

PUBLICATIONS

DIVISION OF SYNTHETIC CHEMISTRY

— Organoelement Chemistry —

Tanabe T, Mizuhata Y, Takeda N, Tokitoh N: Syntheses and Structures of Overcrowded Silanedichalcogenols and their Applications to the Syntheses of Silanedichalcogenolato Complexes, *J. Organomet. Chem.*, **694**, 353-365 (2009).

Mizuhata Y, Inamura K, Tokitoh N: Reaction of 9-Germaphenanthrene with Dimethyl Acetylenedicarboxylate: Unexpected Formation of a 1,2-Oxagermolane Derivative, *Heterocycles*, **77**, 811-816 (2009).

Tokitoh N, Tsurusaki A, Sasamori T: A Unique Thermal Reaction of 9-Anthryldiphosphene Leading to the Formation of a Triphosphirane Derivative, *Phosphorus Sulfur and Silicon and the Related Elements*, **184**, 979-986 (2009).

Tokitoh N, Kawai M, Takeda N, Sasamori T: Intramolecular Si-C and C-H Bond Activation in a Platinum Complex Leading to the Formation of the Platinacycles, *Heterocycles*, **79**, 311-318 (2009).

Tsurusaki A, Sasamori T, Tokitoh N: [4+2] Cycloaddition of 9-Anthryldiphosphene with Electron-Deficient Olefins: Transformation of a Diaryldiphosphene to Alkylaryldiphosphenes, *Organometallics*, **28**, 2604-3607 (2009).

Yuasa A, Sasamori T, Hosoi Y, Furukawa Y, Tokitoh N: Synthesis and Properties of Stable 1,2-Bis(metalloacenyl)disilenes: Novel $d-\pi$ Conjugated Systems with a Si=Si Double Bond, *Bull. Chem. Soc. Jpn.*, **82**, 793-805 (2009).

Mizuhata Y, Sasamori T, Tokitoh N: Stable Heavier Carbene Analogues, *Chem. Rev.*, **109**, 3479-3511 (2009).

Mizuhata Y, Tokitoh N: Reactions of a Kinetically Stabilized 2-Stannanaphthalene with Elemental Sulfur and Selenium: Synthesis of Novel Cyclic Chalcogenides Containing a Tin Atom, *J. Sulph. Chem.*, **30**, 385-392 (2009).

Mizuhata Y, Shinohara A, Tanabe Y, Tokitoh N: Cycloaddition Reactions of Kinetically Stabilized 9-Silaanthracene with Polycyclic Aromatic Hydrocarbons, *Chem. Eur. J.*, **15**, 8405-8408 (2009).

Kawabata T, Jiang C, Hayashi K, Tsubaki K, Yoshimura T, Majumdar S, Sasamori T, Tokitoh N: Axially Chiral Binaphthyl Surrogates with an Inner N-H-N Hydrogen Bond, *J. Am. Chem. Soc.*, **131**, 54-55 (2009).

Hayashi S, Nakanishi W, Furuta A, Drabowicz J, Sasamori T, Tokitoh N: How Does Non-covalent Se...Se=O Interaction Stabilize Selenoxides at Naphthalene 1,8-positions: Structural and Theoretical Investigations, *New J. Chem.*, **33**, 196-206 (2009).

Tsutsumi J, Sasamori T, Yoshida H, Tokitoh N, Sato N, Kato S, Muzikante I, Neilands O: A Noncentrosymmetric Crystal Structure of a Zwitterionic Compound, Pyridinium 5,7-dihydro-5,7-dioxo-6H-cyclopenta[b]pyridin-6-ylide, Realized by Weak Hydrogen Bonds, *J. Mol. Struct.*, **920**, 52-60 (2009).

Hiroto S, Aratani N, Shibata N, Higuchi Y, Sasamori T, Tokitoh N, Shinokubo H, Osuka A: Zwitterionic Corroles: Regioselective Nucleophilic Pyridination of a Doubly Linked Biscorrole, *Angew. Chem. Int. Ed.*, **48**, 2388-2390 (2009).

Hiramatsu T, Sasamori T, Yoshida H, Tokitoh N, Sato N: Reversible Polymorphic Crystalline Transition of a Push-pull-type Molecule: {4-[4,5-bis(methylsulfanyl)-1,3-dithiol-2-ylidene]Cyclohexa-2,5-dien-1-ylidene}Malononitrile (BMDCM), *J. Mol. Struct.*, **922**, 30-34 (2009).

Nakazono S, Imazaki Y, Yoo H, Yang J, Sasamori T, Tokitoh N, Cedric T, Kageyama H, Kim D, Shinokubo H, Osuka A: Regioselective Ru-Catalyzed Direct 2,5,8,11-Alkylation of Perylene Bisimides, *Chem. Eur. J.*, **15**, 7530-7533 (2009).

Ohki Y, Imada M, Murata A, Sunada Y, Ohta S, Honda M, Sasamori T, Tokitoh N, Katada M, Tatsumi K: Synthesis, Structures, and Electronic Properties of [8Fe-7S] Cluster Complexes Modeling the Nitrogenase P-Cluster, *J. Am. Chem. Soc.*, **131**, 13168-13178 (2009).

Maeda C, Kamada T, Aratani N, Sasamori T, Tokitoh N, Osuka A: Selective Formation of a Single Atropisomer of *meso-meso*-Linked Zn(II) Diporphyrin through Supramolecular Self-Assembly, *Chem. Eur. J.*, **15**, 9681-9684 (2009).

— Structural Organic Chemistry —

Margetic D, Murata Y, Komatsu K, Marinic Z: Rigid Alicyclic Molecules from Bicyclo[2.2.1]hept-2-enes (=8,9,10-Trinorbornenes) and 1,4-Dipyridin-2-ylphthalazines as Stereoselective Coupling Agents, *Helv. Chim. Acta*, **92**, 298-312 (2009).

Horsewill AJ, Panesar KS, Rols S, Johnson MR, Murata Y, Komatsu K, Mamone S, Danquigny A, Cuda F, Maltsev S, Gressel MC, Carravetta M, Levitt MH: Quantum Translator-Rotator: Inelastic Neutron Scattering of Dihydrogen Molecules Trapped inside Anisotropic Fullerene Cages, *Phys. Rev. Lett.*, **102**, [013001-1]- [013001-4] (2009).

Mamone S, Ge M, Huevonen D, Nagel U, Danquigny A, Cuda F, Gressel MC, Murata Y, Komatsu K, Levitt MH, Room T, Caravetta M: Rotor in a Cage: Infrared Spectroscopy of an Endohedral Hydrogen-fullerene Complex, *J. Chem. Phys.*, **130**, [081103-1]-[081103-4] (2009).

Kohama Y, Rachi T, Jing J, Li Z, Tang J, Kumashiro R, Izumisawa S, Kawaji H, Atake T, Sawa H, Murata Y, Komatsu K, Tanigaki K: Rotational Sublevels of an Ortho-Hydrogen Molecule Encapsulated in an Isotropic C₆₀ Cage, *Phys. Rev. Lett.*, **103**, [073001-1]-[073001-4] (2009).

— Synthetic Organic Chemistry —

Kawabata T, Jiang C, Hayashi K, Tsubaki K, Yoshimura T, Majumdar S, Sasamori T, Tokitoh N: Axially Chiral Binaphthyl Surrogates with an Inner N-H-N Hydrogen Bond, *J. Am. Chem. Soc.*, **131**, 54-55 (2009).

- Sue D, Takaishi K, Harada T, Kuroda R, Kawabata T, Tsubaki K: Synthesis of Chiral Dotriacontanaphthalenes: How Many Naphthalene Units are We Able to Elaborately Connect?, *J. Org. Chem.*, **74**, 3940-3943 (2009).
- Furuta T, Nakayama M, Suzuki H, Tajimi H, Inai M, Nukaya H, Wakimoto T, Kan T: Concise Synthesis of Chafurosides A and B, *Org. Lett.*, **11**, 2233-2236 (2009).
- Takaishi K, Sue D, Kuwahara S, Harada N, Kawabata T, Tsubaki K: Synthesis and Properties of S,R-Alternating Octinaphthalenes, *Tetrahedron*, **65**, 6135-6140 (2009).
- Hidari KIPJ, Oyama K, Ito G, Nakayama M, Inai M, Goto S, Kanai Y, Watanabe K, Yoshida K, Furuta T, Kan T, Suzuki T: Identification and Characterization of Flavonoids as Sialyltransferase Inhibitors, *Biochem. Biophys. Res. Commun.*, **382**, 609-613 (2009).
- Aihara Y, Yoshida A, Furuta T, Wakimoto T, Akizawa T, Konishi M, Kan, T: Regioselective Synthesis of Methylated Epigallocatechin Gallate via Nitrobenzenesulfonyl (Ns) Protecting Group, *Bioorg. Med. Chem. Lett.*, **19**, 4171-4174 (2009).
- Kawabata T, Furuta T: Nonenzymatic Regioselective Acylation of Carbohydrates, *Chem. Lett.*, **38**, 640-647 (2009).
- Azuma Y, Imanishi M, Yoshimura T, Kawabata T, Futaki S: Cobalt(II)-Responsive DNA Binding of a GCN4-bZIP Protein Containing Cysteine Residues Functionalized with Iminodiacetic Acid, *Angew. Chem. Int. Ed.*, **48**, 6853-6856 (2009).
- Kawabata T: Asymmetric Synthesis of Amino Acids with a Tetrasubstituted Carbon Center via Memory of Chirality, *ACS Symposium Series 1009 "Asymmetric Synthesis and Application of α -Amino Acids"*, 31-56 (2009).
- Tanima D, Imamura Y, Kawabata T, Tsubaki K: Development of Highly Sensitive and Selective Molecules for Detection of Spermidine and Spermine, *Org. Biomol. Chem.*, **7**, 4689-4694 (2009).
- Furuta T, Onuki H, Mochizuki M, Ito M, Inai M, Wakimoto T, Kan T: Solid-Supported Synthesis of Artificial Phospholipids, *Synlett*, 3373-3377 (2009).
- Ueda Y, Muramatsu W, Mishiro K, Furuta T, Kawabata T: Functional Group Tolerance in Organocatalytic Regioselective Acylation of Carbohydrates, *J. Org. Chem.*, **74**, 8802-8805 (2009).
- [Others]
- Kawabata T: Acylation Catalysts, *Advances in Organocatalysts, Maruoka K, Ed. Kagakudojin*, 150-161 (2009) (in Japanese).
- DIVISION OF MATERIALS CHEMISTRY**
— Chemistry of Polymer Materials —
- Tsujii Y, Nomura A, Okayasu K, Gao W, Ohno K, Fukuda T: AFM Studies on Microtribology of Concentrated Polymer Brushes in Solvents, *J. Phys. Conf. Ser.*, **184**, no. 012031 (2009).
- Ladmiraal V, Morinaga T, Ohno K, Fukuda T, Tsujii Y: Synthesis of Monodisperse Zinc Sulfide Particles Grafted with Concentrated Polystyrene Brush by Surface-initiated Nitroxide-mediated Polymerization, *Eur. Polym. J.*, **45**, 2788-2796 (2009).
- Xu C, Ohno K, Ladmiraal V, Milkie DE, Kikkawa JM, Composto RJ: Simultaneous Block Copolymer and Magnetic Nanoparticle Assembly in Nanocomposite Films, *Macromolecules*, **42**, 1219-1228 (2009).
- Goto A, Hirai N, Wakada T, Nagasawa K, Tsujii Y, Fukuda T: Reversible Chain Transfer Catalyzed Polymerization (RTCP) with Alcohol Catalysts, *ACS Symp. Ser.*, **1023**, 159-168 (2009).
- Goto A, Shinjo A, Nagasawa K, Tsujii Y, Fukuda T: Reversible Chain Transfer Catalyzed Polymerization (RTCP) Using In Situ Formed Alkyl Iodides, *Aust. J. Chem.*, **62**, 1492-1495 (2009).
- Yokota S, Matsuo K, Kitaoka T, Wariishi H: Retention and Paper-strength Characteristics of Anionic Polyacrylamides Conjugated with Carbohydrate-binding Modules, *BioRes.*, **4**, 234-244 (2009).
- Egusa S, Yokota S, Tanaka K, Esaki K, Okutani Y, Ogawa Y, Kitaoka T, Goto M, Wariishi H: Surface Modification of a Solid-state Cellulose Matrix with Lactose by a Surfactant-enveloped Enzyme in a Nonaqueous Medium, *J. Mater.Chem.*, **19**, 1836-1842 (2009).
- Yokota S, Ohta T, Kitaoka T, Ona T, Wariishi H: Preparation and Characteristics of Anionic Polyacrylamides Containing Direct Dye with a High Affinity for Cellulose, *BioRes.*, **4**, 497-508 (2009).
- Esaki K, Yokota S, Egusa S, Okutani Y, Ogawa Y, Kitaoka T, Goto M, Wariishi H: Preparation of Lactose-modified Cellulose Films by a Nonaqueous Enzymatic Reaction and their Biofunctional Characteristics as a Scaffold for Cell Culture, *Biomacromolecules*, **10**, 1265-1269 (2009).
- Yokota S, Ohta T, Kitaoka T, Ona T, Wariishi H: Preparation of Cellobiose-conjugated Polyacrylamide and its Interaction with a Cellulose Matrix for Papermaking Application, *Sen'i Gakkaishi*, **65**, 212-217 (2009).
- Yokota S, Ohta T, Kitaoka T, Wariishi H: Adsorption of Cellobiose-pendant Polymers to a Cellulose Matrix Determined by Quartz Crystal Microbalance Analysis, *BioRes.*, **4**, 1098-1108 (2009).
- Yokota S, Matsuyama K, Yamamoto H, Kitaoka T, Wariishi H: Specific Attraction at the Carboxyl Terminus of Fatty Acid/Oxidized Aluminum Interface for the Sizing Appearance of Fiber-network Materials, *Sen'i Gakkaishi*, **65**, 332-337 (2009).
- [Others]
- Ohno K: Synthesis and Applications of Fine Particles Grafted with Concentrated Polymer Brush, *Chem. Engineering*, **54**, 579-584 (2009) (in Japanese).
- Goto A: A Novel Class of Living Radical Polymerization Using Non-Transition Metal Catalysts, *Chem. Industry*, **60(2)**, 1-7 (2009) (in Japanese).
- Kitaoka T, Yokota S: Architectural Design and Functional Development of Cellulosic Nanolayers, *Bioscience & Industry*, **67**, 156-160 (2009) (in Japanese).

