

SELECTED GRANTS

DIVISION OF SYNTHETIC CHEMISTRY

— Organoelement Chemistry —

Tokitoh, N.

Creation of Novel Catalysts Centered on the Coordination Diversity of Heavy Typical Elements, Grant-in-Aid for Scientific Research on Innovative Area “Stimuli-responsive Chemical Species for the Creation of Functional Molecules”

28 June 2012–31 March 2017

Tokitoh, N.

Electron-state Control of Aromatic Compounds Containing Heavier Group 14 Elements by Substituent Introduction and Element Substitution

Grant-in-Aid for Scientific Research (B)

1 April 2013–31 March 2016

Tokitoh, N.

Development of Pt–Silylyne Complexes and Their Application to Synergetic and Tandem Activation of Small Molecules

Grant-in-Aid for Challenging Exploratory Research

1 April 2012–31 March 2014

Sasamori, T.

Construction of [2]Ferrocenophanes Linked by π -Bond between Heavier Group 14 Elements and Control of Their Ring-opening Polymerization

Grant-in-Aid for Scientific Research on Innovative Area “Emergent Chemistry of Nano-scale Molecular Systems” and “New Polymeric Materials Based on Element-Blocks”

1 April 2013–31 March 2015

Sasamori, T.

Construction of Novel d - π Conjugated Systems Containing Heavier Main Group Elements and Their Functions

Grant-in-Aid for Young Scientists (A)

1 April 2011–31 March 2014

Mizuhata, Y.

Construction of Silicon-containing Dehydroannulenes and Their Aromaticity and Antiaromaticity

Grant-in-Aid for Scientific Research (C)

1 April 2014–31 March 2017

Agou, T.

Bottom-up Syntheses of Electron-Deficient Aluminum Clusters and Elucidation of Their Properties

Grant-in-Aid for Scientific Research (C)

1 April 2012–31 March 2015

— Structural Organic Chemistry —

Murata, Y.

Synthesis of Tailor-made Nanocarbons and Their Application to Electronic Devices

Grants-in-Aid for Scientific Research (A)

1 April 2011–31 March 2016

Murata, Y.

Molecular Interface Science of π -Conjugated Carbon Complexes on Non-Equilibrated States

PRESTO (Precursory Research for Embryonic Science and Technology), JST

1 October 2012–31 March 2016

Murata, Y.

Creation of Paramagnetic Endofullerenes by Organic Synthesis

Grant-in-Aid for Challenging Exploratory Research

1 April 2012–31 March 2014

Wakamiya, A.

Development of Organic Dyes Based on Fine Tuning of π -Orbitals Using DFT Calculations

PRESTO (Precursory Research for Embryonic Science and Technology), JST

1 October 2010–31 March 2016

Wakamiya, A.

Creation of Wireless Electric Power Supply

Center of Innovation Program (COI)

1 October 2013–31 March 2022

Wakamiya, A.

High Dimensional Structural Control of π -Conjugated Systems and Their Functionalization

Grant-in-Aid for Scientific Research (B)

1 April 2014–31 March 2017

Murata, M.

Synthesis of Electron-Accepting π -Systems Containing Fulvalene as a Key Structural Unit

Grant-in-Aid for Scientific Research (B)

1 April 2012–31 March 2015

Murata, M.

Organization of Nanocarbon Molecules Based on Metal Coordination

Grant-in-Aid for Challenging Exploratory Research

1 April 2014–31 March 2016

Abbreviations and acronyms

JST : Japan Science and Technology Agency

MEXT : Ministry of Education, Culture, Sports, Science and Technology

METI : Minister of Economy, Trade and Industry

NEDO : New Energy and Industrial Technology Development Organization

— Synthetic Organic Chemistry —

Kawabata, T.
Regioselective Molecular Transformation Based on Organocatalytic Molecular Recognition
Grant-in Aid for Scientific Research on Innovative Area
25 July 2011–31 March 2016

Kawabata, T.
Regioselective Molecular Transformation of Multifunctionalized Molecules
Grant-in Aid for Scientific Research (S)
30 May 2014–31 March 2019

Furuta, T.
Development of Regio- and Stereoselective Reactions of Polyfunctionalized Molecules by Axially Chiral Catalysts
Grant-in-Aid for Scientific Research (C)
28 April 2011–31 March 2014

Furuta, T.
Direct Intra- and Intermolecular Aldol Reaction by Catalytic Discrimination of Aldehydes
Grant-in-Aid for Scientific Research (C)
1 April 2014–31 March 2017

