LIST OF PUBLICATIONS

Department of Theoretical Studies

K. KOBAYASHI and S. NAGASE, "A Stable Unconventional Structure of $Sc_2@C_{66}$ found by Density Functional Calculations," *Chem. Phys. Lett.* **362**, 373–379 (2002).
N. TAKAGI and S. NAGASE, "Theoretical Study of an Isolable Compound with a Short Silicon-Silicon Triple Bond, $(t\mathrm{Bu_3Si})_2\mathrm{MeSiSi{\equiv}SiSiMe}(\mathrm{Si}t\mathrm{Bu_3})_2$," *Eur. J. Inorg. Chem.* 2775–2778 (2002).
N. TOKITOH, T. SASAMORI, N. TAKEDA and S. NAGASE, "Systematic Studies on Homo- and Heteronuclear Doubly Bonded Compounds of Heavier Group 15 Elements," *Phosphorus, Sulfur Silicon Relat. Elem.* **177**, 1473–1476 (2002).
K. GOTO, J. KOBAYASHI and T. KAWASHIMA, M. W. SCHMIDT and S. NAGASE, "Bonding Properties of 5-Carbaphosphatranes," *Phosphorus, Sulfur Silicon Relat. Elem.* **177**, 2037–2038 (2002).
N. TOKITOH, K. HATANO, T. SASAKI, T. SASAMORI, N. TAKEDA, N. TAKAGI and S. NAGASE, "Synthesis and Isolation of the First Germacyclopropabenzene: A Study to Elucidate the Intrinsic Factor for the Ring Deformation of Cyclopropabenzene Skeletons," *Organometallics* **21**, 4309–4311 (2002).
S. MATSUKAWA, S. KOJIMA, K. KAJIYAMA, Y. YAMAMOTO, K. -Y. AKIBA, S. RU and S. NAGASE, "Characteristic Reactions and Properties of *C*-Apical *O*-Equatorial (*O*-cis) Spirophosphoranes: Effect of the σ^*_{P-O} Orbital in the Equatorial Plane and Isolation of a Hexacoordinate Oxaphosphetane as an Internediate of the Wittig Type Reaction of 10-P-5 Phosphoranes," *J. Am. Chem. Soc.* **124**, 13154–13170 (2002).
Y. NIINO, T. WAKAHARA, T. AKASAKA, M. T. H. LIU, K. KOBAYASHI and S. NAGASE, "Photochemical Decomposition of Pyrazoline Produced in the Reaction of C_{60} with Diazoadamantane," *ITE Lett. Batt. New Tech. Med.* **3**, 82–84 (2002).
K. KOBAYASHI and S. NAGASE, "Theoretical Calculations of Vibrational Modes in Endohedral Metallofullerenes: $La@C_{82}$ and $Sc_2@C_{84}$," *Mol. Phys.* (a special issue for Prof. YOSHIMINE) **101**, 249–254 (2003).
G. M. A. RAHMAN, Y. MAEDA, T. WAKAHARA, M. KAKO, S. SATO, M. OKAMURA, T. AKASAKA, K. KOBAYASHI and S. NAGASE, "Photochemical Bissilylation of C_{70} with Disilane," *ITE Lett. Batt. New Tech. Med.* **4**, 60–66 (2003).
T. WAKAHARA, G. M. A. RAHMAN, Y. MAEDA, M. KAKO, S. SATO, M. OKAMURA, T. AKASAKA, K. KOBAYASHI and S. NAGASE, "Redox Properties of Carbosilylated and Hydrosilykated Fullerene Derivatives," *ITE Lett. Batt. New Tech. Med.* **4**, 67–73 (2003).
T. WAKAHARA, M. KAKO, Y. MAEDA, T. AKASAKA, K. KOBAYASHI and S. NAGASE, "Synthesis and Characterization of Cyclic Silicon Compounds of Fullerenes," *Curr. Org. Chem.* **7**, 927–943 (2003).
K. NAGAYOSHI, K. KITAURA, S. KOSEKI, S. RE and K. KOBAYASHI, Y. -K. CHOE and S. NAGASE, "Calculation of Packing Structure of Methanol Solid Using Ab Initio Lattice Energy at the MP2 level," *Chem. Phys. Lett.* **369**, 597–604 (2003).
J. LU, S. RE, Y. -K. CHOE, S. NAGASE, Y. ZHOU, R. HAN, L. PENG, X. ZHANG and X. ZHAO, "Theoretical Identification of Carbon Clusters C_{20}: Prevalence of the Monocyclic Isomer and Existences of the Smallest Fullerene and Bowl Isomer," *Phys. Rev. B* **67**, 125415 (7 pages) (2003).
J. LU and S. NAGASE, "Structural and Electronic Properties of Metal-Encapsulated Silicon Clusters in a Large Size Range," *Phys. Rev. Lett.* **90**, 115506 (4 pages) (2003).
J. LU and S. NAGASE, "Metal-Doped Germanium Clusters MGe_n at the Sizes of n = 12 and 10: Divergence of Growth Patterns from the MSi_n Clusters," *Chem. Phys. Lett.* **372**, 394–398 (2003).
Z. SLANINA, K. KOBAYASHI and S. NAGASE, "$Ca@C_{72}$ IPR and Non-IPR Structures; Computed Temperature Development of their Relative Concentrations," *Chem. Phys. Lett.* **372**, 810–814 (2003).
N. TAKAGI, K. YAMAZAKI and S. NAGASE, "Theoretical Investigation of Triple Bonding between Transition Metal and Main Group Elements in $(\eta^5\text{-}C_5H_5)(CO)_2M{\equiv}ER$ (M = Cr, Mo, W; E = Si, Ge, Sn, Pb; R = Terphenyl Groups)," *Bull. Korean Chem. Soc.* (a special issue) **24**, 832–836 (2003).
K. NAGAYOSHI, T. IKEDA, K. KITAURA and S. NAGASE, "Computational Procedure of Lattice Energy Using the Ab Initio MO Method," *J. Theor. Comput. Chem.* **2**, 233–244 (2003).
K. KOBAYASHI, S. NAGASE, Y. MAEDA, T. WAKAHARA and T. AKASAKA, "$La_2@C_{80}$: Is the Circular Motion of Two La Atoms Controllable by Exohedral Addition?" *Chem. Phys. Lett.* **374**, 562–566 (2003).
K. KOBAYASHI, S. NAGASE and K. -P. DINSE, "A Theoretical Study of Spin Density Distributions and Isotropic Hyperfine Couplings of N and P atoms in $N@C_{60}$, $P@C_{60}$, $N@C_{70}$, $N@C_{60}(CH_2)_6$, and $N@C_{60}(SiH_2)_6$," *Chem. Phys. Lett.* **377**, 93–98 (2003).

T. HIROYASU, M. MIKI, M. OGURA and Y. OKAMOTO, "Examination of Parallel Simulated Annealing Using Genetic Crossover," *IPSJ TOM* (in Japanese) **43**, 70–79 (2002).
C. MUGURUMA, Y. OKAMOTO and M. MIKAMI, "An Application of the Multicanonical Monte Carlo Method to the Bulk Water System," *Internet Electro. J Mol. Design* **1**, 583–592 (2002).
T. YOSHIDA, T. HIROYASU, M. MIKI, M. OGURA and Y. OKAMOTO, "Energy Minimization of Protein Tertiary Structure by Parallel Simulated Annealing Using Genetic Crossover," *Proceedings of 2002 Genetic and Evolutionary Computation Conference (GECCO 2002)* 49–51 (2002).
A. MITSUTAKE, Y. SUGITA and Y. OKAMOTO, "Replica-Exchange Multicanonical and Multicanonical

Replica-Exchange Monte Carlo Simulations of Peptides. I. Formulation and Benchmark Test," *J. Chem. Phys.* **11**8, 6664–6675 (2003).
A. MITSUTAKE, Y. SUGITA and Y. OKAMOTO, "Replica-Exchange Multicanonical and Multicanonical Replica-Exchange Monte Carlo Simulations of Peptides. II. Application to a More Complex System," *J. Chem. Phys.* **118**, 6676–6688 (2003).
T. HIROYASU, M. MIKI, S. OGURA, K. AOI, T. YOSHIDA and Y. OKAMOTO, "Atom-Level Simulations of Protein Folding," *Proceedings of the 7th World Multiconference on Systemics, Cybernetics and Informatics (SCI2003)* **Vol. XIV**, 117–122 (2003).

K. NAGAYA, Y. TERANISHI and H. NAKAMURA, "Control of Molecular Processes by a Sequence of Linearly Chirped Pulses," *J. Chem. Phys.* **117**, 9588–9604 (2002).
G. V. MIL'NIKOV and H. NAKAMURA, "Practical Implementation of the Instanton Theory, II. Decay of Metastable State Through Tunneling," *J. Chem. Phys.* **117**, 10081–10087 (2002).
H. FUJISAKI, Y. TERANISHI and H. NAKAMURA, "Control of Photodissociation Branching Using the Complete Reflection Phenomenon: Application to HI Molecule,"
J. Theor. Comput. Chem. **1**, 245–253 (2002).
S. NANBU, M. AOYAGI, H. NAKAMURA, H. KAMISAKA, W. BIAN and K. TANAKA, "Chemical Reactions in the O(^{1}D) + HCl System, I. Ab Initio Global Potential Energy Surfaces for the 1^1A',2^1A', and 1^1A'' States," *J. Theor. Comput. Chem.* **1**, 263–273 (2002).
S. NANBU, M. AOYAGI, H. NAKAMURA, H. KAMISAKA, W. BIAN and K. TANAKA, "Chemical Reactions in the O(^{1}D) + HCl System, II. Dynamics on the Ground 1^1A' State and Contributions of the Excited (1^1A'' and 2^1A') states," *J. Theor. Comput. Chem.* **1**, 275–284 (2002).
S. NANBU, M. AOYAGI, H. NAKAMURA, H. KAMISAKA, W. BIAN and K. TANAKA, "Chemical Reactions in the O(^{1}D) + HCl System, III. Quantum Dynamics on the Excited (1^1A'' and 2^1A') Potential Energy Surfaces," *J. Theor. Comput. Chem.* **1**, 285–293 (2002).
A. KONDORSKIY and H. NAKAMURA, "Photodissociation of H_2^+ and HD^+ in an Intense Laser Field," *Phys. Rev. A* **66**, 053412 (8 pages) (2002).
G. V. MIL'NIKOV and H. NAKAMURA, "Calculation of Resonances in the $dt\mu$ Molecule by the R-Matrix Method," *Phys. Rev. A* **67**, 034501 (4 pages) (2003).
G. V. MIL'NIKOV, K. YAGI, T. TAKETSUGU, H. NAKAMURA and K. HIRAO, "Tunneling Splitting in Polyatomic Molecules: Application to Malonaldehyde," *J. Chem. Phys.* **119**, 10–13 (2003).
H. NAKAMURA and E. A. SOLOVJEV, "Semiclassical Theory for the Quantum Defect Function of Diatomic Molecules," *J. Phys. B* **36**, 3697–3705 (2003).

Y. SUZUKI and Y. TANIMURA, "Two-Dimensional Spectroscopy for Two-Dimensional Rotator Coupled to a Gaussian-Markovian Noise Bath," *J. Chem. Phys.* **119**, 1650–1660 (2003).
O. KHÜN and Y. TANIMURA, "Two-Dimensional Vibrational Spectroscopy of a Double Minimum System in a Dissipative Environment," *J. Chem. Phys.* **119**, 2155–2164 (2003).

R. DEKA, D. AJITHA and K. HIRAO, "Adsorption of Small Molecules in Zeolite: A Local Hard-Soft Acid-Base Approach," *J. Phys. Chem. B* **107**, 8574–8577 (2003).
T. YANAI, H. NAKANO, T. NAKAJIMA, T. TSUNEDA, S. HIRATA, Y. KAWASHIMA, Y. NAKAO, M. KAMIYA, H. SEKINO and K. HIRAO, "UTChem- A Program for *Ab Initio* Quantum Chemistry," *Computational Science–ICCS 2003, Lecture Notes in Computer Science (Springer)* 84–95 (2003).
T. NAKAJIMA and K. HIRAO, "Douglas-Kroll Transformation to the Relativistic Many-Electron Hamiltonian," *J. Chem. Phys.* **119**, 4105–4111 (2003).
Y. SAKIMOTO, K. HIRAO and D. G. MUSAEV, "Reactivity of Ebtellur Derivatives with the Peroxynitrite Anion: Comparison with their Ebselen Analogues," *J. Phys. Chem. A* **107**, 5631–5639 (2003).
G. V. MIL'NIKOV, K. YAGI, T. TAKETSUGU, H. NAKAMURA and K. HIRAO, "Tunneling Splitting in Polyatomic Molecules: Application to Malonaldehyde," *J. Chem. Phys.* **119**, 10–13 (2003).
J. PAULOVIC, T. NAKAJIMA, K. HIRAO, R. LINDH and P. A. MALMQVIST, "Relativistic and Correlated Calculations on the Ground and Excited States of ThO," *J. Chem. Phys.* **119**, 798–805 (2003).
T. TSUNEDA, M. KAMIYA and K. HIRAO, "Regional Self-Interaction Correction of Density Functional Theory," *J. Comput. Chem.* **24**, 1592–1598 (2003).
D. AJITHA, K. HIRAO and S. PAL, "Energies and Dipole Moments of Excited States of Ozone and Ozone Radical Cation Using Fock Space Multireference Coupled-Cluster Analytical Response Approach," *Collec. Czechoslovak Chem. Commun.* **68**, 47–60 (2003).
H. YUI, T. NAKAJIMA, K. HIRAO and T. SAWADA, "Enhancement of the Stimulated Raman Scattering Derived from Intermolecular Interactions between Aromatic Moieties," *J. Phys. Chem. A* **107**, 968–973 (2003).
D. G. MUSAEV and K. HIRAO, "The Differences and Similarities in the Reactivities of Peroxynitrite Anion and Peroxynitrous Acid with Ebselen. A Theoretical Study," *J. Phys. Chem. A* **107**, 1563–1573 (2003).
D. G. MUSAEV, Y. V. GELETTII, G. L. HILL and K. HIRAO, "Can Ebselen Derivatives Catalyze the Isomerization of Peroxynitrite to Nitrate?" *J. Am. Chem. Soc.* **125**, 3877–3888 (2003).
H. A. WITEK, H. NAKANO and K. HIRAO, "Multireference Perturbation Theory with Optimized Partitioning. I.

Theoretical and Computational Aspects," *J. Chem. Phys.* **118**, 8197–8206 (2003).
H. A. WITEK, H. NAKANO and K. HIRAO, "Multireference Perturbation Theory with Optimized Partitioning. II. Applications to Molecular Systems," *J. Comput. Chem.* **24**, 1390–1400 (2003).
D. G. FEDOROV, T. NAKAJIMA and K. HIRAO, "An Ab Initio Study of Excited States of U and UF," *J. Chem. Phys.* **118**, 4970–4975 (2003).
K. YAGI, C. OYANAGI, T. TAKETSUGU and K. HIRAO, "Ab Initio Potential Energy Surface for Vibrational State of H_2CO," *J. Chem. Phys.* **118**, 1653–1660 (2003).
S. IKEDA, T. NAKAJIMA and K. HIRAO, "A Theoretical Study of Transition Metal Hydroxides: CuOH, AgOH, and AuOH," *Mol. Phys.* (Yoshimine Memorial Issue) **101**, 105–110 (2003).

T. TAKAYANAGI, "A CASPT2 Study of the Doublet Potential Energy Surface for the $CH(X^2\Pi) + N_2(X^1\Sigma_g^+)$ Reaction," *Chem. Phys. Lett.* **368**, 393–398 (2003).
T. TAKAYANAGI, "Ab Initio Calculations of Low-Lying Potential Energy Surfaces of the HHeF System," *Chem. Phys. Lett.* **371**, 675–680 (2003).
T. TAKAYANAGI and M. SHIGA, "Photodissociation of Cl_2 in Helium Clusters: An Application of Hybrid Method of Quantum Wavepacket Dynamics and Path Integral Centroid Molecular Dynamics," *Chem. Phys. Lett.* **372**, 90–96 (2003).
A. WADA, T. TAKAYANAGI and M. SHIGA, "Theoretical Simulations on Photoexcitation Dynamics of the Silver Atom Embedded in Helium Clusters," *J. Chem. Phys*. **119**, 5478–5486 (2003).

H. TORII, "The Role of Atomic Quadrupoles in Intermolecular Electrostatic Interactions of Polar and Nonpolar Molecules," *J. Chem. Phys.* **119**, 2192–2198 (2003).

T. KIMURA, N. MATSUBAYASHI, H. SATO, F. HIRATA and M. NAKAHARA, "Enthalpy and Entropy Decomposition of Free-Energy Changes for Side-Chain Conformations of Asparatic Acid and Asparagine in Acidic, Neutral, and Basic Aqueous Solutions," *J. Phys. Chem. B* **106**, 12336 (2002).
A. KOVALENKO and F. HIRATA, "Toward a Molecular Theory for the van der Waals-Maxwell Description of Fluid Phase Transitions," *J. Theor. Comput. Chem.* (Review article) **2**, 381 (2002).
T. SUMI and F. HIRATA, "A Density-Functional Theory for Polymer Liquids Based on Interaction Site Model," *J. Chem. Phys.* **118**, 2431 (2003).
K. NISHIYAMA, F. HIRATA and T. OKADA, "Solute-Structure Dependence of Solvation Dynamics Studied by Reference Interaction-Site Model Theory," *J. Chem. Phys.* **118**, 2279 (2003).
T. YAMAGUCHI, S-H. CHONG and F. HIRATA, "Dielectric Relaxation Spectrum of Water Studied by the Site-Site Generalized Langevin/modified Mode-Coupling Theory," *Mol. Phys.* **101**, 1211 (2003).
T. YAMAGUCHI, S. -H. CHONG and F. HIRATA, "Theoretical Study on the Molecular Motion of Liquid Water under High Pressure," *J. Chem. Phys.* **119**, 1021(2003).
H. SATO, Y. KOBORI, S. TERO-KUBOTA and F. HIRATA, "Theoretical Study on Electronic and Solvent Reorganization Processes Associated with a Charging Process of Organic Compounds: I. Molecular and Atomic Level Description of Solvent Reorganization," *J. Chem. Phys.* **119**, 2753 (2003).
I. OMELYAN, A. KOVALENKO and F. HIRATA, "Compressibility of Tert-Butyl Alcohol-Water Mixture: the RISM Theory," *J. Theor. Comput. Chem.* **2**, 193 (2003).
A. SETHIA, E. R. BITTNER and F. HIRATA, " Interplay between the Repulsive and Attractive Interaction and the Spacial Dimesionality of an Excess Electron in a Simple Fluid," *J. Theor. Comput. Chem.* **2**, 129 (2003).

M. MORI and K. YONEMITSU, "Charge Ordering Patterns and Their Excitation Spectra in Two-Dimensional Charge-Transfer Compounds," *Mol. Cryst. Liq. Cryst.* **380**, 209–213 (2002).
M. KUWABARA and K. YONEMITSU, "Strong Commensurability Effect on Metal-Insulator Transition in $(DCNQI)_2Cu$," *Mol. Cryst. Liq. Cryst.* **380**, 257–261 (2002).
K. YONEMITSU, "Variation of Excitation Spectra in Mixed-Stack Charge-Transfer Complexes," *Phase Transitions* **75**, 759–767 (2002).
N. MIYASHITA, M. KUWABARA and K. YONEMITSU, "Domain-Wall Dynamics after Photoexcitations near Neutral-Ionic Phase Transitions," *Phase Transitions* **75**, 887–893 (2002).
K. YONEMITSU, "Correlation-Induced Dimensional Crossovers of Charge-Transfer Excitations in Quasi-One-Dimensional Organic Conductors," *Synth. Met.* **133-134**, 7–9 (2003).
M. KUWABARA, K. YONEMITSU and H. OHTA, "Self-Doping Effect on the Mott Transition Accompanied With Three-Fold Charge Ordering in $(DCNQI)_2Cu$," *Synth. Met.* **133-134**, 295–297 (2003).
K. YONEMITSU, "Dynamic Spin Correlations near Neutral-Ionic Phase Transitions," *Physica B* **329-333**, 1219–1220 (2003).
K. YONEMITSU, N. MIYASHITA and M. KUWABARA, "Photoexcited States and Photoinduced Dynamics in Electronic Phases of MMX-Chain Systems," *Synth. Met.* **135-136**, 521–522 (2003).
N. MIYASHITA, M. KUWABARA and K. YONEMITSU, "Photoinduced Dynamics of Ionicity near the Neutral-Ionic Phase Boundary in a One-Dimensional Extended Peierls-Hubbard Model," *Synth. Met.* **135-136**, 645–646 (2003).
K. YONEMITSU and N. MIYASHITA, "Coherence Recovery and Photoinduced Phase Transitions in One-

Dimensional Halogen-Bridged Binuclear Platinum Complexes," *Phys. Rev. B* **68**, 075113 (9 pages) (2003).
Y. OTSUKA, Y. MORITA and Y. HATSUGAI, "Anisotropic Fermi Surface in the Two-Dimensional Hubbard Model," *Phys. Rev. B* **66**, 073109 (4 pages) (2002).
Y. OTSUKA, Y. MORITA and Y. HATSUGAI, "Correlation Effects on the Fermi Surface of the Two-Dimensional Hubbard Model," *J. Phys. Chem. Solids* **63**, 1389–1391 (2002).
Y. OTSUKA and Y. HATSUGAI, "Fermi Surface of the Periodic Anderson Model Detected by Momentum-Resolved Charge Compressibility," *Physica B* **329-333**, 580–581 (2003).

