

Chapter 4

Science and Technology Supported by Society and the Public**1 Responsible Approaches to Ethical, Legal, and Social Issues in Science and Technology****(1) Establishing of a sense of ethics for researchers and engineers**

In recent years, Japan has faced a situation where misconduct, such as fabrication, falsification, or plagiarism (FFP) of data in research, has been revealed. Such misconduct in scientific research must not be allowed since it goes against the essential qualities of science to create new knowledge through accumulated searches for truth. Misconduct also undermines public trust in science and hinders scientific progress.

Following the approval of the Proper Counteractions against Research Misconduct by CSTP in February 2006, CSTP revised the Countermeasures against Misconduct in Research Activities by the Competitive Research Fund (agreement in the Liaison Committee of Ministries and Agencies Concerned with Competitive Funding) in November 2006 to stipulate measures for FFP in research. Thereafter, the establishment of guidelines, reflection in application guidelines, and other measures were promoted among the related ministries and agencies.

MEXT established a special committee on research misconduct under CST. In August 2006, the committee finalized guidelines on the systems and rules to be formulated by MEXT, funding agencies, and other research organizations such as universities. The guidelines requested them to implement approaches to misconduct, including establishment of a reception desk for accusations, investigation systems, and formulation of provisions related to the above-stated issues; MEXT established a reception desk for accusations within the ministry in November 2006.

In December 2006, MAFF also finalized such guidelines on actions for misconduct in research, requested related organizations to implement approaches to misconduct, and established a reception desk for accusations.

In October 2006, SCJ formulated the Code of Conduct for Scientists which specified ethical standards scientists are to observe and the Charter of the Science Council of Japan in April 2008 as an external vow derived from the full will of the Council members.

(2) Efforts in relation to bioethics and safety in the life sciences

To adequately deal with problems regarding bioethics that could occur as a result of the rapid growth in the life sciences in recent years, CSTP implements surveys and studies on important issues; MEXT and MHLW review necessary acts, regulations, and guidelines. (Refer to Part 2, Chapter 2, Section 2, 1).

(3) Measures for the social impact of nanotechnology

In order for nanotechnology to be accepted and developed by society, it is necessary to correctly assess the impacts of nanomaterials on the human body and the environment. Therefore, based on the results of the Research Project on Facilitation of Public Acceptance of Nanotechnology under the Special Coordination Funds for Promoting Science and Technology, NIMS is implementing the Development of Platform Technologies for Public Acceptance of Nanomaterials [literal translation] (Refer to Part 2, Chapter 2, Section 2, 4).

2 Accountability in S&T and Improvement of Information Dissemination

Many feel that science and technology contributes the social community. While there are high expectations for S&T to deliver safety or relief in life and spiritual richness, however, rapid progress in S&T is causing uneasiness in their minds. In order that the results of science and technology, which will be developed much more in the future, can be smoothly accepted by the social community, it is essential that they are understood and supported by the people through the open sharing of its results with society, disseminating them in easy-to-understand ways, enhancing accountability and information release, and promoting dialogs with the public to allow it the opportunity to evaluate and understand.

From FY 2005, MEXT stipulated in the application guidelines for the program Research and Development Program for Resolving Critical Issues that about 3% of direct expenses should be allocated to outreach activities¹ under the Special Coordination Funds for Promoting Science and Technology and that the outreach activities should be subject to interim and post evaluations.

In addition, in order to raise interest and concern in S&T among children, JST prepares *the Children's White Paper on Science and Technology* which explained S&T in an easy-to-understand way using a comic book format. Under the title "Mission: Investigate global warming," the FY 2008 Children's White Paper explains the scientific issues related to global warming in a way that is easy for elementary students to understand, and was distributed free of charge to public elementary schools and libraries nationwide.

To convey the R&D situation and research findings concerning the agriculture, forestry, and fisheries industries in an easy-to-understand way, MAFF implements the Agricultural Science Events. This project has clear targets of juveniles, consumers, and producers, and mainly sponsors events that people can actually experience. Moreover, in the field of technology for genetic modification, MAFF promotes communication activities including an information service and exchanges of views between producers and consumers, aiming at promoting understanding of the R&D on genetically-modified agricultural crops. Furthermore, independent administrative research institutions offer open lectures throughout the year to promote and disseminate the introduction of research activities and achievements.

¹ Outreach activities: Activities through which S&T are conveyed to people in an easy-to-understand and friendly manner, and increasing awareness of the needs and uneasiness of the public by deepening dialogues, and outcomes are reflected in the S&T activities of the entity executing such activities.

3 Improving Public Awareness concerning S&T

In order to create the social community where people are familiar and strongly interested in S&T, it will be important to promote activities to convey S&T in an easy-to-understand manner, such as providing occasions to gain familiarity with S&T and to enhance accountability and information dissemination through dialogues. It will also be important to promote efforts contributing to improving people's basic knowledge and ability regarding S&T.

(1) Efforts to improve basic education regarding S&T (S&T literacy)

Specifying knowledge and ability regarding S&T required for an adult person will contribute to raising people's interest in S&T and improving the level of math and science education. To this end, as a joint project of the National Institute for Educational Policy Research of MEXT and SCJ, the idea of S&T literacy (knowledge, technology, and viewpoints regarding S&T expressed in easily understandable texts) was formulated in March 2008 under the extensive cooperation of scientists and engineers, and it has been disseminated by posting on the website (<http://www.science-for-all.jp/>) and symposiums. In September 2008, SCJ prepared a report *Wisdom of Science and Technology for a Prosperous Life in the 21 Century* [literal translation].

(2) Fusing S&T with culture and art

At the recent suggestion that S&T should contribute not only to material affluence, but to spiritual richness, efforts to fuse S&T with culture or art have been made. Such fusing of S&T with culture or art may result in the creation of new works of art, which contribute to spiritual richness. On the other hand, the encounter has the potential to create new knowledge in the S&T field, such as creation of new, unique technologies.

In FY 2008, the technology exhibition "Leading Edge Technology Showcase 2009" and the theme symposium "Japanese Media Arts Supported by Technology" were held as supporting exhibitions at the 12th Japan Media Arts Festival sponsored by the Agency for Cultural Affairs, aiming at providing the opportunity for researchers and creators to meet each other and form new communities. In addition to these, various projects have been promoted in new R&D fields fusing S&T with culture.

(3) Reinforcing and enhancing science museum activities

[Operation of the National Museum of Emerging Science and Innovation (Miraikan)]

The National Museum of Emerging Science and Innovation (Miraikan) managed by JST provides exhibitions and explanations to introduce state-of-the-art science in an easily understandable manner, and at the same time, promotes exchange between researchers and the general public through lectures and events. Also, Miraikan has implemented a traveling exhibition service to regional science museums, and fostering of human resources as a core center for activities to promote the understanding of S&T in Japan.

(Supporting science museum activities in various regions across the country)

In order to further reinforce the activities to promote interest in science museums located in

various regions across the country, JST supports the museum's efforts to create opportunities for pupils and students to experience and learn science, technology, and natural science, including region-specific experiment lessons and events, and the delivery of lessons at regional schools.

(Activities of the National Museum of Nature and Science)

The National Museum of Nature and Science holds exhibitions and implements activities to provide the opportunity to convey interesting factors in science, to think together, and to support learning, targeted for a broad range of generations from juveniles to adults, by utilizing the intellectual, material, and human resources of the museum including research achievements and specimen samples. In addition, the museum is working on the development of model programs as a leading museum in the country. It develops human resources who will be interested in activities to promote the understanding of S&T through its Science Communicator Practical Training Program. Also, the museum cooperates with schools to develop scientific experience-based learning programs for children, as well as working on developing a model program for the cultivation of science literacy by including adults according to their stage of life. In addition, the museum has actively released information for the cultivation of science literacy to the public through *milsil*, a printed journal on nature and science, or visibly explaining hot topics of science on its website. The museum is engaged in other activities as well, including an exhibition intended to disseminate details of leading-edge studies at the universities and research institutions in an easy-to-understand manner, and the establishment of the Science Museum Net, which is a system where information on specimen samples and exhibitions at science museums located across the country can be cross-searched via the internet. Through these activities, the museum is facilitating the public's understanding of S&T in cooperation with science-oriented museums, universities, and research institutes.

