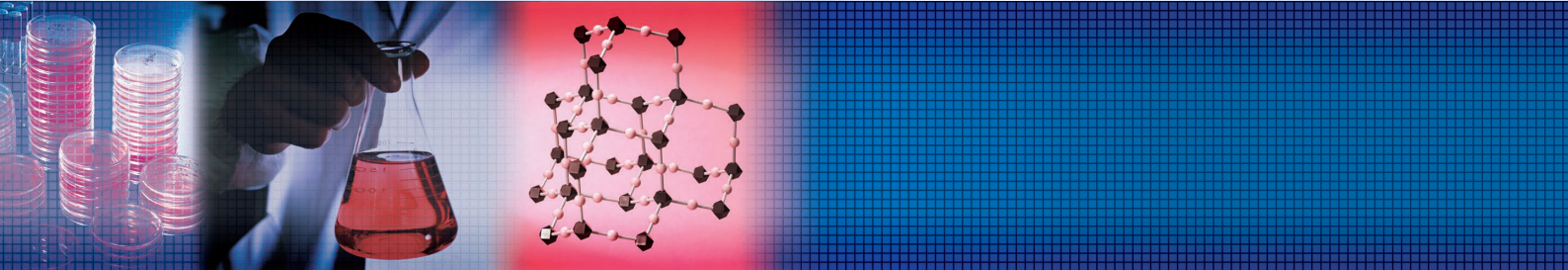


September 2012

**KANEKA CORPORATION**



# INTELLECTUAL PROPERTY REPORT 2012

*April 2011 to March 2012*

**kaneka**

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## Introduction

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Kimikazu Sugawara, President

I offer my greetings with the issue of KANEKA Group's *Intellectual Property Report 2012*.

KANEKA Group drew up its long-term management vision, "DECLARATION OF KANEKA UNITED for the Future," in September 2009 and aims to become a truly global enterprise whose presence is felt in the world market, including in newly developing countries.

An increased sense of a slowing global economy and heightened risks of Japan's own slowing economy have placed KANEKA Group in an increasingly difficult environment.

Within this environment, we consider the following tasks our immediate challenges as we aim to fulfill our long-term management vision: strengthening existing businesses and early development of new businesses, making business model changes to orient ourselves more toward markets and clients, raising cost performance of the entire value chain, and accelerating a globalization that incorporates on-the-ground perspectives.

We consider it vitally important to adapt quickly to business models and the business environment; turn the cycle of intellectual property creation, protection, and utilization based on intellectual property portfolio management; and carry out strategies uniting business strategies, research and development strategies, and intellectual property strategies, for us to overcome these challenges.

We hope that *Intellectual Property Report 2012* serves to deepen your understanding of our intellectual property strategy and actions relating to it. We ask for your ongoing and increased support.

September 2012

Farseeing and collaboratively value-creating group  
(Dreamology Company)

