobayashi T, Ozawa M, Takao K.

J. London Math. Soc., 93(2): 379-396 (2016)

DOI: 10.1112/jlms/jdw004

2. Bridge splittings of links with distance exactly n

Ido A, Jang Y, Kobayashi T.

Topology and its Applications, 196: 608-617 (2015)

DOI: 10.1016/j.topol.2015.05.028

3. Heegaard splittings of distance exactly n

Ido A, Jang Y, Kobayashi T.

Algebr. Geom. Topol., 14(3): 1395-1411 (2014)

DOI: 10.2140/agt.2014.14.1395

4. Distance of bridge surfaces for links with essential meridional spheres

Jang Y.

Pacific J. Math., 267(1): 121-130 (2014)

DOI: 10.2140/pfm.2014.267.121

5. A G-family of quandles and handlebody-knots

Isii A, Iwakiri M, Jang Y, Oshiro K.

Illinois Journal of Mathematics, 57(3): 817-838 (2013)



Three-manifold topology; Geometry of knots and links

KOBAYASHI Tsuyoshi / Professor

tsuyoshi@cc.nara-wu.ac.jp

EDUCATION: 1986 Graduate School of Science, Osaka University
1981 Faculty of Science, Osaka University

ACADEMIC DEGREES: Ph.D. Osaka University

SUBJECT OF RESEARCH:

Low dimensional topology, 3-manifold, knot

SELECTED PUBLICATIONS:

1. A knot with destabilized bridge spheres of arbitrarily high bridge number

Jang Y, Kobayashi T, Ozawa M, Takao K.

J. London Math. Soc., 93(2): 379-396 (2016)

DOI: 10.1112/jlms/jdw004

2. Strong cylindricality and the monodromy of bundles

Ichihara K, Kobayashi T, Yo'av Rieck.

Proc. Amer. Math. Soc., 143: 3169-3176 (2015)

DOI: 10.1090/S0002-9939-2015-12473-2

3. Hyperbolic volume and Heegaard distance

Kobayashi T, Rieck Yo'av

Comm. Anal. Geom., 22(2): 247-268 (2014)

DOI: 10.4310/CAG.2014.v22.n2.a3

4. Heegaard splittings of distance exactly n

Ido A, Jang Y, Kobayashi T.

Algebr. Geom. Topol., 14(3): 1395-1411 (2014)

DOI: 10.2140/agt.2014.14.1395



Geometry and Topology

KATAGIRI Minyo / Associate Professor

katagiri@cc.nara-wu.ac.jp

EDUCATION: 1994 Graduate School of Science and Engineering, Keio University
1990 Faculty of Science and Engineering, Keio University

ACADEMIC DEGREES: Ph.D. Science Keio University

SUBJECT OF RESEARCH:

1. Study on categorifications for graph polynomials

2. Study on topology of graphs and curves on surfaces

SELECTED PUBLICATIONS:

1. On the existence of Yang-Mills connections by cauforwal changes in higher dimensions

Katagiri M.

Journal of Mathematical Society of Japan, 46(1): 139 (1994)

2. Oncritical Riemannian metrics for a curvature functional on 3 manifolds

Katagiri M.

Proceedings of the Japan, 78A(4): 40 (2002)

3. On conformally flat critical Riemannian metrics for a curvature functional

Katagiri M.

Proceedings of the Japan Academy, 81A: 27-29 (2005)

4. Upper bounds for the Roman bondage number of graphs on closed surfaces

Katagiri M.

Annual Report of Graduate School of Humanities and Sciences Nara Women's University, 32 (2016)

Group Theory, Representation theory

MATSUZAWA Junichi / Professor

matsuzawa@cc.nara-wu.ac.jp

EDUCATION: 1989 The University of Tokyo

ACADEMIC DEGREES: Ph.D. The University of Tokyo

SUBJECT OF RESEARCH:

Group Theory

SELECTED PUBLICATIONS:

1. Hard spheres on the gyroid surface

Dotera T, Kimoto M, Matsuzawa J.

Interface Focus, 2(5): 575-581 (2012)

DOI: 10.1098/rsfs.2011.0092

2. Hyperbolic Tiling on the Gyroid Surface in a Polymeric Alloy

Dotera T, Matsuzawa J.

RIMS Kokyuroku, 1725: 80-91 (2011)

3. Representations of the normalizers of maximal tori of simple Lie groups

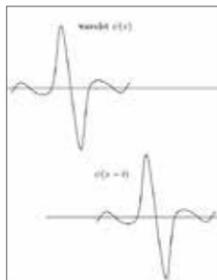
Matsuzawa J, Takahashi M.

Tukuba Journal of Mathematics, 33(2): 189-237 (2009)

4. Symmetry and Group Theory

Matsuzawa J.

Kobunshi (High Polymers, Japan), 57(February): 66-70 (2008)



Fourier analysis, wavelet analysis, and function spaces

MORITOH Shinya / Professor
moritoh (at) cc.nara-wu.ac.jp

EDUCATION: 1993 Graduate School of Mathematical Sciences, The University of Tokyo
 1991 Faculty of Science, The University of Tokyo

ACADEMIC DEGREES: Ph.D. The University of Tokyo

| | |
|---|--|
| SUBJECT OF RESEARCH: Applications of Fourier and wavelet transforms to function spaces | 3. Embeddings of Bessel-potential spaces, and Lorentz-Karamata spaces (in Japanese) Moritoh S. Proceedings of Symposium on Real Analysis 2011 (Shinshu), 43: 32-36 (2012) |
| SELECTED PUBLICATIONS: 1. Detection of singularities in wavelet and ridgelet analyses Moritoh S. RIMS Kokyuroku Bessatsu B57: 1-13 (2016) | 4. A Further Decay Estimate for the Dziubanski-Hernandez Wavelets Moritoh S. Tomoeda K. Canad. Math. Bull. 53: 133-139 (2010) |
| 2. Comparison of integral and discrete Ostrowski's inequalities in the plane Moritoh S. Tanaka Y. Math. Inequal. Appl. 18(1): 125-132 (2015) | |

Knot theory, 3-Manifold topology, foliations, and Origami

MURAI Hiroko / Associate Professor
murai@cc.nara-wu.ac.jp

EDUCATION: 2007 Graduate School, Doctral Research Course in Human Culture, Nara Women's University
 2002 Faculty of Science, Kyoto University

ACADEMIC DEGREES: Ph.D. Nara Women's University

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| SUBJECT OF RESEARCH: 1. Knots and links in 3-manifolds 2. Foliations on knot exterior 3. Categorification of knot invariants and graph polynomials 4. Geometry of Origami | 2. Gap of the depths of leaves of foliations Murai H. Proceedings of Intelligence of Low Dimensional Topology 2006, Series on Knots and Everything, World Scientific, 40: 223-230 (2007) |
| SELECTED PUBLICATIONS: 1. Gap of codimension one foliations Murai H. Kobe Journal of Mathematics, 29: 1-24 (2012) | 3. Depths of the foliations on 3-manifolds each of which admits exactly one depth 0 leaf Murai H. Journal of Knot Theory and its Ramifications, World Scientific, 16(5): 641-669 (2007) |

Number theory and varieties

OKAZAKI Takeo / Associate Professor
okazaki@cc.nara-wu.ac.jp

EDUCATION: 2004 Graduate School of Science, Osaka University

ACADEMIC DEGREES: Ph.D. Osaka University

| | |
|--|---|
| SUBJECT OF RESEARCH: Automorphic Representation and Number Theory | 3. L -functions of $SU_3(\Gamma(2,4,8))$ Okazaki T. J. Number Theory, 132: 54-78 (2012) |
| SELECTED PUBLICATIONS: 1. On some Siegel threefold related to the tangent cone of the Fermat quartic surface. Yamauchi T, Okazaki T. Advances in Theoretical and Mathematical Physics 21(3) (2017) | 4. Saito-Kurokawa type lift to $SU_3(\Gamma^1_{1,3}(2))$ Yamauchi T, Okazaki T. Math. Ann., 208: 589-601 (2008) |
| 2. Endoscopic lifts to the Siegel modular threefold related to Klein's cubic threefold Yamauchi T, Okazaki T. Amer. J. Math., 135(1): 183-206 (2013) | 5. On L-functions of $SU_3(\Gamma_2(4,8))$ Okazaki T. J. Number theory, 125: 117-132 (2007) |



Probabilistic models of statistical mechanics

SHINODA Masato / Professor
shinoda@cc.nara-wu.ac.jp

EDUCATION: 1994 Graduate School of Mathematical Sciences, The University of Tokyo
 1992 Faculty of Science, The University of Tokyo

ACADEMIC DEGREES: Ph.D. The University of Tokyo

| | |
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| SUBJECT OF RESEARCH: Critical behaviors of percolation models, phase transition | percolation on Sierpinski carpet lattices, Shinoda M. Probability Theory and Related Fields, 125: 447-456 (2003) |
| SELECTED PUBLICATIONS: 1. Uniform spanning trees on Sierpinski graphs Elmar Teufl, Stephan Wagner, Shinoda M. Latin American Journal of Probability and Mathematical Statistics, 11(2): 737-780 (2014) | 4. Existence of phase transition of percolation on Sierpinski carpet lattices, Shinoda M. Journal of Applied Probability, 39(1): 1-10 (2002) |
| 2. Optimal strategy for $3 \times N$ AB games Shinoda M. IPSJ Journal, 53(6): 1-6 (2012) | 5. Flexible reward plans for crowdsourced tasks Sakurai Y, Oyama S, Yokoo M, Shinoda M. PRIMA 2015: Principles and Practice of Multi-Agent Systems, the series Lecture Notes in Computer Science, 9387: 400-415 (2015) |
| 3. Non-existence of phase transition of oriented | |



Probability and stochastic analysis

TAKEMURA Tomoko / Associate Professor

Sm18031@cc.nara-wu.ac.jp

EDUCATION: 2010 Graduate School, Doctoral Research Course in Human Culture,
Nara Women's University

ACADEMIC DEGREES: Ph.D. Nara Women's University

SUBJECT OF RESEARCH:

Probability: stochastic process, limit theorem, skew product diffusion, harmonic transform

Tomisaki M, Takemura T.

Proc. Japan Acad. Ser. A Math. Sci., 91(1): 9-13 (2015)

SELECTED PUBLICATIONS:

1. Exponent of inverse local time for harmonic transformed process

Tomisaki M, Takemura T.

Ann. Report of Graduate School of Humanities and Sciences Nara Women's University Bulletin of Universities and Institutes Joint, 31: 127-138 (2016/03)

3. Convergence of time changed skew product diffusion processes.

Takemura T.

Potential Anal., 38(1): 31-55 (2013)

2. Asymptotic behavior of Lévy measure density corresponding to inverse local time.

4. Lévy measure density corresponding to inverse local time

Tomisaki M, Takemura T.

Publ. Res. Inst. Math. Sci., 49(3): 563-599 (2013)

Differential geometry of arithmetic manifolds

TSUNODA Shuichiro / Professor

Sm37052@cc.nara-wu.ac.jp

EDUCATION: 1981 Graduate School, Division of Mathematics, The University of Tokyo
1979 Faculty of Science, The University of Tokyo

ACADEMIC DEGREES: Doctor of Science, Osaka University

SUBJECT OF RESEARCH:

Ricci curvature of arithmetic manifolds
Linear programming

SELECTED PUBLICATIONS:

1. Spatiotemporal Time, Reports of Interdisciplinary Symposium of Mathematics and Physics, 39-43, 2004

2. (partial contribution) Open Problem of Mathematics, SAIENSU-SHA Co., Ltd. 182-188, 2003

3. Complex System, Internal Observation, and Mathematics, A quarterly report of materialists group, Vol. 80, 41-50, 2002

Analytic number theory

UMEGAKI - ICHIHARA Yumiko / Associate Professor

ichihara@cc.nara-wu.ac.jp

EDUCATION: 2002 Nagoya University

ACADEMIC DEGREES: Ph.D. Nagoya University

SUBJECT OF RESEARCH:

Number Theory, Automorphic L-function

3. The first moment of L-functions of primitive forms on $\Gamma_0(p^2)$ and a basis of old forms.

Ichihara Y.

Journal of Number Theory, 131(2): 343-362 (2011)

SELECTED PUBLICATIONS:

1. On the density function for the value-distribution of automorphic L-functions

Matsumoto K., Umegaki Y.

Journal of Number Theory, 198: 176--199 (2019)

4. Estimates of a certain sum involving coefficients of cusp forms in weight and level aspects

Ichihara Y.

Lithuanian Math. J., 48(2): 188-202 (2008)

2. On the value-distribution of the difference between logarithms of two symmetric power L-functions

Matsumoto K., Umegaki Y.

International Journal of Number Theory, 14(07): 2045-2081 (2018)

5. On the Siegel-Tatuzawa theorem for a class of L-functions

Ichihara Y., Matsumoto K.

Kyushu J. Math., 62: 201-215 (2008)



Study on hyperbolic structures of low-dimensional manifolds

YAMASHITA Yasushi / Professor

yamasita@ics.nara-wu.ac.jp

EDUCATION: 1991 Graduate School of science and engineering, Tokyo Institute of Technology

ACADEMIC DEGREES: Ph.D. Tokyo Institute of Technology

SUBJECT OF RESEARCH:

Hyperbolic geometry

DOI: 10.2140/agt.2013.13.927

SELECTED PUBLICATIONS:

1. Non-hyperbolic automatic groups and groups acting on CAT(0) cube complexes

Nakagawa Y, Tamura M, Ymashita Y.

International journal of algebra and computation Academic Journal Joint 24(6): 795-813 (2014/09)

DOI: 10.1142/S0218196714500349

3. Creating software for visualizing Kleinian groups
Ymashita Y.

Lecture Note Ser., IMS, NUS 23: 159-190 (2012)

DOI: 10.1142/9789814401364_0005

4. Linear slices of the quasi-Fuchsian space of punctured tori

Komori Y, Yamashita Y.

Conformal geometry and dynamics 16: 89-102 (2012)

DOI: 10.1090/S1088-4173-2012-00237-8

2. The link volume of 3-manifolds

Yo'av Rieck, Ymashita Y.

