

# THE 112TH ICR ANNUAL SYMPOSIUM

(7 December 2012)

## ORAL PRESENTATION

FUJII, Tomomi et al. (Structural Molecular Biology)  
“Structural Insights into Action of Enzymes for Resorcinol Catabolism”

TSUGE, Tomohiko (Molecular Biology)  
“Molecular Mechanisms Regulating Gene Expression Involved in Morphogenesis”

SAKAMOTO, Masanori et al. (Advanced Inorganic Synthesis)  
“Platonic Hexahedron Composed of Six Organic Faces with an Inscribed Au Cluster”

KAYAHARA, Eiichi et al. (Polymer Controlled Synthesis)  
“Synthesis of Cycloparaphenylene (CPP) Analog and Highly Strained CPP by Using Cyclic Platinum Complexes”

GOTO, Atsushi et al. (Molecular Materials Chemistry)  
“A New Family of Controlled Radical Polymerization with Organic Catalysts”

HASEGAWA, Takeshi (Solution and Interface Chemistry)  
“Analysis of Correlation between Molecular Assembled Structure and Hydration in a Langmuir-adsorbed Monolayer at the Air/water Interface”

SHIMIZU, Masahiro et al. (Laser Matter Interaction Science)  
“Self-organization of Nanostructure on Metal Surface under Femtosecond Laser Pulse Irradiation”

–ICR Award for Young Scientists–  
CHIBA, Daichi (Nanospintronics)  
“Electrical Control of the Ferromagnetic Phase Transition in Cobalt at Room Temperature”

–ICR Award for Young Scientists (Foreign Researchers' Category)–  
CHEN, Wei-tin (Advanced Solid State Chemistry)  
“Ligand-hole Localization in Oxides with Unusual Valence Fe”

–ICR Award for Graduate Students–  
ITO, Yuki (Solution and Interface Chemistry)  
“Polarization Dependence of Raman Scattering from a Thin Film Involving Optical Anisotropy Theorized for Molecular Orientation Analysis”

–ICR Award for Graduate Students–  
INOUE, Shunsuke (Laser Matter Interaction Science)  
“Femtosecond Electron Deflectometry for Measuring Transient Fields Generated by Laser-accelerated Fast Electrons”

## POSTER PRESENTATIONS

**LW** : Laboratory Whole Presentation

**LT** : Laboratory Topic

**GE** : General Presentation

### — Organoelement Chemistry —

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

**GE** MIYAMOTO, Hisashi; SASAMORI, Takahiro; TOKITOH, Norihiro  
“Generation of a Novel Ferrocenophane Bridged by a Ge=Ge Unit”

### — Structural Organic Chemistry —

**LW** “Research Activities in Structural Organic Chemistry Laboratory”

**GE** SHIMOGAWA, Hiroyuki; WAKAMIYA, Atsushi; MURATA, Yasujiro  
“Synthesis and Properties of Thieno-fused BODIPY Derivatives”

**GE** YOSHIKAWA, Osamu; WAKAMIYA, Atsushi; MURATA, Yasujiro  
“Chromic Properties of Boryl-substituted Dithienylbenzothiadiazole Derivatives”

### — Synthetic Organic Chemistry —

**LW** “Asymmetric Synthesis via Enolates with Dynamic Chirality”

**LW** “Regioselective Molecular Transformation by Organo Catalysis”

### — Advanced Inorganic Synthesis —

**LW** “Research Activities in Advanced Inorganic Synthesis”

**GE** YOSHINAGA, Taizo; FRUBE, Akihiro; KANEHARA, Masayuki; TERANISHI, Toshiharu  
“Evaluation of the Electric Field Enhancement Factor in Plasmonic Indium Tin Oxide Nanoparticle Film by Femtosecond Transient Absorption in the Near IR Region”

**GE** TANAKA, Daisuke; SAKAMOTO, Masanori; TERANISHI, Toshiharu  
“Interfacial Interaction between Au Cluster and Porphyrin in Porphyrin Face-coordinated Au Cluster”