(4) Activities of universities and research institutions

MEXT implements measures to promote the increased understanding of S&T by holding public lectures at universities and by developing and improving the University of the Air, which offers S&T courses. In order to communicate how interesting science is, MEXT offered a variety of other events that allowed the general public to communicate directly with scientists, such as the events of Science Cafes or the Summer School for Female High School Students [literal translation] as an active learning program for increasing the interest of the younger generation in the fields of science, science and technology.

JSPS has implemented a project called HIRAMEKI☆TOKIMEKI SCIENCE (Science that Inspires and Inspirits) which introduces updated research results supported by the Grants-in-Aid for Scientific Research to school children in an easy-to-understand manner through experience, experiments and lectures.

As a part of the activities to return academic achievements to the general public, SCJ opens lectures; five lectures were provided in FY 2008. The themes include "Global warming: Message from scientists", "Medical innovation: For the realization of medicine supported by reliability", "Wisdom from each of us to save the Earth: The past and the future of the global environment

clarified by the latest science", "For the promotion of gender equality in academic fields", and "Vision of Japan approached from environmentology".

JAXA implements a variety of different educational activities. Such activities include the Cosmic College and Space School, with the aim of raising interest in S&T in general, including space science among juveniles who will lead the next generation, and to foster children's scientific observational, thinking, and problem-solving abilities.

AIST has permanent exhibition facilities, such as the Science Square Tsukuba/Rinkai, Geological Museum, and the JIS Pavilion. In FY 2008, seven facilities were opened to the public with about 11,000 visitors in total. Furthermore, as one of the largest public research institutions in Japan, AIST positively implements Science Communication projects, including the Science Cafe, Experiment Class, and Delivery Lecture, so that the activities will help the public to understand S&T.

(5) Promoting activities for enhancing understanding of S&T in regions

JST supports experiment classes, events, and network construction by science museums, universities, local governments, and volunteers to promote regional activities for the understanding of S&T.

In addition, through the Children's Dream Fund established in the National Institution for Youth Education, JST subsidizes experimental activities for experiencing science by children organized by private sectors.

(6) Disseminating S&T information to regions across the country

JST creates programs that explain S&T in an easy-to-understand manner for the general public, especially for juveniles, focusing on topics related to S&T and S&T used in our everyday lives. These programs are delivered throughout the country via CS broadcast and CATV under the title Science Channel by the National Institution for Youth Education, and the programs are also offered via the internet (<http://sc-smn.jst.go.jp>).

The JST Virtual Science Center (<http://jvsc.jst.go.jp>) is provided broadly to the public via the internet. This is a program where juveniles can experience various aspects of S&T in an easy-to-understand manner.

(7) Science & Technology Week

The 49th Science & Technology Week was held from April 14 to 20, 2008, in cooperation with related organizations, such as experimental research institutions and local governments. During the week, various facilities are open to the public for experiment and manufacturing classes and lectures from related organizations in different locations around the country. In FY 2008, An Evening of Science and Music [literal translation] was held in Yurakucho, Tokyo. Also, Science Cafes were open every day at the lounge of the MEXT information plaza and other locations during the week. This is an occasion for researchers and the general public to talk casually about science and technology over a cup of coffee.

(8) Awards for science and technology**(Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology)**

The Minister of MEXT has commended individuals who achieved significant results in R&D related to S&T and the promotion of S&T understanding. The commendation is aimed at fostering eagerness in S&T researchers and contributing to the improvement of Japan's S&T level. The award ceremony was held at Toranomon Pastoral on April 15, 2008 (Table 2-4-1).

Table 2-4-1 FY 2008 Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology Awardees

- Special Prize for Science and Technology (Researchers who have achieved particularly excellent results): 1
Shinya Yamanaka
Director, Center for iPS Cell Research and Application, Institute for Integrated Cell-Material Sciences;
Professor, Institute for Frontier Medical Sciences, Kyoto University

○ Prizes for Science and Technology (Development Category)

Name	Title	Achievement [literal translation]
Shigeyuki Akiba	Vice President, KDDI Corporation; Chief Executive Officer, KDDI R&D Laboratories Inc.	Development of the optical submarine cable system of large-capacity multiple wavelengths
Masanori Iiba	Director, Department of Structural Engineering, Building Research Institute	Research and Development on the seismic behavior of seismically isolated structures for single family houses
Seiju Ishikawa	Director, Division of Biotechnology, Tochigi Prefectural Agricultural Experiment Station	Development of <i>Talaromyces flavus</i> wettable powder, an eco-friendly biological pesticide
Tsuneo Imamoto	Professor, Graduate School of Science and Technology, Chiba University	Development of the optically active phosphine ligands useful for catalytic asymmetric synthesis
Tetsuo Ueyama	Chief, A-1257-1 Project Team (A), Audio-Visual Systems Group, Sharp Corporation	Development of the optical pickup servo technology by means of phase-shifting DPP method
Keiji Sakai	Senior Researcher, Precision Technology Development Center, Production Technology Development Group, Sharp Corporation	
Renzaburo Miki	Manager, Precision Technology Development Center, Production Technology Development Group, Sharp Corporation	
Hiroshige Makioka	Manager, Production Technology Development Center, Production Technology Development Group, Sharp Corporation	
Tetsuya Osaka	Professor, Faculty of Science and Engineering, Waseda University	Development of the small magnetic heads for high density recording based on the interfacial electrochemistry

Name	Title	Achievement [literal translation]
Yuji Ohya	Professor, Research Institute for Applied Mechanics, Kyushu University	Development of the wind-lens windmill with ultra-high efficient electric-generating performance
Seizo Onoe	Department, Radio Access Network Development, NTT DoCoMo, Inc.	Development of IMI-2000 system (W-CDMA)
Koji Yamamoto	Managing Director, R&D Strategy Department NTT DoCoMo, Inc.	
Atsushi Murase	Managing Director, Research Laboratories, NTT DoCoMo, Inc.	
Mamoru Sawahashi	Professor, Department of Information Network Engineering, Faculty of Knowledge Engineering, Musashi University	
Masato Kato	NSK Precision Co., Ltd.	Development of the high-speed/silent technology of a ball screw
Junji Minakuchi	NSK Precision Co., Ltd.	
Takayuki Yabe	NSK Precision Co., Ltd.	
Kazuo Miyaguchi	NSK Precision Co., Ltd.	
Kazutoshi Kunishige	Professor, Faculty of Engineering, Kagawa University	Research and development of the new hot strip production metallurgy by ultra-cold winding method
Tetsuya Kuno	Advanced Technology R&D Center, Mitsubishi Electric Corporation	Development of the technology for high-speed exposure control of imaging systems
Hiroaki Sugiura	Advanced Technology R&D Center, Mitsubishi Electric Corporation	
Koichi Yamashita	Advanced Technology R&D Center, Mitsubishi Electric Corporation	
Narihiro Matoba	Information Technology R&D Center, Mitsubishi Electric Corporation	
Shigehide Kuhara	MRI Systems Development Department, MRI Systems Division, Toshiba Medical Systems Corporation	Development of basic imaging technology through the EPI method for MRIs
Minoru Sakairi	Advanced Research Laboratory, Hitachi, Ltd.	Development of security systems using real-time mass spectrometry technology
Kimiaki Sasaki	Senior Researcher, Vehicle Structure Technology Division, Railway Technical Research Institute	Development of a vibration control system with variable attenuation for railcars
Haruhiko Kawasaki	Director, KYB Museum; Hydraulic Components Division, KYB CO., Ltd.	