Algebraic and geometric topology 13: 927-958 (2013)



Nonlinear PDE and Fluid Mechanics

YANAGISAWA Taku / Professor

taku@cc.nara-wu.ac.jp

EDUCATION: 1985 Graduate School of Science, Hokkaido University
1983 Department of Mathematics, Faculty of Science, Hokkaido University

ACADEMIC DEGREES: Ph.D. Hokkaido University

SUBJECT OF RESEARCH:

1. Hodge decomposition of vector fields and its application to fluid dynamics
2. Free boundary problems in plasma dynamics
3. Initial boundary value problems for symmetric hyperbolic systems
4. Singularities of the solutions to compressible and incompressible Euler equations
5. Stability of boundary layers

SELECTED PUBLICATIONS:

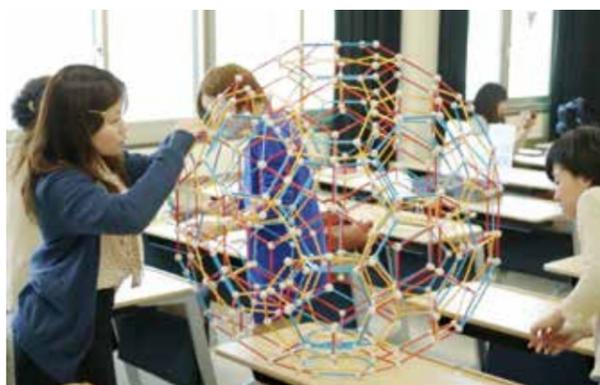
1. Global compensated compactness theorem for general differential operators of first order
Kozono H, Yanagisawa T.

Archive for Rational Mechanics and Analysis, 207(3): 879-905 (2013) DOI: 10.1007/s00205-012-0583-7

2. L^1 Helmholtz Decomposition and Its Application to the Navier-Stokes Equations
Kozono H, Yanagisawa T.

Lectures on Analysis of Nonlinear Partial Differential Equations: Part 3, Morningside Lectures in Mathematics, International Press, 3: 237-290 (2013)

3. Leray's inequality in general multi-connected domains in R^n Reinhard Farwig, Kozono H, Yanagisawa T.
Math. Ann., 354: 137-145 (2012)
DOI: 10.1007/s00208-011-0716-6



Experimental study of new state matter of deconfined quarks and gluons (QGP).

HACHIYA Takashi / Assistant Professor / hachiya@cc.nara-wu.ac.jp

EDUCATION: 2008 Department of Physical Science, Graduate school of Science, Hiroshima University
1999 Department of Physics, Faculty of Science, Hiroshima University

ACADEMIC DEGREES: Ph.D Hiroshima University

SUBJECT OF RESEARCH:

1. Properties of QGP using bottom and charm quark production in high energy heavy ion collisions.
2. Research and Development of the silicon detector for precise tracking.

SELECTED PUBLICATIONS:

1. Single electron yields from semileptonic charm and bottom hadron decays in Au+Au collisions at $\sqrt{s_{NN}}=200$ GeV. A. Adare et al. (PHENIX Collaboration) Phys. Rev. C, 93(3) 034904 (2016)
2. Creation of quark-gluon plasma droplets with three distinct geometries.

C. Aidala et al. (PHENIX Collaboration) Nature Physics (2018)

3. Heavy Quark Production in p+p and Energy Loss and Flow of Heavy Quarks in Au+Au Collisions at $\sqrt{s_{NN}}=200$ GeV. A. Adare et al. (PHENIX collaboration), Phys. Rev. C84 044905 (2011)

4. Centrality dependence of charm production from single electrons measurement in Au + Au collisions at $\sqrt{s_{NN}} = 200$ GeV. S.S. Adler et al.(PHENIX collaboration) Phys. Rev. Lett.94 082301 (2005)



Experimental study of elementary particles using high-energy colliders

HAYASHII Hisaki / Professor

hayashii@cc.nara-wu.ac.jp

EDUCATION: 1984 Division of Physics, Graduate School of Science, Nagoya University
1979 Department of Physics, Faculty of Science, Shizuoka University

ACADEMIC DEGREES: Ph.D. Nagoya University

SUBJECT OF RESEARCH:

1. Lepton flavor violating tau decays for New physics searches
2. CP violation in tau-lepton hadronic decays
3. Hadronic structure function, quark confinement, strange quark mass, muon anomalous magnetic moment, Holography
4. CP violation in B and D mesons
5. Experimental study of particle physics using high energy e^+e^- colliders

SELECTED PUBLICATIONS:

1. The Physics of B Factories (tau lepton chapter) Hayashii H, Belle and BaBar collab. Europ. Phys. Jour. C, 74 (3026): 1-928 (2014)
2. Search for CP violation in $\tau^- \rightarrow K^0 \pi^- \nu_\tau$ decays Bschfberger M, Hayashii H, Belle collab. Phys. Rev. Lett., 107 (131801): 1-4 (2011)
3. High statistic study of the $\tau^- \rightarrow \pi^- \pi^0 \nu_\tau$ decay Fujikawa M, Hayashii H, Belle collab. Phys. Rev. D, 86(092007): 1-38 (2008)



Theoretical study of strongly interacting systems of hadrons and nuclei

HIRENZAKI Satoru / Professor

zaki@cc.nara-wu.ac.jp

EDUCATION: 1991 Division of Physics, Graduate School of Science, Tokyo Metropolitan University
1986 Department of Physics, Faculty of Science, Science University of Tokyo

ACADEMIC DEGREES: Ph.D. Tokyo Metropolitan University

SUBJECT OF RESEARCH:

1. Structure and Formation of Meson–Nucleus bound systems
2. Hadron reactions at Intermediate and High energy regions

Phys. Rev. Lett., 94: 232503 (2005)

3. (d, 3He) reactions for the formation of deeply bound pionic atoms

Hirenzaki S, Toki H, Yamazaki T.

Phys. Rev. C, 44: 2472-2479 (1991)

SELECTED PUBLICATIONS:

1. Deeply bound pionic states in heavy nuclei
Yamazaki T, Hirenzaki S, Hayano R S, Toki H.
Phys. Report, 514: 1 (2012)

4. Structure and Formation of Deeply Bound Pionic Atoms

Toki H, Hirenzaki S, Yamazaki T, Hayano R S.

Nucl. Phys. A, 501: 653-671 (1989)

2. Formation of eta-prime(958) - mesic nuclei and axial U(A)(1) anomaly at finite density
Nagahiro H, Hirenzaki S.



Study of deformation and fracture of soft materials and pattern formation

KITSUNEZAKI So / Professor

kitsune@ki-rin.phys.nara-wu.ac.jp

EDUCATION: 1997 Graduate School of Science, Kyoto University
1992 Faculty of Science, Kyoto University

ACADEMIC DEGREES: Ph.D. Kyoto University

SUBJECT OF RESEARCH:

1. Pattern Formation of Microorganisms
2. Dynamics of Granular Materials
3. Deformation and Fracture of Soft Materials

Tarafdar S.

Wiely, ISBN: 978-3-527-41213-6 (2015)

3. Cracking Condition of Cohesionless Porous Materials in Drying Processes

Kitsunezaki S.

SELECTED PUBLICATIONS:

1. Shaking-induced stress anisotropy in the memory effect of paste

Physical Review E, 87: 052805 (2013)

Kitsunezaki S, Nakahara A, Matsuo Y.

Europhys. Lett., 114: 64002 (2016)

4. Bioconvection and front formation of *Paramecium tetraurelia*

Kitsunezaki S, Komori R, Harumoto T.

Physical Review E, 76: 046301 (2007)

2. Desiccation Cracks and their Patterns: Formation and Modelling in Science and Nature.

Lucas Goehring, Nakahara A, Dutta T, Kitsunezaki S,



Experimental study for atomic collisions of singly and multiply charged ions over wide energy ranges from eV to MeV

ISHII Kunikazu / Associate Professor

ishii@cc.nara-wu.ac.jp

EDUCATION: 2002 Graduate School of Science, Tokyo Metropolitan University

ACADEMIC DEGREES: Ph.D. Tokyo Metropolitan University

SUBJECT OF RESEARCH:

1. Collision dynamics by low energy highly charged ion
2. Basic and applied studies of MeV energy ions

Hirano Y, Umigishi M, Ishii K, Ogawa H.

Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms B, 354: 67 (2014)

SELECTED PUBLICATIONS:

1. Energy distribution of an ion beam extracted into air with a large bore metal capillary
Umigishi M, Hirano Y, Ishii K, Ogawa H.
Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms B, 354: 64 (2014)

3. Development of an in-air RBS technique using a metal capillary

Ishii K, Fujita N, Ogawa H.

Nuclear Instruments and Methods in Physics Research Section B: Beam Interactions with Materials and Atoms B, 269: 1026 (2011)

2. Measurements of an ion beam diameter extracted into air through a large-bore metal capillary



Opacity of hot dense plasmas based on time-dependent density functional theory; Atomic processes and electronic structures of ions in dense plasmas in external, strong magnetic fields

KIYOKAWA Shuji / Professor / sk@cc.nara-wu.ac.jp

EDUCATION: Tokyo Institute of Technology

ACADEMIC DEGREES: Ph.D. Tokyo Institute of Technology

SUBJECT OF RESEARCH:

- Properties of Strongly coupled plasmas strongly coupled plasmas density functional theory

3. Correspondence between Phase Oscillator Network and Classical XY Model with the Same Infinite-Range Interaction in Statics

Uezu T, Kimoto T, Kiyokawa S, Okada M.

Journal of the Physical Society of Japan, 84: 033001 (2015)

SELECTED PUBLICATIONS:

1. Multi-average ion model for hot dense plasmas derived from finite temperature density-functional theory
Kiyokawa S.

High Energy Density Physics 13: 40 (2014)

2. Exact solution to the Coulomb wave using the linearized phase-amplitude method

Kiyokawa S.

AIP Advances, 5(8): 087150 (2015)

Experimental study of magnetism and metal physics

MATSUOKA Yuki / Associate Professor
matsuoka@cc.nara-wu.ac.jp

EDUCATION: 1998 Division of Physics, Graduate School of Science, Tohoku University

ACADEMIC DEGREES: Ph.D. Tohoku University

SUBJECT OF RESEARCH:

1. The phase stability of noble metal martensitic alloy
2. Research of the effect of mugineic acid on Soil, ESR/EPR, Fe³⁺ mineral
3. ESR measurement of pottery and potter's clay, ESR, Bizen-pottery, clay, color, Fe³⁺

SELECTED PUBLICATIONS:

1. Composition dependence of the phase stability in Au-Cd-Ag martensitic alloy
Matsuoka Y, Fujita M, Nagahara A.
Materials Today Proceeding, 2S: S573-S576 (2015)
2. Size effect for phase stability on Au-Cd-Ag of phase boundary composition
Matsuoka Y, Suzuki K, Kudo N.
Journal of Alloys and Compounds, 577S: S521 - S524 (2012)



Elementary particle physics experiments, especially CP violation, heavy-flavored hadron spectroscopy, and particle detector development

MIYABAYASHI Kenkichi / Professor
miyabaya@cc.nara-wu.ac.jp

EDUCATION: 1994 Graduate School of Science, Nagoya University
1990 Faculty of Science, Nagoya University

ACADEMIC DEGREES: Ph.D. Nagoya University

SUBJECT OF RESEARCH:

1. Study of CP violation in B meson decays at high luminosity asymmetric-energy e⁺e⁻ collider
2. Heavy-flavored hadron spectroscopy at B-factory experiment
3. Research and development of inorganic scintillator based electromagnetic calorimeter
4. Beam background monitoring for high luminosity e⁺e⁻ collider

- Iwashita T, Miyabayashi K. et al. (The Belle Collaboration),
PTEP, 2014: 043C01 (2014)
2. Evidence of a new narrow resonance decaying to $\chi_{c1}\gamma K$ in $B \rightarrow \chi_{c1}\gamma K$
Bhardwaj V, Miyabayashi K. et al. (The Belle Collaboration),
Phys. Rev. Lett., 111: 032001 (2013)

SELECTED PUBLICATIONS:

1. Measurement of branching fractions for $B \rightarrow J/\psi \eta K$ decays and search for a narrow resonance in the $J/\psi \eta$ final state

3. Precise measurement of the CP violation parameter $\sin 2\phi_1$ in $B^0 \rightarrow (cc)K^0$ decays
Adachi I, Miyabayashi K. et al. (The Belle Collaboration),
Phys. Rev. Lett., 108: 171801 (2012)



Theoretical study for the structures and properties of hadrons

NAGAIRO Hideko / Associate Professor
nagahiro@cc.nara-wu.ac.jp

EDUCATION: 2001 Graduate School, Doctoral Research Course in Human Culture, Nara Women's University

ACADEMIC DEGREES: Ph.D. Nara Women's University

SUBJECT OF RESEARCH:

1. Natures of hadrons (structure, mass generation, decay properties)
2. eta, eta'(958) mesic nuclei and chiral symmetry

SELECTED PUBLICATIONS:

1. Structure of charmed baryons studied by pionic decays
Nagahiro H, Yasui S, Hosaka A, Oka M, Noumi H.
(American Physical Society) Phys. Rev. D, 95: 014023 (2017)
2. Measurement of excitation spectra in the $^{12}\text{C}(p,d)$ reaction near eta' emission threshold

- eta-PRIME/Super-FRS Collaboration (Tanaka Y K. et al.)
(American Physical Society) Phys. Rev. Lett., 117: 202501. (2016)
3. Elementarity of composite systems
Nagahiro H, Hosaka A.
(American Physical Society) Phys. Rev. C, 90: 065201 (2014)
4. Composite and elementary nature of a resonance in the sigma model,
Nagahiro H, Hosaka A.
(as Editors' Suggestion) Phys. Rev. C, 88: 055203 (2013)



Experimental research on ion-atom and ion-solid collisions

OGAWA Hidemi / Professor
ogawa@cc.nara-wu.ac.jp

EDUCATION: 1984 Graduate School of Science, Kyoto University
1979 Faculty of Science, Kyoto University

ACADEMIC DEGREES: Ph.D. Kyoto University

SUBJECT OF RESEARCH:

1. Secondary electron emission from thin film by ion and neutral beam irradiation
2. Energy losses and charge exchanges of high velocity heavy ions in solid and gas targets

SELECTED PUBLICATIONS:

1. Number distribution of emitted electrons by MeV H⁺ impact on carbon,
Koyanagi Y, Hongo N, Ishii K, Kaneko T, Ogawa H.
Nucl. Instr. Meth. B. to be published
2. Energy distribution of an ion beam extracted into air with a large bore metal capillary.

