

Toray Industries, Inc.

FY 2013

Intellectual **P**roperty **R**eport

April 1, 2013 — March 31, 2014



TORAY

Innovation by Chemistry

Introduction

In February 2011, Toray Group formulated a long-term corporate vision called “AP-Growth TORAY 2020.” It is a unified roadmap for management activities that focuses on the next roughly 10 years and seeks to ensure that we remain a corporate group of high value for all stakeholders by actively fulfilling our role in social development and environmental stewardship. The “Project AP-G 2013” medium-term management program was established at the same time to promote our efforts for the three year period starting in FY 2011 as the first stage.

In the “AP-Growth TORAY 2020,” we are aiming to become a “corporate group that proactively contributes to social development and environmental stewardship” and a “corporate group that provides high value to all stakeholders” by further expanding our global business as the economic scale of emerging countries is set to surpass that of developed countries, and further concentrating our efforts on expanding our “Green Innovation Business” that contributes to the solution of increasingly critical global environmental problems as well as resource and energy problems.

In February 2014, the “Project AP-G 2016” medium-term management program was established as the second stage of “AP-Growth TORAY 2020” and will be promoted for three years starting in FY 2014. “Project AP-G 2016” adds a growth strategy from a new perspective while continuing with the results and challenges of “Project AP-G 2013.” It promotes four Group-wide projects, namely the “Green Innovation Business Expansion,” “Life Innovation Business Expansion,” “Asia, Americas and Emerging Country Business Expansion,” and “Total Cost Reduction” projects.

Among these, we believe that innovation of technologies through R&D will be indispensable in promoting the “Green Innovation Business Expansion (GR) Project” and the “Life Innovation Business Expansion (LI) Project.” Therefore, we also promote the strengthening of our intellectual property capabilities as a crucial theme of these projects. Also, strengthening global intellectual property capabilities and intellectual property management is a crucial issue in implementing the “Asia, Americas and Emerging Country Business Expansion (AE-II) Project.”

By adopting a trilateral integrated approach that incorporates its business strategies, R&D strategies and intellectual property strategies to realize sustainable growth, Toray Group will strive to realize our corporate philosophy of “Contributing to society through the creation of new value with innovative ideas, technologies and products,” while continually working to raise Toray Group’s corporate value.

Toray Industries, Inc. President Akihiro Nikkaku serves as the chairman of the Committee on Intellectual Property of KEIDANREN (Japan Business Federation) and expert member of the Cabinet’s Intellectual Property Strategy Headquarters. He provides advice for Japan’s intellectual property policies and participated in the establishment of the government’s “Intellectual Property Strategic Program 2014.” He will continue to engage in activities to promote intellectual property policies that will contribute to the enhancement of Japan’s industrial competitiveness.

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Overview of Toray Group

■ Corporate Outline (as of March 31, 2014)

Name: Toray Industries, Inc.
 Established: January 1926
 Paid-in Capital: ¥147,873 million

No. of Group companies: 159 parent company and consolidated subsidiaries (62 Japanese and 97 overseas consolidated subsidiaries)
 No. of employees: 45,881 (consolidated), 7,123 (non-consolidated)

■ Corporate Philosophy

Corporate Philosophy

Contributing to society through the creation of new value with innovative ideas, technologies and products

Corporate Missions



Corporate Guiding Principles

Safety and Environment	Placing top priority on safety, accident prevention and environmental preservation, ensuring the safety and health of our employees, our customers and local communities, and actively promoting environmental preservation
Ethics and Fairness	Obtaining the trust of society and meeting its expectations by acting fairly while maintaining high ethical standards and a strong sense of responsibility and maintaining transparency in management
Customer Focus	Providing customers with new values and solutions, and achieving sustainable growth together
Innovation	Achieving continuous innovation in all corporate activities, and aiming for dynamic evolution and growth
Fieldwork and Initiative	Strengthening fieldwork abilities and initiative, the foundations of our corporate activities, through consistent learning from one another and constant self-driven efforts
Global Competitiveness	Pursuing competitiveness through global top quality standards and cost management, and achieving growth and expansion in the global marketplace
Global Coalition	Developing global coalition through integrated internal linkages and strategic alliances with external parties
Emphasis on Human Resources	Providing an environment where employees find value in their work, and building positive, energetic relationships between people and the organization

Main Businesses

■ Fibers & Textiles:

Filament yarns, staple fibers, spun yarns, woven and knitted fabrics of nylon, polyester and acrylics; non-woven fabrics; ultra-microfiber non-woven fabric with suede texture, apparel products, etc.

■ Plastics & Chemicals:

(Excludes films and plastic products included in IT-related Products segment, listed below) Nylon, ABS, PBT, PPS and other resins and molded products; polyolefin foam; polyester, polypropylene, PPS and other films and processed film products; raw materials for synthetic fibers and plastics; zeolite catalysts; fine chemicals such as raw materials for pharmaceuticals and agrochemicals; veterinary medicines, etc.

■ IT-related Products:

Films and plastic products for information- and telecommunication-related products; electronic circuit materials and semiconductor-related materials; color filters for LCDs and related materials; materials for plasma display panels; magnetic recording materials; graphic materials and IT-related equipment, etc.

■ Carbon Fiber Composite Materials:

Carbon fibers, carbon fiber composite materials and their molded products

■ Environment & Engineering:

Comprehensive engineering; condensers; industrial equipment and machinery; environment-related equipment; water treatment membranes and related equipment; materials for housing, building and civil engineering applications, etc.

■ Life Science:

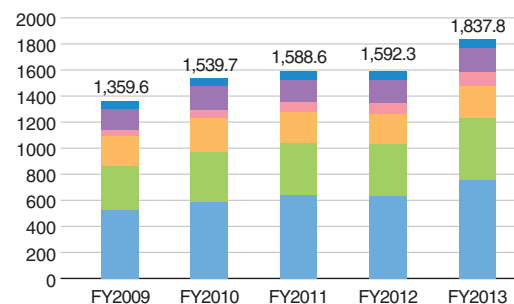
Pharmaceuticals, medical products, etc.

■ Others:

Analysis, physical evaluation, research and other services.

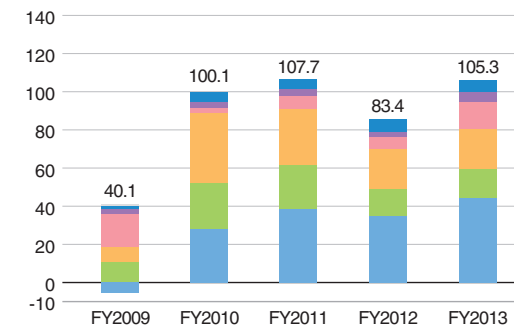
■ Net Sales

(Billions of yen)



■ Operating Income

(Billions of yen)



I Core Technologies and Management Strategies

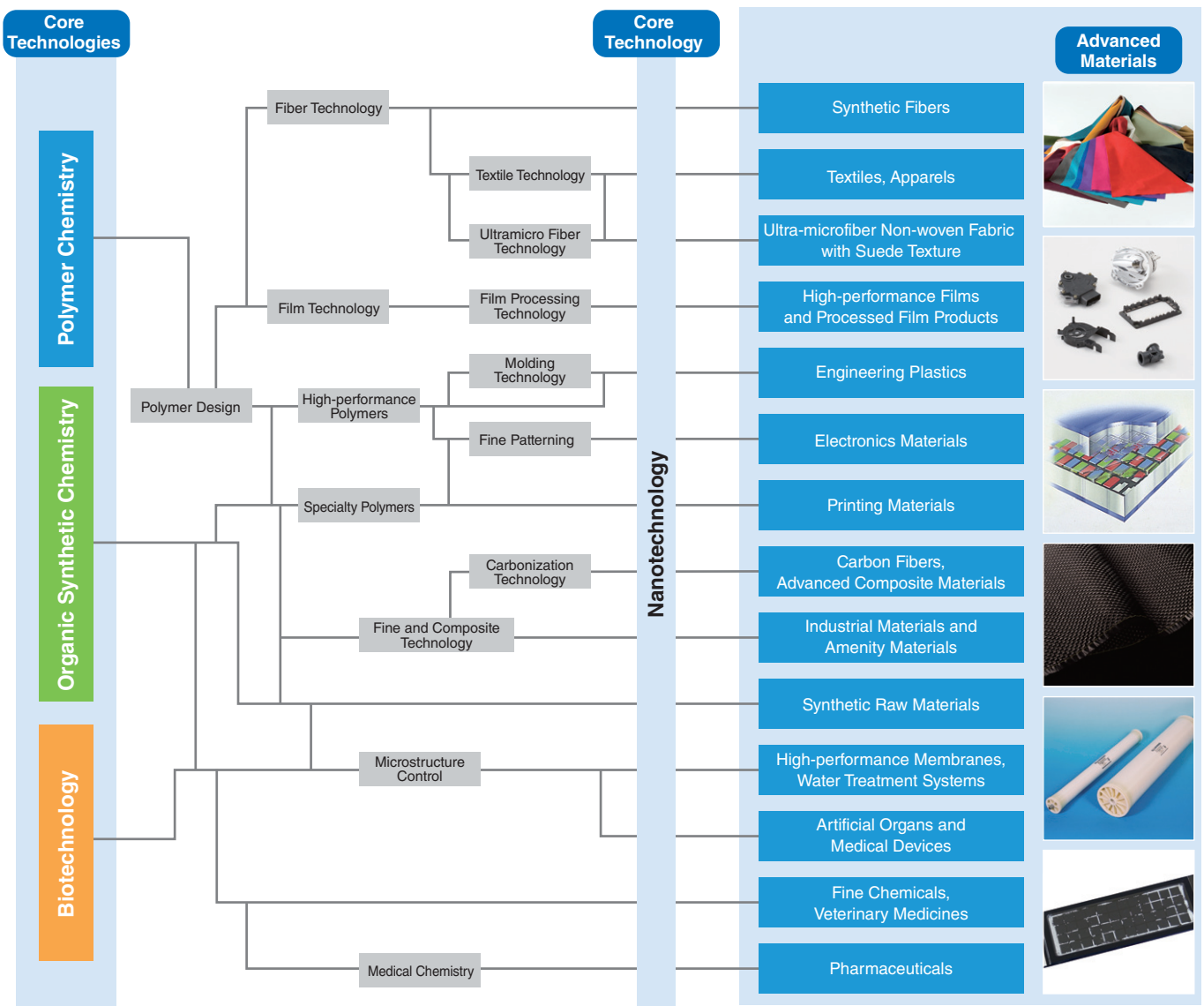
1 Core Technologies

Since its foundation, Toray Group has cultivated “organic synthetic chemistry,” “polymer chemistry,” and “biotechnology” as core technologies. While developing these technologies, we have constantly expanded our businesses from fibers and textiles to films, chemicals and plastics. We have also developed businesses in the fields of electronics & information materials, carbon fiber composite materials, pharmaceuticals, medical devices, and water treatment. In addition to

“nanotechnology,” which represents a new core technology for us, we have developed and commercialized a diverse array of advanced materials by growing and combining these four core technologies in recent years.