Name	Title	Achievement [literal translation]
Yuji Sano	Power and Social Systems Research and Development Center, Power Systems Company, Toshiba Corporation	Development of inspection/maintenance/repair technology for nuclear reactors using lasers
Naruhiko Mukai	Power and Social Systems Research and Development Center, Power Systems Company, Toshiba Corporation	
Makoto Ochiai	Power and Social Systems Research and Development Center, Power Systems Company, Toshiba Corporation	
Yoshinobu Makino	Power and Social Systems Research and Development Center, Power Systems Company, Toshiba Corporation	
Masaki Yoda	Nuclear Energy Systems & Services Division, Power Systems Company, Toshiba Corporation	
Sakayu Shimizu	Professor, Graduate School of Agriculture, Kyoto University	Development of an industrial production process for chiral compounds using a new enzymic method
Michihiko Kataoka	Associate Professor, Graduate School of Agriculture, Kyoto University	
Keiji Sakamoto	Technical Department, Daiichi Fine Chemical Co., Ltd.	
Yoshihiko Yasohara	Frontier Biochemical & Medical Research Laboratories, Kaneka Corporation	
Noriyuki Kizaki	Frontier Biochemical & Medical Research Laboratories, Kaneka Corporation	Research and development for the k- ϵ model with a third-order, nonlinear eddy viscosity model
Kazuhiko Suga	Professor, Graduate School of Engineering, Osaka Prefecture University	
Tohru Sugimoto	Designated Professor, Department of Pediatrics, Kyoto Prefectural University of Medicine; Director, Saiseikai Shigaken Hospital	Research and development for a method for quantitating MYCN amplification with blood DNA of neuroblastoma
Takahiro Goto	Intern, Department of Pediatrics, Kyoto Prefectural University of Medicine; Director, Goto Kodomo Clinic	
Hajime Hosoi	Associate Professor, Department of Pediatrics, Kyoto Prefectural University of Medicine	
Toshiaki Takesawa	Chief Researcher, National Institute of Agrobiological Sciences	Development of collagen vitrigel useful for tissue regeneration

Name	Title	Achievement [literal translation]
Ichiro Tanaka	Corporate Research & Development Laboratories, Sumitomo Metal Industries, Ltd.	Development of nondirectional magnetic steel sheet for a highly-efficient motor
Hiroyoshi Yashiki	Corporate Research & Development Laboratories, Sumitomo Metal Industries, Ltd.	
Taisei Nakayama	Wakayama Steel Works, Sumitomo Metal Industries, Ltd.	
Hiroyuki Tsuchiya	Associate Professor, Graduate School of Medical Science, Kanazawa University	Development of combination chemotherapy with caffeine and the extremity-preserved shrinking operation
Katsuro Tomita	Professor, Graduate School of Medical Science, Kanazawa University	
Kazuo Toraichi	Professor Emeritus, Designated Professor, Tsukuba Advanced Research Alliance, The University of Tsukuba	Development of the Fluency Information Theory-based multimedia description
Hiroshi Nomura	JFE Steel Corporation; West Japan Works, JFE Steel Corporation	Development of highly-efficient processing technology for high purity ferritic stainless steel
Hiroshi Hata	Drivetrain Engineering Division 3, Toyota Motor Corporation	Development of a new hybrid transmission for FF SUV
Masahiro Kojima	Drivetrain Engineering Division 3, Toyota Motor Corporation	
Hideto Watanabe	Drivetrain Engineering Division 3, Toyota Motor Corporation	
Tatsuhiko Mizutani	Hybrid Vehicle Unit Development Division, Toyota Motor Corporation	
Harufumi Mandai	Murata Manufacturing Co., Ltd.	Promotion of the development of ceramic multilayer device modules for high frequency
Atsushi Miyawaki	Deputy Director, RIKEN Brain Science Institute	Development of practical fluorescent protein for bioimaging technology
Satoshi Karasawa	Technological Development, Amalgam Inc.	
Masahiro Watanabe	Professor and Director, Clean Energy Research Center, The University of Yamanashi	Research and development for innovative material fuel cells and their structure control
Hiroyuki Uchida	Professor, Interdisciplinary Graduate School of Medical Engineering, The University of Yamanashi	

○ Prizes for Science and Technology (Research Category)

Name	Title	Achievement [literal translation]
Hitoshi Arai	Professor, Graduate School of Mathematical Sciences, The University of Tokyo	Research on a new mathematical theory of vision and illusion
Shigehisa Arai	Professor, Quantum Nanoelectronics Research Center, Tokyo Institute of Technology	Research on semiconductor lasers at the 1.5-micron wavelength band for optical communication
Haruo Isono	Professor, Department of Computer and Information Engineering, Faculty of Engineering, Nippon Institute of Technology	Research on a stereoscopic television system without the need for special glasses
Toshihiro Ichiki	Lecturer, Kyushu University Hospital	Research on the regulation mechanism of angiotensin II receptor expression and its function

Name	Title	Achievement [literal translation]
Joji Inazawa	Professor, Medical Research Institute, Tokyo Medical and Dental University	Development of high-precision genome array and research on identification of disease gene
Masaaki Inutake	Affiliate Professor, Research Institute of Electrical Communication, Tohoku University	
Akira Ando	Associate Professor, Graduate School of Engineering, Tohoku University	
Makoto Ichimura	Associate Professor, Graduate School of Pure and Applied Sciences, The University of Tsukuba	
Yoshimitsu Amagishi	Professor Emeritus, Shizuoka University	
Akira Tsushima	Associate Professor, Faculty of Engineering, Yokohama National University	
Mitsuteru Inoue	Professor, Department of Electrical and Electronic Engineering, Faculty of Engineering, Toyohashi University of Technology	Physical clarification of the Alfvén wave phenomenon and research on engineering application
Toshiaki Enoki	Professor, Graduate School of Engineering, Tokyo Institute of Technology	Research on magneto-optical, solid space optical modulators
Yaeta Endo	Managing Director, Professor and Director, Cell-Free Science and Technology Research Center, Ehime University	Research on the specific electron/magnetic structure of nano-graphite
Toshio Ogata	Director, Materials Reliability Center, National Institute for Materials Science	Research on a practical cell-free protein synthesis method for wheat germ
Taikan Oki	Professor, Institute of Industrial Science, The University of Tokyo	Development of a material test method under extremely low temperature, and research on the clarification of the properties of material
Takao Kashiwagi	Professor, Integrated Research Institute, Tokyo Institute of Technology	Research on the construction of an integrated model of global water recycling and global water resources
Maki Kawai	Professor, Graduate School of Frontier Sciences, The University of Tokyo	Research on echo-friendly next generation air-conditioning energy systems
Hideomi Koinuma	Affiliate Professor, Graduate School of Frontier Sciences, The University of Tokyo	Research on the chemical reactions of a single molecule adsorbed on the surface of a solid
Yuji Matsumoto	Associate Professor, Materials and Structures Laboratory, Tokyo Institute of Technology	Creation of combinatorial solid chemistry and research on the function of nano-material
Kenji Itaka	Researcher, Japan Science and Technology Agency	
Zhaomin Hou	Chief Scientist, RIKEN Advanced Science Institute	
Feng-Lei Hong	General Manager, National Institute of Advanced Industrial Science and Technology	Research on the development of a catalyst for polymerization of high-performance rare earth chelate
Hajime Inaba	Senior Researcher, National Institute of Advanced Industrial Science and Technology	
Atsushi Oonae	Chief of Administrative Planning, National Institute of Advanced Industrial Science and Technology	
Kaoru Minoshima	General Manager, National Institute of Advanced Industrial Science and Technology	
Hirokazu Matsumoto	Senior Research Fellow, National Institute of Advanced Industrial Science and Technology and Technology (AIST)	