Department of Molecular Structure

E. HARADA, J. KUMAGAI, K. OZAWA, S. IMABAYASHI, A. S. TSAPIN, K. H. NEALSON, T. E. MEYER, M. A. CUSANOVICH and H. AKUTSU, "A Directional Electron Transfer Regulator Based on Heme-Chain Architecture in the Small Tetraheme Cytochrome *c* from *Shewanella oneidensis*," *FEBS Lett.* **532**, 333–337 (2002).
Y. KYOGOKU, Y. FUJIYOSHI, I. SHIMADA, H. NAKAMURA, T. TSUKIHARA, H. AKUTSU, T. ODAHARA, T. OKADA and N. NOMURA, "Structural Genomics of Membrane Proteins," *Acc. Chem. Res.* **36**, 199–206 (2003).
A. K. KHITRIN, T. FUJIWARA and H. AKUTSU, "Phase-Modulated Heteronuclear Decoupling in NMR of Solids," *J. Magn. Reson.* **162**, 46–53 (2003).
Y. MATSUKI, H. AKUTSU and T. FUJIWARA, "Band-Selective Recoupling of Homonuclear Double-Quantum Dipolar Interaction with a Generalized Composite 0degrees Pulse: Application to ^{13}C Aliphatic Region-Selective Magnetization Transfer in Solids," *J. Magn. Reson.* **162**, 54–66 (2003).
A. Y. NOSAKA, T. FUJIWARA, H. YAGI, H. AKUTSU and Y. NOSAKA, "Photocatalytic Reaction Sites at the TiO_2 Surface as Studied by Solid-State ^1H-NMR Spectroscopy," *Langmuir* **19**, 1935–1937 (2003).

T. NAKAMURA, R. KIMURA, H. SAKAI, M. ABE, H. KONDOH, T. OHTA and M. MATSUMOTO, "Nano-Dot Formation Using Self-Assembled 3-Mercaptopropionic Acid Thin Films Prepared by Facile Atmospheric-Vapor-Adsorption Method on Al(111)," *Appl. Surf. Sci.* **202**, 241–251 (2002).
K. TONO, A. TERASAKI, T. OHTA and T. KONDOW, "Electronic and Geometric Structures of $Co_2C_n^-$ and $V_2C_n^-$: Initial Growth Mechanisms of Late and Early 3*d* Transition Metal Carbide Clusters," *J. Chem. Phys.* **117**, 7010–7016 (2002).
Y. OGI, T. ENDO, K. TSUKIYAMA, H. KONDOH, K. TONO, Y. OGAWA, Y. HAMADA, T. OHTA and H. KURODA, "Detection of Vibrationally Hot NO and CO Excited by Infrared Free Electron Laser," *Jpn. J. Appl. Phys.* **41**, 108–112 (2002).
Y. HAMADA, H. KONDOH, Y. OGAWA, K. TONO, T. OHTA, Y. OGI, T. ENDO, K. TSUKIYAMA and H. KURODA, "Infrared Multiphoton-Absorption-Induced Iron Desorption from Solid State C_{60} Fullerene and Anthracene," *Jpn. J. Appl. Phys.* **41**, 113–117 (2002).
T. YOKOYAMA, H. TOKORO, S. OHKOSHI, K. HASHIMOTO, K. OKAMOTO and T.OHTA, "Photoinduced Phase Transition of $RbMnFe(CN)_6$ Studied by X-Ray Absorption Fine Structure Spectroscopy," *Phys. Rev. B* **66**, 184111 (10 pages) (2002).
Y. OGI, T. ENDO, K. TSUKIYAMA, H. KONDOH, K. TONO, Y. OGAWA, Y. HAMADA, T. OHTA and H. KURODA, "Vibrational Excitation of CO Molecules by Infrared Free Electron Laser," *J. Electron Spectrosc.* **128**, 167–173 (2003).
T. YOKOYAMA, D. MATSUMURA, K. AMEMIYA, S. KITAGAWA, N. SUZUKI and T. OHTA, "Spin Reorientation Transitions of Ultrathin Co/Pd(111) Films Induced by Chemisorption: X-Ray Magnetic Circular Dichroism Study," *J. Phys.: Condens. Matter* **15**, S537–S546 (2003).
K. AMEMIYA, S. KITAGAWA, D. MATSUMURA, T. YOKOYAMA and T. OHTA, "Development of a Depth-Resolved X-Ray Magnetic Circular Dichroism: Application to Fe/Cu(100) Ultrathin Films," *J. Phys.: Condens. Matter* **15**, S561–S571 (2003).
H. KONDOH, M. IWASAKI, T. SHIMADA, K. AMEMIYA, T. YOKOYAMA, T. OHTA, M. SHIMOMURA and S. KONO, "Adsorption of Thiolate to Singly Coordinated Sites on Au(111) Evidenced by Photoelectron Diffraction," *Phys. Rev. Lett.* **90**, 66102 (4 pages) (2003).
A. NAMBU, H. KONDOH, I. NAKAI, K. AMEMIYA and T. OHTA, "Film Growth and X-Ray Induced Chemical Reactions of Thiophene Adsorbed on Au(111)," *Surf. Sci.* **530**, 101–110 (2003).
K. TONO, A. TERASAKI, T. OHTA and T. KONDOW, "Chemical Control of Magnetism: Oxidation Induced Ferromagnetism in the Chromium Dimer Evidenced by Photoelectron Spectroscopy," *Phys. Rev. Lett.* **90**, 133402 (4 pages) (2003).
K. OKAMOTO, K. KOHDATE, K. NAGAI, J. MIYAWAKI, H. KONDOH, T. YOKOYAMA, A. NOJIMA and T. OHTA, "Development of Light-Modulated XAFS Spectroscopy," *J. Synchrotron Radiat.* **10**, 242–247 (2003).
K. OKAMOTO, K. NAGAI, J. MIYAWAKI, H. KONDOH and T. OHTA, "XAFS Study on the Photoinduced Spin Transition of $[Fe(2\text{-pic})_3]Cl_2 \cdot C_2H_5OH$," *Chem. Phys. Lett.* **371**, 707–712 (2003).
M. NAGASAKA, I. NAKAI, H. KONDOH, T. OHTA and V. CARAVETTA, "Oxygen *K*-Shell Near Edge X-

Ray Absorption Fine Structure Study of O and OH Overlayers on Pt(111)," *Chem. Phys. Lett.* **375**, 419–424 (2003).

R. MIZOGUCHI, K. ONDA, S. S. KANO and A. WADA, "Thinning-Out in Optimized Pulse Shaping Method Using Genetic Algorithm," *Rev. Sci. Instrum.* **74**, 2670–2674 (2003).
K. ONDA, Y. IWASAWA and A. WADA, "Vibrational Relaxation of Adsorbate and Adsorbent in the CO-Adsorbed DM-20 Zeolite System," *Chem. Phys. Lett.* **370**, 437–442 (2003).
H. ISHIDA, R. MIZOGUCHI, K. ONDA, C, HIROSE, S. S. KANO and A. WADA, "Second Harmonic Observation of Cu(111) Surface: *In Situ* Measurements during Molecular Adsorption," *Surf. Sci.* **526**, 201–207 (2003).
H. NOGUCHI, T. OKADA, K. ONDA, S. S. KANO, A. WADA and K. DOMEN, "Time-Resolved SFG Study of Formate on Ni(111) Surface under Irradiation of Picosecond Laser Pulses," *Surf. Sci.* **528**, 183–188 (2003).
J. KUBOTA, A. WADA, K. DOMEN and S. S. KANO, "Transient Responses of SFG Spectra of D_2 Ice/CO/Pt(111) Interface with Irradiation of Ultra-Short NIR Pump Pulses," *Chem. Phys. Lett.* **362**, 476–482 (2002).

T. YOKOYAMA, H. TOKORO, S. OHKOSHI, K. HASHIMOTO, K. OKAMOTO and T. OHTA, "Photoinduced Phase Transition of $RbMnFe(CN)_6$ Studied by X-Ray-Absorption Fine Structure Spectroscopy," *Phys. Rev. B* **66**, 184111 (10 pages) (2002).
T. YOKOYAMA, D. MATSUMURA, K. AMEMIYA, S. KITAGAWA, N. SUZUKI and T. OHTA, "Spin Reorientation Transitions of Ultrathin Co/Pd(111) Films Induced by Chemisorption: X-Ray Magnetic Circular Dichroism Study," *J. Phys.: Condens. Matter* **15**, S537–S546 (2003).
K. AMEMIYA, S. KITAGAWA, D. MATSUMURA, T. YOKOYAMA and T. OHTA, "Development of a Depth-Resolved X-Ray Magnetic Circular Dichroism: Application to Fe/Cu(100) Ultrathin Films," *J. Phys.: Condens. Matter* **15**, S561–S572 (2003).
H. KONDOH, M. IWASAKI, T. SHIMADA, K. AMEMIYA, T. YOKOYAMA and T. OHTA, "Adsorption of Thiolates to Strongly Coordinated Sites on Au(111) Evidenced by Photoelectron Diffraction," *Phys. Rev. Lett.* **90**, 066102 (4 pages) (2003).
K. OKAMOTO, K. KOHDATE, K. NAGAI, J. MIYAWAKI, H. KONDOH, T. YOKOYAMA, A. NOJIMA and T. OHTA, "Development of Light-Modulated XAFS Spectroscopy," *J. Synchrotron Radiat.* **10**, 242–247 (2003).
T. YOKOYAMA, K. TAKAHASHI and O. SATO, "Metastable Photoinduced Phase of Cu(II) Ethylenediamine Complexes Studied by X-Ray-Absorption Fine-Structure Spectroscopy," *Phys. Rev. B* **67**, 172104 (4 pages) (2003).

K. TANAKA, A. TENGEIJI, T. KATO, N. TOYAMA, M. SHIRO and M. SHIONOYA, "Efficient Incorporation of a Copper Hydroxypyridone Base Pair in DNA," *J. Am. Chem. Soc.* **124**, 12494–12498 (2002).
N. HAYASHI, T. KATO, T. AOKI, T. ANDO and A. FUKUDA, "Orientational Distributions in Smectic Liquid Crystals Showing V-Shaped Switching Investigated by Polarized Raman Scattering," *Phys. Rev. E* **65**, 041714 (2002).
N. HAYASHI, T. KATO, T. ANDO and A. FUKUDA, "Molecular Ordering Deformation Induced by Externally Applied Electronic Field in an Antiferroelectric Liquid Crystal," *Jpn. J. Appl. Phys.* **41**, 5292–5297 (2002).
T. WAKAHARA, S. OKUBO, M. KONDOU, Y. MAEDA, T. AKASAKA, M. WAELCHLI, M. KAKO, K. KOBAYASHI, S. NAGASE, T. KATO, K. YAMAMOTO, X. GAO, E. VAN CAEMELBECKE and K. M. KADISH, "Ionization and Structural Determination of the Major Isomer of $Pr@C_{82}$," *Chem. Phys. Lett.* **360**, 235–239 (2002).
M. KAMO, A. TSUDA, Y. NAKAMURA, N. ARATANI, K. FURUKAWA, T. KATO and A. OSUKA, "Metal-Dependent Regioselective Oxidative Coupling of 5,10,15-Triarylporphyrins with DDQ-$Sc(OTf)_3$ and Formation of an Oxo-Quinoidal Pophyrin," *Org. Lett.* **5**, 2079–2082 (2003).
K. KOBAYASHI, H. OHTSU, T. WADA, T. KATO and K. TANAKA, "Characterization of a Stable Ruthenium Complex with an Oxyl Radical," *J. Am. Chem. Soc.* **125**, 6729–6739 (2003).
K. TANAKA, A. TENGEIJI, T. KATO, N. TOYAMA and M. SHIONOYA, "A Discrete Self-Assembled Metal Array in Artificial DNA," *Science* **299**, 1212–1213 (2003).
M. HIRAOKA, H. SAKAMOTO, K. MIZOGUCHI, T. KATO and R. KATO, "Charge Transport in the Insulating State of $(DMe\text{-}DCNQI)_2Li$ above T_{SP}: A Possible Fractional Charge Soliton Conduction with $\pm 1/2e$," *Phys. Rev. Lett.* **91**, 056604 (2003).
N. HAYASHI, T. KATO, T. ANDO and A. FUKUDA, "Intrinsic Aspect of V-Shaped Switching in Ferroelectric Liquid Crystals: Biaxial Anchoring Arising from Peculiar Short Axis Biasing in the Molecular Rotation around the Long Axis," *Phys. Rev. E* **68**, 011702 (2003).
S. OKUBO and T. KATO, "ESR Parameters of Series of $La@C_n$ Isomers," *Appl. Magn. Reson.* **23**, 481–493 (2003).
T. IKOMA, S. OKADA, S. TERO-KUBOTA, H. NAKANISHI, T. KATO, P. HOEFER, A. KAMLOWSKI and K. AKIYAMA, "Angle-Selective Measurements of Spin Soliton in Ladder Polydiacetylene by Pulsed 94GHz EPR," *Appl. Magn. Reson.* **23**, 445–453 (2003).

Department of Electronic Structure

Y. INOKUCHI, K. OHASHI, H. SEKIYA and N. NISHI, "Positive Charge Distribution in $(benzene)_1(toluene)_2^+$ and $(benzene)_2(toluene)_1^+$ Studied by Photodissociation Spectroscopy," *J. Chem. Phys.* **117**, 10648 (2002).
N. NISHI, K. KOSUGI, K. HINO, T. YOKOYAMA and E. OKUNISHI, "Formation and Magnetic Characteristics of Cobalt-Carbon Nanocluster Magnets Embedded in Amorphous Carbon Matrices," *Chem. Phys. Lett.* **369**, 198 (2003).
T. MICHI, K. OHASHI, Y. INOKUCHI, N. NISHI and H. SEKIYA, "Infrared Spectra and Structures of $(CH_3NH_2)_nH^+(n = 1–4)$," *Chem. Phys. Lett.* **371**, 111 (2003).
Y. INOKUCHI, K. OHASHI, Y. HONKAWA, H. SEKIYA and N. NISHI, "Fermi Resonance Interaction in Hetero-Dimer and Trimer Ions Containing Aniline," *Chem. Phys. Lett.* **373**, 568 (2003).
Y. INOKUCHI, K. OHASHI, Y. HONKAWA, H. SEKIYA and N. NISHI, "Infrared Photodissociation Spectroscopy of $[Aniline\text{-}(Water)_n]^+$ (n = 1–8): Structural Change from Branched and Cyclic to Proton-Transferred Forms," *J. Phys. Chem.* **107**, 4230 (2003).
T. TAKAMUKU, D. MATSUO, M. TABATA, T. YAMAGUCHI and N. NISHI, "Structure of Aqueous Mixtures of N,N-Dimethylacetamide Studied by Infrared Spectroscopy, X-Ray Diffraction, and Mass Spectrometry," *J. Phys. Chem. A* **107**, 6070 (2003).
Y. HONKAWA, Y. INOKUCHI, K. OHASHI, N. NISHI and H. SEKIYA, "Infrared Spectra and Structures of $aniline^+$–furan and $aniline^+$–phenol. Preference between *p*-Type and *s*-Type Hydrogen-Bonded Strucutures," *Chem. Phys. Lett.* **376**, 244–250 (2003).
N. NISHI, K. KOSUGI, K. HINO and T. YOKOYAMA, "Matrix Embedded Cobalt-Carbon Nano-Cluster Magnets: Behavior as Room Temperature Single Domain Magnets," *Eur. J. Phys. D* **24**, 97 (2003).

M. SAKAI, S. ISHIUCHI and M. FUJII, "Picosecond Time-Resolved Nonresonant Ionization Detected IR Spectroscopy on 7-Azaindole Dimer," *Eur. J. Phys. D* **20**, 399–402 (2002).
S. ISHIUCHI, K. DAIGOKU, M. SAEKI, M. SAKAI, K. HASHIMOTO and M. FUJII, "Hydrogen Transfer in Photo-Excited Phenol/ammonia Clusters by UV-IR-UV Ion Dip Spectroscopy and Ab Initio MO Calculations I: Electronic Transitions," *J. Chem. Phys.* **117**, 7077–7082 (2002).
S. ISHIUCHI, K. DAIGOKU, M. SAEKI, M. SAKAI, K. HASHIMOTO and M. FUJII, "Hydrogen Transfer in Photo-Excited Phenol/ammonia Clusters by UV-IR-UV Ion Dip Spectroscopy and Ab Initio MO Calculations II: Vibrational Transitions," *J. Chem. Phys.* **117**, 7083–7093 (2002).
M. SAKAI, T. UEDA, T. YAMANAKA and M. FUJII, "Construction of a Picosecond Time-Resolved IR Dip Spectrometer for Hydrogen-Bond Clusters," *Bull. Chem. Soc. Jpn.* **76**, 509–514 (2003).
T. WATANABE, Y. IKETAKI, T. OMATSU, K. YAMAMOTO, S. ISHIUCHI, M. SAKAI and M. FUJII, "Two-Color Far-Field Super-Resolution Microscope Using a Doughnut Beam," *Chem. Phys. Lett.* **371**, 634–639 (2003).
Y. IKETAKI, T. WATANABE, S. ISHIUCHI, M. SAKAI, T. OMATSU, K. YAMAMOTO, M. FUJII and T. WATANABE, "Investigation of the Fluorescence Depletion Process in Condensed Phase," *Chem. Phys. Lett.* **372**, 773–778 (2003).

K. MISAWA, I. MATSUDA and R. LANG, "Femtosecond Wave Packet Engineering in a Cyanine Dye Molecule," *Proc. SPIE Int. Soc. Opt. Eng.* **4798**, 11–20 (2002).
N. T. HASHIMOTO, K. MISAWA and R. LANG, "Three-Level Picture for Chirp-Dependent Fluorescence Yields under Femtosecond Optical Pulse Irradiation," *Appl. Phys. Lett.* **82**, 2749–2751 (2003).

