

Research Programs Introduction 2017

Strategic Basic Research Programs

CREST On-going Research Areas

Research Area	Research Supervisor Deputy Research Supervisor	Research Term (FY)	
Scientific Innovation for Energy Harvesting Technology	Kenji Taniguchi Hiroyuki Akinaga	Emeritus Professor, Osaka University Principal Research Manager, National Institute of Advanced Industrial Science and Technology (AIST)	2015-2022
Creation of Innovative Core Technology for Manufacture and Use of Energy Carriers from Renewable Energy	Koichi Eguchi	Professor, Graduate School of Engineering, Kyoto University	2013-2020
Phase Interface Science for Highly Efficient Energy Utilization	Katsunori Hanamura	Professor, School of Engineering, Tokyo Institute of Technology	2011-2018
Creation of Essential Technologies to Utilize Carbon Dioxide as a Resource Through the Enhancement of Plant Productivity and the Exploitation of Plant Products	Akira Isogai	Professor Emeritus, Nara Institute of Science and Technology.	2011-2018
Establishment of Core Technology for the Preservation and Regeneration of Marine Biodiversity and Ecosystems	Isao Koike	Professor Emeritus, The University of Tokyo	2011-2018
Creation of Basic Technology for Improved Bioenergy Production through Functional Analysis and Regulation of Algae and Other Aquatic Microorganisms	Tadashi Matsunaga	Senior Researcher (Professor), Waseda Research Institute for Science and Engineering / Distinguished Professor, Institute of Engineering, Tokyo University of Agriculture and Technology	2010-2017
Development and application of optical technology for spatiotemporal control of biological functions	Ryoichiro Kageyama	Professor, Institute for Frontier Life and Medical Sciences, Kyoto University	2016-2023
Creation of fundamental technologies contribute to the elucidation and application for the robustness in plants against environmental changes	Satoshi Tabata	Director and Vice Chairman of the Board of Trustees, Kazusa DNA Research Institute	2015-2022
Innovative Technology Platforms for Integrated Single Cell Analysis	Sumio Sugano	Professor, Graduate School of Frontier Sciences, The University of Tokyo	2014-2021
Structural Life Science and Advanced Core Technologies for Innovative Life Science Research	Keiji Tanaka	Chairperson and Director General, Tokyo Metropolitan Institute of Medical Science	2012-2019
Creation of Fundamental Technologies for Understanding and Control of Biosystem Dynamics	Tadashi Yamamoto	Professor, Okinawa Institute of Science and Technology (OIST)	2011-2019
Creation of an innovative quantum technology platform based on the advanced control of quantum states	Yasuhiko Arakawa	Professor/Director of Center for Photonics Electronics Convergence, Institute of Industrial Science, The University of Tokyo	2016-2023
Development and application of intelligent measurement-analysis methods through coalition between measurement technologies and informatics	Yoshiyuki Amemiya Genshiro Kitagawa	Project Professor, Graduate School of Frontier Sciences, The University of Tokyo Fellow, Meiji Institute for Advanced Study of Mathematical Sciences, Meiji University	2016-2023