Name	Title	Achievement [literal translation]
Kunihito Koumoto	Professor, Graduate School of Engineering, Nagoya University	Research of ceramics synthesis method at low temperature, learnt from organisms
Hideo Komine	Associate Professor, Department of Urban and Civil Engineering, College of Engineering, Ibaraki University	Research on the experiment of swelling and permeable properties of impermeable bentonite material and its theory
Makoto Sakata	Professor, Graduate School of Engineering, Nagoya University	Research on a method to visualize the distribution of electrons and nuclear densities based on information theory
Keishi Sakamoto	Senior Researcher of Division of Fusion Energy Technology, and Group Leader of Plasma Heating Technology Group, Japan Atomic Energy Agency	Research on stabilization and high-efficiency of a heater with high power and high radio frequency for ITER
Atsushi Kasugai	Plasma Heating Technology Group, Division of Fusion Energy Technology, Japan Atomic Energy Agency	
Koji Takahashi	Plasma Heating Technology Group, Division of Fusion Energy Technology, Japan Atomic Energy Agency	
Kazuki Sada	Associate Professor, Graduate School of Engineering, Kyushu University	Research on lipophilic polyelectrolyte gel, which absorbs organic substances well
Soju Suzuki	Director, Department of Experimental Fast Reactor, Oarai Research and Development Center, Japan Atomic Energy Agency	Research on upgrades for the experimental fast reactor JOYO and its fast reactor cycle
Satoru Nakai	Deputy Director, Department of Experimental Fast Reactor, Oarai Research and Development Center, Japan Atomic Energy Agency	
Yukimoto Maeda	Senior Engineer, Department of Experimental Fast Reactor, Oarai Research and Development Center, Japan Atomic Energy Agency	
Takafumi Aoyama	Division Head, Department of Experimental Fast Reactor, Oarai Research and Development Center, Japan Atomic Energy Agency	
Hiroshi Daimon	Professor, Graduate School of Materials Science, Nara Institute of Science and Technology	Research on stereoscopic atom photography with circularly-polarized light
Fumihiko Matsui	Assistant Professor, Graduate School of Materials Science, Nara Institute of Science and Technology	
Tomohiro Matsushita	Japan Synchrotron Radiation Research Institute	
Fang Zhun Guo	Japan Synchrotron Radiation Research Institute	
Yusaku Takita	Professor, Faculty of Engineering, Oita University	Research on practical use of the catalyst-used new decomposition method for chlorofluorocarbon
Hideo Takezoe	Professor, Graduate School of Engineering, Tokyo Institute of Technology	Research on banana-shaped liquid crystal
Junji Watanabe	Professor, Graduate School of Engineering, Tokyo Institute of Technology	
Keiji Tanaka	Deputy Director, RIKEN Brain Science Institute	Research on intracerebral mechanism of watching an object to recognize it
Kazuyuki Toji	Professor, Graduate School of Environmental Studies, Tohoku University	Research on nanocapsule material

Name	Title	Achievement [literal translation]
Kazuwa Nakao	Professor, Graduate School of Medicine, Kyoto University	Research on the practical application and translation of new hormones
Takaharu Nakagawa	Advanced Technologies Development Laboratory, Panasonic Electric Works Co., Ltd.	Research on FRP sub-critical hydrolysis recycle technology
Toyoyuki Urabe	Panasonic Electric Works Co., Ltd.	
Tetsuya Maekawa	Panasonic Electric Works Co., Ltd.	
Masaru Hidaka	Advanced Technologies Development Laboratory, Panasonic Electric Works Co., Ltd.	
Takeshi Yoshimura	Panasonic Electric Works Analysis Center Co., Ltd.	
Takao Nanba	Professor, Graduate School of Science, Kobe University	Development of high luminance infrared light and research on its application to material science
Shin-ichi Kimura	Associate Professor, Institute for Molecular Science, National Institutes of Natural Sciences	Research on design methods for discrete algorithm and sharing methods for confidential information
Takao Nishizeki	Professor, Graduate School of Information Sciences, Tohoku University	
Tsutomu Hasegawa	Professor, Graduate School of Information Science and Electrical Engineering, Kyushu University	Research on robot intelligence based on environmental models
Toshiaki Hisada	Professor, Graduate School of Frontier Sciences, The University of Tokyo	Research on a multi-scale/multi-physics heart simulator
Seiryu Sugiura	Professor, Graduate School of Frontier Sciences, The University of Tokyo	
Hiroshi Watanabe	Lecturer, Graduate School of Frontier Sciences, The University of Tokyo	
Takumi Washio	Researcher, Core Research for Evolutional Science and Technology (CREST), Japan Science and Technology Agency	
Jun-ichi Okada	Researcher, Core Research for Evolutional Science and Technology (CREST), Japan Science and Technology Agency	
Kei Hiraki	Professor, Graduate School of Information Science and Technology, The University of Tokyo	Research on ultra-long-distance and ultra-fast data communication methods
Mari Inaba	Associate Professor, Graduate School of Information Science and Technology, The University of Tokyo	
Akira Kato	Associate Professor, Information Technology Center, The University of Tokyo	

Name	Title	Achievement [literal translation]
Yoshiteru Maeno	Professor, Graduate School of Science, Kyoto University	Research on superconducting ruthenium oxide in monocrystalline in high performance image reactors
Hiroshi Nishimura	Former Expert, Research and Development Center, Canon Machinery Inc.	
Sinichi Ikeda	Senior Researcher, National Institute of Advanced Industrial Science and Technology	
Naoki Kikugawa	Senior Researcher, National Institute for Materials Science	
Satoshi Kono	Canon Machinery Inc.	
Osamu Mishima	Fellow, National Institute for Materials Science	Experimental research on water polyamorphisms
Kenji Miwa	Chief Researcher, Materials Research Institute for Sustainable Development, National Institute of Advanced Industrial Science and Technology	Research on creation technology for high performance metallic material by the electromagnetic vibration process
Takuya Tamura	Researcher, Materials Research Institute for Sustainable Development, National Institute of Advanced Industrial Science and Technology	
Kohki Mukai	Associate Professor, Graduate School of Engineering, Yokohama National University	Research on quantum dot lasers for optical communication
Mitsuru Sugawara	Nanotechnology Research Center, Fujitsu Laboratories Ltd.	
Yoshiaki Nakata	Designated Researcher, Institute for Nano Quantum Information Electronics, The University of Tokyo	
Hidezo Mori	Director, Department of Cardiac Physiology, National Cardiovascular Center Research Institute	Research on microvascular imaging
Kenkichi Tanioka	Director, NHK Science & Technical Research Laboratories	
Toshiaki Kawai	Former Project Coordinator, Electron Tube Division, Hamamatsu Photonics K.K.	
Satoshi Takeshita	Director, Department of Cardiovascular Surgery and ICU, National Cardiovascular Center	
Yoshihiko Dan	Power Electronics Center, Hitachi Medical Corporation	
Yuusuke Mori	Professor, Graduate School of Engineering, Osaka University	Research on innovative protein crystallization for highly accurate structural analysis and processing technology of the crystal
Kazufumi Takano	Associate Professor, Graduate School of Engineering, Osaka University	
Hiroaki Adachi	President, SOSHO, Inc.	
Tsuyoshi Inoue	Associate Professor, Graduate School of Engineering, Osaka University	
Hiroyoshi Matsumura	Assistant Professor, Graduate School of Engineering, Osaka University	Research on high efficiency voice sound signal encoding
Takehiro Moriya	Research Fellow, Moriya Research Laboratory, Communication Science Laboratories, NTT Science and Core Technology Laboratory Group, Nippon Telegraph and Telephone Corporation	

Name	Title	Achievement [literal translation]
Kazushi Yamanaka	Professor, New Industry Creation Hatchery Center, Tohoku University	Research on the multiple orbiting phenomenon of surface acoustic waves of a ball and its application to sensors

○ Prizes for Science and Technology (Science and Technology Promotion Category)