Department of Molecular Assemblies

O. DROZDOVA, K. YAKUSHI, Y. MISAKI and K. TANAKA, "Optical Study of Two-Dimensional Organic Metal $(EO\text{-}TTP)_2AsF_6$ (EO-TTP = 2-(4,5-ethylenedioxy-1,3- dithiol-2-ylidene)-5-(1,3-dithiol-2-ylidene)-1,3,4,6-tetrathiapentalene)," *J. Solid State Chem.* **168**, 497–502 (2002).
M. MENEGHETTI, C. PECILE, K. YAKUSHI, K. YAMAMOTO, K. KANODA and K. HIRAKI, "Study of the Phase Transitions of $(DI\text{-}DCNQI)_2M$ (M = Ag, Li, Cu) through the Analysis of the Temperature Dependent Vibronic and Vibrational Infrared Absorptions," *J. Solid State Chem.* **168**, 632–638 (2002).
K. YAKUSHI, K. YAMAMOTO, M. SIMONYAN, J. OUYANG, C. NAKANO, Y. MISAKI and K. TANAKA, "Charge-Ordering and Magnetic Phase Transitions in $\theta\text{-}(BDT\text{-}TTP)_2Cu(NCS)_2$," *Phys. Rev. B* **66**, 235102 (5 pages) (2002).
P. TOMAN, S. NESPUREK and K. YAKUSHI, "Electronic States and Infrared Spectroscopy of Nickel and Cobalt Phthalocyanines: *Ab Initio* Calculations for the Neutral and Cation State," *J. Porphyrin Phthalocyanines* **6**, 556–562 (2002).
O. DROZDOVA, K. YAKUSHI, H. YAMOCHI, G. SAITO and D. B. TANNER, "Infrared Study of the Properties of the Normal (metallic) Phase of $\kappa\text{-}(ET\text{-}^{13}C_4)_2\ Cu(CN)[N(CN)_2]$," *Synth. Met.* **133-134**, 119–121 (2003).
T. MIZUTANI, M. TOKUMOTO, T. KINOSHITA, J. S. BROOKS, Y. UWATOKO, O. DROZDOVA, K. YAKUSHI, I. TAMURA, H. KOBAYASHI, T. MANGETSU, J. YAMADA and K. ISHIDA, "Effect of

Uniaxial Strain in Organic Superconductor κ-(BEDT-TTF)$_2$Cu(NCS)$_2$," *Synth. Met.* **133-134**, 229–231 (2003).
K. YAMAMOTO, K. YAKUSHI, K. MIYAGAWA, K. KANODA, A. KAWAMOTO, J. YAMAURA and T. ENOKI, "Vibrational Spectra of BEDT-TTF Based 2D Charge Ordering Systems," *Synth. Met.* **133-134**, 269–272 (2003).
O. DROZDOVA, K. YAKUSHI, A. OTA, H. YAMOCHI and G. SAITO, "Spectroscopic Study of the [0110] Charge Ordering in (EDO-TTF)$_2$PF$_6$," *Synth. Met.* **133-134**, 277–279 (2003).
K. YAKUSHI, K. YAMOMOTO, J. OUYANG, M. SIMONYAN, C. NAKANO, Y. MISAKI and K. TANAKA, "Charge Ordering and Phase Transition in θ-(BDT-TTP)$_2$Cu(NCS)$_2$," *Synth. Met.* **133-134**, 287–289 (2003).
T. YAMAMOTO, H. TAJIMA, R. KATO, M. URUICHI and K. YAKUSHI, "Thermoelectric Power and Raman Spectra of (Me$_2$DCNQI)$_2$Cu$_x$Li$_{1-x}$," *Synth. Met.* **133-134**, 291–292 (2003).
M. URUICHI, K. YAKUSHI, T. SHIRAHATA, K. TAKAHASHI, T. MORI and T. NAKAMURA, "Characterization of Quasi-1D Conductors, (BDTFP)$_2$X(PhCl)$_{0.5}$ (X = PF$_6$, AsF$_6$)," *Synth. Met.* **133-134**, 407–409 (2003).
K. TAKEDA, I. SHIROTANI and K. YAKUSHI, "Insulator to Metal Transition and Electronic Spectra of Bis(1,2-benzoquinonedioximato)-Platinum(II), Pt(bqd)$_2$ at High Pressure," *Synth. Met.* **133-134**, 415–416 (2003).
K. SUZUKI, K. YAMAMOTO and K. YAKUSHI, "Charge Ordering in θ-(BEDT-TTF)$_2$ TlM(SCN)$_4$ (M = Co and Zn) Studied by Vibrational Spectroscopy," *Synth. Met.* **135-136**, 525–526 (2003).
K. YAMAMOTO, K. YAKUSHI, K. HIRAKI, T. TAKAHASHI, K. KANODA, M. MENEGHETTI and C. PECILE, "Charge Distribution and Molecular Arrangement in (DI-DCNQI)$_2$Ag Studied by High-Pressure Vibrational Spectroscopy," *Synth. Met.* **135-136**, 563–564 (2003).
K. YAKUSHI, R. SWIETLIK, K. YAMAMOTO, T. KAWAMOTO, T. MORI, Y. MISAKI and K. TANAKA, "Charge Disproportionation in the Charge-Transfer Salts of TTP," *Synth. Met.* **135-136**, 583–585 (2003).
R. WOJCIECHOWSKI, K. YAMAMOTO, K. YAKUSHI and A. KAWAMOTO, "Raman Study of Charge Disproportionation in α-(BEDT-TTF)$_2$I$_3$," *Synth. Met.* **135-136**, 587–588 (2003).
R. WOJCIECHOWSKI, K. YAMAMOTO, K. YAKUSHI, M. INOKUCHI and A. KAWAMOTO, "High-Pressure Raman Study of the Charge Ordering in α-(BEDT-TTF)$_2$I$_3$," *Phys. Rev. B* **67**, 224105 (11 pages) (2003).
R. SWIETLIK, A. LAPINSKI, L. OUAHAB and K. YAKUSHI, "Charge Ordering in the κ-Phase BEDT-TTF Salts with Co(CN)$_6$ and Fe(CN)$_6$ Anions Studied by Infrared and Raman Spectroscopy," *C. R. Acad. Sci. (Paris) Chimie* **3/6**, 395–403 (2003).

T. NAKAMURA, "Low-Temperature Electronic Phases of EDT-TTF Based Molecular Conductors," *Mol. Cryst. Liq. Cryst.* **380**, 233–237 (2002).
T. NAKAMURA, M. TANIGUCHI, Y. MISAKI, K. TANAKA and Y. NOGAMI, "Microscopic Investigation of a New Two-Component Organic Conductor with Itinerant and Localized Spins: (CHTM-TTP)$_2$TCNQ," *J. Phys. Soc. Jpn.* **71**, 2208–2215 (2002).
T. NAKAMURA, T. TAKAHASHI, S. AONUMA and R. KATO, "*g*-Tensor Analyses of β'-Type Pd(dmit)$_2$ Metal Complexes," *Mol. Cryst. Liq. Cryst.* **379**, 53–58 (2002).
T. SAKURAI, Y. INAGAKI, S. OKUBO, H. OHTA, R. KATO and T. NAKAMURA, "Frequency Dependence Millimeter Wave ESR Measurements of Et$_2$Me$_2$P[Pd(dmit)$_2$]$_2$," *Mol. Cryst. Liq. Cryst.* **379**, 59–64 (2002).
M. URUICHI, K. YAKUSHI, T. SHIRAHATA, K. TAKAHASHI, T. MORI and T. NAKAMURA, "Structural Phase Transition in Quasi-One-Dimensional Conductors (BDTFP)$_2$*X*(PhCl)$_{0.5}$ (*X* = PF$_6$ and AsF$_6$) [BDTFP = 5,7-bis(1,3-dithiol-2-ylidene)-5,7-dihydrofuro [3,4-b] pyrazine; PhCl= chlorbenzene]," *J. Mater. Chem.* **12**, 2696–2700 (2002).
Y. NOGAMI and T. NAKAMURA, "X-Ray Observation of 2k_F and 4k_F Charge Orderings in (TMTTF)$_2$ReO$_4$ and (TMTTF)$_2$SCN Associated with Anion Orderings," *J. Phys. IV France* **12** (PR9), 145–148 (2002).
S. NISHIHARA, T. AKUTAGAWA, T. HASEGAWA S. FUJIYAMA, T. NAKAMURA and T. NAKAMURA, "Two Polymorphs of (Anilinium)(18-crown-6)[Ni(dmit)$_2$]: Structure and Magnetic Properties," *J. Solid State Chem.* **168**, 661–667 (2002).
T. NAKAMURA, "Possible Charge Ordering Patterns of the Paramagnetic Insulating States in (TMTTF)$_2$*X*," *J. Phys. Soc. Jpn.* **72**, 213–216 (2003).
A. ISHIKAWA, N. MATSUNAGA, K. NOMURA, T. NAKAMURA, T. TAKAHASHI and G. SAITO, "Magnetic Field Dependence of Incommensurate SDW Transition in (TMTTF)$_2$Br," *Synth. Met.* **133-134**, 65–66 (2003).
S. FUJIYAMA and T. NAKAMURA, "NMR Investigation of (TMTTF)$_2$*X*: Charge Configurations and Spin Dynamics," *Synth. Met.* **133-134**, 67–68 (2003).
R. CHIBA, K. HIRAKI, T. TAKAHASHI, H.M. YAMAMOTO and T. NAKAMURA, "Charge Ordering in θ-(BEDT-TTF)$_2$*M*Zn(SCN)$_4$ [*M* = Rb, Cs]," *Synth. Met.* **133-134**, 305–306 (2003).
Y. KUBO, Y. TAKANO, K. HIRAKI, T. TAKAHASHI, H.M. YAMAMOTO and T. NAKAMURA, "The Electronic State of α-(BEDT-TTF)$_2$I$_3$ under Hydrostatic Pressure," *Synth. Met.* **133-134**, 307–308 (2003).
M. URUICHHI K. YAKUSHI, T. SHIRAHATA, K. TAKAHASHI and T. NAKAMURA, "Characterization of Quasi-1D Conductors, (BDTFP)$_2$*X*(PhCl)$_{0.5}$ (*X* = PF$_6$, AsF$_6$)," *Synth. Met.* **133-134**, 407–409 (2003).
T. SAKURAI, H. OHTA, S. OKUBO, R. KATO and T. NAKAMURA, "Temperature Dependence Millimeter

Wave ESR Measurements of $Et_2Me_2P[Pd(dmit)_2]_2$," *Synth. Met.* **133-134**, 421–422 (2003).
T. NAKAMURA, M. TANIGUCHI, Y. MISAKI, K. TANAKA and Y. NOGAMI, "Magnetic Investigation of Itinerant and Local Hybrid Spins System, $(CHTM\text{-}TTP)_2TCNQ$," *Synth. Met.* **133-134**, 441–442 (2003).
Y. KUBO, Y. TAKANO, K. HIRAKI, T. TAKAHASHI, H.M. YAMAMOTO and T. NAKAMURA, "^{13}C-NMR Studies of the 'Narrow Gap Semiconducting' State of α-$(BEDT\text{-}TTF)_2I_3$ under Pressure," *Synth. Met.* **135-136**, 591–592 (2003).
R. CHIBA, K. HIRAKI, T. TAKAHASHI, H.M. YAMAMOTO and T. NAKAMURA, "Pressure Effect on the Charge Ordering in θ-$(BEDT\text{-}TTF)_2MZn(SCN)_4$ (M = Rb, Cs)," *Synth. Met.* **135-136**, 595–596 (2003).
T. IMAKUBO, N. TAJIMA, T. SHIRAHATA, A. MIYAKE, H. SAWA, T. NAKAMURA, H. OHNUKI, M. TAMURA, R. KATO, M. IZUMI, Y. NISHIO and K. KAJITA, "Crystal Design of Organic Conductors Using the Iodine Bond," *Synth. Met.* **135-136**, 601–602 (2003).
T. NAKAMURA, "ESR Investigation of Charge Localized States in $(TMTTF)_2X$," *Synth. Met.* **135-136**, 1181–1182 (2003).
S. NISHIHARA, T. AKUTAGAWA, T. HASEGAWA, T. NAKAMURA, S. FUJIYAMA and T. NAKAMURA, "Magnetic and ^{1}H-NMR of $[Ph(NH_3)](18\text{-crown-}6)[Ni(dmit)_2]$ Having Molecular Spin Ladder Structure," *Synth. Met.* **135-136**, 1279–1280 (2003).
T. NAKAMURA, "ESR Study of the Charge Ordering in $(TMTTF)_2X$," *Physica B* **329-333**, 1148–1149 (2003).
A. ISHIKAWA, N. MATSUNAGA, K. NOMURA, T. SASAKI, T. NAKAMURA, T. TAKAHASHI and G. SAITO, "Electron Correlation and Two Dimensionality in the Spin-Density-Wave Phase of $(TMTTF)_2Br$ under Pressure," *Phys. Rev. B* **67**, 212404 (4pages) (2003).

E. FUJIWARA, H. FUJIWARA, H. KOBAYASHI, T. OTSDUKA and A. KOBAYASHI, "A Series of Organic Conductors κ-$(BETS)_2FeBr_xCl_{4-x}$ ($0 < x < 4$) Exhibiting Successive Antiferropmagnetic and Superconducting Transitions [BETS = Bis(ethylenedithio)tetraselenafulvalene]," *Adv. Mater.* **14**, 1376–1379 (2002).
V.GRITSENKO, E. FUJIWARA, H. FUJIWARA and H. KOBAYASHI, "Stable Molecular Metals Based on Bis(ethylenedithio)tetraselenafulvalene and Halogen Ions: κ-$(BETS)_2X\cdot C_2H_4(OH)_2$ (X = Br, Cl)," *Synth. Met.* **128**, 273–278 (2002).
E. FUJIWARA, H. FUJIWARA and H. KOBAYASHI, "Novel π-Electron Donor for Magnetic Conductors Containing a PROXYL Radical," *Chem. Lett.* 1048–1049 (2002).
M. A. TANATAR, T. ISHIGURO, H. TANAKA and H. KOBAYASHI, "Magnetic Field-Temperature Phase Diagram of the Quasi-Two-Dimensional Organic Superconductor, λ-$(BETS)_2GaCl_4$ Studied *via* Thermal Conductivity," *Phys. Rev. B* **66**, 134503 (8 pages) (2002).
A. BHATTACHARJEE, Y. NAKAZAWA, H. KOBAYASHI and M. SORAI, "AC Magnetic Susceptibility of the Assembled-Metal Complex, $\{NBu_4[Fe^{II}Fe^{III}(ox)^3]\}_\infty$ (Bu = n-C_4H_9, ox = oxalato)," *J. Phys. Soc. Jpn.* **71**, 2263–2267 (2002).
H. KOBAYASHI, E. FUJIWARA, F. FUJIWARA, H. TANAKA, H. AKUTSU, I. TAMURA, T. OTSUKA, A. KOBAYASHI, M. TOKUMOTO and P. CASSOUX, "Development and Physical Properties of Magnetic Organic Superconductors Based on BETS Molecules [BETS = bis(ethylenedithio)tetraselenafulvalene]," *J. Phys. Chem. Solids* **63**, 1235–1238 (2002).
I. TAMURA, H. KOBAYASHI and A. KOBAYASHI, "X-Ray Diffraction Study of α-$(BEDT\text{-}TTF)_2I_3$ Single Crystal under High Pressure," *J. Phys. Chem. Solids* **63**, 1255–1257 (2002).
H. KOBAYASHI, E. FUJIWARA, H. FUJIWARA, H. TANAKA, I. TAMURA, B. ZHANG, V. GRITSENKO, T. OTSUKA, A. KOBAYASHI, M. TOKUMOTO and P. CASSOUX, "Magnetic Organic Superconductors—Interplay of Conductivity and Magnetism," *Mol. Cryst. Liq. Cryst.* **379**, 9–18 (2002).
A. KOBAYASHI, W. SUZUKI, E. FUJIWARA, T. OTSUKA, H. TANAKA, Y. OKANO and H. KOBAYASHI, "Molecular Design and Development of Single-Component Molecular Metals with Extended TTF Ligands," *Mol. Cryst. Liq. Cryst.* **379**, 19–28 (2002).
A. KOBAYASHI, W. SUZUKI, H. TANAKA, Y. OKANO and H. KOBAYASHI, "Molecular Metals and Superconductors Based on Transition Metal Complexes with dmit or Extended-TTF Ligands," *Mol. Cryst. Liq. Cryst.* **380**, 37–43 (2002).
H. KOBAYASHI, E. FUJIWARA, H. FUJIWARA, H. TANAKA T. OTSUKA, A. KOBAYASHI, M. TOKUMOTO and P. CASSOUX, "Antiferromagnetic Organic Superconductors, $BETS_2FeX_4$ (X = Br, Cl)," *Mol. Cryst. Liq. Cryst.* **380**,139–144 (2002).
E. OJIMA, H. FUJIWARA, H. KOBAYASHI, M. TOKUMOTO and A. KOBAYASHI, "New Organic Conductors Based on Tellurium-Containing Donor Molecules," *Mol. Cryst. Liq. Cryst.* **380**,175–181 (2002).
M. TOKUMOTO, T. MIZUTANI T. KINOSHITA, J. S. BROOKS, Y. UWATOKO, O. DROZDOVA, K. YAKUSHI, I. TAMURA H. KOBAYASHI, T. MANGETSU, J. YAMADA and K. ISHIDA, "Effect of Uniaxial Pressure in Organic Superconductor κ-$(BEDT\text{-}TTF)_2Cu(NCS)_2$," *Mol. Cryst. Liq. Cryst.* **380**, 227–232 (2002).
H, FUJIWARA, E, FUIWARA and H. KOBAYASHI, "Synthesis, Structures and Physical Properties of the Cation Radical Salts Based on Tempo Radical Containing Electron Donors," *Mol. Cryst. Liq. Cryst.* **380**, 269–275 (2002).
W. SUZUKI, E. FUJIWARA, A. KOBAYASHI, Y. FUJISHIRO, E. NISHIBORI, M. TAKATA, M. SAKATA, H. FUJIWARA and H. KOBAYASHI, "Highly Conducting Crystals Based on Single-Component

Gold Complexes with Extended-TTF Dithiolate Ligands," *J. Am. Chem. Soc.* **125**, 1486–1487 (2003).
S. UJI, T. TERASHIMA, C. TERAKURA, T. YAKABE, Y. TERAI, S. YASUZUKA Y. IMANAKA, M. TOKUMOTO, A. KOBAYASHI, F. SAKAI, H. TANAKA, H. KOBAYASHI, L. BALICAS and J. BROOKS, "Global Phase Diagram of the Magnetic Field-Induced Organic Superconductors λ-$(BETS)_2Fe_xGa_{1-x}Cl_4$," *J. Phys. Soc. Jpn.* **72**, 369–373 (2003).
H. FUJIWARA, H. -J. LEE, H. KOBAYASHI, E FUJIWARA and A. KOBAYASHI, "A Novel TTP Donor Containing a PROXYL Radical for Magnetic Molecular Conductors," *Chem. Lett.* **32**, 482–483 (2003).
H. CUI, T, OTSUKA, E. FUJIWARA, A. KOBAYASHI, Y. MISAKI, and H. KOBAYASHI, "Syntheses and Physical Properties of New Organic Conductors with Lanthanoid Chloride Complex Anions," *Synth. Met.* **135-136**, 641–642 (2003).
E. FUJIWARA, A. KOBAYASHI and H. KOBAYASHI, "Structures and Physical Properties of Nickel Complexes with TTF-Type Ligands," *Synth. Met.* **135-136**, 535–536 (2003).
A. KOBAYASHI, W. SUZUKI, E. FUJIWARA, H. TANAKA, Y. OKANO and H. KOBAYAHSI, "Molecular Design and Development of Single-Component Molecular Metal," *Synth. Met.* **133-134**, 393–395 (2003).
T. MIZUTANI, M. TOKUMOTO, T. KINOSHITA, J. S. BROOKS, Y. UWATOKO, O. DROZDOVA, K. YAKUSHI, I. TAMURA, H. KOBAYASHI, T. MANGETSU, J. YAMADA and K. ISHIDA, "Effect of Uniaxial Strain in Organic Superconductor κ-$(BEDT\text{-}TTF)_2Cu(NCS)_2$," *Synth. Met.* **133-134**, 229–231 (2003).
S. UJI, C. TERAKURA, T. TERASHIMA, T. YAKABE, Y. IMANAKA, T. TERAI, S. YASUZUKA, M. TOKUMOTO, F. SAKAI, A. KOBAYASHI, H. TANAKA, H. KOBAYASHI, L. BALICAS and J. S. BROOKS, "Novel Electronic Properties under Magnetic Fields in Organic Conductors λ-$(BETS)_2Fe_xGa_{1-x}Cl_4$," *Synth. Met.* **133-134**, 481–483 (2003).
S. UJI, C. TERAKURA T. TERASHIMA, T. YAKABE, Y. IMANAKA, T. TERAI, S. YASUZUKA, M. TOKUMOTO, F. SAKAI, A. KOBAYASHI, H. TANAKA, H. KOBAYASHI, L. BALICAS and J. S. BROOKS, "Superconductivity in Organic Alloys λ-$(BETS)_2Fe_xGa_{1-x}Cl_4$," *Synth. Met.* **137**, 1183–1185 (2003).
H. KOBAYASHI, B. ZHANAG, H. TANAKA, H. FUJIWARA, T. OTSUKA, E. FUJIWARA and A. KOBAYASHI, "Interplay of Magnetism and Superconductivity in BETS Conductors (BETS = bis(ethylenedithio)-tetraselenafulvalene)," *Synth. Met.* **137**, 1157–1162 (2003).
H. KOBAYASHI, H. TANAKA, H. FUJIWARA, I. TAMURA, V. GRITSENKO, T. OTSUKA, E. FUJIWARA, A. KOBAYASHI, M. TOKUMOTO and P. CASSOUX, "Electronic Properties of BETS Superconductors with Magnetic Anions," *Synth. Met.* **133-134**, 447–479 (2003).
B. ZHANG, H. TANAKA, A. KOBAYASHI and H. KOBAYASHI, "Magnetoresistance experiment of λ-$BETS_2Fe_{0.40}Ga_{0.60}Cl_4$," *Synth. Met.* **135-136**, 529–530 (2003).
A. KOBAYASHI, W. SUZUKI, E. FUJIWARA, H. TANAKA, Y. FUJISHIRO, E. NISHIBORI, M. TAKATA, M. SAKATA, Y. OKANO and H. KOBAYASHI, "Development of Single-Component Molecular Metals Based on Extended-TTF Dithiolate Ligands," *Synth. Met.* **135-136**, 511–513 (2003).
M. A. TANATAR, M. SUZUKI, T. ISHIGURO, H. TANAKA, H. FUJIWARA, H. KOBAYASHI, T. TOITO and J. YAMADA, "Thermal Conductivity of Organic Superconductors in Oriented Magnetic Field," *Synth. Met.* **137**, 1291–1293 (2003).
H. FUJIWARA, E. FUJIWARA and H. KOBAYASHI, "Synthesis, Structures and Properties of New Organic Donors Connecting to TEMPO Radical through a Pyrrolidine Ring," *Synth. Met.* **133-134**, 359–360 (2003).
H. FUJIWARA, E. FUJIWARA and H. KOBAYASHI, "Synthesis, Structures and Physical Properties of Donors Containing a PROXYL Radical," *Synth. Met.* **135-136**, 533–534 (2003).
H. TANAKA, H. KOBAYASHI and A. KOBAYASHI, "Structural and Physical Properties of Single-Component Molecular Conductors Based on Magnetic Metal Complexes," *Synth. Met.* **135-136**, 549–550 (2003).
S. UJI, C. TERAKURA, T. TERASHIMA, T. YAKABE, Y. TERAI, Y. IMANAKA, S. YASUZUKA, M. TOKUMOTO, F. SAKAI, A. KOBAYASHI, H. TANAKA, H. KOBAYASHI, L. BALICAS and J. S. BROOKS, "Large Anisotropy in Magnetic Field Induced Superconductors λ-$(BETS)_2Fe_xGa_{1-x}Cl_4$," *Physica C* **388-389**, 611–612 (2003).