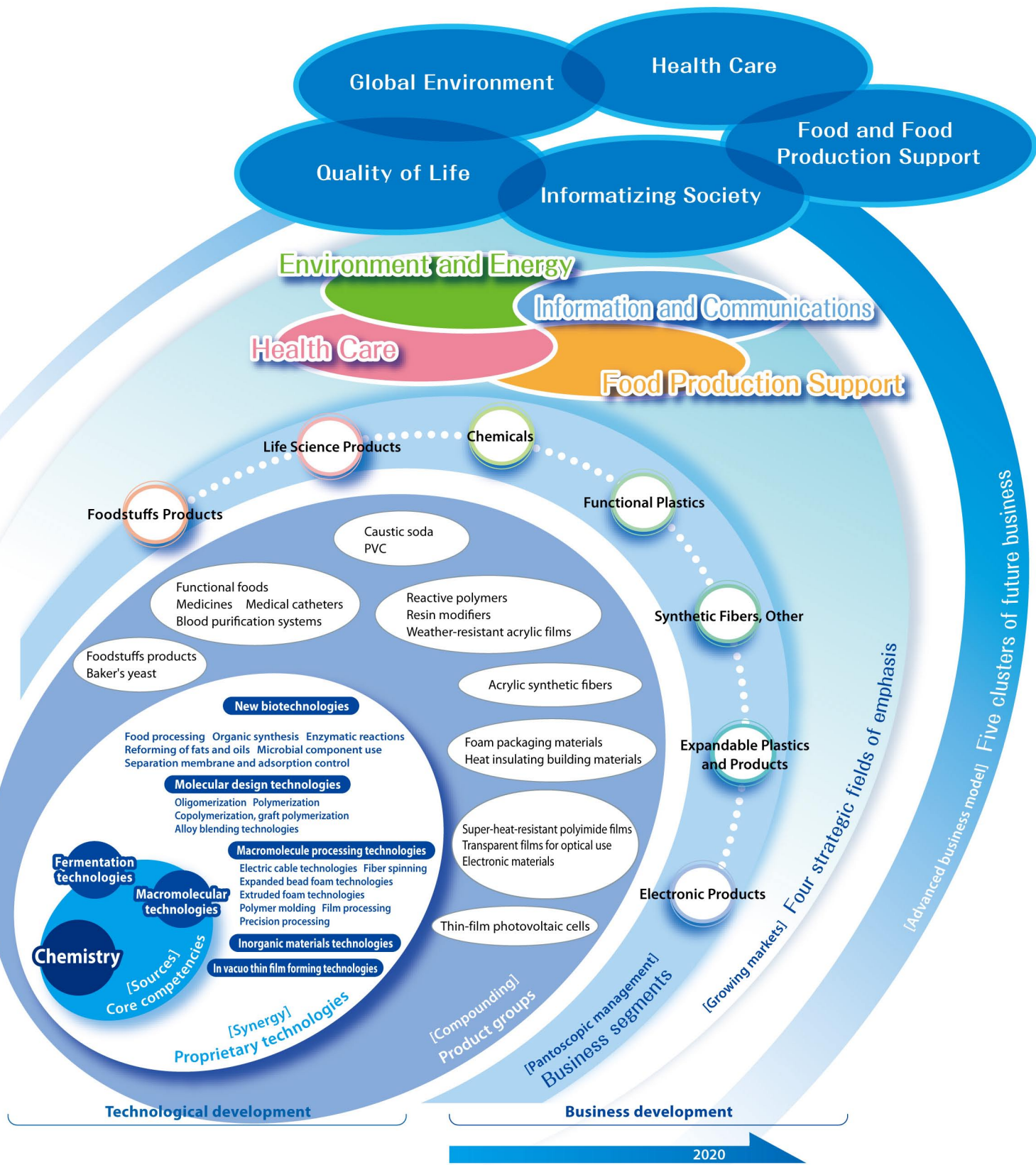


Fig. 1

KANEKA's technological and business development



# 1. Core Competencies and Business Model

Since its foundation, KANEKA has promoted technological development with macromolecular and fermentation technologies as its core competency fields (Fig. 1). We have created our highly specialized product groups through these multiple proprietary technologies and their synergetic effects. KANEKA has integrated a variety of technical capabilities

and business models under a new idea called "Pantoscopic Business Management."

Starting with this, and looking from the perspectives of customers, a materials-to-sale value chain, and globalization, we will construct business models that flexibly respond to the changing environment with enterprises and products.

## 2. Strategic Fields of Emphasis and Business Strategy Direction

Figure 1 shows the strategic fields of emphasis, current business segments, and an outlook on future business clusters.

There are four strategic fields to emphasize and expand, in which KANEKA will make concentrated investments of resources looking ahead to 2020. These are "Environment and Energy," "Health Care," "Information and Communications," and "Food Production Support." These fields are future growth markets and domains where KANEKA can contribute to society.

At present, we operate in the seven business segments of Chemicals, Functional Plastics, Expandable Plastics and Products, Foodstuffs Products, Life Science Products, Electronic Products, and Synthetic Fibers, Other. Each of these fields will expand their businesses within the strategic fields of emphasis by creating new business and by M&A. In the future, KANEKA intends to