With “Innovation by Chemistry” as the corporate slogan, Toray Group will continue striving to contribute to society through the creation of new value by using its four core technologies and their integrated technologies.

Toray Group Technologies and Businesses



I Core Technologies and Management Strategies

2 Management Strategies

In February 2011, Toray Group formulated the long-term corporate vision “AP-Growth TORAY 2020,” looking ahead to the next decade and a medium-term management program, “Project AP-G 2013,” covering a three-year period (FY 2011 to FY 2013), which will serve as the first stage.

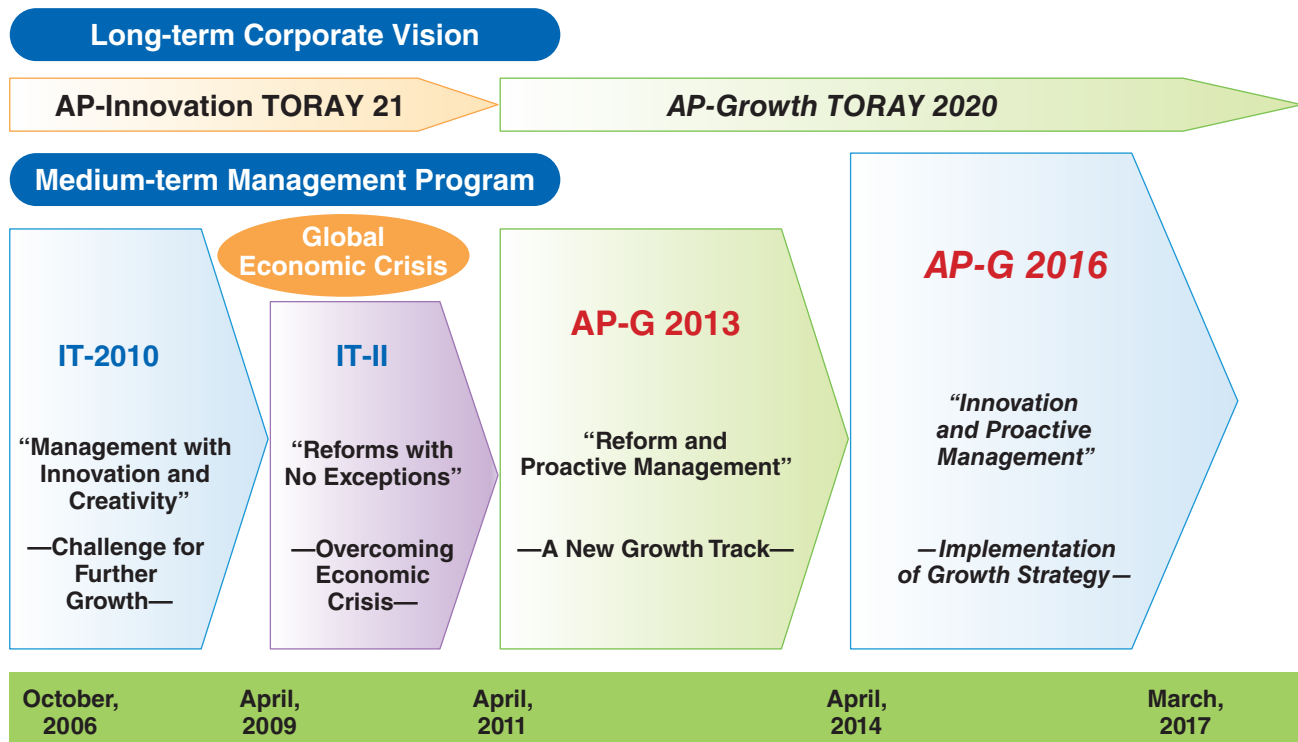
In the “AP-Growth TORAY 2020” long-term corporate vision, we are aiming to become a “corporate group that continually increases revenues and profits,” a “corporate group that proactively contributes to social development and environmental stewardship” and a “corporate group that provides high value to all stakeholders” by promoting further global business expansion and pouring efforts into expanding the Green Innovation Business.

Under the “AP-Growth TORAY 2013” medium-term management program, we worked comprehensively and vigorously to implement our growth strategy and strengthen our

corporate structure in the midst of major changes in domestic and overseas business environments. We also promoted investment in each business field to expand globally and were able to achieve steady results in R&D that will lead to the big new products and technologies of the future.

In February 2014, we established the new “Project AP-G 2016” medium-term management program that covers the three-year period from FY 2014 to FY 2016 as the second stage of “AP-Growth TORAY 2020” and began working on it in April. While continuing with the proactive management strategy of “Project AP-G 2013,” it further improves upon efforts related to the growth strategy, which was added from a fresh perspective, and strengthening the corporate structure. It also further enhances investment and R&D in the aims of business expansion.

■ “AP-Growth TORAY 2020” Long-term Corporate Vision and “Project AP-G 2016” Medium-term Management Program

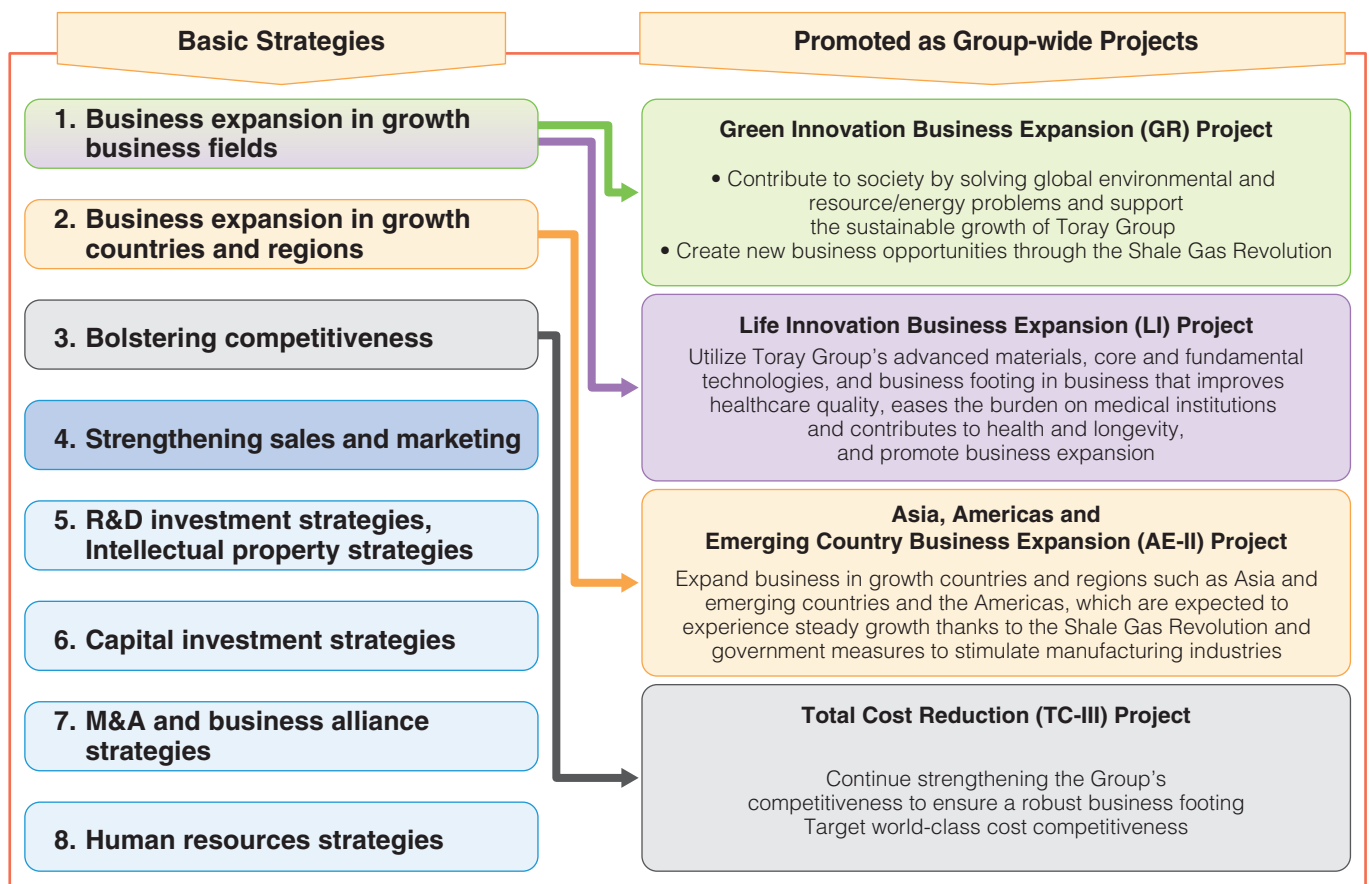


I Core Technologies and Management Strategies

As Group-wide, cross-organizational themes of “Project AP-G 2016,” we will vigorously promote four Group-wide projects, namely the “Green Innovation Business Expansion (GR) Project” that aims to expand business that contributes to solutions for global environmental issues and resource and energy issues; the “Life Innovation Business Expansion (LI) Project” that aims to expand business that improves healthcare quality, eases the burden on medical institutions,

and contributes to health and longevity; the “Asia, Americas and Emerging Country Business Expansion (AE-II) Project” that aims to expand business in growth countries and regions such as Asia and emerging countries and the Americas, which are expected to experience steady growth thanks to the Shale Gas Revolution and government measures to stimulate manufacturing industries; and the “Total Cost Reduction (TC-III) Project” to ensure our robust business footing.

■ Basic Strategies and Company-wide Cross-Functional Projects of “Project AP-G 2016”



See the URL below for details on “Project AP-G 2016.”
http://www.toray.co.jp/ir/management/man_002.html

II Business Strategies and R&D Strategies

1 Basic Strategies by Business Category

The Fibers & Textiles and Plastics & Chemicals businesses, positioned as Core Growth Driving Businesses, aim to actively expand business revenue and profits, mainly in growth business fields and regions, and will support a steady expansion of business for the entire Toray Group in the future.

IT-related Products and Carbon Fiber Composite Materials, designated as Strategically Expanding Businesses, strive to strategically and proactively expand business and drive a medium- and long-term expansion in revenue and profits by implementing measures that include intensively allocating management resources and strengthening responses to

such growth markets as information and telecommunications, automobiles and aircraft, and new energy.