R. KATO, N. TAJIMA, M. TAMURA and J. -I. YAMAURA, "Uniaxial Strain Effect in a Strongly Correlated Two-Dimensional System β'-$(CH_3)_4As[Pd(dmit)_2]_2$," *Phys. Rev. B* **66**, 020508 (4 pages) (2002).
R. KATO, T. IMAKUBO, H. YAMAMOTO, R. MAEDA, M. FUJIWARA, J. -I. YAMAURA and H. SAWA, "An Application of Supramolecular Chemistry to Molecular Conductors," *Mol. Cryst. Liq. Cryst.* **380**, 61–68 (2002).
T. SAKURAI, Y. INAGAKI, S. OKUBO, H. OHTA, R. KATO and T. NAKAMURA, "Frequency Dependence Millimeter Wave ESR Measurements of $Et_2Me_2P[Pd(dmit)_2]_2$," *Mol. Cryst. Liq. Cryst.* **379**, 59–64 (2002).
S. TARUTANI, J. -I. YAMAURA, K. TAKAHASHI and R. KATO, "High Pressure Properties of Extremely One-Dimensional Electronic Conductors $Me_4X(CPDT\text{-}TCNQ)_2$ (X = N, P and As)," *Solid State Commun.* **123**, 251–255 (2002).
T. YAMAMOTO, H. TAJIMA, R. KATO, M. URUICHI and K. YAKUSHI, "Raman Spectra of $(Me_2\text{-}DCNQI)_2Cu_xLi_{1-x}$($0 \le x \le 1$): The Evidence for Charge Separation at Room Temperature in a One-Dimensional Conductor Having a Quarter-Filled Band," *J. Phys. Soc. Jpn.* **71**, 1956–1964 (2002).
M. FUJIWARA and R. KATO, "Unique Structural and Physical Properties of $Ni(dmit)_2$ Anion Radical Salts Characterized by Short Te···S Contacts (dmit = 1,3-dithiole-2-thione-4,5-dithiolate)," *J. Chem. Soc., Dalton Trans.*

3763–3770 (2002).
M. TAMURA and R. KATO, "Magnetic Susceptibility of β'-[Pd(dmit)$_2$] Salts (dmit = 1,3-dithiol-2-thione-4,5-dithiolate, C_3S_5): Evidence for Frustration in Spin-1/2 Heisenberg Antiferromagnets on a Triangular Lattice," *J. Phys.: Condens. Matter* **14**, L729–L734 (2002).
M. FUJIWARA, N. TAJIMA, T. IMAKUBO, M. TAMURA and R. KATO, "Structural and Physical Properties of New Conducting Cation Radical Salts with Te-Based Counteranions, Tetraiodotellurate(II) and Hexaiododitellurate(II)," *J. Solid State Chem.* **168**, 396–407 (2002).
S. YASUZUKA, C. TERAKURA, T. TERASHIMA, T. YAKABE, Y. TERAI, H. M. YAMAMOTO, J. YAMAURA, R. MAEDA, R. KATO and S. UJI, "Fermi Surface in New Layered Organic Conductors (BEDT-TTF)$_3$Br(pBIB) and (BEDT-TTF)$_3$Cl(DFBIB)," *Synth. Met.* **133-134**, 169–171 (2003).
T. IMAKUBO, N. TAJIMA, M. TAMURA, R. KATO, Y. NISHIO and K. KAJITA, "Supramolecular Organic Conductor θ-(DIETS)$_2$[Au(CN)$_4$]: Unique Crystal Structure and Superconductivity under Uniaxial Strain (DIETS = diiodo(ethylenedithio)diselenadithiafulvalene)," *Synth. Met.* **133-134**, 181–183 (2003).
Y. SHIMOJO, M. A. TANATAR, T. ISHIGURO and R. KATO, "Upper Critical Field of Quasi One-Dimensional Superconductor (DMET-TSeF)$_2$AuI$_2$ under Oriented Magnetic Fields," *Synth. Met.* **133-134**, 247–249 (2003).
T. YAMAMOTO, H. TAJIMA, R. KATO, M. URUICHI and K. YAKUSHI, "Thermoelectric Power and Raman Spectra of $(Me_2DCNQI)_2Cu_xLi_{1-x}$," *Synth. Met.* **133-134**, 291–292 (2003).
T. SHIRAHATA, T. MORI, R. KATO and K. TAKAHASHI, "Synthesis, Crystal Structures and Electrical Properties of Cation Radical Salts of Selenium-Containing π-Extended Donors, BEDT-HBDST and BEDT-HSTT," *Synth. Met.* **133-134**, 321–324 (2003).
J. YAMAURA, R. KATO, S. TARUTANI and K. TAKAHASHI, "High Pressure X-Ray Study on CPDT-TCNQ Anion Radical Salts," *Synth. Met.* **133-134**, 411–413 (2003).
M. HIRAOKA, H. SAKAMOTO, K. MIZOGUCHI and R. KATO, "Spin Soliton Dynamics and Magnetic Susceptibility of (DMe-DCNQI)$_2$Li by ESR under Pressure," *Synth. Met.* **133-134**, 417–418 (2003).
T. SAKURAI, H. OHTA, S. OKUBO, R. KATO and T. NAKAMURA, "Temperature Dependence Millimeter Wave ESR Measurements of $Et_2Me_2P[Pd(dmit)_2]_2$," *Synth. Met.* **133-134**, 421–422 (2003).
Y. TAKANO, K. HIRAKI, T. TAKAHASHI and R. KATO, "Electronic Properties of Two Band System, β'-Pd(dmit)$_2$ Salts," *Synth. Met.* **133-134**, 423–424 (2003).
H. M. YAMAMOTO, M. HAGIWARA and R. KATO, "New Phase of (BEDT-TTF)(TCNQ)," *Synth. Met.* **133-134**, 449–451 (2003).
Y. OSHIMA, H. OHTA, H. M. YAMAMOTO, R. KATO, K. KOYAMA and M. MOTOKAWA, "Magnetooptical Measurements of BEDT-TTF Salts Containing Supramolecular Assemblies," *Synth. Met.* **133-134**, 453–454 (2003).
M. FUJIWARA, N. TAJIMA, T. IMAKUBO, M. TAMURA and R. KATO, "New Te-Based Counter Anions for Conducting Cation Radical Salts: Tetraiodotellurate(II) and Hexaiododitellurate(II)," *Synth. Met.* **133-134**, 459–461 (2003).
Y. NISHIO, S. SASAKI, Y. MORI, K. KAJITA, S. AONUMA, H. SAWA, M. TAMURA and R. KATO, "Deuterium Freedom and M-I Transition in (DMe-DCNQI)$_2$Cu System," *Synth. Met.* **133-134**, 569–571 (2003).
Y. OSHIMA, H. OHTA, K. KOYAMA, M. MOTOKAWA, H. M. YAMAMOTO, R. KATO, M. TAMURA, Y. NISHIO and K. KAJITA, "Fermi Surface Study of Quasi-Two-Dimensional Organic Conductors by Magnetooptical Measurements," *J. Phys. Soc. Jpn.* **72**, 143–148 (2003).
N. TAJIMA, T. IMAKUBO, R. KATO, Y. NISHIO and K. KAJITA, "Effects of Uniaxial Strain on Transport Property of a Supramolecular Organic Conductor θ-(DIETS)$_2$[Au(CN)$_4$]," *J. Phys. Soc. Jpn.* **72**, 1014–1017 (2003).
M. HIRAOKA, H. SAKAMOTO, K. MIZOGUCHI, T. KATO and R. KATO, "Charge Transport in the Insulating State of (DMe-DCNQI)$_2$Li above T_{SP}: A Possible Fractional Charge Soliton Conduction with ±1/2*e*," *Phys. Rev. Lett.* **91**, 056604 (4 pages) (2003).

H. SATO, N. KAWATSU, T. ENOKI, M. ENDO, R. KOBORI, S. MARUYAMA and K. KANEKO, "Drastic Effect of Water-Adsorption on the Magnetism of Nanomagnets," *Solid State Commun.* **125**, 641–645 (2003).
K. ENOMOTO, A. MIYAZAKI and T. ENOKI, "Novel Important Role of π-d Interaction in (DMET)$_2$FeCl$_4$," *Synth. Met.* **135-136**, 561–562 (2003).
J. NISHIJO, E. OGURA, J. YAMAURA, A. MIYAZAKI, T. ENOKI, T. TAKANO, Y. KUWATANI and M. IYODA, "Ferromagnetic Interaction and Metallic Conductivity of Radical Ion Salts (DIEDO)$_2$M(mnt)$_2$ (M = Ni, Pt)," *Synth. Met.* **133-134**, 539–541 (2003).
A. MIYAZAKI and T. ENOKI, "Crystal Structure and Physical Properties of (EDS-TTF)$_2$FeBr$_4$," *Synth. Met.* **133-134**, 543–545 (2003).
K. YAMAMOTO, K. YAKUSHI, K. MIYAGAWA, K. KANODA, A. KAWAMOTO, J. YAMAURA and T. ENOKI, "Vibrational Spectra of BEDT-TTF Based 2D Charge Ordering Systems," *Synth. Met.* **133-134**, 269–272 (2003).
T. ENOKI, H. YAMAZAKI, K. OKABE, K. ENOMOTO, T. KATO, A. MIYAZAKI, E. OGURA, Y. KUWATANI and M. IYODA, "Unconventional TTF-Based Molecular Magnets," *Synth. Met.* **133-134**, 151–153 (2003).
K. ENOMOTO, A. MIYAZAKI and T. ENOKI, "Novel π-d Interaction System (DMET)$_2$FeCl$_4$," *Synth. Met.*

135-136, 561–562 (2003).
T. ENOKI, H. YAMAZAKI, J. NISHIJO, K. UGAWA, E. OGURA, Y. KUWATANI, M. IYODA and Y. V. SUSHKO, "Novel Magnetism of EDO-TTFX_2 Salts (X = Br, I)," *Synth. Met.* **137**, 1173–1174 (2003).
S. OKUBO, K. KURITA, Y. INAGAKI, H. OHTA, K. ENOMOTO, A. MIYAZAKI and T. ENOKI, "Submillimater and Millimeter Wave ESR Measurements of $(DMET)_2FeBr_4$ below T_N," *Synth. Met.* **135-136**, 589–590 (2003).
K. ENOMOTO, A. MIYAZAKI and T. ENOKI, "Electronic and Magnetic Properties of Organic Conductors $(DMET)_2MBr_4$ (M = Fe, Ga)," *Bull. Chem. Soc. Jpn.* **76**, 945–959 (2003).
F. SETIFI, L. OUAHAB, J. GUILLEVIC, A. MIYAZAKI, T. ENOKI, T. TOMITA and J. YAMADA, "New Organic-Inorganic Hybrid Materials Based on DTDH-TTP and Paramagnetic Isothiocyanato Complex Anion: $(DTDH\text{-}TTP)_2[Cr(phen)(NCS)_4]\cdot CH_2Cl_2$," *Synth. Met.* **137**, 1177–1178 (2003).
A. MIYAZAKI, K. OKABE, T. ENOKI, F. SETIFI, S. GOLHEN, L. OUAHAB, T. TOITA and J. YAMADA, "Weak Ferromagnetism of (BDH-TTP)$[M(isoq)_2(NCS)_4]$ (M = Cr, Fe; isoq = isoquinoline)," *Synth. Met.* **137**, 1195–1196 (2003).
K. OKABE, A. MIYAZAKI and T. ENOKI, "Transport Property of π-d Interaction System $(EDTDM)_2FeBr_4$ under Pressure and Magnetic Field," *Synth. Met.* **135-136**, 693–694 (2003).
A. MIYAZAKI, K. OKABE, K. ENOMOTO, J. NISHIJO, T. ENOKI, F. SETIFI, S. GOLHEN, L. OUAHAB, T. TOITA and J. YAMAURA, "π-d Interaction-Based Molecular Magnets," *Polyhedron* **22**, 2227–2234 (2003).
J. NISHIJO, A. MIYAZAKI and T. ENOKI, "Weak-Ferromagnetism in Molecular Magnets Based on Transition Metal Complexes of Crown Thioether," *Polyhedron* **22**, 1755–1758 (2003).
F. SETIFI, L. OUAHAB, S. GOLHEN, A. MIYAZAKI, T. ENOKI, T. TOITA and J. YAMADA, "New Bulk Weak Ferromagnet in Ferrimagnetic Chains of Molecular Material Based on DTDH-TTP and Paramagnetic Thiocyanato Complex Anion: (DTDH-TTP)$[Cr(isoq)_2(NCS)_4]$," *C. R. Chimie* **6**, 309–316 (2003).
M. INAKUMA, A. TANINAKA, H. KATO, H. SHINOHARA and T. ENOKI, "Magnetic Anisotropy of Cerium Endhedral Metallofullerene," *J. Phys. Chem. B* **107**, 6965–6973 (2003).
A. MIYAZAKI, T. KATO, H. YAMAZAKI, T. ENOKI, E. OGURA, Y. KWATANI and M. IYODA, "Anomalous Metallic State of One-Dimensional Molecular Conductor $(EDO\text{-}TTFBr_2)_3I_3$," *Phys. Rev. B* **68**, 085108 (6 pages) (2003).
K. TAKAI, M. OGA, H. SATO, T. ENOKI, Y. OHKI, M. TAO, W. SUENAGEA and S. IIJIMA, "Structure and Electroic Properties of Nongraphitic Disordered Carbon System and Its Heat-Treatment Effect," *Phys. Rev. B* **67**, 214202 (11 pages) (2003).

Department of Applied Molecular Science

H. IMAI, K. INOUE, M. OHBA, H. OKAWA and K. KIKUCHI, "A Novel Two-Dimensional Chiral Complex; $[Cu\text{-}II(R)\text{-}pn]_2[Ni\text{-}II(CN)_4]_2\cdot H_2O$ ((*R*)-pn = (*R*)-1,2-diaminopropane)," *Synth. Met.* **137**, 919–920 (2003).
F. IWAHORI, AS. MARKOSYAN and K. INOUE, "Structures and Magnetic Properties of the Complexes Made up by $Cu(hfac)_2$ and Bisnitroxide Radical Derivatives," *Mol. Cryst. Liq. Cryst.* **376**, 449–454 (2002).
AS. OVCHINNIKOV, IG. BOSTREM, VE. SINITSYN, AS. BOYARCHENKOV, NV. BARANOV and K. INOUE, "Low-Energy Excitations and Thermodynamical Properties of the Quantum (5/2,1/2,1/2) Ferrimagnetic Chain," *J. Phys.: Condens. Matter* **14**, 8067–8078 (2002).
CD. SMITH, SE. BOTTLE, PC. JUNK, K. INOUE and AS. MARKOSYAN, "Synthesis and Properties of $Mn(hfac)_2$ Complexes of Isoindoline Nitroxide Radicals," *Synth Met.* **138**, 501–506 (2003).
H. KUMAGAI, Y. OKA, K. INOUE and M. KURMOO, "Hydrothermal Synthesis, Structure and Magnetism of Square-Grid Cobalt(II)-Carboxylate Layered Compounds with and without Pillars," *J. Chem. Soc., Dalton Trans.* 3442–3446 (2002).
H. KUMAGAI, M. OHBA, K. INOUE and H. OKAWA, "Synthesis and Characterization of a Tetrahedral and Octahedral Cobalt(II) Alternate Chain Complex," *Chem. Lett.* 1006–1007 (2002).
H. KUMAGAI, Y. OKA, S. KAWATA, M. OHBA, K. INOUE, M. KURMOO and H. OKAWA, "Hydrothermal Synthesis, Crystal Structure and Characterization of a New Hexanuclear Cobalt(II) Complex Comprised of Octahedral and Tetrahedral Cobalt Ions," *Polyhedron* **22**, 1917–1920 (2003).
S. HAYAMI, R. KAWAJIRI, G. JUHASZ, T. KAWAHARA, K. HASHIGUCHI, O. SATO, K. INOUE and Y. MAEDA, "Study of Intermolecular Interaction for the Spin-Crossover Iron(II) Compounds," *Bull. Chem. Soc. Jpn.* **76**, 1207–1213 (2003).
Y. HOSOKOSHI, K. KATOH and K. INOUE, "Magnetic Properties on an Organic Ferrimagnetic Compound and Related Materials," *Synth. Met.* **133**, 527–530 (2003).
H. OHTA, K. KIRITA, T. KUNIMOTO, S. OKUBO, Y. HOSOKOSHI, K. KATOH, K. INOUE, A. OGASAHARA and S. MIYASHITA, "Low Dimensionality Observed by ESR Measurements in $S = 1$ Spin Ladder Substance BIP-TENO (3,3',5,5'-Tetrakis(N-Tert-Butylaminoxyl)biphenyl)," *J. Phys. Soc. Jpn.* **71**, 2640–2643 (2002).
T. GOTO, NV. MUSHNIKOV, Y. HOSOKOSHI, K. KATOH and K. INOUE, "High Field Magnetization Processes of BIPNNBNO and PIMBNO at Low Temperature," *Physica B* **329**, 1160–1161 (2003).
Y. YOSHIDA, K. YURUE, M. MITOH, T. KAWAE, Y. HOSOKOSHI, K. INOUE, M. KINOSHITA and K.

TAKEDA, "Field-Induced Magnetic Ordering in an Alternating Heisenberg Chain F5PNN," *Physica B* **329**, 979–980 (2003).
T. SAKAI, N. OKAZAKI, K. OKAMOTO, K. KINDO, Y. NARUMI, Y. HOSOKOSHI, K. KATO, K. INOUE and T. GOTO, "Magnetization Plateau in S = 1 Organic Spin Ladder BIP-TENO," *Physica B* **329**, 1203–1204 (2003).
T. SAKAI, N. OKAZAKI, K. OKAMOTO, K. KINDO, Y. NARUMI, Y. HOSOKOSHI, K. KATO, K. INOUE and T. GOTO, "Magnetization Plateaux in S = 1 Spin Ladder," *Phys. Status Solidi B* **236**, 429–432 (2003).
S. AONUMA, H. CASELLAS, B. GARREAU DE BONNEVAL, I. MALFANT, C. FAULMANN, P. CASSOUX, Y. HOSOKOSHI and K. INOUE, "Structure and Property of M(dmit)$_2$ Salt with Trimethylammonio-TEMPO and Related Magnetic Organic Cations," *Mol. Cryst. Liq. Cryst.* **380**, 263–268 (2002).
K. MUKAI, M. MATSUBARA, H. HISATOU, Y. HOSOKOSHI, K. INOUE and N. AZUMA, "Anomalous Magnetic Behavior in Three Kinds of 3-(Aryl-substituted)-1,5-diphenylverdazyl Radical Crystals (*p*-FPDV, *p*-PyDV and *m*-PyDV) Induced by Frustrated Spin Interaction," *J. Phys. Chem. B* **106**, 8632–8638 (2002).
IS. DUBENKO, I.YU. GAIDUKOVA, E. GRATZ, K. INOUE, AS. MARKOSYAN and VE. RODIMIN, "Magnetic Instability of the Co Sublattice in the $Ho_{(1-x)}Y_xCo_3$ System," *Physica B* **319**, 21–27 (2002).
K. NAGAYOSHI, MD. K. KABIR, H. TOBITA, K. HONDA, M. KAWAHARA, M. KATADA, K. ADACHI, H. NISHIKAWA, I. IKEMOTO, H. KUMAGAI, Y. HOSOKOSHI, K. INOUE, S. KITAGAWA and S. KAWATA, "Design of Novel Inorganic-Organic Hybrid Materials Based on Iron-Chloranilate Mononuclear Complexes: Characteristics of Hydrogen-Bond-Supported Layers toward the Intercalation of Guests," *J. Am. Chem. Soc.* **125**, 221–232 (2002).
K. ADACHI, Y. SUGIYAMA, H. KUMAGAI, K. INOUE, S. KITAGAWA and S. KAWATA, "Synthesis and Crystal Structure of One-Dimensional Copper(II) Coordination Polymer Bridged by Pyrazine Derivative," *Mol. Cryst. Liq. Cryst.* **376**, 71–76 (2002).
NV. BARANOV, K. INOUE, H. MICHOR, G. HILSCHER and AA. YERMAKOV, "Spin Fluctuations in Gd_3Rh Induced by *f–d* Exchange: the Influence on the *T*-linear Specific Heat," *J. Phys.: Condens. Matter* **15**, 531–538 (2003).
T. NAITO, T. INABE, T. AKUTAGAWA, T. HASEGAWA, T. NAKAMURA, Y. HOSOKOSHI and K. INOUE, "Physical Properties of $(ET)_3(MnCl_4)(TCE)$ and the Related Salts," *Synth. Met.* **135-136**, 613–614 (2003).
K. MUKAI, S. JINNO, Y. SHIMOBE, N. AZUMA, M. TANIGUCHI, Y. MISAKI, K. TANAKA, K. INOUE and Y. HOSOKOSHI, "Genuine Organic Magnetic Semiconductors: Electrical and Magnetic Properties of the TCNQ and Iodide Salts of Methylpyridinium-Substituted Verdazyl Radicals," *J. Mater. Chem.* **13**, 1614–1621 (2003).
Y. TAKAZAKI, Z. YANG, M. EBIHARA, K. INOUE and T. KAWAMURA, "A Honeycomb Network of a Paddlewheel-Type Dirhodium Complex in Two Oxidation States and Pinningof the Oxidation States," *Chem. Lett.* 120–121 (2003).
IS. DUBENKO, IY. GAIDUKOVA, SA. GRANOVSKY, K. INOUE, AS. MARKOSYAN, S. ROY and N. ALI, "Magnetic Phase Transitions in $(Tb,Y)Mn_2M_2$ (M = Ge and Si) Systems," *J. Appl. Phys.* **93**, 8185–8187 (2003).
M. DOERR, M. ROTTER, M. ELLERBY, AS. MARKOSYAN, SS. SAXENA, Y. HOSOKOSHI, K. INOUE and M. LOEWENHAUPT, "Pressure Dependent Magnetization of $DyCu_2$ Single Crystals," *Physica B*, **329**, 633–634 (2003).