— Polymer Controlled Synthesis —

Yamago S, Yamada T, Togai M, Ukai Y, Kayahara E, Pan N: Synthesis of Structurally Well-Defined Telechelic Polymers by Organostibine-Mediated Living Radical Polymerization: In Situ Generation of Functionalized Chain-Transfer Agents and Selective ω -End-Group Transformations, *Chem. Eur. J.*, **15**, 1018-1029 (2009).

Hasegawa J, Kanamori K, Nakanishi K, Hanada T, Yamago S: Pore Formation in Poly(divinylbenzene) Networks Derived from Organotellurium-Mediated Living Radical Polymerization, *Macromolecules*, **42**, 1270-1277 (2009).

Kayahara E, Yamago S: Development of an Arylthiobismuthine Cocatalyst in Organobismuthine-Mediated Living Radical Polymerization: Applications for Synthesis of Ultrahigh Molecular Weight Polystyrenes and Polyacrylates, *J. Am. Chem. Soc.*, **131**, 2508-2513 (2009).

Yamago S, Ukai Y, Matsumoto A, Nakamura Y: Organotellurium-Mediated Controlled/Living Radical Polymerization Initiated by Direct C-Te Bond Photolysis, *J. Am. Chem. Soc.*, **131**, 2100-2101 (2009).

Yamago S, Kayahara E, Yamada H: Synthesis of Structurally Well-Controlled ω -Vinylidene Functionalized Poly(alkyl methacrylate)s and Polymethacrylonitrile by Organotellurium, Organostibine, and Organobismuthine-Mediated Living Radical Polymerizations, *React. Funct. Polym.*, **7**, 416-423 (2009).

Hasegawa J, Kanamori K, Nakanishi K, Hanada T, Yamago S: Rigid Crosslinked Polyacrylamide Monoliths with Well-Defined Macropores Synthesized by Living Polymerization, *Macromol. Rapid Commun.*, **30**, 986-990 (2009).

Yamago S: Precision Polymer Synthesis by Degenerative Transfer Controlled/Living Radical Polymerization Using Organotellurium, Organostibine, and Organobismuthine Chain-Transfer Agents, *Chem. Rev.*, **109**, 5051-5068 (2009).

Kawahara Y, Naruko S, Nakayama A, Wu M-C, Woo EM, Tsuji M: Morphological Studies on Single Crystals and Nanofibers of Poly(heptamethylene terephthalate), *J. Mater. Sci.*, **44**, 4705-4709 (2009).

Kawahara Y, Naruko S, Nakayama A, Wu M-C, Woo EM, Tsuji M: Stacked-Lamellar Structure of Electrospun Poly(heptamethylene terephthalate) Nanofibers, *J. Mater. Sci.*, **44**, 2137-2142 (2009).

Hirai A, Inui O, Horii F, Tsuji M: Phase Separation Behavior in Aqueous Suspensions of Bacterial Cellulose Nanocrystals Prepared by Sulfuric Acid Treatment, *Langmuir*, **25**, 497-502 (2009).

Kawahara Y, Ikegami M, Nakayama A, Tsuda Y, Kenjo S, Tsuji M: Morphological Studies on Assembling Behavior of Oligopeptides Obtained by Dissolution of Feather Keratin with Alkali, *Sen'i Gakkaishi*, **65**, 319-323 (2009).

Tosaka M, Furutani M, Tsuji M, Ikeda Y, Kohjiya S, Wititsuwannakul D, Wititsuwannakul R, Nagayama K, Danev R: Strain-Induced Crystallization of Fractionated Natural Rubber from Fresh Latex, *J. Soc. Mater. Sci., Jpn.*, **58**, 5-10 (2009) (in Japanese).

Tosaka M, Murachi Y, Tsuji M: Self-Organization of Nanoparticle Chains Using Oriented Poly(tetrafluoroethylene) Substrate, *J. Soc. Mater. Sci., Jpn.*, **58**, 41-45 (2009) (in Japanese).

Tosaka M: A Route for the Thermodynamic Description of Strain-Induced Crystallization in Sulfur-Cured Natural Rubber, *Macromolecules*, **42**, 6166-6174 (2009).

[Others]

Yamago S, Nakamura Y: Living Radical Polymerization 1. Polymerization Mechanism and Methods 1, *J. Soc. Rubber Ind. Jpn.*, **82**, 135-140 (2009) (in Japanese).

Yamago S, Nakamura Y: Living Radical Polymerization 2. Polymerization Mechanism and Methods 2, *J. Soc. Rubber Ind. Jpn.*, **82**, 363-369 (2009) (in Japanese).

Yamago S, Nakamura Y: Living Radical Polymerization 3. Synthesis of Block Copolymers and End-Functionalized Polymers by Chain-End Modification, *J. Soc. Rubber Ind. Jpn.*, **82**, 522-526 (2009) (in Japanese).

Tosaka M: Birefringence Study on Molecular Orientation of Natural Rubber During Strain-Induced Crystallization, *Kobunshi*, **58**, 726 (2009).

— Inorganic Photonics Materials —

Tokuda Y, Tanaka Y, Takahashi M, Ihara R, Yoko T: Silicophosphate/silicophosphate Hybrid Materials Prepared by Solventless Ethanol Condensation, *J. Ceram. Soc. Japan*, **117**, 842-846 (2009).

Kakiuchida H, Takahashi M, Tokuda Y, Yoko T: Rewritable Holographic Structures Formed in Organic-Inorganic Hybrid Materials by Photothermal Processing, *Adv. Funct. Mater.*, **19**, 2569-2576 (2009).

Teixeira LAV, Tokuda Y, Yoko T, Morita K: Behavior and State of Boron in CaO-SiO₂ Slags during Refining of Solar Grade Silicon, *ISIJ International*, **49**, 777-782 (2009).

Figus C, Takahashi M, Kidchob T, Yoko T, Piccinini M, Casula M, Innocenzi P: Formation of Hybrid Nano-crystals in Organic-inorganic Films from a Basic Sol, *J. Sol-Gel Sci. Technol.*, **52**, 408-414 (2009).

Yao JX, Takahashi M, Yoko T: Controlled Preparation of Macroporous TiO₂ Films by Photo Polymerization-induced Phase Separation Method and their Photocatalytic Performance, *Thin Solid Films*, **517**, 6479-6485 (2009).

— Nanospintronics —

Delmo MP, Yamamoto S, Kasai S, Ono T, Kobayashi K: Large Positive Magnetoresistive Effect in Silicon Induced by the Space-Charge Effect, *Nature*, **457**, 1112-1115 (2009).

Gondo D, Sakai Y, Fujita T, Zhang W, Mibu K, Kondou K, Kasai W, Ono T: Characterization of Local Magnetic Properties in Co₂MnSn Heusler Alloy Films and Magnetoresistance of Co₂MnSn-based Magnetic Tunnel Junctions, *J. Magn. Soc. Jpn.*, **33**, 100-104 (2009).

Seo SM, Lee KJ, Yang H, Ono T: Current-Induced Control of Spin-Wave Attenuation, *Phys. Rev. Lett.*, **102**, [147202-1]-[147202-4] (2009).

Tanigawa H, Koyama T, Yamada G, Chiba D, Kasai S, Fukami S, Suzuki T, Ohshima N, Ishiwata N, Nakatani Y, Ono T: Domain Wall Motion Induced by Electric Current in a Perpendicularly Magnetized Co/Ni Nano-Wire, *Appl. Phys. Express*, **2**, [053002-1]-[053002-3] (2009).

Yamauchi Y, Hashisaka M, Nakamura S, Chida K, Kasai S, Ono T, Leturcq R, Ensslin K, Driscoll DC, Gossard AC, Kobayashi K: Universality of Bias- and Temperature-Induced Dephasing in Ballistic Electronic Interferometers, *Phys. Rev. B (Rapid Communications)*, **79**, [161306-1]-[161306-4] (2009).

Nakamura S, Hashisaka M, Yamauchi Y, Kasai S, Ono T, Kobayashi K: Conductance Anomaly and Fano Factor Reduction in Quantum Point Contacts, *Phys. Rev. B (Rapid Communications)*, **79**, [201308-1]-[201308-4] (2009).

Bonanni V, Bisero D, Vavassori P, Gubbiotti G, Madami M, Adeyeye AO, Goolaup S, Singh N, Ono T, Spezzani C: Shape and Thickness Effects on the Magnetization Reversal of Py/Cu/Co Nanostructures, *J. Magn. Magn. Mater.*, **29**, 3038-3041 (2009).

Delmo MP, Kasai S, Kobayashi K, Ono T: Current-controlled Magnetoresistance in Silicon in Non-Ohmic Transport Regimes, *Appl. Phys. Lett.*, **95**, [132106-1]-[132106-3] (2009).

Hashisaka M, Yamauchi Y, Chida K, Nakamura S, Kobayashi K, Ono T: Noise Measurement System at Electron Temperature Down to 20 mK with Combinations of the Low Pass Filters, *Review of Scientific Instruments*, **80**, [096105-1]-[096105-2] (2009).

Sawicki M, Chiba D, Korbecka A, Nishitani Y, Majewski JA, Matsukura F, Dietl T, Ohno H: Experimental Probing of the Interplay between Ferromagnetism and Localization in (Ga, Mn)As, *Nature Physics*, **6**, 22-25 (2009).

Nishitani Y, Chiba D, Matsukura F, Ohno H: AC Susceptibility of (Ga,Mn)As Probed by the Anomalous Hall Effect, *Journal of Applied Physics*, **105**, [07C516-1]-[07C516-3] (2009).

DIVISION OF BIOCHEMISTRY — **Biofunctional Design-Chemistry** —

Futaki S: Cell-Surface Chemistry, *Chemistry*, **64**, 48-52 (2009) (in Japanese).

Sayed AEI, Futaki S, Harashima H: Delivery of Macromolecules Using Arginine-Rich Cell Penetrating Peptides: Ways to Overcome Endosomal Entrapment, *AAPS J.*, **11**, 13-22 (2009).

Guterstam P, Madani F, Hirose H, Takeuchi T, Futaki S, Andaloussi SEL, Graslund A, Langel U: Elucidating Cell-Penetrating Peptide Mechanisms of Action for Membrane Interaction, Cellular Uptake, and Translocation Utilizing the Hydrophobic Counter-Anion Pyrenebutyrate, *Biochim. Biophys. Acta*, **1788**, 2509-2517 (2009).

Nishino A, Sawa N, Onodera K, Sakamoto S, Araki Y, Nakase I, Futaki S, Inoue Y, Wada T: Studies on the Effects of Arginine Residues Introduced to Peptide Ribonucleic Acids (PRNA) on the Complex Stability with RNA, *Nucleic Acids Symp. Ser.*, **53**, 55-56 (2009).

Nakase I, Hirose H, Tanaka G, Tadokoro A, Kobayashi S, Takeuchi T, Futaki S: Cell Surface Accumulation of Flock House Virus-derived Peptide Leads to Efficient Internalization via Macropinocytosis, *Mol. Ther.*, **17**, 1868-1876 (2009).

