

# THE 111TH ICR ANNUAL SYMPOSIUM

(9 December 2011)

## ORAL PRESENTATIONS

MURATA, Michihisa (Structural Organic Chemistry)  
“Synthesis, Aromaticity, and Optoelectronic Properties of Fullerene Derivatives”

MASUBUCHI, Yuichi (Molecular Rheology)  
“Prediction of Rheology of Polymers”

MURDEY, Richard (Molecular Aggregation Analysis)  
“Growth and in situ Electrical Measurements of Organic Semiconductor Thin Films”

KAWABATA, Takeo (Synthetic Organic Chemistry)  
“Regioselective Functionalization of Polyols by Organocatalysis”

HIRATAKE, Jun (Chemistry of Molecular Biocatalysts)  
“Something Unexpected:  $\gamma$ -Glutamyltranspeptidase Inhibitors and Collagen”

OGAWA, Tetsuya (Electron Microscopy and Crystal Chemistry)  
“Cryo-TEM Observation of Organic Materials and Aggregates in Solution”

TAYAGAKI, Takeshi (Photonic Elements Science)  
“Electron-Hole Dynamics and Optoelectronic Properties in Semiconductor Nanostructures”

– ICR Award for Young Scientists –  
IMANISHI, Miki (Biofunctional Design-Chemistry)  
“Control of Circadian Phase by an Artificial Zinc Finger Transcription Regulator”

– ICR Award for Graduate Students –  
IWAMOTO, Takahiro (Polymer Controlled Synthesis)  
“Size-Selective Encapsulation of  $C_{60}$  by [10]Cycloparaphenylene: Formation of the Shortest Fullerene-Peapod”

– ICR Award for Graduate Students –  
KOYAMA, Tomohiro (Nanospintronics)  
“Observation of the Intrinsic Pinning of a Magnetic Domain Wall in a Ferromagnetic Nanowire”

## POSTER PRESENTATIONS

 : Laboratory Whole Presentation  
 : Laboratory Topic  
 : General Presentation

### — Organoelement Chemistry —

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

 SAKAGAMI, Michiyasu; SASAMORI, Takahiro; TOKITOH, Norihiro  
“Synthesis and Properties of Novel Bis(ferrocenyl)diphosphene Derivatives”

### — Structural Organic Chemistry —

 “Research Activities in Structural Organic Chemistry Laboratory”

 NISHIMURA, Hidetaka; WAKAMIYA, Atsushi; MURATA, Yasujiro; FUKUSHIMA, Tatsuya; KAJI, Hironori  
“Synthesis and Properties of Triphenylamine Derivatives with Quasi-Planar Structure”

 TANIGUCHI, Takuhiro; WAKAMIYA, Atsushi; MURATA, Yasujiro; DY, Joanne Ting; SEGAWA, Hiroshi  
“Development of Organic Dyes for DSCs using Boryl-substituted Thienylthiazole as a Key Skeleton”

### — Synthetic Organic Chemistry —

 TOMOHARA, Keisuke; YOSHIMURA, Tomoyuki; KAWABATA, Takeo  
“Asymmetric  $\alpha$ -arylation of  $\alpha$ -amino Acids Derivatives”

 MISHIRO, Kenji; FURUTA, Takumi; KAWABATA, Takeo  
“Sugar Specific Acylation with Organocatalysts and Mechanistic Insights into the Specificity”

### — Chemistry of Polymer Materials —

 NOMURA, Akihiro; YOKOTA, Shingo; OHNO, Kohji; TSUJII, Yoshinobu  
“Lubrication Mechanisms of Concentrated Polymer Brushes”

 MAEDA, Keishi; NAKAHARA, Ryo; NOMURA, Akihiro; OHNO, Kohji; TSUJII, Yoshinobu  
“Fabrication of High-Density Graft Type of Gels and its Application to Low-Friction Materials”

### — Polymer Controlled Synthesis —

 “Research Activity in Polymer Controlled Synthesis Laboratory”

GE NAKANISHI, Koji; YAHATA, Yoshikazu; TSUJII, Yoshinobu; MORINAGA, Takashi; SATO, Takaya; YAMAGO, Shigeru  
“Synthesis of Concentrated Polymer Brush via Surface-Initiated TERP of Ionic Liquid Monomers”

GE YAHATA, Yoshikazu; NAKANISHI, Koji; KONISHI, Shota; YAMAGO, Shigeru; TSUJII, Yoshinobu  
“Synthesis of Concentrated Polymer Brush via Surface-Initiated TERP of Unconjugated Monomers”

GE NAKAMURA, Yasuyuki; ARIMA, Takahiro; TOMITA, Sora; YAMAGO, Shigeru  
“Photoinduced Switching of Living Radical Polymerization and Radical Coupling Reaction Mediated by Organotellurium Compounds”

#### — Inorganic Photonics Materials —

LT HATAYAMA, Yasuaki  
“Preparation of Organic-inorganic Hybrid Micro-rolls for Biosensing Application”