**GE** SATO, Ryota; ITO, Shin-ichi; TOMISHIGE, Keiichi; TERANISHI, Toshiharu  
“Designed Synthesis of Monodisperse Metal/Pt Core/Shell Nanoparticles with Precisely-Tuned Pt Atomic Layers and Their CO Adsorption Properties”

GE Wu, Hsin-Lun; EGUCHI, Miharuru; MITSUI, Daisuke; TERANISHI, Toshiharu  
“Seed-Mediated Synthesis of Rhombic Dodecahedral Au Nanocrystals and Their 3D-FDTD Simulations”

— Chemistry of Polymer Materials —

GE NAKANISHI, Yohei; KAWANO, Yuko; SAKAKIBARA, Keita; OHNO, Kohji; MORINAGA, Takashi; SATO, Takaya; TSUJII, Yoshinobu  
“Fabrication of Novel Ionics-materials by Higher-order Structural Control of Ionic Liquid/polymer Composites”

GE HSU, Shu-Yao; AKIMOTO, Shuhei; OHNO, Kohji; TSUJII, Yoshinobu  
“Tribology Properties of Concentrated Polymer Brushes with Extraordinarily Large Thicknesses”

— Polymer Controlled Synthesis —

LW “Research Activity of Polymer Controlled Synthesis”

GE ARIMA, Takahiro; NAKAMURA, Yasuyuki; YAMAGO, Shigeru  
“Synthesis of End- and Mid-chain Functionalized Polymers by a Combination of TERP and Radical Coupling Reaction”

GE IWAMOTO, Takahiro; KURACHI, Daisuke; KAYAHARA, Eiichi; YAMAGO, Shigeru  
“Synthesis of [4]Cyclophenanthrene and [4]Cyclopyrene through Tetranuclear Platinum Complexes”

— Inorganic Photonics Materials —

GE TANIMOTO, Toshiro; MASAI, Hirokazu; TOKUDA, Yomei; YOKO, Toshinobu  
“Correlation between the Preparation Method and the Photoluminescent Property of SnO-ZnO-P<sub>2</sub>O<sub>5</sub> Glasses”

GE OGAWA, Tadahiyo; TOKUDA, Yomei; MASAI, Hirokazu; YOKO, Toshinobu  
“Adsorption of Proteins on Organic-inorganic Hybrid Thin Films Prepared by Sol-gel Method”

— Nanospintronics —

GE MATSUO, Sadashige  
“Quantum Transport Effect in Bi<sub>2</sub>Se<sub>3</sub> Thin Film”

GE UEDA, Kohei  
“Current Induced Magnetic Domain Wall in Co/Ni Nanowires”

GE ARAKAWA, Tomonori  
“Real-time Measurement of Quantum Transport by Single Electron Transistor”

— Biofunctional Design-Chemistry —

LW “Research Activities in Biofunctional Design Chemistry Laboratory”

GE TANAKA, Gen; NAKASE, Ikuhiko; KAWAGUCHI, Yoshimasa; FUTAKI, Shiroh  
“Importance of CXCR4 in Efficient Cellular Internalization of Cell-penetrating R12 Peptide”

— Chemistry of Molecular Biocatalysts —

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

GE KIRIKAE, Hiroaki; KOEDUKA, Takao; WATANABE, Bunta; HIRATAKE, Jun  
“Synthesis and Evaluation of 4-Coumarate:CoA Ligase Inhibitors”

— Molecular Biology —

LW “Studies Promoted by the Laboratory of Molecular Biology”

— Chemical Biology —

GE HIRATA, Nao; UESUGI, Motonari  
“Fluorescent Chemical Probes for Human Stem Cells”

— Molecular Materials Chemistry —

LW “Research Activities in Molecular Materials Chemistry Laboratory”

GE FUKUSHIMA, Tatsuya; FUJIMURA, Subaru; KAJI, Hironori  
“Solid-state NMR Analysis of Donor/Acceptor Structures in Organic Solar Cells”

GE OHTSUKI, Akimichi; GOTO, Atsushi; KAJI, Hironori  
“Photo-Induced Controlled Radical Polymerization with Organic Catalysts”