Life Science, which includes pharmaceuticals, medical devices and bio-tools, and Environment Businesses, centered on water treatment, are positioned as Intensively Developing and Expanding Businesses. We are making efforts to develop and expand these businesses through prioritized allocation of management resources to establish these businesses as our next pillar for revenue and profit growth to follow “Strategically Expanding Businesses.”

■ Basic Strategies by Business Category

Core Growth Driving Businesses

Fibers & Textiles, Plastics & Chemicals

Steadily drive business expansion and profit growth of Toray Group

Strategically Expanding Businesses

IT-related Products, Carbon Fiber Composite Materials

Drive revenue and profit growth over the medium- and long-term and achieve strategic and aggressive business expansion

Intensively Developing and Expanding Businesses

Environment (Water Treatment), Life Science

Develop as the next driver for revenue and profit growth to follow IT-related products and carbon fiber composite materials

II Business Strategies and R&D Strategies

2 R&D Segments

The R&D activities of Toray Group are divided into seven segments, one for each business domain, as follows: Fibers & Textiles; Resins & Chemicals; Films; Electronics & Information Related Products; Carbon Fiber Composite Materials; Life Science (pharmaceuticals and medical

devices); and Water Treatment.

The “Business Categories, R&D Segments and Segments” chart shows the relationship between business categories and R&D/segments.

Relationship between Business Categories, R&D Segments and Segments

Business Categories	R&D Segments	Segments	Basic Materials	Advanced Materials
Core Growth Driving Businesses	Fibers & Textiles	Fibers & Textiles	Synthetic Fibers Resins Chemical Materials Films	High Function Fibers & Textiles
	Resins & Chemicals Films	Plastics & Chemicals		High Function Resins Functional Particles New Energy Materials
Strategically Expanding Businesses	Electronics & Information Related Products	IT-related Products		High Density Recording Materials High Function Films Display Materials Semiconductor-related Materials
	Carbon Fiber Composite Materials	Carbon Fiber Composite Materials		Carbon Fiber Composite Materials
	Life Science	Life Science		Pharmaceuticals and Medical Devices Bio-tools
Intensively Developing and Expanding Businesses	Water Treatment	Environment & Engineering		High Function Separation Membranes, etc.

3 R&D Strategies

In the “Project AP-G 2016” medium-term management program covering the three years from FY 2014 to FY 2016, Toray Group will focus on “Green Innovation” and “Life Innovation” as priority fields, and will promote R&D based on the following basic strategies in order to support sustainable growth of the Group, through creation of innovative new materials and technologies.

- (1) We will prioritize themes that offer essential and long-term competitiveness utilizing Toray Group’s core and fundamental technologies and business footing.
- (2) We will establish mainstay technologies for the future by expanding upon our core products and technologies, actively researching new fields and technologies, and pursuing production process innovations.
- (3) Starting in FY 2014, we will invest ¥180 billion in R&D over a period of three years. (An investment of ¥ 180 billion will be allocated over a period of three years starting in FY 2014,

with 50% going towards R&D related to “Green Innovation” and 20% towards “Life Innovation.”)

- (4) We strive to create innovative solutions by promoting open innovation that straddles industry, government and academia and extends globally and further promote collaboration and integration of research efforts with external organizations.
- (5) We will strengthen the global development of R&D functions, collaborate with leading companies and institutions overseas, and utilize outstanding resources in each country and integrate different cultures to cultivate new research domains.
- (6) We will strategically promote patent rights for the results of our R&D investments with initiatives that include promoting intellectual property capabilities and promoting global patent applications that emphasize constraints.

II Business Strategies and R&D Strategies

4 Scheme for R&D and Commercialization

Since its foundation, Toray Group has adhered to the philosophy that “R & D is the key to the Toray of tomorrow.” With this in mind, we have consistently pursued R&D into advanced materials better in step with the times. Toray’s strengths which allow it to draw on its R&D capabilities are: 1) a history and culture of creating innovative technologies (with an emphasis on basic research); 2) engaging in long-term and persistent efforts to pursue advanced materials and technology to the limit; 3) having numerous specialist organizations; 4) having an integrated R&D organization; 5) having the ability to integrate technology through industry-government-academia joint research; 6) having strategic partnerships with industry leaders; and 7) possessing advanced analytical capabilities (with strong links to the Toray Research Center Inc.). These strengths have enabled us to develop and commercialize a wide range of advanced materials.

However, development and commercialization of materials takes a certain amount of time. For that reason, coming up with one theme after another, starting with a theme that will generate profit in the immediate future, or pipeline management, is important. As with Toray’s carbon fibers and reverse osmosis (RO) membranes, having a big picture outlook on the times, recognizing the value of the material and persistently working on it—what can truly be called “super endurance”—is what brings about innovation. It is this persistent basic research that is our strength and the biggest barrier to entry.

All of Toray Group’s R&D functions are consolidated into a single organization called the “Technology Center.”

Experts from many fields come together at this “undivided R&D organization,” and this makes it easier for new technologies to be born from the fusion of technologies.

Moreover, this “undivided R&D organization” is able to exert collective strength by utilizing technology and knowledge from many fields to solve challenges affecting a single business field. It also has the characteristic of being able to quickly roll out various advanced materials to multiple businesses.

Toray Group’s R&D team continues to use the catchphrase, “the Deeper, the Newer,” which is also the DNA of the Group’s researchers and engineers. This expression comes from Kyoshi Takahama, a Japanese poet from the early 20th century. The concept underlying the catchphrase is that when you dig deep into something, the result will be new discoveries and inventions. This concept is the essence of our pursuit of technology to the limit.

To speed up all processes, from development to commercialization, we will enhance functions to support processing technologies, facilities and equipment technologies and management for our vital projects as we progress with the creation of large-scale businesses.

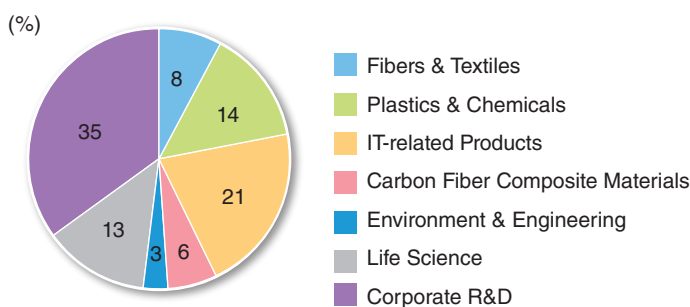
In undertaking the medium-term management program “Project AP-G 2016” to promote Toray Group’s new growth strategies for the realization of “Green Innovation” and “Life Innovation,” we are bolstering initiatives for combining the total strengths of the Technology Center and for promoting collaboration and integrating research efforts.

5 R&D Expenditures

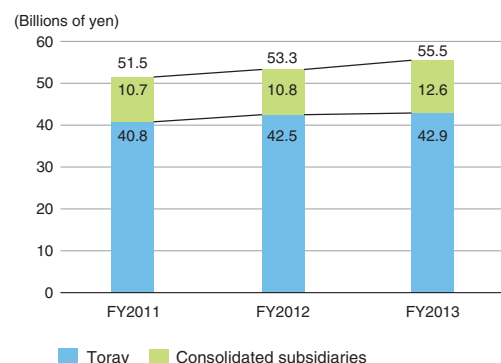
In FY 2013, Toray Group R&D expenses amounted to ¥55.5 billion (total R&D expenses of parent company Toray were ¥42.9 billion). By segment, we allocated 8% of these expenditures to Fibers & Textiles, 14% to Plastics & Chemicals, 21% to IT-related Products,

6% to Carbon Fiber Composite Materials, 3% to Environment & Engineering, 13% to Life Science and 35% to corporate R&D (all percentages approximate).

FY 2013 R&D Expenses by Segment



R&D Expenditures (past three years)



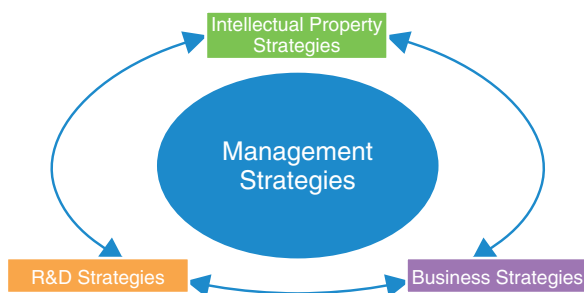
III Toray Group Intellectual Property Strategies

1 Basic Policies on Intellectual Property

The Toray Group has formulated and executes the following four intellectual property strategies as its basic policies on intellectual property.

(1) Intellectual property strategies, as a part of the strategy trinity, that conform to management principles

Toray Group regards intellectual property as one of its vital management resources. Based on this rationale, we believe that any intellectual property strategy cannot exist in isolation from business strategies and R&D strategies and that all three strategies must thus be mutually and organically integrated. Therefore, the Group has designated its intellectual property strategies as one of the most important elements of its management strategies.



(2) Promoting the procurement of rights

In terms of intellectual property, it is necessary to actively patent Toray Group's products and technologies and ensure profits. Therefore, holding as many useful patent rights as possible and building patent portfolios are our most important tasks. At the same time, we also pay close attention to the efficient patenting by raising the quality of each patent and not making needless applications.

(3) Respecting the rights of others

Executing business while infringing on patent rights of other parties is not legally permissible. In keeping with the spirit of adhering to such related laws and ordinances, for many years Toray has operated a system for comprehensively investigating the relations between its own products and technologies and patents owned by other companies, and we thoroughly educate employees to prevent infringement on patent rights of other parties.

(4) Rightful enforcement of our own rights

When the Toray Group's patent rights are infringed upon by another party, we take proper steps by exercising our patent rights. We not only demand that infringement cease, but depending on the circumstances we also receive monetary profits from licensing as well as use our patent rights for cross-licensing with patent rights of other parties.

2 Intellectual Property Strategies in Line with Our Business Strategies

Under the basic strategy of the "Project AP-G 2016" medium-term management program, Toray Group promotes the creation of innovative new materials and technologies with "Green Innovation" and "Life Innovation" as priority fields. We will promote intellectual property strategies consisting of the four points below in order to build barriers to entry that will protect those results and firmly maintain our technological advantage.

- 1) Enhancing the quality of patents
- 2) Building globally competitive patent portfolios
- 3) Firmly maintaining our technological advantage through strategic patent applications and other such efforts
- 4) Developing human resources that support global intellectual property development

We are vigorously promoting intellectual property activities as described below based on these basic strategies.

(1) Enhancing the quality of patents

With a view toward the strict judgments rendered by courts and the Patent Office concerning inventive steps and quality of disclosure of patent specifications since around 2000, Toray Group believes that high-quality patents should have patentability that can stand up to such judgments, be easy to enforce at the same time and be useful as tools for executing business.