Imanishi M, Nakamura A, Morisaki T, Futaki S: Positive and Negative Cooperativity of Modularly Assembled Zinc Fingers, *Biochem. Biophys. Res. Commun.*, **387**, 440-443 (2009).

Kurihara D, Akita H, Kudo A, Masuda T, Futaki S, Harashima H: Effect of Polyethyleneglycol Spacer on the Binding Properties of Nuclear Localization Signal-Modified Liposomes to Isolated Nucleus, *Biol. Pharm. Bull.*, **32**, 1303-1306 (2009).

Hatakeyama H, Itho E, Akita H, Oishi M, Nagasaki Y, Futaki S, Harashima H: A pH-sensitive Fusogenic Peptide Facilitates Endosomal Escape and Greatly Enhances the Gene Silencing of siRNA-containing Nanoparticles in Vitro and in Vivo, *J. Control. Release*, **139**, 127-132 (2009).

Azuma Y, Imanishi M, Yoshimura T, Kawabata T, Futaki S: Cobalt(II)-Responsive DNA Binding of a GCN4-bZIP Protein Containing Cysteine Residues Functionalized with Iminodiacetic Acid, *Angew. Chem. Int. Ed.*, **48**, 6853-6856 (2009).

Takayama K, Nakase I, Michiue H, Takeuchi T, Tomizawa K, Matsui H, Futaki S: Enhanced Intracellular Delivery Using Arginine-Rich Peptides by the Addition of Penetration Accelerating Sequences (Pas), *J. Control. Release*, **138**, 128-133 (2009).

Sakurai Y, Hatakeyama H, Akita H, Oishi M, Nagasaki Y, Futaki S, Harashima H: Efficient Short Interference RNA Delivery to Tumor Cells Using a Combination of Octaarginine, GALA and Tumor-Specific, Cleavable Polyethylene Glycol System, *Biol. Pharm. Bull.*, **32**, 928-932 (2009).

Watkins CL, Brennan P, Fegan C, Takayama K, Nakase I, Futaki S, Jones AT: Cellular Uptake, Distribution and Cytotoxicity of the Hydrophobic Cell Penetrating Peptide Sequence PFVYLI Linked to the Proapoptotic Domain Peptide PAD, *J. Control. Release*, **140**, 237-244 (2009).

Kobayashi S, Nakase I, Kawabata N, Yu H, Pujals S, Imanishi M, Giralt E, Futaki S: Cytosolic Targeting of Macromolecules Using a pH-dependent Fusogenic Peptide in Combination with Cationic Liposomes, *Bioconjug. Chem.*, **20**, 953-959 (2009).

Gao C, Izquierdo-Barba I, Nakase I, Futaki S, Ruan J, Sakamoto K, Sakamoto Y, Kuroda K, Terasaki O, Che S: Mesoporous Silica Based Delivery System for a Drug with a Peptide as a Cell-Penetrating Vector, *Microporous and Mesoporous Materials*, **122**, 201-207 (2009).

Watkins CL, Schmaljohann D, Futaki S, Jones AT: Low Concentration Thresholds of Plasma Membranes for Rapid Energy-Independent Translocation of a Cell Penetrating Peptide, *Biochem. J.*, **420**, 179-189 (2009).

Inomata K, Ohno A, Tochio H, Isogai S, Tenno T, Nakase I, Takeuchi T, Futaki S, Ito Y, Hiroaki H, Shirakawa M: High-resolution Multi-dimensional NMR Spectroscopy of Proteins in Human Cells, *Nature*, **458**, 106-110 (2009).

Takayama K, Tadokoro A, Pujals S, Nakase I, Giralt E, Futaki S: Novel System to Achieve One-Pot Modification of Cargo Molecules with Oligoarginine Vectors for Intracellular Delivery, *Bioconjug. Chem.*, **20**, 249-257 (2009).

Nakase I, Gallis I, Takatani-Nakase T, Oh S, Lacoste E, Singh N P, Goodlett DR, Tanaka S, Futaki S, Lai H, Sasaki T: Transferrin Receptor-dependent Cytotoxicity of Artemisinin? Transferrin Conjugates on Prostate Cancer Cells and Induction of Apoptosis, *Cancer Lett.*, **274**, 290-298 (2009).

Wada T, Sawa N, Sato H, Futaki S, Inoue Y: Effects of Arginine Residue Introduction upon Interaction and Complexation Behavior of Peptide Ribonucleic Acids (PRNAs) with RNA: Synthesis and Properties of Alpha-Containing Arginine., *Nucleic Acids Symp. Ser.*, **52**, 673-674 (2008).

Takayama K, Suehisa Y, Fujita T, Nguyen J, Futaki S, Yamamoto A, Kiso Y, Hayashi Y: Oligoarginine-Based Prodrugs with Self-Cleavable Spacers for Caco-2 Cell Permeation, *Chem. Pharm. Bull.*, **56**, 1515-1520 (2008).

— Chemistry of Molecular Biocatalysts —

Ikeuchi H, Meyer ME, Ding Y, Hiratake J, Richards NGJ: A Critical Electrostatic Interaction Mediates Inhibitor Recognition by Human Asparagine Synthetase, *Bioorg. Med. Chem.*, **17**, 6641-6650 (2009).

Ogata M, Hidari KIPJ, Kozaki W, Murata T, Hiratake J, Park EY, Suzuki T, Usui T: Molecular Design of Spacer-N-Linked Sialoglycopolypeptide as Polymeric Inhibitors Against Influenza Virus Infection, *Biomacromolecules*, **10**, 1894-1903 (2009).

— Molecular Biology —

Matsuyama T, Satoh M, Nakata R, Aoyama T, Inoue H: Functional Expression of Miraculin, a Taste-Modifying Protein in *Escherichia coli*, *J. Biochem.*, **145**, 445-450 (2008).

Aoyama T: Phospholipid Signaling in Root Hair Development, *Root Hairs, Excellent Tools for the Study of Plant Molecular Cell Biology* (eds., Emons A.M.C., Ketelaar T, Springer, Berlin Heidelberg New York), 171-189 (2009).

[Others]

Kusano H, Aoyama T: Mechanism Establishing and Sustaining the Polarity in Root Hair Morphogenesis: Focusing on Phospholipid Signaling, *Tanpakushitu Kakusan Koso*, **54**, 649-655 (2009) (in Japanese).

— Chemical Biology —

Jung D, Shimogawa H, Kwon Y, Mao Q, Sato S, Kamisuki S, Kigoshi H, Uesugi M: Wrenchnolol Derivative Optimized for Gene Activation in Cells, *J. Am. Chem. Soc.*, **131**(13), 4774-4782 (2009).

Yamazoe S, Shimogawa H, Sato S, Esko JD, Uesugi M: A Dumbbell-Shaped Small Molecule that Promotes Cell Adhesion and Growth, *Chem. Biol.*, **16**(7), 773-782 (2009).

Kamisuki S, Mao Q, Abu-Elheiga L, Gu Z, Kugimiya A, Kwon Y, Shinohara T, Kawazoe Y, Sato S, Asakura K, Choo H, Sakai J, Wakil SJ, Uesugi M: A Small Molecule that Blocks Fat Synthesis by Inhibiting the Activation of SREBP, *Chem. Biol.*, **16**(8), 882-892 (2009).

[Others]

Sato S, Murata A, Uesugi M: Chemical Genetics of Marine Natural Products, *Cell Engineering*, **28**(4), 332-337 (2009) (in Japanese).

Uesugi M, Osada H, Kojima H, Murata O: Efficient Construction and Use of Chemical Library, *Pharmacia*, **45**(10), 965-970 (2009) (in Japanese).

DIVISION OF ENVIRONMENTAL CHEMISTRY —Molecular Materials Chemistry—

Yamada T, Kaji H: Planarity of Triphenylamine Moieties of a Typical Hole-Transport Material for OLEDs, *N,N'*-Diphenyl-*N,N'*-di (*m*-tolyl) benzidine (TPD), in the Amorphous State, *J. Mol. Struct.*, **927**, 82-87 (2009).

Saito A, Miyajima T, Nakashima M, Fukushima T, Kaji H, Matano Y, Imahori H: Acenaphtho [1,2-*c*] Phosphole P-Oxide: A Phosphole-Naphthalene π -Conjugated System with High Electron Mobility, *Chem. Eur. J.*, **15**, 10000-10004 (2009).

Nishiyama Y, Fukushima T, Takami K, Kusaka Y, Kaji H: Characterization of Local Structures in Amorphous and Crystalline Tris (8-hydroxyquinoline) Aluminum (III) (Alq₃) by Solid-State ²⁷Al MQMAS NMR Spectroscopy, *Chem. Phys. Lett.*, **471**, 80-84 (2009).

Hirai A, Inui O, Horii F, Tsuji M: Phase Separation Behavior in Aqueous Suspensions of Bacterial Cellulose Microfibrils Prepared by the Sulfuric-Acid Treatment, *Langmuir*, **25**, 497-502 (2009).

—Hydrospheric Environment Analytical Chemistry—

Nakagawa Y, Fildaus ML, Norisuye K, Sohrin Y, Irisawa K, Hirata T: Precise Isotope Analysis of Mo in Seawater Using Multiple Collector-Inductively Coupled Mass Spectrometry with a Chelating Resin Column Preconcentration Method, *Anal. Chem.*, **80**, 9213-9219 (2008).

Mukai H, Sohrin Y: 4,5-Bis (diphenylphosphinoyl) -1,2,3,-triazolo Ligand: Studies on Metal Complex Formations in Liquid-liquid Distribution System, *Inorg. Chim. Acta*, **362**, 4526-4533 (2009).

Hojo M, Ueda T, Hamada H, Chen Z, Umetani S: Conductometric Studies on Higher Ion-aggregation from Lithium Fluoroalkanoates in Propylene Carbonate and *N,N*-dimethylformamide, *J. Mol. Liquids*, **145**, 24-32 (2009).

Nakatsuka S, Okamura K, Takeda S, Nishioka J, Fildaus ML, Norisuye K, Sohrin Y: Behaviors of Dissolved and Particulate Co, Ni, Cu, Zn, Cd and Pb during a Mesoscale Fe-Enrichment Experiment (SEEDS II) in the Western North Pacific, *Deep-Sea Res. II*, **56**, 2822-2838 (2009).

[Others]

Fildaus ML, Nakagawa Y, Norisuye K, Sohrin Y: Marine Geochemistry of Zr, Hf, Nb, Ta, Mo and W, *Transaction of the RIOCI*, **22**, 3-6 (2009).

Norisuye K: GEOTRACES Intercalibration Cruise in the Atlantic Ocean, *Transaction of the RIOCI*, **22**, 13-18 (2009) (in Japanese).

Sohrin Y: Enough Oxygen in the Hydrosphere?, *Chemistry*, **64**, 47-51 (2009) (in Japanese).

Sohrin Y (Edited by Kanzaki Y) : Determination of Ultra Trace Elements in Seawater, *Recent Developments on Ion Exchange Technology*, 178-181 (2009) (in Japanese).

Sohrin Y (Edited by Hayashi T) : Metallome-Proteome Interaction in Marine Ecosystem, *Toward Reforestation*, 74-86 (2009) (in Japanese).

—Solution and Interface Chemistry—

Matubayasi N: Free-Energy Analysis of Solvation with the Method of Energy Representation, *Calorimetry (Netsu-Sokutei)*, **36**, 165-172 (2009) (in Japanese).

Matubayasi N: Free-Energy Analysis of Solvation with the Method of Energy Representation, *Frontiers in Bioscience*, **14**, 3536-3549 (2009).

Yoshida K, Matubayasi N, Nakahara M: Self-Diffusion Coefficients for Water and Organic Solvents in Extremely Low-Density Supercritical States, *J. Mol. Liq.*, **147**, 96-101 (2009).

Takahashi H, Matubayasi N, Nakano M: A Quantum Chemical Approach to Free Energy Calculation for Chemical Reactions in Condensed System: Combination of a Quantum Chemical Method with a Theory of Statistical Mechanics, *Challenges and Advances in Computational Chemistry and Physics*, **6**, 455-505 (2008).

Takahashi H, Ohno H, Kishi R, Nakano M, Matubayasi N: Computation of the Free Energy Change Associated with One-Electron Reduction of Coenzyme Immersed in Water: A Novel Approach within the Framework of the Quantum Mechanical/Molecular Mechanical Method Combined with the Theory of Energy Representation, *J. Chem. Phys.*, **129**, [205103-1]-[205103-14] (2008).

Yoshida K, Matubayasi N, Nakahara M: Self-Diffusion Coefficients for Water and Organic Solvents at High-Temperatures along the Coexistence Curve, *J. Chem. Phys.*, **129**, [214501-1]-[214501-9] (2008).