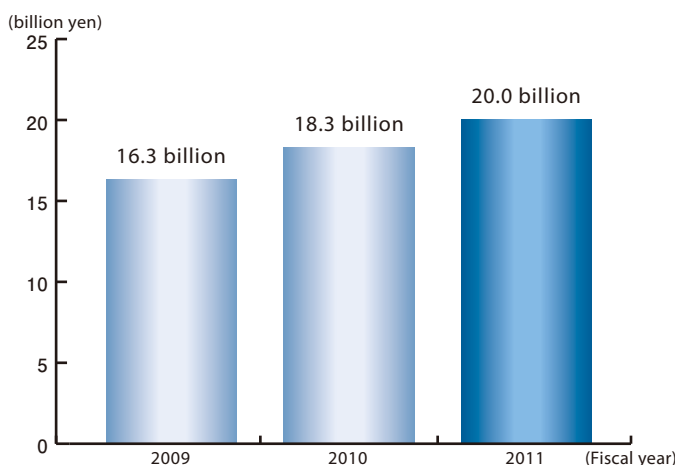
evolve these into five major business clusters.

In 2020, we plan to have five new business clusters, namely: a "Business cluster contributing to the Global Environment," a "Business cluster contributing to Health Care," a "Business cluster contributing to Food and Food Production Support," a "Business cluster contributing to an Informatizing Society," and a "Business cluster contributing to Quality of Life."

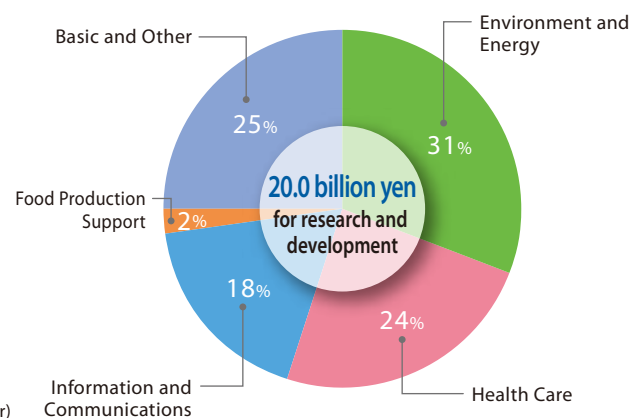
The total amount of research and development expenditures by KANEKA Group was 20.0 billion yen for fiscal 2011 (Fig. 2).

Of this, 75% (15.0 billion yen) was directed to the four strategic fields of emphasis for promoting business development (Fig. 3).

We will increase the share of investment in Food Production Support in the future.



**Fig. 2** Transition of research and development expenditure (by KANEKA Group)



**Fig. 3** Research and development expenditures by strategic field of emphasis for fiscal 2011 (by KANEKA Group)

# 3. Strategic Fields of Emphasis and Overview of Intellectual Property

**What lies at the heart of our corporate philosophy, "By a creative integration of people and technology, we will collaboratively create value that breaks fresh ground for the future and contribute to the global environment and to quality of life," is sustainable development, for which innovation is indispensable. We recognize that intellectual property (rights) supports innovation.**

**Guided by this basic recognition, we will carry out our business strategies as a research-and-development-oriented company by uniting business strategies, research and development strategies, and intellectual property strategies.**

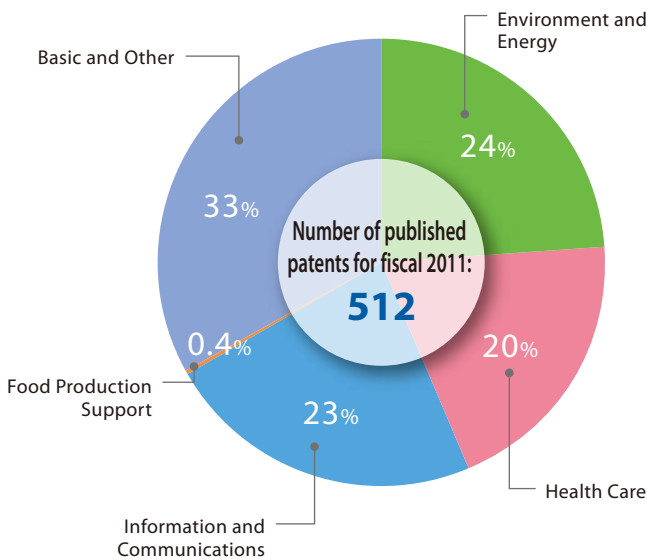
Our basic policy concerning the execution of intellectual property strategy is to contribute to competitive business development and new business creation based on intellectual property portfolio management. To do

this, we will pour our efforts into the strategic fields of emphasis, promote globalization, enhance group management, and build up a system to promote M&A. In the strategic fields of emphasis, we are promoting global as well as domestic patent application and acquisition, particularly in the significantly developing Asia region.