From this viewpoint, Toray Group not only conducts thorough prior-art searches before filing patent applications, but also it provides inventors with opportunities to communicate with patent practitioners to perfect patent application documents, and with various tools to facilitate improvements in the quality of the documents. For example, prior-art searches are undertaken by patent searchers assigned to R&D departments charged with the primary role of patent searches.

Of particular note, we have enhanced education of the patent searchers and built a database for sharing know-how in performing searches more efficiently and thereby stringently selecting inventions for which to file patent applications based on their ability to stand up to the strict judgments of the Patent Office.

Our efforts extend beyond merely raising the quality of each individual patent and we have formulated and utilize the Manual for Building a Patent Portfolio that condenses know-how for raising the quality of the overall patent portfolio for protecting a specific theme.

To promote advantageous business development through the effective use of Toray's patents when another company enters one of our markets, we built a patent database arranged by product so that sales and marketing departments can easily ascertain our patents that could be used to defend against the entry of competitors.

III Toray Group Intellectual Property Strategies

We will constantly work on improving the quality of our patents by continually enhancing the above efforts.

(2) Building globally competitive patent portfolios

We will build and execute intellectual property strategies in cooperation with Toray Group R&D and businesses to support business expansion in growth countries and regions. Specifically, we will promote Toray's foreign patent applications and patenting. In particular, under the "Asia, Americas and Emerging Country Business Expansion (AE-II) Project" within the "Project AP-G 2016" medium-term management program, we will proactively focus especially on patent applications and patenting in these regions where we aim to achieve business expansion in the future. In addition, we will promote patent applications and patenting from overseas affiliated companies to ensure the appropriate protection of inventions created in our R&D bases in each country, the protection which is growing in importance with the globalization of our R&D.

(3) Firmly maintaining our technological advantage through strategic patent applications and other such efforts

In the past, we primarily filed patent applications and established rights in our core growth driving business fields such as synthetic fibers, films and engineering plastics and enjoyed a high market share and profitability. Today, in keeping with the "Green Innovation Business Expansion (GR) Project" and "Life Innovation Business Expansion (LI) Project," which are part of the "Project AP-G 2016" medium-term management program, we have placed emphasis on these two fields and enhanced our efforts at patent applications and patenting of rights. We are working to build patent portfolios with emphasis on these growth business fields. We expect the patent portfolios we build to support our businesses in these growth business fields as a powerful barrier to entry in the future.

3 Selection and Concentration in Patent Administration

In accordance with the spirit of the "Total Cost Reduction (TC-III) Project" within the "Project AP-G 2016" medium-term management program, we are engaged in various efforts as described below to enhance our patent capabilities while keeping cost-effectiveness in mind.

In the course of shifting to a "Selection and Concentration in Patent Administration" policy, Toray has designated "Rank-A Projects" as top priority issues in the administration of patents. Under this approach, we appoint a leader and supervising executive for each project and provide additional support through regularly scheduled follow-ups by technical division executives. The following three "Rank-A Projects" categories are currently being pursued.

- (1) "Rank-A Patenting Projects," with the objective of establishing patent portfolios for new technologies and related peripheral technologies through applications and patenting;
- (2) "Rank-A Defense Projects," targeting early clarification of relations of patent rights owned by other companies with Toray's important R&D, and prompt determination of

(4) Developing human resources that support global intellectual property development

With respect to patent education, Toray carries out multifaceted and multilevel education for everyone from general managers and other management to new employees and front line sales representatives on domestic and overseas patent systems and operations for the purpose of improving patent consciousness within the sales and marketing and R&D departments and providing education for enhancing practical skills.

Additionally, to measure the effectiveness of patent education, we carry out annual "Patent Operational Assessment Qualification Test" to objectively evaluate the legal knowledge and practical skills of researchers and engineers with respect to patents. The results of these tests are reflected in personnel evaluations for technical staff.

Intellectual property-related problems are becoming increasingly sophisticated, complex and globalized, and the capability requirements of members of our Intellectual Property Division are thus becoming increasingly stringent.

Accordingly, to raise the legal and patent affairs capabilities of members of this division, Toray is encouraging the acquisition of a patent attorney qualification, which is a national license for handling procedures at the Patent Office and courts. Concurrently, to raise capabilities to deal with global issues as well as capabilities for supporting overseas affiliated companies, we are actively implementing such measures as providing support for strengthening the foreign language capabilities of staff and dispatching staff to overseas affiliated companies. As of March 31, 2014, Toray Intellectual Property Division and Toray Intellectual Property Center, Ltd. have 26 patent attorneys.

When it comes to our domestic and overseas subsidiaries and affiliated companies, we pour effort into education for a wide range of employees, from management to inventors, and specialized education for members of departments in charge of intellectual property.

- countermeasures to address patents of other companies having a major impact on Toray's business; and
- (3) "Rank-A Utilization of Rights Projects" structured to cope with infringement of our patents by other companies through proper enforcement of our rights, efforts to curb such infringement by other companies, and to obtain rightful compensation for practice of our patented inventions by other companies.

Rank-A Projects are established in many technologies in major fields which are typified by advanced materials businesses in the four major growing business fields (environment, water-related and energy; information, telecommunications and electronics; automobiles and aircraft; and life science).

In filing new patent applications, including those covered by the Rank-A Projects, we stringently select inventions to file that can make contributions to our business by means of strengthening collaboration between technical and/or sales and marketing departments, and the Intellectual Property Division.

III Toray Group Intellectual Property Strategies

4 Increasing Incentives for Inventions

For employee invention incentives, Toray has long maintained a compensation system for employee inventions. This system includes fixed-sum compensations at the time of patent application and registration (including foreign patents in both cases) and performance compensations based on profits acquired through the use of patented inventions and from license fees. However, we have revised these internal rules to effectively respond to the amended Patent Law as well as recent trends in court rulings in areas concerning employee inventions.

Through this kind of flexible system, we are promoting the creation of excellent inventions inspired by enhanced incentives to innovate and invent to enhance Toray's competitiveness.

In FY 2006, we established an award system for not only inventors but also others in Toray who make a valuable contribution to patent-related activities. We expect that our multifaceted system of incentives will lead to further vitalization of activities related to intellectual properties. Many of our affiliated companies have a similar compensation system.

5 Brand Strategy

Toray strictly controls the various corporate brands which represent our identification and originality, including the "Toray Industries, Inc." corporate name, its corporate symbol*, business trademarks "TORAY," etc., its domain names "toray.co.jp," "toray.com," and so on, as intellectual property that symbolizes Toray Group corporate activities. We make vigorous use of these names in our corporate brand strategy.

Toray Group is advancing a number of brand strategies to enhance employee engagement, customer confidence and strengthen our ability to attract outstanding personnel by enhancing the value of the corporate brand.

The quotation marks in Toray Group's corporate symbol* express our willingness to engage in dialogue with all of our stakeholders through our people, our products and our technology. The quotation marks also speak of our aspiration to excel as a distinctive presence within society. This corporate symbol is registered as a trademark for the primary businesses of our Group in nearly 150 countries around the world in which we have established exclusive use rights. We have also adopted stringent defensive measures to deal with unauthorized use by third parties.

In 2009, Toray Group pledged to move forward in its corporate activities by focusing its entire business strategy on the global environment. Since 2011, the Group has advanced its Green Innovation Business Expansion (GR) Project. One example of a company-wide initiative is to make society at large aware of Toray's contributions to environmental preservation and the goal of a low-carbon society through the ecodream® brand, which is a general brand name for the

deployment of GR businesses and products.

Moreover, starting in FY 2013, Toray Group has been intensifying its global deployment of the integrated brand ecodream™ for its biomass-based polymer materials and products. The aim of setting up the integrated brand is to globally advance and establish the Toray's strong determination to provide solutions to environmental issues through the use of biomass materials in fibers, resins, films and other individual products. They are focuses in Toray's business activities within the broad concept underlying ecodream®.

On October 9, 2012, Toray announced its first technology brand, "NANOALLOY®," an innovative microstructure control technology that vastly enhances the characteristics of polymers by making nanometer-order alloys of multiple polymers. Toray has started the full-scale development of commercial products based on this technology (<http://www.nanoalloy.jp/>). NANOALLOY® is a ground-breaking technology for which we hold basic patents and major manufacturing and use patents. We are moving ahead with a strategy of enhancing the brand value by making the technology more visible and by working with our partner companies that are using our materials based on this technology.

Toray Group has obtained some 1,200 product brands that are protected by approximately 10,000 trademark rights. We actively pursue our brand strategy to strengthen the underpinnings of each of our business while advancing the appropriate management of our trademarks for these individual product brands.

A collection of Toray's brands and logos is shown below.

*Corporate symbol

GR products and activity brands

TORAY

ecodream

Other main brands

ecodear
Plant-based Product Solutions

NANOALLOY
TECHNOLOGY

ultrasuede TORAYCON Lumirror

HIGH-PERFORMANCE CARBON FIBER
TORAYCA

3D-Gene

torayvino

IV Analysis of the Marketability and Competitive Advantages of Technologies

'TORAY'

Innovation by Chemistry

With “Innovation by Chemistry” as its corporate slogan, Toray Group creates innovative new materials and technologies based on the core technologies of organic synthetic chemistry, polymer chemistry, biotechnology and nanotechnology to create new value and offer it to society. Our perspective is to protect our planet and ensure safety and confidence for people’s lives.

Toray Group has established the “AP-Growth TORAY 2020” long-term corporate vision and, to achieve it, we established the new “Project AP-G 2016” medium-term management program for the three year period from 2014 to 2016 and launched it in April 2014.

Under “Project AP-G 2016,” we have incorporated a growth strategy from a new perspective. Gathering the collective strength of Toray Group, we are promoting “Innovation and Proactive Management” with “business expansion in growth fields and growth countries and regions” and “bolstering competitiveness” as the linchpins. Our aim is to achieve

sustainable growth as a highly profitable group and improve our corporate value for all stakeholders.

As part of that, we will engage in development of advanced materials utilizing Toray Group’s technological competency and strengths such as infrastructure to expand our business in growth fields and will create new businesses to capture growing demand. In particular, in the environment and energy field, we will work on the “Green Innovation Business Expansion (GR) Project” to contribute to solving global environmental problems and resource and energy problems. In life science including the medical and healthcare fields, we will comprehensively and vigorously promote the “Life Innovation Business Expansion (LI) Project” by means of a new company-wide project.

As for expanding our business in growth countries/regions, we will actively develop businesses featuring our strengths and promote the “Asia, Americas and Emerging Country Business Expansion (AE-II) Project” to steadily capture growing demand.

To bolster our competitiveness, we will promote the “Total Cost Reduction (TC-III) Project” aimed at achieving world-class cost competitiveness.