Yoshimura, T.
Asymmetric Syntheses of Bioactive Natural Products via Chiral Enolate Intermediate with Dynamic Chirality
Grant-in-Aid for Scientific Research (C)
1 April 2014–31 March 2017

— Advanced Inorganic Synthesis —

Teranishi, T.
Establishment of Deeply Penetrating Photoacoustic Imaging Technology Based on Functional Probes: Design and Synthesis of Activatable Probes and Development of in vivo Imaging Technology
Industry-Academia Collaborative R&D Programs, JST
1 December 2011–31 March 2017

Teranishi, T.
Research on Hydrogen Storage Properties of Polyhedral Palladium Nanoparticles
Grant-in-Aid for Challenging Exploratory Research
1 April 2014–31 March 2016

Teranishi, T.
Synthesis of Magnetic Nanoparticles for Creating Novel Nanocomposite Magnetic Materials
Elements Strategy Initiative, MEXT
1 July 2012–31 March 2022

Teranishi, T.
Research on Nanoscale Phase-Controlled Nanocomposite Magnets
Mirai Kaitaku Research Project, NEDO
1 October 2012–31 March 2022

Teranishi, T.
Development of Green Sustainable Chemical Process
Mirai Kaitaku Research Project, NEDO
1 November 2012–31 March 2022

Sakamoto, M.
Fabrication of Nanocrystal Superstructure toward Novel Artificial Photosynthesis
Precursory Research for Embryonic Science and Technology, JST
1 April 2012–31 March 2015

Sakamoto, M.
Research for the Photochemical Functions of Porphyrin Face-coordinated Metal Nanoparticles
Grant-in-Aid for Scientific Research(C)
1 April 2013–31 March 2016

DIVISION OF MATERIALS CHEMISTRY
— Chemistry of Polymer Materials —

Tsujii, Y.
Development of Novel Nanosystem by Hierarchically Assembling Concentrated Polymer Brushes
CREST (Core Research for Evolutional Science and Technology), JST
1 October 2009–31 March 2015

Tsujii, Y.
Super Lubrication of Novel Nano-Brushes
Advanced Environmental Materials of Green Network of Excellence (GRENE) Program, MEXT
6 December 2011–31 March 2016

Tsujii, Y.
Development of High-Performance Li-ion Batteries Using High-capacity, Low-cost Oxide Electrodes
NEDO Project for Development of Novel Technology in Li-ion Batteries
1 October 2012–31 March 2017

Tsujii, Y.
High-Reliable Li-ion Battery Electrolytes Supported with Well-Designed Polymeric Monoliths
NEDO Project for New Energy Venture Business Technology Innovation Program
1 April 2013–28 February 2014

Ohno, K.
Pharmacokinetics of Well-Defined Polymer Brush-Afforded Fine Particles
Grants-in Aid for Young Scientists (A)
1 April 2011–31 March 2014

Ohno, K.
Development of Molecular Targeted MRI Contrast Agent A-STEP (Adaptable and Seamless Technology Transfer Program through Target-Driven R&D), JST
1 October 2012–30 September 2015

Ohno, K.
Development of Ionic Liquid-Containing Blend Films
PRESTO (Precursory Research for Embryonic Science and Technology), JST
1 October 2013–31 March 2017

Sakakibara, K.
Construction of Photoresponsive Cellulosic Nanostructures via Polysaccharide-Based Hierarchic Assembly
Grants-in-Aid for Young Scientist (B)
1 April 2012–31 March 2015

— Polymer Controlled Synthesis —

Yamago, S.
Creation of Hoop-shaped π -Conjugated Molecules through the Supramolecular Chemical Approach and Elucidation of their Properties
CREST (Core Research for Evolutional Science and Technology), JST
1 October 2010–31 March 2016

Yamago, S.
Highly Value-added Polymer Material Created by New Living Radical
Polymerization Agent
NexTEP (Next Generation Technology Transfer Program), JST
1 April 2014–31 March 2020

— **Inorganic Photonics Materials** —

Masai, H.
Control of the Local Structure and the Luminescent Properties of Glass
Phosphor Containing ns² Type Emission Center
Grant-in-Aid for Young Scientists (A)
1 April 2014–31 March 2018

— **Nanospintronics** —

Ono, T.
Development of Novel Spin Dynamics Devices
Grant-in-Aid for Scientific Research(S)
1 April 2011–31 March 2016

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

Futaki, S.
Library Design for Targeting HTLV-1 Related Proteins and the Selection
Grant-in-Aid for Challenging Exploratory Research
1 April 2013–31 March 2015

Imanishi, M.
Construction of Artificial Input Systems of the Circadian Clock
Grants-in-Aid for Scientific Research on Innovative Areas “Synthetic
Biology”
1 April 2014–31 March 2016