N. ASAKUMA, H. HIRASHIMA, T. FUKUI, M. TOKI, K. AWAZU and H. IMAI, "Photo-Reduction of Amorphous and Crystalline ZnO Films," *Jpn. J. Appl. Phys.* **41**, 3909–3915 (2002).
S. YAMABI, H. IMAI and K. AWAZU, "Biomimetic Approach for Exact Control of TiO_2 Periodic Microstructure," *Chem. Lett.* **7**, 714–715 (2002).
N. ASAKUMA, H. HIRASHIMA, T. FUKUI, M. TOKI, K. AWAZU and H. IMAI, "Photocrystallization of Amorphous ZnO," *J. Appl. Phys.* **92**, 5707–5710 (2002).
K. AWAZU, S. ROORDA, J. L. BREBNER, S. ISHII and K. SHIMA, "Structure of Latent Tracks Created by Swift Heavy Ions in Amorphous SiO_2 and Zinc Phosphate Glass," *Jpn. J. Appl. Phys.* **42**, 3950–3957 (2003).
K. NOMURA, T. NAKANISHI, Y. NAGASAWA, Y. OHKI, K. AWAZU, M. FUJIMAKI, N. KOBAYASHI, S. ISHII and K. SHIMA, "Structural Change Induced in TiO_2 by Swift Heavy Ions and Its Application to Three Dimensional Lithography," *Phys. Rev. B* **68**, 64106 (7 pages) (2003).

K. KIKUCHI, H. NISHIKAWA, I. IKEMOTO, T. TOITA, H. AKUTSU, S. NAKATSUJI and J. YAMADA, "Tetrachloroferrate(III) Salts of BDH-TTP [2,5-Bis(1,3-dithiolan-2-ylidene)-1,3,4,6-tetrathiapentalene] and BDA-TTP [2,5-Bis(1,3-dithian-2-ylidene)-1,3,4,6-tetrathiapentalene]: Crystal Structures and Physical Properties," *J. Solid State Chem.* **168**, 503 (2002).
M. IYODA, K. HARA, E. OGURA, T. TAKANO, M. HASEGAWA, M. YOSHIDA, Y. KUWATANI, H. NISHIKAWA, K. KIKUCHI, I. IKEMOTO and T. MORI, "Synthesis and Electroconductive Properties of Radical Salts Derived from Tetrathiafulvalene Dimmers," *J. Solid State Chem.* **168**, 597 (2002).
M. CHIKAMATSU, S. KAZAOUI, N. MINAMI, K. YASE, T. KODAMA, H. NISHIKAWA, I. IKEMOTO and K. KIKUCHI, " Electrical and Optical Properties of a Potassium-Doped Film of a Long Alkyl Chain-Linked C_{60}," *Mol. Cryst. Liq. Cryst.* **377**, 353 (2002).

H. YOSHINO, K. MURATA, Y. YAMAMURA, T. TSUJI, J. YAMADA, S. NAKATSUJI, H. ANZAI, H. NISHIKAWA, K. KIKUCHI, I. IKEMOTO and K. SAITO, "Electrical Properties of Organic Conductors at High Temperature," *Mol. Cryst. Liq. Cryst.* **380**, 239 (2002).
T. KODAMA, R. FUJII, Y. MIYAKE, K. SAKAGUCHI, H. NISHIKAWA, I. IKEMOTO, K. KIKUCHI and Y. ACHIBA, "Structural Study of Four Ca@$_{82}$ Isomers by ^{13}C NMR Spectroscopy," *Chem. Phys. Lett*. **377**, 197 (2003).
H. NISHIKAWA, A. MACHIDA, T. MORIMOTO, K. KIKUCHI, T. KODAMA, I. IKEMOTO, J. YAMADA, H. YOSHINO and K. MURATA, "A New Organic Superconductor, $(DODHT)_2BF_4 \cdot H_2O$," *Chem. Commun.* 494 (2003).
J. YAMADA, T. TOITA, H. AKUTSU, S. NAKATSUJI, H. NISHIKAWA, I. IKEMOTO, K. KIKUCHI, E. S. CHOI, D. GRAF and J. S. BROOKS, "A New Organic Superconductor, β-$(BDA\text{-}TTP)_2GaCl_4$ [BDA-TTP = 2,5-(1,3-Dithian-2-Ylidene)-1,3,4,6-Tetrathiapentalene]," *Chem. Commun.* 2230 (2003).
J. YAMADA, M. WATANABE, T. TOITA, H. AKUTSU, S. NAKATSUJI, H. NISHIKAWA, I. IKEMOTO and K. KIKUCHI, "Development of New Organic Metals and Superconductors from a Non-TTF Donor System," *Mol. Cryst. Liq. Cryst.* **390**, 121 (2003).
Y. OSHIMA, H. OHTA, K. KOYAMA, M. MOTOKAWA, H. NISHIKAWA, K. KIKUCHI and I. IKEMOTO, "Magnetooptical Measurements of Quasi-One-Dimensional Conductor $(DMET)_2I_3$," *Synth. Met.* **135-136**, 531 (2003).
J. YAMADA, T. TOITA, H. AKUTSU, S. NAKATSUJI, H. NISHIKAWA, I. IKEMOTO and K. KIKUCHI, "Organic Conductors Based on Unsymmetrical BDY Donors," *Synth. Met.* **135-136**, 539 (2003).
K. YOKOYAMA, H. NISHIKAWA, T. KODAMA, I. IKEMOTO, K. KIKUCHI and J. YAMADA, "Crystal Structures and Physical Properties of New Ni Complexes with Dihydro-TTF Dithiolato," *Synth. Met.* **135-136**, 659 (2003).
S. KOJIMA, H. NISHIKAWA, T. KODAMA, I. IKEMOTO and K. KIKUCHI, "Synthesis and Physical Properties of New C_{60} Derivatives Linked with TTF," *Synth. Met.* **135-136**, 775 (2003).
K. KIKUCHI, H. NISHIKAWA, T. MORIMOTO, T. KODAMA, I. IKEMOTO and J. YAMADA, "Structural Studies of DODHT Superconductor and Related Salts," *Synth. Met.* **137**, 1159 (2003).
H. NISHIKAWA, T. MORIMOTO, A. MACHIDA, T. KODAMA, I. IKEMOTO, K. KIKUCHI, J. YAMADA, H. YOSHINO and K. MURATA, "Structure and Properties of Radical Salts of DODHT Derivatives," *Synth. Met.* **137**, 1253 (2003).

Department of Vacuum UV Photoscience

T. GEJO, Y. TAKATA, T. HATSUI, M. NAGASONO, H. OJI, N. KOSUGI and E. SHIGEMASA, "Angle-Resolved Photoion Spectroscopy of NO_2 and SO_2," *Chem. Phys.* **289**, 15 (2003).
N. KOSUGI, "Exchange Interaction in Core Excitation of Diatomic Systems," *Chem. Phys.* **289**, 117 (2003).
A. Y. MATSUURA, T. OBAYASHI, H. KONDOH, T. OHTA, H. OJI, N. KOSUGI, K. SAYAMA and H. ARAKAWA, "Adsorption of Merocyanine Dye on Rutile TiO_2(110)," *Chem. Phys. Lett.* **360**, 133 (2002).
E. SHIGEMASA, T. GEJO, M. NAGASONO, T. HATSUI and N. KOSUGI, "Double and Triple Excitations Near the K-Shell Ionization Threshold of N_2 Revealed by Symmetry-Resolved Spectroscopy," *Phys. Rev. A* **66**, 022508 (2002).

Y. J. LI, O. TAKEUCHI, D. N. FUTBA, K. MIYAKE, H. SHIGEKAWA and Y. KUK, "Characteristic Intra- and Interunit Interactions of the Kr Atoms Adsorbed on Si(111)-7×7 Surface," *Phys. Rev. B* **68**, 033301 (4 pages) (2003).
R. TERO, K. FUKUI, and Y. IWASAWA, "Atom-Resolved Surface Structures and Molecular Adsorption on TiO_2(001) Investigated by Scanning Tunneling Microscopy," *J. Phys. Chem. B* **107**, 3207–3214 (2003).
S. TAKAKUSAGI, K. FUKUI, R. TERO, F. NARIYUKI and Y. IWASAWA, "Self-Limiting Growth of Pt Nanoparticles from MeCpPtMe3 Adsorbed on TiO_2(110) Studied by Scanning Tunneling Microscopy," *Phys. Rev. Lett.* **91**, 066102 (4 pages) (2003).
A. KOIZUMI, H. MORIYA, N. WATANABE, Y. NONOGAKI, Y. FUJIWARA and Y. TAKEDA, "Er-Related Luminescence in Er, O-Codoped InGaAs/GaAs Multiple-Quantum-Well Structures Grown by Organometallic Vapor Phase Epitaxy," *Appl. Phys. Lett.* **80**, 1559–1561 (2002).
Y. FUJIWARA, Y. NONOGAKI, R. OGA, A. KOIZUMI and Y. TAKEDA, "Reactor Structure Dependence of Interface Abruptness in GaInAs/InP and GaInP/GaAs Grown by Organometallic Vapor Phase Epitaxy," *Appl. Surf. Sci.* **216**, 564–568, (2003).
S. D. MORE, J. HUDECECK, and T. URISU, "Hydrophobic/Hydrophilic Interactions of Cytochrome *c* with Functionalized Self-Assembled Monolayers on Silicon," *Surf. Sci.* **532-535**, 993–998 (2003).
C. WANG, S. D. MORE, Z. WANG, S. YAMAMURA, Y. NONOGAKI and T. URISU, "Patterning SiO_2 Thin Films Using Synchrotron Radiation Stimulated Etching with a Co Contact Mask," *J. Vac. Sci. Technol. B* **21**, 818–822 (2003).
S. YAMAMURA, S. YAMAUCHI, S. WATANABE, M. TABE, T. KASAI, Y. NONOGAKI and T. URISU, "Infrared Reflection Absorption Spectroscopy Using $CoSi_2$ Buried Metal Layer Substrates Made by Wafer-Bonding," *Jpn. J. Appl. Phys.* **42**, 3942–3943 (2003).

C. WANG and T. URISU, "Synchrotron Radiation Stimulated Etching SiO_2 Thin Films with a Co Contact Mask for the Area-Selective Deposition of Self-Assenbled Monolayer," *Jpn. J. Appl. Phys.* **42**, 4016–4019 (2003).

K. MITSUKE, "Ultraviolet and Visible Dispersed Spectroscopy for the Photofragments Produced from H_2O in the Extreme Ultraviolet," *J. Chem. Phys.* **117**, 8334–8340 (2002).
M. ONO and K. MITSUKE, "Anisotropy of Fragment Ions from SF_6 by Photoexcitation between 23 and 210 eV," *Chem. Phys. Lett.* **366**, 595–600 (2002).
Y. MAKINO, T. MORI, H. EGUCHI, H. SAITO, B. KYOH and S. MIYAKE, "Preferentially Oriented Anatase Nano-Powder Densified by Pulsed High Current Heating," *J. Mater. Sci. Lett.* **22**, 403–405 (2003).
T. MORI, M. FUJIWARA, R. MANORY, I. SHIMIZU, T. TANAKA and S. MIYAKE, "HfO_2 Thin Films Prepared by Ion Beam Assisted Deposition," *J. Vac. Sci. Technol.* **169-170**, 528–531 (2003).
J. KOU, T. MORI, M. ONO, Y. HARUYAMA, Y. KUBOZONO and K. MITSUKE, "Molecular- and Atomic-Like Photoionization of C_{60} in the Extreme Ultraviolet," *Chem. Phys. Lett.* **374**, 1–6 (2003).
T. MORI, J. KOU, M. ONO, Y. HARUYAMA, Y. KUBOZONO and K. MITSUKE, "Development of a Photoionization Spectrometer for Accurate Ion Yield Measurements from Gaseous Fullerenes," *Rev. Sci. Instrum.* **74**, 3769–3773 (2003).
A. MITSUO, T. MORI, Y. SETSUHARA, S. MIYAKE and T. AIZAWA, "Mechanical Properties of Zirconium Films Prepared by Ion-Beam Assisted Deposition," *Nucl. Instrum. Meth. Phys. Res., Sect. B* **206**, 366–370 (2003).

Coordination Chemistry Laboratories

H. MIYASAKA, R. CLERAC, T. ISHII, H. CHANG, S. KITAGAWA and M.YAMASHITA, "Out-of-Plane Dimers of Mn(III) Quadridentate Schiff-Base Complexes with Saltmen^{2-} and Naphtmen^{2-} Ligands: Structure Analysis and Ferromagnetic Exchange," *J. Chem. Soc., Dalton Trans.* **7**, 1528–1534 (2002).
H. TANAKA, K. MARUMOTO, S. KURODA, T. ISHII, R. KANEHAMA, N. AIZAWA, H. MATSUZAKA, K. SUGIURA, H. MIYASAKA, T. KODAMA, K. KIKUCHI, I. IKEMOTO and M. YAMASHITA, "Electron Spin Resonance Studies of Co(tbp)·C_{60} Single Crystal," *J. Phys.: Condens. Matter* **14**, 3993–4000 (2002).
K. NAKATA, Y. YOSHINO, H. HARA, T. MANABE, T. ISHII, H. MIYASAKA, M. YAMASHITA, H. MATSUZAKA and M. KATADA, "Structure, Magnetic and Electronic Properties of Charge Transfer Complex Containing Hexacyanoferrate Chain and BEDT-TTF Column," *Mol. Cryst. Liq. Cryst.* **380**, 117–122 (2002).
H. ASO, T. MANABE, T. KAWASHIMA, T. ISHII, H. MIYASAKA, H. MATSUZAKA, M. YAMASHITA, N. KURODA and M. SHIRO, "Creations of Solitons and Polarons in MX-Chain Compounds, $\{[Pt(en)_2][PtX_2(en)_2]\}_3(CuX_4)_4$ (X = Cl and Br)," *Mol. Cryst. Liq. Cryst.* **376**, 7–12 (2002).
N. AIZAWA, H. HARA, T. ISHII, M. YAMASHITA, H. MIYASAKA, H. MATSUZAKA, T. KODAMA, K. KIKUCHI and I. IKEMOTO, "Syntheses and Physical Properties of Complexes of Fullerene with Magnetic Metal Porphyrins," *Mol. Cryst. Liq. Cryst.* **376**, 13–18 (2002).
K. TAKIZAWA, T. ISHII, H. MIYASAKA, H. MATSUZAKA, M. YAMASHITA, T. KAWASHIMA, H. MATSUZAKI, H. KISHIDA and H. OKAMOTO, "Crystal and Electronic Structures of Quasi-One-Dimensional Halogen-Bridged Binuclear Platinum Complexes, $\{(C_nH_{2n+1})_2NH_2\}_4[Pt_2(pop)_4I]$ (n = 2–6)," *Mol. Cryst. Liq. Cryst.* **376**, 159–164 (2002).
T. MANABE, K. YOKOYAMA, T. ISHII, H. MIYASAKA, H. MATSUZAKA, M. YAMASHITA, T. KAWASHIMA, H. MATSUZAKI, H. KISHIDA, H. OKAMOTO, K. MARUMOTO, H. TANAKA, H. ITOH and S. KURODA, "Physical Properties of Quasi-One-Dimensional Mixed-Metal and Mixed-Halogen Complexes, $Ni_{1-x}Pd_x(chxn)_2Cl_yBr_{1-y}Y_2$," *Mol. Cryst. Liq. Cryst.* **376**, 165–170 (2002).
H. MIYASAKA, Y. YOSHINO, T. ISHII, R. KANEHAMA, T. MANABE, M. YAMASHITA, H. NISHIKAWA, I. IKEMOTO, H. KISHIDA, H. MATSUZAKI and H. OKAMOTO, "Magnetic/Conducting Hybrid Compound Composed of 1-D Chain $[Mn^{II}_2Cl_5(EtOH)]_\infty^-$ and BEDT-TTF Stacking Layer," *J. Solid State Chem.* **168**, 418–426 (2002).
C. KACHI-TERAJIMA, H. MIYASAKA, T. ISHII, K. SUGIURA and M. YAMASHITA, "Structure and Electrochemistry of the Bridging-Ligand Mono-Substituted Diruthenium Compound, $[Ru_2(II,III)(O_2CCH_3)_3(admpym)(Cl)(MeOH)]$ (Hadmpym = 2-amino-4,6-dimethylpyrimidine)," *Inorg. Chim. Acta* **332**, 210–215 (2002).
H. ITO, M. SUNATA, S. KURODA, T. MANABE and M. YAMASHITA, "Electrical Conduction of Halogen-Bridged Metal Complexes $Ni_{1-x}Pd_x(chxn)_2Br_3$," *Mol. Cryst. Liq. Cryst.* **379**, 285–290 (2002).
H. MIYASAKA, K. SUGIMOTO, K. SUGIURA, T. ISHII and M. YAMASHITA, "Reactions of Mn(III) Quadridentate Schiff Base Compounds with TCNQ Anion to Form Unusual TCNQ Derivatives by Alcoholysis," *Mol. Cryst. Liq. Cryst.* **379**, 197–204 (2002).
H. MIYASAKA, K. MIZUSHIMA, S. FURUKAWA, K. SUGIURA, T. ISHII and M. YAMASHITA, "Out-of-Plane Dimer Structures and Magnetic Properties of Mn(III) Quadridentate Schiff Base Compounds with N,N'-(1,1,2,2-tetramethylethylene)bis(5-chlorosalicylideneiminato)," *Mol. Cryst. Liq. Cryst.* **379**, 171–178 (2002).
K. NAKATA, H. MIYASAKA, T. ISHII, M. YAMASHITA and K. AWAGA, "Synthesis, Structure and Magnetic Properties of the Antiferromagnetic Hexamanganese Cluster $[Mn_6(\mu_4\text{–}O)_2(O_2CC_6HF_4)_{10}(HO_2CCH_3)_4]\cdot(C_7H_8)$," *Mol. Cryst. Liq. Cryst.* **379**, 211–216 (2002).
R. CLERAC, H. MIYASAKA, M. YAMASHITA and C. COULON, "Evidence for Single-Chain Magnet Behavior in a Mn^{III}-Ni^{II} Chain Designed with High Spin Magnetic Units: A Route to High Temperature Metastable