- Umigishi M, Hirano Y, Ishii K, Ogawa H.
Nucl. Instr. Meth. B, 354: 64-66 (2015)
3. Measurements of an ion beam diameter extracted into air through a large-bore metal capillary.
Hirano Y, Umigishi M, Ishii K, Ogawa H.
Nucl. Instr. Meth. B, 354: 67-70 (2015)
4. Forward-backward correlated secondary electron emission depending on the emergent-angle of protons transmitted a thin carbon foil.
Sorai K, Amano S, Ishii K, Kanekoi T, Ogawa H.
J. Phys. B:Atomic, Molecular & Optical Physics, 47: 085201 (2014)



Theoretical study of particle phenomenology and dynamics of quantum gauge theories

OHKI Hiroshi / Assistant Professor

hohki@cc.nara-wu.ac.jp

EDUCATION: 2010 Division of Physics and Astronomy, Graduate School of Science, Kyoto University

ACADEMIC DEGREES: Ph.D. Kyoto University

SUBJECT OF RESEARCH:

1. Study of Particle Phenomenology

2. Lattice gauge Theory

3. Numerical Simulation of Lattice Quantum Chromo Dynamics

4. String Phenomenology

5. Non-perturbative dynamics of the quantum gauge theory

Springer, 978-3-642-30804-8 (2012)

2. Light composite scalar in twelve-flavor QCD on the lattice

Aoki Y, Aoyama T, Kurachi M, Maskawa T, Nagai K -i, Ohki H, Rinaldi E, Shibata A, Yamawaki K, Yamazaki T.

Phys. Rev. Lett., 111(162001): 1-5 (2013)

3. Nucleon strange quark content from $N_f = 2 + 1$ lattice QCD with exact chiral symmetry

Ohki H, Takeda T, Aoki S, Hashimoro S, Kaneko T, Matsufuru H, Noaki J, Onogi T.

Phys. Rev. D, 87(034509): 1-13 (2013)

SELECTED PUBLICATIONS:

1. An introduction to non-Abelian discrete symmetries for particle physicists

Ishimori H, Kobayashi T, Ohki H, Okada H, Shimizu Y, Tanimoto M,



Observational study of galaxy clusters and the structure formation in the universe; Development of high-resolution X-ray microcalorimeters

OTA Naomi / Associate Professor

naomi@cc.nara-wu.ac.jp

EDUCATION: 2001 Division of Physics, Graduate School of Science, The University of Tokyo
1996 Department of Physics, Faculty of Science, The University of Tokyo

ACADEMIC DEGREES: Ph.D. The University of Tokyo

SUBJECT OF RESEARCH:

1. Observational study of structure and evolution of galaxy clusters in the universe

2. Development of high-resolution X-ray microcalorimeters

SELECTED PUBLICATIONS:

1. The quiescent intracluster medium in the core of the Perseus cluster

Hitomi Collaboration.

Nature, 535 (7610): 117-121 (2016)

2. Search for gas bulk motions in eight nearby clusters of galaxies with Suzaku

Ota N, Yoshida H.

Publications of the Astronomical Society of Japan, 68(SP1) id. S19 (2016)

3. Investigation of the hard X-ray emission from the hottest cluster A2163 with Suzaku

Ota N, Nagayoshi K, Pratt G W, Kitayama T, Oshima T, Reiprich T H.

Astronomy & Astrophysics, 562 id. A60 (2014)

4. X-ray spectroscopy of clusters of galaxies

Ota N.

Research in Astronomy & Astrophysics, 12(8): 973-994 (2012)



Experimental study of quark gluon plasma (QGP) created by high-energy heavy ion collisions

SHIMOMURA Maya / Assistant Professor / maya@cc.nara-wu.ac.jp

EDUCATION: 2004,2009 Physics, Graduate School of Pure and Applied Sciences, University of Tsukuba
2002 Physics, Faculty of Science, Nara Women's University
2001 Physics and Astronomy, Liberal Arts and Sciences, Iowa State University

ACADEMIC DEGREES: Ph.D. University of Tsukuba

SUBJECT OF RESEARCH:

The boundary condition of the produced QGP matter by measuring azimuthal anisotropy in relativistic heavy ion collisions at RHIC-(s)PHENIX and LHC-ALICE

SELECTED PUBLICATIONS:

1. Measurement of the higher-order anisotropic flow coefficients for identified hadrons in Au + Au collisions at $\sqrt{s_{NN}}=200\text{GeV}$

A. Adare et al. (PHENIX Collaboration)

Phys. Rev. C, 93(5): 051902 (2016)

DOI: 10.1103/PhysRevC.93.051902

2. Single electron yields from semileptonic charm

and bottom hadron decays in Au+Au collisions at $\sqrt{s_{NN}}=200\text{GeV}$

A. Adare et al. (PHENIX Collaboration)

Phys. Rev. C, 93(3): 034904 (2016)

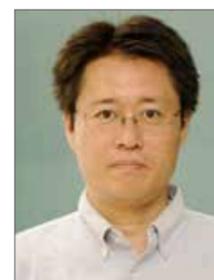
DOI: 10.1103/PhysRevC.93.034904

3. Systematic Study of Azimuthal Anisotropy in Cu+Cu and Au+Au Collisions at $\sqrt{s_{NN}}=62.4$ and 200GeV

A. Adare et al. (PHENIX Collaboration)

Phys.Rev.C, 92(3): 034913 (2015)

DOI: 10.1103/PhysRevC.92.034914



String, string field, quantum field, and unified theories

TAKAHASHI Tomohiko / Professor

tomo@cc.nara-wu.ac.jp

EDUCATION: 1997 Division of Physics and Astronomy, Graduate School of Science, Kyoto University

ACADEMIC DEGREES: Ph.D. Kyoto University

SUBJECT OF RESEARCH:

String particle physics field theory

SELECTED PUBLICATIONS:

1. Open String Feilds as Matrices

Kishimoto I, Masuda T, Takahashi T, Takemoto S.

Prog Theor Exp Phys, 2015(3): 033B05 (2015)

DOI: 10.1093/ptep/ptv023

2. Observables for identity-based tachyon vacuum solutions

Kishimoto I, Masuda T, Takahashi T.

Prog Theor Exp Phys, 2014(10): 103B02 (2014)

DOI: 10.1093/ptep/ptu136

3. Comments on observables for identity-based marginal solutions in Berkovits' superstring field theory

Kishimoto I, Takahashi T.

J. High Energy Phys., 2014:31 (2014)

DOI: 10.1007/JHEP07(2014)031

4. Gauge invariant overlaps for identity-based marginal solutions

Kishimoto I, Takahashi T.

Prog Theor Exp Phys, 2013(9): 093B07 (2013)

DOI: 10.1093/ptep/ptt073



Theoretical study of nonequilibrium dynamics in quantum systems, biomolecules, chemical reactions, and social systems

TODA Mikito / Professor

toda@ki-rin.phys.nara-wu.ac.jp

EDUCATION: 1987 Division of Physics and Astronomy, Graduate School of Science, Kyoto University
1980 Department of Applied Physics, School of Engineering, The University of Tokyo

ACADEMIC DEGREES: Ph.D. Kyoto University

SUBJECT OF RESEARCH:

1. Quantum Mechanics of Non-Integrable Systems
Quantum Chaos, Quantum Entanglement, Origin of Irreversibility
2. Dynamical Process of Chemical Reaction
Chaos, Transition State Theory, Time Series Analysis of Biomolecules
3. Social Physics
Complex networks, Statistical Analysis of Social Network Systems

Teramoto H, Toda M, Takahashi M, Kono H, Komatsuzaki T.

Phys Rev Lett, 115: 093003(5 pages)(2015)
DOI: 10.1103/PhysRevLett.115.093003

2. Breakdown Mechanisms of Normally Hyperbolic Invariant Manifolds in terms of Unstable Periodic Orbits and Homoclinic/Heteroclinic Orbits in Hamiltonian Systems

Teramoto H, Toda M, Komatsuzaki T.
Nonlinearity, 28: 2677–2698 (2015)

SELECTED PUBLICATIONS:

1. Mechanism and Experimental Observability of Global Switching Between Reactive and Nonreactive Coordinates at High Total Energies



Unification theory of phase transitions in phase oscillator networks and the classical XY model; Theoretical study of phase transitions in phase oscillator networks and the classical XY model with various interactions

UEZU Tatsuya / Professor / uezu@ki-rin.phys.nara-wu.ac.jp

EDUCATION: 1983 Graduate School of Science, Kyoto University
1978 Faculty of Science, Kyoto University

ACADEMIC DEGREES: Ph.D. Kyoto University

SUBJECT OF RESEARCH:

1. Synchronization phenomena
Phase oscillator networks, Kuramoto model
2. Correspondence between phase oscillator networks and the classical XY model with the same infinite-range interaction
Phase transition, Critical phenomena
3. Statistical mechanical study on disordered systems and neural networks
Neural networks, Spin glasses, Replica method, Learning

Architecture ---

Uezu T, Kiyokawa S.
J. Phys. Soc. Jpn., 85(6): 064001 (1 – 31) (2016)

2. Correspondence between phase oscillator network and classical XY model with the same infinite-range interaction in statics

Uezu T, Kimoto T, Kiyokawa S, Okada M.
J. Phys. Soc. Jpn., 84(3): 033001 -1 -- 033001 -5 (2015)

SELECTED PUBLICATIONS:

1. Supervised Learning of Two-Layer Perceptron under the Existence of External Noise --- Learning Curve of Boolean Functions of Two Variables in Tree-Like

3. Unlearning of Mixed States in the Hopfield Model -- Finite Loading Case --

Ohtani H, Yoshida M, Kiyokawa S, Uezu T.
J. Phys. Soc. Jpn., 84(1): 014002 -1 -- 014002 -17 (2015)



Theoretical study of correlation effects in condensed-matter systems

TSUCHIIZU Masahisa / Associate Professor

tsuchiiz@cc.nara-wu.ac.jp

EDUCATION: 2001 Graduate School of Science, Nagoya University
1996 Faculty of Science, Nagoya University

ACADEMIC DEGREES: Ph.D. Nagoya University

SUBJECT OF RESEARCH:

1. Strong correlations in two-dimensional electron systems
2. Electronic correlations in molecular conductors
3. Charge ordering in one-dimensional electron systems

2. Multi-Orbital Molecular Compound (TTM-TTP)₁₃: Effective Model and Fragment Decomposition
Tsuchiizu M, et al.

J. Phys. Soc. Jpn. 80: 013703 (2011)

3. Interchain-Frustration-Induced Metallic State in Quasi-One-Dimensional Mott Insulators

Tsuchiizu M, Suzumura Y, Bourbonnais C.
Phys. Rev. Lett. 99: 126404 (2007)

SELECTED PUBLICATIONS:

1. Orbital Nematic Instability in the Two-Orbital Hubbard model: Renormalization-Group + Constrained RPA Analysis
Tsuchiizu M, et al.
Phys. Rev. Lett. 111: 057003 (2013)

4. Phase Diagram of One-Dimensional Extended Hubbard Model at Half Filling

Tsuchiizu M, Furusaki A.
Phys. Rev. Lett. 88: 056402 (2002)



Experimental study of crystal structures and physical properties of quasicrystals and intercalated layered materials

YAMAMOTO Kazuki / Associate Professor / kazuki.yamamoto@cc.nara-wu.ac.jp

EDUCATION: 1994 Graduate School of Engineering, University of Tsukuba
1991 Graduate School of Science, Niigata University

ACADEMIC DEGREES: Ph.D. University of Tsukuba

SUBJECT OF RESEARCH:

1. X-ray Study of Electron Density Distributions in Crystals.
2. X-ray Study of Structure for Quasicrystals.
3. X-ray Study of Structure for Intercalated Layered Materials.

strains in a Co-rich Al-Ni-Co decagonal phase

Yamamoto K, Yang W, Nishimura Y, Matsuo Y.
Materials Transactions, 45(4): 1225-1260 (2004)

3. Structure of an Al-Cu-Co Decagonal Quasicrystal Studied by Cs-Corrected STEM

Yubuta K, Yamamoto K, Yasuhara A, Hiraga K.
Material Transaction, 55(6): 866-870 (2014)

SELECTED PUBLICATIONS:

1. X-ray study of the electron density distribution for Al₆Mn, Yamamoto K, Matsuo Y.
Journal of Physics: Condensed Matter, 12(11): 2359-2365 (2000)

4. The structure of an Al-Rh-Cu decagonal quasicrystal studied by spherical aberration (Cs)-corrected scanning transmission electron microscopy

Yubuta K, Yamamoto K, Yasuhara A, Hiraga K.
Philosophical Magazine, 95: 1524–1535 (2015)



Observational study of high-energy phenomena with X-ray satellites

YAMAUCHI Shigeo / Professor

yamauchi@cc.nara-wu.ac.jp

EDUCATION: 1991 Division of Astrophysics, Graduate School of Science, Nagoya University
1987 Department of Physics, Faculty of Science, Nagoya University

ACADEMIC DEGREES: Ph.D. Nagoya University

SUBJECT OF RESEARCH:

1. Origin of the Galactic Diffuse X-ray Emission
2. Evolution of Supernova Remnants

Koyama K.
Publications of the Astronomical Society of Japan, 68(4):
59 (2016)

SELECTED PUBLICATIONS:

1. Origin of the Galactic Diffuse X-Ray Emission: Iron K-shell Line Diagnostics
Nobukawa M, Uchiyama H, Nobukawa K K, Yamauchi S, Koyama K.
The Astrophysical Journal, 833(2): 268 (2016)

3.The quiet intracluster medium in the core of the Perseus cluster
The Hitomi collaboration
Nature, 535: 117-121 (2016)

2. Scale heights and equivalent widths of the iron K-shell lines in the Galactic diffuse X-ray emission
Yamauchi S, Nobukawa K K, Nobukawa M, Uchiyama H,

4. Iron emission line from the spiral galaxy M101
Yamauchi S.
Publications of the Astronomical Society of Japan,
68(SP1): S18 (2016)



Theoretical study of highly correlated low-dimensional electron systems

YOSHIOKA Hideo / Professor

h-yoshi@cc.nara-wu.ac.jp

EDUCATION: 1993 Graduate School of Science, The University of Tokyo
1988 Faculty of Science, Nagoya University

ACADEMIC DEGREES: Ph.D. The University of Tokyo

SUBJECT OF RESEARCH:

1. Theoretical Study on Quasi-One-Dimensional Organic Conductors
2. Electronic Correlation in Carbon Nanotubes
3. Theoretical Study on Strongly Correlated One-Dimensional Electron System

2. Phase competition, solitons, and domain walls in neutral-ionic transition systems
Tsuchiizu M, Yoshioka H, Seo H.
J. Phys. Soc. Jpn., 85: 104705(10 Pages) (2016)
DOI: 10.7566/JPSJ.85.104705

SELECTED PUBLICATIONS:

1. Tomonaga-Luttinger liquid theory for metallic fullurene polymers
Yoshioka H, Shima H, Noda Y, Ono S, Ohno K.
Physical Review B, 93: 165431 (2016)
DOI: 10.1103/PhysRevB.93.165431

3. Enhancement of charge ordering by zeeman effect in one-dimensional molecular conductors
Yoshioka H, Seo H, Otsuka Y.
Journal of the Korean Physical Society, 63(3): 383-386 (2013)
DOI: 10.3938/jkps.63.383



Elucidation of molecular mechanism between structure and function of metalloproteins and metalloenzymes

FUJII Hiroshi / Professor

fujii@cc.nara-wu.ac.jp

EDUCATION: 1990 Graduate School of Engineering Kyoto University

ACADEMIC DEGREES: Ph.D. Kyoto University

SUBJECT OF RESEARCH:

Reactivity and selectivity of metalloenzymes relating to biological oxidation reactions

Inorg. Chem., 57, 1685-1688 (2018).

