

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.
Synthesis and Properties of Alumoles Having an Aluminum–Halogen Bond

Grant-in-Aid for Challenging Exploratory Research

1 April 2014–31 March 2016

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 2017

Sasamori, T.
Development of Transformations of Small Molecules and Multicomponent Couplings Utilizing Low-valent Compounds of Heavier Group 14 Elements

Grant-in-Aid for Scientific Research (B)

1 April 2015–31 March 2018

Sasamori, T.
Construction of d- π Electron Systems Containing Heavier Group 14 Elements and Their Functionalization

Grant-in-Aid for Challenging Exploratory Research

1 April 2015–31 March 2017

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

Agou, T.
Development of Transformation Reactions Beginning with the Bond Activation by Reactive Aluminum Compounds

Grant-in-Aid for Young Scientist (A)

1 April 2015–31 March 2018

— 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.
Spherical π -Figuration Based on Functionalization of Sub-Nano Space

Grant-in-Aid for Scientific Research on Innovative Areas “ π -System Figuration”

1 April 2015–31 March 2017

Murata, Y.
Functional Molecular Systems Based on Dynamic Behavior of Active Species

Grant-in-Aid for Scientific Research on Innovative Areas “Stimuli-responsive Chemical Species for the Creation of Functional Molecules”

1 April 2015–31 March 2017

Murata, Y.
Creation of New Reactive Chemical Species by the Ultimate Steric Protection

Grant-in-Aid for Challenging Exploratory Research

1 April 2015–31 March 2017

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

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

— **Synthetic Organic Chemistry** —

Kawabata, T.
Regioselective Molecular Transformation Based on Organocatalytic Molecular Recognition
Grant-in Aid for Scientific Research on Innovative Area
1 October 2011–31 March 2015

Kawabata, T.
Regioselective Molecular Transformation of Multifunctionalized Molecules
Grant-in Aid for Scientific Research (S)
1 April 2014–31 March 2018

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

Ueda, Y.
Site-Selective Molecular Transformation Promoted by Anion-Exchange of Cationic Intermediates in Nucleophilic Catalysis
Grant-in-aid for Young Scientists (B)
1 April 2015–31 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, Japan Agency for Medical Research and Development
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.
Research for the Photochemical Functions of Porphyrin Face-coordinated Metal Nanoparticles
Grant-in-Aid for Scientific Research (C)
1 April 2013–31 March 2016

Sato, R.
Development of The Novel and Versatile Alloying Process via Nanosized Phosphorus Compounds
Grant-in-Aid for Challenging Exploratory Research
1 April 2015–31 March 2017

Saruyama, M.
Orientational Control and Structure-specific Properties of Heterostructural Nanoparticles
Grant-in-Aid for Research Activity Start-up
1 October 2015–31 March 2017

DIVISION OF MATERIALS CHEMISTRY
— **Chemistry of Polymer Materials** —

Tsujii, Y.
Reinforcement of Resiliency of Concentrated Polymer Brushes and Its Tribological Applications—Development of Novel “Soft and Resilient Tribology (SRT)” System
ACCEL, JST
1 September 2015–31 March 2019

Tsujii, Y.
Development of Novel Nanosystem by Hierarchically Assembling Concentrated Polymer Brushes
Core Research for Evolutional Science and Technology (CREST), 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

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
Core Research for Evolutional Science and Technology (CREST),
JST
1 October 2010–31 March 2016

Yamago, S.
Highly Value-added Polymer Material Created by New Living
Radical Polymerization Agent
Next Generation Technology Transfer Program (NexTEP), 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 ns^2 Type Emission Center
Grant-in-Aid for Young Scientists (A)
1 April 2014–31 March 2018

— **Nanospintronics** —

Ono, T.
Spin-orbitronics and Device Application
New Research Projects under Specially Promoted Research
1 April 2015–31 March 2020

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

Futaki, S.
New Strategies for Intracellular Delivery of Biopharmaceuticals
Grant-in-Aid for Science Research (A)
1 April 2015–31 March 2018

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** —

Watanabe, B.
Synthesis of γ -Glutamyl Transpeptidase-Specific Chemical Probes
and Their Application to Cancer Immunotherapy
Grant-in-Aid for Young Scientists (B)
1 April 2015–31 March 2017

— **Molecular Biology** —

Aoyama, T.
Development of an Artificial Gene Expression Responding to UV-B
Light
Grant-in-Aid for Challenging Exploratory Research
1 April 2013–31 March 2016

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

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

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

Fukushima, T.
Study on Weather Resistance of Solution-Processable Organic Solar
Cells
Suga Weathering Technology Foundation
1 April 2015–31 March 2016

