

Asahi Kasei Group Intellectual Property Report 2014

Organization for IP

Corporate IP, part of Corporate Research & Development in the holding company of the Asahi Kasei Group, is the organization responsible for management of intellectual property (IP) for the Group. Corporate IP also formulates and executes IP strategy for the Group, and provides the shared infrastructure for the Group's IP functions.

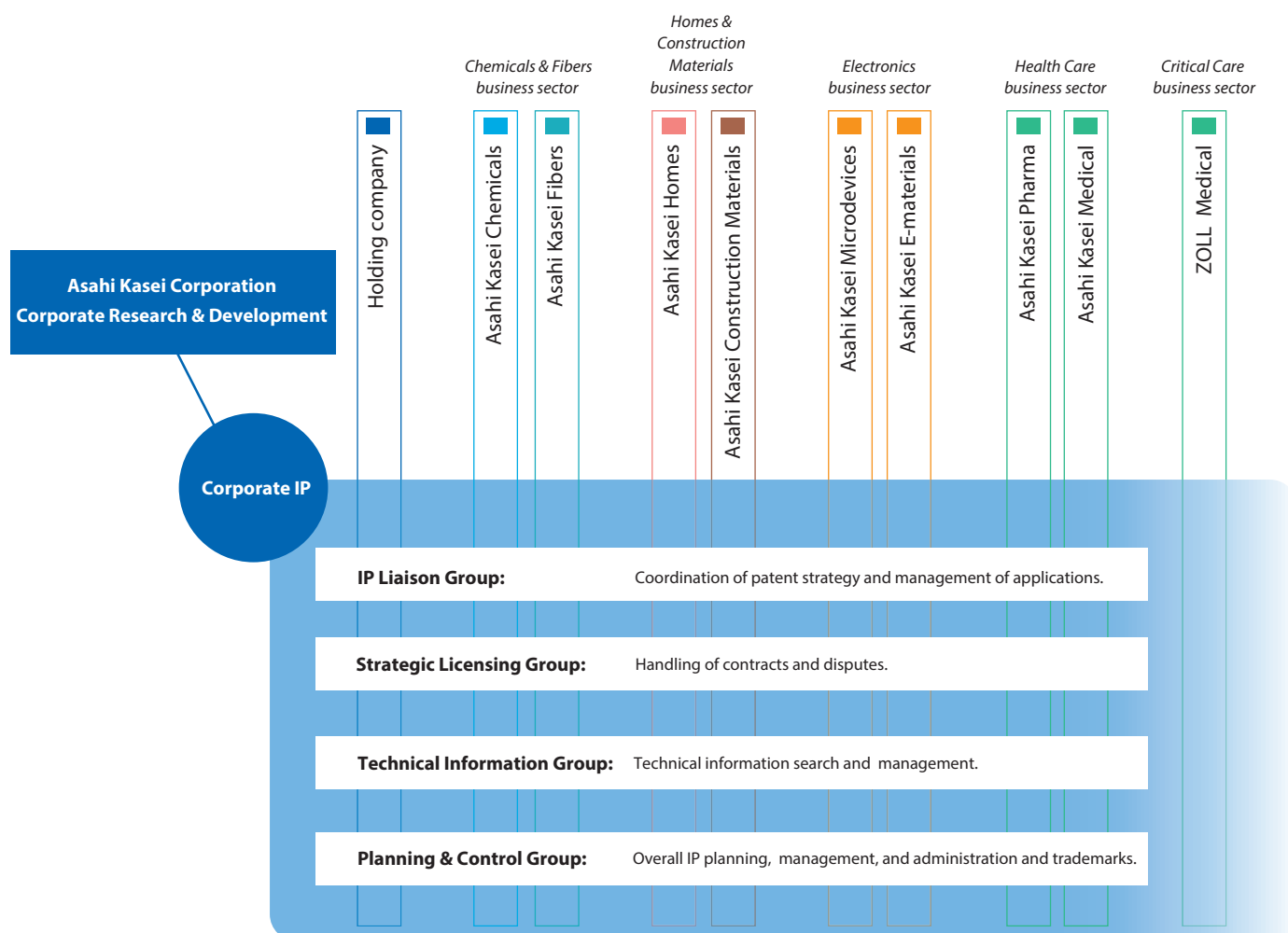
Each core operating company of the Group also has its own organization for management of IP rights, including their acquisition, maintenance, and enforcement. The IP organizations of the core operating companies are staffed with liaison personnel of Corporate IP, and with concurrent positions in the core operating companies, these personnel work to identify IP, secure IP rights, and enforce those rights in concert with each core operating company's own business strategy and R&D strategy. They also formulate IP strategies for the core operating companies and