Takeuchi, T.
Therapeutic Drug Development for Treatment of Polyglutamine
Diseases by Reverse Drug Design Strategy
Grants-in-Aid for Young Scientists (A)
1 April 2014–31 March 2017

— **Chemistry of Molecular Biocatalysts** —

Hiratake, J.
Search for Pharmaceuticals Based on Asparagine Synthetase Inhibitors
Grant-in-Aid for Scientific Research (C)
1 April 2011–31 March 2014

Hiratake, J.
Molecular Mechanisms for Pyrethrin Biosynthesis
GDLS Lipase for Development of Insect-Resistant Recombinant
Plants
1 April 2013–31 March 2016

Hiratake, J.
Development and Applications of Specific Inhibitors of γ -Glutamyl
Transpeptidase
A Grant from the Japan Foundation for Applied Enzymology
28 April 2014–27 April 2015

Watanabe, B.
A Study on Biosynthesis and Dynamics of Archaeal Membrane Lipids
Using Synthetic Lipid Molecules
Grant-in-Aid for Young Scientists (B)
1 April 2013–31 March 2015

— **Molecular Biology** —

Aoyama, T.
Regulatory Mechanisms for Functional Morphologies of Plants
Bilateral Program for Joint Research between JSPS and NSFC
1 April 2012–31 March 2015

Tsuge T.
Regulatory Mechanism of Plant Morphogenesis by Regulators of
mRNA Metabolism
Grant-in-Aid for Scientific Research (C)
1 April 2013–31 March 2016

— **Chemical Biology** —

Uesugi, M.
Control and Analysis of Cells by Synthetic Small Molecules
Grant-in-Aid for Scientific Research (S)
30 May 2014–31 March 2019

Uesugi, M.
Chemical Biological Exploration of New Functions of Endogenous
Lipid-related Molecules
CREST (Core Research for Evolutional Science and Technology), JST
1 October 2014–31 March 2020

DIVISION OF ENVIRONMENTAL CHEMISTRY
— **Molecular Materials Chemistry** —

Kaji, H.
Structure and Function of Organic Thin-Film Solar Cells: Specially-
Shaped Polymers and Hierarchical Structure Analysis
Grant-in-Aid for Scientific Research (A)
1 April 2013–31 March 2016

Goto, A.
High Performance Color Material by Living Radical Polymerization
with Organic Catalysts
A-STEP (Adaptable and Seamless Technology Transfer Program
through Target-Driven R&D), JST
1 November 2011–31 March 2015

Fukushima, T.
Solid-State NMR Analysis of Bulk Heterostructures toward High-efficiency
Organic Solar Cells
Grant-in-Aid for Young Scientists (B)
1 April 2014–31 March 2016

— **Hydrospheric Environment Analytical Chemistry** —

Sohrin, Y.
Ocean Section Study in the Pacific Ocean, Indian Ocean and Japan Sea
Using Multielemental Analysis of Trace Metals
Grant-in-Aid for Scientific Research (A)
1 April 2012–31 March 2015

Sohrin, Y.
Development of Novel Proxies for Paleoceanography on the Precise
Analysis of Stable Isotope Ratios of Heavy Metals
Grant-in-Aid for Challenging Exploratory Research
1 April 2014–31 March 2017

— **Solution and Interface Chemistry** —

Hasegawa, T.
Development of Novel Analytical Techniques for Revealing Molecular
Orientation of Adsorbed Molecules on a Rough Surface or on Nano
Particles
Grant-in-Aid for Challenging Exploratory Research
1 April 2014–31 March 2016

Hasegawa, T.
Generation of a New Energy State by Excitation of Multipole via Light Absorption and Its Application to Surface-enhance Raman Scattering Spectrometry
Grant-in-Aid for Scientific Research (B)
1 April 2011–31 March 2014

Shimoaka, T.
Development of Analytical Techniques for Studying the Structure and Property of a Polymer Influenced by Minute Water Molecules Involved in a Polymer Thin Film
Grant-in-Aid for Young Scientists (B)
1 April 2014–31 March 2017

— **Molecular Microbial Science** —

Kurihara, T.
Functional Analysis and Application of Phospholipids Containing Polyunsaturated Fatty Acids in Bacterial Cell Membrane
Grant-in-Aid for Scientific Research (B)
1 April 2012–31 March 2015

Kurihara, T.
Exploration of Cold-Adapted Microorganisms to Develop the Low-temperature Bioprocessing
Grant-in-Aid for Scientific Research (B)
1 April 2013–31 March 2016