SELECTED PUBLICATIONS:

1. Critical Factors in Determining the Heterolytic versus Homolytic Bond Cleavage of Terminal Oxidants by Iron(III) Porphyrin Complex
Sawako Yokota and Hiroshi Fujii
J. Am. Chem. Soc., 140, 5127-5137 (2018).

3. Participation of Electron-Transfer Process in Rate-Limiting Step of Aromatic Hydroxylation Reactions by Compound I Models of Heme Enzymes
Maaya Asaka and Hiroshi Fujii
J. Am. Chem. Soc., 138, 8048-8051 (2016).

2. Preparation, Characterization and Reactivity of a Bis-hypochlorite Adduct of a Chiral Manganese(IV)-Salen Complex
Ikuko Araki, Kaoru Fukui, and Hiroshi Fujii

4. Unique coupling of mono- and dioxygenase chemistries in a single active site promotes heme degradation
Toshitaka Matsui, Shusuke Nambu, Celia W. Goulding, Satoshi Takahashi, Hiroshi Fujii, and Masao Ikeda- Saito
Proc. Natl. Acad. Sci., 113, 3779-3784 (2016).



Development of light-driven biocatalytic process

HONDA Yuki / Assistant Professor

honda@cc.nara-wu.ac.jp

EDUCATION: 2012 Graduate School of Advanced Science and Engineering, Waseda University

ACADEMIC DEGREES: Dr.Eng. Waseda University

SUBJECT OF RESEARCH:

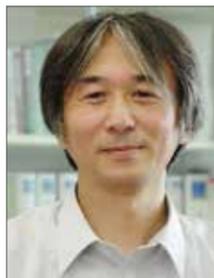
1. Inorganic/bio hybrid photocatalytic system for hydrogen production
2. Light-driven coenzyme regeneration system

2. Inorganic/whole-cell Biohybrid Photocatalyst for Highly Efficient Hydrogen Production from Water
Honda Y, Watanabe M, Hagiwara H, Ida S, Ishihara T.
Appl. Catal. B Environ., 210: 400-406 (2017)
DOI: 10.1016/j.apcatb.2017.04.015

SELECTED PUBLICATIONS:

1. Coexpression of 5-Aminolevulinic Acid Synthase Gene Facilitates Heterologous Production of Thermostable Cytochrome P450, CYP119, in Holo Form in *Escherichia coli*
Honda Y, Nanasawa K, Fujii H
ChemBioChem, 19: 2156-2159 (2018)
DOI: 10.1002/cbic.201800331

3. Application to Photocatalytic H₂ Production of a Whole-cell Reaction by Recombinant *Escherichia coli* Cells Expressing [FeFe]-hydrogenase and Maturases Genes
Honda Y, Hagiwara H, Ida H, Ishihara T
Angew. Chem. Int. Ed., 55: 8045-8048 (2016).
DOI: 10.1002/anie.201600177



Research on the physical properties of nano-sized metal complexes in a solid state

KAJIWARA Takashi / Professor

kajiwarata@cc.nara-wu.ac.jp

EDUCATION: 2000 Graduate School of Science, Tohoku University

ACADEMIC DEGREES: Ph.D. Tohoku University

SUBJECT OF RESEARCH:

Magnetochemistry of lanthanide-based metal complexes

Magnetochemistry, 2(4): 43 (2016)

DOI: 10.3390/magnetochemistry2040043

SELECTED PUBLICATIONS:

1. Light Lanthanide Complexes with Crown Ether and Its Aza Derivative Which Show Slow Magnetic Relaxation Behaviors

Wada H, Ooka S, Yamamura T, Kajiwarata T.

Inorg. Chem., 56(1): 147-155 (2017)

DOI: 10.1021/acs.inorgchem.6b01764

3. Structural switching from paramagnetic to single-molecule magnet behaviour of LnZn₂ trinuclear complexes

Poh Ling Then, Takehara C, Kataoka Y, Nakano M, Yamamura T, Kajiwarata T.

Dalton Trans., 44: 18038-18048 (2015)

DOI: 10.1039/C5DT02965A

2. Slow Magnetic Relaxation of Lanthanide(III)

Complexes with a Helical Ligand

Wada H, Ooka S, Iwasawa D, Hasegawa M, Kajiwarata T.



Design and synthesis of high-performance transition metal complex catalysts and development of novel environmentally friendly synthetic organic reactions

KATAOKA Yasutaka / Professor / kataoka@cc.nara-wu.ac.jp

EDUCATION: 1992 Graduate School of Engineering, Kyoto University

1987 Faculty of Engineering, Kyoto University

ACADEMIC DEGREES: Ph.D. Kyoto University

SUBJECT OF RESEARCH:

1. Synthetic Organic Chemistry

2. Organometallic Chemistry

Acids

Shimokawa R, Kawada Y, Hayashi M, Kataoka Y, Ura Y.

Dalton Trans., 45: 16112-16116 (2016)

SELECTED PUBLICATIONS:

1. Palladium-catalyzed Aerobic Synthesis of Terminal Acetals from Vinylarenes Assisted by pi-Acceptor Ligands

Matsumura S, Sato R, Nakaoka S, Yokotani W, Murakami Y, Kataoka Y, Ura Y.

ChemCatChem, 9: 751-757 (2017)

3. Maleimide-assisted Anti-Markovnikov Wacker-type Oxidation of Vinylarenes Using Molecular Oxygen as a Terminal Oxidant

Nakaoka S, Murakami Y, Kataoka Y, Ura Y.

Chem. Commun., 52: 335-338 (2016)

2. Oxygenation of a Benzyl Ligand in SNS-Palladium

Complexes with O₂: Acceleration by Anions or Brønsted



Classical and quantum molecular simulations aiming at a priori design and investigation of physical properties of molecular ensembles and condensed matter

KINUGAWA Kenichi / Professor / kinugawa@cc.nara-wu.ac.jp

EDUCATION: 1988 Graduate School of Engineering, Kyoto University

1986 Faculty of Engineering, Kyoto University

ACADEMIC DEGREES: Ph.D. Kyoto University

SUBJECT OF RESEARCH:

Classical and quantum molecular simulations aiming at a priori design and investigation of physical properties of molecular ensembles and condensed matter

Imaoka H, Kinugawa K.

Chem. Phys. Lett., 671: 174 (2017)

SELECTED PUBLICATIONS:

1. Path integral centroid molecular dynamics simulation of para-hydrogen sandwiched by graphene sheets

Minamino Y, Kinugawa K.

Chem. Phys. Lett., 664: 114 (2016)

3. Quantum effects on liquid dynamics as evidenced by the presence of well-defined collective excitations in liquid para-hydrogen

F. J. Bermejo, Kinugawa K, C. Cabrillo, S. M. Benington, B. Fák, M. T. Fernández-Díaz, P. Verkerk, J. Dawidowski, R. Fernández-Perea.

Phys. Rev. Lett., 84: 5359 (2000)

2. Transport coefficients of normal liquid helium-4

calculated by path integral centroid molecular dynamics

simulation



Research on molecular chirality and organic synthesis using organometallic reagents

MATSUMOTO Arimasa / Assistant Professor

a-matsumoto@cc.nara-wu.ac.jp

EDUCATION: 2012 Graduate School of Science, The University of Tokyo

2007 Faculty of Science, The University of Tokyo

ACADEMIC DEGREES: Ph.D. The University of Tokyo

SUBJECT OF RESEARCH:

Organometallic Chemistry, Chirality

Matsumoto A, Ozaki H, Harada S, Tada K, Ayugase T, Ozawa H, Kawasaki T, Soai K.

Angew. Chem. Int. Ed., 55: 15246-15249 (2016)

DOI:10.1002/anie.201608955

SELECTED PUBLICATIONS:

1. Achiral Inorganic Gypsum Acts as an Origin of Chirality through Its Enantiotopic Surface in Conjunction with Asymmetric Autocatalysis

Matsumoto A, Kaimori Y, Uchida M, Omori H, Kawasaki T, Soai K.

Angew. Chem. Int. Ed., 56: 545-548 (2017)

DOI:10.1002/anie.201610099

3. Crystal Structure of Isopropylzinc Alkoxide of Pyrimidyl Alkanol: Mechanistic Insights for Asymmetric Autocatalysis with Amplification of Enantiomeric Excess

Matsumoto A, Abe T, Hara A, Tobita T, Sasagawa T, Kawasaki T, Soai K.

Angew. Chem. Int. Ed., 54: 15218-15221 (2015)

DOI: 10.1002/anie.201508036

2. Asymmetric Induction by Nitrogen ¹⁴N/¹⁵N Isotopomer

in Conjunction with Asymmetric Autocatalysis



Synthetic studies of small molecules with bioactivity and analyses of their function

MIKATA Yuji / Professor

mikata@cc.nara-wu.ac.jp

EDUCATION: 1993 Graduate School of Science, Kyoto University
1988 Faculty of Science, Kobe University

ACADEMIC DEGREES: Ph.D. Kyoto University

SUBJECT OF RESEARCH:

1. Fluorescent Sensors for Zinc, Cadmium, Mercury, Pyrophosphate
2. Enzyme models, Coenzyme models
3. Carbohydrate-Based Metal Complexes

SELECTED PUBLICATIONS:

1. Y. Mikata, R. Ohnishi, R. Nishijima, A. Matsumoto, and H. Konno
Pyrophosphate-Induced Intramolecular Excimer Formation in Dinuclear Zinc(II) Complexes with Tetrakisquinoline Ligands
Inorg. Chem., **57**(13), 7724-7734 (2018).

2. Y. Mikata, A. Kizu, K. Nozaki, H. Konno, H. Ono, S. Mizutani, and S. Sato
TQOPEN (*N,N,N',N'*-Tetrakis(2-quinolylmethyl)-3-oxa-1,5-pentanediamine) Family as Heptadentate Fluorescent Cd²⁺ Sensors
Inorg. Chem., **56**(13), 7404-7415 (2017).

3. Y. Mikata, A. Takekoshi, M. Kaneda, H. Konno, K. Yasuda, M. Aoyama and S. Tamotsu
Replacement of quinolines with isoquinolines affords target metal ion switching from Zn²⁺ to Cd²⁺ in the fluorescent sensor TQLN (*N,N,N',N'*-tetrakis(2-quinolylmethyl)-2,6-bis(aminomethyl)pyridine)
Dalton Trans., **46**(3), 632-637 (2017).