— Hydrospheric Environment Analytical Chemistry —

GE TAKANO, Shotaro; SOHRIN, Yoshiki; HIRATA, Takafumi; TANIMIZU, Masaharu  
“Development of a Simple Pretreatment Method Using NOBIAS CHELATE-PA1 Resin for Measurement of Copper Isotopic Composition in Seawater”

GE NORISUYE, Kazuhiro; YAMAMOTO, Jun; TAKANO, Shotaro; SOHRIN, Yoshiki  
“The Distribution of Bismuth in the Western North Pacific”

— Solution and Interface Chemistry —

GE SHIMOAKA, Takafumi; ITOH, Yuki; HASEGAWA, Takeshi  
“Dynamic Rearrangement of Stearic Acid Molecules Adsorbed on a Gold Surface Induced by Ambient Water Molecules Studied by Infrared Spectroscopy”

— Molecular Microbial Science —

LW “Research Activities of Molecular Microbial Science Laboratory”

☒ SUGIURA, Miwa; KAWAMOTO, Jun; ESAKI, Nobuyoshi; KURIHARA, Tatsuo  
“Control of the Production of Outer Membrane Proteins by Eicosapentaenoic Acid in a Psychrotrophic Bacterium, *Shewanella livingstonensis* Ac10”

— Polymer Materials Science —

☒ “Research Topics in Polymer Material Science Laboratory”

☒ JIN, Ling; DENG, Cong; POLEC, Inga; INOUE, Rintaro; NISHIDA, Koji; KANAYA, Toshiji  
“Influence of Atactic Polystyrene on the Shear-induced Precursor in Isotactic Polystyrene”

☒ HARA, Ayana; INOUE, Rintaro; NISHIDA, Koji; KANAYA, Toshiji  
“The Observation of Multiple Structure Formed of Introduced Phase Separation of Epoxy”

☒ SAKAI, Tatsuya; INOUE, Rintaro; NISHIDA, Koji; KANAYA, Toshiji  
“Studies on Carbon Nanotube/poly(vinyl alcohol) Gel Composite by Light Scattering and Small Angle X-ray Scattering”

☒ KATAYAMA, Yutaka; NISHIDA, Koji; INOUE, Rintaro; KANAYA, Toshiji  
“Structure Formation of Methylcellulose Aqueous Solution in Sol Region”

— Molecular Rheology —

☒ KAWASAKI, Yohji; WATANABE, Hiroshi; UMEKI, Yuka; NISHIKAWA, Makiya  
“Viscoelastic Properties of DNA Hydrogel”

— Molecular Aggregation Analysis —

☒ MURDEY, Richard; SATO, Naoki  
“Growth Morphology and Photoconductivity of Lead Phthalocyanine Thin Films”

☒ ASAMI, Koji  
“Low-frequency Dielectric Dispersion of Lipophilic-ion-doped Biological Cells”

— Interdisciplinary Chemistry for Innovation —

☒ “Research Activities of Interdisciplinary Chemistry for Innovation”

— Particle Beam Science —

☒ NASU, Yuji; IKEDA, Hideki; KITAHARA, Ryunosuke; FUWA, Yasuhiro; TONGU, Hiromu; IWASHITA, Yoshihisa; ICHIKAWA, Masahiro  
“Development of Very Small ECR H<sup>+</sup> Ion Source with Permanent Magnets”

☒ FUWA, Yasuhiro; IKEDA, Hideki; KITAHARA, Ryunosuke; NASU, Yuji; TONGU, Hiromu; IWASHITA, Yoshihisa; MATSUMOTO, Toshihiro; MICHIZONO, Shinichiro; FUKUDA, Shigeki  
“Klystron Beam Focusing Magnet Composed of Anisotropic Ferrite Magnets”

☒ SOUDA, Hikaru; NAKAO, Masao; TONGU, Hiromu; NODA, Akira; JIMBO, Kouichi; OSAKI, Kazuya; OKAMOTO, Hiromi; YURI, Yosuke; HE, Zhengqi; GRIESER, Manfred; MADSEN, Niels  
“Efficient Indirect Transverse Laser Cooling of Mg Ion Beam by Reducing Particle Numbers with Scraper”