Name	Title	Achievement [literal translation]
Mitsuo Nagamachi	Professor Emeritus, Hiroshima University	Promotion of customer preference-based Kansei Engineering Technology
Chihiro Watanabe	Professor, Graduate School of Decision Science and Technology, Tokyo Institute of Technology	Promotion of technology for analysis of the effect of innovation on economic society

○ Prizes for Science and Technology (Technology Category)

Name	Title	Achievement [literal translation]
Koichi Akira	AHJIKAN Co., Ltd.	Development of processing technology related to egg products and production
Koichiro Hara	AHJIKAN Co., Ltd.	
Sadatoshi Abe	Fuji Yusoki Kogyo Co., Ltd.	Development of a high-speed palletizing robot with low power consumption
Yoshihiko Anzawa	Asahi-Shuzo Sake Brewing Co., Ltd.	Development related to the hardness and digestibility of steamed rice in sake brewing
Haruo Ura	SOATEC, Inc.	Development of the portable 3-D laser measurement system, 'Soaring Eye'
Takaaki Endo	Gikken Co., Ltd.	Development of large PRC box culvert engineering
Masao Okuno	SHIMA SEIKI MFG., LTD.	Development of a method to connect the edges of knitting fabric using a flat knitting machine
Ryosuke Sasaoka	President, Kotogawa Co., Ltd.	Development of high performance roof tiles
Masanori Sugiyama	Professor, Graduate School of Biomedical Sciences, Hiroshima University	Development of new yogurt using brewing by-products and vegetable lactobacilli
Kazuhiro Nomura	Nomura Dairy Products Co., Ltd.	
Masatsugu Nagakura	Representative Director, Marunaka Industrial Company, Ltd.	Development of a galvanization processing system that enables uniform plating processing
Etsuji Natori	Suga Test Instruments Co., Ltd.	Development of a complex corrosion cycle testing system
Ryo Futaki	Thermal Co.,Ltd.	Development of noise absorbing materials with used aluminum cans
Kunihiro Hoshika	ZOJIRUSHI Corporation	Development of the safeguard against regurgitation in electric jars
Shigemitsu Hotta	President, Hotta Carpet Co.,Ltd.	Development of carpet with new surface thread
Shoichi Murata	Murata Welding Laboratories Inc.	Development of a butt welding machine for zonal metallic lamina
Yoshihide Yumoto	President, Grapac Japan Co., Inc.	Development of a micro lens array process for printed matter visible stereoscopically with the naked eye
Yuji Watanabe	President, M.E.C. Co., Ltd.	Development of an ultrasonic and non-pressure leakage inspection device

○ Prizes for Science and Technology (Public Understanding Promotion Category)

Name	Title	Achievement [literal translation]
Masahiro Aoki	Public Relations Department, National Institute of Advanced Industrial Science and Technology (AIST)	Promoted the understanding of geoscience and underground resources through the activities of the Geological Museum
Masahiro Asahara	Associate Professor, Faculty of Education and Regional Studies, The University of Fukui	Promoting science at local elementary schools
Miyuki Tanmatsu	Technical Expert, Faculty of Engineering, Tottori University	
Hiroshi Atsuchi	Full-time Instructor, The Japan Society for the Advancement of Inventions	Promoting science and technology through the Children's Invention Classrooms
Akihiko Inoue	Asakura Publishing Co., Ltd.	Promoting medical knowledge through the publication of Internal Medicine over a number of years
Yasufumi Kawamura	Associate Professor, Faculty of Science Division I, Tokyo University of Science	Broad promotion of science and technology for youth and the general public through Science Experiment Classrooms
Hideo Kiyomoto	Noguchi Prize	Promoting science and technology through "The Wings of Junior Scientists" program
Manabu Kobayashi	Professor Emeritus, The University of Tsukuba	Dissemination of and enlightenment on education on creativity and science for the youth
Toshiko Sawaguchi	Associate Professor, Department of Legal Medicine, School of Medicine; Institute of Advanced Biomedical Engineering and Science, Tokyo Women's Medical University	Promoting pediatric forensic medicine focusing on infant sudden death syndrome
Kenzo Suzuki	MATEC YAO (Management & Technology Interchange Group YAO)	Promoting science and technology through on-site education on manufacturing in cooperation with schools
Kazuo Takahashi	Professor, Faculty of Engineering, Nagasaki University	Promoting volcano disaster prevention and measures for recovery and reconstruction based on the lessons learned from the Unzen volcano disaster
Yuichi Takayanagi	Director, Tamarokuto Science Center	Dissemination of and enlightenment on science program production and out-reach activity
Motoko Takenishi	ROBOCON Magazine, Ohmsha, Ltd.	Promoting manufacturing knowledge in the youth through ROBOCON Magazine
Hirofumi Tsuchida	Research and Development Division, Corporate R&D Center, Olympus Corporation	Promoting science and technology in children through the Exciting Project
Makoto Nakai	Senior Researcher, National Institute for Agro-Environmental Sciences	Promoting soil use through soil monoliths
Tadao Hamazaki	Professor, Faculty of Agriculture, Kagoshima University	
Toshiaki Ohkura	Senior Researcher, National Institute for Agro-Environmental Sciences	
Takeshi Ota	Senior Researcher, National Agricultural Research Center, National Agriculture and Food Research Organization	
Hiroshi Obara	Senior Researcher, National Institute for Agro-Environmental Sciences	

Name	Title	Achievement [literal translation]
Masatoshi Noda	Professor, Graduate School of Medicine, Chiba University	Introducing the latest microbiology knowledge to elementary, junior and high school students
Takashi Murayama	Editorial Department, BAIFUKAN Co.,Ltd.	Promoting science and technology through continuous publication of the Dictionary of Physics for more than 20 years
Masahiro Morita	Fourth Grade Student, Department of Genetic Engineering, School of Biology-Oriented Science and Technology, Kinki University	Dissemination of and enlightenment on life science research with soma clone mouse
Hareyuki Yamaguchi	Professor, Department of Civil and Environment Engineering, Schools of Systems Engineering, National Defense Academy	Dissemination of and enlightenment on solutions for the aggravated coast washing waste problem
Hidenori Yamada	Counselor, Japan Science Foundation; Deputy Director, Science Museum	Promoting science and technology through the activities of Science Pavilions and Museums
Osamu Watanabe	Professor, Graduate School of Information Science and Engineering, Tokyo Institute of Technology	Promoting computer science through SuperCon "Denno-Koshien"
Yuko Matsuda	Assistant Professor, Global Scientific Information and Computing Center, Tokyo Institute of Technology	
Makoto Kikuchi	Professor, Cybermedia Center, Osaka University	
Jun-ichi Watanabe	Associate Professor, Ephemeris Computation Office, National Astronomical Observatory of Japan, National Institutes of Natural Sciences	Dissemination of and enlightenment on the new definition of planet
Hidehiko Agata	Associate Professor, Ephemeris Computation Office, National Astronomical Observatory of Japan, National Institutes of Natural Sciences	

○Young Scientists' Prize

Name	Title	Achievement [literal translation]
Takao Aoki	Full-time Researcher, Japan Science and Technology Agency	Research of quantum information processing technology in the quantum-optical area
Shuji Akiyama	PRESTO Full-time Researcher "Life Phenomena and Measurement Analysis", Japan Science and Technology Agency	Research on signal perception, transmission, and response mechanisms using X-ray small angle scattering
Mitsuyoshi Akiyama	Associate Professor, Graduate School of Engineering, Tohoku University	Research on the development of super-efficient structural material and the assessment of its life span
Hiroki Ago	Associate Professor, Institute for Materials Chemistry and Engineering, Kyushu University	Research on the growth and functionalization of carbon nanotubes
Tomoyuki Arawaka	Associate Professor, Faculty of Science, Nara Women's University	Research on the expression theory of infinite dimension algebra
Yuji Ikegaya	Associate Professor, Graduate School of Pharmaceutical Sciences, The University of Tokyo	Research on the function and plasticity of nerve circuit systems
Kumiko Tanaka-Ishii	Associate Professor, Graduate School of Information Science and Technology, The University of Tokyo	Research on methods for the input of documents using language statistics-based prediction

