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# THE 108TH ICR ANNUAL SYMPOSIUM

(5 December 2008)

## ORAL PRESENTATIONS

IKENOUCHI, Junichi (Supramolecular Biology)  
“Elucidation of Molecular Mechanisms which Generate and Maintain Discrete Membrane Domains in Polarized Cells”

AKUTSU, Tatsuya (Biological Information Networks)  
“Kernel-based Approaches to Classification and Design of Chemical Compounds”

MIZUHATA, Yoshiyuki (Organoelement Chemistry)  
“The Chemistry of ‘Heavy Aromatics’”

MURATA, Yasujiro (Structural Organic Chemistry)  
“Synthesis and Properties of Open-Cage Fullerenes and Endohedral Fullerenes”

YOSHIMURA, Tomoyuki, et al. (Synthetic Organic Chemistry)  
“Asymmetric Synthesis via Planar Chiral Enolates”

KURATA, Hiroki, et al. (Electron Microscopy and Crystal Chemistry)  
“Development of a Scanning Transmission Electron Microscope Equipped with a Nanotip-FEG and Its Application to Local Analysis”

SAITO, Takashi (Advanced Solid State Chemistry)  
“Synthesis and Physical Properties of the A-site-ordered Perovskites  $AA_3B_4O_{12}$ ”




TAKITA, Ryo (Organotransition Metal Chemistry)  
“Synthesis and Properties of All-cis Poly(arylene vinylene)s Containing Thiophene Cores”

– ICR Award for Young Scientists –  
GOTO, Atsushi (Chemistry of Polymer Materials)  
“Reversible Chain Transfer Catalyzed Polymerization(RTCP): A New Class of Living Radical Polymerization”


– ICR Award for Graduate Students –  
HARUTA, Mitsutaka (Electron Microscopy and Crystal Chemistry)  
“Atomic Resolution ADF-STEM Imaging of Organic Molecular Crystal of Halogenated Copper Phthalocyanine”


MATSUNAGA, Ryusuke (Photonic Elements Science)  
“Evidence for Dark Excitons in a Single Carbon Nanotube due to the Aharonov-Bohm Effect”


## POSTER PRESENTATIONS


 : Laboratory Whole Presentation  
 : Laboratory Topic  
 : General Presentation


### — Organoelement Chemistry —

 “Synthesis and Properties of Novel Organic Compounds Containing Heavier Elements”

 TSURUSAKI, Akihiro; SASAMORI, Takahiro; TOKITOH, Norihiro  
“Cycloaddition Reactions of an Overcrowded 9-Anthryldi-phosphene”


 MATSUMOTO, Teruyuki; SASAMORI, Takahiro; TOKITOH, Norihiro  
“Design and Syntheses of a Novel Iminophosphido Ligand and Its Complexation Reactions”

 INAMURA, Koji; MIZUHATA, Yoshiyuki; TOKITOH, Norihiro  
“Structures and Reactivity of 9-Sila- and 9-Germaphenanthrene Complexes”


 TANABE, Yusuke; MIZUHATA, Yoshiyuki; TOKITOH, Norihiro  
“Elucidation of the Hydration Mechanism of Silabenzene-Cr(CO)<sub>3</sub> Complex and the Chemistry of Related Compounds”


### — Structural Organic Chemistry —

 “Synthesis of Endohedral Fullerenes by Means of Organic Synthesis and Their Properties”


 KUROTOBI, Kei; MURATA, Michihisa; MURATA, Yasujiro  
“Synthesis and Properties of Open-Cage Fullerene with Expanded  $\pi$ -Conjugated System”

### — Synthetic Organic Chemistry —

 HAYASHI, Kazuhiro; CHANGSHENG, Jiang; YOSHIMURA, Tomoyuki; TSUBAKI, Kazunori; SASAMORI, Takahiro; TOKITOH, Norihiro; KAWABATA, Takeo  
“Synthesis and Properties of Novel Axially Chiral Binaphthyls Consisting of N-H-N Hydrogen Bond”

 WATANABE, Toshihide; KAWABATA, Takeo  
“Asymmetric Aldol Reactions via Memory of Chirality”