Magnets," *J. Am. Chem. Soc.* **124**, 12837–12844 (2002).
T. MANABE, K. YOKOYAMA, S. FURUKAWA, C. KACHI-TERAJIMA, K. NAKATA, F. IWAHORI, H. MIYASAKA, K. SUGIURA, M. YAMASHITA, H. KISHIDA and H. OKAMOTO, "Tuning of Spin Density Wave Strengths in Quasi-One-Dimensional Mixed-Halogen-Bridged Ni(III) Complexes with Strong-Electron Correlation, $[Ni^{III}(chxn)_2Cl_{1-x}Br_x](NO_3)_2$," *Inorg. Chem.* **41**, 4993–4995 (2002).
R. KANEHAMA, Y. YOSHINO, T. ISHII, T. MANABE, H. HARA, H. MIYASAKA, H. MATSUZAKA, M. YAMASHITA, M. KATADA, H. NISHIKAWA and I. IKEMOTO, "Syntheses and Physical Properties of New Charge-Transfer Salts Consisting of a Conducting BEDT-TTF Column and Magnetic 1D or 2D Fe(III) Networks," *Synth. Met.* **133-134**, 553–554 (2003).
H. MATSUZAKI, T. MATSUOKA, H. KISHIDA, K. TAKIZAWA, H. MIYASAKA, K. SUGIURA, M. YAMASHITA and H. OKAMOTO, "Novel Optical and Magnetic Bistability and Photoinduced Transition in a One-Dimensional Halogen-Bridged Binuclear Pt Complex," *Phys. Rev. Lett.* **90**, 046401 (4 pages) (2003).
M. YAMASHITA, H. ASO, S. MATSUNAGA, K. TAKIZAWA, K. NAKATA, C. KACHI-TERAJIMA, F. IWAHORI, T. ISHII, H. MIYASAKA, K. SUGIURA, T. KAWASHIMA, K. TAKAI, N. KURODA, M. SHIRO, H. KISHIDA, H. OKAMOTO, H. TAKAHASHI, H. TANAKA, K. MARUMOTO and S. KURODA, "Unprecedented Soliton Formation Mechanism in Quasi-One-Dimensional Chloro-Bridged Pt^{II}-Pt^{IV} Mixed-Valence Compound, $\{[Pt(en)_2][PtCl_2(en)_2]\}_3(CuCl_4)_4 \cdot 12H_2O$," *Chem. Lett.* **32**, 278–279 (2003).
H. MIYASAKA, K. MIZUSHIMA, K. SUGIURA and M. YAMASHITA, "A Series of Ni(II) Pyridyloximato (pao^-) Compounds $[Ni(pao)_2(L)_2]$ (L = Unidentate Ligand): As a Coordination Donor Building Block in the Assembly with Mn(III) Salen Analogues," *Synth. Met.* **137**, 1245–1246 (2003).
M. MITO, H. AKAMA, H. DEGUCHI, S. TAKAGI, T. KAWAE, K. TAKEDA, T. ISHII, M. YAMASHITA, H. NAKAO, Y. MURAKAMI and S. YAMAMOTO, "Pressure Effects on an S = 1 Haldane Compound $Ni(C_5H_{14}N_2)_2N_3(PF_6)$," *J. Phys. Soc. Jpn.* **72**, 399–404 (2003).
F. IWAHORI, H. MIYASAKA, T. ISHII, K. SUGIURA and M. YAMASHITA, "Platinum(II) Complex with S = 1/2 Organic Radical Ligand," *Synth. Met.* **135-136**, 355–356 (2003).
T. ONO, M. YAMASHITA, K. YOKOYAMA, S. FURUKAWA, T. MANABE, K. SUGIURA, T. ISHII, H. MIYASAKA, H. MATSUZAKI, H. KISHIDA, H. OKAMOTO, K. MARUMOTO, H. TANAKA, Y. HASEGAWA, S. KURODA and H. ITOU, "Tuning of Spin Density Wave Strength of Ni(III) Complexes with Strong Electron-Correlation," *Synth. Met.* **135-136**, 257–258 (2003).
R. KANEHAMA, H. MIYASAKA, K. SUGIURA, M. YAMASHITA, H. ITOU, S. KURODA, H. KISHIDA and H. OKAMOTO, "New Charge-Transfer Salts $(ET)_8(Mn^{II}Br_4)_2(DCE)_2$ and $(ET)_3Mn^{II}Br_4$: Preparations, Structures and Physical Properties (ET = BEDT-TTF, DCE = 1,2-Dichloroethane)," *Synth. Met.* **135-136**, 633–634 (2003).
H. KISHIDA, M. ONO, H. MATSUZAKI, M. YAMASHITA, Y. TAGUCHI, Y. TOKURA and H. OKAMOTO, "Gigantic Third-Order Optical Nonlinearity in One-Dimensional Mott Insulators," *Synth. Met.* **135-136**, 315–316 (2003).
H. MIYASAKA, H. IEDA, N. MATSUMOTO, K. SUGIURA and M. YAMASHITA, "Structure and Magnetic Properties of the Two-Dimensional Ferrimagnet $(NEt_4)[\{Mn(salen)\}_2Fe(CN)_6]$: Investigation of Magnetic Anisotropy on a Single Crystal," *Inorg. Chem.* **42**, 3509–3515 (2003).
H. TANAKA, K. MARUMOTO, S. KURODA and M. YAMASHITA, "LESR Studies of Long-Lived Photogenerated Spins in the MX-Chain Complex, $Pd(chxn)_2Br_3$," *Synth. Met.* **135-136**, 317–318 (2003).
H. MIYASAKA, T. NEZU, F. IWAHORI, S. FURUKAWA, K. SUGIMOTO, R. CLERAC, K. SUGIURA and M. YAMASHITA, "Heterometallic Hexanuclear Cluster with an S = 8 Spin Ground State: $Mn^{II}\{Mn^{II}(hfac)_2\}_3$-$\{Ni^{II}(pao)_3\}_2$ ($hfac^-$ = Hexafluoroacetylacetonate, pao^- = Pyridine-2-aldoximate)," *Inorg. Chem.* **42**, 4501–4503 (2003).

Y. FUKUMOTO, T. DOHI, H. MASAOKA, N. CHATANI and S. MURAI, "Reaction of Terminal Alkynes with Hydrazines to Give Nitriles Catalyzed by $TpRuCl(PPh_3)_2$: Novel Catalytic Transformation Involving a Vinylidene Ruthenium Intermediate," *Organometallics* **21**, 3845–3847 (2002).
N. CHATANI, A. KAMITANI and S. MURAI, "Ruthenium-Catalyzed Reaction of α,β-Unsaturated Imines with Carbon Monoxide and Alkenes Leading to β,γ-Unsaturated γ-Butyrolactams: Involvement of Direct Carbonylation of Olefinic C–H Bonds as a Key Step," *J. Org. Chem.* **67**, 7014–7018 (2002).
N. CHATANI, S. YORIMITSU, T. ASAUMI, F. KAKIUCHI and S. MURAI, "$Ru_3(CO)_{12}$-Catalyzed C–H/CO/Olefin Coupling of *N*-Pyridylindolines. Direct Carbonylation at a C–H Bond δ to the Pyridine Nitrogen," *J. Org. Chem.* **67**, 7557–7560 (2002).
N. CHATANI, K. AMAKO, M. TOBISU, T. ASAUMI, Y. FUKUMOTO and S. MURAI, "Ruthenium-Catalyzed Carbonylative Cycloaddition of α-Keto Lactones with Alkenes or Alkynes: The Participation of an Ester-Carbonyl group in Cycloaddition Reactions as the Two-Atom Assembling Unit," *J. Org. Chem.* **68**, 1591–1593 (2003).
F. KAKIUCHI, S. KAN, K. IGI, N. CHATANI and S. MURAI, "A Ruthenium-Catalyzed Reaction of Aromatic Ketones with Arylboronates: A New Method for the Arylation of Aromatic Compounds *via* C–H Bond Cleavage," *J. Am. Chem. Soc.* **125**, 1698–1699 (2003).
A. KAMITANI, N. CHATANI and S. MURAI, "Palladium-Catalyzed Carbonylation of 2-(Propargyl)allyl Phosphates Leading to Highly Unsaturated γ-Lactones," *Angew. Chem., Int. Ed.* **42**, 1397–1399 (2003).

N. CHATANI, M. OSHITA, M. TOBISU, Y. ISHII and S. MURAI, "A $GaCl_3$-Catalyzed [4+1] Cycloaddition of α,β-Unsaturated Carbonyl Compounds and Isocyanides Leading to Unsaturated γ-Lactone Derivatives," *J. Am. Chem. Soc.* **125**, 7812–7813 (2003).

T. FUJIWARA, R. OKAMURA, T. WADA and K. TANAKA, "Coordination Ability of 1,10-Phenanthroline-5,6-Dione: Syntheses and Redox Behavior of a Ru(II) Complex with an *o*-Quinoid Moiety and of Bridged Ru(II)-M(II) Complexes (M = Pd, Pt)," *Dalton Trans.* 3221–3226 (2003).
K. KOBAYASHI, H. OHTSU, T. WADA, T. KATO and K. TANAKA, "Characterizationof a Stable Ruthenium Complex with Oxyl Radical", *J. Am. Chem. Soc.* **125**, 6729–6739 (2003).
H. SUGIMOTO, K. SIRE K., H. TSUKUBE and K. TANAKA, "Mono-Dithiolene Molybdenum(IV) Complexes of cis-1,2-Dicyno-1.2-ethylenedithiolate (mnt^{2-}): New Models for Molybdenum Enzymes," *Eur. J. Inorg. Chem.* 2633–2638 (2003).
T. KOIZUMI, T. TOMON and K. TANAKA, "Terpyridine-Analogous (N,N,C)-Tridentate Ligands: Synthesis, Structures and Electrochemical Properties of Ruthenium(II) Complexes Bearing Tridentate Pyridinium and Pyridinylidene Ligands," *Organometallics* **22**, 970–975 (2003).
D. OOYAMA, T. KOBAYASHI, K. SHIREN and K. TANAKA, "Regulation of Electron Donating Ability to Metal Center: Isolation and Characterization of Ruthenium Carbonyl Complexes with *N*,*N*- and/or *N*,*O*-Donor Polypyridyl Ligands," *J. Organomet. Chem.* **665**, 107–113 (2003).
K. SHIREN and K. TANAKA, "Acid-Base Equilibrium of Aqua-Chromium-Dioxolene Complexes Aimed at Formation of Oxo-Chromium Complexes," *Inorg. Chem.* **41**, 5912 (2002).
K. KOBAYASHI, H. OHTSU, T. WADA and K. TANAKA, "Ruthenium Pxyl Radical Complex Containing o-Oquinone Ligand Detected by ESR Measurements of Spin Trapping Technique," *Chem. Lett.* 23–24 (2002).
T. NAGATA and K. TANAKA, "Synthesis of a 6-(2-Pyrrolyl)-2,2'-Bipyridine Derivative and Its Ruthenium Complex," *Bull. Chem. Soc. Jpn.* **75**, 2469 (2002).
H. SUGIMOTO, H. WADA, Y. WAKATSUKI, T. WADA and K. TANAKA, "Novel Diruthenium Disulfinate Complex Formed through Oxygen Capture on Deprotonated Form of Ruthenium-Aqua-Dithiolene: Four Oxygens from O_2 and Four Oxygens from H_2O," *Chem. Lett.* 634–635 (2002).

T. KOMURO, T. MATSUO, H. KAWAGUCHI and K. TATSUMI, "Copper and Silver Complexes Containing the $S(SiMe_2S)_2^{2-}$ Ligand: Efficient Entries into Heterometallic Sulfido Clusters," *Angew. Chem., Int. Ed.* **42**, 465–468 (2003).
T. KOMURO, T. MATSUO, H. KAWAGUCHI and K. TATSUMI, "Unusual Coordination Modes of Arylthiolates in $Mo\{\eta^5\text{-}SC_6H_3\text{-}2,6\text{-}(SiMe_3)_2\}\{\eta^7\text{-}SC_6H_3\text{-}2,6\text{-}(SiMe_3)_2\}$," *J. Am. Chem. Soc.* **125**, 2070–2071 (2003).
S. E. D'ARBELOFF-WILSON, P. HITCHCOCK, J. F. NIXON, H. KAWAGUCHI and K. TATSUMI, "[2+2] Cyclo-addition Reactions of Bis-pentamethylcyclopentadienyl Zirconium Metal Complexes Containing Terminal Chalcogenide Ligands with the Phospha-alkyne PC^tBu. Synthesis, Crystal and Molecular Structures of the Four Complexes $[Zr(\eta^5\text{-}(C_5Me_5)_2(SC(^tBu)=P))]$, $[Zr(\eta^5\text{-}(C_5Me_5)_2(SeC(^tBu)=P))]$, $[Zr(\eta^5\text{-}(C_5Me_5)_2(SC(^tBu)=PSe))]$, and $[Zr(\eta^5\text{-}(C_5Me_5)_2(SC(^tBu)=PC(Ph)=N))]$," *J. Organomet. Chem.* **672**, 1–10 (2003).
Y. OHKI, N. MATSUURA, T. MARUMOTO, H. KAWAGUCHI and K. TATSUMI, "Heterolytic Cleavage of Dihydrogen Promoted by Sulfido-Bridged Tungsten-Ruthenium Dinuclear Complexes," *J. Am. Chem. Soc.* **125**, 7978 (2003).
H. AIHARA, T. MATSUO and H. KAWAGUCHI, "Titanium N-Hetrocyclic Carbene Complexes Incorporating an Imidazolium-linked Bis(phenol)," *Chem. Commun.* 2204–2205 (2003).
J. FANG, L. GAN, H. KAWAGUCHI, W. -Y. SUN, K. -B. YU and W. -X. TANG, "Reversible Anion Exchanges between the Layered Organic-Inorganic Hybridized Architectures and Structures of Manganese(II) and Copper(II) Complexes Novel Tripodal Ligands," *Chem. Eur. J.* **9**, 3965–3973 (2003).
K. MATSUZAKI, H. KAWAGUCHI, P. VOTH, K. NODA, S. ITOH, H. D. TAKAGI, K. KASHIWABARA and K. TATSUMI, "Syntheses and Characterization of Titanium(IV) and Titanium(III) Complexes with (2-Dimethylphosphino)ethane-1-thiolate and (3- T. Dimethylphosphino)propane-1-thiolate as Ligands," *Inorg. Chem.* **42**, 5320–5329 (2003).
KOMURO, T. MATSUO, H. KAWAGUCHI and K. TATSUMI, "Coordination Chemistry of Silanedithiolato Ligands Derived from Cyclotrisilathiane: Synthesis and Structures of Complexes of Iron(II), Cobalt(II), Palladium(II), Copper(I), and Silver(I)," *Inorg. Chem.* **42**, 5340–5347 (2003).

Y. KAWAI, M. HAYASHI and N. TOKITOH, "Propanone 2-Chloro-4,6-Dinitrophenylhydrazone," *Acta Crystallogr., Sect. E* **58**, o1098–o1099 (2002).
N. TAKEDA, A. SHINOHARA and N. TOKITOH, "Synthesis and Properties of the First 1-Silanaphthalene," *Organometallics* **21**, 4024–4026 (2002).
N. TOKITOH, K. HATANO, T. SASAKI, T. SASAMORI, N. TAKEDA, N. TAKAGI and S. NAGASE, "Synthesis and Isolation of the First Germacyclopropabenzene: A Study to Elucidate the Intrinsic Factor for the Ring Deformation of Cyclopropabenzene Skeletons," *Organometallics* **21**, 4309–4311 (2002).
N. NAKATA, N. TAKEDA and N. TOKITOH, "η^6-Germabenzene Complexes of Chromium and Molybdenum," *Angew. Chem., Int. Ed.* **42**, 115–117 (2003).

N. NAKATA, N. TAKEDA and N. TOKITOH, "Synthesis and Properties of the First Stable Neutral Germaaromatic Compound, 2-{2,4,6-Tris[bis(trimethylsilyl)methyl]phenyl}-2-germanaphthalene," *Organometallics* **22**, 481–489 (2003).
K. NAGATA, N. TAKEDA and N. TOKITOH, "Unusual Oxidation of Dichalcogenido Complexes of Platinum," *Chem. Lett.* **32**, 170–171 (2003).
T. TAJIMA, K. HATANO, T. SASAKI, T. SASAMORI, N. TAKEDA and N. TOKITOH, "The First Examples of Stable Benzenes Fused with Two Three-membered Rings: Synthesis and Structures of the Two Stereoisomers of Bis(silacyclopropa)benzenes," *Chem. Lett.* **32**, 220–221 (2003).
N. NAKATA, N. TAKEDA and N. TOKITOH, "Reaction of Stable Germabenzene with Chalcogens: Synthesis and Structure of a Novel Germanium Analog of Pentathiepane, 1,2,3,4,5,6-Pentathiagermepane," *J. Organomet. Chem.* **672**, 66–71 (2003).
T. SASAMORI, N. TAKEDA and N. TOKITOH, "Synthesis and Reactions of New Diphosphenes Bearing Extremely Bulky Substituents," *J. Phys. Org. Chem.* **16**, 450–462 (2003).
N. TAKEDA, T. KAJIWARA, H. SUZUKI, R. OKAZAKI and N. TOKITOH, "Synthesis and Properties of the First Stable Silylene-Isocyanide Complexes," *Chem. Eur. J.* **9**, 3530–3543 (2003).
K. NAGATA, N. TAKEDA and N. TOKITOH, "Synthesis, Structure, and Properties of the First Disulfur and Diselenium Complexes of Platinum," *Bull. Chem. Soc. Jpn.* **76**, 1577–1587 (2003).

S. NORO, R. KITAURA, M. KONDO, S. KITAGAWA, T. ISHII, H. MATSUZAKA and M. YAMASHITA, "Framework Engineering by Anions and Prous Functionalities of Cu(II)/4,4'-bpy Coordination Polymers," *J. Am. Chem. Soc.* **124**, 2568–2583 (2002).
H. ASO, T. MANABE, T. KWASHIMA, T. ISHII, H. MIYASAKA, H. MATSUZAKA, M. YAMASHITA, M. HASSANUDDIN, N. KURODA and M. SHIRO, " Creations of Solitons and Polarons in MX-Chain Compounds, $\{[Pt(en)_2][PtX_2(en)_2]\}_3(CuX_4)_4$ (X = Cl and Br)," *Synth. Met.* **376**, 7–12 (2002).
N. AIZAWA, H. HARA, T. ISHII, M. YAMASHITA, H. MIYASAKA, H. MATSUZAKA, T. KODAMA, K. KIKUCHI and I. IKEMOTO, "Synthesis and Physical Properties of Complexes of Fullerene with Magnetic Metal Porphyrins," *Synth. Met.* **376**, 13–18 (2002).
K. TAKIZAWA, T. ISHII, H. MIYASAKA, H. MATSUZAKA, M. YSMASHITA, T. KAWASHIMA, H. MATSUZAKI, H. KISHIDA and H. OKAMOTO, "Crystal and Electronic Structures of Quasi-One-Dimensional Halogen-Bridged Binuclear Platinum Complexes, $\{[C_nH_{2n+1})_2NH_2\}_4[Pt_2(pop)_4I]$ (n = 2–6)," *Synth. Met.* **376**, 159–164 (2002).
T. MANABE, K. YOKOYAMA, T. ISHII, H. MIYASAKA, H. MATSUZAKA, M. YAMASHITA, T. KAWASHIMA, H. MATSUZAKI, H. KISHIDA, H. OKAMOTO, K. MARUMOTO, H. TANAKA, H. ITOH and S. KURODA, "Physical Properties of Quasi-One-Dimensional Mixed-Metal and Mixed-Halogen Complexes $Ni_{1-x}Pd_x(chxn)_2Cl_yBr_{1-y}Y_2$," *Synth. Met.* **376**, 165–170 (2002).
H. TANAKA, K. MARUMOTO, S. KRODA, T. ISHII, R. KANEHAMA, N. AIZAWA, H. MATSUZAKA, K. SUGIURA, H. MIYASAKA, T. KODAMA, K. KIKUCHI, I. IKEMOTO and M. YAMASHITA, "Electron Spin Resonance Studies of Co(tbp)·C_{60} Single Crystal," *J. Phys.: Condens. Matter* **14**, 3993–4000 (2002).

K. ONITSUKA, M. YAMAMOTO, S. SUZUKI and S. TAKAHASHI, "Structure and Reactivity of (η^3-Indolylmethyl)palladium Complexes Generated by the Reaction of Organopalladium Complexes with *o*-Alkenylphenyl Isocyanide," *Organometallics* **21**, 581–583 (2002).
M. YAMAMOTO, K. ONITSUKA, M. UNO, and S. TAKAHASHI, "Synthesis of Enantiopure Planar-Chiral Cyclopentadienyl-Ruthenium Binuclear Complexes Bridged by Aromatic Systems," *J. Chem. Soc., Dalton Trans.* 1473–1478 (2002).
K. ONITSUKA, S. SUZUKI and S. TAKAHASHI, "A Novel Route to 2,3-Disubstituted Indoles *via* Palladium-Catalyzed Three-Component Coupling of Aryl Iodide, *o*-Alkenylphenyl Isocyanide and Amine," *Tetrahedron Lett.* **43**, 6197–6199 (2002).
K. ONITSUKA, H. KITAJIMA, M. FUJIMOTO, A. IUCHI, F. TAKEI and S. TAKAHASHI, "Platinum-Acetylide Dendrimers Possessing a Porphyrin Core," *Chem. Commun.* 2576–2577 (2002).
D. -Y. ZHOU, E. YONEDA, K. ONITSUKA and S. TAKAHASHI, "Ruthenium-Catalyzed Carbonylation of Allene: Direct Synthesis of Methacrylates and Methacrylamides," *Chem. Commun.* 2868–2869 (2002).
K. ONITSUKA, A. SHIMIZU and S. TAKAHASHI, "A Divergent Approach to the Precise Synthesis of Giant Organometallic Dendrimers Using Platinum-Acetylides as Building Blocks," *Chem. Commun.* 280–281 (2003).
F. TAKEI, S. NAKAMURA, K. ONITSUKA, N. KOBAYASHI and S. TAKAHASHI, "Preparation and Photochemical Properties of Polyisocyanides with Regularly Arranged Porphyrin Pendants," *Chem. Lett.* **32**, 506–507 (2003).