Name	Title	Achievement [literal translation]
Hiroyuki Isobe	Professor, Graduate School of Science, Tohoku University	Research on chemically modified functional molecules in the nanocarbon area
Akihiro Itai	Associate Professor, Faculty of Agriculture, Tottori University	Research on the the breeding and development of molecule markers in the preservation of <i>Pyrus pyrifolia</i> fruit
Tetsuya Ido	Senior Researcher, Space-Time Standards Group, National Institute of Information and Communications Technology	Research on the cooling of neutral Sr atoms with laser and the non-recoil high-resolution spectrum
Takeshi Itoh	Head, Bioinformatics Research Unit, Division of Genome and Biodiversity Research, National Institute of Agrobiological Sciences	Research on the application of genome information based on large-scale genome annotation
Koji Inoue	Associate Professor, Graduate School of Information Science and Electrical Engineering, Kyushu University	Research of cache memory for next generation computers
Hiroaki Iwai	Lecturer, Graduate School of Life and Environmental Sciences, The University of Tsukuba	Research on pectin biosynthesis and its function by means of cell adhesion in higher plants
Hideo Iwasaki	Associate Professor, Faculty of Science and Engineering, Waseda University	Research on the circadian rhythm mechanism in cyanobacteria
Yoshiyuki Iwata	Senior Researcher, Department of Accelerator and Medical Physics, Research Center for Charged Particle Therapy, National Institute of Radiological Sciences	Research on highly efficient small linear accelerators
Hideki Innan	Associate Professor, Hayama Center of Advanced Studies, The Graduate University for Advanced Studies	Research on the creation of new areas integrating genome development and theoretical population genetics
Takafumi Ueno	Associate Professor, Department of Chemistry, Graduate School of Science, Nagoya University	Research on the development of nano material using protein supermolecules
Taro Uchimura	Associate Professor, Graduate School of Engineering, The University of Tokyo	Research on technology to rapidly improve the hardness and earthquake resistance of soil structure
Kazuo Emoto	Associate Professor, Center for Frontier Research, National Institute of Genetics, Research Organization of Information and Systems	Research on the infrastructure of molecules/structures that specify the morphology of plasma
Mami Ooji (Mami Tanaka)	Associate Professor, Graduate School of Engineering, Tohoku University	Research on tactile sensor systems with functional material
Yasuo Ohnishi	Associate Professor, Graduate School of Agricultural and Life Sciences, The University of Tokyo	Research on the control mechanism of gene expression in Actinomycetes and new biosynthesis enzyme
Naoyuki Oyama	Deputy Senior Researcher, Division of Fusion Energy Technology, Japan Atomic Energy Agency	Research on the upgrading of tokamak plasma by controlling plasma rotation
Masafumi Okada	Associate Professor, Graduate School of Science, Tokyo Institute of Technology	Research on the effective exercise in which nonlinear information and mechanism exist as a phenomenon
Nozomu Okino	Associate Professor, Graduate School of Bioresource and Bioenvironmental Sciences, Kyushu University	Discovery and application of new bacteria-derived sphingolipid-decomposing enzymes
Narutaka Ozawa	Associate Professor, Graduate School of Mathematical Sciences, The University of Tokyo	Research on operator ring and discrete population

Name	Title	Achievement [literal translation]
Shojiro Kaita	Deputy Laboratory Head, Elastomer Precision Polymerization Laboratory, Center for Intellectual Property Strategies, RIKEN	Research on accurate polymerization of dienes with rare earth metal chelate catalysts
Toshiro Kaneko	Associate Professor, Graduate School of Engineering, Tohoku University	Research on structural formation mechanisms with plasma flow control
Kohki Kawane	Associate Professor, Graduate School of Medicine, Kyoto University	Research on autoimmune disease caused by DNA that escaped degradation
Hideo Kishida	Associate Professor, Graduate School of Engineering, Nagoya University	Research on nonlinear optical response in low level and strongly correlated insulators
Noriaki Kimura	Assistant Professor, Graduate School of Science, Tohoku University	Research on the development of superconducting material whose reversing symmetry was broken and its anisotropy
Toshihiro Kushibiki	Designated Lecturer, Graduate School of Engineering, Osaka University	Research on cell function control by drug delivery systems and optical technology
Ryoichi Kuwano	Associate Professor, Graduate School of Sciences, Kyushu University	Research on the catalytic asymmetrical hydrogenation of heterocyclic aromatic compounds
Masataka Goto	Senior Researcher, Information Technology Research Institute, National Institute of Advanced Industrial Science and Technology	Research on the understanding and interface of sound by computer
Kunimasa Saitoh	Associate Professor, Graduate School of Information Science and Technology, Hokkaido University	Research on the highly accurate analysis of photonic crystal fiber and its optimal design
Kimiko Sakaguchi	Researcher, Heavy Ion Nuclear Physics Laboratory, Nishina Center for Accelerator-Based Science, RIKEN	Research on the three-body force in atomic nucleus by the highly accurate measurement of deuteron - proton scattering
Takehiko Sasaki	Professor, Akita University Faculty of Medicine	Research on the biological control mechanism by cell membrane inositol phospholipid metabolism
Chiyuki Sassa	Researcher, East China Sea Fisheries Resources Division, Seikai National Fisheries Research Institute, Fisheries Research Agency	Research on the initial ecology of middle- and deep-sea fish in the West North Pacific
Moritoshi Sato	Associate Professor, Graduate School of Arts and Sciences, The University of Tokyo	Research on visualized observation methods for molecular processes in living cells
Daisuke Sano	Department of Microbiology, Faculty of Biology, The University of Barcelona; JSPS Postdoctoral Fellow for Research Abroad	Research on the isolation of functional protein from activated sludge bacteria
Yozo Shoji	Senior Researcher, Space Communications Group, New Generation Wireless Communications Research Center, Research Department 1, National Institute of Information and Communications Technology	Research on highly efficient radio communication technology at the millimeter wave band in the area of radio communication engineering
Ryo Shirakashi	Associate Professor, Institute of Industrial Science, The University of Tokyo	Research on long-term high-quality preservation in organisms
Mitsutoshi Setoh	Associate Professor, Department of Strategic Methodology, Okazaki Institute for Integrative Bioscience, National Institute for Physiological Sciences, National Institutes of Natural Sciences	Research on glutamic acid signal transmission by visualization