advance coordination with inventors.

Certain functions identified for reinforcement are shared by Corporate IP throughout the Group. Corporate IP also provides Group-wide services performed by the dedicated specialist personnel of its Strategic Licensing Group, Technical Information Group, and Planning & Control Group.

ZOLL Medical Corporation, which joined in the Asahi Kasei Group in 2012, has its own IP personnel who work to identify IP, secure IP rights, and enforce those rights in accordance with ZOLL's policy. Members of Corporate IP and ZOLL's IP personnel communicate closely with each other for mutual understanding and information sharing to achieve synergy within the Group.

Asahi Kasei Group Organization for IP



IP Strategy

Basic Policy

In the Asahi Kasei Group, the management strategy, IP strategy, and R&D strategy of each operation are integrated as one, with the creation of new businesses as an important management task. IP activities are advanced in direct connection with the management of operations to gain business advantage by the steady acquisition of IP rights from R&D results, enabling the creation of new businesses and the securement of profitability in existing businesses.

The core operating companies take the lead in formulating IP strategy for each operation in line with the relevant business characteristics. The primary focus is on strengthening existing businesses, with equal emphasis placed on the quality and the quantity of patents. Strategic licensing is performed when it is deemed an effective means to heighten the contribution of IP rights to our own business operations.

A relationship of mutual trust and reliance is fostered between the personnel working on IP and those working on R&D, as the IP and R&D functions advance in close coordination to strengthen business operations.

Thorough Patent Searching

The Asahi Kasei Group considers reliable and effective patent searching to be vital, and thorough patent searches are performed at critical phases in the process of developing IP rights. Patent searches are conducted by different personnel in correspondence with different purposes. Technology information specialists in Corporate IP conduct key searches related to subjects which significantly impact business operations. Researchers conduct primary searches themselves, which enhances their patent searching ability and heightens their motivation.

Continuous monitoring of patent information related to R&D projects for selective dissemination of information (SDI) is another focus of patent searches. These search and monitoring results are compiled into a strategic database which is utilized as described under IP Portfolio, below.

Overseas IP Strategy

The expansion of world-leading businesses is one of the main strategies of the Asahi Kasei Group's medium-term management initiative. Accordingly, Corporate IP places emphasis on the securement and utilization of firm IP rights that support global business operations, especially in the US, China, Europe, and emerging countries. As China continues to grow in importance for our global expansion, we are also strengthening a wide range of IP activities in China. The ongoing and comprehensive reinforcement of global IP activities will continue to support further expansion of operations worldwide.