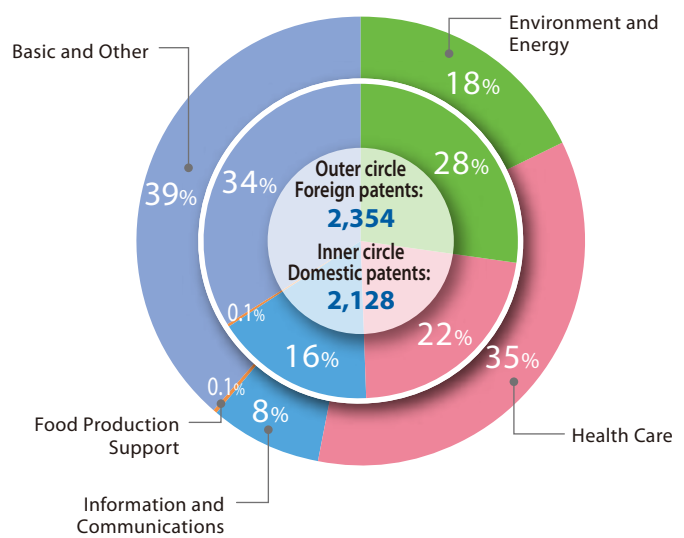
In fiscal 2011, 512 domestic patent applications by KANEKA Group were published, 343 (67%) of which are in the four strategic fields of emphasis (Fig. 4).

At the end of March 2012, KANEKA Group possessed 2,128 domestic patents, 1,406 (66%) of which are in the four strategic fields of emphasis (Fig. 5).

In addition, KANEKA Group possessed 2,354 foreign patents, 1,447 (61%) of which are in the four strategic fields of emphasis (Fig. 5).



**Fig. 4** Number of published domestic patents for strategic fields of emphasis for fiscal 2011 (for KANEKA Group)



**Fig. 5** Numbers of patents possessed (by KANEKA Group) in strategic fields of emphasis as of the end of March 2012

## 4. Analysis of Marketability and Dominance in Markets of Technologies

KANEKA aims to be a research-and-development-oriented company. All our employees are making efforts to develop innovations that benefit society. We are developing new products and new markets using new

technological developments and advancements. Here we describe our competitive edge and market growth potential, in alignment with our four strategic fields of emphasis.

### Environment and Energy

Our company holds technologies and materials related to the environment and energy, first of all in the businesses of high-conversion efficiency thin-film photovoltaic cells and peripheral enterprises and also in the new businesses of organic EL lighting devices, battery materials for fuel cells and lithium-ion rechargeable batteries, and other technologies.

We develop various environmentally friendly products such as the world's first soft heat-resistant biopolymer of 100% plant origin (Kaneka Biopolymer AONILEX), as well as expandable plastic products whose slogans are "lightweight" and "energy-saving." Regardless of whether they are new or existing businesses, we will further expand our areas of contribution to the environment and energy savings.

In fiscal 2011, we developed high-efficiency heterojunction silicon photovoltaic cells that use no silver in a joint project with Belgium's Interuniversity Microelectronics Center (IMEC).

### Health Care

This field is advancing primarily through medical equipment, medicinal bulk intermediates, and functional foodstuffs business, but we also will expand our business through M&A activities.

Also, we will create new markets and products by taking advantage of our proprietary biotechnologies and material technologies in the business fields of regenerative medical devices, medical polymers, biologics, and materials for preventative care and nursing care.

In fiscal 2011, we developed and began sales of a chrysanthemum flower extract that is a functional food ingredient able to moderate uric acid levels.

### Information and Communications

We are developing new businesses such as opto-electro chemicals used in LED lighting and elsewhere; thermal solution materials able to deal with high heat problems in increasingly compact and high-capability devices; and transparent conductive films, using the macromolecule technologies in which we have excelled. Meanwhile, we will advance our electronics technologies and materials technologies such as polyimide film and optical film to create new products that will support society in the future.

In fiscal 2011, we developed transparent conductive films for touchscreens and organic insulation coating materials for thin-film transistors used in display screens.

### Food Production Support

KANEKA has wide-ranging potential to cope with the issue of food shortages caused by population increases.