Kawamoto, J.
Exploration of Functional Metal-Nanoparticle-Producing Bacteria from Extreme Environments
Grant-in-Aid for Scientific Research (B)
1 April 2012–31 March 2015

Kawamoto, J.
Application of Polyunsaturated Fatty Acid-Containing Phospholipids as a Lipophilic Molecular Chaperone
Grant-in-Aid for Challenging Exploratory Research
1 April 2014–31 March 2015

DIVISION OF MULTIDISCIPLINARY CHEMISTRY
— **Polymer Materials Science** —

Kanaya, T.
Non-equilibrium Intermediate States and Polymer Crystallization-Towards Establishment of Basis for Industrial Application
Grant-in-Aid for Scientific Research (A)
1 April 2012–31 March 2017

Kanaya, T.
Photon and Quantum Basic Research Coordinated Development Program, JST
1 September 2013–31 March 2018

Nishida, K.
Property Control of Water-soluble Cellulose Derivatives
Grant-in-Aid for Scientific Research (C)
1 April 2011–31 March 2014

Ogawa, H.
Development of the Micro-GISAXS System for Functional Polymer Thin Films
Grant-in-Aid for Young Scientist (B)
1 April 2013–31 March 2015

— **Molecular Rheology** —

Watanabe, H.
Non-linear Feedbacks between Polymer Dynamics and Phase Separation Kinetics in Polymer Blends
Grant-in-Aid for Scientific Research (A)
1 April 2012–31 March 2015

Masubuchi, Y.
Molecular Friction of Polymers under Stretch and Oriented State
Grant-in-Aid for Scientific Research (B)
1 April 2014–31 March 2017

Masubuchi, Y.
Relaxation Mechanisms of Polymers under Fast Flow
Grant-in-Aid for Scientific Research (B)
1 April 2011–31 March 2014

Matsumiya, Y.
Molecular Picture of the Correlation Length in Polymer Dynamics
Grant-in-Aid for Scientific Research (C)
1 April 2012–31 March 2015

ADVANCED RESEARCH CENTER FOR BEAM SCIENCE
— **Particle Beam Science** —

Iwashita, Y.
An Ion Source Using Direct Injection of Short-pulse Laser Plasma to RF Bucket
Grant-in-Aid for Challenging Exploratory Research
1 April 2012–31 March 2015

Iwashita, Y.
Innovative High-performance Ion Source by the RF Phase Direct Injection of the Short Pulse Laser Plasma
Grant-in-Aid for Challenging Exploratory Research
1 April 2012–31 March 2014

Iwashita, Y.
Quantum Improvement of the Superconducting Acceleration Cavity Performance by the Laminated Film Structure
Grant-in-Aid for Challenging Exploratory Research
1 April 2014–31 March 2016

Iwashita, Y.
Fundamental Technology Development for High Brightness X-ray Source and the Imaging by Compact Accelerator
Photon and Quantum Basic Research Coordinated Development Program
1 April 2013–31 March 2017

— **Laser Matter Interaction Science** —

Sakabe, S.
Demonstration of Ultra-fast Electron Diffraction Using Fast Electrons Accelerated in Plasmas by an Intense Femtosecond Laser
Grant-in-Aid for Scientific Research (S)
1 April 2011–31 March 2016

Sakabe, S.
Long-distance Acceleration of Surface Plasma Electrons Along a Metal Wire by the Surface Wave Induced by Ultra-intense Laser Pulses
Grant-in-Aid for Challenging Exploratory Research
1 April 2013–31 March 2015

Sakabe, S.
Fundamental Study for Mechanism Clarification of Laser Colored Metal Surface
Amada Foundation for Metal Work Technology
15 December 2011–31 March 2014

Hashida, M.
New Functionality on Metal Surface Induced by Femtosecond Laser Ablation
Grant-in-Aid for Scientific Research (C)
1 April 2013–31 March 2016

Inoue, S.
Increasing the Brightness of the Laser-accelerated Electron Source by Controlling the Peripheral Plasma and the Electromagnetic Field
Grant-in-Aid for Young Scientists (B)
1 April 2014–31 March 2016

Inoue, S.
A New Technology for Controlling Laser Accelerated Electron Pulse with Laser Produced Plasma
Grant-in-Aid for MATSUDO FOUNDATION
29 October 2014–28 October 2015

— **Electron Microscopy and Crystal Chemistry** —

Kurata, H.
Advanced Characterization Nanotechnology Platform at Kyoto University
Nanotechnology Platform Project, MEXT
2 July 2012–31 March 2022

Haruta, M.
Atomic Resolution Polarized Spectrum Analysis
Grant-in-Aid for Research Activity Start-up
30 August 2013–31 March 2014