Shizu, K.
Molecular Design for Deep-Blue Electroluminescent Materials by Visualizing Radiative and Nonradiative Decays
Grant-in-Aid for Young Scientists (B)
1 April 2015–31 March 2017

— **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

Takano, S.
Biogeochemical Cycling of Nickel, Copper, and Zinc Isotopes in the Ocean
Sasakawa Scientific Research Grant
1 April 2014–28 February 2015

— **Solution and Interface Chemistry** —

Hasegawa, T.
Development of ROA Imaging and its Application to Visualization of Atropisomers for a Study of Fluoroorganic Chemistry
Grant-in-Aid for Scientific Research (A)
1 April 2015–31 March 2020

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

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.
Mechanism of Biogenesis of Membrane Microdomain Containing Polyunsaturated Fatty Acids in Bacteria and Its Physiological Functions
Grant-in-Aid for Scientific Research (B)
1 April 2015–31 March 2018

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

Kurihara, T.
Analysis of Cold-Adaptation Mechanism of Food Spoilage Bacteria and Its Application to Food Industry
Grant-in-Aid for Challenging Exploratory Research
1 April 2015–31 March 2017

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 2016

Ogawa, T.
Research on Acyltransferases that Create Heterogeneity of Bacterial Biomembranes
Grant-in-Aid for Research Activity Start-up
23 August 2015–31 March 2017

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

Ogawa, H.
Development of GISAXS-CT Measurement for Visualizing Functional Polymer Thin Films
Grant-in-Aid for Young Scientist (B)
1 April 2015–31 March 2017

— **Molecular Rheology** —

Watanabe, H.
Relationship Between Chemical Structure and Extensional Behavior of Entangled Polymer Chain
Grant-in-Aid for Scientific Research (B)
1 April 2015–31 March 2018

Matsumiya, Y.
Experimental Test on the Dynamics of Telechelic Polymers
Grant-in-Aid for Scientific Research (C)
1 April 2015–31 March 2018

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.
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 Pro-gram
1 April 2013–31 March 2017

— **Laser Matter Interaction Science** —

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

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 MATSUO FOUNDATION
29 October 2014–28 October 2015

— **Electron Microscopy and Crystal Chemistry** —

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

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** —

Nakamura, M.
Synthesis of Nitrogen-Containing Polycyclic Aromatic Compounds via Iron-catalyzed C-H Amination
Grant-in-Aid for challenging Exploratory Research
1 April 2015–31 March 2016

Takaya, H.
Solution-Phase Characterization of Paramagnetic Metal Complex by X-ray Absorption Spectroscopy
Grant-in-Aid for challenging Exploratory Research
1 April 2015–31 March, 2017

Isozaki, K.
Development of Catalytic Multi-photon-excited Photoreactions in the Reaction Field Localizing Substrates and Excitation Sources
Grant-in-Aid for Scientific Research on Innovative Areas “Application of Cooperative Excitation into Innovative Molecular Systems with High-Order Photofunctions”
1 April 2015–31 March 2017

Iwamoto, T.
Development of Aromatic C-H Functionalization Base on Cation- π Interaction
Grant-in-Aid for Young Scientists (B)
1 April 2015–31 March 2017

— **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-responsible 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

Wakioka, M.
Development of highly efficient catalytic systems for direct arylation polymerization based on equilibrium between active and dormant species
Grants-in-Aid for Young Scientists (B)
1 April 2015–31 March 2017

Ozawa, F.
Development of Highly Efficient Catalysts for Synthesizing of π -Conjugated Polymers via Direct Arylation
ACT-C, 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** —

Goto, S.
Development of Integrated Proteome Database jPOST
Grant-in-Aid for Scientific Research (B), MEXT
1 April 2015–31 March 2018

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

Ogata, H.
Are Viruses Elementary Particles that Generate and Maintain the Diversity of Marine Organisms?
Pursuit of Ideal, CANON Foundation
1 April 2014–31 March 2017

Goto, S.
Bioinformatics for Marine Microbial Genomes and Environmental Data
CREST (Core Research for Evolutional Science and Technology), JST
1 October 2012–31 March 2017

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

— **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.
Reinforcement of Resiliency of Concentrated Polymer Brushes and Its Tribological Applications
Strategic Basic Research Program, ACCEL, JST (JST)
1 September 2015–31 March 2017

Mamitsuka, H.
Estimating Data Structures from Various Semi-Structured Data
Grants-in-Aid for Scientific Research (B)
1 April 2012–31 March 2016