Development of new functions and reactions based on organometallic clusters and synthesis of supramolecules comprised of metal clusters

NAKAJIMA Takayuki / Associate Professor

t.nakajima@cc.nara-wu.ac.jp

EDUCATION: 1998 Graduate School of Science and Engineering, Doctor later, Waseda University

ACADEMIC DEGREES: Ph.D. Waseda University

SUBJECT OF RESEARCH:

Development of new functions and reactions based on organometallic clusters supported by multidentate ligands and synthesis of supramolecules comprised of metal clusters

SELECTED PUBLICATIONS:

1. Tri- and Tetranuclear Copper Hydride Complexes Supported by Tetradentate Phosphine Ligands
T. Nakajima, Y. Kamiryo, K. Hachiken, K. Nakamae, Y. Ura, T. Tanase,
Inorg. Chem., **57**, 11005-11018 (2018).
2. Oxidative Addition of Aromatic ortho C–H Bond of Tetrakisphosphine to Asymmetric Diiridium(I) Centres

- Nakajima T, Noda S, Sakamoto M, Matsui A, Nakamae K, Kure B, Ura Y, Tanase T.
Dalton Trans., 45: 4747-4761 (2016)
3. Reversible Dioxygen Binding on Asymmetric Dinuclear Rhodium Centres
Nakajima T, Sakamoto M, Kurai S, Kure B, Tanase T.
Chem. Commun., 4 9: 5239-5338 (2013)
4. Wheel-Shaped Icosanuclear Homo- and Heterometallic Complexes of NiII, CoII, and CuII Ions Supported by Unsymmetrical Aminoalcohol Ligands
Nakajima T, Seto K, Horikawa F, Shimizu I, Scheurer A, Kure B, Kajiwara T, Tanase T, Mikuriya M.
Inorg. Chem., 51: 12503-12510 (2012)



Fine Synthesis and Functions of Multinuclear Transition–Metal Complexes

NAKAMAE Kanako / Assistant Professor

nakamae@cc.nara-wu.ac.jp

EDUCATION: 2015 Graduate School of Humanities and Sciences, Nara Women's University

ACADEMIC DEGREES: Ph.D. Nara Women's University

SUBJECT OF RESEARCH:

Development of New Materials Based on Fine Syntheses of Multinuclear Transition–Metal Complexes

SELECTED PUBLICATIONS:

1. Self-Alignment of Low-Valent Octanuclear Palladium Atoms
Nakamae K, Takemura Y, Kure B, Nakajima T, Kitagawa Y, Tanase T.
Angew. Chem. Int. Ed., 54: 1016–1021 (2015)
DOI: 10.1002/anie.201409511
2. Facile Insertion of Carbon Dioxide into Cu₂(μ–H) Dinuclear Units Supported by Tetrakisphosphine Ligands

Nakamae K, Kure B, Nakajima T, Ura Y, Tanase T.
Chem. Asian J., 9: 3106–3110 (2014)
DOI: 10.1002/asia.201402900

3. A Fluxional Cu₈H₆ Cluster Supported by Bis(diphenylphosphino) methane and Its Facile Reaction with CO₂
Nakamae K, Tanaka M, Kure B, Nakajima T, Ura Y, Tanase T.
Chem. Eur. J., 2017, 23, 9457(2017)
DOI: 10.1002/chem.201702071



Development of mass spectrometric methods for studies on the structure, function, and interaction of proteins

NAKAZAWA Takashi / Professor

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EDUCATION: 1982 Graduate School of Science, Osaka University
1977 Faculty of Science, Osaka University

ACADEMIC DEGREES: Ph.D. Osaka University

SUBJECT OF RESEARCH:

1. Development of the method for identifying animals species based on amino acid sequencing of collagen in archaeological samples using mass spectrometry
2. Analysis of protein functions using histidine residues as micro-environmental probes

SELECTED PUBLICATIONS:

1. Characterization of binding media in Egyptian Romano portraits using enzyme-linked immunosorbant assay and mass spectrometry
Mazurek J, Svoboda M, Maish J, Kawahara K, Fukakusa S, Nakazawa T, Taniguchi Y.
e-Preservation Science 11, 76-83 (2014)

2. Imidazole C-2 hydrogen/deuterium exchange reaction at histidine for probing protein structure and function with matrix-assisted laser desorption ionization mass spectrometry
Hayashi N, Kuyama H, Nakajima C, Kawahara K, Miyagi M, Nishimura O, Matsuo H, Nakazawa T.
Biochemistry 53(11): 1818-1826 (2014)
3. X-ray snapshots of a pyridoxal enzyme: a catalytic mechanism involving concerted [1,5]-hydrogen sigmatropy in methionine γ-lyase
Sato D, Shiba T, Karaki T, Yamagata W, Nozaki T, Nakazawa T, Harada S.
Scientific Reports 7, 4874(2017)
DOI: 10.1038/541598-017-05032-6



Computational physical chemistry: Quantum dynamics of molecular systems

OHTA Yasuhito / Associate Professor

ohta@cc.nara-wu.ac.jp

EDUCATION: 2001 Kanazawa University

ACADEMIC DEGREES: Ph.D. Kanazawa University

SUBJECT OF RESEARCH:

Quantum chemical molecular dynamics simulation of the self-organization reaction of nano materials

Iron Particle

Ohta Y, Okamoto Y, Alister J. Page, Stephan Irle, Morokuma K.

ACS NANO, 3: 3413-3420 (2009)

SELECTED PUBLICATIONS:

1. Possible Mechanism of BN Fullerene Formation from a Boron Cluster: Density-Functional Tight-Binding Molecular Dynamics Simulations

Ohta Y.

Journal of Computational Chemistry, 37: 886-895 (2016)

DOI: 10.1002/jcc.24287

3. Density-functional tight-binding molecular dynamics simulations of SWCNT growth by surface carbon diffusion on an iron cluster

Ohta Y, Okamoto Y, Stephan Irle, Morokuma K.

Carbon, 47: 1270-1275 (2009)

2. Quantum Chemical Molecular Dynamics Simulation of Single-Walled Carbon Nanotube Cap Nucleation on an



Design and photofunctionalization of metalloproteins

TAKASHIMA Hiroshi / Associate Professor

hiroshi@cc.nara-wu.ac.jp

EDUCATION: 2000 Graduate School of Engineering, Kyushu University

1997 Graduate School of Engineering, Doshisha University

ACADEMIC DEGREES: Ph. D. Kyushu University

SUBJECT OF RESEARCH:

Photoinduced electron transfer reactions in the metalloprotein containing a photofunctional molecule.

Yoshikawa N, Kimura H, Yamabe S, Kanehisa N, Inoue T, Takashima H.

Journal of Molecular Structure, 1117: 49-56 (2016)

DOI: 10.1016/j.molstruc.2016.03.069

SELECTED PUBLICATIONS:

1. Photoinduced electron-transfer reactions of tris(2,2'-bipyridine)ruthenium(II)-based carbonic anhydrase inhibitors tethering plural binding sites

Suwa M, Imamura N, Awano P, Nakata E, Takashima H.

Journal of Physical Organic Chemistry, 31: e3848(2018)

DOI: 10.1002/poc.3848

3. Photoinduced Electron-Transfer Reactions of Carbonic Anhydrase Inhibitor Containing tris(2,2'-Bipyridine) ruthenium(II) Analogue

Takashima H, Fukuda M, Nakagaki F, Ogata T, Tsukahara K.

The Journal of Physical Chemistry B, 117 (9): 2625-2635 (2013) DOI: 10.1021/jp310604w

2. Emission property and DFT calculation for the ³MLCT luminescence of Ru(bpy)₂(L)²⁺ complex



Unimolecular Dissociation and Ion-Molecule Reaction Dynamics in the Gas Phase by Combining Mass Spectrometric Studies with Theoretical Methods, and Development of Software for Fungal Species Identification

TAKEUCHI Takae / Associate Professor / takeuchi_t@cc.nara-wu.ac.jp

EDUCATION: 1985 Graduate School of Humanities and Sciences, Nara Women's University

1982 Graduate School of Science, Nara Women's University

ACADEMIC DEGREES: Ph.D. Nara Women's University

SUBJECT OF RESEARCH:

1. Theoretical Study of the Fragmentation Mechanism in Mass Spectrometry: Energetics and Dynamics

Yamagaki T, Takeuchi M, Watanabe T, Sugahara K, Takeuchi T. Rapid Comm. Mass Spectrom., 30: 2650-2654 (2016)

2. Development of Fungal Odor Detection Technique and Software for Identifying Fungal Species by Ion Mobility and Mass Spectrometric Analysis of Microbial Volatile Organic Compounds (MVOCs) for Conservation of Cultural Properties

2. Analysis of Volatile Metabolites Emitted by Soil-Derived Fungi Using Head Space Solid-Phase Microextraction/ Gas Chromatography/ Mass Spectrometry I. *Aspergillus fumigatus*, *Aspergillus nidulans*, *Fusarium solani* and *Penicillium paneum*

3. Generation and Reactivity of SiSi Multiple Bonded Ions Using Mass Spectrometry

Takeuchi T, Kimura T, Tanaka H, Kaneko S, Ichii S, Kiuchi M, Suzuki T. Surf. Interface Anal., 44:694-698 (2012)

SELECTED PUBLICATIONS:

1. Mechanism for Odd-electron Anion Ggeneration of Dihydroxybenzoic Acid Isomers in Matrix-assisted Laser Desorption/Ionization Mass Spectrometry with Density Functional Theory Calculations

3. Influence of Metal-Peptide Complexation on Fragmentation and Inter-Fragment Hydrogen Migration in Electron Transfer Dissociation

Asakawa D, Takeuchi T, Yamashita A, Wada Y.

J. Am. Soc. Mass Spectrom., 25: 1029-1039 (2014)



Organometallic, coordination, and bioinorganic chemistry based on multinuclear metal centers

TANASE Tomoaki / Professor

tanase@cc.nara-wu.ac.jp

EDUCATION: 1988 Synthetic Chemistry, Graduate School of Engineering, The University of Tokyo

1983 Faculty of Engineering, The University of Tokyo

ACADEMIC DEGREES: Ph.D. The University of Tokyo

SUBJECT OF RESEARCH:

1. Extended Metal Atom Chains Supported by Linear Polyphosphines

Tanase T, Morita K, Otaki R, Yamamoto K, Kaneko Y, Nakamae K, Kure B, Nakajima T.

Chem. Eur. J., 23: 524-528 (2017)

2. Structurally Constrained Organometallic Clusters by Using Multidentate Ligands

2. Planar PtPd₃ Complexes Stabilized by Three Bridging Silylene Ligands

3. Constructions of Multinuclear Reaction Centers Inspired by Metalloenzymes

Tanabe M, Yumoto R, Yamada T, Fukuta T, Hoshino T, Osakada K, Tanase T.

4. Bioinorganic Chemistry on Di- and Multinuclear Metal Complexes Containing Carbohydrates

Chem. Eur. J., 23: 1386-1392 (2017)

SELECTED PUBLICATIONS:

1. Chiral Self-Recognition between Stereogenic Tetrapalladium Units Affording Pd₈ Chains Supported by Homochiral Tetrakisphosphines

3. Self-Alignment of Low-Valent Octanuclear Palladium Atoms, Nakamae K, Takemura Y, Kure B, Nakajima T, Kitagawa Y, Tanase T.

Angew. Chem. Int. Ed., 54: 1016-1021 (2015)



Research on the synthesis, reactivity, and catalysis of novel transition metal complexes toward a sustainable future

URA Yasuyuki / Associate Professor / ura@cc.nara-wu.ac.jp

EDUCATION: 2001 Graduate School of Pharmaceutical Sciences, Hokkaido University
1997 Faculty of Pharmaceutical Sciences, Hokkaido University

ACADEMIC DEGREES: Ph. D. Hokkaido University

SUBJECT OF RESEARCH:

1. Development of environmental load-reducing organic synthetic reactions using transition metal catalysts
2. Synthesis, reactivity, and catalysis of novel transition metal complexes

2. Oxygenation of a Benzyl Ligand in SNS-Palladium Complexes with O₂: Acceleration by Anions or Brønsted Acids

Shimokawa R, Kawada Y, Hayashi M, Kataoka Y, Ura Y. Dalton Trans., 45: 16112–16116 (2016)
DOI: 10.1039/C6DT02948E

SELECTED PUBLICATIONS:

1. Palladium-catalyzed Aerobic Synthesis of Terminal Acetals from Vinylarenes Assisted by π-Acceptor Ligands

Matsumura S, Sato R, Nakaoka S, Yokotani W, Murakami Y, Kataoka Y, Ura Y. ChemCatChem, 9: 751-757 (2017)
DOI: 10.1002/cctc.201601517

3. Maleimide-assisted anti-Markovnikov Wacker-type oxidation of vinylarenes using molecular oxygen as a terminal oxidant

Nakaoka S, Murakami Y, Kataoka Y, Ura Y. Chem. Commun., 52: 335-338 (2016)
DOI: 10.1039/C5CC06746D



Colloid and surface chemistry: Research on properties and nano-structure of molecular assemblies

YADA Shiho / Assistant Professor

qas_yada@cc.nara-wu.ac.jp

EDUCATION: 2019 Graduate School of Humanities and Sciences, Nara Women's University

ACADEMIC DEGREES: Ph. D. Nara Women's University

SUBJECT OF RESEARCH:

1. Structural analysis of micelle, liquid crystal and ionic liquid using small angle X-ray and neutron scattering techniques
2. Evaluation of properties and structural analysis of foams formed by surfactants
3. Structural analysis of amphiphilic compounds adsorbed at air/water interface

Colloids Surf. A 564: 51–58 (2019)

DOI: 10.1016/j.colsurfa.2018.12.030

2. Adsorption Dynamics of Homogeneous Polyoxypropylene-Polyoxyethylene Alkyl Ether Type Nonionic Surfactants at Air/Water Interface

Yada S, Suzuki T, Hashimoto S, Yoshimura T. J. Mol. Liq. 255(1): 208–214 (2018)
DOI: 10.1016/j.molliq.2018.01.150

3. Adsorption and Aggregation Properties of Homogeneous Polyoxypropylene-Polyoxyethylene Alkyl Ether Type Nonionic Surfactants

Yada S, Suzuki T, Hashimoto S, Yoshimura T. Langmuir 33(15): 3794–3801 (2017)
DOI: 10.1021/acs.langmuir.7b00104

SELECTED PUBLICATIONS:

1. Emulsification, Solubilization, and Detergency Behaviors of Homogeneous Polyoxypropylene-Polyoxyethylene Alkyl Ether Type Nonionic Surfactants
- Yada S, Matsuoka K, Kanasaki Y, Gotoh K, Yoshimura T.