Innovative catalysts and creation technologies for the utilization of diverse natural carbon resources	Wataru Ueda	Professor, Department of Material and Life Chemistry, Faculty of Engineering, Kanagawa University	2015-2022
Advanced core technology for creation and practical utilization of innovative properties and functions based upon optics and photonics	Ken-ichi Kitayama	Professor, The Graduate School for the Creation of New Photonics Industries	2015-2022
Development of Atomic or Molecular Two-Dimensional Functional Films and Creation of Fundamental Technologies for Their Applications	Atsushi Kurobe	Chief Fellow, Corporate Research & Development Center, Toshiba Corporation	2014-2021
Innovative Nano-electronics through Interdisciplinary Collaboration among Material, Device and System Layers	Takayasu Sakurai Naoki Yokoyama	Professor, Institute of Industrial Science, The University of Tokyo Fellow, FUJITSU LABORATORIES LTD.	2013-2020
Creation of Innovative Functional Materials with Advanced Properties by Hyper-nano-space Design	Tohru Setoyama	Executive Officer, Mitsubishi Chemical Corporation / General Manager Yokohama R&D Center Setoyama Laboratory	2013-2020
Establishment of Molecular Technology towards the Creation of New Functions	Hisashi Yamamoto	Professor, Chubu University/Emeritus professor, University of Chicago	2012-2019
Creation of Innovative Functions of Intelligent Materials on the Basis of the Element Strategy	Kohei Tamao	Science Advisor / Director, Global Research Cluster, RIKEN	2010-2017
Development and Integration of Artificial Intelligence Technologies for Innovation Acceleration	Minoru Etoh	Senior Vice President, General Manager of Innovation Management Department, NTT DOCOMO, INC.	2016-2023
Modeling Methods allied with Modern Mathematics	Takashi Tsuboi	Professor, Graduate School of Mathematical Sciences, The University of Tokyo	2014-2021
Intelligent Information Processing Systems Creating Co-Experience Knowledge and Wisdom with Human-Machine Harmonious Collaboration	Norihiro Hagita	Board Director, Director, Intelligent Robotics and Communication Laboratories, Advanced Telecommunications Research Institute International	2014-2021
Advanced Application Technologies to Boost Big Data Utilization for Multiple-Field Scientific Discovery and Social Problem Solving	Yuzuru Tanaka	Professor Emeritus, Hokkaido University	2013-2020
Advanced Core Technologies for Big Data Integration	Masaru Kitsuregawa Etsuya Shibayama	Director General, National Institute of Informatics / Professor, Institute of Industrial Science, The University of Tokyo Professor, Information Technology Center, The University of Tokyo	2013-2020
Creation of Fundamental Theory and Technology to Establish a Cooperative Distributed Energy Management System and Integration of Technologies Across Broad Disciplines Toward Social Application	Masayuki Fujita	Professor, Tokyo Institute of Technology	2012-2019
Development of System Software Technologies for post-Peta Scale High Performance Computing	Mitsuhsia Sato	Deputy Project Leader, RIKEN Advanced Institute for Computational Science	2010-2017