We will create new business in stockbreeding and cultivation support materials such as functional feed material, and other farm production support materials such as plant supplement materials.

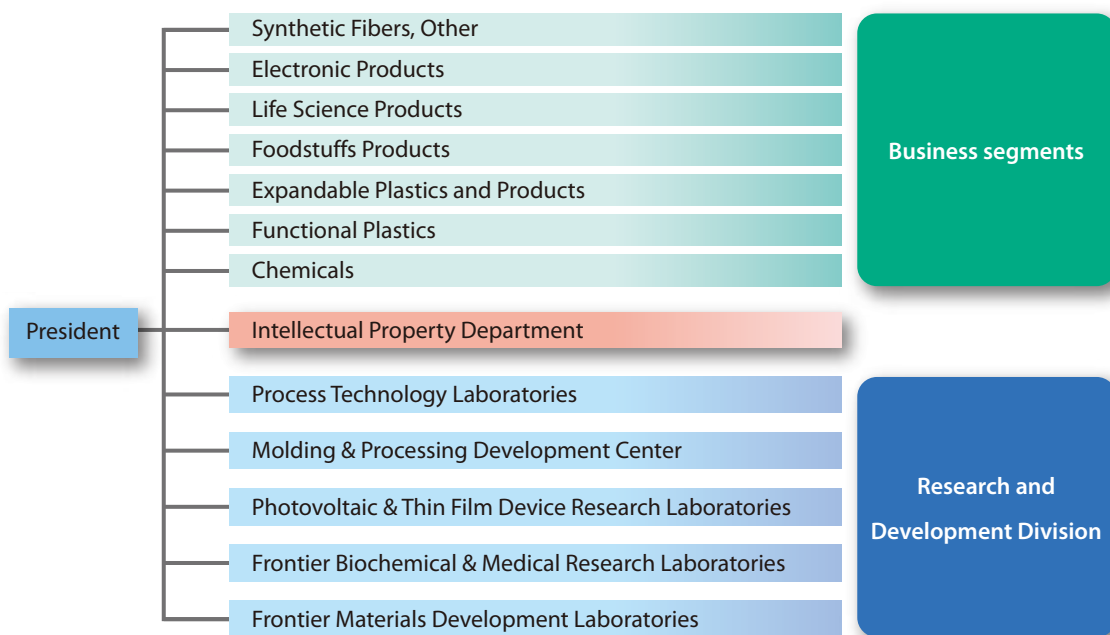
## 5. Research and Development-Intellectual Property Relational Diagram; Research and Development Cooperation and Affiliation

Figure 6 shows the relationship of research and development to intellectual property in KANEKA.

KANEKA's research and development system is managed by five research institutes, which report directly to the president. The individual institutes are functionally linked to the research organizations of the business segments and aim for the distribution, effective use, and synergistic effect of research and development resources such as personnel, materials, funds, and information, and are working to

advance their respective research and development themes. As a system under direct control of the president, the Intellectual Property Department develops intellectual property strategies and manages intellectual property portfolios for the entire KANEKA Group.

In addition, we have assigned an intellectual property committee member to each Research and Development institute and each business segment to effectively drive intellectual property efforts.



**Fig. 6** Relational diagram of Research and Development Division and Intellectual Property Department

As for research and development activities, we are globally developing open innovation, including by acquisition and development of overseas research and development bases. By creatively combining external technologies, we are promoting an innovative change of research and development along with process innovation as an innovative change of production to develop and propose earth-friendly processes.

Cooperating with the Japan Aerospace Exploration Agency (JAXA), we are researching heat-resistant metal substitutes for aerospace craft and developing a new thermoset imide resin with excellent processability for manufacturing highly heat-resistant carbon-fiber-reinforced composite material. We opened the Kaneka Fundamental Technology Research Alliance Laboratories at the Osaka University Graduate School of Engineering in the Osaka University Suita Campus Osaka University Techno Alliance Building and began joint research centered on increasing efficiency of

organic ELs, high-efficiency photovoltaic cells, and other themes.

In July 2011, our affiliate company GeneFrontier Corporation began sales of a "Reconstituted Cell-Free Protein Synthesis Kit," which enables fast and easy synthesis of proteins in a test tube by adding template DNA or mRNA to a reaction mixture. This was developed in cooperation with Takuya Ueda, Professor at the Tokyo University Graduate School of Frontier Sciences.