### — Chemistry of Polymer Materials —

 KYO, Shogyo; KAYAMA, Yuzo; ARITA, Toshihiko; OHNO, Kohji; FUKUDA, Takeshi; TSUJII, Yoshinobu  
“Synthesis of Thick, Concentrated Polymer Brushes by High-pressure LRP”

GE AKASHI, Tatsuki; OHNO, Kohji; FUKUDA, Takeshi; TSUJII, Yoshinobu  
“Surface-Initiated Atom Transfer Radical Polymerization on Narrowly Size-Distributed Silica Nanoparticles of Diameters less than 100 nm”

— Polymer Controlled Synthesis —

GE UKAI, Yu; MATSUMOTO, Atsushi; NAKAMURA, Yasuyuki; YAMAGO, Shigeru  
“Photo Induced Living Radical Polymerization Using Organotellurium Compounds”

GE YAMADA, Hiroto; KAYAHARA, Eiichi; YAMAGO, Shigeru  
“Synthesis of End-Functionalized Polymers through Heavier Heteroatom-Metal Exchange Reactions”

GE UEKI, Kazuya; YAMAGO, Shigeru  
“Synthesis of Oligo(Aromatic Ketone)s by Iterative Friedel-Crafts Reaction”

— Inorganic Photonics Materials —

LT OKU, Satoshi; TOKUDA, Yomei; TAKAHASHI, Masahide; YOKO, Toshinobu  
“Novel Solvent-free Synthesis of Proton-conducting Organic-inorganic Hybrid Materials”

LT OKA, Takanori; TOKUDA, Youmei; TAKAHASHI, Masahide; YOKO, Toshinobu  
“Quantitative Analysis for Quadrupolar Nuclei in Amorphous Materials”

LT MIYAGAWA, Yuya; TAKAHASHI, Masahide; TOKUDA, Youmei; YOKO, Toshinobu  
“Organo-silico-phosphate Photosensitive Film for Active Microoptics”

— Nanospintronics —

GE NAKANO, Kunihiko; NAKATANI, Yoshinobu; OSHIMA, Norikazu; KASAI, Shinya; KOBAYASHI, Kensuke; ONO, Teruo  
“Real-time Detection of the Current Induced Vortex Dynamics by using the TMR Effect”

GE YAMAUCHI, Yoshiaki; HASHISAKA, Masayuki; NAKAMURA, Shuji; KASAI, Shinya; KOBAYASHI, Kensuke; ONO, Teruo  
“Measurement of the Shot Noise in a Quantum Dot”

— Biofunctional Design-Chemistry —

LW “Progress in Biofunctional Design Chemistry”

GE NAKAMURA, Atsushi; IMANISHI, Miki; FUTAKI, Shiroh  
“Control of a Circadian Clock Gene by Artificial Zinc-finger Type Transcription Factors”

— Chemistry of Molecular Biocatalysts —

LW “Research Activities of Laboratory of Chemistry of Molecular Biocatalysts”

GE IKEUCHI, Hideyuki  
“Inhibitors of Asparagine Synthetase -Molecular Design and Synthesis-”

— Molecular Biology —

LT TANIGUCHI, Y. Yukimi; TSUGE, Tomohiko; AOYAMA, Takashi  
“Role of the Arabidopsis Phospholipase D Gene PLD $\zeta$ 2 under Phosphate-starved Conditions”

— Chemical Biology —

LW Chemical Biology

GE YAMAZOE, Sayumi; SHIMOGAWA, Hiroki; SATO, Shin-ichi; UESUGI, Motonari  
“Discovery of Adhesamine, a Dumbbell-shaped Small Molecule that Promotes Cell Adhesion”

— Molecular Materials Chemistry —

GE SHIMAHARA, Yurie; KIMURA, Hironobu; FUKUSHIMA, Tatsuya; OYAMADA, Takahito; ENDO, Ayataka; YAHIRO, Masayuki; ADACHI, Chihaya; KAJI, Hironori  
“Effect of Dynamics on Photoluminescence of Tetraphenylpyrene (TPPy), a Material for Organic Light-Emitting FETs”

GE FUKUSHIMA, Tatsuya; TAKAMI, Kousuke; KAJI, Hironori  
“Organic Light Emitting Diodes Fabricated from Alq<sub>3</sub> in Different Crystalline Polymorphs”