1 Fibers & Textiles

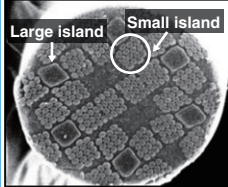
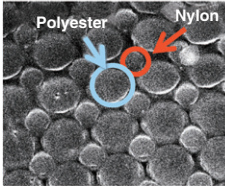
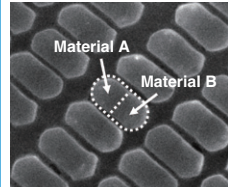
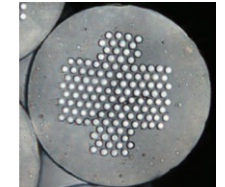
Toray has built a solid position in the Fibers & Textiles field, supplying a host of products—from filament yarns and staple fibers of three major synthetic fibers (nylon, polyester and acrylic) to textiles and garment products—for a wide range of applications from apparel to industrial. In this business field, we are strengthening our stable profit base and expanding profits as a Core Growth Driving Business. At the same time, R&D is focused on the creation and expansion of high-performance products and advanced fiber and textile materials by pursuing ultimate performance.

Through these efforts, and by arbitrarily controlling the section form of fibers at the nanometer order, we developed revolutionary synthetic fiber manufacturing technology that can freely combine various raw resin materials. This technology divides multiple resin materials into many fine flows, and after precisely measuring and distributing them, these flows are discharged all at once by means of an innovative converging type spinneret. It allows us to give fiber soft, bulky and stretchy texture, which was difficult with conventional nanofibers.

Together with Nippon Telegraph and Telephone Corporation, Toray developed “hitoe,” a functional material that is capable of gathering biological information such as heart rate and ECG data simply by wearing it. We succeeded in practical application by giving nanofiber material a special highly conductive resin coating. The “hitoe” material offers both

a good fit on the skin and breathability. By putting on clothing made from this material, the wearer can easily and comfortably measure their heart rate, ECG data and other biological information in various daily life scenarios. In the future, both companies will launch efforts to commercialize biological information measuring clothing utilizing the “hitoe” material.

■ Island-in-the-sea type complexed fiber using nano-section control technology

	Island diameter differs	Island material differs
Complexed fiber section form		
	Bonded islands	Special arrangement of islands
Complexed fiber section form		

IV Analysis of the Marketability and Competitive Advantages of Technologies

2 Resins & Chemicals

In plastic resins, Toray has exploited advances in polymerization and molecular designs, polymer alloys, composites, polymer processing and other fundamental technologies to achieve excellent performance and function in ABS (acrylonitrile butadiene styrene) resin, nylon resin, PBT (polybutylene terephthalate) resin, PPS (polyphenylene sulfide) resin, liquid-crystalline polyester resin and other engineering plastics. This is paving the way for the use of such plastics in electric and information devices, as well as automobile parts.

In the field of chemicals, we offer chemical solutions that contribute to new product development and Toray Group's advanced materials through synthesis of carbon nanotubes (CNTs), polymer particles, fine polymers and so on, based on the fundamental technologies of organic synthesis, inorganic synthesis and catalysts.

One of our recent successes was polymerization of polybutylene terephthalate derived from partial biomass material (partially bio-based PBT) using 1,4-Butanediol made by Genomatica achieved in mid-sized facilities jointly with renewable chemical process technology leader Genomatica. We were also successful in creating a molding prototype possessing the same physical characteristics and moldability as conventional petroleum-derived PBT. We have begun pre-marketing activities as we are now confident in a commercial-scale mass production of partially bio-based PBT.

We also successfully developed injection molding

ready carbon fiber reinforced polyphenylene sulfide (PPS) possessing the same tensile strength as aluminum die-cast. This developed PPS resin is 45% lighter than aluminum die-cast and retains the heat resistance, flame resistance and chemical resistance properties. We were the first in the world to achieve this and did so by applying Toray's proprietary filament yarn carbon fiber-reinforced pellet manufacturing technology and technology for improving the interfacial adhesion of carbon fiber and PPS resin. We will work on accelerating establishment of mass production technology for commercialization.

■ Moldings manufactured with partial bio PBT

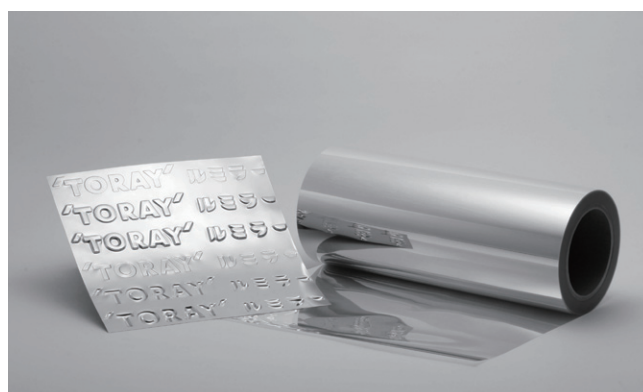


3 Films

In films, Toray was the first in Japan to commercialize biaxially oriented polyester film and has been leading the world in the field of high-performance and high-function films by advancing the technologies of the polyester film together with biaxially oriented polypropylene film. We are also the global pioneer in the development and commercialization of biaxially oriented polyphenylene sulfide and aramid films. To date, we have utilized our original film thickness control technology; special drawing technology; surface forming technology backed by film laminating methods; coating, cleaning and static electricity control technologies; and NANOALLOY® technology. We have used these optimal functions to support various industrial applications in such areas as flat panel displays, packaging applications for retort foods and magnetic materials applications for computer memory backups.

Recently, in FY 2013, sales of our PICASUS® nano multi-layer laminate film developed by combining our proprietary nano meter-scale multi-layer technology and polymer design technology rose to 10 times what they were in FY 2009. PICASUS® is a metallic-luster film with hundreds to a thousand layers of different types of polymer just a few nanometers

■ PICASUS® nano multi-layer laminate film



thick. Without coating or plating, it provides the luster of metal. Since it was brought to market in 2008 as a heavy metal-free low environmental burden film, it has been meeting new needs for an environmentally-friendly society. Specifically, utilizing the exceptional electromagnetic wave permeability, optical transparency, and easy formability, it can be applied to the exterior/surface of capacitance type touch panels and non-

IV Analysis of the Marketability and Competitive Advantages of Technologies

contact chargers as well as the surface of millimeter wave radars in collision avoidance systems and next-generation

head-up displays in automobiles. Our aim is to expand sales five-fold in FY 2016 compared to FY 2013.

4 Electronics & Information Related Products

In Electronics & Information Related Products, Toray mobilizes its fundamental technologies in such areas as polymer design of thermal resistance and optical functionality, organic synthetics, particle dispersion, thin layer-film forming and photolithography to develop semiconductor buffer coatings, insulator and flexible substrate materials for optical devices and packaging, high-k insulator materials, ceramic substrate materials, color filters for liquid-crystal displays (LCDs), plasma display rear panel forming technology and organic electroluminescent (EL) light-emitting materials.

As a result, we have achieved world-class performance in single-walled carbon nanotube thin film transistors (CNT-TFT) coating. By combining single-walled CNT with substantially improved semiconductor purity and Toray's proprietary semiconductor polymers, we achieved more than five times greater mobility compared to using single-walled CNT before improving semiconductor purity and more than 10 times greater mobility compared to conventional amorphous silicon.

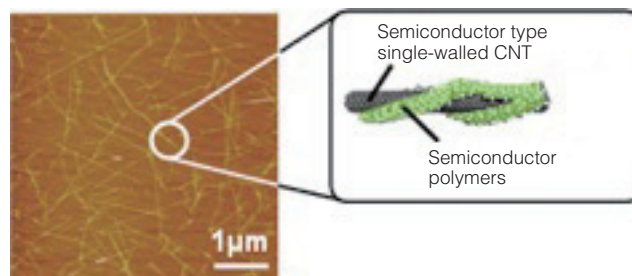
We also developed a heat resistant photosensitive resist capable of substantially simplifying the ion injection process in the manufacturing of silicon carbide semiconductor devices used in next-generation power electronics (inverters and other electric devices). With this material, using a regular photolithography process, fine patterns 2 μm and smaller can be formed. It possesses heat resistance for temperatures

of 300°C and higher during ion injection and ion stopping performance for wafers as well as removal performance with chemicals after the ion injection process.

Additionally, we developed a new photosensitive polyimide adhesive film as a sealing (packaging) material to contribute to further miniaturization and high-density packaging of electronic components in smartphones and other mobile electronics through advancement of our resin design technology.

Moreover, we have developed and brought to market new varieties of our RAYBRID® photosensitive electro-conductive paste for touch panel wiring that enable finer wiring forming with 20 μm of both wiring width and spacing compared to the conventional 50 μm .

■ Semiconductor type single-walled CNT dispersed thin film



IV Analysis of the Marketability and Competitive Advantages of Technologies

5 Carbon Fiber Composite Materials

Toray Group is the world's largest manufacturer of carbon fibers and supplies TORAYCA® carbon fibers and woven fabrics. We also supply intermediate materials such as prepregs and molding technologies of carbon fiber composite materials. Here, we target applications in the fields of aircraft, aerospace, sports equipment, civil engineering, construction, automobile, electronic & information devices and energy industry instruments. Under "Project AP-G 2016," this is a core business area for Green Innovation, which is contributing to global CO₂ reductions as it makes aircraft and automobiles lighter and therefore more fuel efficient, produces clean energy from windmills, and also reduces the weight of high-pressure tanks for natural gas and hydrogen.

As a result, we received the 60th Okochi Memorial Grand Production Prize (2013) from the Okochi Memorial Foundation. We received this prize in recognition of our development of TORAYCA® T800S/3900-2B (prepreg), which is a primary structural component of the world's first all-composite private

aircraft—Boeing Company's state-of-the-art Boeing 787—and our establishment of a production system for it. We also received the Minister's Prize, the Ministry of Economy, Trade and Industry, at the 13th Green Sustainable Chemistry Awards (GSC Awards).

With respect to carbon fiber composite materials, we acquired a 20% stake in Plasan Carbon Composites, Inc., a US CFRP (Carbon Fiber Reinforced Plastics) automobile parts manufacturer, in the aim of achieving a strategic global expansion in the automotive field. This has enabled us to secure a sales channel to US automobile manufacturers and establish a North American production/development base for CFRP automobile parts.

We also developed TORAYCA® T1100G, a high-strength and high-modulus carbon fiber which offers both these characteristics that had heretofore been considered of high technical difficulty, and a high-performance prepreg (resin-impregnated carbon fiber sheets) that uses these carbon fibers.