Physical chemistry of soft matter: Surfactants, amphiphilic polymers, ionic liquid, and metal nanoparticles

YOSHIMURA Tomokazu / Professor

yoshimura@cc.nara-wu.ac.jp

EDUCATION: 2001 Graduate School of Science and Technology, Kumamoto University

ACADEMIC DEGREES: Ph.D. Kumamoto University

SUBJECT OF RESEARCH:

1. Design and Synthesis of Novel Surfactants and Amphiphilic Polymers with High Functions
2. Study on Solution Properties of Surfactant
3. Study on Self-Assembly Using DLS, SAXS, SANS and cryo-TEM
4. Study on Liquid/Liquid Interface and Emulsion

DOI: 10.1021/acs.langmuir.7b00104

2. Aggregate Formation of Glycyrrhizic Acid

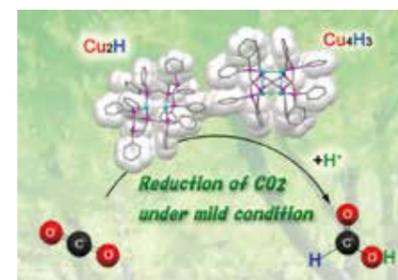
Matsuoka K, Miyajima R, Ishida Y, Karasawa S, Yoshimura T. Colloids Surf. A 500: 112-117 (2016)
DOI: 10.1016/j.colsurfa.2016.04.032

SELECTED PUBLICATIONS:

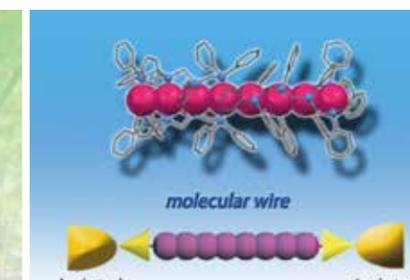
1. Adsorption and Aggregation Properties of Homogeneous Polyoxypropylene-Polyoxyethylene Alkyl Ether Type Nonionic Surfactants
- Yada S, Suzuki T, Hashimoto S, Yoshimura T. Langmuir, 33(15): 3794-3801 (2017)

3. Single-alkyl and multi-alkyl chain-containing amphiphilic oligomers with several sugar side chains: solution properties and nanostructural analysis of aggregates by SANS

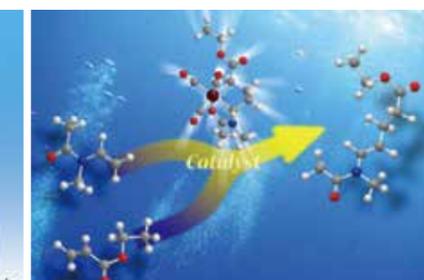
Yoshimura T, Nakatani Y, Matsuoka K, Akutsu K, Iwase H. Colloid Polym. Sci., 295(5): 793-802 (2017)
DOI: 10.1007/s00396-017-4063-3



Fixation of CO₂ by copper hydride complexes.



Creation of transition metal molecular wires.



Environmental load-reducing catalytic organic transformation reactions.





Cell-cell interaction in ciliates

HARUMOTO Terue / Professor

harumoto@cc.nara-wu.ac.jp

EDUCATION: 1992 Department of Molecular, Cellular and Animal Biology, University of Camerino, Italy
1982 Graduate School of Science, Tohoku University

ACADEMIC DEGREES: Ph.D. University of Camerino
Ph.D. Tohoku University

SUBJECT OF RESEARCH:

1. Predator-prey interaction in ciliates
2. Mechanism of induction of conjugation in ciliates
3. Stop codon recognition and eRF1s in ciliates

Kobayashi M, Miura M, Takusagawa M, Sugiura M, Harumoto T.

Zoological Science, 32(1): 53-61 (2015)

3. Single amino acid substitution alters omnipotent eRF1 of *Dileptus* to *Euplotes*-type dualpotent eRF1: standard codon usage may be advantageous in raptorial ciliates.

Li Y, Kim OTP, Ito K, Saito K, Suzai T, Harumoto T.

Protist, 164: 440-449(2013)

SELECTED PUBLICATIONS:

1. Rapid response to nutrient depletion on the expression of mating pheromone, gamone 1, in *Blepharisma japonicum*

Sugiura M, Yamanaka M, Suzaki T, Harumoto T.

Jpn.J.Protozool., 49(1,2): 27-36 (2016)

2. Two possible barriers blocking conjugation between different megakaryotypes of *Blepharisma*



Ecology and evolution of plant reproductive strategy, with focuses on the mutualism between plants and pollinators and resource utilization of plants

IDA Takashi / Associate Professor / tyida@cc.nara-wu.ac.jp

EDUCATION: 2009 Hokkaido University
2003 Hokkaido University

ACADEMIC DEGREES: Ph.D. Hokkaido University

SUBJECT OF RESEARCH:

1. Plant reproduction
2. Plant-animal interactions
3. Resource allocation

2. The consequences of demand-driven seed provisioning for sexual differences in reproductive investment in *Thalictrum occidentale* (Ranunculaceae)

Ida TY, Harder LD, Kudo G.

Journal of Ecology, 103(1): 269-280 (2015)

SELECTED PUBLICATIONS:

1. Defensive chemicals of neighboring plants limit visits of herbivorous insects: associational resistance within a plant population.

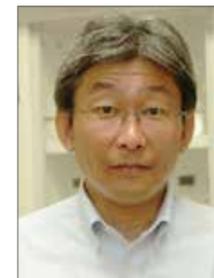
Ida TY, Takanashi K, Tamura M, Ozawa R, Nakashima Y, Ohgushi T

Ecology and Evolution, in press (2019)

3. Heating effect by perianth retention on developing achenes and implications for seed production in the alpine herb *Ranunculus glacialis*

Ida TY, Totland Ø.

Alpine Botany, 124(1): 37-47 (2014)



Genome structure in fungi. Fungal dimorphism

IWAGUCHI Shin-ichi / Associate Professor

iwaguchi@cc.nara-wu.ac.jp

EDUCATION: 1992 Graduate School of Medicine, Nagoya University
1988 Graduate School of Science, Okayama University

ACADEMIC DEGREES: Ph.D. Nagoya University

SUBJECT OF RESEARCH:

1. Chromosome rearrangement in Fungi chromosome rearrangement Electrophoretic Karyotype *Candida albicans*

2. Ploidy shift in Fungi *Candida albicans* Ploidy Loss of heterozygosity

3. Dimorphism in fungi Dimorphism Subtractive DNA cloning *Candida tropicalis*

Medical Mycology, 46(4): 655-663 (2008)

2. Chromosome translocation induced by the insertion of the URA blaster into the major repeat sequence (MRS) in *Candida albicans*

YEAST, 21: 619-634 (2004)

3. Pseudohyphal growth induced by exposure of yeast cells to subinhibitory levels of antifungal azoles in *Candida tropicalis*

Plant Morphology, 13(1): 2-10 (2001)

SELECTED PUBLICATIONS:

1. The loss of parts of chromosome 7 followed by the insertion of URA cassette into RB2 on MRS in *Candida albicans* strain CAI-4

Iwaguchi S, Suzuki M, Sakai N, Yokoyama K, Suzuki T.



Biomembrane biogenesis and transport in eukaryotic cells

KAGIWADA Satoshi / Professor

kagiwada@cc.nara-wu.ac.jp

EDUCATION: 1993 Biophysics, Graduate School of Science, Kyoto University
1988 Faculty of Science, Kyoto University

ACADEMIC DEGREES: Ph.D. Kyoto University

SUBJECT OF RESEARCH:

Structure and function of biomembrane

Kagiwada S, Uno Y, Nishii I, Noguchi T.

Algal Research, 8: 214-223 (2015)

SELECTED PUBLICATIONS:

1. Induction of intranuclear membranes by overproduction of Opi1p and Scs2p, regulators for yeast phospholipid biosynthesis, suggests a mechanism for Opi1p nuclear translocation

Masuda M, Ohshima A, Noguchi T, Kagiwada S.

Journal of Biochemistry, 159(3): 351-361 (2015)

3. Coordinated regulation by two VPS9 domain-containing guanine nucleotide exchange factors in small GTPase Rab5 signaling pathways in fission yeast.

Kagiwada S, Tsukamoto Y, Shimazu S, Takegawa K, Noguchi T, Miyamoto M.

Biochemistry and Biophysics Research Communications, 458(4): 802-809 (2015)

2. Colony sheath formation is accompanied by shell formation and release in the green alga *Botryococcus braunii* (race B)



Studies on biodiversity and the maintaining mechanisms in freshwater ecosystems

KATANO Izumi / Associate Professor

katano@cc.nara-wu.ac.jp

EDUCATION: 2004 Graduate school of Human Culture, Nara Women's University
1998 Faculty of Science, Nara Women's University

ACADEMIC DEGREES: Ph.D. Nara Women's University

SUBJECT OF RESEARCH:

1. Studies for biodiversity-environment interactions in freshwater ecosystems
2. Conservation and restoration in river ecosystems
3. Biodiversity conservation in SATOYAMA ecosystems

2. A cross-system meta-analysis reveals coupled predation effects on prey biomass and diversity.

Katano I, Doi H, Eriksson BK, Hillebrand H.

Oikos, 124: 1427-1435 (2015)

3. Stream grazers determine their crawling direction on the basis of chemical and particulate microalgal cues.

Katano I, Doi H.

Peer, J 2: e503

DOI: 10.7717/peerj.503 (2014)

SELECTED PUBLICATIONS:

1. Distribution and drift dispersal dynamics of a caddisfly grazer in response to resource abundance and its ontogeny.

Katano I, Mitsuhashi H, Doi H, Isobe Y, Oishi T.

Royal Society of Open Science, 4: 160732 (2017)



Evolution of developmental complexities in volvocine algae

NISHII Ichiro / Associate Professor

ichiron@cc.nara-wu.ac.jp

EDUCATION: 1999 Physiology, Graduate School of Science, Osaka University
1993 Department of Biology, Faculty of Science, Osaka University

ACADEMIC DEGREES: Ph.D. Osaka University

SUBJECT OF RESEARCH:

Green algae, *Volvox* and volvocine algae, multicellularity, folding of multicellular sheet, morphogenesis, germsoma differentiation

multicellular green alga *Volvox carteri*.

S E Prochnik, J Umen, A M Nedelcu, A Hallmann, S M Miller, Nishii I, P Ferris, et al.

Science, 329: 223-226 (2010)

DOI: 10.1126/science.1188800

SELECTED PUBLICATIONS:

1. Colony sheath formation is accompanied by shell formation and release in the green alga *Botryococcus braunii* (race B).

Uno Y, Nishii I, Kagiwada S, Noguchi T.

Algal Research, 8:214-223 (2015)

DOI: 10.1016/j.algal.2015.02.015

3. *Volvox*: Simple steps to developmental complexity? Nishii I, S M Miller.

Current Opinion in Plant Biology, 13: 646-653 (2010)

DOI: 10.1016/j.pbi.2010.10.005

2. Genomic analysis of organismal complexity in the



Physiological analysis of non-visual photoreception in lower vertebrates

KAWANO-YAMASHITA Emi / Assistant Professor

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EDUCATION: 2006 Graduate School of Humanities and Sciences, Nara Women's University
2001 Faculty of Science, Nara Women's University

ACADEMIC DEGREES: Ph.D. Nara Women's University

SUBJECT OF RESEARCH:

Physiological analysis of non-visual photoreception in lower vertebrates

Koyanagi M, Wada S, Kawano-Yamashita E, Hara Y, Kuraku S, Kosaka S, Kawakami K, Tamotsu S, Tsukamoto H, Shichida Y, Terakita A.

BMC Biol., 13: 73 (2015)

SELECTED PUBLICATIONS:

1. Activation of transducin by bistable pigment parapinopsin in the pineal organ of lower vertebrates.

Kawano-Yamashita E, Koyanagi M, Wada S, Tsukamoto H, Nagata T, Terakita A.

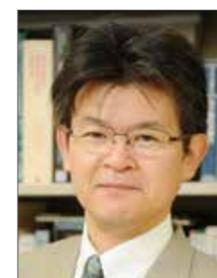
PLOS ONE, 10 (10): e0141280 (2015)

3. The evolution and diversity of pineal and parapineal photopigments.

Kawano-Yamashita E, Koyanagi M, Terakita A.

Evolution of visual and non-visual pigments. Springer, 4: 1-21 (2014)

2. Diversification of non-visual photopigment parapinopsin in spectral sensitivity for diverse pineal functions.



Plant-microbe interaction, symbiotic and non-symbiotic nitrogen fixation

SAEKI Kazuhiko / Professor

ksaeki@cc.nara-wu.ac.jp

EDUCATION: 1986 Course for Biological Chemistry, Graduate School of Science, Osaka University

ACADEMIC DEGREES: Ph.D. Osaka University

SUBJECT OF RESEARCH:

Genome biology of nitrogen-fixing symbiosis; rhizobium plant-microbe interaction symbiosis

Microbes Environ., 28(2): 275-278 (2013)

SELECTED PUBLICATIONS:

1. Hijacking of leguminous nodulation signaling by the rhizobial type III secretion system

Okazaki S, Kaneko T, Sato S, Saeki K.

Proc Natl Acad Sci U S A., 110(42): 17131-17136 (2013)

3. Rhizobial measures to evade host defense strategies and endogenous threats to persistent symbiotic nitrogen fixation: a focus on two legume-rhizobium model systems

Saeki K.

Cell Mol Life Sci., 68(8): 1327-1339 (2011)

2. Commonalities and differences among symbiosis islands of three *Mesorhizobium loti* strains

Kasai-Maita H, Hirakawa H, Nakamura Y, Kaneko T, Miki K, Maruya J, Okazaki S, Tabata S, Saeki K, Sato S.



Morphogenesis of higher plants and yeasts

SAKAGUCHI Shuichi / Associate Professor

guchi@cc.nara-wu.ac.jp

EDUCATION: 1988 Botany, Graduate School of Science, The University of Tokyo
1982 Department of Biology (Botany), Faculty of Science, The University of Tokyo

ACADEMIC DEGREES: Ph.D. The University of Tokyo

SUBJECT OF RESEARCH:

1. Microtubular structures in shoot meristematic cells
2. 3-D analysis of plant cell shapes by micro X-ray computer tomography
3. Clonal analysis of leaves using a GUS-Ac transgene
4. Correlation of phyllotaxis and localization of Pin1 auxin transporter in shoot apical meristems
5. Posture control of zygomorphic flowers by torsion of flower stalks in response to gravity
6. Role for calcium in polarized growth in yeasts

SELECTED PUBLICATIONS:

1. Microtubules direct the layered structure of angiosperm shoot apical meristems (SAMs) Sakaguchi S. *In: Atlas of plant cell structure.* (Noguchi T. et al. (ed)) Springer, 6 Cytoskeletons: pp. 134-135 (2014)
2. Ion gradients in xylem exudate and guttation fluid related to tissue ion levels along primary leaves of barley Nagai M, Ohnishi M, Uehara T, Yamagami M, Miura E, Kamakura M, Kitamura A, Sakaguchi S, Sakamoto W, Shimmen T, Fukaki H, Reid Robert J, Furukawa A, Mimura T. *Plant, Cell & Environment*, 36(10): 1826-1837 (2013)



Physiological and Biochemical studies on plant organelles, photosynthesis, and allelopathy

SAKAI Atsushi / Professor

sakai@cc.nara-wu.ac.jp

EDUCATION: 1991 Division of Plant Sciences, Graduate School of Science, The University of Tokyo
1989 Faculty of Science, The University of Tokyo

ACADEMIC DEGREES: Ph.D. The University of Tokyo

SUBJECT OF RESEARCH:

1. Allelopathy
2. Hyper Sensitive Response
3. Function of Organelle Genomes
4. Photosynthesis and Respiration in Plants

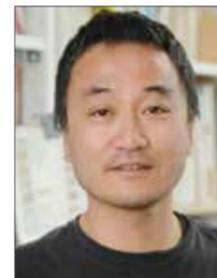
Cytologia, 80: 1-9 (2015)

3. Effects of chloroplast dysfunction on mitochondria: white sectors in variegated leaves have higher mitochondrial DNA levels and lower dark respiration rates than green sectors.