Yasaka Y, Wakai C, Matubayasi N, Nakahara M: Water as an In-situ NMR Indicator for Impurity Acids in Ionic Liquids, *Analytical Chemistry*, **81**, 400-407 (2008).

—Molecular Microbial Science—

Kawamoto J, Kurihara T, Yamamoto K, Nagayasu M, Tani Y, Mihara H, Hosokawa M, Baba T, Sato SB, Esaki N: Eicosapentaenoic Acid Plays a Beneficial Role in Membrane Organization and Cell Division of a Cold-Adapted Bacterium, *Shewanella livingstonensis* Ac10, *J. Bacteriol.*, **191**, 632-640 (2009).

Jitsumori K, Omi R, Kurihara T, Kurata A, Mihara H, Miyahara I, Hirotsu K, Esaki N: X-Ray Crystallographic and Mutational Studies of Fluoroacetate Dehalogenase from *Burkholderia* sp. Strain FA1, *J. Bacteriol.*, **191**, 2630-2637 (2009).

Kamachi T, Nakayama T, Shitamichi O, Jitsumori K, Kurihara T, Esaki N, Yoshizawa K: The Catalytic Mechanism of Fluoroacetate Dehalogenase: a Computational Exploration of Biological Dehalogenation, *Chemistry*, **15**, 7394-7403 (2009).

Nakamura T, Yamaguchi A, Kondo H, Watanabe H, Kurihara T, Esaki N, Hirono S, Tanaka S: Roles of K151 and D180 in L-2-Haloacid Dehalogenase from *Pseudomonas* sp. YL: Analysis by Molecular Dynamics and *Ab Initio* Fragment Molecular Orbital Calculations, *J. Comput. Chem.*, **30**, 2625-2634 (2009).

Goto M, Yamauchi T, Kamiya N, Miyahara I, Yoshimura T, Mihara H, Kurihara T, Hirotsu K, Esaki N: Crystal Structure of a Homolog of Mammalian Serine Racemase from *Schizosaccharomyces pombe*: *J. Biol. Chem.*, **284**, 25944-25952 (2009).

Tobe R, Mihara H, Kurihara T, Esaki N: Identification of Proteins Interacting with Selenocysteine Lyase, *Biosci. Biotechnol. Biochem.*, **73**, 1230-1232 (2009).

Omori T, Mihara H, Kurihara T, Esaki N: Occurrence of Phosphatidyl-D-Serine in the Rat Cerebrum, *Biochem. Biophys. Res. Commun.*, **382**, 415-418 (2009).

Yamauchi T, Goto M, Wu HY, Uo T, Yoshimura T, Mihara H, Kurihara T, Miyahara I, Hirotsu K, Esaki N: Serine Racemase with Catalytically Active Lysinoalanyl Residue, *J. Biochem.*, **145**, 421-424 (2009).

Imai T, Mihara T, Kurihara T, Esaki N: Selenocysteine Is Selectively Taken Up by Red Blood cells, *Biosci. Biotechnol. Biochem.*, **73**, 2746-2748 (2009).

[Others]

Yasuda HM, Ueda M, Okano K, Mihara H, Esaki N: Enzymatic Synthesis of Unnatural Amino Acids, *Asymmetric Synthesis and Application of α -Amino Acids*, **1009**, 357-737 (2009).

Kurihara T, Kawamoto J, Esaki N: Proteins and Phospholipids Involved in Cold-adaptation of Psychrotrophic Bacteria, *Seikagaku*, **81**, 1072-1079 (2009) (in Japanese).

Kurihara T: Function of Phospholipids Containing Polyunsaturated Fatty Acids in Cold-adapted Bacteria, *Seikagaku*, **81**, 716-719 (2009) (in Japanese).

Kurihara T, Esaki N: Cold-active Enzymes, *Chemical Engineering of Japan*, **73**, 324-327 (2009) (in Japanese).

Kurihara T: Production of a Chiral Organohalogen Compound by Using a Novel Enzyme Catalyzing Asymmetric Reduction, *Bioscience & Industry*, **67**, 161-163 (2009) (in Japanese).

Kurihara T, Mihara H, Esaki N: Mechanistic Analysis of Selenium Incorporation into Proteins and its Applications, *Metal-biotechnology for Environmental Conservation and Resource Recycling*, 241-246 (2009) (in Japanese).

DIVISION OF MULTIDISCIPLINARY CHEMISTRY

—Polymer Materials Science—

Kaida R, Kaku T, Baba K, Oyadomari M, Watanabe T, Nishida K, Kanaya T, Shani Z, Shoseyov O, Hayashi T: Loosening Xyloglucan Accelerates the Enzymatic Degradation of Cellulose in Wood, *Mol. Plant*, **2**, 904-909 (2009).

Sadakane K, Onuki A, Nishida K, Koizumi S, Seto H: Hydrophobic Ions Added to a Binary Mixture of D₂O and 3-Methylpyridine, *Phys. Rev. Lett.*, **103**, [167803-1]-[167803-4] (2009).

- Kawashima K, Inoue R, Kanaya T, Matsuba G, Nishida K, Hino M: Distribution of Glass Transition Temperature T_g in a Polymer Thin Film by Neutron Reflectivity, *J. Phys.: Conf. Ser.*, **184**, [012004-1]-[012004-4] (2009).
- Ogawa H, Kanaya T, Nishida K, Matsuba G, Majewski P.J, Watkins E: Time-resolved Specular and Off-specular Neutron Reflectivity Measurements on Deuterated Polystyrene and Poly (vinylmethylether) Blend Thin Films during Dewetting Process, *J. Chem. Phys.*, **131**, [104907-1]-[104907-7] (2009).
- Inoue R, Kanaya T, Nishida K, Tsukushi I, Telling MTF, Gabrys BJ, Tyagi M, Soles C, Wu W-L: Glass Transition and Molecular Mobility in Polymer Thin Films, *Phys. Rev. E*, **80**, [031802-1]-[031802-4] (2009).
- Rahman N, Kawai T, Matsuba G, Nishida K, Kanaya T, Watanabe H, Okamoto H, Kato M, Uski A, Matsuda M, Nakajima K, Honmma N: Effect of Polylactide Stereocomplex on the Crystallization Behavior of Poly (L -lactic acid), *Macromolecules*, **42**, 4739-4745 (2009).
- Matsuba G, Zhao Y, Teratani M, Hayashi Y, Takayama Y, Ogono Y, Nishida K, Kanaya T: Oriented Structure in Isotactic Polystyrene Melt Induced by Shear Flow, *Kobunshirobunshu*, **66**, 419-427 (2009) (in Japanese).
- Sato TJ, Yamamoto O, Hiraota K, Yoshizawa H, Itoh S, Watanabe S, Asami T, Kindo K, Uwatoko Y, Kanaya T, Higashi N, Ueno K: Versatile Inelastic Neutron Spectrometer (VINS) Project for J-PARC, *Nucl. Instr. Meth. Phys. Res. A*, **600**, 143-145 (2009).
- Kanaya T, Inoue R, Kawashima K, Miyazaki T, Tsukushi I, Shibata K, Matsuba G, Nishida K, Hino M: Glassy Dynamics and Heterogeneity of Polymer Thin Films, *J. Phys. Soc. Jpn.*, **78**, [041004-1]-[041004-9] (2009).
- Hayashi Y, Matsuba G, Zhao Y, Nishida K, Kanaya T: Precursor of Shish-kebab in Isotactic Polystyrene under Shear Flow, *Polymer*, **50**, 2095-2103 (2009).
- Kubo J, Rahman N, Takahashi N, Kawai T, Matsuba G, Nishida K, Kanaya T, Yamamoto M: Improvement of Poly (vinyl alcohol) Properties by the Addition Magnesium Nitrate, *J. Appl. Polym. Sci.*, **112**, 1674-1652 (2009).
- Mondal Mojammel H, Mukherjee M, Kawashima K, Nishida K, Kanaya T: Study of Thickness Dependent Density in Ultrathin Water Soluble Polymer Films, *Macromolecules*, **42**, 732-736 (2009).
- [Others]
- Nishida K: In Situ Observation of Structure Formation in Fibers and Films, *Sen-i Gakkaishi*, **65**, 337-340 (2009) (in Japanese).
- Molecular Rheology—
- Masubuchi Y, Furuichi K, Horio K, Uneyama T, Watanabe H, Ianniruberto G, Greco F, Marrucci G: Primitive Chain Network Simulations for Entangled DNA Solutions, *J. Chem. Phys.*, **131**, [114906-1]-[114906-8] (2009).
- Kawakita H, Uneyama T, Kojima M, Morishima K, Masubuchi Y, Watanabe H: Formation of Globules and Aggregates of DNA Chains in DNA/Polyethylene Glycol/monovalent Salt Aqueous Solutions, *J. Chem. Phys.*, **131**, [094901-1]-[094901-9] (2009).
- Matsumiya Y, Inoue T, Iwashige T, Watanabe H: Dielectric Relaxation of Polymer/Carbon Dioxide Systems, *Macromolecules*, **42**, 4712-4718 (2009).
- Okuda S, Inoue Y, Masubuchi Y, Uneyama T, Hojo M: Wall Boundary Model for Primitive Chain Network Simulations, *J. Chem. Phys.*, **130**, [214907-1]-[214907-7] (2009).
- Sato H, Masubuchi Y, Watanabe H: DNA Diffusion in Aqueous Solution in Presence of Suspended Particles, *J. Polym. Sci. B Polym. Phys.*, **47**, 1103-1101 (2009).
- Uneyama T, Masubuchi Y, Horio K, Matsumiya Y, Watanabe H, Pathak JA, Roland CM: A Theoretical Analysis of Rheodielectric Response of Type-A Polymer Chains, *J. Polym. Sci. B Polym. Phys.*, **47**, 1039-1057 (2009).
- Moriya M, Roschztardt F, Nakahara Y, Saito H, Masubuchi Y, Asakura T: Rheological Properties of Native Silk Fibroins from Domestic and Wild Silkworms, and Flow Analysis in Each Spinneret by a Finite Element Method, *Biomacromolecules*, **10**, 929-935 (2009).
- Masubuchi Y, Uneyama T, Watanabe H, Ianniruberto G, Greco F, Marrucci G: Primitive Chain Network Simulations of Conformational Relaxation for Individual Molecules in the Entangled State. II. Retraction from Stretched States, *Nihon Reoroji Gakkaishi*, **37**, 65-68 (2009).
- Uneyama T: Coarse-Grained Brownian Dynamics Simulations for Symmetric Diblock Copolymer Melts Based on the Soft Dumbbell Model, *Nihon Reoroji Gakkaishi*, **37**, 81-90 (2009).
- Qiao X, Li W, Watanabe H, Sun K, Chen X: Rheological Behavior of Biocomposites of Silk Fibroin Fiber and Poly (ϵ -caprolactone): Effect of Fiber Network, *J. Polym. Sci. B Polym. Phys.*, **47**, 1957-1970 (2009).
- Watanabe H: Slow Dynamics in Homopolymer Liquids, *Polym. J.*, **41**, 929-950 (2009).
- Molecular Aggregation Analysis—
- Tsutsumi J, Sasamori T, Yoshida H, Tokitoh N, Sato N, Kato S, Muzikante I, Neilands O: A Noncentrosymmetric Crystal Structure of a Zwitterionic Compound, Pyridinium 5,7-Dihydro-5,7-dioxo-6H-cyclopenta[b]pyridin-6-ylide, Realized by Weak Hydrogen Bonds, *J. Mol. Struct.*, **920**, 52-60 (2009).
- Yoshida H, Watazu Y, Sato N, Okamoto T, Yamaguchi S: Electronic Structure of Bis(benzo)pentathienoacene in the Gas and Solid Phase: Ultraviolet Photoemission Spectroscopy and Energy Band Calculation, *Appl. Phys. A*, **95**, 185-191 (2009).
- Hiramatsu T, Sasamori T, Yoshida Y, Tokitoh N, Sato N: Reversible Polymorphic Crystalline Transition of a Push-Pull-Type Molecule: {4-[4,5-Bis (methylsulfanyl) -1,3-dithiol-2-ylidene]cyclohexa-2,5-dien-1-ylidene}malononitrile (BMDCM), *J. Mol. Struct.*, **922**, 30-34 (2009).
- Murdey R, Bouvet M, Sumimoto M, Sakaki S, Sato N: Direct Observation of the Energy Gap in Lutetium Bisphthalocyanine Thin Films, *Synth. Met.*, **159**, 1677-1681 (2009).
- Hiramatsu T, Yoshida H, Sato N: Solvent-Dependent Structural and Electronic Behaviors of a Push-Pull Molecule: {4-[4,5-Bis (methylsulfanyl)-1,3-dithiol-2-ylidene]cyclohexa-2,5-dien-1-ylidene}malononitrile *J. Phys. Chem. A*, **113**, 9174-9179 (2009).

