



*Ideas & Chemistry*

# 2012 Annual Report

Year Ended March 31, 2012



# 1882-2012

# Ideas

Creating new high-functional products  
by enhancing our core technologies

# Chemistry

# HISTORY

In 2012, Toyobo Co., Ltd., marked the 130th anniversary of its establishment and adopted a new corporate slogan, **“Ideas & Chemistry.”** Toyobo’s predecessor company, Osaka Boseki, was the first joint-stock corporation in Japan to be formed entirely with private capital. At that time, textile spinning companies were small and had low productivity. Amid these relatively weak companies, Osaka Boseki, which imported its equipment and production technology from the United Kingdom, was not only successful in its business activities but also pointed the way for the beginning of a modern industry in Japan. This success was due to the **“Ideas,” plans for a possible course of action,** by the founders, which made it possible to overcome many difficulties and also served as testimony of its success. In 1914, Osaka Boseki merged with Mie Boseki, and the name given to the new company was Toyobo Co., Ltd.

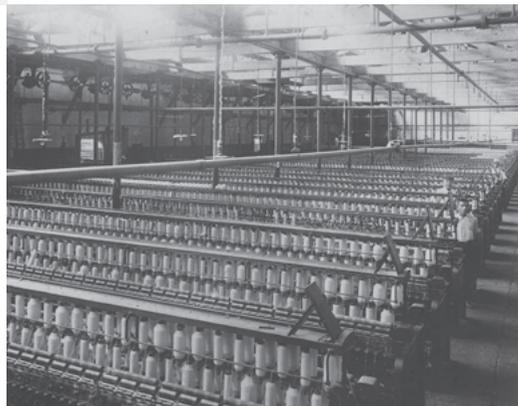
production, which had been commercialized in Europe and the United States. This technology was combined with the chemical fiber technology that had been established in the 1930s and from the 1950s onward, and Toyobo developed spandex fibers, films, functional polymers, biochemical products, and other items. These new products were created through **“Chemistry,” which aims to change the shape and/or properties of materials,** and greatly expanded Toyobo’s business domains.

The era of the 1970s was a time when the issues of the limits to growth and the need for sustainability received closer attention as common themes around the world. At the same time, trade disputes over Japan’s textile exports to the United States brought Toyobo to another important turning point in its history. During that time, Toyobo reallocated its resource development activities and young research personnel to new businesses outside the textile business. Research and development themes addressed included environmental pollution, the shortage of water, and health care. With their pioneering spirit, Toyobo’s research personnel accepted the challenge of developing original technologies in the field of **“Chemistry” to achieve breakthroughs** and realize their aspirations. The products that came out of this pioneering drive—VOC emissions treatment equipment, reverse osmosis membrane elements for seawater desalination, and artificial kidney hollow fiber membranes—are still supporting Toyobo today.

In the 1980s, as part of its business strategy of diversification, Toyobo entered the fields of information recording materials and pharmaceuticals, but these efforts did not meet with success. However, these experiences

## 1882

During the period of recovery following World War II, Toyobo introduced technology for manufacturing synthetic fibers for apparel





expanded Toyobo's capabilities for the variations of **"Chemistry" as technical seeds** and led to the creation of new products in its film business and its contract manufacturing of pharmaceutical business, based on new **"Ideas"** and **ways of thinking**.

From the year 2000 onward, Toyobo undertook structural reforms in its textile business by making efficient use of assets and profitability as guidelines. Toyobo further developed the technologies it has accumulated in the textile business to develop products for industrial use and applications in people's daily lives. These included high-performance fibers, non-woven fabrics, tire cords and airbag fabrics for automotive use and other products.

Today, as in the past, Toyobo is taking initiatives to create new **"Chemistry."** For example, as flat panel display TVs came into wider use in the latter half of the first decade of the 21st century, based on the superior optical properties of its polyester films, Toyobo expanded its business in this area. Using its knowledge in this field, Toyobo developed high functional films for touch screens and films with superior durability

made from improved raw polymers. In addition, Toyobo developed highly heat-resistance plastics based on non-edible plant materials, enzymes for diagnostics with high reaction efficiency as biocatalysts and other materials featuring biocompatibility. Toyobo is currently moving quickly to expand sales of these products into world markets.

Last, Toyobo's management in its early days set the goal for its business activities of seeing to it that "no one is unclothed and freezing anywhere in the world." For the past 130 years up to the present, Toyobo's **"Chemistry" in the form of its products** has continued to change, but the Toyobo Group's "reason for being," its mission of contributing to society and humanity, through specialty businesses remains unchanged. In the years to come, Toyobo will respond to the expectations of its shareholders and other stakeholders as it continues to work to accomplish this mission.