■ Okochi Memorial Grand Production Prize Awards Ceremony



IV Analysis of the Marketability and Competitive Advantages of Technologies

6 Life Science

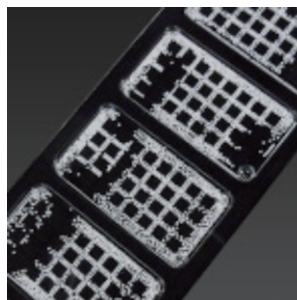
In pharmaceuticals, Toray has commercialized the natural interferon beta product FERON™ (based on biotechnology) and the world's first oral prostacyclin derivative product DORNER® (based on organic synthesis technology). We furthermore developed TRK-820, an antipruritus drug that is a highly selective κ (kappa) opioid receptor agonist. Toray is an authorized manufacturer and dealer of the drug, which is sold in Japan through Torii Pharmaceutical Co., Ltd. under the trade name REMITCH®* CAPSULES 2.5 μg , an oral antipruritus drug for hemodialysis patients.

In the medical field, Toray has commercialized the high-sensitive DNA chip 3D-Gene®. 3D-Gene® utilizes Toray's creative advanced technologies, such as microscopic concavoconvex resin substrates and reaction acceleration by stirring the sample solution using beads and has a higher detection power, reproducibility and quantitative performance compared with existing DNA microarrays based on glass

substrates. An analysis system using 3D-Gene® was adopted at Cambridge University's experiment support facilities in the UK. It is used primarily to research biomarkers, and its popularity has been gaining pace across Europe, including the UK.

* "REMITCH®" is a registered trademark of Torii Pharmaceutical Co., Ltd.

■ 3D-Gene® high-sensitive DNA chip



7 Environment/Water Treatment

To solve the water shortages and the water pollution problems around the world, we are working in the water treatment field by developing reverse osmosis (RO), nanofiltration (NF), ultrafiltration (UF) and microfiltration (MF) membranes, based on organic synthetic chemistry, polymer chemistry and nanotechnology, for such uses as producing ultrapure water and seawater desalination achieved by making selective separation possible. We are also endeavoring globally to propose sustainable water resource systems.

As a result, we developed an ultra low pressure, high-durability reverse osmosis (RO) membrane offering both high water permeability and durability using our proprietary microstructure control technology. By improving our technology for forming pores (fine holes that allow water molecules to pass through but not sodium ions or other substances) in the RO membrane and increasing water permeability while maintaining superior substance removal performance, we enabled low pressure water treatment and achieved a roughly 30% reduction in energy.

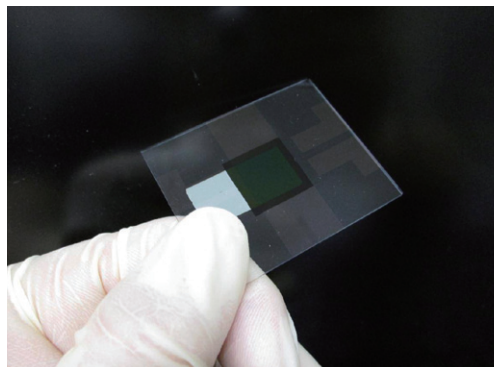
Under our management policy that all business strategies must place priority on the global environment in an effort to help realize a sustainable low-carbon society, Toray is promoting R&D related to solar cell materials and biomass-derived polymers along with the expansion of these businesses.

As a result, we have achieved a world-class conversion

efficiency of more than 10% with single layer elements for organic thin layer solar cells. By using our newly developed high orientation aromatic polymer as the donor material and a fullerene compound as the acceptor, we succeeded in achieving highly controlled orientation of the power generating layer and three times the conventional layer thickness.

Also, with our biomass-derived polymers, we have developed the first gym class uniform in the school uniform industry that uses our 30% plant ecodear® PET derived polyester fiber made from plant-derived ethylene glycol. Furthermore, we will also be the first in the world to offer work clothes conforming to the Green Purchasing Law using ecodear® PET.

■ Organic thin layer solar cell



V R&D, Intellectual Property Organization/R&D Partnerships

1 R&D and Intellectual Property Organization

As of 1985, Toray has built an R&D organization centering on its Technology Center. The role of the Center is to draft company-wide strategies and key projects for R&D.

We are also reinforcing global R&D capabilities to deal with changes in the business environment in recent years, and further globalizing ourselves as the growth markets of emerging countries become more and more important. This means not just the type of business expansion that entails moving production from Japan, but transforming overseas bases into “independent development enterprises” that pursue development in line with local needs.

As our R&D is becoming increasingly global, so is our Intellectual Property Division. As an independent organization under the direct control of the President, the Intellectual Property Division is strengthening the intellectual property capacity of the entire Toray Group based on intellectual property strategies that are linked with management strategies.

(1) Life innovation promotion system

Under the “Project AP-G 2016” medium-term management program, we will vigorously and comprehensively promote the expansion of our Life Innovation Business on a Group-wide basis leveraging Toray Group’s strengths of advanced materials, core technologies, fundamental technologies and business footing in the aim of having our Group’s businesses contribute to the medical and healthcare fields through support for an aging society, advancement of medical treatment, etc. Toward that end, we have newly established a Life Innovation Business Strategic Planning Department that will engage in strategic planning for Toray Group’s Life Innovation Business.

Additionally, as a measure to strengthen our R&D capabilities with an eye to expanding our business in the life innovation field, we established new life innovation bases in the United States and Japan. The former is a global base established within the Medical Devices Center of Minnesota University, which is a medical cluster engaged in R&D on the world’s most advanced medical devices, and the latter was established in the Kobe Biomedical Innovation Cluster in the prefecture of Hyogo, which is developing into one of Japan’s leading medical clusters. These bases promote cooperation with medical institutions, laboratory diagnosis facilities and medical device companies in Japan and other countries for the purpose of accelerating the development of medical devices and expanding application of Toray Group’s advanced materials in medical devices.

(2) Establishment of E&E Center as an integrated technology development base for accelerating Green Innovation

In January 2011, Toray established the E&E Center (Environment & Energy Center) as an integrated technology development base for environment and energy fields. The Environment and Energy Development Center was opened

within the Seta Plant (Otsu, Shiga Prefecture) to serve as the core organization of the E&E Center.

The establishment of the E&E Center is a part of measures for accelerating Green Innovation at Toray Group, with focus particularly on reinforcement of R&D in the environment and energy fields. Toray positions the E&E Center as an integrated collaboration base in the environment and energy fields for the entire Group. It intends to strategically integrate the Group’s R&D functions in these fields to fundamentally bolster its technological development capabilities that leverage the overall Group strengths and push forward with the creation and expansion of new businesses.

E&E Center collaborates with Toray’s Global Environment Business Strategic Planning Department under the direct control of the President and promotes open innovation, a strategic imperative in these fields, to promote dynamic creation of new businesses and innovation of business models.

The priority theme of the core organization Environment and Energy Development Center is the creation and expansion of businesses for “new environment-related materials” such as biomass materials and energy-saving housing materials as well as innovative new components related to “new energy,” especially solar cells, fuel cells and lithium-ion batteries. The center will build a structure that enables functions ranging from planning of technological development strategy to technological development related affairs and technical marketing in an integrated manner.

Along with A&A Center (Automotive & Aircraft Center), Toray positions E&E Center as Toray Group’s new growth engine for achieving a sustainable low-carbon society. Leveraging these centers, Toray will develop and expand businesses in advanced materials and technologies in the core fields of automobiles and aircraft as well as environment and energy.

(3) Building an R&D System in China

Toray has built its R&D bases in Shanghai and Nantong to strengthen the R&D system essential to growing our business in China.

We established headquarters for the Chinese R&D base Toray Fibers & Textiles Research Laboratories (China) Co., Ltd., or TFRC, in 2002 in Nantong, followed by a Shanghai branch in 2004, and have conducted R&D at these two locations since then. On January 1, 2012, we spun the Shanghai branch into an independent entity, known as Toray Advanced Materials Research Laboratories (China) Co., Ltd., or TARC. Thus research is taking place at the two companies TFRC (in Nantong City, Jiangsu) and TARC (Shanghai).

The chief functions of TARC are 1) to conduct R&D that will expand our Chinese business (i.e., provide product development and technical service for Chinese customers) as based on Group strategies in each business field except Fibers & Textiles, and additionally 2) to serve as the China

V R&D, Intellectual Property Organization/R&D Partnerships

branch of Toray's Advanced Materials Research Laboratories (in Shiga), which performs basic research.

To promote further growth of Toray Group business in the Chinese market, which we expect to grow dramatically in the future, our local staff are paying close attention to Chinese customers' unique needs and working to develop new products and technologies suited to local needs. We are additionally strengthening our customer response with technological support. To do this, we were not only further strengthening research fields we have long engaged in (resins, films, water treatment, amenities, etc.), but also doing film processing research and starting new R&D services in carbon fiber composite materials, electronics & information materials and so on.

We hire excellent research talent from China to do basic research. They work closely with our Advanced Materials Research Laboratories in Japan to create advanced materials.