Tsutsumi J, Yoshida H, Murdey R, Kato S, Sato N: An Accurate Calculation of Electronic Contribution to Static Permittivity Tensor for Organic Molecular Crystals on the Basis of the Charge Response Kernel Theory, *J. Phys. Chem. A*, **113**, 9207-9212 (2009).

Yoshida Y, Tanaka H, Saito G, Ouahab L, Yoshida H, Sato N: Valence-Tautomeric Ionic Liquid Composed of a Cobalt Bis (dioxolene) Complex Dianion, *Inorg. Chem.*, **48**, 9989-9991 (2009).

Tsutsumi J, Yoshida H, Murdey R, Sato N: Spontaneous Buildup of Surface Potential with a Thin Film of a Zwitterionic Molecule Giving Non-centrosymmetric Crystal Structure, *Appl. Phys. Lett.*, **95**, [182901-1]-[182901-3] (2009).

Asami K: Simulation of Dielectric Spectra of Erythrocytes with Various Shapes, *J. Phys. D: Appl. Phys.*, **42**, [135503-1]-[135503-7] (2009).

Hayashi Y, Katsumoto Y, Oshige I, Omori S, Yasuda A, Asami K: The Effects of Erythrocyte Deformability upon Hematocrit Assessed by the Conductance Method, *Phys. Med. Biol.*, **54**, 2395-2405 (2009).

[Others]

Futaki S, Asami K: Ligand-Induced Extramembrane Conformation Switch Controlling Alamethicin Assembly and the Channel Current, *Peptaibiotics*, 343-352 (2009).

—Supramolecular Biology—

Takeuchi K, Nakano Y, Kaneda M, Aizu M, Yamaguchi A, Kato U, Awano W, Kiyonaka S, Mori S, Yamamoto D, Umeda M: Changes in Temperature Preference and Energy Homeostasis in Dystroglycan Mutants., *Science*, **323**, 1740-1743 (2009).

Umeda M, Kato U: Physiological Function and Transport Machineries of Membrane Phospholipids., *J. Pharm. Sci.*, **109** (suppl.1), 18 (2009).

[Others]

Umeda M: Hunting for “Atsugari” gene, *Farumashia*, **45**, 12 (2009) (in Japanese)

ADVANCED RESEARCH CENTER FOR BEAM SCIENCE

—Particle Beam Science—

Wakita A, Iwashita Y, Shirai T, Ikegami M, Tongu H, Souda H, Mori M, Yogo A, Orimo S, Nishiuchi M, Ogura K, Sagisaka A, Ma JS, Pirozhkov A, Kiriyama H, Nakai Y, Shimomura T, Tanoue M, Akutsu A, Okada H, Motomura T, Kondo S, Kanazawa S, Sugiyama H, Daido H: Characteristics of a Laser-Produced Proton Beam Improved by a Synchronous RF Field, *Nucl. Instrum. Meth.*, **A599**, 15-19 (2009).

Nishiuchi M, Daito I, Ikegami M, Daido H, Mori S, Orimo M, Ogura K, Sagisaka A, Yogo A, Pirozhkov AS, Sugiyama H, Kiriyama H, Okada H, Kanazawa S, Kondo S, Shimomura T, Tanoue M, Nakai H, Sasao Y, Wakai D, Sakaki H, Bolton P R, Choi IW, Sung JH, Lee J, Oishi Y, Fujii T, Nemoto K, Souda H, Noda A, Iseki Y, Yoshiyuki T: Focusing and Spectral Enhancement of a Repetition-Rated Laser-Driven Divergent Multi-MeV Proton Beam Using Permanent Quadrupole Magnets, *Appl. Phys. Lett.*, **94**, [061107-1]-[061107-3] (2009).

Suda T, Wakasugi M, Emoto T, Ishii K, Ito S, Kurota K, Kuwajima A, Noda A, Shirai T, Yamae T, Tongu H, Wang S, Yano Y: First Demonstration of Electron-Scattering Using a Novel Target Developed for Short-Lived Nulaei, *Phys. Rev. Lett.*, **102**, [102501-1]-[102501-4] (2009).

Noda A, Yogo A: Laser Ion Acceleration and Its Medical Application, *J. Vac. Soc. Jpn.*, **52**, 448-454 (2009) (in Japanese).

Ikegami M, Nakamura S, Iwashita Y, Shirai T, Souda H, Tajima Y, Tanabe M, Tongu H, Itoh H, Shintaku H, Yamazaki A, Daido H, Yogo A, Orimo S, Mori M, Nishiuchi M, Ogura K, Sagisaka A, Pirozhkov AS, Kiriyama H, Kanazawa S, Kondo S, Yamamoto Y, Shimomura T, Tanoue M, Nakai Y, Akutsu A, Bolanov SV, Kimura T, Oishi Y, Nemoto K, Tajima T, Noda A: Radial Focusing and Energy Compression of a Laser-Produced Proton Beam by a Synchronous rf Field, *Phys. Rev. ST-AB*, **12**, [063501-1]-[063501-5] (2009).

Choi I.W., Kim CM, Sung JH, Lee SK, Kim IJ, Jin YY, Jeong TM, Hafz N, Pae KH, Noh YC, Ko DK, Yogo A, Pirozhkov AS, Orimo S, Sagisaka A, Nishiuchi M, Daito I, Oishi Y, Iwashita Y, Nakamura S, Nemoto K, Noda A, Daido H, Lee J: Ion Spectrometer Composed of Time-of-Flight and Thomson Parabola Spectrometers for Simultaneous Characterization of Laser-Driven Ions, *Rev. Sci. Instrum.*, **80**, [053302-1]-[053302-10] (2009).

Yogo A, Daido H, Mori M, Kiriyama H, Bulanov SV, Bolton P R, Esirkepov TZ, Ogura K, Sagisaka A, Orimo S, Nishiuchi M, Pirozhkov AS, Nagatomo H, Oishi Y, Nayuki T, Fujii T, Nemoto T, Kanazawa S, Kondo S, Okada H, Nakai Y, Akutsu A, Shimomura T, Tanoue M, Motomura T, Nakamura S, Shirai T, Iwashita Y, Noda A: Ion Acceleration Using Temporally-Controlled High-Intensity Laser Pulses, *Rev. Laser Eng.*, **37**, 449-454 (2009) (in Japanese).

Yamada M, Iwashita Y, Ichikawa M, Sugimoto T, Tongu H, Fujisawa H, Shimizu HM, Ino T, Mishima K, Taketani K, Yoshioka T, Muto S, Morishima T, Oku T, Suzuki J, Shinohara T, Sakai K, Sato H, Hirota K, Otake Y, Seki Y, Kawasaki S, Komamiya S, Kamiya Y, Otono H, Yamashita S, Geltenbort P: Development of Modulating Permanent Magnet Sextupole Lens for Focusing of Pulsed Cold Neutrons, *Physica B*, **404**, 2646-2651 (2009).

Taketani K, Mishima K, Ino K, Yoshioka T, Muto S, Morishima T, Shimizu MS, Oku T, Suzuki J, Shinohara T, Sakai K, Sato H, Hirota K, Otake Y, Kitaguchi M, Hino M, Seki Y, Iwashita Y, Yamada M, Ichikawa M, Sugimoto T, Kawasaki S, Komamiya S, Kamiya Y, Otono H, Yamashita S, Geltenbort P: Highly Polarized Very Cold Neutrons through a Permanent Magnet Quadrupole, *Physica B*, **404**, 2643-2645 (2009).

[Others]

Nakao M, Tanabe M, Souda H, Wakita A, Ishikawa T, Ikegami M, Tongu H, Shirai T, Noda A: Laser Cooling of Bunched Beam at S-LSR, *Proc. of 5th Annual Meeting of Particle Accelerator Society of Japan*, 120-122 (2008).

Noda A, Souda H, Tongu H, Nakao M, Wakita A, Tanabe M, Ishikawa T, Ikegami M, Shirai T, Noda K, Shibuya S, Fujimoto T, Iwata S, Grieser M: Present Status of Beam Physics Research Using Accelerator Facility of ICR, Kyoto University, *Proc. of 5th Annual Meeting of Particle Accelerator Society of Japan*, 52-54 (2008).

- Tongu H, Noda A, Souda H, Nakao M, Wakita A, Shirai T, Ikegami M: Study of the Residual Gas in S-LSR, *Proc. of 5th Annual Meeting of Particle Accelerator Society of Japan*, 388-390 (2008).
- Wakita A, Noda A, Shirai T, Iwashita Y, Ikegami M, Tongu H, Souda H, Mori M, Yogo A, Orimo S, Nishiuchi M, Ogura K, Sagisaka A, Ma JL, Pirozhkov A, Kiriyama H, Nakai Y, Shimomura T, Tanoue M, Akutsu A, Okada H, Motomura T, Kondo S, Kanazawa S, Sugiyama H, Daido H: Energy Compression of Laser-produced Proton Beam by the Application of a Synchronous RF Field, *Proc. of 5th Annual Meeting of Particle Accelerator Society of Japan*, 427-429 (2008).
- Souda H, Tanabe M, Nakao M, Wakita A, Ishikawa T, Ikegami M, Tongu H, Noda A, Shirai T: Trial of Three Dimensional Laser Cooling at S-LSR, *Proc. of 5th Annual Meeting of Particle Accelerator Society of Japan*, 433-435 (2008).
- Iwashita Y, Tajima T, Watanabe K, Hayano H: High Resolution Inspection Camera for Superconducting Cavity, *Proc. of 5th Annual Meeting of Particle Accelerator Society of Japan*, 206-208 (2008).
- Ichikawa M, Iwashita Y, Sugimoto T, Tongu H, Fujisawa H, Yamada M: Development of Small ECR Ion Source with Pulse Gas Valve, *Proc. of 5th Annual Meeting of Particle Accelerator Society of Japan*, 506-508 (2008).
- Yamada M, Iwashita Y, Ichikawa M, Sugimoto T, Tongu H, Fujisawa H, Shimizu HM, Ino T, Mishima K, Taketani K, Yoshioka T, Muto S, Morishita T, Oku T, Suzuki J, Shinohara T, Sakai K, Sato H, Hirota K, Otake Y, Seki Y, Kawasaki S, Komamiya S, Kamiya Y, Otono H, Yamashita S, Geltenbort P: Development of Modulating Permanent Magnet Sextupole Lens, *Proc. of 5th Annual Meeting of Particle Accelerator Society of Japan*, 948-950 (2008).
- Sugimoto T, Iwashita Y, Ichikawa M, Yamada M, Wakita A, Kazama I, Tauchi T: Development of the Continuously Adjustable Permanent Magnet Quadrupole, *Proc. of 5th Annual Meeting of Particle Accelerator Society of Japan*, 951-953 (2008).
- Noda A, Iwashita Y, Souda H, Tongu H, Wakita A, Daido H, Ikegami M, Kiriyama H, Mori M, Nishiuchi M, Ogura K, Orimo S, Sagisaka A, Yogo A, Pirozhkov A, Shirai T: Quality Improvement of Laser-produced Protons by Phase Rotation and its Possible Extension to High Energies, *Proc. of LINAC08*, 214-216 (2009).
- Yamada M, Fujisawa H, Ichikawa M, Iwashita Y, Tongu H, Geltenbort P, Hirota K, Otake Y, Sato H, Ino T, Mishima K, Morishita T, Mutou S, Shimizu HM, Taketani K, Kamiya Y, Kawasaki S, Komamiya S, Otono H, Yamashita S, Oku T, Sakai K, Shinohara T, Suzuki J, Seki Y, Yoshioka T: Development of Modulating Permanent Magnet Sextupole Lens for Focusing of Pulsed Cold Neutrons, *Proc. of LINAC08*, 263-265 (2009).
- Sugimoto T, Ichikawa M, Iwashita Y, Kazama I, Yamada M, Tauchi T: Development of the Continuously Adjustable Permanent Magnet Quadrupole for ATF2, *Proc. of LINAC08*, 524-526 (2009).
- Ichikawa M, Fujisawa H, Iwashita Y, Sugimoto T, Tongu H, Yamada M: Development of Very Small ECR Ion Source with Pulse Gas Valve, *Proc. of LINAC08*, 673-675 (2009).
- Iwashita Y, Hayano H, Watanabe K: Development of Inspection Systems for Superconducting Cavities, *Proc. of LINAC08*, 824-826 (2009).
- Laser Matter Interaction Science—
- Tokita S, Murakami M, Shimizu S, Hasida M, Sakabe S: Liquid-Cooled 24 W Mid-Infrared Er:ZBLAN Fiber Laser, *Opt. Lett.*, **34**, 3062-3064 (2009).
- Tokita S, Inoue S, Masuno S, Hasida M, Sakabe S: Single-Shot Ultrafast Electron Diffraction with a Laser-Accelerated Sub-MeV Electron Pulse, *Appl. Phys. Lett.*, **95**, 111911 (2009).
- Sakabe S, Hasida M, Tokita S, Otani K: Laser Energy Scaling Law for the Yield of Neutrons Generated by Intense Femtosecond Laser-Cluster Interactions, *Plasma and Fusion Research*, **4**, 41 (2009).
- Hasida M, Mishima H, Tokita S, Sakabe S: Non-Thermal Ablation of Expanded Polytetrafluoroethylene with an Intense Femtosecond-Pulse Laser, *Opt. Express*, **17**, 13116-13121 (2009).
- Nagashima T, Hirayama H, Shibuya K, Hangyo M, Hasida M, Tokita S, Sakabe S: Terahertz Pulse Radiation from Argon Clusters Irradiated with Intense Femtosecond Laser Pulses, *Opt. Express*, **17**, 8907-8912 (2009).
- Sakabe S, Hasida M, Tokita S, Namba S, Okamuro K: Mechanism for Self-Formation of Periodic Grating Structures on a Metal Surface by a Femtosecond Laser Pulse, *Phys. Rev. B*, **79**, 33409 (2009).
- Niki H, Kuroyanagi T, Horiuchi Y, Tokita S: Laser Isotope Separation of Zirconium for Nuclear Transmutation Process, *J. Nucl. Sci. Tech.*, **5**, 101-104 (2008).
- Electron Microscopy and Crystal Chemistry—
- Hosomizu K, Oodoi M, Umeyama T, Matano Y, Yoshida K, Isoda S, Isosomppi M, Tkachenko NV, Lemmetyinen H, Imahori H: Substituent Effects of Porphyrins on Structures and Photo-physical Properties of Amphiphilic Porphyrin Aggregates, *J. Phys. Chem. B*, **112**, 16517-16524 (2008).
- Terada S, Asayama K, Tsujimoto M, Kurata H, Isoda S: Chemical Shift of Electron Energy-loss Near-edge Structure on the Nitrogen K-edge and Titanium L₃-edge at TiN/Ti Interface, *Microsc. Microanal.*, **15**, 106-113 (2009).
- Haruta M, Kurata H, Komatsu H, Shimakawa Y, Isoda S: Effects of Electron Channeling in HAADF-STEM Intensity in La₂CuSnO₆, *Ultramicroscopy*, **109**, 361-367 (2009).
- Haruta M, Komatsu H, Kurata H, Shimakawa Y, Isoda S: HAADF-STEM Analysis of Layered Double Perovskite La₂CuSnO₆ Grown Epitaxially, *J. Microscopy*, **236**, 100-103 (2009).
- Kurata H, Isojima S, Kawai M, Shimakawa Y, Isoda S: Local Analysis of the Edge Dislocation Core in BaTiO₃ Thin Film by STEM-EELS, *J. Microscopy*, **236**, 128-131 (2009).
- Haruta M, Kurata H, Komatsu H, Shimakawa Y, Isoda S: Site-resolved Oxygen K-edge ELNES of the Layered Double Perovskite La₂CuSnO₆, *Phys. Rev. B*, **80**, [165123-1]-[165123-6] (2009).