IP Portfolio

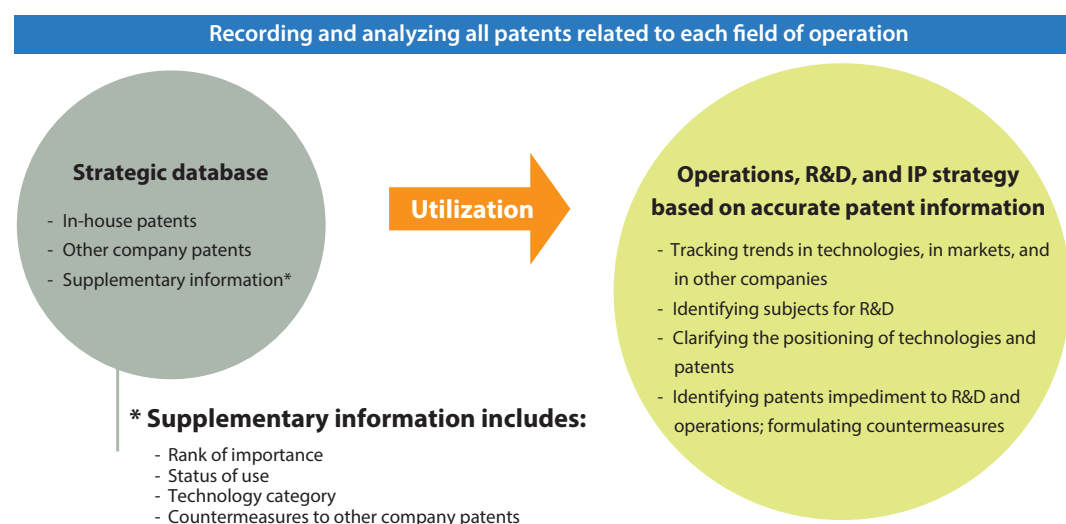
The Asahi Kasei Group maintains a strategic database (SDB) of patent information to enable strategic analysis in the management of its IP portfolio. The information contained in the SDB is used for the advancement of business operations, R&D, and IP activities.

One unique characteristic of the SDB is the inclusion of supplementary information specific to each individual patent (both in-house patents and other company patents) as related to each R&D project. The supplementary information includes a rank of importance, status of use, technology category, and countermeasures to other company patents.

Key aspects of the utilization of this SDB include 1) tracking trends in technologies, in markets, and in other companies, 2) identifying subjects for R&D, 3) clarifying the positioning of technologies and patents, including those of other companies, and 4) identifying patents which would pose an impediment to R&D and to business operations, and formulating countermeasures.

Through maintenance and utilization of the SDB, the IP Liaison Group and the Technical Information Group of Corporate IP work closely together with each R&D organization to formulate and implement countermeasures in response to other company patents as well as plans for in-house patent applications.