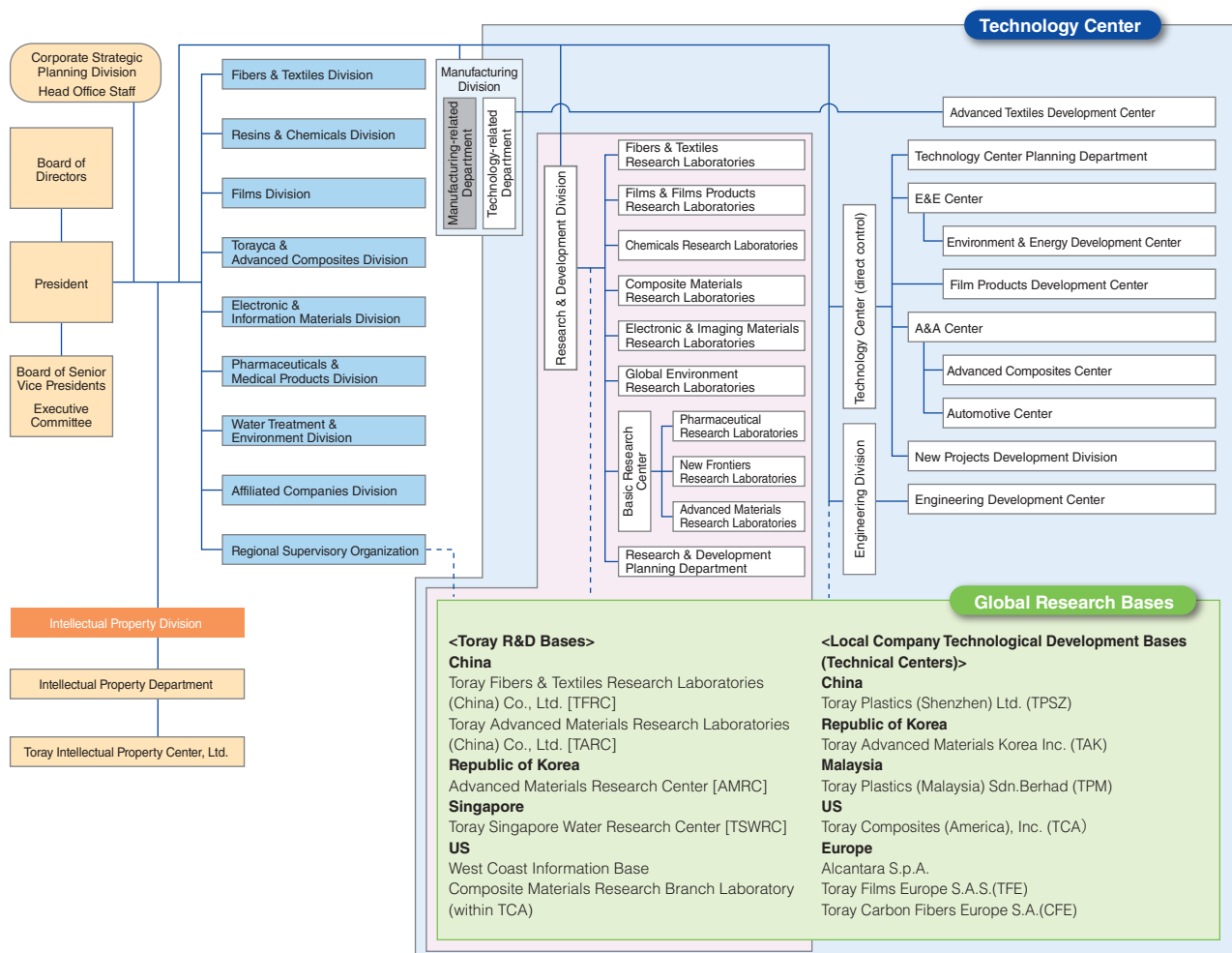
Because our Shanghai base offers relatively easy access to important Chinese customers and many elite universities are close to the base, we will further strengthen its organization as an R&D center in China in fields other than Fibers & Textiles.

We are also enhancing TFRC and positioning it to specialize as a Fibers & Textiles R&D base. Toray Group has established an organization in Nantong that brings production and R&D together, and we will take advantage of this integrated entity in our R&D.

As a result of these initiatives, TARC and TFRC have produced a large number of inventions, and the two organizations together file more than 100 patent applications in China annually.

In the medium-term management program "Project AP-G 2016" that we are currently pursuing, Toray Group seeks to turn itself into a corporate group with sustainably growing business revenues and profits. One of our basic strategies is charted in the "Asia, Americas and Emerging Country Business Expansion (AE-II) Project," which works to capture the growth of Asia, emerging countries, and other areas including the United States where major growth is expected to occur. We are taking up the challenge of the AE-II Project in part through the recent reform and expansion of our R&D organization in China as we endeavor to expand business in fields and regions that will grow remarkably in the future.

■ Organization (As of June 2014)



V R&D, Intellectual Property Organization/R&D Partnerships

2 R&D Partnerships

Through open innovation, the practice of making full use of the advanced technologies we have developed and advanced materials we have created and working in partnership with a variety of organizations, the Toray Group offers solutions to its customers. At the A&A Center and E&E Center, which were established as integrated technological development bases in the growth fields of Environment and Energy and Automobiles and Aircraft, we bring together the Group's collective strength to conduct faster R&D and work with customers in development partnerships that facilitate new product development, commercialization and business growth.

As a topic from FY 2013, the Innovative Structural Materials Association (ISMA) was established for the purpose of promoting in an integrated manner development of the innovative bonding technology necessary for using the developed materials in the right places and technical development related to strengthening the important structural materials of transportation equipment, such as iron and steel, nonferrous metal, carbon fiber-reinforced plastic (CFRP), etc. The aim is drastic reduction of the weight of automobiles and other transportation equipment, and Toray is a participant in the association.

In order to promote development of materials for 3D packages for semiconductor devices, we have also decided to participate in SEMATECH, a consortium in the state of New York in the United States that performs research on semiconductor manufacturing technology. We are an associate member of SEMATECH's 3D Interconnect Program, which is working on next-generation semiconductor 3D packaging technology. We are working on development of new materials for semiconductor packaging and related practical processing methods in aims of having them adopted by leading semiconductor manufacturers, including SEMATECH core members and program members.

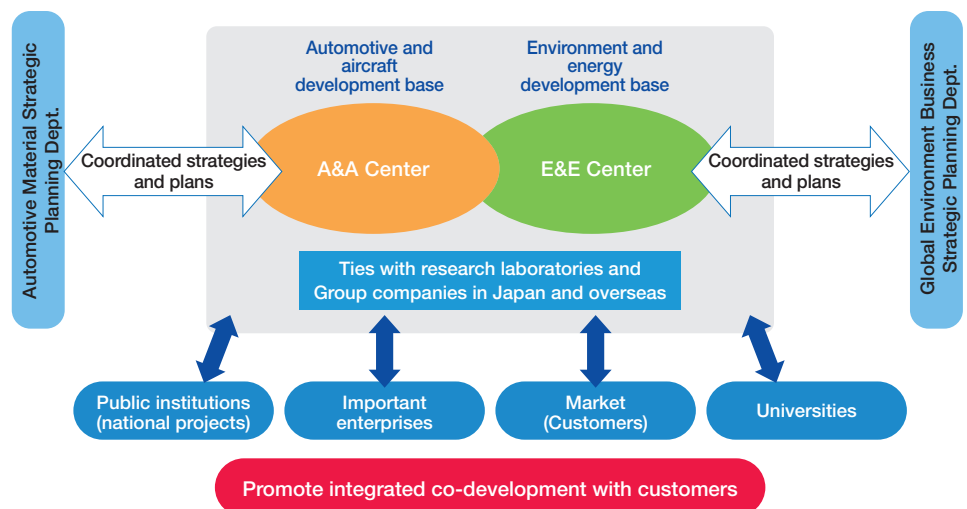
Moreover, three programs in which Toray participates were selected for the Radical Innovation and Entrepreneurship Program (COI STREAM) to be launched in FY 2014 by the Ministry of Education, Culture, Sports, Science and Technology. Kanazawa Institute of Technology serves as the core institution for the program of next-generation infrastructure building based on innovative materials. We will develop innovative materials that are superior in terms of environmental performance, are highly functional (light weight, long-term durability, self-restoring, flame resistant, etc.), allow for flexible design, are easy to work

with and make moving and recycling easy after construction in order to bring about a society that will last for centuries, exuding flexibility and maintaining value over long periods of time. Shinshu University serves as the core institution for the Aqua Innovation Center program for contributing to rich living environments around the world and global sustainability. The aim is to put to practical use innovative water desalination/circulation systems that make safe and reliable water from seawater and water containing impurities such as oil via nationwide R&D efforts. The University of Tokyo serves as the core institution for the Coherent Photon Technology Innovation Center program. In this program, we are developing a theory to underpin trust in the technology with light as the key component of the cooperation, focusing on coherent photon technology, which has been progressing by leaps and bounds in recent years. We will create innovative manufacturing technology and related sciences that pose a smaller environmental burden with specifically designed, high quality methods, completely different from conventional screwing and welding.

In addition to the above, "TherMAT," a research association focused on technology for innovative utilization of unused thermal energy, was established for the purpose of innovating fundamental technology for reducing, collecting and using the enormous amount of thermal energy released into the environment without being used in fields such as transportation, promoting energy and CO₂ savings by establishing the technology as a system, and thereby improving international competitiveness. Toray will work on technical development of heat shield materials.

Moreover, under the "Life Innovation Business Expansion Project," which is part of "Project AP-G 2016," we will promote cooperation with medical institutions, laboratory diagnosis facilities and medical device companies in Japan and other countries utilizing our newly established life innovation bases.

■ Initiatives for Technology and Product Development at A&A Center and E&E Center



VI Guidelines on Procurement and Management of Intellectual Properties, Management of Trade Secrets, Prevention of Technology Leakage

1 Procurement and Management of Intellectual Properties

For procurement and management of patents, Toray adheres to its Patent Management Regulations and Patent Management Standards. These rules are permanently accessible on our intranet. Trademarks are handled in a similar manner with internal rules, including Trademark Management Regulations; Trade Name, Corporate Symbol and Brand Management Regulations; and Trademark Management Standards. These rules are disclosed throughout Toray.

For patents, we have set up a patent committee within each business to discuss details and complete all required procedures. Participants in these committees are patent practitioners of Toray Intellectual Property Department and Intellectual Property Center, Ltd., a subsidiary handling Toray Group's intellectual property issues, as well as members of the research, R&D and business (sales) departments in each business sector. In this way, we adopt an integrated approach to the management of intellectual properties, R&D and business strategies.

The patent committees provide a particularly useful forum

for making key policy decisions to determine the technological areas on which patent applications are focused, inventions for which applications should be filed, existing applications for which requests for examination are to be filed and patent rights that should be maintained or abandoned. Discussions likewise extend to the enforcement of existing patent rights and other key concerns.

We also established our brand management system as the organization overseeing important trademarks and brands in our business fields. The general managers in each of Toray's business divisions serve as brand managers as well as members of Intellectual Property Department and other operational staff participate in managing brand strategies of each sales and marketing division.

The Technology Brand Committee serves as the organization charged with reviewing and setting policy for the promotion and management of technology brands of which NANOALLOY® is a representative example.

2 Management of Trade Secrets and Prevention of Technology Leakage

In 2007, Toray established its own Confidential Information Management Regulations for making adjustments to previously existing information management systems. We took this step due to the need for measures to enable stricter and more systematic information management and to prevent information leakage in response to the growing needs for 1) prevention of unfair competition; 2) protection of personal information; 3) security trade administration; and 4) protection of classified information.

We took this opportunity to also tighten our management of electronic information, which has become increasingly important to cope with risks in information leaks. In addition

to revising our Electronic Information Security Standards in response to changes in risks, we implement information security measures such as regular internal audits.

Additionally, at the Risk Management Committee, which manages company-wide risk, information management is positioned as one of Toray's priority risks, and from an integrated perspective considering document control, electronic data control, personnel management and facility/equipment/device management, we are working on thorough management of trade secrets and technical information and prevention of information leaks.

VII Contribution of Licensing-related Activities to Businesses

Toray Group actively promotes the procurement and enforcement of intellectual property rights as a way to distinguish its products and technologies and establish a competitive edge in the marketplace. At the same time, we consider cross-licensing as an important strategy in maintaining continuity and expanding the sphere of our business. Promoting open innovation that globally involves

industry, government and academia, Toray Group will more than ever before utilize its intellectual property as extremely valuable tools to maintain its advantageous position.