Harada M, Kimura Y, Saijo K, Ogawa T, Isoda S: Photochemical Synthesis of Silver Particles in Tween 20/Water/Ionic Liquid Microemulsions, *J. Colloid Interface Sci.*, **339**, 373-381 (2009).

Kira A, Umeyama T, Matano Y, Yoshida K, Isoda S, Park JK, Kim D, Imahori H: Supramolecular Donor-Acceptor Heterojunctions by Vectorial Stepwise Assembly of Porphyrins and Coordination Bonded Fullerene Arrays for Photocurrent Generation, *JACS*, **131**, 3198-3200 (2009).

Tsuruoka T, Furukawa S, Takashima Y, Yoshida K, Isoda S, Kitagawa S: Nanoporous Nanorods Fabricated by Coordination Modulation and Oriented Attachment Growth, *Angew. Chem. Int. Ed.*, **48**, 1-6 (2009).

Wang JB, Shen YF, Kessel S, Fernandes P, Yoshida K, Yagai S, Kurth DC, Mohwald H, Nakanishi T: Self-Assembly Made Durable: Water-Repellent Materials Formed by Cross-Linking Fullerene Derivatives, *Angew. Chem. Int. Ed.*, **48**, 2166-2170 (2009).

Yoshida K, Isoda S, Kamata T: Epitaxial Orientation of Dimethyl Glyoximatoplatinum(II) on Various Substrates, *Crystal Growth & Design*, **9**, 2582-2587 (2009).

[Others]

Adachi M, Jiu J, Isoda S, Mori Y, Uchida F: Dye-Sensitized Solar Cells Using Highly Crystallized One-Dimensional Titania Nanocrystals, *Nanocrystals: Properties, Preparation and Applications*, Nova Science Publisher Inc., 3-14 (2009).

Kabuto C, Akine S, Nemoto T, Kwon E: Release of Software (Yadokari-XG 2009) for Crystal Structure Analyses, *J. Cryst. Soc. Jpn.*, **51**, 218-224 (2009).

—Structural Molecular Biology—

Yamauchi T, Goto M, Wu H-Y, Uo T, Yoshimura T, Mihara H, Kurihara T, Miyahara I, Hirotsu K, Esaki N: Serine Racemase with Catalytically Active Lysinoalanyl Residue, *J. Biochem.*, **145**, 421-424 (2009).

Goto M, Yamauchi T, Kamiya N, Miyahara I, Yoshimura T, Mihara H, Kurihara T, Hirotsu K, Esaki N: Crystal Structure of a Homolog of Mammalian Serine Racemase from *Schizosaccharomyces pombe*, *J. Biol. Chem.*, **284**, 25944-25952 (2009).

[Others]

Hata Y, Fujii T, Yoshida M, Oikawa T: Structure of Maleylacetate Reductase from *Rhizobium* sp. Strain MTP-10005, *Abstract of AsCA'09 Conference of the Asian Crystallographic Association*, 102 (2009).

Hata Y, Fujii T, Oikawa T, Soda K: Psychrophilic Tetrameric Malate Dehydrogenase Has No Intersubunit Ion-pairs, *Abstract of the 6th Asian Biophysics Association Symposium*, 75 (2009).

INTERNATIONAL RESEARCH CENTER FOR ELEMENTS SCIENCE

—Organic Main Group Chemistry—

Hatakeyama T, Kondo Y, Fujiwara Y, Takaya H, Ito S, Nakamura E, Nakamura M: Iron-Catalysed Fluoroaromatic Coupling Reactions under Catalytic Modulation with 1,2-Bis(diphenylphosphino)benzene, *Chem. Commun.*, 1216-1218 (2009).

Yashio K, Kawahata M, Danjo H, Yamaguchi K, Nakamura M, Imamoto T: Construction of Optically Active Multimetallic Systems of Rhodium(I), Palladium(II), and Ruthenium(II) with a P-chiral Tetrakisphosphine Ligand, *J. Organomet. Chem.*, **694**, 97-102 (2009).

Ishizuka K, Ando D, Watanabe T, Nakamura M: Threo-2-(2,6-Dimethoxyphenoxy)-1-(4-ethoxy-3-methoxyphenyl)propane-1,3-diol., *Acta Cryst. Section E*, **E65**, o1389-o1390 (2009).

Tsuji H, Tanaka I, Endo K, Yamagata K, Nakamura M, Nakamura E: Indium-Catalyzed [1 + n] Annulation Reaction between β -Ketoester and α,ω -Diyne, *Org. Lett.*, **11**, 1845-1847 (2009).

Ito S, Fujiwara Y, Nakamura E, Nakamura M: Iron-Catalyzed Cross-Coupling of Alkyl Sulfonates with Arylzinc Reagents, *Org. Lett.*, **11**, 4306-4309 (2009).

Hatakeyama T, Nakagawa N, Nakamura M: Iron-Catalyzed Negishi Coupling toward an Effective Olefin Synthesis, *Org. Lett.*, **11**, 4496-4499 (2009).

Noda D, Sunada Y, Hatakeyama T, Nakamura M, Nagashima H: Effect of TMEDA on Iron-catalyzed Coupling Reactions of ArylMgX with Alkyl Halides, *J. Am. Chem. Soc.*, **131**, 6078-6079 (2009).

Hatakeyama T, Hashimoto S, Ishizuka K, Nakamura M: Highly Selective Biaryl Cross-Coupling Reactions between Aryl Halides and Aryl Grignard Reagents: A New Catalyst Combination of N-Heterocyclic Carbenes and Iron, Cobalt, and Nickel Fluorides, *J. Am. Chem. Soc.*, **131**, 11949-11963 (2009).

Takaya H, Ito M, Murahashi S: Rhenium-Catalyzed Addition of Carbonyl Compounds to the Carbon-Nitrogen Triple Bonds of Nitriles: Alpha-C-H Activation of Carbonyl Compounds, *J. Am. Chem. Soc.*, **131**, 10824-10825 (2009).

Kreutz J, Li L, Roach S, Hatakeyama T, Ismagilov RF: Laterally Mobile, Functionalized Self-Assembled Monolayers at the Fluorous-aqueous Interface in a Plug Based Microfluidic System: Characterization and Testing with Membrane Protein Crystallization, *J. Am. Chem. Soc.*, **131**, 6042-6043 (2009).

—Advanced Solid State Chemistry—

Kawai M, Ito K, Shimakawa Y: Resistance Switching in a Single-Crystalline NiO Thin Film Grown on a Pt_{0.8}Ir_{0.2} Electrode, *Appl. Phys. Lett.*, **95**, [012109-1]-[012109-3] (2009).

Kawai M, Inoue S, Mizumaki M, Kawamura N, Ichikawa N, Shimakawa Y: Reversible Changes of Epitaxial Thin Films from Perovskite LaNiO₃ to Infinite-Layer Structure LaNiO₂, *Appl. Phys. Lett.*, **94**, [082102-1]-[082102-3] (2009).

Yamamoto S, Kasai N, Shimakawa Y: Preparation of Monodisperse and Spherical Rutile VO₂ Fine Particles, *Chem. Mater.*, **21**, 198-200 (2009).

Long Y, Saito T, Tohyama T, Oka K, Azuma M, Shimakawa Y: Intermetallic Charge Transfer in A-Site-Ordered Double Perovskite BiCu₃Fe₄O₁₂, *Inorg. Chem.*, **48**, 8489-8492 (2009).

Mizumaki M, Saito T, Shiraki H, Shimakawa Y: Orbital Hybridization and Magnetic Coupling of the A-Site Cu Spins in CaCu₃B₄O₁₂ (B = Ti, Ge, and Sn) Perovskites, *Inorg. Chem.*, **48**, 3499-3501 (2009).