Strategic Database of Patent Information



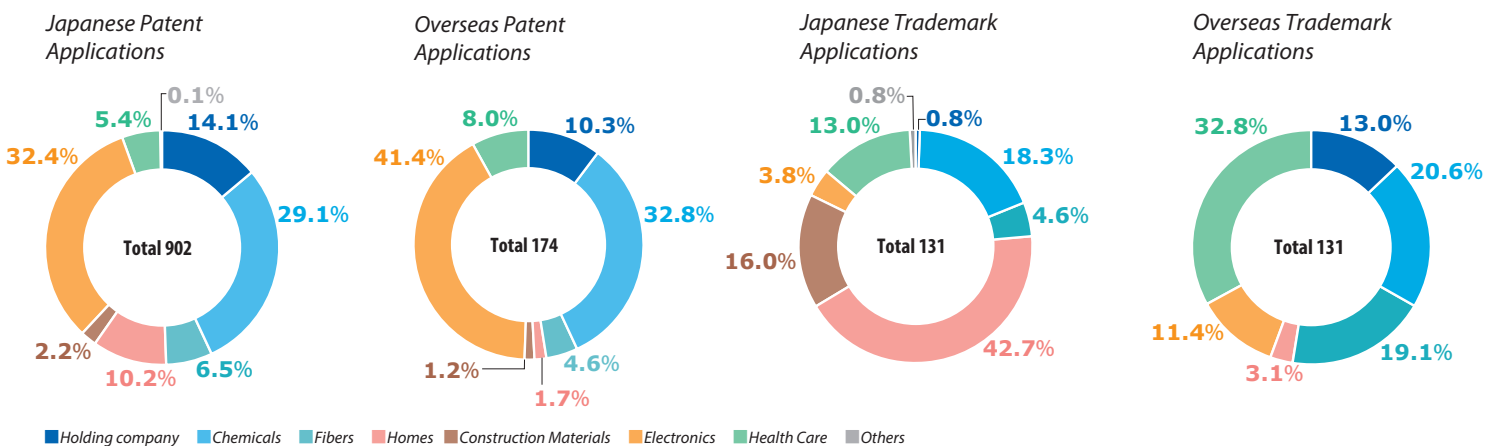
Number of IP Applications and Rights

The Asahi Kasei Group works to continuously maintain an IP portfolio that will secure market superiority in business operations. The IP portfolio is reviewed annually to determine whether to file patent applications and whether to maintain or abandon patents and applications, as well as the feasibility of licensing.

Among Japanese patents, those in practice amount to 40% (38% in the previous year) of the total. Combined with those scheduled to come into practice, this rises to 63% (64% in the

previous year). The 38% of the total which is classified as “defensive and other” includes many strategically essential patents which serve to inhibit the entry of competitors.

The number of patents held overseas is steadily rising with patent protection playing an increasingly important role for global operations.



Number of Applications, by Segment

From January 1, 2013, to December 31, 2013

		Holding Company	Chemicals	Fibers	Homes	Construction Materials	Electronics	Health Care	Others ¹	Total
Patents	Japanese	128	265	59	93	20	295	49	1	902 ²
	Overseas	18	57	8	3	2	72	14	0	174 ³
Trademarks	Japanese	1	24	6	56	21	5	17	1	131
	Overseas	17	27	25	4	0	15	43	0	131

Number of IP Rights, by Segment

As of December 31, 2013

		Holding Company	Chemicals	Fibers	Homes	Construction Materials	Electronics	Health Care	Others ¹	Total
Japanese Patents	In practice	48	1,083	214	309	146	687	139	18	2,644
	Scheduled to be in practice	261	576	94	165	46	348	19	7	1,516
	Defensive & other	127	1,128	155	126	113	710	169	17	2,545
	Total	436	2,787	463	600	305	1,745	327	42	6,646 ²
Overseas Patents	U.S.	102	553	45	0	4	256	113	8	1,081
	Europe	130	793	122	0	40	208	357	3	1,653
	Asia	141	1,505	146	0	19	555	160	5	2,531
	Other	39	224	17	0	14	27	87	0	408
	Total	412	3,075	330	0	77	1,046	717	16	5,668 ²
Trademarks	Japanese	219	536	1,503	534	244	124	385	41	3,584 ²
	Overseas	383	832	747	6	41	244	349	0	2,602

¹ Others: Asahi Kasei Engineering Corp.

² Not equal to sums of individual totals due to sharing of certain IP rights among more than one segment.

³ Overseas applications for a single patent family are counted as one.

Strategic IP Management

Management of IP Rights

Based on the view that IP is fundamental to obtain profit in business, the acquisition, maintenance, and enforcement of IP rights are performed in accordance with the Asahi Kasei Group Intellectual Property Management Regulations.

Once IP is identified in R&D, researchers, liaison personnel, and technology information specialists work in concert to acquire IP rights. Application procedures and the storage and management of IP information are almost fully computerized, enabling the swift exchange of information with researchers and IP law firms located around the world. We enhance close communication and coordination with IP law firms as important strategic partners in the management of IP.

Managing Trade Secrets and Preventing Unauthorized Technology Outflow

Thorough management of trade secrets and other confidential information in the Asahi Kasei Group is performed in accordance with its Secrecy Maintenance Regulations. Information in digital format is managed in accordance with Basic Regulations for Information Systems and information about individual people is managed in accordance with the Guideline for Personal Information Management. The Asahi Kasei Group implements strict measures to prevent unauthorized or unintentional outflow of technological information and know-how in accordance with its basic policy and management standards for prevention of technology outflow. The Asahi Kasei Group also applies internal guidelines summarizing related precautions to take when entering business overseas as well as procedures to ensure the preservation of prior-use rights in China.