K. UENO, N. WATANABE, S. ASAMI, M. SAKAI and H. OGINO, "Synthesis of Sefl-Stabilized and Donor-Free Silyl(silylene)tungsten Complexes," *Organometallics* **21**, 1326–1328 (2002).
K. UENO, T. YAMAGUCHI, K. UCHIYAMA and H. OGINO, "Synthesis of the First Gallane-Coordinated Transition Metal Complex," *Organometallics* **21**, 2347–2349 (2002).
M. OKAZAKI, K. SATOH, T. AKAGI, M. IWATA, K. A. JUNG, R. SHIOZAWA, K. UENO, H. TOBITA and H. OGINO, "Convenient Preparation of Li[(η^5-C_5Me_5)M(CO)$_2$] (M = Ru, Fe) by the Reaction of (η^5-

$C_5Me_5)M(CO)_2H$ with *n*-BuLi," *J. Organomet. Chem.* **645**, 201–205 (2002).

Laser Research Center for Molecular Science

S. ONO, Y. SUZUKI, T. KOZEKI, H. MURAKAMI, H. OHTAKE, N. SARUKURA, H. SATO, S. MACHIDA, K. SHIMAMURA and T. FUKUDA, "High-Energy, All-Solid-State, Ultraviolet Laser Power-Amplifier Module Design and Its Output-Energy Scaling Principle," *Appl. Opt.* **41**, 7556–7560 (2002).
Z. LIU, S. ONO, T. KOZEKI, Y. SUZUKI, N. SARUKURA and H. HOSONO, "Generation of Intense 25-fs Pulses at 290 nm by a Hollow Fiber Filled with High-Pressure Argon Gas," *Jpn. J. Appl. Phys.* **41**, L986–L988 (2002).
H. OHTAKE, H. MURAKAMI, T. YANO, S. ONO, N. SARUKURA, H. TAKAHASHI, Y. SUZUKI,G. NISHIJIMA and K. WATANABE, "Anomalous Power and Spectrum Dependence of Terahertz Radiation from Femtosecond-Laser-Irradiated Indium Arsenide in High Magnetic Fields up to 14 T," *Appl. Phys. Lett.* **82**, 1164–1166 (2003).
H. TAKAHASHI, Y. SUZUKI, M. SAKAI, S. ONO, N. SARUKURA, T. SUGIURA, T. HIROSUMI and M. YOSHIDA, "Significant Enhancement of Terahertz Radiation from InSb by Use of a Compact Fiber Laser and an External Magnetic Field," *Appl. Phys. Lett.* **82**, 2005–2007 (2003).
M. TAKESADA, E. VANAGAS, D. TUZHILIN, I. KUDRYASHOV, S. SURUGA, H. MURAKAMI, N. SARUKURA,K. MATSUDA, S. MONONOBE, T. SAIKI, M. YOSHIMOTO and S. KOSHIHARA, "Micro-Character Printing on a Diamond Plate by Femtosecond Infrared Optical Pulses," *Jpn. J. Appl. Phys.* **42**, 4613–4616 (2003).
H. TAKAHASHI, Y. SUZUKI, S. ONO, H. MURAKAMI, N. SARUKURA and T. NAKAMURA, "Mode-Locking Stability Adjustment of a Kerr-Lens Mode-Locked Ti:sapphire Laser, Analyzed by a Recently Developed Real-Time Spectrum Analyzer," *Jpn. J. Appl. Phys.* **42**, 4330–4333 (2003).
H. TAKAHASHI, Y. SUZUKI, A. QUEMA, M.SAKAI, T. YANO, S. ONO, N. SARUKURA, M. HOSOMIZU, T. TSUKAMOTO, G. NISHIJIMA and K. WATANABE, "Magnetic-Field-Induced Enhancement of THz-Radiation Power from Femtosecond-Laser-Iradiated InAs up to 27 T," *Jpn. J. Appl. Phys.* **42**, L532–L534 (2003).
H. TAKAHASHI, M. SAKAI, S. ONO, N. SARUKURA, H. SARO and T. FUKUDA, "Optical Property of Ce^{3+}-Ion-Doped $LiCaAlF_6$ Crystal in Vacuum Ultraviolet Region," *Jpn. J. Appl. Phys.* **42**, L660–L662 (2003).
A. QUEMA, H. TAKAHASHI, M. SAKAI, M. GOTO, S. ONO, N. SARUKURA, N. YAMADA and R. SHIODA, "Identification of Potential Estrogenic Environmental Pollutants by Terahertz Transmission Spectroscopy," *Jpn. J. Appl. Phys.* **42**, L932–L934 (2003).
H. TAKAHASHI, A. QUEMA, R. YOSHIOKA, S. ONO and N. SARUKURA, "Excitation Fluence Dependence of Megahertz Radiation Mechanism from Femtosecond-Laser-Irradiated InAs under Magnetic Field," *Appl. Phys. Lett.* **83**, 1068–1070 (2003).

I. SHOJI and T. TAIRA, "Drastic Reduction of Depolarization Resulting from Thermally Induced Birefringence by Use of a (110)-Cut YAG Crystal," *OSA Trends in Optics and Photonics.* **68**, 521–525 (2002).
V. LUPEI, N. PAVEL and T. TAIRA, "Highly Efficient Continuous-Wave 946-nm Nd:YAG Laser Emission under Direct 885-nm Pumping," *Appl. Phys. Lett.* **81**, 2677–2679 (2002).
Y. SATO and T. TAIRA, "Spectroscopic Properties of Neodymium-Doped Yttrium Orthovanadate Single Crystals with High-Resolution Measurement," *Jpn. J. Appl. Phys.* **41**, 5999–6002 (2002).
T. DASCALU, T. TAIRA and N. PAVEL, "100-W Quasi-Continuously-Wave Diode Radial Pumped Microchip Composite Yb:YAG Laser," *Opt. Lett.* **27**, 1791–1793 (2002).
Y. SATO, T. TAIRA, N. PAVEL and V. LUPEI, "Laser Operation with Near Quantum-Defect Slope Efficiency in Nd:YVO_4 under Direct Pumping into the Emitting Level," *Appl. Phys. Lett.* **82**, 844–846 (2003).
H. ISHIZUKI, T. TAIRA, S. KURIMURA, J.H. RO and M. CHA, "Periodic Poling in 3-mm-thick MgO:$LiNbO_3$ Crystals," *Jpn. J. Appl. Phys.* **42**, 108–110 (2003).
N. E. YU, S. KURIMURA, K. KITAMURA, J. H. RO, M. CHA, S. ASHIHARA, T. SHIMURA, K. KURODA and T. TAIRA, "Efficient Frequency Doubling of a Femtosecond Pulse with Simultaneous Group-Velocity Matching and Quasi Phase Matching in Periodically Poled, MgO-Doped Lithium Niobate," *Appl. Phys. Lett.* **82**, 3388–3390 (2003).
A. LUPEI, V. LUPEI, T. TAIRA, Y. SATO, A. IKESUE and C. GHEORGHE, "Energy Transfer Processes of Nd^{3+} in Y_2O_3 Ceramic," *J. Lumin.* **102-103**, 72–76 (2003).
J. SAIKAWA and T. TAIRA, "Second-Harmonic Nonlinear Mirror CW Mode Locking in Yb:YAG Microchip Lasers," *Jpn. J. Appl. Phys.* **42**, 649–651 (2003).
H. ISHIZUKI, I. SHOJI and T. TAIRA, "Periodical Poling Characteristics of Congruent MgO:$LiNbO_3$ Crystals at Elevated Temperature," *Appl. Phys. Lett.* **82**, 4062–4064 (2003).
Y. SATO, N. PAVEL and T. TAIRA, "Laser Oscillation with More Than 80% Slope Efficiency in Nd:YVO_4 under Direct Pumping into the Emitting Level," *OSA Trends in Optics and Photonics.* **83**, 46–50 (2003).
T. DASCALU, T. TAIRA and N. PAVEL, "Diode Edge-Pumped High Power Microchip Composite Yb:YAG Laser," *OSA Trends in Optics and Photonics.* **83**, 231–234 (2003).
H. ISHIZUKI, I. SHOJI, T. TAIRA and S.KURIMURA, "Periodical Poling Characteristics of 5mol% MgO-

Doped Congruent $LiNbO_3$ Crystals at Elevated Temperature," *OSA Trends in Optics and Photonics.* **83**, 248–253 (2003).
N. PAVEL, I. SHOJI, T. TAIRA, M. IWAI, T. YOSHINO, S. YAMAGUCHI and M. IMAEDA, "High-Power Blie Generation in a Periodically Poled MgO:$LiNbO_3$ Ridge-Type Waveguide by Frequency Doubling of a Diode End-Pumped Nd:YAG Laser," *OSA Trends in Optics and Photonics.* **83**, 388–392 (2003).
Y. SATO, I. SHOJI, T. TAIRA and A. IKESUE, "The Spectroscopic Properties and Laser Characteristics of Polycrystalline Nd:$Y_3Sc_xAl_{(5-x)}O_{12}$ Laser Media," *OSA Trends in Optics and Photonics.* **83**, 444–450 (2003).
S. ASHIHARA, T. SHIMURA, K. KURODA, N. E. YU, S. KURIMURA, K. KITAMURA, J. H. RO, M. CHA and T. TAIRA, "Group-Velocity-Matched Cascaded Quadratic Nonlinearities of Femtosecond Pulses in Periodically Poled MgO:$LiNbO_3$," *Opt. Lett.* **28**, 1442–1444 (2003).
Y. SATO, T. TAIRA and A. IKESUE, "Spectral Parameters of Nd^{3+}-Ion in the Polycrystalline Solid-Solution Composed of $Y_3Al_5O_{12}$ and $Y_3Sc_2Al_3O_{12}$," *Jpn. J. Appl. Phys.* **42**, 5071–5074 (2003).

Research Center for Molecular-scale Nanoscience

K. ITO, T. SUZUKI, Y. SAKAMOTO, D. KUBOTA, Y. INOUE, F. SATO and S. TOKITO, "Oligo(2,6-Anthrylene)s: Acene-Oligomer Approach for Organic Field-Effect Transistors," *Angew. Chem., Int. Ed.* **42**, 1159–1162 (2003).
T. TSUZUKI, N. SHIRASAWA, T. SUZUKI and S. TOKITO, "Color Tunable Organic Light-Emitting Diodes Using Pentafluorophenyl-Substituted Iridium Complexes," *Adv. Mater.* **15**, 1455–1458 (2003).

T. ISHIBASHI, M. ARA, H. TADA and H. ONISHI, "Conformation of *n*-Alkyl Monolayers Covalently Bonded to Si(111) Probed by Infrared-Visible Sum-Frequency Spectroscopy," *Chem. Phys. Lett.* **367**, 376–381 (2003).
M. ARA and H. TADA, "Friction Force Microscopy Using Silicon Cantilevers Covered with Organic Monolayers *via* Silicon-Carbon Covalent Bonds," *Appl. Phys. Lett.* **83**, 578–580 (2003).
H. TADA, M. ARA and S. TANAKA, "Wet Process Molecular Planting in A Specific Site on Siliocn with Si–C Covalent Bonds," *Proceedings of MRS Meeting* **739**, H7. 37. 1–5 (2003).

K. ONO, S. YAMADA, M. OHKITA, K. SAITO, S. TANAKA and T. HANAICHI, " Electrochemical Synthesis and Properties of Poly[1,4-bis(*N*-pyrrolylalkoxy)benzene]s with a Three-dimentional Crosslinked Structure," *Chem. Lett.* 516–517 (2003).
Y. YAMASHITA, M. TOMURA and K. IMAEDA, "Non-Planar BEDT-TTF Derivatives Fused with Tetrahydrofuran Rings Affording Cation Radical Salts with Unusual Crystal Structures," *Mol. Cryst. Liq. Cryst.* **380**, 203–207 (2002).
M. AKHTARUZZAMAN, M. TOMURA, M. B. ZAMAN, J. NISHIDA and Y. YAMASHITA, "Synthesis and Characterization of New π-Conjugated Molecules Containing Bis(ethynylpyridine) Units with a Benzothiadiazole Spacer," *J. Org. Chem.* **67**, 7813–7818 (2002).
Y. YAMASHITA and M. TOMURA, "Preparation and Structures of Dication Salts of Phenyl Substituted TTF Vinylogues," *J. Solid State Chem.* **168**, 427–432 (2002).
M. TOMURA and Y. YAMASHITA, "Unsymmetrical Tetrathiafulvalene with a Fused 1,2,5-Thiadiazole Ring and an Ethylenedioxy Group," *Acta Crystallogr., Sect. E* **59**, o145–o147 (2003).
Y. YAMASHITA, K. SUZUKI and M. TOMURA, "Novel Electron Acceptors Containing Nitrogen, Sulfur-Heterocyclic Units," *Synth. Met.* **133-134**, 341–343 (2003).
M. AKHTARUZZAMAN, M. TOMURA, J. NISHIDA and Y. YAMASHITA, "Linear Molecules with Ethynylpyridine and Bisbenzothiadiazole Units," *Synth. Met.* **137**, 873–874 (2003).
M. AKHTARUZZAMAN, M. TOMURA, K. TAKAHASHI, J. NISHIDA and Y. YAMASHITA, "Hydrogen Bonding Networks Consisted of Conjugation-Extended 4,4'-Bipyridines and Chloranilic Acid," *Supramol. Chem.* **15**, 239–243 (2003).

H. HOCKE and Y. UOZUMI, "A Simple Synthetic Approach to Homochiral 6- and 6'-Sybstituted 1,1'-Binaphthyl Derivatives," *Tetrahedron* **59**, 619–630 (2003).
Y. UOZUMI and R. NAKAO, "Catalytic Oxidation of Alcohols in Water under Atmospheric Oxygen by Use of an Amphiphilic Resin-Dispersion of Nano-Palladium Catalyst," *Angew. Chem., Int. Ed.* **42**, 194–197 (2003).
Y. UOZUMI and Y. KOBAYASHI, "The Sonogashira Reaction in Water via An Amphiphilic Resin-Supported Palladium-Phosphine Complex Under Copper-Free Conditions," *Heterocycles* **59**, 71–74 (2003).
H. HOCKE and Y. UOZUMI, "Polymer-Supported 2,2'-Bis(oxazol-2-yl)-1,1'-Binaphthyls (boxax): Immobilized Chiral Ligands for Asymmetric Wacker-Type Cyclization," *Synlett* 2049–2053 (2002).
Y. UOZUMI and T. KIMURA, "Heck Reaction in Water with Amphiphilic Resin-Supported Palladium-Phosphine Complexes," *Synlett* 2045–2048 (2002).
K. SHIBATOMI and Y. UOZUMI, "New Homochiral Phosphine Ligands Having a Hexahydro-1H-pyrrolo[1,2-c]imidazolone Backbone: Preparation and Use for Pd-Catalyzed Asymmetric Allylic Alkylation of Cycloalkenyl Carbonates," *Tetrahedron: Asymmetry* **13**, 1769–1772 (2002).

T. NAGATA and K. TANAKA, "Syntheses of a 6-(2-Pyrrolyl)-2,2'-Bipyridine Derivative and Its Ruthenium

Complex," *Bull. Chem. Soc. Jpn.* **75**, 2469–2470 (2002).
T. NAGATA, Y. KIKUZAWA and A. OSUKA, "Synthesis and Photoreaction of a Porphyrin/cobalt(III)-Complex Linked Molecule," *Inorg. Chim. Acta* **342**, 139–144 (2003).

O. NAKAGOE, N. TAKAGI and Y. MATSUMOTO, "Thermal Decomposition of Acetylene on Pt(111) Studied by Scanning Tunneling Microscopy," *Surf. Sci.* **514**, 414–419 (2002).
I. KINOSHITA, D. INO, K. NAGATA, K. WATANABE, N. TAKAGI and Y. MATSUMOTO, "Anomalous Quenching of Electronic States of Nanographene on Pt(111) by Deuterium Edge Termination," *Phys. Rev. B* **65**, 241402R (4 pages) (2002).
K. WATANABE, D.T. DIMITROV, N. TAKAGI and Y. MATSUMOTO, "Coherent Surface Phonon at a GaAs(100)-c(8×2) Surface," *Phys. Rev. B* **65**, 235328 (7 pages) (2002).
K. WATANABE, N. TAKAGI and Y. MATSUMOTO, "Impulsive Excitation of a Vibrational Mode of Cs on Pt(111)," *Chem. Phys. Lett.* **366**, 606–610 (2002).
O. NAKAGOE, M. OHTA, K. WATANABE, N. TAKAGI and Y. MATSUMOTO, "Structural Changes of AgO Chains on Ag(110) by Photo- and CO-Induced Oxygen Elimination," S*urf. Sci.* **528**, 144–150 (2003) .
Z. LIU, T. SAWADA, N. TAKAGE, K. WATANABE and Y. MATSUMOTO, "Reaction Intermediates in the Oxidation of Methanol on a Pt(111)-(2×2)O Surface," *J. Chem. Phys.* **119**, 4879–4886 (2003).
O. NAKAGOE, K. WATANABE, N. TAKAGI and Y. MATSUMOTO, "Role of Structural Fluctuation in a Surface Reaction Studied by Scanning Tunneling Microscopy: The CO + O → CO_2 Clean-Off Reaction on Ag(110)(2×1)-O," *Phys. Rev. Lett.* **90**, 226105 (4 pages) (2003).

Y. NEGISHI, T. NAGATA and T. TSUKUDA, "Structural Evolution in $(CO_2)_n$ Clusters ($n < 10^3$) as Studied by Mass Spectrometry," *Chem. Phys. Lett.* **364**, 127–132 (2002).
Y. NEGISHI, H. MURAYAMA and T. TSUKUDA, "Formation of $Pd_n(SR)_m$ Clusters ($n < 60$) in the Reactions of $PdCl_2$ and RSH (R = *n*-$C_{18}H_{37}$, *n*-$C_{12}H_{25}$)," *Chem. Phys. Lett.* **366**, 561–566 (2002).
Y. NEGISHI and T. TSUKUDA, "One-Pot Preparation of Subnanometer-Sized Gold Clusters *via* Reduction and Stabilization by meso-2,3-Dimercaptosuccinic Acid," *J. Am. Chem. Soc.* **125**, 4046–4047 (2003).
H. MURAYAMA, N. ICHIKUNI, Y. NEGISHI, T. NAGATA and T. TSUKUDA, "EXAFS Study on Interfacial Structures of Pd Clusters and *n*-Octadecanethiolate Monolayers: Formation of PdS Interlayer," *Chem. Phys. Lett.* **376**, 26–32 (2003).
S. SATO, N. YAMAMOTO, K. NAKANISHI, H. YAO, K. KIMURA, T. NARUSHIMA, Y. NEGISHI and T. TSUKUDA, "Self-Assembly of Si Clusters into Single Crystal Arrangements: Formation of Si_{10} Cluster Crystals," *Jpn. J. Appl. Phys.* **42**, L616–618 (2003).

Y. YOKOI, G. YELKEN, Y. OUMI, Y. KOBAYASHI, M. KUBO, A. MIYAMOTO and M. KOMIYAMA, "Monte Carlo Simulation of Pyridine Base Adsorption on Heulandite (010)," *Appl. Surf. Sci.* **188**, 377–380 (2002).
M. KOMIYAMA, Y. -J. LI and D. YIN, "Apparent Local Structural Change Caused by Ultraviolet Light on a TiO_2 Surface Observed by Scanning Tunneling Microscopy," *Jpn. J. Appl. Phys.* **41**, 4936–4938 (2002).
M. KOMIYAMA, D. YIN and Y. -J. LI, "Electronic Structure Change on TiO_2 Surface due to UV Light Irradiation," *Stud. Surf. Sci. Catal.* **145**, 153–156 (2003).

M. NAKANO, J. KOMATSU, S. MATSUURA, K. TAKASHIMA, S. KATSURA and A. MIZUNO, "Single-Molecule PCR Using Water-In-Oil Emulsion," *J. Biotechnology* **102**, 117–124 (2003).
Y. MATSUI, S. SATO, K. TAKASHIMA, S. KATSURA and A. MIZUNO, "Simultaneous Removal NO_x and DEP from Diesel Engine Exhaust Using Plasma and Oxidative Catalyst," *SAE Technical paper* **SP1759**, 111–119 (2003).
Z. SU, J. SAWADA, Y. MATSUI, K. TAKASHIMA and A. MIZUNO, "NO_x Removal Using Discharge Plasma and Electrophoresis," *SAE Technical paper* **SP1759**, 139–143 (2003).
A. HASHEM, M. ABDEL-SALAM, A. MIZUNO, A. YEHIA, A. TURKY and A. GABR, "Optimum Operating Conditions for Ozone Generation in AC Corona and AC Silent-Discharge Reactors," *J. Inst. Electrostatics Jpn.* **27**, 129–134 (2003).
G. LI, K. TAKASHIMA, S. KATSURA and A. MIZUNO, "Formation of Pearl-Chain Adhesion of Dielectric Particles in Electrostatic Field," *J. Inst. Electrostatics Jpn.* **27**, 135–139 (2003).
Z. Z. SU, K. ITO, K. TAKASHIMA, S. KATSURA and A. MIZUNO, "OH Radical Generation by Atmospheric Pressure Pulsed Discharge Plasma and its Quantitative Analysis by Monitoring CO Oxidation," *J. Phys. D: Applied Phys.* **35**, 3192–3198 (2002).