PRESTO On-going Research Areas

Research Area	Research Supervisor Deputy Research Supervisor	Research Term (FY)
Scientific Innovation for Energy Harvesting Technology	Kenji Taniguchi Hiroyuki Akinaga Emeritus Professor, Osaka University Principal Research Manager, National Institute of Advanced Industrial Science and Technology (AIST)	2015-2020
Creation of Innovative Core Technology for Manufacture and Use of Energy Carriers from Renewable Energy	Koichi Eguchi Professor, Graduate School of Engineering, Kyoto University	2013-2018
Phase Interfaces for Highly Efficient Energy Utilization	Katsunori Hanamura Professor, School of Engineering, Tokyo Institute of Technology	2011-2017
Creation of Essential Technologies to Utilize Carbon Dioxide as a Resource through the Enhancement of Plant Productivity and the Exploitation of Plant Products	Akira Isogai Professor Emeritus, Nara Institute of Science and Technology	2011-2017
Optical control of biological functions for the elucidation of biological systems	Yoshinori Shichida Visiting professor, Research Organization of Science and Technology, Ritsumeikan University / Professor Emeritus, Kyoto University	2016-2021
Creation of next-generation fundamental technologies for the control of biological phenomena in field-grown plants	Kiyotaka Okada Professor, Faculty of Agriculture, Ryukoku University	2015-2020
Innovative Technology Platforms for Integrated Single Cell Analysis	Itaru Hamachi Professor, Graduate School of Engineering, Kyoto University	2014-2019
Creation of Innovative Technology for Medical Applications Based on the Global Analyses and Regulation of Disease-Related Metabolites	Yoshiya Oda President, Biomarkers and Personalized Medicine Core Function Unit, Eisai Product Creation Systems	2013-2018
Elucidation and Regulation in the Dynamic Maintenance and Transfiguration of Homeostasis in Living Body	Masato Kasuga President, National Center for Global Health and Medicine	2012-2017
Structural Life Science and Advanced Core Technologies for Innovative Life Science Research	Soichi Wakatsuki Professor, SLAC National Accelerator Laboratory / Stanford University	2012-2017
Design and Control of Cellular Functions	Hiroki R. Ueda Professor, Graduate School of Medicine and Faculty of Medicine, The University of Tokyo	2011-2017
Quantum state control and functionalization	Kohei Itoh Professor, Faculty of Science and Technology, Keio University	2016-2021
Development and application of intelligent measurement-analysis methods through coalition between measurement technologies and informatics	Yoshiyuki Amemiya Genshiro Kitagawa Project Professor, Graduate School of Frontier Sciences, The University of Tokyo Fellow, Meiji Institute for Advanced Study of Mathematical Sciences, Meiji University	2016-2021
Fully-controlled photons and their proactive usage for new era creation (FRONTIER)	Ken-ichi Ueda Professor Emeritus, University of Electro-Communications	2015-2020
Science and Creation of Innovative Catalysts	Hiroshi Kitagawa Professor, Department of Chemistry, Graduate School of Science, Kyoto University	2015-2020
Innovative Nano-Electronics through Interdisciplinary Collaboration among Material, Device and System Layers	Takayasu Sakurai Naoki Yokoyama Professor, Institute of Industrial Science, The University of Tokyo Fellow, FUJITSU LABORATORIES LTD.	2013-2018
Hyper-Nano-Space Design toward Innovative Functionality	Kazuyuki Kuroda Professor, Faculty of Science and Engineering, Waseda University	2013-2018
Molecular technology and creation of new functions	Takashi Kato Professor, School of Engineering, The University of Tokyo	2012-2017
Fundamental Information Technologies toward Innovative Social System Design	Sadao Kurohashi Professor, Graduate School of Informatics, Kyoto University	2016-2021
Advanced Materials Informatics through Comprehensive Integration among Theoretical, Experimental, Computational and Data-Centric Sciences	Shinji Tsuneyuki Professor, School of Science, The University of Tokyo	2015-2020
Innovational technical basis for cultivation in cooperation with information science	Seishi Ninomiya Professor, Graduate School of Agricultural and Life Sciences, The University of Tokyo	2015-2020
Collaborative Mathematics for Real World Issues	Hiroshi Kokubu Professor, Graduate School of Science, Kyoto University	2014-2019
Design of Information Infrastructure Technologies Harmonized with Societies	Hiroto Yasuura Executive Vice President, Kyushu University	2014-2019
Advanced Core Technologies for Big Data Integration	Masaru Kitsuregawa Etsuya Shibayama Director General, National Institute of Informatics / Professor, Institute of Industrial Science, The University of Tokyo Professor, Information Technology Center, The University of Tokyo	2013-2018

ERATO On-going Research Projects

Research Project	Research Director	Research Term (FY)
NUMATA Organellar Reaction Cluster	Keiji Numata Team Leader, RIKEN Center for Sustainable Resource Science	2016-2021
NOMURA Microbial Community Control	Nobuhiko Nomura Professor, Faculty of Life and Environmental Sciences, University of Tsukuba	2015-2020
SATO Live Bio-Forecasting	Thomas N. Sato Director, The Thomas N. Sato BioMEC-X Laboratories, Advanced Telecommunications Research Institute International (ATR)	2013-2018
TOUHARA Chemosensory Signal	Kazushige Touhara Professor, Graduate School of Agricultural and Life Sciences, The University of Tokyo	2012-2017