- Nishimura K, Azuma M, Hirai S, Takano M, Shimakawa Y: Synthesis and Physical Properties of Double Perovskite $\text{Pb}_2\text{FeReO}_6$, *Inorg. Chem.*, **48**, 5962-5966 (2009).
- Oka K, Azuma M, Hirai S, Belik AA, Kojitani H, Akaogi M, Takano M, Shimakawa Y: Pressure-Induced Transformation of 6H Hexagonal to 3C Perovskite Structure in PbMnO_3 , *Inorg. Chem.*, **48**, 2285-2288 (2009).
- Long Y, Saito T, Mizumaki M, Agui A, Shimakawa Y: Various Valence States of Square-Coordinated Mn in A-Site-Ordered Perovskites, *J. Amer. Chem. Soc.*, **131**, 16244-16247 (2009).
- Smirnova O, Azuma M, Kumada N, Kusano Y, Matsuda M, Shimakawa Y, Takei T, Yonesaki Y, Kinomura N: Synthesis, Crystal Structure, and Magnetic Properties of $\text{Bi}_3\text{Mn}_4\text{O}_{12}(\text{NO}_3)$ Oxynitrate Comprising $S=3/2$ Honeycomb Lattice, *J. Amer. Chem. Soc.*, **131**, 8313-8317 (2009).
- Haruta M, Komatsu H, Kurata H, Shimakawa Y, Isoda S: HAADF-STEM Analysis of Layered Double Perovskite $\text{La}_2\text{CuSnO}_6$ Grown Epitaxially, *J. Microscopy.*, **236**, 100-103 (2009).
- Kurata H, Isojima S, Kawai M, Shimakawa Y, Isoda S: Local Analysis of the Edge Dislocation Core in BaTiO_3 Thin Film by STEM-EELS, *J. Microscopy.*, **236**, 128-131 (2009).
- Ichikawa N, Imai Y, Hagiwara K, Sakama H, Azuma M, Shimakawa Y, Takano M, Kotaka Y, Yonetani M, Fujisawa H, Shimizu M, Ishikawa K, Cho Y: Ferromagnetism and Ferroelectricity in $\text{BiFeO}_3/\text{BiCrO}_3$ Artificial 1/1 Superlattice, *Mater. Res. Soc. Symp. Proc.*, **1110**, C03-15 (2009).
- Shimakawa Y, Inoue S, Kawai M, Ichikawa N, Mizumaki M, Kawamura N: Single-Crystal Thin Films of SrFeO_2 and LaNiO_2 with Infinite-Layer Structures, *Mater. Res. Soc. Symp. Proc.*, **1148**, PP07-08 (2009).
- Long Y, Hayashi N, Saito T, Azuma M, Muranaka S, Shimakawa Y: Temperature-Induced A-B Intersite Charge Transfer in an A-Site-Ordered $\text{LaCu}_3\text{Fe}_4\text{O}_{12}$ Perovskite, *Nature*, **458**, 60-63 (2009).
- Haruta M, Kurata H, Komatsu H, Shimakawa Y, Isoda S: Site-Resolved Oxygen K-Edge ELNES of the Layered Double Perovskite $\text{La}_2\text{CuSnO}_6$, *Phys. Rev. B*, **80**, [165123-1]-[165123-6] (2009).
- Mizokawa T, Morita Y, Sudayama T, Takubo K, Yamada I, Azuma M, Takano M, Shimakawa Y: Metallic versus Insulating Behavior in the A-site Ordered Perovskite Oxides $\text{ACu}_3\text{Co}_4\text{O}_{12}$ (A=Ca and Y) Controlled by Mott and Zhang-Rice Physics, *Phys. Rev. B*, **80**, [125105-1]-[125105-4] (2009).
- Haruta M, Kurata H, Komatsu H, Shimakawa Y, Isoda S: Effects of Electron Channeling in HAADF-STEM Intensity in $\text{La}_2\text{CuSnO}_6$, *Ultramicroscopy*, **109**, 361-367 (2009).
- Shimakawa Y, Takano M: Charge Disproportionation and Charge Transfer in A-site Ordered Perovskites Containing Iron, *Z. Anorg. Allg. Chem.*, **635**, 1882-1889 (2009).
- Jiang H, Kumada N, Yonesaki Y, Takei T, Kinomura N, Yashima M, Azuma M, Oka K, Shimakawa Y: Hydrothermal Synthesis of a New Double Perovskite-Type Bismuthate, $(\text{Ba}_{0.75}\text{K}_{0.14}\text{H}_{0.11})\text{BiO}_3 \cdot n\text{H}_2\text{O}$, *Jpn. J. App. Phys.*, **48**, [010216-1]-[010216-3] (2009).
- Yasui S, Nakajima M, Naganuma H, Okamura S, Nishida K, Yamamoto T, Iijima T, Azuma M, Morioka H, Saito K, Ishikawa M, Yamada T, Funakubo H: Composition Control and Thickness Dependence of {100}-Oriented Epitaxial BiCoO_3 - BiFeO_3 Films Grown by Metalorganic Chemical Vapor Deposition, *J. Appl. Phys.*, **105**, [061620-1]-[061620-5] (2009).
- Miura K, Kubota M, Azuma M, Funakubo H: Electronic and Structural Properties of $\text{BiZn}_{0.5}\text{Ti}_{0.5}\text{O}_3$, *Jpn. J. App. Phys.*, **48**, [09KF05-01]-[09KF05-04] (2009).
- Kumagai Y, Oba F, Yamada I, Azuma M, Tanaka I: First-Principles Study of Defect-Induced Potentials in $\text{Ca}_2\text{CuO}_2\text{Cl}_2$, *Phys. Rev. B*, **80**, [085120-1]-[085120-9] (2009).
- Schuster R, Pyon S, Knupfer M, Fink J, Azuma M, Takano M, Takagi H, Büchner B: Charge-Transfer Excitons in Underdoped $\text{Ca}_{2-x}\text{Na}_x\text{CuO}_2\text{Cl}_2$ Studied by Electron Energy-Loss Spectroscopy, *Phys. Rev. B*, **79**, [214517-1]-[214517-4] (2009).

—Organotransition Metal Chemistry—

- Takita R, Takada R, Jensen RS, Okazaki F, Ozawa F: Synthesis and Ligand Properties of 1-Phosphaethenyl-2-phosphanlyferrocenes, *Organometallics*, **27**, 6279-6285 (2008).
- Wakioka M, Nakajima Y, Ozawa F: Mechanism of C-P Reductive Elimination from *trans*-[Pd(CH=CHPh)Br(PMePh₂)₂], *Organometallics*, **28**, 2527-2534 (2009).
- Kameo H, Shima T, Nakajima Y, Suzuki H: Synthesis of Heterometallic Trinuclear Polyhydrido Clusters Containing Ruthenium and Osmium and Their Electronic and Structural Deviation from Homometallic Systems, *Organometallics*, **28**, 2535-2545 (2009).
- Wakioka M, Mutoh Y, Takita R, Ozawa F: A Highly Selective Catalytic System for the Cross-Coupling of (*E*)-Styryl Bromide with Benzeneboronic Acid: Application to the Synthesis of All-Trans Poly(arylenevinylene)s, *Bull. Chem. Soc. Jpn.*, **82**, 1292-1298 (2009).
- Mutoh Y, Yamamoto Y, Wakioka M, Takita R, Nakamura J, Iida T, Ozawa F: The Effects of Primary Structures on Photo-induced Insolubilization of All-cis Poly(*p*-phenylenevinylene)s in Thin Films, *Bull. Chem. Soc. Jpn.*, **82**, 1533-1537 (2009).
- Ozawa F: Structures and Catalytic Properties of Complexes Bearing a Diphosphinidene-cyclobutene Ligand, *Yuukigousei-kagakukyoukaishi*, **67**, 529-539 (2009) (in Japanese).
- Okazaki M, Takano M, Ozawa F: Redox-responsive Recombination of Carbon-Carbon Bonds on Flexible Tetrairon Cores, *J. Am. Chem. Soc.*, **131**, 1684-1685 (2009).
- Okazaki M, Yoshimura M, Takano M, Ozawa F: Redox-Active Phosphorus Ligands Bearing a [4Fe-4C] Core Substituent, *Organometallics*, **28**, 7055-7058 (2009).
- Suzuki E, Komuro T, Okazaki M, Tobita H: Synthesis and Characterization of DMAP-Stabilized Aryl(silylene) Complexes and (Arylsilyl)(DMAP) Complexes of Tungsten: Mechanistic Study on the Interconversion between These Complexes via 1,2-Aryl Migration, *Organometallics*, **28**, 1791-1799 (2009).
- Okazaki M, Hayashi A, Fu C-F, Liu S-T, Ozawa F: Synthesis, Structures, and Reactions of Dirhodium Complexes Bearing 1,2-Diphenyl-3,4-diphosphinidene-cyclobutene Ligand (DPCB), *Organometallics*, **28**, 902-908 (2009).

Nakajima Y, How Z: Rare-Earth-Metal/Platinum Heterobinuclear Complexes Containing Reactive Ln-alkyl Groups (Ln = Y, Lu): Synthesis, Structural Characterization, and Reactivity, *Organo-metallics*, **28**, 6861-6870 (2009).

[Others]

Ozawa F: Structures and Catalytic Properties of Complexes Bearing a Diphosphinidene-cyclobutene Ligand, *Yuukigouseikaig akukyokaishi*, **67**, 529-539 (2009) (in Japanese).

—Photonic Elements Science—

Yamada Y, Yasuda H, Tayagaki T, Kanemitsu Y: Temperature Dependence of Photoluminescence Spectra of Undoped and Electron-doped SrTiO₃: Crossover from Auger Recombination to Single-carrier Trapping, *Phys. Rev. Lett.*, **102**, [247401-1]-[247401-4] (2009).

Matsunaga R, Miyauchi Y, Matsuda K, Kanemitsu Y: Symmetry-induced Nonequilibrium Distributions of Bright and Dark Exciton States in Single Carbon Nanotubes, *Phys. Rev. B*, **80**, [115436-1]-[115436-6] (2009).

Miyauchi Y, Hirori H, Matsuda K, Kanemitsu Y: Radiative Lifetimes and Coherence Lengths of One-dimensional Excitons in Single-walled Carbon Nanotubes, *Phys. Rev. B*, **80**, [081410(R)-1]-[081410(R)-4] (2009).

Hirano D, Tayagaki T, Yamada Y, Kanemitsu Y: Composition Dependent Dynamics of Biexciton Localization in Al_xGa_{1-x}N Mixed Crystals, *Phys. Rev. B*, **80**, [075205-1]-[075205-4] (2009).

Tayagaki T, Fukatsu S, Kanemitsu Y: Photoluminescence Dynamics and Reduced Auger Recombination in Si_{1-x}Ge_x/Si Superlattices under High-Density Photoexcitation, *Phys. Rev. B*, **79**, [041301(R)-1]-[041301(R)-4] (2009).

Miyauchi Y, Matsuda K, Kanemitsu Y: Femtosecond Excitation Correlation Spectroscopy of Single-Walled Carbon Nanotubes: Analysis Based on Nonradiative Multiexciton Recombination Processes, *Phys. Rev. B*, **80**, [235433-1]-[235433-6] (2009).

Yamada Y, Yasuda H, Tayagaki T, Kanemitsu Y: Photocarrier Recombination Dynamics in Highly Excited SrTiO₃ Studied by Transient Absorption and Photoluminescence Spectroscopy, *Appl. Phys. Lett.*, **95**, [121112-1]-[121112-3] (2009).

Taguchi S, Ishizumi A, Tayagaki T, Kanemitsu Y: Mn-Mn Couplings in Mn-doped CdS Nanocrystals Studied by Magnetic Circular Dichroism Spectroscopy, *Appl. Phys. Lett.*, **95**, [173101-1]-[173101-3] (2009).

Yoshikawa K, Matsunaga R, Matsuda K, Kanemitsu Y: Mechanism of Exciton Dephasing in a Single Carbon Nanotube Studied by Photoluminescence Spectroscopy, *Appl. Phys. Lett.*, **94**, [093109-1]-[093109-3] (2009).

Ishizumi A, Kanemitsu Y: Blinking Behavior of Surface-Defect and Impurity Luminescence in Nondoped and Mn²⁺-Doped CdS Nanocrystals, *J. Phys. Soc. Jpn.*, **78**, [083705-1]-[083705-4] (2009).

Ueda A, Tayagaki T, Kanemitsu Y: Dynamics of Quantized Auger Recombination in CdSe Nanocrystals Studied by Femtosecond Intraband Pump-Probe Spectroscopy, *J. Phys. Soc. Jpn.*, **78**, [083706-1]-[083706-4] (2009).

BIOINFORMATICS CENTER

—Bioknowledge Systems—

Hirakawa M, Nishihara H, Kanehisa M, Okada N: Characterization and Evolutionary Landscape of AmnSINE1 in Amniota Genomes, *Gene*, **441**, 100-110 (2009).

Hashimoto K, Tokimatsu T, Kawano S, Yoshizawa AC, Okuda S, Goto S, Kanehisa M: Comprehensive Analysis of Glycosyltransferases in Eukaryotic Genomes for Structural and Functional Characterization of Glycans, *Carbohydr. Res.*, **344**, 881-887 (2009).

Shigemizu D, Araki M, Okuda S, Goto S, Kanehisa M: Extraction and Analysis of Chemical Modification Patterns in Drug Development, *J. Chem. Inf. Model.*, **49**, 1122-1129 (2009).

Kawashima T, Kawashima S, Tanaka C, Murai M, Yoneda M, Putnum NH, Rokhsar DS, Kanehisa M, Satoh N, Wada H: Domain Shuffling and the Evolution of Vertebrates, *Genome Res.*, **19**, 1393-1403 (2009).

Wheelock CE, Wheelock AM, Kawashima S, Diez D, Kanehisa M, van Erk M, Kleemann R, Haeggstrom JZ, Goto S: Systems Biology Approaches and Pathway Tools for Investigating Cardiovascular Disease, *Mol. Biosyst.*, **5**, 588-602 (2009).

Yamanishi Y, Hattori M, Kotera M, Goto S, Kanehisa M: E-zyme: Predicting Potential EC Numbers from the Chemical Transformation Pattern of Substrate-Product Pairs, *Bioinformatics*, **25**, i79-i86 (2009).