K. K. OKUDAIRA, H. YAMANE, K. ITO, M. IMAMURA, S. HASEGAWA and N. UENO, "Photodegradation of Poly(Tetrafluoroethylene) and Poly(Vinylidene Fluoride) Thin Films by Inner Shell Excitation," *Surf. Rev. Lett.* **9**, 335–340 (2002).
K. K. OKUDAIRA, K. OHARA, H. SETOYAMA, T. SUZUKI, Y. SAKAMOTO M. IMAMURA, S. HASEGAWA, K. MASE and N. UENO, "Excited States of Perfluorinated Oligo(*p*-Phenylene) by Inner-Shell Excitation," *Nucl. Instrum. Methods Phys. Res., Sect. B* **199**, 265–269 (2003).
H. YAMANE, K. ITO, S. KERA, K. K. OKUDAIRA and N. UENO, "Low-Energy Electron Transmission

through Organic Monolyers: An Estimation of the Effective Monolayer Potential by an Excess Electron Inteface," *J. Appl. Phys.* **92**, 5203–5207 (2002).

N. WATANABE, K. YAMAUCHI, Y. KAMATA, Y. UDAGAWA and T. MÜLLER, "Electron Correlation Effects in N_2 and CO Studied by X-Ray Scattering and CISD Calculations," *Mol. Phys.* **100**, 2839–2847 (2002).
M. TAKAHASHI, T. SAITO, M. MATSUO and Y. UDAGAWA, "A High Sensitivity Electron Momentum Spectrometer with Simultaneous Detection in Energy and Momentum," *Rev. Sci. Instrum.* **73**, 2242–2248 (2002).
T. HATANO, Y. KONDO, K. SAITO, T. EJIMA, M. WATANABE and M. TAKAHASHI, "Multilayer Polarizers for the Use of He-I and He-II Resonance Lines," *Surf. Rev. Lett.* **9**, 587–591 (2002).
N. SAITO, A. De FANIS, K. KUBOZUKA, M. MACHIDA, M. TAKAHASHI, H. YOSHIDA, I. H. SUZUKI, A. CASSIMI, A. CZASCH, R. DÖRNER, K. WANG, B. ZIMMERMANN, V. MCKOY, I. KOYANO and K. UEDA, "Carbon K-Shell Photoelectron Angular Distribution from Fixed-in-Space CO_2 Molecules," *J. Phys. B: At., Mol. Opt. Phys.* **36**, L25–L30 (2003).
M. TAKAHASHI, T. HATANO, T. EJIMA, Y. KONDO, K. SAITO, M. WATANABE, T. KINUGAWA and J. H. D. ELAND, "Polarization Measurements of Laboratory VUV Light: a First Comparison between Multilayer Polarizers and Photoelectron Angular Distributions," *J. Electron Spectrosc.* **130**, 79–84 (2003).
M. TAKAHASHI, T. SAITO, J. HIRAKA and Y. UDAGAWA, "The Impact Energy Dependence of Momentum Profiles of Glyoxal and Biacetyl and Comparison with Theory at Their High-Energy Limits," *J. Phys. B: At., Mol. Opt. Phys.* **36**, 2539–2251 (2003).

Y. KUBOZONO, Y. TAKABAYASHI, K. SHIBATA, T. KANBARA, S. FUJIKI, S. KASHINO, A. FUJIWARA and S. EMURA, "Crystal Structure and Electronic Transport of Dy@C_{82}," *Phys. Rev. B* **67**, 115410 (8 pages) (2003).
T. TAKENOBU, DAM HIEU CHI, S. MARGADONNA, K. PRASSIDES, Y. KUBOZONO, A. N. FITCH, K. KATO and Y. IWASA, "Synthesis, Structure, and Magnetic Properties of the Fullerene-Based Ferromagnets, Eu_3C_{70} and Eu_9C_{70}," *J. Am. Chem. Soc*. **125**, 1897–1904 (2003).
D. H. CHI, Y. IWASA, K. UEHARA, T. TAKENOBU, T. ITO, T. MITANI, E. NISHIBORI, M. TAKATA, M. SAKATA, Y. OHISHI, K. KATO and Y. KUBOZONO, "Pressure-Induced Structural Phase Transition in Fullerides Doped with Rare Earth Metals," *Phys. Rev. B* **67**, 094101 (7 pages) (2003).
J. KOU, T. MORI, M. ONO, Y. HARUYAMA, Y. KUBOZONO and K. MITSUKE, "Molecular- and Atomic-Like Photoionization of C_{60} in the Extreme Ultraviolet," *Chem. Phys. Lett.* **374**, 1–6 (2003).
J. B. CLARIDGE, Y. KUBOZONO and M. J. ROSSEINSKY, "A Complex Fulleride Superstructure-Decoupling Cation Vacancy and Anion Orientational Ordering in $Ca_{3+x}C_{60}$ with Maximum Entropy Methods," *Chem. Mater.* **15**, 1830–1839 (2003).
T. MORI, J. KOU, M. ONO, Y. HARUYAMA, Y. KUBOZOZN and K. MITSUKE, "Development of a Photoionizaion Spectrometer for Gaseous Fullerenes in the Extreme Ultraviolet," *Rev. Sci. Instrum.* **74**, 3769–3773 (2003).
K. SHIBATA, Y. RIKIISHI, T. HOSOKAWA, Y. HARUYAMA, Y. KUBOZONO, S. KASHINO, T. URUGA, A. FUJIWARA, H. KITAGAWA, T. TAKANO and Y. IWASA, "Structural and Electronic Properties of Ce@C_{82}," *Phys. Rev. B* **68**, 094104 (7 pages) (2003).
T. KANBARA, K. SHIBATA, S. FUJIKI, Y. KUBOZONO, S. KASHINO, T. URISU, M. SAKAI, A. FUJIWARA, R. KUMASHIRO and K. TANIGAKI, "N-Channel Field Effect Transistors with Fullerene Thin Films and Their Application to a Logic Gate Circuit," *Chem. Phys. Lett.* **379**, 223–229 (2003).

H. YAMANE, K. ITO, S. KERA, K. K. OKUDAIRA and N. UENO, "Low Energy Electron Transmission Study of Indium/(perylenel-3,4,9,10-tetracarboxylic dianhydride) System," *Jpn. J. Appl. Phys.* **41** 6591–6594 (2002).
S. KERA, H.YAMANE, I. SAKURAGI, K. K. OKUDAIRA and N. UENO, "Very Narrow Photoemission Bandwidth of the Highest Occupied State in a Copper-Phthalocyanine Monolayer," *Chem. Phys. Lett.* **364**, 93–98 (2002).
H.YAMANE, D. YOSHIMURA, K. K. OKUDAIRA, K. SEKI and N.UENO, "Intermolecular Energy-Band Dispersion in PTCDA Multilayers," *Phys. Rev. B* **68**, 33102 (3 pages) (2003).

I. UECHI, M. FUJIWARA, Y. FUJIWARA, Y. YAMAMOTO and Y. TANIMTOTO, "Magnetic Field Effects on Anodic Oxidation of Potassium Iodide," *Bull. Chem. Soc. Jpn.* **75**, 2379–2382 (2002).
Y. TANIMOTO, S. IZUMI, K. FURUTA, T. SUZUKI, Y. FUJIWARA, M. FUJIWARA, T. HIRATA and S. YAMADA, "Effects of High Magnetic Field on *Euglena gracilis*," *Int. J. Appl. Electromag. Mechanics* **14**, 311–316 (2001/2002).
T. HAINO, H. ARAKI, Y. FUJIWARA, Y. TANIMOTO and Y. FUKAZAWA, "Fullerene Sensors Based on Calix[5]arene," *Chem. Commun.* 2148–2149 (2002).
A. KATSUKI, I. UECHI, M. FUJIWARA and Y. TANIMOTO, "High Magnetic Field Effect on the Growth of 3-Dimentional Silver Dendrites," *Chem. Lett.* 1186–1187 (2002).
M. G. SUNG, K. SASSA, H. OGAWA, Y. TANIMOTO and S. ASAI, "Strengthening of Carbon Fibers by Imposition of a High Magnetic Field in a Carbonization Process," *Mater. Trans.* **43**, 2087–2091 (2002).

T. ISHIDA, M. MURAKAMI, G. WATANABE, H. YOSHIKAWA and S. NISHIKIORI, "Theoretical Study on Photoinduced Color Change and Charge Transfer of Methylviologen," *Internet Electronic J. Mol. Design* **2**, 14–23 (2003).
T. ISHIDA and G. C. SCHATZ, "A Local Interpolation Scheme Using No Derivatives in Potential Sampling: Application to $O(^1D) + H_2$ System," *J. Comput. Chem.* **24**, 1077–1086 (2003).
M. HIRAMA, T. ISHIDA and J. AIHARA, "Possible Molecular Hydrogen Formation Mediated by the Radical Cations of Anthracene and Pyrene," *J. Comput. Chem*. **24**, 1378–1382 (2003).
K. H. KIM, Y. S. LEE, G. -H. JEUNG and T. ISHIDA, "Potential Energy Surface Generation Using Ab Initio Calculations and IMLS/Shepard Interpolation for the LiH + H $\leftrightarrows$ Li + H_2 Reactions," *J. Chem. Phys.* **119**, 4689–4694 (2003).
H. YOSHIKAWA, S. NISHIKIORI and T. ISHIDA, "Crystal Structure and Spectroscopic Properties of the CT Complex of Methyl Viologen Dication and *o*-Dimethoxybenzene Included in a Polycyano-Polycadmate Host, and Theoretical Study on Its Red Shifted CT Absorption," *J. Phys. Chem. B* **107**, 9261–9267 (2003).

T. OBA and H. TAMIAKI, "Which Side of the π-Macrocycle Plane of (Bacterio)chlorophylls Is Favored for Binding of the Fifth Ligand?" *Photosynth. Res.* **74**, 1–10 (2002).
T. OBA and H. TAMIAKI, "Coordination Chemistry of Chlorophylls: Which Side of the Chlorin Macrocycle Is Favored for the Ligand Coordination?" *J. Photosci.* **9**, 362–363 (2002).

UVSOR (Ultraviolet Synchrotron Orbital Radiation) Facility

K. TAKAHASHI, T. NAKAYAMA, Y. MATSUMI, S. SOLOMON, T. GEJO, E. SHIGEMASA and T. J. WALLINGTON, "Atmospheric Lifetime of SF_5CF_3," *Geophys. Res. Lett.* **29**, 1–4 (2002).
T. GEJO, Y. TAKATA, T. HATSUI, M. NAGASONO, H. OJI, N. KOSUGI and E. SHIGEMASA, "Angle-Resolved Photoion Spectroscopy of NO_2 and SO_2," *Chem. Phys.* **289**, 15–29 (2003).

M. HOSAKA, M. KATOH, A. MOCHIHASHI, J. YAMAZAKI, K. HAYASHI, K. TAKASHIMA and H. HAMA, "Q-Switching Operation of the UVSOR-FEL," *Nucl. Instrum. Methods Phys. Res., Sect. A* **507**, 289–293 (2003).

K. G. NATH, Y. UFUKTEPE, S. KIMURA, Y. HARUYAMA, T. KINOSHITA, T.MATSUMURA, T. SUZUKI, H. OGASAWARA and A. KOTANI, "Photoemission Study of Mixed-Valent Tm-Monochalcogenides: Evidence of Electron-Correlation Effect in Different Tm-Core Levels," *J. Phys. Soc. Jpn.* **72**, 1792–1799 (2003).
S. KIMURA, T. NISHI, T. TAKAHASHI, T. HIRONO, Y. IKEMOTO, T. MORIWAKI and H. KIMURA, "Infrared Spectroscopy under Extreme Conditions," *Physica B* **329-333**, 162–1626 (2003).
S. KIMURA, H. IWATA, K. KANAI, S. SHIN, G. SCHMERBER, J. P. KAPPLER and J. C. PARLEBAS, "Collapse of Kondo Lattice in $Ce_{1-x}La_xPd_3$ (x = 0, 0.03)," *Acta Physica Polonica B* **34**, 975–978 (2003).
J. SICHELSCHMIDT, V. VOEVODIN, S. PASCHEN, W. CARRILLO-CABRERA, YU. GRIN, F. STEGLICH and S. KIMURA, "Optical Reflectivity of the Clathrate Compound Ba_6Ge_{25}," *Acta Physica Polonica B* **34**, 613–616 (2003).

Computer Center

T. MIKAMI and S. OKAZAKI, "An Analysis of Molecular Origin of Vibrational Energy Transfer from Solute to Solvent based upon Path Integral Influence Functional Theory," *J. Chem. Phys.* **119**, 4790–4797 (2003).

S. NANBU, M. AOYAGI, H. KAMISAKA, H. NAKAMURA, W. BIAN and K. TANAKA, "Chemical Reactions in the $O(^1D)$ + HCl System I. Ab Initio Global Potential Energy Surfaces for the $1^1A'$, $2^1A'$, and $1^1A''$ States," *J. Theor. Comput. Chem.* **1**, 263–273 (2002).
H. KAMISAKA, H. NAKAMURA, S. NANBU, M. AOYAGI, W. BIAN and K. TANAKA, "Chemical Reactions in the $O(^1D)$ + HCl System II. Dynamics on the Ground $1^1A'$ State and Contributions of the Excited ($1^1A''$, and $2^1A'$) States," *J. Theor. Comput. Chem.* **1**, 275–284, (2002).
H. KAMISAKA, H. NAKAMURA, S. NANBU, M. AOYAGI, W. BIAN and K. TANAKA, "Chemical Reactions in the $O(^1D)$ + HCl System III. Quantum Dynamics on the Excited ($1^1A''$, and $2^1A'$) Potential Energy Surfaces," *J. Theor. Comput. Chem.* **1**, 285–293 (2002).
I. TOKUE, H. TANAKA, K. YAMASAKI and S. NANBU, "Formation of HCl^+ ($A^2\Sigma^+$) and HBr^+ ($A^2\Sigma^+$) Resulting from He (2^3S) Penning Ionization of HCl and HBr," *J. Phys. Chem. A* **106**, 6068–6074 (2002).
K. HARADA, K TANAKA, T. TANAKA, S.NANBU and M. AOYAGI, "Millimeter-Wave Spectroscopy of the Internal Rotation Band of the He-HCN Cluster and Determination of the Empirical Intermolecular Potential Energy Surface," *J. Chem. Phys.* **117**, 7041–7050 (2002).
J. -I. CHOE, S. -K. CHANG, S. MINAMINO and S. NANBU, "Ab Initio Study of Complexation Behavior of Calix[5]arene Derivative toward Alkyl Ammonium Cations," *Bull. Korean Chem. Soc.* **24**, 75–80 (2003).
S. MINAMINO, J. -I. CHOE, S. -K. CHANG, F. MIZUTANI and S. NANBU, "Theoretical Study of Vibrational Spectra of p-Tert-Butylcalix[4]crown-6-Ether Complexed with Ethyl Ammonium Cation," *Chem. Phys. Lett.* **374**,

572–576 (2003).

Center for Integrative Bioscience

R. YASUDA , T. MASAIKE , K. ADACHI, H. NOJI, H. ITOH and K. KINOSITA, Jr., "The ATP-Waiting Conformation of Rotating F_1-ATPase Revealed by Single-Pair Fluorescence Resonance Energy Transfer," *Proc. Natl. Acad. Sci. U.S.A.* **100**, 9314–9318 (2003).
K. ADACHI, H. NOJI and K. KINOSITA, Jr., "Single Molecule Imaging of the Rotation of F_1-ATPase," *Methods in ENZYMOLOGY.* **361**, 211–227 (2003).

H. SAWAI, N. KAWADA, K. YOSHIZATO, H. NAKAJIMA, S. AONO and Y. SHIRO, "Characterization of the Heme Environmental Structure of Cytoglobin, a Fourth Globin in Humans," *Biochemistry* **42**, 5133–5142 (2003).

H. FUJII and Y. FUNAHASHI, "Trigonal Bipyramidal Ferric Aqua Complex with Sterically Hindered Salen Ligand as a Model for Active Site of Protocatechuate 3,4-Dioxygenase," *Angew. Chem., Int. Ed.* **41**, 3638–3641 (2002).
X. ZHANG, H. FUJII, K. MANSFIELD MATERA, C. T. MIGITA, D. SUN, M. SATO, M. IKEDA-SAITO and T. YOSHIDA, "Regiospecificity of Each of the Three Steps of Heme Oxygenase Reaction from Hemin to *meso*-Hydroxyhemin, from *meso*-Hydroxyhemin to Verdoheme, and from Verdoheme to Biliverdin," *Biochemistry* **42**, 7418–7426 (2003).
M. OHASHI, T. KOSHIYAMA, TAKAFUMIUENO, M. YANASE, H. FUJII and Y. WATANABE, "Preparation of Artificial Metalloenzymes by Insertion of Chromium(III) Schiff Base Complexes into Apomyoglobin Mutants," *Angew. Chem., Int. Ed.* **42**, 1005–1008 (2003).

Y. MIZUTANI and T. KITAGAWA, "Vibrational Energy Relaxation of Metalloporphyrins in a Condensed Phase Probed by Time-Resolved Resonance Raman Spectroscopy," *Bull. Chem. Soc. Jpn.* **75**, 623–639 (2002).
K. SATO, S. NAGATOMO, C. DENNISON, T. NIIZEKI, T. KITAGAWA and T. KOHZUMA, "UV Resonance Raman and NMR Spectroscopic Studies on the pH Dependent Metal Ion Release from Pseudoazurin," *Inorg. Chim. Acta* **339**, 383–392 (2002).
S. OGO, R. YAMAHARA, M. ROACH, T. SUENOBU, M. AKI, T. OGURA, T. KITAGAWA, H. MASUDA, S. FUKUZUMI and Y. WATANABE, "Structural and Spectroscopic Features of a *cis* (Hydroxo)-Fe^{III}-(Carboxylato) Configuration as an Active Site Model for Lipoxygenases," *Inorg. Chem.* **41**, 5513–5520 (2002).
T. OSAKO, S. NAGATOMO, Y. TACHI, T. KITAGAWA and S. ITOH, "Low-Temperature Stopped-Flow Studies on the Reactions of Copper(II) Complexes and H_2O_2: The First Detection of a Mononuclear Copper(II)-Peroxo Intermediate," *Angew. Chem., Int. Ed.* **41**, 4325–4328 (2002).
N. C. MAITI, T. TOMITA, T. KITAGAWA, K. OKAMOTO and T. NISHINO, "Resonance Raman Studies on Xanthine Oxiase: Observation of the Mo^{VI}-Ligand Vibration," *J. Biol. Inorg. Chem.* **8**, 327–333 (2003).
H. ARII, Y. SAITO, S. NAGATOMO, T. KITAGAWA, Y. FUNAHASHI, K. JITSUKAWA and H. MASUDA, "C–H Activation by $Cu(III)_2$–O_2 Intermediate with Secondary Amino Ligand," *Chem. Lett.* **32**, 156–157 (2003).
D. OKUNO, T. IWASE, K. SHINZAWA-ITOH, S. YOSHIKAWA and T. KITAGAWA, "FTIR Detection of Protonation/Deprotonation of Key Carboxyl Side Chains Caused by Redox Change of the Cu_A-Heme *a* Moiety and Ligand Dissociation from the Heme a_3-Cu_B Center of Bovine Heart Cytochrome *c* Oxidase," *J. Am. Chem. Soc.* **125**, 7209–7218 (2003).
T. UCHIDA, Q. HE, C. Y. RALSTON, M. BRENOWITZ and M. R. CHANCE, "Linkage of Monovalent and Divalent Ion Binding in the Folding of the P4-P6 Domain of the *Tetrahymena* Ribozyme," *Biochemistry* **41**, 5799–5806 (2002).
T. UCHIDA, K. TAKAMOTO, Q. HE, M. R. CHANCE and M. BRENOWITZ, "Multiple Monovalent Ion-Dependent Pathways for the Folding of the L-21 *Tetrahymena Thermophila* Ribozyme," *J. Mol. Biol.* **328**, 463–478 (2003).

A. YAMADA, T. KAKITANI, S. YAMAMOTO and T. YAMATO, "A Computational Study on the Stability of the Protonated Schiff Base of Retinal in Rhodopsin," *Chem. Phys. Lett.* **366**, 670–675 (2002).
T. KAWATSU, T. KAKITANI and T. YAMATO, "Destructive Interference in the Electron Tunneling through Protein Media," *J. Phys. Chem. B* **106**, 11356–11366 (2002).
A. YAMADA, T. YAMATO, T. KAKITANI and S. YAMAMOTO, "Analysis of *cis-trans* Photoisomerization Mechanism of Rhodopsin Based on the Tertiary Structure of Rhodopsin," *J. Photosci.* **9**, 51–54 (2002).
T. KAKITANI, T. KAWATSU, A. KIMURA, A. YAMADA, T. YAMATO and S. YAMAMOTO, "Unique Mechanism of Excitation Energy Transfer and Photoisomerization in Biological Systems," *J. Biol. Phys.* **28**, 367–381 (2002).