SELECTED PUBLICATIONS:

1. Monoterpenes of *Salvia leucophylla*. Sakai A, Yoshimura H. *Current Bioactive Compounds*, 8: 90-100 (2012)
2. Cytological studies on proliferation, differentiation, and death of BY-2 cultured tobacco cells Sakai A, Takusagawa M, Nio A, Sawai Y.

Toshiji H, Katsumata T, Takusagawa M, Yusa Y, Sakai A. *Protoplasma*, 249: 805-817 (2011)



Ecological and evolutionary studies on populations and communities

SATO Hiroaki / Associate Professor

scarab@cc.nara-wu.ac.jp

EDUCATION: 1987 Division of Environment Conservation, Graduate School of Environmental Science, Hokkaido University

1982 Zoological Institute, Faculty of Science, Hokkaido University

ACADEMIC DEGREES: Ph.D. Hokkaido University

SUBJECT OF RESEARCH:

1. Ecological and taxonomic studies of leafminers
2. Interactions between animals and plants
3. Behavioral and community ecology of dung beetles

mammalian but not insect herbivores

Iwamoto M, Horikawa C, Shikata M, Wasaka N., Kato T, Sato H. *Ecological Research*, 29: 455-462 (2014)

SELECTED PUBLICATIONS:

1. Differential performance of red admiral butterflies on variants of Japanese nettle populations under intense versus low pressure from sika deer. Kohyama T, Horikawa C, Kawai S, Shikata M, Kato T and Sato H. *Ecosphere*, 8: e01568, 2017
2. Stinging hairs on the Japanese nettle *Urtica thunbergiana* have a defensive function against

3. Early leaf abscission has little effect on larval mortality of *Ectoedemia cerviparadisicola* (Lepidoptera, Nepticulidae) associated with *Quercus gilva* Yukari S, Yamamoto A, Oishi M, Sato H. *Annals Entomological Society of America*, 105: 572-581 (2012)



Environmental regulation of plant growth and development

SATO-NARA Kumi / Associate Professor

kumisn@cc.nara-wu.ac.jp

EDUCATION: 1997 Division of Biology, Graduate School of Science, Tohoku University

ACADEMIC DEGREES: Ph.D. Tohoku University

SUBJECT OF RESEARCH:

1. Light regulation of aquaporins and water transport in *Arabidopsis thaliana*.
2. Environmental stresses and plant growth
3. Roles of pre-mRNA splicing and microRNAs in plant development

2. Diurnal changes in shoot water dynamics are synchronized with hypocotyl elongation in *Arabidopsis thaliana*.

Ishikawa H, Sato-Nara K, Takase T, Suzuki H. *Plant Signaling & Behavior*, 8(3) eLocation ID: e23 (2013)

SELECTED PUBLICATIONS:

1. Accumulation of TIP2;2 aquaporin during dark adaptation is partially phyA dependent in roots of *Arabidopsis* seedlings Uenishi Y, Nakabayashi Y, Tsuchihira A, Takusagawa M, Hashimoto K, Maeshima M, Sato-Nara K. *Plants*, 3: 177-195 (2014)

3. Functionally diversified members of the MIR165/6 gene family regulate ovule morphogenesis in *Arabidopsis thaliana*. Hashimoto K, Miyashima S, Sato-Nara K, Yamada T, Nakajima K. *Plant and Cell Physiology*, 59(5): 1017-1026(2018)



Studies on cell-cell interaction and the molecular mechanism of sexual reproduction in ciliates

SUGIURA Mayumi / Associate Professor / msugi@cc.nara-wu.ac.jp

EDUCATION: 2003 Graduate School of Human Culture, Nara Women's University
1998 Faculty of Science, Nara Women's University

ACADEMIC DEGREES: Ph.D. Nara Women's University

SUBJECT OF RESEARCH:

1. Molecular mechanism of induction of sexual reproduction in the ciliates
2. Sexual maturation and mating-type determination in the ciliate *Blepharisma*

2. Novel specificity of IDO enzyme involved in the biosynthesis of mating pheromone in the ciliate *Blepharisma stoltei*.

Sugiura M, Yuasa HJ, Harumoto T.
Protist 168(6): 686-696 (2017)

SELECTED PUBLICATIONS:

1. A single amino acid residue regulates the substrate affinity and specificity of indoleamine 2,3-dioxygenase.
Yuasa HJ, Sugiura M, Harumoto T.
Arch. Biochem. Biophys. 640: 1-9 (2018)

3. Alternative gene expression in type I and type II cells may enable further nuclear changes during conjugation of *Blepharisma japonicum*.

Sugiura M, Tanaka Y, Suzaki T, Harumoto T.
Protist, 163(2): 204-216 (2012)



Physiological and histological studies on photoneuroendocrine organ

TAMOTSU Satoshi / Professor
tamotsu@cc.nara-wu.ac.jp

EDUCATION: 1986 Graduate School of Medicine, Hamamatsu University School of Medicine
1979 Faculty of Science, Okayama University

ACADEMIC DEGREES: Ph.D. Hamamatsu University

SUBJECT OF RESEARCH:

1. Function and neural network of extraocular photoreceptive organ, pineal organ and deep-brain photoreceptor, in the vertebrate
2. Photosensory organs of deep-sea fishes
3. Neuroethological study for the sensory organ of the invertebrates, insects and echinoderms

Tsukamoto H, Shichida Y, Terakita A.
BMC Biol., 13(1): 73 (2015)

2. Beta-arrestin functionally regulates the non-bleaching pigment parainopsin in lamprey pineal.

Kawano-Yamashita E, Koyanagi M, Shichida Y, Oishi T, Tamotsu S, Terakita A. PLoS ONE, 6: e16402 (2011)

SELECTED PUBLICATIONS:

1. Diversification of non-visual photopigment parainopsin in spectral sensitivity for diverse pineal functions.
Koyanagi M, Wada S, Kawano-Yamashita E, Hara Y, Kuraku S, Kosaka S, Kawakami K, Tamotsu S,

3. Neuronal projections and putative interaction of multimodal inputs in the subesophageal ganglion in the blowfly, *Phormia regina*.

Maeda T, Tamotsu S, Iwasaki M, Nishimura T, Shimohigashi M, Hojo MK, Ozaki M.
Chem Senses, 39(5): 391-401 (2014)



Functional analysis of small G protein in membrane traffic, Roles of transcription factors and chrathrin assembly protein in Leukemogenesis

WATANABE Toshio / Professor / toshiwatana@cc.nara-wu.ac.jp

EDUCATION: 1987 Graduate School of Science, The University of Tokyo
1982 Biochemistry and Biophysics, Faculty of Science, The University of Tokyo

ACADEMIC DEGREES: Ph.D. The University of Tokyo

SUBJECT OF RESEARCH:

1. Roles of small G protein Arfs and their GAP in development
2. Roles of PICALM in mouse development and diseases
3. Roles of organelle during mouse development

2. Partial loss of CALM function affects gamma-secretase-mediated A β 42 production and amyloid deposition in vivo.

Kanatsu K, Hori Y, Takatori S, Watanabe T, Iwatsubo T, Tomita T.
Human Molecular Genetics, 25,3988-3997 (2016)

SELECTED PUBLICATIONS:

1. A knockout mouse model reveals a critical role of Af10-dependent H3K79 methylation in midfacial development. Ogoh H, Yamagata K, Nakao T, Sandell LL, Yamamoto A, Yamashita A, Tanga N, Suzuki M, Abe T, Kitabayashi I, Watanabe T, Sakai D.
Scientific Reports 7: 11922(2017)

3. Mice doubly-deficient in the Arf GAPs SMAP1 and SMAP2 exhibit embryonic lethality.

Sumiyoshi M, Masuda N, Tanuma N, Ogoh H, Imai E, Otsuka M, Hayakawa N, Ohno K, Matsui Y, Hara K, Gotoh R, Suzuki M, Rai S, Tanaka H, Matsumura I, Shima H, Watanabe T.
FEBS Letters, 589: 2754-2762 (2015)



Morphogenesis and functions of mammalian reproductive organs

YASUDA Keiko / Professor
ponko@cc.nara-wu.ac.jp

EDUCATION: 1982 Graduate School of Science, Nara Women's University
1980 Faculty of Science, Nara Women's University

ACADEMIC DEGREES: Ph.D. Kyoto University

SUBJECT OF RESEARCH:

Morphogenesis and functions of mammalian reproductive organs

2. Theca cell layer formation in mouse ovarian follicle culture in vitro.

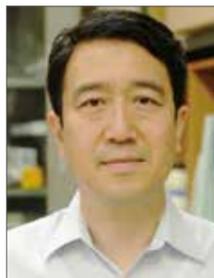
Itami S, Yasuda K, Tamotsu S, Sakai A.
Cytologia, 77: 287-288 (2012)

SELECTED PUBLICATIONS:

1. The protein phosphatase 6 catalytic subunit (Rpp6C) is indispensable for proper post-implantation embryogenesis.
Ogoh H, Tanuma N, Matsui Y, Hayakawa N, Inagaki A, Sumiyoshi M, Momoi Y, Kishimoto A, Suzuki M, Sasaki N, Ohuchi T, Nomura M, Teruya Y, Yasuda K, Watanabe T, Shima H.
Mechanisms of Development, 139: 1-9 (2016)

3. Co-culturing of follicles with interstitial cells in collagen gel reproduce follicle development accompanied with theca cell layer formation.

Itami S, Yasuda K, Matsui C, Hashiura S, Sakai A, Tamotsu S.
Reproductive Biology and Endocrinology, 9: 159-167 (2011)



Phylogeny, classification and ultrastructure of protists

YOSHIKAWA Hisao / Associate Professor

h.yoshikawa@cc.nara-wu.ac.jp

EDUCATION: 1986 Graduate School of Medicine, Kyoto Prefectural University of Medicine
1982 Biology, Graduate School of Science and Technology, Konan University

ACADEMIC DEGREES: Ph.D. Kyoto Prefectural University of Medicine

SUBJECT OF RESEARCH:

1. Molecular phylogenetic study on the genus *Blastocystis*.

2. Molecular epidemiological research on human and animal *Blastocystis* infections.

SELECTED PUBLICATIONS:

1. *Blastocystis* phylogeny among various isolates from humans to insects.

Yoshikawa H, Koyama Y, Tsuchiya E, Takami K. *Parasitology International*, 65: 750-759 (2016)

2. Molecular survey of *Blastocystis* sp. from humans and associated animals in an Indonesian community with poor hygiene.

Yoshikawa H, Tokoro M, Nagamoto T, Arayama S, Puji B S Asih, Ismail E Rozi, Din Syafruddin

Parasitology International, 65: 780-784 (2016)

3. Genetic Diversity of *Blastocystis* in livestock and zoo animals.

Alfellani M A, Taner-Mulla D., Jacob A S, Imeede C A, Yoshikawa H, Stensvold C R, Clark C G.

Protist, 154: 497-509 (2013)

4. *Blastocystis*: Pathogen or Passenger?

Mehlhorn H, Tan K S W, Yoshikawa H.

Parasitology Research Monographs 4, Springer, (Ed) (2012)



Ecological studies on freshwater and marine animals

YUSA Yoichi / Professor

yusa@cc.nara-wu.ac.jp

EDUCATION: 1995 Zoology, Graduate School of Science, Kyoto University

ACADEMIC DEGREES: Ph.D. Kyoto University

SUBJECT OF RESEARCH:

1. Ecological studies on aquatic invertebrates

2. Management of aquatic invertebrate pests

SELECTED PUBLICATIONS:

1. Roles of the seasonal dynamics of ecosystem components in fluctuating indirect interactions on a rocky shore

Wada Y, Iwasaki K, Ida T Y, Yusa Y.

Ecology, 98:1093-1103 (2017)

DOI: 10.1002/ecy.1743

2. Variation in the sex ratio of apple snails (*Pomacea* spp.) in their native range

Yusa Y, Kitaura J, Cazzaniga N J

Malacologia, 59: 239-245 (2016)

3. Plastic sexual expression in the androdioecious barnacle *Octolasmis warwickii* (Cirripedia: Pedunculata)

Wijayanti H, Yusa Y.

Biological Bulletin, 230: 51-55 (2016)



Analysis of atmospheric chemical and physical processes utilizing satellite measurements

HAYASHIDA Sachiko / Professor / sachiko@ics.nara-wu.ac.jp

EDUCATION: 1985 Graduate School of Science of Atmosphere and Hydrosphere, Nagoya University
1980 Faculty of Science, Kyoto University

ACADEMIC DEGREES: Ph.D. Nagoya University

SUBJECT OF RESEARCH:

1. Study of physical and chemical processes of atmospheric minor species

2. Remote sensing of atmospheric minor species

SELECTED PUBLICATIONS:

1. Study of lower tropospheric ozone over central and eastern China: Comparison of satellite observation with model simulation

Hayashida S, Kayaba S, Deushi M, Yamaji K, Ono A, Kajino M, Sekiyama T T, Maki T, Liu X.

"Land-Atmospheric Interactions in Asia", Book Series: Springer Remote Sensing/Photogrammetry, Editors: Vadrevu K P, Ohara T, Justice C, in press (2017)

2. Observation of ozone enhancement in the lower troposphere over East Asia from a space-borne ultraviolet spectrometer

Hayashida S, Liu X, Ono A, Yang K, Chance K.