Research Project	Research Director		Research Term (FY)
NAKAMURA Macroscopic Quantum Machines	Yasunobu Nakamura	Professor, Research Center for Advanced Science and Technology, The University of Tokyo	2016-2021
YAMAMOTO Atom Hybrid	Kimihisa Yamamoto	Professor, The Institute of Innovative Research Laboratory for Chemistry and Life Science/ Hybrid Materials Unit, Tokyo Institute of Technology	2015-2020
SAITOH Spin Quantum Rectification	Eiji Saitoh	Professor, Advanced Institute for Materials Research (WPI-AIMR) / Institute for Materials Research, Tohoku University	2014-2019
MOMOSE Quantum Beam Phase Imaging	Atsushi Momose	Professor, Institute of Multidisciplinary Research for Advanced Materials, Tohoku University	2014-2019
ADACHI Molecular Exciton Engineering	Chihaya Adachi	Professor / Director, Center for Organic Photonics and Electronics Research, Kyushu University	2013-2018
ISOBE Degenerate π -Integration	Hiroyuki Isobe	Professor, Department of Chemistry, The University of Tokyo	2013-2018
ITAMI Molecular Nanocarbon	Kenichiro Itami	Director, Institute of Transformative Bio-molecules (WPI-ITbM), Nagoya University / Professor, Department of Chemistry, Graduate School of Science, Nagoya University	2013-2018
MINOSHIMA Intelligent Optical Synthesizer	Kaoru Minoshima	Professor, Graduate School of Informatics and Engineering, The University of Electro-Communications	2013-2018
HASUO Metamathematics for Systems Design	Ichiro Hasuo	Associate Professor, Information Systems Architecture Science Research Division, National Institute of Informatics	2016-2021
KAWAHARA Universal Information Network	Yoshihiro Kawahara	Associate Professor, Graduate School of Information Science and Technology, The University of Tokyo	2015-2020
ISHIGURO Symbiotic Human-Robot Interaction	Hiroshi Ishiguro	Distinguished Professor, Graduate School of Systems Innovation, Osaka University / Visiting Director, Hiroshi Ishiguro Laboratories, Advanced Telecommunications Research Institute International (ATR)	2014-2019
KAWARABAYASHI Large Graph	Ken-Ichi Kawarabayashi	Professor, National Institute of Informatics	2012-2017

ACCEL On-going Research Projects

R&D Project Name	Research Director		R&D Term
Application Field Development of Dynamic Intelligent Systems by using High Speed Vision	Masatoshi Ishikawa	Professor, Graduate School of Information Science and Technology, the University of Tokyo	2016
Building Foundations and Developing Applications for Next-Generation Media Content Ecosystem Technologies	Masataka Goto	Prime Senior Researcher, National Institute of Advanced Industrial Science and Technology (AIST)	2016
Development of High-Resolution LIDAR System based on Slow-Light Structures	Toshihiko Baba	Professor, Graduate School of Engineering, Yokohama National University	2016
Creation of the Functional Materials on the Basis of the Inter-Element-Fusion Strategy and Their Innovative Applications	Hiroshi Kitagawa	Professor, Graduate School of Science, Kyoto University	2015
Realization and Development of Innovative Information Processing System and Application using Near-Field Coupling Integration Technology	Tadahiro Kuroda	Professor, Faculty of Science and Technology, Keio University	2015
Reinforcement of Resiliency of Concentrated Polymer Brushes and Its Tribological Applications – Development of Novel “Soft and Resilient Tribology (SRT)” System	Yoshinobu Tsujii	Professor, Institute for Chemical Research, Kyoto University	2015
Development of Flexible Nitride Semiconductor Devices with PSD	Hiroshi Fujioka	Professor, Institute of Industrial Science, The University of Tokyo	2014
Fundamentals and Applications of Diamond Electrodes	Yasuaki Einaga	Professor, Faculty of Science and Technology, Keio University	2014
Development of Key Chemical Processes of Extremely High Efficiency with Super-Performance Heterogeneous Catalysts	Yasuhiro Uozumi	Professor, Institute for Molecular Science	2014
Molecular Basis of Symbiotic Networks and its Application	Masayoshi Kawaguchi	Professor, National Institute for Basic Biology	2014
Embodied Media Technology based on Haptic Primary Colors	Susumu Tachi	Professor Emeritus, The University of Tokyo	2014
Innovative Molecular Structure Analysis based on Self-Assembly Technology	Makoto Fujita	Professor, School of Engineering, The University of Tokyo	2014
Three-Dimensional Integrated Circuits Technology Based on Vertical BC-MOSFETs and Its Advanced Application Exploration	Tetsuo Endoh	Director of Center for Innovative Integrated Electronic Systems, Professor, Graduate School of Engineering, Tohoku University	2014
The Nanospace Science of PCP for Molecular Control	Susumu Kitagawa	Director/Distinguished Professor, Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University	2013
“Photonic Crystal Surface-Emitting Semiconductor Laser” -Towards Realization of High Power and High Brightness Operation	Susumu Noda	Professor, Graduate School of Engineering, Kyoto University	2013
Materials Science and Application of Electrides	Hideo Hosono	Professor, Laboratory for Materials and Structures, Institute of Innovative Research / Materials Research Center for Element Strategy, Tokyo Institute of Technology	2013