Name	Title	Achievement [literal translation]
Sergey Saveliev	Research Affiliate, Digital Materials Team, Single Quantum Dynamics Research Group, Advanced Science Institute, RIKEN	Research on fluxoid quanta control in superconductors
Hidekuni Takao	Associate Professor, Intelligent Sensing System Research Center, Toyohashi University of Technology	Research on intelligent sensing devices in the area of semiconductor engineering
Hideo Takaoka	Associate Professor, Graduate School of Science, Kobe University	Global analysis of weak solutions of nonlinear distributed equations
Tetsushi Taguchi	Senior Researcher, Biomaterials Center, National Institute for Materials Science	Research on material technology that allows the interface of live tissue
Shoji Takeuchi	Associate Professor, Institute of Industrial Science, The University of Tokyo	Research on biomicrosystems in engineering
Toshihiko Takemura	Associate Professor, Research Institute for Applied Mechanics, Kyushu University	Quantitative assessment of the effect of aerosol on climate
Keiji Tanaka	Associate Professor, Graduate School of Engineering, Kyushu University	Research of high molecular nano physical properties at the interface of different phases
Masaki Tanaka	Associate Professor, Hokkaido University Graduate School of Medicine	Research on the voluntary control of eye movement at the thalamic and frontal lobe
Motomasa Tanaka	Unit Leader, Tanaka Research Unit, RIKEN Brain Science Institute	Research on neurodegenerative disease related to the miss folding of protein
Takeshi Naemura	Associate Professor, Graduate School of Information Science and Technology, The University of Tokyo	Research on real world-oriented media technology in interdisciplinary areas
Akihiro Narita	Assistant Professor, Graduate School of Science, Nagoya University	Research on the structure of actin filament edge complex with an electron microscope
Kunihiko Nishino	Assistant Professor, Institute of Scientific and Industrial Research, Osaka University	Research on multidrug resistant factors contained in bacterial genomes and control mechanisms
Yoshihiro Hase	Researcher, Quantum Beam Science Directorate, Japan Atomic Energy Agency	Research on the creation of useful plant species with ion beam breeding technology
Masahito Hasegawa	Professor, Research Institute for Mathematical Sciences, Kyoto University	Research of the semantics of programming language
Katsuro Hayashi	Associate Professor, Secure Materials Center, Materials and Structures Laboratory, Tokyo Institute of Technology	Development of the functions of C12A7 crystal derived from active negative ions
Masaki Fukata	Professor, Division of Membrane Physiology, National Institute for Physiological Sciences, National Institutes of Natural Sciences	Research of the mechanism of proteins to localize in cell membrane
Takanori Fukushima	Team Leader, RIKEN Frontier Research System	Research on pi-electronic nanomaterials
Hidenobu Fukutome	Researcher, Silicon Technologies Laboratories, Fujitsu Laboratories Ltd.	Research on technology for nano-measurement of 2-dimensional impurity distribution in a precise transistor
Osamu Fujino	Associate Professor, Graduate School of Mathematics, Nagoya University	Research on the birational geometry of high dimensional algebraic variety
Kazuhisa Makino	Associate Professor, Graduate School of Information Science and Technology, The University of Tokyo	Research of algorithms to discrete enumeration
Kazunori Matsuura	Associate Professor, Graduate School of Engineering, Kyushu University	Research on the formation of new nanostructures by biomolecular self-assembly
Kenji Matsuura	Assistant Professor, Graduate School of Environmental Science, Okayama University	Research on the interaction mechanism of termite with ovum mimetic sclerotium bacteria and its application technology

Name	Title	Achievement [literal translation]
Masaru Matsuda	Associate Professor, Center for Bioscience Research & Education, Utsunomiya University	Research on the structure of gender distinction systems by identification of the gender determinant gene in killifish
Sachihiko Matsunaga	Lecturer, Graduate School of Engineering, Osaka University	Research on the construction mechanism of chromosomal morphology by super microscopic technology
Tetsuro Murahashi	Associate Professor, Graduate School of Engineering, Osaka University	Research on sandwich metallic clusters
Yoichi M.A. Yamada	Deputy Team Leader, RIKEN Frontier Research System	Research on the creation of self-assembled metallic polymer catalysts
Hideo Yokota	Team Leader, Bio-research Infrastructure Construction Team, VCAD System Research Program, Center for Intellectual Property Strategies, RIKEN	Research on the construction of biological and cellular computer models
Masayuki Yokoyama	Associate Professor, Department of Large Helical Device Project, National Institute for Fusion Science, National Institutes of Natural Sciences	Research on the grading-up of no-current plasma using three dimensions of a magnetic field
Kiyotsugu Yoshida	Associate Professor, Medical Research Institute, Tokyo Medical and Dental University	Research on the mechanism of intracellular information transmission and induction of cellular death in damaged DNA
Misako Yoneda	Assistant Professor, Institute of Medical Science, The University of Tokyo	Research on the mechanism of the establishment of infectiveness in Paramyxoviridae



Award ceremony
Photo: MEXT



Awardee of the Special Prize for Science and Technology
Professor Yamanaka (left), The then Minister of MEXT Tokai (right)

(NISTEP Researchers Award)

NISTEP has selected approximately 10 scientists for the NISTEP Researchers Awards [literal translation] every year since FY 2005.

In FY 2008, NISTEP selected the below-listed scientists who achieved significant results related to S&T in the past several years referring to the activities investigated and studied by NISTEP and the opinions of its expert network (approximately 2,000 experts), and announced their names in December 2008 (Table 2-4-2).

Table 2-4-2 NISTEP Researchers Award 2008 Recipients

Category	Name	Organization	Reason for the award [literal translation]
Research	Yoshiro Niitsu	Designated Professor, Department of Molecular Target Exploration, Sapporo Medical University	Contribution to medicine through the development of therapeutic treatment for various refractory diseases including cirrhosis
	Hideo Hosono	Professor, Frontier Research Center, Tokyo Institute of Technology	Discovery of a new high temperature iron superconductor, the third superconducting material
	Michiko Miura	Professor, Graduate School of Advanced Sciences of Matter, Hiroshima University	Development of a transistor model which is technically superior and suited to the age of super-miniaturization of semiconductors, and the acquisition of its international standardization
	Shigehiro Yamaguchi	Professor, Graduate School of Science, Nagoya University	Creation of a high-performance, organic electronics material based on the basic chemistry of typical elements
	Teruhiko Wakayama	Team Leader, Laboratory for Genomic Reprogramming, Center for Developmental Biology, RIKEN	Success in the cloning of body cells isolated from a frozen corpse
Project /International Research Exchange	Yujiro Ikeda	Director, Materials and Life Science Division, J-PARC Center, Japan Atomic Energy Agency	Development of an up-to-date accelerator pulse neutron source
	Kazuo Hasegawa	Leader, Accelerator Section I, Accelerator Division, J-PARC Center, Japan Atomic Energy Agency	
	Michikazu Kinsho	Leader, Accelerator Section II, Accelerator Division, J-PARC Center, Japan Atomic Energy Agency	
	Masaaki Shimada	Professor, Institute of Tropical Medicine, Nagasaki University	Promotion of international study exchange related to countermeasures for infection based in Kenya
Fostering human resources /Gender equality	Noriko Kohnno-Hirata	Professor, Department of Mathematics, College of Science and Technology, Nihon University	Contribution to gender equality, support of female researchers, and education activities for female students
	Hitoki Yoneda	Professor, Institute for Laser Science, University of Electro-Communications	Contribution to the development and implementation of an advanced educational program for the engineering graduate school
Diffusion /Enhanced Understanding of results	Noriko Arai	Professor, Information and Society Research Division, National Institute of Informatics	Web-based informational sharing site construction software was made available free of charge, and the new educational technique progressed on a nationwide scale. In addition, many primers of mathematics were published for the general public, especially for the youth and people who didn't like mathematics.

(The Imperial Prize, Japan Academy Prize, and Duke of Edinburgh Prize)

The Imperial and Japan Academy Prizes are awarded to individuals who have achieved notable research landmarks or who have authored particularly outstanding academic papers or books. The Japan Academy Prize is awarded to up to nine individuals and the Imperial Prize is awarded in each of its two categories: humanities and natural sciences. The awardees of up to one individual in each category are selected from among recipients for that year's Japan Academy Prize. Among the past recipients, Hideki Yukawa (1940), Shinichiro Tomonaga (1948), Kenichi Fukui (1962), Leo Esaki (1965), Makoto Kobayashi (1985), Toshihide Masukawa (1985), Masatoshi Koshihara (1989), and Ryoji Noyori (1995) became Nobel Laureates after awarded. At the suggestion of His Royal Highness the Prince Philip, the Duke of Edinburgh Prize was adopted in 1987. It is awarded every two years to a Japanese scientist with outstanding achievements in the area of wildlife protection and species preservation. In FY 2008, an award ceremony was held on June 9 at the Japan Academy in the presence of Their Majesties the Emperor and Empress (Table

2-4-3).