Atmospheric Chemistry and Physics, 15: 9865-9881 (2015)

3. Methane concentrations over Monsoon Asia as observed by SCIAMACHY: Signals of methane emission from rice cultivation,

Hayashida S, Ono A, Yoshizaki S, Frankenberg C, Takeuchi W, Yan X.

Remote Sensing of Environment, 139: 246-256 (2013)



Studies on the atmospheric environment with analyses of meteorological data

KUJI Makoto / Associate Professor

makato@ics.nara-wu.ac.jp

EDUCATION: 1993 Geophysics, Graduate School of Science, Tohoku University

ACADEMIC DEGREES: Ph.D. Tohoku University

SUBJECT OF RESEARCH:

1. Remote sensing of cloud, aerosol, and water vapor

2. Atmospheric radiation and energy budget

SELECTED PUBLICATIONS:

1. Cloud fractions estimated from shipboard whole-sky camera and ceilometer observations

Kuji M, Fujimoto R, Miyagawa M, Funada R, Hori M, Kobayashi H, Koga S, Matsushita J, Shiobara M

Trans. JSASS Aerospace Tech. Japan, 14: pp.7 (2016)

2. Characteristics of aerosol properties of haze and yellow sand examined from SKYNET measurements over East China Sea

Kitakoga S, Inoue Y, Kuji M, Hayasaka T.

J. Meteor. Soc. Japan, 92A: 57-69 (2014)

3. Development of a cloud detection method from whole-sky color images

Yabuki M, Shiobara M, Nishinaka K, Kuji M.

Polar Science, 8: 315-326 (2014)

4. Relationship between trace gases and aerosols from biomass burning in Southeast Asia using satellite and emission data

Azuma Y, Nakamura M, Kuji M.

Proc. SPIE, 8523: pp.8 (2012)



Studies on environmental changes over land with analyses of satellite images

MURAMATSU Kanako / Professor / muramatu@ics.nara-wu.ac.jp

EDUCATION: 1993 Graduate school, Human Life and Environmental Science Course, Nara Women's University.

1989 Physics, Graduate school of Science, Nara Women's University

ACADEMIC DEGREES: Ph.D. Nara Women's University

SUBJECT OF RESEARCH:

Environmental Science, Remote Sensing, Vegetation change detection, Estimation of Gross Primary Production, Land Cover

southern Kyoto prefectures using multitemporal ALOS/AVNIR-2 data.

Hanaki N, Muramatsu K, Ochiai F, Soyama N, Daigo M, Tadono T.J.

The remote sensing society of Japan, 35(2): 77-88 (2015) In Japanese.

SELECTED PUBLICATIONS:

1. Determination of parameters for shrubs in the global gross primary production capacity estimation algorithm
Mineshita Y, Muramatsu K, Soyama N, Thanyapraneeekul J, Daigo M.

Journal of the Remote Sensing Society of Japan
36(3): 236-246 (2016)

3. Algorithm developing of gross primary production from it's capacity and a canopy conductance index using flux and global observing satellite data.

Muramatsu K, Furumi S, Daigo M.

Proc. of SPIE, Vol. 9637, ISBN: 9781628418477, Remote Sensing for Agriculture, Ecosystems, and Hydrology XVII 9637 (2015)

2. Determination of bamboo distribution in Nara and

Studies on planetary atmospheres using observational data and numerical simulations

NOGUCHI Katsuyuki / Assistant Professor / nogu@ics.nara-wu.ac.jp

EDUCATION: 2004 Division of Earth and Planetary Science, Graduate School of Science, The University of Tokyo

2000 Graduate School of Science, The University of Tokyo

ACADEMIC DEGREES: Ph.D. The University of Tokyo

SUBJECT OF RESEARCH:

Atmospheric Science

Noguchi K, Hayashi H.

Journal of Space Science Informatics Japan, 6: 109-116 (2017)

SELECTED PUBLICATIONS:

1. Role of stationary and transient waves in CO₂ supersaturation during northern winter in the Martian atmosphere revealed by MGS radio occultation measurements

Noguchi K, et al.

J. Geophys. Res. Planets, in press (2017)

3. Estimation of changes in the composition of the Martian atmosphere caused by CO₂ condensation from GRS Ar measurements and its application to the rederivation of MGS radio occultation measurements

Noguchi K, Ikeda S, Kuroda T, Tellmann S, Pätzold M.

J. Geophys. Res. Planets, 119(12): 2510-2521 (2014)

DOI: 10.1002/2014JE004629

2. Conversion of the MRO/MCS data into netCDF format and gridding of them for analysis and visualization by the use of GrADS



Mathematical approaches to environmental risk assessment and modeling microbial biogeochemistry

SETO Mayumi / Assistant Professor

seto@ics.nara-wu.ac.jp

EDUCATION: 2008 Division of Earth and Planetary Sciences, Graduate School of Sciences, Kyushu University

ACADEMIC DEGREES: Ph.D. Kyushu University

SUBJECT OF RESEARCH:

1. Thermodynamic and kinetic limitations on microbial metabolism and growth

2. Risk assessment for aquatic ecosystems

3. Risk assessment and cost-benefit analysis of food safety policies

2. Sample size allocation for food item radiation monitoring and safety inspection

Seto M, Uriu K.

Risk Analysis, 35(3): 409-422 (2015)

DOI: 10.1111/risa.12276

SELECTED PUBLICATIONS:

1. Perspectives for ecosystem management based on ecosystem resilience and ecological thresholds against multiple and stochastic disturbances

Sasaki T, Furukawa T, Iwasaki Y, Seto M, Mori S A.

Ecological Indicators, 57: 395-408 (2015)

DOI: 10.1016/j.ecolind.2015.05.019

3. The Gibbs free energy threshold for the invasion of a microbial population under kinetic constraints

Seto M.

Geomicrobiology Journal, 31(8): 645-653 (2014)



Modeling dynamics and evolution of lateral asymmetry in fish

TAKAHASHI Satoshi / Associate Professor

takahasi@ics.nara-wu.ac.jp

EDUCATION: 1990 Graduate School of Science, Kyoto University

ACADEMIC DEGREES: Ph.D. Kyoto University

SUBJECT OF RESEARCH:

1. Mathematical model of lateral asymmetry polymorphisms in fish

2. Dimension spectra of fractals

2. Measuring and evaluating morphological asymmetry in fish: distinct lateral dimorphism in the jaws of scale-eating cichlids

Hata H, Yasugi M, Takeuchi Y, Takahashi S, Hori M.

Ecology and Evolution, 3: 4641-4647 (2013)

SELECTED PUBLICATIONS:

1. Laterality is universal among fishes but increasingly cryptic among derived groups

Hori M, Nakajima M, Hata H, Yasugi M, Takahashi S, Nakae M, Yamaoka K, Kohda M, Kitamura J, Maehata M,

Tanaka H, Okada N, Takeuchi Y.

Zoological Science, in press (2017)

3. Sexual systems and dwarf males in barnacles: Integrating life history and sex allocation theories

Yamaguchi S, Yusa Y, Sawada K, Takahashi S.

J. Theor. Biol., 320: 1-9 (2013)



Mathematical and computational modeling of population, behavioral, and evolutionary biology

TAKASU Fugo / Professor

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EDUCATION: 1994 Graduate School of Science, Kyoto University
1990 Department of Biophysics, Faculty of Science, Kyoto University

ACADEMIC DEGREES: Ph.D. Kyoto University

SUBJECT OF RESEARCH:

1. Spatial population and evolutionary dynamics in continuous space
2. Theoretical study on avian brood parasitism
3. Evolutionary games in space

2. Spatially explicit model applied to pine wilt disease dispersal based on host plant infestation.

Tuyen Van Nguyen, Young-Seuk Park, Chang-Sik Jeoung, Won-Il Choi, Yong-Kuk Kim, Il-Hyo Jung, Nanako Shigesada, Kohkichi Kawasaki, Fugo Takasu, Tae-Soo Chon.

Ecological Modelling 353:54-62 (2017).

SELECTED PUBLICATIONS:

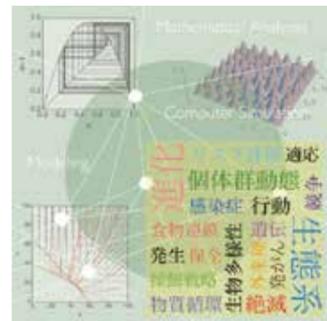
1. How can distinct egg polymorphism be maintained in the rufescent prinia (*Prinia rufescens*)-plainsive cuckoo (*Cacomantis merulinus*) interactions- a modeling approach.

Wei Liang, Canchao Yang, and Fugo Takasu.

Ecology and Evolution 1-8 (2017).

3. Ancient origin and maternal inheritance of blue cuckoo eggs. Frode Fossøy, Michael D. Sorenson, Wei Liang, Torbjørn Ekrem, Arne Moksnes, Anders P. Møller, Jarkko Rutila, Eivin Røskft, Fugo Takasu, Canchao Yang and Bård G. Stokke.

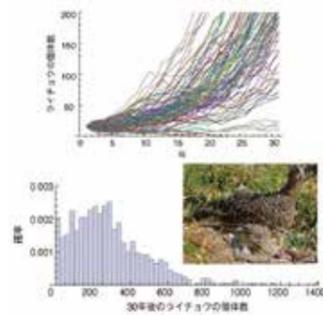
Nature Communications 7, Article number: 10272.



Modeling and simulation of life systems



Daily discussion in the laboratory



Population viability analysis of the Japanese rock ptarmigan



Field Practice of Forest Biology

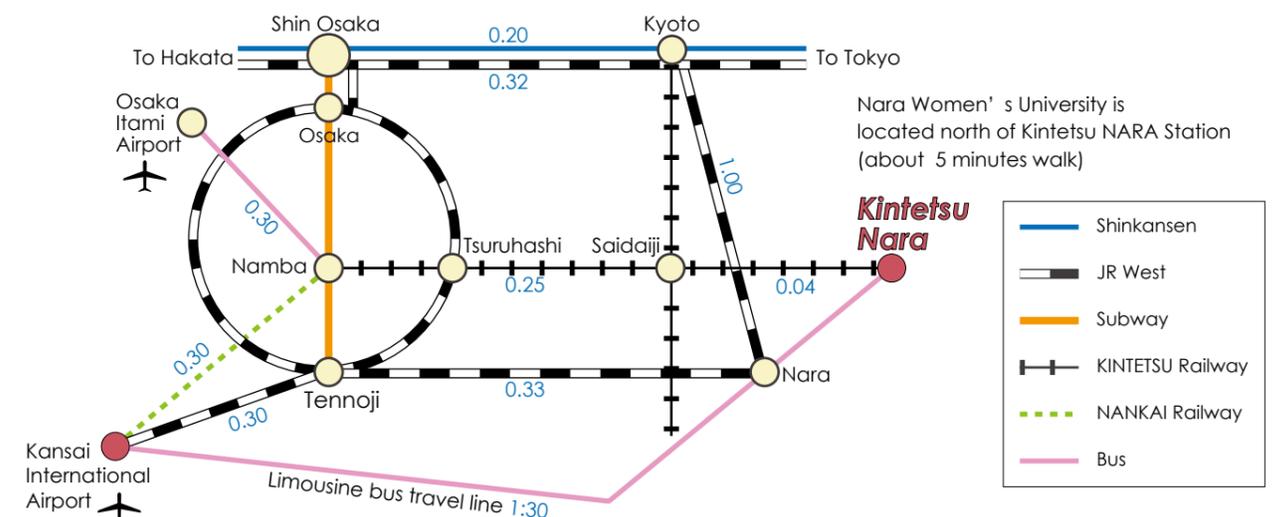
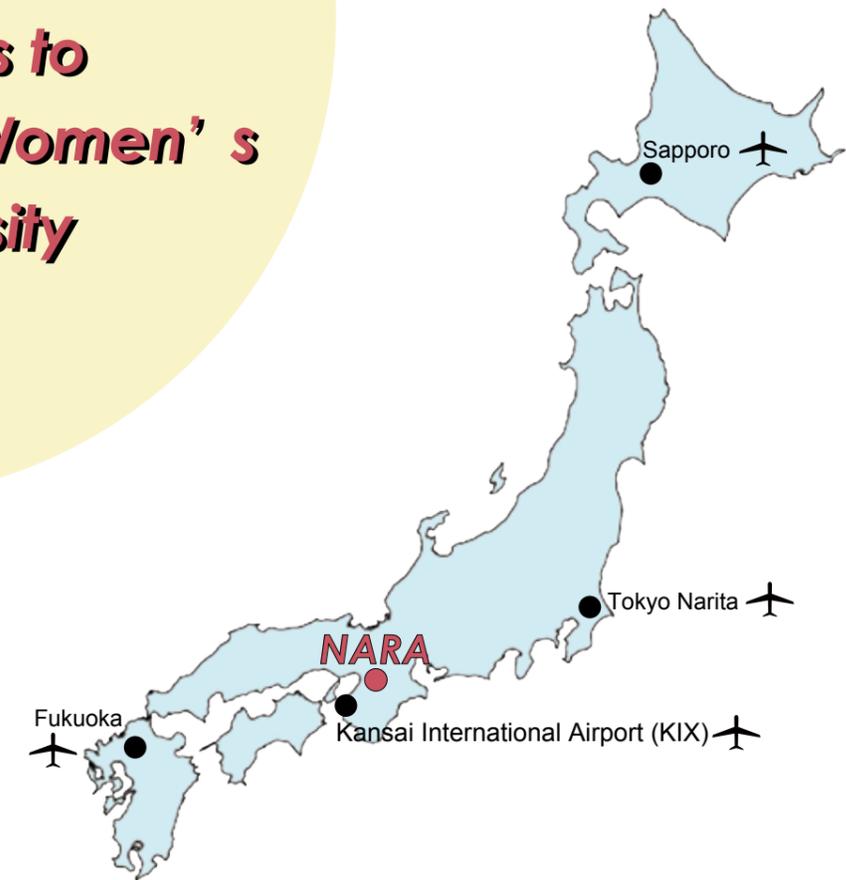


Field Practice of Marine Biology



Field Practice of Freshwater Biology

Access to Nara Women's University



Faculty of Science and Graduate School of Science

Nara Women's University

Issued in April, 2019