Although generating income through licensing is not considered to be an optimal approach for doing business, it bears mentioning that patent fee revenues have constituted a profitable arm of our corporate operations for many years.

VIII Valid and Enforceable Patents, Patent Applications, External Commendations

1 Valid and Enforceable Japanese Patents (Total for Toray Industries, Inc. and 48 Japanese and overseas affiliates at the end of March 2014)

Toray Group takes an aggressive approach to obtaining patents with far-sighted strategies for use in developing advanced materials, and will firmly maintain this stance in the future.

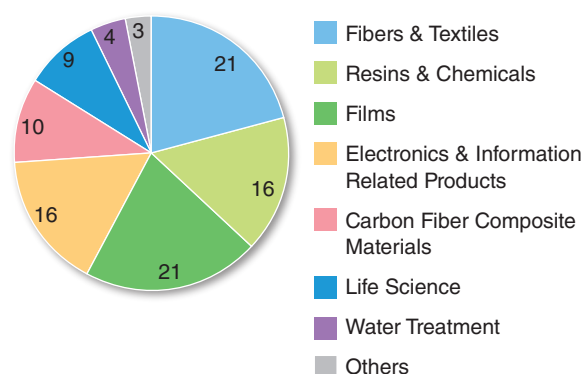
In recent years, we have engineered a pronounced shift in emphasis from quantity to quality, which translates into greater emphasis on improving the quality of patents. This has resulted in a more stringent focus on cost awareness and operational efficiency in determining whether or not to file patent applications or to file a request for examination for our patent

applications as well as when rendering judgments on whether to maintain or abandon existing patent rights.

At the end of March 2014, the number of valid and enforceable patents in Japan was 5,498, of which 2,082 (37.9%) were in current use within the Group; 2,730 (49.6%) were scheduled to be used in the future; and 686 (12.5%) were patents for defense and other purposes. The following chart breaks down these patents by specific R&D segment.

Number of Valid and Enforceable Japanese Patents at the End of March 2014

Fibers & Textiles	1,168
Resins & Chemicals	863
Films	1,167
Electronics & Information Related Products	906
Carbon Fiber Composite Materials	526
Life Science	497
Water Treatment	204
Others	167
Total	5,498



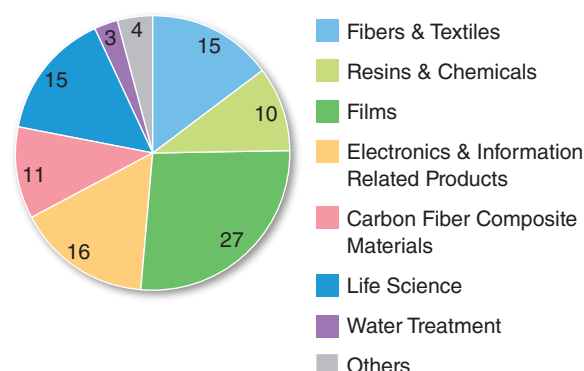
2 Valid and Enforceable Foreign Patents (Total for Toray Industries, Inc. and 48 Japanese and overseas affiliates at the end of March 2014)

At the end of March 2014, the number of our valid and enforceable patents in countries other than Japan was 6,141, with the following chart breaking down these patents by specific R&D segment.

The large proportion of foreign patents for Films, Carbon Fiber Composite Materials and Life Science compared with that of Japanese patents owned in those areas reflects Toray's goal of expanding its operations globally in these businesses.

Number of Valid and Enforceable Foreign Patents at the End of March 2014

Fibers & Textiles	915
Resins & Chemicals	620
Films	1,668
Electronics & Information Related Products	953
Carbon Fiber Composite Materials	649
Life Science	941
Water Treatment	177
Others	218
Total	6,141



VIII

Valid and Enforceable Patents, Patent Applications, External Commendations

3 Japanese Patent Applications (Total for Toray Industries, Inc. and 48 Japanese and overseas affiliates in FY 2013)

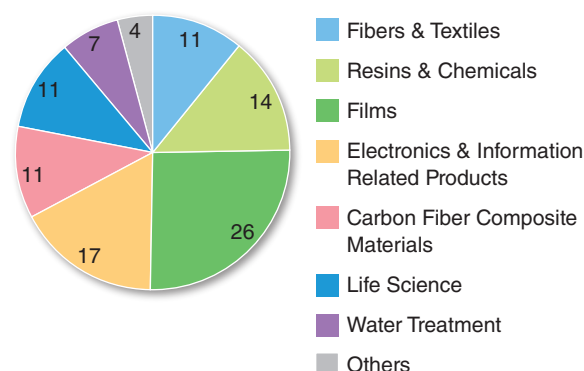
During FY 2013, the number of applications was 1,580, with the following chart breaking down these applications by R&D segment.

The relatively large proportion of patent applications in Films, Electronics & Information Related Products, Carbon

Fiber Composite Materials, Life Science and Water Treatment compared with that of the domestic patents owned in those areas reflects Toray Group's policy of actively applying for new patents in its Strategically Expanding Businesses and Intensively Developing and Expanding Businesses.

Number of Japanese Patent Applications in FY 2013

Fibers & Textiles	175
Resins & Chemicals	214
Films	405
Electronics & Information Related Products	272
Carbon Fiber Composite Materials	172
Life Science	173
Water Treatment	109
Others	60
Total	1,580



4 Foreign Patent Applications (Total for Toray Industries, Inc. and 48 Japanese and overseas affiliates in FY 2013)

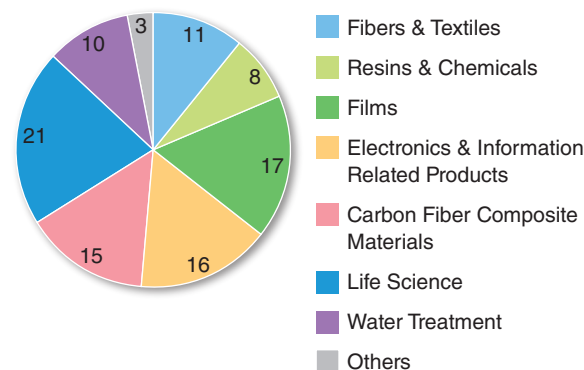
During FY 2013, the number of applications for foreign patents was 3,430, with the following chart breaking down these applications by R&D segment.

Particularly noteworthy, the relatively large proportion of

patent applications in Carbon Fiber Composite Materials, Life Science and Water Treatment compared with domestic patent applications is an indication that we aim to expand our global business in these fields.

Number of Foreign Patent Applications in FY 2013

Fibers & Textiles	369
Resins & Chemicals	272
Films	575
Electronics & Information Related Products	533
Carbon Fiber Composite Materials	528
Life Science	706
Water Treatment	359
Others	88
Total	3,430



5 External Commendations

■ Commendations Received in FY 2013

National Commendations for Invention

Commendation	Subject of Commendation	R&D Segment
Invention Prize	Invention of selective opioid kappa receptor agonist, Nalfurafine Hydrochloride	Life Science

Local Commendations for Invention

Commendation	Region	Subject of Commendation	R&D Segment
Minister of Education, Culture, Sports, Science and Technology Encouragement Prize for Invention	Kinki	Positive-tone photosensitive siloxane clear coating	Electronics & Information Related Products
Shikoku Bureau of Economy, Trade & Industry Director's Prize	Shikoku	Carbon fiber reinforced polyamide resin	Carbon Fiber Composite Materials
Mayor of Nagoya Prize	Chubu	Method for producing aromatic compound	Resins & Chemicals
The Encouragement Prize for Invention	Chubu	Environmentally-friendly artificial leather and method for producing the same	Fibers & Textiles
The Encouragement Prize for Invention	Kanto	Method for producing glass fiber reinforced recycled styrene thermoplastic resin composition	Resins & Chemicals
The Encouragement Prize for Invention	Kinki	Soft-textured and heat keeping denim	Fibers & Textiles
The Encouragement Prize for Invention	Kinki	Comfortable clothes material	Fibers & Textiles
The Encouragement Prize for Invention	Kinki	Biaxially oriented polyester film with heat resistance	Films
The Encouragement Prize for Invention	Shikoku	High-performance carbon fiber and carbon fiber reinforced composite material	Carbon Fiber Composite Materials
The Encouragement Prize for Invention	Kanto	High-sensitive DNA chip with fine particles for stirring	Life Science

Other External Commendations

Commendation	Awarding Institution	Subject of Commendation	R&D Segment
nano tech Awards 2014	nano tech Executive Committee	Collective strength to promote R&D and commercialization within the fields of "life nanotechnology" and "green nanotechnology," which are the major themes of nano tech	Fibers & Textiles, Resins & Chemicals, Films, Electronics & Information Related Products, Carbon Fiber Composite Materials, Life Science
The 60th Annual Okochi Memorial Grand Production Prize	Okochi Memorial Foundation	Development of carbon fiber composite materials for airplanes	Carbon Fiber Composite Materials
The 13th Green Sustainable Chemistry Awarded by the Minister of Economy, Trade and Industry	Green & Sustainable Chemistry Networking Conference	Development of carbon fiber composite materials to reduce weight of airplanes	Carbon Fiber Composite Materials
Japanese Proteomics Society Award for Technical Development	Japanese Proteomics Society	A novel approach for discovering proteins at extremely low-abundance in serum	Life Science



IX Policies for Intellectual Property Portfolio

As noted in Part III of this report, Toray Group manages its intellectual property portfolio with a close eye on the future profitability and technical innovation of each technology and product.

We have established “Rank-A Projects” for technologies assigned particularly high importance, with invention

activities promoted on a prioritized basis. These projects promote activities of the formation of patent portfolios through the creation of patent maps to thoroughly comprehend technologies and patents of other companies, and establishment of subsequent strategies for enforcement of patent rights.



X Information on Risk Response

As part of its defense-oriented intellectual property activities, Toray regularly researches and examines the patents of its competitors in each technology. Our policy likewise requires mandatory confirmation of competitors' patents before any new product is commercialized and judgments of whether we might infringe on any of the patents. If any patents having an impact

on our business are identified, the next step is to plan and execute countermeasures to remove such impacts.

At the present time, there are no intellectual property related lawsuits in the courts deemed capable of having a serious impact on the business interests of Toray Group.

Note

The plans, prospects and strategies referred to in this report are merely assumptions based on available information at the time of issuance of this report. They are subject to revision in the event of changes to Toray Group's operating conditions, the emergence of new technical innovations and changes to the intellectual property environment.

Product names marked with ® or ™ are trademarks.

Date of Issue: November 2014

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