To raise awareness and understanding regarding such issues among personnel, a wide range of education and training measures are performed.

Corporate Brand Strategy

The corporate brand “Asahi Kasei” has been registered in 76 countries, and the current Group Logo combining “Asahi” with “KASEI” in upper case has been used since 2007. The Group Logo is an expression of innovation, and is designed to promote correct pronunciation. In the growing market of China, Chinese characters for “asahi” and “kasei” are added to the logo to enhance recognition of the Asahi Kasei brand.

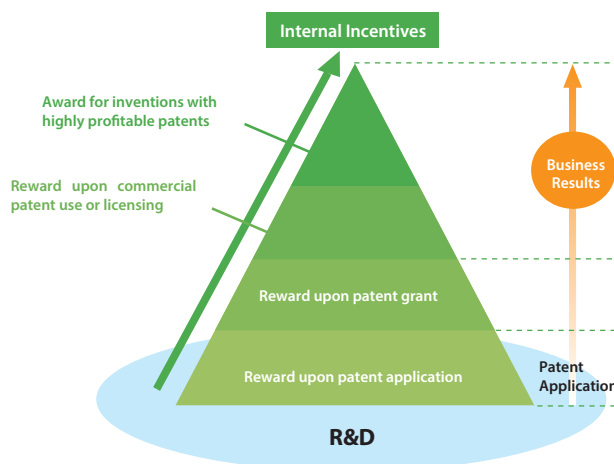
The Group Logo and Company Logotype represent the identity and reliability of the Asahi Kasei Group. We have established a Group Emblems Guideline to ensure unified usage around the world within a defined style, format, and application range. The unified global Asahi Kasei Group identity is further reinforced by our Information Disclosure

Policy and Information Disclosure Regulation requiring compliance with the Group Emblems Guideline. To confirm adherence to our established brand management standards, Corporate Communications reviews the content of exhibits, advertisements, and external announcements before they are made public.

Incentives for Innovation

Incentives for employee innovation include lump-sum rewards upon application for and grant of patents, and special rewards for inventors who make exceptional contributions to business operations. In April 2005, we made substantial revision to our invention reward system eliminating any theoretical limits on rewards and rewarding inventors when a patented invention is commercialized. Such incentives serve to focus the minds of our young researchers on the objective of obtaining IP rights and further promote inventions which result in commercialization. For researchers based outside of Japan, we have separate incentive systems tailored to the law and customs of each country. These systems are continuously reviewed, with further revisions made as appropriate in accordance with the times and as deemed fair and effective to foster greater motivation to obtain IP rights which make valuable contributions to operations in line with the IP strategy of each business.

System to Reward Innovation (in Japan)



Human Resource Development

Recognizing human resources as an essential key to the execution of its IP strategy, the Asahi Kasei Group implements a comprehensive range of measures for the education and training of personnel in matters related to IP. The systematic program begins with orientation for new employees, and includes uniform training sessions for technical personnel and for marketing personnel throughout the Asahi Kasei Group. In addition, “e-learning” programs are made available on the corporate intranet to enable personnel to further enhance their practical knowledge related to IP rights.



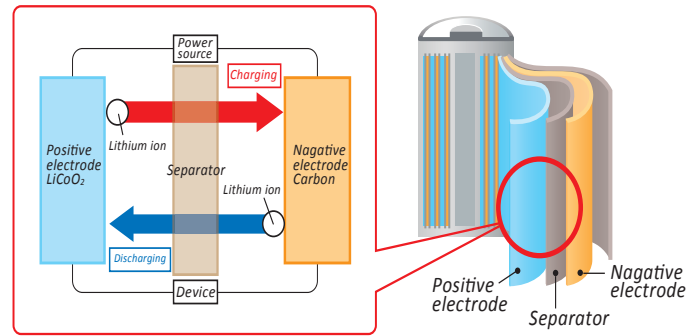
Lithium-ion battery (LIB)

- The Charles Stark Draper Prize -

Asahi Kasei Fellow Dr. Akira Yoshino received the 2014 Charles Stark Draper Prize for Engineering in recognition of his groundbreaking contributions to the creation of the lithium-ion battery (LIB). The Charles Stark Draper Prize is awarded annually by the US National Academy of Engineering to people who made outstanding contributions to engineering. It has been called the Nobel Prize of Engineering.