ACT-I On-going Research Areas

Research Area	Research Supervisor		Research Term (FY)
Information and Future	Masataka Goto	Prime Senior Researcher, Information Technology Research Institute, National Institute of Advanced Industrial Science and Technology	2016-2021

ALCA

Technology area		Program Officer		First Year
Special Priority Technology Areas	White Biotechnology	Yoshiharu DOI	President, Japan Synchrotron Radiation Research Institute	2015
	Next Generation Batteries	Kohei UOSAKI	Fellow, National Institute for Materials Science	2013
ALCA Enabling Technology Projects	Development of Advanced Industrial Electricity Equipment for High-efficiency Energy Equipment Systems	Hiroyuki OHSAKI	Professor, The University of Tokyo	2016
	Photon Management and Optical Engineering	Kenji TANIGUCHI	Specially appointed professor, Osaka University	2016
	Waste-heat Recovery Technology	Kenji TANIGUCHI	Specially appointed professor, Osaka University	2016
	Production of Effective Biomass Materials with Bioresource Technology	Akihiko KONDO	Professor, Kobe University	2015
	Highly Efficient Production Process for Biomass-based Chemicals and Polymers	Yoshiharu DOI	President, Japan Synchrotron Radiation Research Institute	2015
	High-Quality and Large-Diameter GaN Wafer	Kenji TANIGUCHI	Specially appointed professor, Osaka University	2015
	New Heat Resistant Materials for Low CO ₂ Emission Type Next-Generation Thermal Electric Power Generation	Kohmei HALADA	Invited researcher, National Institute for Materials Science	2015
	Innovative Light-Weight Materials for the Forward Energy-Saving Society	Kohmei HALADA	Invited researcher, National Institute for Materials Science	2015
	Superconducting Electric Power Equipment using Liquid Hydrogen Cooling	Hiroyuki OHSAKI	Professor, The University of Tokyo	2015
	Next-Generation Smart Community	Shigehito DEKI	Emeritus professor, Kobe University	2015
Game-changing Technology Areas & ALCA Technology Areas	Innovative Energy-Saving and Energy-Producing Chemical Processes	Takashi TATSUMI	President, National Institute of Technology and Evaluation	2012
	Innovative Energy-Saving and Energy-Producing Systems and Devices	Kenji TANIGUCHI	Specially appointed professor, Osaka University	2012-2016
	Biotechnology	Akihiko KONDO	Professor, Kobe University	2010
	Solar Cell and Solar Energy Systems	Atsuhiko OSUKA	Professor, Kyoto University	2010
	Superconducting Systems	Hiroyuki OHSAKI	Professor, The University of Tokyo	2010
	Electric Storage Devices	Tetsuya OSAKA	Emeritus Professor/Senior Research Professor, Waseda University	2010
	Ultra Heat-Resistant Materials and High Quality Recyclable Steel	Kohmei HALADA	Invited researcher, National Institute for Materials Science	2010-2016

RISTEX

Research Area	Research Supervisor		Research Term (FY)
Human-Information Technology Ecosystem	Jiro KOKURYO	Professor, Faculty of Policy Management, Keio University	2016-2021
Creating a Safe and Secure Living Environment in the Changing Public and Private Spheres	Hajime YAMADA	Chair of the Board, Information Communication Policy Forum / Former Professor, Faculty of Economics, Toyo University	2015-2020
Designing a Sustainable Society through Intergenerational Co-creation	Takashi OMORI	Former Chair of Economic Committee, Asia-Pacific Economic Cooperation / Former Professor of Osaka University	2014-2019
Creating Community-based Robust and Resilient Society	Haruo HAYASHI	President National Research Institute for Earth Science and Disaster Prevention	2012-2017
Science of Science, Technology and Innovation Policy	Akira MORITA	Professor, college of policy studies, Tsuda University / Professor Emeritus, The University of Tokyo	Launched FY2011
Implementation-Support Program (Call for proposal Type)	Azusa TOMIURA	Former Auditor, Tokyo Institute of Technology	Launched FY2007
Implementation-Support Program (R&D results integrated Type)	Tateo ARIMOTO	Professor, The National Graduate Institute for Policy Studies (GRIPS)	Launched FY2013