Haruta, M.
Electronic State Mapping Using Oxygen
Grant-in-Aid for Young Scientist (A)
1 April 2014–31 March 2018

Haruta, M.
Basic Research of Atomic Resolution Organic Crystal Image Using STEM
Grant-in-Aid for Challenging Exploratory Research
1 April 2014–31 March 2017

INTERNATIONAL RESEARCH CENTER FOR ELEMENTS SCIENCE

— **Organic Main Group Chemistry** —

Isozaki, K.
Development of Novel Gold Nanoparticle Catalysts Bearing Molecular Interfacial Reaction Fields
The Science Research Promotion Fund of Research Institute for Production Development
1 November 2014–31 October 2015

Iwamoto, T.
Aromatic C-H Functionalization via Cation- π Interaction
Grant-in-Aid for Research Activity Start-up
29 August 2014–31 March 2016

— **Advanced Solid State Chemistry** —

Shimakawa, Y.
Exploring for New Functional Materials with Unusual Ionic States and Coordinations
Creation of Innovative Functions of Intelligent Materials on the Basis of the Element Strategy
1 April 2011–31 March 2016

— **Organotransition Metal Chemistry** —

Ozawa, F.
Synthesis and Catalytic Properties of Stimulus-responsive Transition Metal Complexes Bearing Low-coordinate Phosphorus Ligands
Grant-in-Aid for Scientific Research on Innovative Areas “Stimuli-responsive Chemical Species for the Creation of Functional Molecules”
1 April 2012–31 March 2017

Ozawa, F.
Synthesis and Catalytic Applications of Non-innocent Phosphaalkene Ligands
Grants-in-Aid for Scientific Research (B)
1 April 2014–31 March 2017

Wakioka, M.
Development of Living Polymerization Based on Direct Arylation
Grants-in-Aid for Young Scientists (B)
1 April 2012–31 March 2015

Ozawa, F.
Development of Highly Efficient Catalysts for Synthesizing of π -Conjugated Polymers via Direct Arylation
ACT-C (Advanced Catalytic Transformation Program for Carbon Utilization), JST
1 October 2012–31 March 2018

Takeuchi, K.
Development of Novel Phosphaalkene-NHC Multidentate Ligands and Their Application for Metal Complexes and Catalytic Reactions
The Kyoto University Research Funds for Young Scientists (Step-up) FY2014
1 April 2014–31 March 2015

— **Photonic Elements Science** —

Kanemitsu, Y.
Evaluation of Nonradiative Carrier Recombination Loss in Concentrator Heterostructure Solar Cells
CREST (Core Research for Evolutional Science and Technology), JST
1 October 2011–31 March 2017

BIOINFORMATICS CENTER

— **Chemical Life Science** —

Ogata, H.
A Holistic Ecosystemic Investigation on Marine Viruses, Virophages and Their Eukaryotic Hosts
Grant-in-Aid for Scientific Research (C)
1 April 2014–31 March 2017

Goto, S.
Elucidation on Evolutionary Mechanisms of Antigenic Variation Gene Families
Grant-in-Aid for Scientific Research (B)
1 April 2014–31 March 2018

Kotera, M.
Reaction Network Prediction for ab initio Reconstruction of Metabolic Pathways Biosynthesis Machinery
Grant-in-Aid for Scientific Research on Innovative Areas, MEXT
1 April 2013–31 March 2015

Kotera, M.
Information Technology Development for the Comparative Genomics of Various Insects
Grant-in-Aid for Young Scientists (B)
1 April 2013–31 March 2016

— **Mathematical Bioinformatics** —

Akutsu, T.
An Approach to Novel Structure Design by Combining Discrete Methods and Statistical Methods
Grant-in-Aid for Scientific Research (A)
1 April 2014–31 March 2019

— **Bio-knowledge Engineering** —

Mamitsuka, H.
Estimating Data Structures from Various Semi-Structured Data
Grants-in-Aid for Scientific Research (B)
1 April 2012–31 March 2015

Karasuyama, M.
Extracting Sub-Structures from Graph-Structured Data
Grants-in-Aid for Young Scientists (B)
1 April 2014–31 March 2017

Takeuchi, I.; Hatano, K.; Karasuyama, M.
Theory and Applications of Optimality Guaranteed Screening for Big-Data Analysis
Grants-in-Aid for Scientific Research (B)
1 April 2014–31 March 2017

Natsume, Y.
In silico Analysis of Histone Modification Dynamics that Regulate Developmental Processes
PRESTO (Precursory Research for Embryonic Science and Technology), JST
1 October 2010–31 March 2015