Dr. Yoshino invented a completely new combination of carbon for the negative electrode and LiCoO_2 (lithium cobalt oxide) for the positive electrode, and developed the fundamental technology for the LIB.

Not only has the LIB facilitated widespread adoption of many portable electronic devices such as mobile phones and notebook computers, but it is also increasingly used in electric vehicles as an environmentally friendly means of transportation.



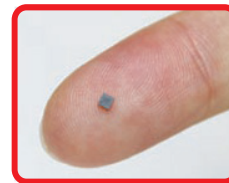
Automatic adjustment of electronic compasses - Prize for Science and Technology in Development Category, The Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology -

Asahi Kasei Group Fellow Dr. Masaya Yamashita received the Prize for Science and Technology in the Development Category of the 2014 Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology, in recognition of a method to automatically adjust electronic compasses. The Prize for Science and Technology is awarded annually to people who made outstanding contributions to science and technology in Japan.

Electronic compasses measure geomagnetism to determine azimuth. They are influenced by strong magnetic fields from surrounding magnetic parts such as speakers, which introduce errors in the calculation of azimuth. With conventional electronic compass technology, users are required to regularly perform a complicated calibration procedure to eliminate such errors.

This award recognized the invention of the world's first method to enable automatic collection of geomagnetic data for continuous and accurate calculation of azimuth while the portable device is used in a natural manner.

The technology is used for electronic map applications to rotate the map to match the direction the users are facing. This has been applied to a wide range of portable devices, especially smartphones and tablet PCs.



3-axis electronic compass
AK8963C



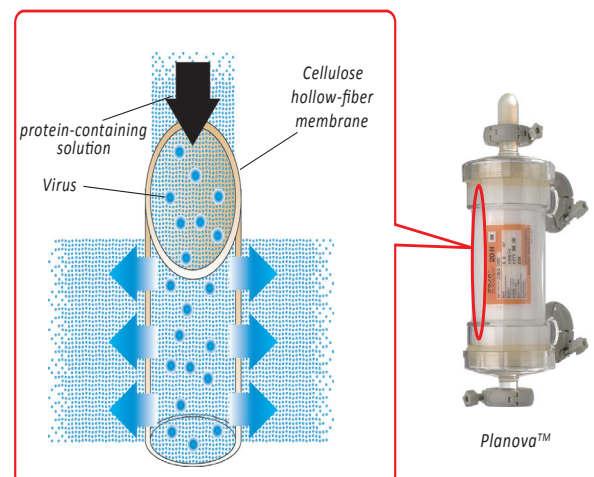
Map application in a portable device

Virus removal filters

- The Okochi Memorial Technology Prize -

Mr. Tetsuo Sato and Mr. Shoichi Ide of Asahi Kasei Medical Co., Ltd. received the 60th Annual Okochi Memorial Technology Prize for the development of production technology for virus removal filters and the establishment of a market for them. The Okochi Memorial Prizes are a prestigious series of prizes with a rich tradition, awarded to honor outstanding achievements in the field of manufacturing engineering and industrial technology in Japan.

This prize was awarded in recognition of the contribution to enhanced safety in the manufacture of biotherapeutic products through the establishment of production technology for Planova™ virus removal filters and obtaining their widespread use by manufacturers of plasma derivatives and biopharmaceuticals worldwide. The outstanding performance of Planova™ filters featuring reliable virus clearance, high rates of protein recovery, and effectiveness against various kinds of virus has been widely recognized by manufacturers of biotherapeutics in many countries. It is also expected that the use of Planova™ filters will soon begin in emerging countries.