Our antifreeze protein extracted from radish sprouts, jointly developed with BICC WORLD CO., LTD. (based in Himeji, Hyogo Prefecture) has been used in a major noodle manufacturer's frozen noodles. We began full-fledged sales of the protein in March 2012.

We have reached an agreement with vocational school Mode Gakuen to collaborate on hairdressing technology, to promote development of wigs and other items in the head ornamentation products field.



## 6. Policies Concerning Acquisition and Control of Intellectual Property, Control of Trade Secrets, and Prevention of Technology Leaks

KANEKA has established intellectual property control regulations and taken care to carry out appropriately the creation, protection, and utilization of intellectual property.

**The Intellectual Property Department has established the slogan "High-quality, speedy, and global" as its operations objective concerning acquisition and control of intellectual property. It aims to strengthen a system for acquiring and utilizing foreign patents, and at the same time to enrich the companywide workflow of intellectual property operations using its intellectual property control system to accelerate the intellectual property business process, strengthen documentation control, and improve work efficiency.**

We control trade secrets by having the employees thoroughly informed of the contents of the compliance guidebook edited by the CSR committee, as well as of employment regulations and know-how control procedures.

To encourage excellent inventions, we have instituted a commendation system for outstanding inventions. An outstanding invention is commended with an emphasis on quality within 2 years after the filing of the applica-

tion for a patent. We commended 10 outstanding inventions during fiscal 2011.

In fiscal 2011, we instituted "Grand Patent Master" awards for inventors with thirty registered patents and "Patent Master" awards for those with fifteen registered patents over the course of fifteen years of patent applications. We aim to increase incentive to invent and encourage higher rates of patent registration through this program. In our first fiscal year for the program (2011), we awarded two inventors with the Grand Patent Master award and thirty-three with the Patent Master award for their respective cumulative achievements. We instituted requirements for a double prior-art search by both the inventor(s) and an external searching agency before patent application, in order to promote higher rates of patent registration, in fiscal 2011.

Regarding remuneration for an employee's invention, we determine the amount according to the results of an examination by the Remuneration Review Committee based on invention remuneration regulations and in consideration of the working profit and the royalties income for the preceding three years. The result of the review is released within the company. No upper limit is set to the remuneration amount.

## 7. Contribution of License-Related Activities to Businesses

Generally, the main objectives for acquiring and controlling intellectual property rights are to maximize the profit from one's own business and to gain direct profit from the intellectual property.

**KANEKA's prime objective is to maximize the profit from its own business. We will develop business operations to be as advantageous as possible, using patent rights as exclusive rights.**

On the other hand, we will use licenses if they will effectively expand markets where our technologies have been patented.

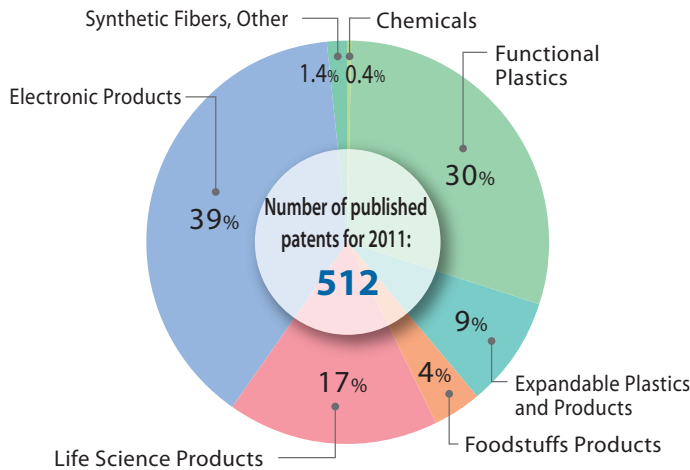
**Also, when we prepare to create new businesses, we will actively build business alliances using licenses and cross-licenses.**