☒ IMAJO, Sohei; IWASHITA, Yoshihisa; SHIMIZU, Hirohiko M.; YOSHIOKA, Tamaki; KITAGUCHI, Masaaki; ARIMOTO, Yasushi; SEKI, Yoshichika; and NOP Collaboration  
“The R&D of the UCN Accelerator for Neutron EDM Experiment at J-PARC”

— Laser Matter Interaction Science —

☒ NAKAJIMA, Hiroaki; TOKITA, Shigeki; INOUE, Shunsuke; HASHIDA, Masaki; SAKABE, Shuji  
“Long-distance Guidance of Fast Electrons along a Metal Wire Irradiated by an Intense Femtosecond Laser Pulse”

☒ MIYASAKA, Yasuhiro; HASHIDA, Masaki; SHIMIZU, Masahiro; TOKITA, Shigeki; SAKABE, Shuji  
“Mechanism of Femtosecond Laser Nano Ablation for Metals ~Nonthermal Ion Emission from Nano Structures on Surface~”

— Electron Microscopy and Crystal Chemistry —

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

☒ SAITO, Hikaru; KURATA, Hiroki  
“Optical Property of Nanomaterial Using Angular Resolved EELS”

☒ ASO, Ryotaro; KAN, Daisuke; SHIMAKAWA, Yuichi; KURATA, Hiroki  
“Quantitative Strain Analysis of Epitaxial Perovskite Oxide Thin Films Using Cs-TEM and Cs-STEM”

— Structural Molecular Biology —

☒ “Research Activities at Laboratory of Structural Molecular Biology”

— Organic Main Group Chemistry —

☒ “Activities in Organic Main Group Chemistry”

☒ HASHIMOTO, Sigma; OBA, Tsuyoshi; HATAKEYAMA, Takuji; NAKAMURA, Masaharu  
“Synthesis and Physical Properties of BN-fused Helical  $\pi$ -Conjugated Molecules”

☒ IMAYOSHI, Ryuji; YOSHIMOTO, Yuya; GHORAI, Sujit K.; HATAKEYAMA, Takuji; NAKAMURA, Masaharu  
“Synthesis of Arylamines Based on Iron-Catalyzed Aromatic Amination”

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

— **Advanced Solid State Chemistry** —

☐ “Introduction of Advanced Solid State Chemistry Laboratory”

☒ MATSUMOTO, Kazuya; SHIMAKAWA, Yuichi  
“Oxygen Incorporation into Infinite-layer Structure  $AFeO_2$   
( $A=Sr, Ca$ )”

— **Organotransition Metal Chemistry** —

☐ “Activity Report: Organotransition Metal Chemistry Laboratory”

☒ WAKIOKA, Masayuki; KITANO, Yutaro; TAKETANI, Tomoyoshi; NAKAMURA, Yuki; HIHARA, Yoshihiro; OZAWA, Fumiyuki  
“A New Synthetic Route to  $\pi$ -Conjugated Polymers via Palladium-catalyzed Direct Arylation”

☒ NAKAJIMA, Yumiko; LIN, Ya-Fan; MINAMI, Ataru  
“Synthesis and Properties of 3d Metal Complexes Bearing a Low-coordinate Phosphorus Ligand”

— **Photonic Elements Science** —

☐ “Research Topics in Photonic Elements Science Group”

— **Chemical Life Science** —

☐ “Recent Update of GenomeNet Including Reaction Ontology”

☒ MUTO, Ai; KOTERA, Masaaki; TOKIMATSU, Toshiaki; NAKAGAWA, Zenichi; GOTO, Susumu; KANEHISA, Minoru  
“Metabolic Pathway Evolution from the Aspect of Chemical Reaction Modules Conserved in the Global Metabolic Network”

— **Mathematical Bioinformatics** —

☐ “Research Topics of Laboratory of Mathematical Bioinformatics”

— **Bio-knowledge Engineering** —

☒ HANCOCK, Timothy; MAMITSUKA, Hiroshi  
“Multi-omic Metabolic Network Analysis”

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

☐ “Research Topics in Nano-interface Photonics Group”

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

☒ TERASHIMA, Takahito  
“Properties of Heavy-fermion  $Ce_{1-x}Yb_xCoIn_5$  System by MBE”