Planova™

Major External Commendations

Fiscal Year	Commendation	Organization	Title
2014	Heroes of Chemistry Award	American Chemical Society (ACS)	Non-Phosgene Polycarbonate (PC)
	The Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology Prizes for Science and Technology	Ministry of Education, Culture, Sports, Science and Technology	Development of Electronic Compass and Automatic Adjustment Method
2013	The Okochi Memorial Technology Prize	Okochi Memorial Foundation	Development of production technology for virus removal filters and the establishment of a market for them
	The CSJ Award for Technical Development	The Chemical Society of Japan	Development and commercialization of gold-nickel oxide (Au-NiOx) nanoparticle catalysts with a core-shell structure for methyl methacrylate (MMA) production
	The Charles Stark Draper Prize	The National Academy of Engineering (US)	Engineering of the rechargeable lithium-ion battery that enables compact, lightweight mobile devices
	The Global Energy Prize	Global Energy Partnership	Invention of Rechargeable Lithium-Ion Battery, which is An Essential Element for Mobile Electronic Devices, Electric Vehicles and Hybrid Electric Vehicles
2012	National Commendation for Invention The Imperial Invention Prize	Japan Institute of Invention and Innovation	Automatic Adjustment Technology of Electronic Compass
	The Okochi Memorial Technology Prize	Okochi Memorial Foundation	Development of a Genetically-Engineered Thrombomodulin Agent for the Treatment of Disseminated Intravascular Coagulation (DIC)
2011	National Commendation for Invention The Invention Prize	Japan Institute of Invention and Innovation	Polysulfone-Membrane Hemodialyzer
2010	The Commendation for Science and Technology by the Minister of Education, Culture, Sports, Science and Technology Prizes for Science and Technology	Ministry of Education, Culture, Sports, Science and Technology	Comprehensive Research on Thrombomodulin as An Antithrombotic Molecule on Vascular Endothelial Cell
2009	National Commendation for Invention The Invention Prize	Japan Institute of Invention and Innovation	Non-Fluorocarbon Gases High-Performance Phenolic Resin Foam
	The Okochi Memorial Production Prize	Okochi Memorial Foundation	Development of Separator for High-Safety and High-Performance Lithium-Ion Secondary Batteries
2008	Medal with Purple Ribbon	Government of Japan	Development of Novel Process for Polycarbonate Production from CO ₂ without Using Phosgene
	National Commendation for Invention The Invention Prize	Japan Institute of Invention and Innovation	The Catalyst for the 2nd Stage Reaction in the Direct Methyl-Esterification to Produce MMA
	The CSJ Award for Technical Development	The Chemical Society of Japan	Direct Methyl Esterification Route for MMA – Development of Its Catalytic Chemistry and Process Engineering –
	The Award of the Society of Polymer Science, Japan	The Society of Polymer Science, Japan	Development of Microporous PE Film which Contributed to Dissemination and Innovation of Lithium-Ion Battery

Local Commendations for Invention (Japan Institute of Invention and Innovation)

Fiscal Year	Commendation	Area	Title
2013	The Encouragement for Invention Prize	Kanto	Modified Conjugated Diene Polymer for Tire Tread
	The Prize of Okayama Prefectural Governor	Chugoku	Process for Stabilizing Oxymethylene Copolymer
2012	The Encouragement for Invention Prize	Kanto	Ion-exchange Membrane
	The Prize of Okayama Prefectural Governor	Chugoku	Innovative Catalyst for Production of MMA by Direct Methyl-Esterification
2011	The Encouragement for Invention Prize	Kanto	Housing Design Method Using Sunlight Simulation
2010	The Encouragement for Invention Prize Chairman of Japan Patent Attorneys Association	Kyushu	Automatic Adjustment Technology of Electronic Compass
	The Encouragement for Invention Prize	Chubu	Surface-Grooving Method for ALC Wall Panels