## 8. Contribution of Patent Clusters to Businesses

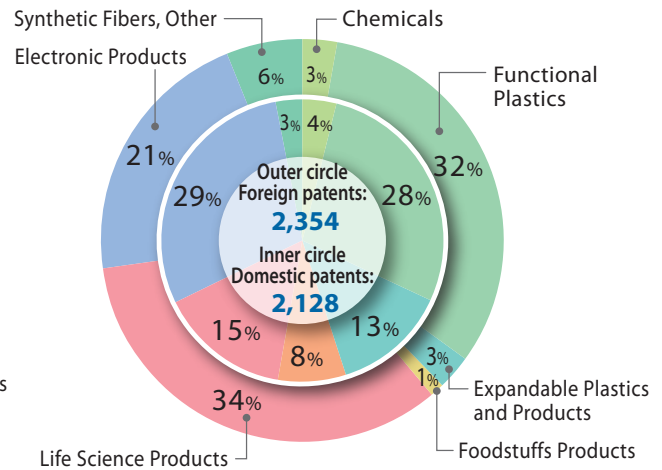
KANEKA seeks to make the most cost-effective use of intellectual property expenditures through filing and registration of foreign patent applications carefully selected within each business segment after an examination of their compatibility with broad-based domestic patent applications and business developments. We also

strive to reinforce foreign intellectual property rights in line with the Asian shift of international business.

As Figures 7 and 8 show, the Functional Plastics, Life Science Products, and Electronic Products segments comprise large portions of KANEKA Group's published domestic patents and patents in effect.



**Fig. 7** Number of published domestic patents by business segment for 2011 (for KANEKA Group)



**Fig. 8** Number of patents possessed (by KANEKA Group) by business segment, at the end of March 2012

**To construct strong patent networks, we have been filing strategic patent applications to cover important themes in research and development for strategic fields of emphasis.**

An example of our patent networks is "Kaneka Biopolymer AONILEX" (below, "AONILEX").

AONILEX is a polyester polymer produced from vegetable oils and fats and other biomasses by microorganisms. Being 100% plant-derived with excellent biodegrading properties, it contributes to curbing the increase of carbon dioxide and to protecting the environment.

Concerning its physical properties, AONILEX exhibits a wide range of physical properties from hard to soft in comparison with a representative biopolymer, polylactic acid (PLA), which is a hard polymer. It also is superior in heat and hydrolysis resistance and in water vapor barrier properties. It can be used in farming and construction materials (mulch films, etc.) and packaging materials (compost bags, etc.), as well as in many other products such as bottles and other containers, interior materials for automobiles, and electronic equipment. Already it is being used in some products (grass cutting string for grass cutters, erasers).

Kaneka achieved high-level accumulation of the polymer within the microbial cells using strain breeding techniques and culture techniques developed through joint research with Yoshiharu Doi, Director of the RIKEN Research Cluster for Innovation. Kaneka also developed a clean process to isolate and purify the polymer from the microbial cells. KANEKA also is actively developing molding and processing technologies for AONILEX in order to broaden its use applications.

From May 2011, our Takasago Plant's trial production facility (production capacity 1,000 metric tons/year) has been producing AONILEX. We aim to produce 10,000 metric tons per year and reach sales of 10 billion yen within a few years.

As a result of this research and development, we have filed many patent applications--211 domestically and 312 abroad--pertaining to a wide range of technologies such as strain breeding, culture methods, isolation and purification methods, and use and processing methods. At the end of March 2012, 24 domestic patents and 55 foreign patents remained in effect. The materials patent for AONILEX (US5,292,860, EP0533144B1) will expire in September 2012, but we still have a strong, exclusive patent network including core technology-related patents such as family patents of WO2008/010296 for strain breeding, family patents of WO2006/031940 for the crystallization nucleating agent, and others. While continuing to file applications concerning the fruits of further research and development, primarily in the areas of use applications and processing, we will promote the competitive edge of this business by maintaining and strengthening our patent network with steady acquisition of rights of the applications undergoing examination (100 domestic and 76 abroad).



**Fig. 9** Application examples of "Kaneka Biopolymer AONILEX"

## 9. Intellectual Property Portfolio Policies

**We consider management of intellectual property portfolios to be the basis for the cycle of intellectual property creation, protection, and utilization.**

In the case of KANEKA, the key to intellectual property portfolio management is building up a strong patent network that contributes to our business revenue, based on strong patents that can be enforced.

We make the position of competitors visual with patent maps and formulate patent strategies to promote optimal filing of the patent groups that fit our vision for the future. Our Research and Development Division and business segments formulate and update their intellectual property strategies semiannually and use them as starting points for discussion on the execution of management strategies that unite business strategies, research and development

strategies, and intellectual property strategies.