GE TAKAMI, Kosuke; YAMADA, Tomonori; KAJI, Hironori  
“Crystal Structure Analysis of *N,N*-diphenyl-*N,N*-di(*m*-tolyl) benzidine (TPD) by Two-Dimensional Double-Quantum Solid-State NMR”

GE YAMADA, Tomonori; KAJI, Hironori  
“Percolation Paths for Charge Transports in TPD, a Hole-transport Material for Organic Light-emitting Diodes”

— Hydrospheric Environment Analytical Chemistry —

LW “Recent Topics from Hydrospheric Environment Analytical Chemistry”

GE OKABE, Taro; TANIGAWA, Masahito; UMETANI, Shigeo; SOHRIN, Yoshiki  
“Ion Imprinted Sol-gel Materials for the Separation of Metal Ions”

— Solution and Interface Chemistry —

LT SHINTANI, Megumi; MATUBAYASI, Nobuyuki; NAKAHARA, Masaru  
“NMR Analysis of the Delivered Drugs in the Phospholipid Bilayer Membrane”

GE KIMURA, Hiroshi; MATUBAYASI, Nobuyuki; NAKAHARA, Masaru  
“NMR Analysis of Pyrolytic Behaviors of Saccharides”

— **Molecular Microbial Science** —

- LT OMORI, Taketo; HONDA, Ai; MIHARA, Hisaaki; KURIHARA, Tatsuo; ESAKI, Nobuyoshi  
“Novel Biological Phospholipids”
- GE MOWAFY, Amr; KURIHARA, Tatsuo; MIHARA, Hisaaki; ESAKI, Nobuyoshi  
“2-Haloacrylate Dehalogenase, a Novel Enzyme Representing a New Class of Hydratases”

— **Polymer Materials Science** —

- LW “Recent Research for Polymer Materials Science Laboratory”
- GE TANAKA, Kentaro; NISHIDA, Koji; KANAYA, Toshiji  
“Critical Dissolution Ionic Strength of Aqueous Solution of Chitosan”

— **Molecular Rheology** —

- GE CHEN, Quan  
“Component Dynamics in Polyisoprene/Poly(4-tert-butylstyrene) Miscible Blends”
- GE MISHIMA, Eri; YAMADA, Takeshi; YAMAGO, Shigeru; WATANABE, Hiroshi  
“Development of Living Cationic Polymerization using Organotellurium Compounds”
- GE TANAKA, Satoshi  
“Dynamics of Star-block Copolymer during Elasticity Recovery after Cessation of Flow”
- GE SUZUKI, Takeshi  
“SCF Calculation of Conformation of Polymer Chain for Multiblock Copolymers”

— **Molecular Aggregation Analysis** —

- LT YOSHIDA, Hiroyuki; WATAZU, Yuji; MURDEY, Richard; SATO, Naoki  
“Structure and Molecular Orientation in Vacuum-Deposited Thin Film of Bis(benzo)pentathienoacene”
- GE HIRAMATSU, Takaaki; YOSHIDA, Hiroyuki; SATO, Naoki  
“Structural Features of Polymorphic Crystalline Transition of an Amphoteric and Polar Molecule: BMDCM”
- GE UCHINO, Yosuke; YOSHIDA, Hiroyuki; MURDEY, Richard; SATO, Naoki  
“Frontier Electronic Structure in an Evaporated Thin Film of Bis(catecholate)diboron”

— **Supramolecular Biology** —

- LT KUBO, Akira  
“Identification and Functional Analysis of Lipids Constituting Cell-surface Membrane”
- LT SUZUKI, Harumitsu; KATO, Utako; UMEDA, Masato  
“A Role for Fatty Acid Desaturase in Energy Metabolism”

— **Particle Beam Science** —

- GE YAMADA, Masako  
“Development of Permanent Magnet Sextupole for Pulsed Cold Neutron Beam”
- GE NAKAO, Masao; SOUDA, Hikaru; WAKITA, Akihisa; TONGU, Hiromu; NODA, Akira; TANABE, Mikio; ISHIKAWA, Takehiro; IKEGAMI, Masahiro; SHIRAI, Toshiyuki  
“Two Dimensional Laser Cooling at S-LSR”