Table 2-4-3

The 98th Imperial Prize, Japan Academy Prize, and Duke of Edinburgh Prize Recipients

<List of recipients>

Name of prize	Name of recipient	Present organization and Title	Research achievement for award
Imperial Prize/Japan Academy Prize	Keiji Morokuma	Research Leader, Fukui Institute for Fundamental Chemistry, Kyoto University; Professor Emeritus, Emory University, USA; Professor Emeritus, Institute for Molecular Science; Professor Emeritus, The Graduate University for Advanced Studies	Theoretical Studies of Design of Structure, Function and Reactivity of Molecules
Japan Academy Prize	Takaya Hosaka	Professor, Chiba University	The Persecution of Jews and Christians in the Early Roman Principate
	Fumio Ohtake	Professor and Director, Institute of Social and Economic Research, Osaka University	Inequality in Japan
	Yoshinori Fujiyoshi	Professor, Graduate School of Science, Kyoto University	Structure Determination of Membrane Proteins based on the Development of an Innovative Cryo-Electron Microscope
	Naomasa Nakai	Professor, Graduate School of Pure and Applied Sciences, University of Tsukuba	Study of Active Galactic Nuclei and Super-Massive Black Holes based on VLBI Observations of Water-Vapor Maser Emission
	Akira Hasegawa	President, Soliton Communications; Affiliate Professor, Tianjin University; Affiliate Professor, Zhejiang University	Discovery of Optical Soliton Properties in Fibers and of Self-organization of Plasma Turbulence
	Kanji Ohyama	Professor, Bioresource Engineering Research Institute, Ishikawa Prefectural University; Professor Emeritus, Kyoto University	Gene Content, Organization and Molecular Evolution of Plant Organellar Genomes and Sex Chromosomes —Insights from the Case of the Liverwort <i>Marchantia polymorpha</i> —
	Kenji Kangawa	Director, National Cardiovascular Center Research Institute	Discovery of Novel Bioactive Peptides with Special Reference to Ghrelin
	Yoshiyuki Nagai	Director, Center of Research Network for Infectious Diseases, RIKEN; Professor emeritus, Nagoya University	Elucidation of the Molecular Basis of Paramyxovirus Pathogenicity and Generation of a Novel Class of Expression Vector
Duke of Edinburgh Prize	Eitaro Wada	Director, Ecosystem Change Research Program, Frontier Research Center for Global Change, Japan Agency for Marine-Earth Science And Technology; Professor emeritus, Kyoto University; Professor emeritus, Research Institute for Humanity and Nature	Elucidation of Ecosystem Structure and its Response to Environmental Change with Special Reference to the Stable Isotope Fingerprint

* Affiliation and position at the time of award



(From left of the back) Yoshiyuki Nagai, recipient; Kanji Ohyama, recipient; Naomasa Nakai, recipient; Akira Hasegawa, recipient; Kenji Kangawa, recipient; Eitaro Wada, recipient
 (From left of the front) Fumio Ohtake, recipient; Keiji Morokuma, recipient; Chie Nakane, director of the 1st Division, Japan Academy; Masaaki Kubo, President of Japan Academy; Takashi Sugimura, Secretary manager, Japan Academy; Yoshihide Kozai, Director of the 2nd Division, Japan Academy; Takaya Hosaka, recipient; Yoshinori Fujiyoshi, recipient

Photo: The Japan Academy

(JSPS PRIZE)

The JSPS PRIZE was established by JSPS in FY 2004 to sustain the zeal for research and the further advancement of young researchers in all academic fields, from humanities to natural sciences, with rich creativity and superlative research ability while rewarding and offering them support in advancing their work from an early stage in their careers. In 2008, the award ceremony was held on March 9 at the Japan Academy in the presence of Their Imperial Highnesses Prince and Princess Akishino (Table 2-4-4).

Table 2-4-4 FY 2008 JSPS PRIZE Awardees

<A list of winners>

Category	Name of awardee	Present organization and Title	Research achievement for award
Humanities and Social Sciences	Shin Arita	Associate Professor, Graduate School of Arts and Sciences, The University of Tokyo	Educational Structure and Social Stratification in Korea and Japan
	Asako Nakai	Associate Professor, Graduate School of Language and Society, Hitotsubashi University	English-Language Literatures and Postcolonial Criticism
	Taiji Furusawa	Professor, Graduate School of Economics, Hitotsubashi University	Game Theoretic Approach to International Political Economy
	Noriko Miya	Assistant Professor, Institute for Research in Humanities, Kyoto University	Cultural Policy and Publishing Activities during the Mongol Period
Mathematics; Physical Sciences; Chemistry; Engineering Sciences	Kohei Itoh	Professor, Faculty of Science and Technology, Keio University	Establishment of Semiconductor Isotope Engineering
	Kunio Inoue	Professor, Graduate School of Science, Tohoku University	Precision Measurement of Reactor Neutrino Oscillations
	Masayuki Inoue	Professor, Graduate School of Pharmaceutical Sciences, The University of Tokyo	Total Syntheses of Marine Polycyclic Ethers
	Masahito Ueda	Professor, Graduate School of Science, The University of Tokyo	Theory of Ultracold Atomic Gases
	Seiji Ogo	Professor, Center for Future Chemistry, Kyushu University	Hydrogen-Activation with Water-Soluble Metal-Aqua Complexes in Water under Ambient Conditions
	Naoki Kobayashi	Professor, Graduate School of Information Sciences, Tohoku University	Type Theory for Software Verification
	Takao Someya	Associate Professor, School of Engineering, The University of Tokyo	Fundamental Research on Organic Transistors and their Applications to Large-Area Electronics
	Takeshi Tsuji	Associate Professor, Graduate School of Mathematical Sciences, The University of Tokyo	P-adic Hodge Theory and its Application
	Nobuhiro Tsuji	Professor, Graduate School of Engineering, Kyoto University	Study on Ultrafine Grained Metallic Materials
	Masaya Notomi	Senior Research Scientist, Supervisor, Nippon Telegraph and Telephone Corporation, NTT Basic Research Laboratories	Discovery and Applications of Novel Functions of Photonic Crystals
Kei Hirose	Professor, Graduate School of Science and Engineering, Tokyo Institute of Technology	Experimental Study of Earth and Planetary Materials at Ultra-High Pressure and Temperature	

Category	Name of awardee	Present organization and Title	Research achievement for award
Biological Sciences; Agricultural Sciences; Medical, Dental, Pharmaceutical Sciences	Masahisa Katsuno	Designated Associate Professor, Institute for Advanced Research, Nagoya University	Development of Pathogenesis-Based Therapy for Neurodegenerative Diseases
	Shuichi Koizumi	Professor, Interdisciplinary Graduate School of Medicine and Engineering, The University of Yamanashi	Glial Regulation of the Brain Function
	Tatsuya Sawamura	Director, Department of Vascular Physiology, National Cardiovascular Center	Elucidation of the Mechanisms of Vascular Dysfunction Leading to Cardiovascular Diseases
	Katsuhiko Shirahige	Professor, Graduate School of Bioscience and Biotechnology, Tokyo Institute of Technology	Establishment and Applications of Chromosome Analysis Technology Based on Genomic Information
	Keiko U Torii	Associate Professor, Department of Biology, The University of Washington	Mechanisms of Stomatal Patterning and Differentiation in Plants
	Osamu Nureki	Professor, The Institute of Medical Science, The University of Tokyo	Structural Basis for the Dynamic Mechanism of Genetic Code Translation
	Junn Yanagisawa	Professor, TARA Center, The University of Tsukuba	Study of the Molecular Mechanisms for Energy Homeostasis in cells
	Takashi Yoshimura	Professor, Graduate School of Bioagricultural Sciences, Nagoya University	Seasonal Clock Percepts Coming of Spring in Vertebrate - Quail as a Model Animal
Teruhiko Wakayama	Team Leader, Center for Developmental Biology, RIKEN	Development of Novel Biotechnologies for Animal Reproduction	

* Affiliation and position at the time of award