In addition, to better enhance the management of intellectual property portfolios, we are making efforts to cultivate an intellectual property climate and strengthen patent-mindedness by structuring a consistent, level-specific training system for personnel regarding intellectual property.

In fiscal 2011, we introduced a personal intellectual property records system to enable tracking of individuals' numbers of filed and registered patent applications as well as of attendance of training sessions on intellectual property. Furthermore, with regard to our branding strategy, we instituted and implemented "Product Brand Management Guidelines," whose central aim is to increase the value of the corporate brand "KANEKA."

## 10. Information on Handling Risks (Current State of Exercise of Rights)

**To avoid disputes with other companies in advance, KANEKA always conducts a patent search at the occasion of any proposal of a new theme, proposal for implementing a business, changes in specifications, etc. and secures patent clearance. In addition, when necessary, we make use of advice from outside specialists to adopt the safest policy based on comprehensive judgment.**

**On the other hand, we make it a policy to firmly stand against and promptly deal with any act of patent infringement or imitation by other entities, including with patent infringement lawsuits.**

The patent infringement case filed by KANEKA Corporation in the Federal District Court, Central District of California on October 6, 2009 based on a U.S. patent possessed by this company concerning the reduced form coenzyme Q10 is still pending.

The patent infringement case filed by KANEKA Corporation in the Federal District Court, Northern District of Texas on July 20, 2010 based on two U.S. patents possessed by this company concerning the flame retardant polyester fiber for artificial hair is still pending.

The patent infringement case filed by KANEKA Corporation in the Federal District Court, Eastern District of Texas on July 26, 2010 based on five U.S. patents possessed by this company concerning polyimide film products and relevant manufacturing methods was later transferred to the Federal District Court, Central District of California. As an additional measure, we filed a request for investigation and

an Exclusion Order regarding suspected infringing products with the U.S. International Trade Commission on April 1, 2011. Because the investigation is in progress, the patent infringement case has been suspended.

KANEKA Corporation filed patent infringement cases, based on a European patent in its possession concerning a manufacturing method of an oxidized form of coenzyme Q10, in the Paris District court, France and the Düsseldorf District Court, Germany on October 28, 2010. Of these, the patent infringement case in France is still pending. The Düsseldorf District Court delivered a decision dismissing KANEKA Corporation's claims in the Germany case on grounds of failure to prove infringement, on March 13, 2012. On April 13, 2012, KANEKA Corporation appealed this ruling to the Higher Regional Court of Düsseldorf.

KANEKA Corporation filed a patent infringement case, based on a U.S. patent in its possession concerning a manufacturing method of an oxidized form of coenzyme Q10, in the Federal District Court, Central District of California on March 22, 2011.

As an additional measure, we filed a request for investigation and an Exclusion Order regarding suspected infringing products with the U.S. International Trade Commission on June 17, 2011. Because the investigation is in progress, the patent infringement case has been suspended.

As of the end of July 2012, no intellectual property lawsuit that would greatly affect operations has been filed against the KANEKA Group.

**Cautions Concerning Prospect**

Prospect, planning, policies, management strategies, determination of facts, descriptions concerning the future development, and items other than facts already realized are described based on forecasts, estimations, plans, etc. founded on the information we currently have.

In addition, when making a forecast, we use prescribed premises in addition to the facts already realized. There is no guarantee that such premises are objectively correct or will be realized in the future. The factors that affect the premises include technological and demand trends, the state of competition, the economic environment, fluctuation of the exchange rates, etc.

**Policy Concerning Disclosure**

This company firmly maintains its policy not to disclose matters of major uncertainty in the future or details of its important strategies. Accordingly, this material discloses no such matters.

# KANEKA

**KANEKA Corporation****■ Osaka Head Office ■**

3-2-4, Nakanoshima, Kita-ku, Osaka-shi, Osaka 530-8288, Japan

Phone:+81-6-6226-5050 Fax:+81-6-6226-5037

**■ Tokyo Head Office ■**

1-12-32, Akasaka, Minato-ku, Tokyo 107-6025, Japan

Phone:+81-3-5574-8000 Fax:+81-3-5574-8121