— **Laser Matter Interaction Science** —

- LW “Advances in Laser Matter Interaction Science”
- GE NAMBA, Shin; HASHIDA, Masaki; OKAMURO, Kiminori; TOKITA, Shigeaki; SAKABE, Shuji  
“Mechanism of Nano-ablation for Metals with Femtosecond Laser”
- GE MASUNO, Shin-ichiro; TOKITA, Shigeaki; HASHIDA, Masaki; SAKABE, Shuji  
“Formation of Isolated Minute Thin Films by Laser Induced forward Transfer”

— **Structural Molecular Biology** —

- GE ITO, Yoshiaki; TOCHIO, Tatsunori; HANDA, Katsumi; OOHASHI, Hirofumi; FUKUSHIMA, Sei; BLAICU, Aurel; TERASAWA, Mititaka  
“Chemical States Obtained using a High-resolution Double-crystal X-ray Fluorescence Spectrometer”
- LW “Recent Research Topics in Laboratory of Structural Molecular Biology”
- GE ITO, Yoshiaki; SHIGEOKA, Nobuyuki; TOCHIO, Tatsunori; OOHASHI, Hirofumi; YOSHIKAWA, Hideki; FUKUSHIMA, Sei  
“Evaluation of the Absorption Edge from the Evolution Spectra”

— **Organic Main Group Chemistry** —

- LW “Recent Research Topics from Organic Main Group Chemistry”
- GE NAKAGAWA, Naohisa; HATAKEYAMA, Takuji; NAKAMURA, Masaharu  
“Iron-Catalyzed Cross-Coupling Reaction between Alkenyl-zinc Reagents and Alkyl Halides”
- GE TAKAYA, Hikaru; ISOZAKI, Katsuhiro; HAGA, Yusuke; FUKUI, Sadayuki; SASANO, Daisuke; SEIKE, Hirofumi; NAOTA, Takeshi; NAKAMURA, Masaharu  
“Metallated Peptides: Synthesis, Structure, and Functions”
- GE YOSHIMOTO, Yuya; HATAKEYAMA, Takuji; NAKAMURA, Masaharu  
“Iron-Catalyzed Enyne Cross-Coupling Reaction”
- GE ITOH, Takuma; ITO, Shingo; NAKAMURA, Eiichi; NAKAMURA, Masaharu  
“Iron-Catalyzed Enantioselective Carbometalation of Oxabicyclic Alkenes with Aryl Zinc Reagents”

— **Advanced Solid State Chemistry** —

- LT** SAITO, Takashi  
“Magnetism of the A-site-ordered Perovskite  $\text{CaCu}_3(\text{Ge}, \text{Ti}, \text{Sn})_4\text{O}_{12}$ ”
- LW** “Recent Research Topics of Laboratory of Advanced Solid State Chemistry”
- GE** INOUE, Satoru; KAWAI, Masanori; SHIMAKAWA, Yuichi  
“Epitaxial Thin Films of  $\text{SrFeO}_2$  with  $\text{FeO}_2$  Infinite Layers by  $\text{CaH}_2$  Low Temperature Reduction”
- GE** LONG, Youwen  
“High Pressure Synthesis and Intermetallic Charge Transfer in  $\text{LaCu}_3\text{Fe}_4\text{O}_{12}$  Double Perovskite”

— **Organotransition Metal Chemistry** —

- LW** “Activity Report: Organotransition Metal Chemistry Laboratory”
- GE** NAKAJIMA, Yumiko; OZAWA, Fumiyuki  
“Synthesis and Property of Transition Metal Complexes Bearing a Phosphaalkene Ligand”

— **Bioknowledge Systems** —

- LW** “KEGG Database and GenomeNet Pharmaceutical Products Database”

— **Biological Information Networks** —

- GE** POOLSAP, Unyanee  
“Prediction of RNA Secondary Structure with Pseudoknots Using Integer Programming”

— **Pathway Engineering** —

- LT** HASHIMOTO, Kosuke; TAKIGAWA, Ichigaku  
“Efficiently Finding Significant Substructural Patterns Conserved in Glycans”

— **Research Center for Low Temperature and Materials Sciences** —

- LT** TERASHIMA, Takahito; NII, Akinori; SHISHIDO, Hiroaki; YASU, Kazuki; KATOU, Tomonari; SHIBAUCHI, Takasada; MATSUDA, Yuji  
“Preparation and Transport Properties of Heavy-Fermion Superlattices”