#### — Nanospintronics —

GE TANABE, Kenji  
“Detection of Spin Motive Force Induced by Magnetic Vortex Core Motion”

GE CHIDA, Kensaku  
“Precursor Phenomenon of the Quantum Hall Effect Breakdown Detected by the Noise Measurement”

GE SHIMAMURA, Kazutoshi  
“Electrical Field Control of Magnetic Properties Using Ion Film”

#### — Biofunctional Design-Chemistry —

LT NOSHIRO, Daisuke; ASAMI, Koji; FUTAKI, Shiroh  
“Metal-mediated Leakage Control by Novel Alamethicin Analogues”

GE YAMAMOTO, Kazutoshi; IMANISHI, Miki; FUTAKI, Shiroh  
“Rhythmic Expression of a Desired Gene by Artificial Clock Proteins”

#### — Chemistry of Molecular Biocatalysts —

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

GE IKEUCHI, Hideyuki; AHN, Yong-Mo; OTOKAWA, Takuya; WATANABE, Bunta; RICHARDS, G. J. Nigel; HIRATAKE, Jun  
“Development of Novel Inhibitors of Human Asparagine Synthetase –A New Paradigm for Cancer Chemotherapy–”

#### — Molecular Biology —

LW “Overview of Research Works in Laboratory of Molecular Biology”

#### — Chemical Biology —

LW “Introduction of Chemical Biology Laboratory”

#### — Molecular Materials Chemistry —

GE FURUKAWA, Shinya; SUZUKI, Furitsu; SATO, Tohru; TANAKA, Kazuyoshi; KAJI, Hironori  
“Quantum Chemical Calculations of Charge Transports in Organic LED Materials”

GE FUJIMURA, Subaru; FUKUSHIMA, Tatsuya; YAMAMOTO, Junichi; FUKUCHI, Masashi; KAJI, Hironori  
“Solid-state NMR Analysis of Donor-Acceptor Interaction in Polymer-Fullerene Systems”

#### — Hydrospheric Environment Analytical Chemistry —

LT TAKANO, Shotaro; SOHRIN, Yoshiki; HIRATA, Takafumi; TANIMIZU, Masaharu  
“Development of Precise Analytical Method for Copper Isotopic Composition in Seawater”

GE MINAMI, Tomoharu; SOHRIN, Yoshiki  
“Development of Automated System for Preconcentration of Al, Mn, Fe, Co, Ni, Cu, Zn, Cd and Pb in the Open Ocean”

GE NORISUYE, Kazuhiro; SOHRIN, Yoshiki  
“Development of an Analytical Method for the Determination of Bi in Seawater”

#### — Solution and Interface Chemistry —

LT ITOH, Yuki; HASEGAWA, Takeshi  
“Molecular Orientation Analysis in a Thin Film Using Raman Spectroscopy”

GE MATSUO, Yushi  
“Solution-NMR Study on Location, Orientation, and Dynamics of Naphthalene Derivatives in Lipid Membrane”

#### — Molecular Microbial Science —

LW “Introduction of Molecular Microbial Science Lab”

GE IMAI, Takeshi; MIHARA, Hisaaki; ESAKI, Nobuyoshi; KURIHARA, Tatsuo  
“Studies on Enzymatic Pathway for the Reduction of Selenite”

#### — Polymer Materials Science —

LW “Recent Research Topics in Polymer Material Science Laboratory”

GE NAKAMURA, Makoto; INOUE, Rintaro; NISHIDA, Koji; KANAYA, Toshiji; HINO, Masahiro  
“Distribution of Glass Transition Temperature in Poly(methyl methacrylate) Thin Films”

GE HAMADA, Takanori; INOUE, Rintaro; NISHIDA, Koji; KANAYA, Toshiji; KOHARA, Shinji  
“Structural Analysis of Isotactic Poly(methyl methacrylate) during the Induction Period of Crystallization by X-ray Scattering”

GE YAJIMA, Daishi; NISHIDA, Koji; INOUE, Rintaro; KANAYA, Toshiji; OGAWA, Hiroki; MASUNAGA, Hiroyasu  
“Phase Separation in Aqueous Mixture of Poly(vinyl alcohol) and Poly(vinyl sulfate) Potassium Salt”

— **Molecular Rheology** —

LI KURITA, Yushi; MATUMIYA, Yumi; WATANABE, Hiroshi  
“Evaluation of Dielectrically Detected Segment Size for 1,2-Polybutadiene”

— **Molecular Aggregation Analysis** —

LI YOSHIDA, Hiroyuki; ITO, Eisuke; HARA, Masahiko; SATO, Naoki; CHIN, WheeWon; JINWOOK, Han; ULES, Thomas; RAMSEY, Michel G.  
“Effect of Polarization Energy and Surface Dipole Layer on the Ionization Energy of Organic Solids”

— **Interdisciplinary Chemistry for Innovation** —

LW “Research Activity of Interdisciplinary Chemistry for Innovation”

— **Particle Beam Science** —

LW “Research Activities of Particle Beam Science Laboratory”