Folkersen L, Diez D, Wheelock CE, Haeggstrom JZ, Goto S, Eriksson P, Gabrielsen A: GeneRegionScan: a Bioconductor Package for Probe-level Analysis of Specific, Small Regions of the Genome., *Bioinformatics*, **25**, 1978-1979 (2009).

Wheelock CE, Goto S, Yetukuri L, D'Alexandri FL, Klukas C, Schreiber F, Oresic M: Bioinformatics Strategies for the Analysis of Lipids, *Methods Mol. Biol.*, **580**, 339-368 (2009).

Takarabe M, Shigemizu D, Kotera M, Goto S, Kanehisa M: Characterization and Classification of Adverse Drug Interactions, *Genome Informatics*, **22**, 167-175 (2009).

Tanaka M, Moriya Y, Goto S, Kanehisa M: Analysis of Lipid Biosynthesis Protein Family and Phospholipid Structural Variations, *Genome Informatics*, **22**, 191-201 (2009).

Hayes CN, Diez D, Joannin N, Kanehisa M, Wahlgren M, Wheelock CE, Goto S: Tools for Investigating Mechanisms of Antigenic Variation: New Extensions to varDB, *Genome Informatics*, **23**, 46-59 (2009).

[Others]

Aoki-Kinoshita KF, Kanehisa M: Using KEGG in the Transition from Genomics to Chemical Genomics., *Bioinformatics for Systems Biology (Krawetz S, ed.)*, Humana Press, 429-445 (2009).

Kanehisa M, Limviphuvadh V, Tanabe M: Knowledge Based Analysis of Protein Interaction Networks in Neurodegenerative Diseases, *Neuroproteomics (Alzate O, ed.)*, CRC Press, 147-162 (2009).

Hashimoto K, Kanehisa M: KEGG GLYCAN for Integrated Analysis of Pathways, Genes, and Glycan Structures., *Handbook of Glycomics (Cummings RD, Pierce JM, eds.)*, Academic Press, 197-210 (2009).

—Biological Information Networks—

Tamura T, Christian N, Takemoto K, Ebenhoeh O, Akutsu T: Analysis and Prediction of Nutritional Requirements Using Structural Properties of Metabolic Networks and Support Vector Machines, *Genome Informatics*, **22**, 176-190 (2009).

Imada T, Ota S, Nagamochi H, Akutsu T: Enumerating Stereoisomers of Tree Structured Molecules Using Dynamic Programming, *Proc. 20th International Symposium on Algorithms and Computation*, 14-23 (2009).

Akutsu T, Hayashida M, Tamura T: Integer Programming-Based Methods for Attractor Detection and Control of Boolean Networks, *Proc. The combined 48th IEEE Conference on Decision and Control and 28th Chinese Control Conference* (2009).

Cong Y, Tamura Y, Akutsu T, Ching WK: Efficient Computation of Impact Degrees for Multiple Reactions in Metabolic Networks with Cycles, *Proc. ACM Third International Workshop on Data and Text Mining in Bioinformatics*, 67-70 (2009).

Takasu A, Fukagawa D, Akutsu T: Latent Topic Extraction from Relational Table for Record Matching, *Lecture Notes in Artificial Intelligence*, **5808**, 449-456 (2009).

Akutsu T, Tamura T, Horimoto K: Completing Networks Using Observed Data, *Lecture Notes in Artificial Intelligence*, **5809**, 126-140 (2009).

Hayashida M, Akutsu T: Comparing Biological Networks via Graph Compression, *Lecture Notes in Operations Research*, **11**, 168-176 (2009).

Fukagawa D, Akutsu T, Takasu A: Constant Factor Approximation of Edit Distance of Bounded Height Unordered Trees, *Lecture Notes in Computer Science*, **5721**, 7-17 (2009).

Tamura T, Takemoto K, Akutsu T: Measuring Structural Robustness of Metabolic Networks under a Boolean Model Using Integer Programming and Feedback Vertex Sets, *Proc. 3rd International Conference on Complex, Intelligent and Software Intensive Systems*, 819-824 (2009).

Nacher JC, Ochiai T, Hayashida M, Akutsu T: A Bipartite Graph Based Model of Protein Domain Networks, *Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering*, **4**, 525-535 (2009).

Song J, Tan H, Mamhood K, Law RHP, Buckle AM, Webb GI, Akutsu T, Whisstock JC: Prodepth: Predict Residue Depth by Support Vector Regression Approach from Sequences only, *PLoS ONE*, **4**, [e7072:1]-[e7072:14] (2009).

Akutsu T, Tamura T: On Finding a Fixed Point in a Boolean Network with Maximum Indegree 2, *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences*, **E92-A**, 1771-1778 (2009).

Mouri K, Nacher JC, Akutsu T: A Mathematical Model for the Detection Mechanism of DNA Double-Strand Breaks Depending on Autophosphorylation of ATM, *PLoS ONE*, **4**, [e5131:1]-[e5131:14] (2009).

Kato Y, Akutsu T, Seki H: Dynamic Programming Algorithms and Grammatical Modeling for Protein Beta-Sheet Prediction, *Journal of Computational Biology*, **16**, 945-957 (2009).

Tamura T, Akutsu T: Algorithms for Singleton Attractor Detection in Planar and Nonplanar AND/OR Boolean Networks, *Mathematics in Computer Science*, **2**, 401-420 (2009).

Ching WK, Zhang SQ, Jiao Y, Akutsu T, Tsing NK, Wong AS: Optimal Control Policy for Probabilistic Boolean Networks with Hard Constraints, *IET Systems Biology*, **3**, 90-99 (2009).

Tamura T, Akutsu T: Detecting a Singleton Attractor in a Boolean Network Utilizing SAT Algorithms, *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences*, **E92-A**, 493-501 (2009).

Poolsap U, Kato Y, Akutsu T: Prediction of RNA Secondary Structure with Pseudoknots Using Integer Programming, *BMC Bioinformatics*, **10**, [S38:1]-[S38:11] (2009).

Kato Y, Akutsu T, Seki H: A Grammatical Approach to RNA-RNA Interaction Prediction, *Pattern Recognition*, **42**, 531-538 (2009).

Nacher JC, Hayashida M, Akutsu T: Emergence of Scale-Free Distribution in Protein-Protein Interaction Networks Based on Random Selection of Interacting Domain Pairs, *BioSystems*, **95**, 155-159 (2009).

Brown JB, Akutsu T: Identification of Novel DNA Repair Proteins via Primary Sequence, Secondary Structure, and Homology, *BMC Bioinformatics*, **10**, [25:1]-[25:22] (2009).

Nacher JC, Ochiai T, Hayashida M, Akutsu T: A Mathematical Model for Generating Bipartite Graphs and Its Application to Protein Networks, *Journal of Physics A*, **42**, [485005:1]-[485005:20] (2009).

Hayashida M, Tamura T, Akutsu T, Ching W-K, Cong Y: On Distribution and Enumeration of Attractors in Probabilistic Boolean Networks, *IET Systems Biology*, **3**, 465-474 (2009).

—Pathway Engineering—

Kayano M, Takigawa I, Shiga M, Tsuda K, Mamitsuka H: Efficiently Finding Genome-wide Three-way Gene Interactions from Transcript- and Genotype-Data, *Bioinformatics*, **25** (21), 2735-2743 (2009).

Zhu S, Zeng J, Mamitsuka H: Enhancing MEDLINE Document Clustering by Incorporating MeSH Semantic Similarity, *Bioinformatics*, **25**(15), 1944-1951 (2009).

Zhu S, Takigawa I, Zeng J, Mamitsuka H: Field Independent Probabilistic Model for Clustering Multi-Field Documents, *Information Processing and Management*, **45**(5), 555-570 (2009).

Hancock T, Mamitsuka H: A Markov Classification Model for Metabolic Pathways, *Lecture Notes in Bioinformatics (Proceedings of the Ninth Workshop on Algorithms in Bioinformatics (WABI 2009))*, **5724**, 121-132 (2009).

Wan R, Kiseleva L, Harada H, Mamitsuka H, Horton P: HAMSTER: Visualizing Microarray Experiments as a Set of Minimum Spanning Trees, *Source Code for Biology and Medicine*, **4**, 8 (2009).

Ching W-K, Li L, Chan YM, Mamitsuka H: A Study of Network-based Kernel Methods on Protein-Protein Interaction for Protein A Study of Network-based Kernel Methods on Protein-Protein Interaction for Protein Functions Prediction, *Lecture Notes in Operations Research (Proceedings of the 3rd International Symposium on Optimization and Systems Biology (OSB 2009))*, **11**, 25-32 (2009).

Wan R, Vo AN, Mamitsuka H: Efficient Probabilistic Latent Semantic Analysis through Parallelization, *Lecture Notes in Computer Science (Proceedings of the 5th Asian Information Retrieval Symposium (AIRS 2009))*, **5839**, 432-443 (2009).

Hancock T, Mamitsuka H: Semi-Supervised Graph Partitioning with Decision Trees, *Genome Informatics*, **22**, 30-40 (2009).

duVerle D, Takigawa I, Ono Y, Sorimachi H, Mamitsuka H: CaMPDB: a Resource for Calpain and Modulatory Proteolysis, *Genome Informatics*, **22**, 202-214 (2009).

Li L, Shiga M, Ching W-K, Mamitsuka H: Annotating Gene Functions with Integrative Spectral Clustering on Microarray Expressions and Sequences, *Genome Informatics*, **22**, 95-120 (2009).

Wan R, Mamitsuka H: Discovering Network Motifs in Protein Interaction Networks, *Biological Data Mining in Protein Interaction Networks*, **Chapter 8**, 117-143 (2009).

Takigawa I, Kudo M, Nakamura A: Convex Sets as Prototypes for Classifying Patterns, *Engineering Applications of Artificial Intelligence*, **vol. 22(1)**, 101-108 (2009).

Watanabe K, Shiga M, Watanabe S: Upper Bound for Variational Free Energy of Bayesian Networks, *Machine Learning*, **Vol. 75(2)**, 199 (2009).

Kayano M, Konishi S: Functional Principal Component Analysis via Regularized Gaussian Basis Expansions and Its Application to Unbalanced Data, *Journal of Statistical Planning and Inference*, **139(7)**, 2388-2398 (2009).

Natsume Y, Kadota K, Satsu H, Shimizu M: Effect of Quercetin on the Gene Expression Profile of the Mouse Intestine, *Biosci. Biotechnol. Biochem.*, **73(3)**, 722-5 (2009).

Natsume Y, Ito S, Satsu H, Shimizu M: Protective Effect of Quercetin on ER Stress Caused by Calcium Dynamics Dysregulation in Intestinal Epithelial Cells, *Toxicology*, **258(2-3)**, 164-175 (2009).

[Others]

Li L, Shiga M, Ching W-K, Mamitsuka H: Annotating Gene Functions by Spectral Clustering for Combining Gene Expressions and Sequences, *Poster and Software Demonstrations, The 20th International Conference on Genome Informatics*, **42** (2009).

Natsume-Kitatani Y, Shiga M, Mamitsuka H: Analyzing Histone Codes by a Computational Approach, *Poster and Software Demonstrations, The 20th International Conference on Genome Informatics*, **44** (2009).

Kayano M, Takigawa I, Shiga M, Tsuda K, Mamitsuka H: Genome-Wide Three-Way Gene Interactions from Transcript and Genotype Data, *Poster and Software Demonstrations, The 20th International Conference on Genome Informatics*, **45** (2009).

Nguyen H, Mamitsuka H: Gene Function Prediction via Discriminative Graph Embedding, *Poster and Software Demonstrations, The 20th International Conference on Genome Informatics*, **97** (2009).

Hancock T, Mamitsuka H: Using Local Reaction Structure to Build a Global Metabolic Network Classifier, *Poster and Software Demonstrations, The 20th International Conference on Genome Informatics*, **98** (2009).

Takigawa I, Tsuda K, Mamitsuka H: Mining Significant Substructure-Substructure Pairs in Structural Associations, *Poster and Software Demonstrations, The 20th International Conference on Genome Informatics*, **107** (2009).

du Verle D, Takigawa I, Ono Y, Sorimachi H, Mamitsuka H: CaMPDB: a Resource for Calpain and Modulatory Proteolysis, *Poster and Software Demonstrations, The 20th International Conference on Genome Informatics*, **114** (2009).

ENDOWED RESEARCH SECTION

—Water Chemistry Energy (AGC) —

Yoshida K, Matubayasi N, Nakahara M: Self-diffusion Coefficients for Water and Organic Solvents in Extremely Low-Density Supercritical States, *J. Mol. Liq.*, **147**, 96-101 (2009).

Yasaka Y, Wakai C, Matubayasi N, Nakahara M: Water as an In-situ NMR Indicator for Acid Impurities in Ionic Liquids, *Anal. Chem.*, **81**, 400-407 (2009).