GE FUWA, Yasuhiro; TONGU, Hiromu; IWASHITA, Yoshihisa; OTANI, Kazuto; SAKABE, Shuji; HAYANO, Hitoshi; OKAMURA, Masahiro  
“Application of Laser Plasma to Particle Accelerator Research”

GE ZHENGQI, He; SOUDA, Hikaru; NAKAO, Masao; TONGU, Hiromu; JIMBO, Kouichi; YURI, Yousuke; OKAMOTO, Hiromi; NODA, Akira  
“Laser Cooling Simulation at S-LSR”

— **Laser Matter Interaction Science** —

GE MIYASAKA, Yasuhiro; HASHIDA, Masaki; IKUTA, Yoshinobu; TOKITA, Shigeki; SAKABE, Shuji  
“Mechanism of Femtosecond Laser Nano Ablation for Metals ~ Ion Emission Enhanced by Morphology of Metal Surface ~”

GE JAHANGIRI, Fazel; HASHIDA, Masaki; NAGASHIMA, Takeshi; TOKITA, Shigeki; HANGYO, Masanori; SAKABE, Shuji  
“Intense Terahertz Radiation from Argon Cluster Plasma Irradiated by Intense Femtosecond Laser Pulses”

GE INOUE, Shunsuke; TOKITA, Shigeki; OTANI, Kazuto; HASHIDA, Masaki; SAKABE, Shuji  
“Autocorrelation Method for Measuring Emission-time of Fast Electrons Produced by Femtosecond Laser”

GE IKUTA, Yoshinobu; HASHIDA, Masaki; MIYASAKA, Yasuhiro; TOKITA, Shigeki; SAKABE, Shuji  
“Mechanism of Periodic Grating Structures on Metal Surface Self-organized by Femtosecond Laser Pulses”

GE KOWATA, Kiyoto; TOKITA, Shigeki; INOUE, Shunsuke; OTANI, Kazuto; HASHIDA, Masaki; SAKABE, Shuji  
“Development of An In-line Type Plasma Mirror for Improvement of Pulse Contrast”

— **Electron Microscopy and Crystal Chemistry** —

LW “Research Activities in Laboratory of Electron Microscopy and Crystal Chemistry”

GE HARUTA, Mitsutaka; KURATA, Hiroki  
“High Resolution Imaging of Structural Defects in Organic Thin Films”

— **Structural Molecular Biology** —

LW “Introduction of Structural Molecular Biology Laboratory”

— **Organic Main Group Chemistry** —

LW “Introduction of Organic Main Group Chemistry”

GE KAWABATA, Tatsuya; ITO, Shingo; ITOH, Takuma; JIN, Masayoshi; NAKAMURA, Masaharu  
“Stereoselective Carbometalation of Oxabicyclic Alkenes under Iron Catalysis”

GE YOKOI, Tomoya; ISOZAKI, Katsuhiko; OGATA, Kazuki; SASANO, Daisuke; SEIKE, Hirofumi; TAKAYA, Hikaru; NAKAMURA, Masaharu  
“Synthesis and Functions of ONO-Pincer Ru-Complex-Bound Norvalines”

GE IMAYOSHI, Ryuji; YOSHIMOTO, Yuya; GHORAI, S. K.; HATAKEYAMA, Takuji; NAKAMURA, Masaharu  
“Iron-Catalyzed Aromatic Amination Using Magnesium Amides”

— **Advanced Solid State Chemistry** —

LW “Research Activities in the Advanced Solid State Chemistry Laboratory”

— **Organotransition Metal Chemistry** —

LW “Activity Report: Organotransition Metal Chemistry Laboratory”

GE NAKAJIMA, Yumiko; SHIRAISHI, Yu; TSUCHIMOTO, Takahiro; OZAWA, Fumiyuki  
“Electronic Properties of Copper(I) Complexes Bearing a Bis(phosphaethenyl)pyridine Ligand”

GE WANG, Qifeng; WAKIOKA, Masayuki; OZAWA, Fumiyuki  
“Synthesis of End-capped Regioregular Poly(3-hexylthiophene) via Direct Arylation”

— **Photonic Elements Science** —

LW “Research Topics in Photonic Elements Science Group”

— **Chemical Life Science** —

LW “Development of Chemical and Enzyme Databases and Related Tools in GenomeNet”

GE HIRANUKA, Kazushi; DIEZ, Diego; JOANNIN, Nicolas; KANEHISA, Minoru; GOTO, Susumu  
“Clustering Analysis of Antigenically Variable Gene Families”

— **Mathematical Bioinformatics** —

 TAMURA, Takeyuki  
“Predicting Essential Genes by Impact Degree on Metabolic Networks”

— **Bio-knowledge Engineering** —

 NGUYEN, Canh Hao; MAMITSUKA, Hiroshi  
“Latent Feature Models for Biological Networks”

— **Nano-Interface Photonics (SEI Group CSR Foundation)** —

 “Reserch Activities in Nano-Interface Photonics Group”