# 2012

To become  
“The category leader for  
continually providing new  
value in the environment,  
life science and high-  
function products fields”

# Profile

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The Toyobo Group aims to become “The category leader for continually providing new value in the environment, life science and high-function products fields.” With its core technologies of polymerization, modification, processing and biotechnology as its base, Toyobo is expanding its specialty businesses globally, focusing on five markets (Environment, Life Science, Automotive, Electronics & Information Display and Lifestyle & Safety) as it works to offer new value as a high-function products manufacturer.

The Group has four main business segments:

- **Films and Functional Polymers**
- **Industrial Materials**
- **Life Science**
- **Textiles**

The Group’s Corporate Philosophy is “*Jun-ri-Soku-yu*.” This phrase was the personal motto of Eiichi Shibusawa, who was the founder of Toyobo 130 years ago. It expresses the idea that “Adhering to Reason Leads to Prosperity.” As we continue to follow this Company philosophy handed down from the time of its establishment, we will pass the baton to the next generations.

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### Caution Regarding Business Forecasts and Forward-Looking Statements

Business forecasts and other forward-looking statements regarding Toyobo Co., Ltd. found in this annual report reflect the management’s assessment based on data available to it at the time that such were compiled. Readers are cautioned that actual business results may differ materially from these statements due to market trends, economic conditions and other factors.

# Consolidated Financial Highlights

TOYOBO CO., LTD. AND CONSOLIDATED SUBSIDIARIES  
Years ended March 31

	Millions of yen						Thousands of U.S. dollars (Note 1)
	2012	2011	2010	2009	2008	2007	2012
Net sales	<b>¥349,505</b>	¥340,573	¥318,773	¥367,271	¥431,417	¥426,666	<b>\$4,252,403</b>
Films and functional polymers	<b>133,322</b>	126,960	114,928	122,312	134,631	124,614	<b>1,622,119</b>
Industrial materials	<b>71,221</b>	71,462	63,157	74,656	76,138	74,391	<b>866,541</b>
Life science	<b>31,695</b>	31,386	32,377	33,123	33,961	32,639	<b>385,631</b>
Textiles	<b>87,999</b>	86,832	88,373	111,736	142,471	149,585	<b>1,070,678</b>
Real estate (Note 2)	<b>3,793</b>	3,602	4,564	4,649	4,267	—	<b>46,149</b>
Other businesses (Note 2)	<b>21,474</b>	20,331	15,374	20,795	39,950	45,437	<b>261,273</b>
Operating income	<b>18,305</b>	20,890	11,469	11,229	27,075	30,435	<b>222,716</b>
Net income (loss)	<b>4,587</b>	4,155	2,094	(12,505)	4,698	13,472	<b>55,810</b>
EBITDA	<b>37,778</b>	40,003	31,888	32,435	46,349	47,373	<b>459,642</b>
Depreciation and amortization	<b>19,473</b>	19,113	20,419	21,206	19,274	16,938	<b>236,927</b>
Capital expenditure	<b>16,517</b>	13,931	15,166	20,039	32,486	15,753	<b>200,961</b>
R&D expenses	<b>10,820</b>	10,634	10,296	10,669	10,877	10,426	<b>131,646</b>
Total assets	<b>437,841</b>	443,516	438,439	443,816	494,496	513,191	<b>5,327,181</b>
Shareholders' equity (excluding minority interests)	<b>130,572</b>	125,770	107,095	98,253	129,671	133,521	<b>1,588,648</b>
Interest-bearing debt	<b>154,888</b>	151,804	170,963	178,901	178,842	194,239	<b>1,884,511</b>
Net cash flows provided by (used in) operating activities	<b>14,192</b>	33,714	29,024	(368)	23,282	27,064	<b>172,673</b>
Net cash flows used in investing activities	<b>(15,061)</b>	(11,579)	(13,455)	(15,803)	(10,193)	(2,925)	<b>(183,246)</b>
Net cash flows used in financing activities	<b>(11,531)</b>	(9,915)	(15,832)	17,379	(17,948)	(22,439)	<b>(140,297)</b>

## Per stock data (yen):

	Yen						U.S. dollars (Note 1)
Basic net income (loss) per share	<b>¥5.17</b>	¥5.49	¥2.88	(¥17.92)	¥6.73	¥19.32	<b>\$0.063</b>
Cash dividends	<b>3.50</b>	3.50	3.50	3.50	5.00	5.00	<b>0.043</b>

## Financial ratios:

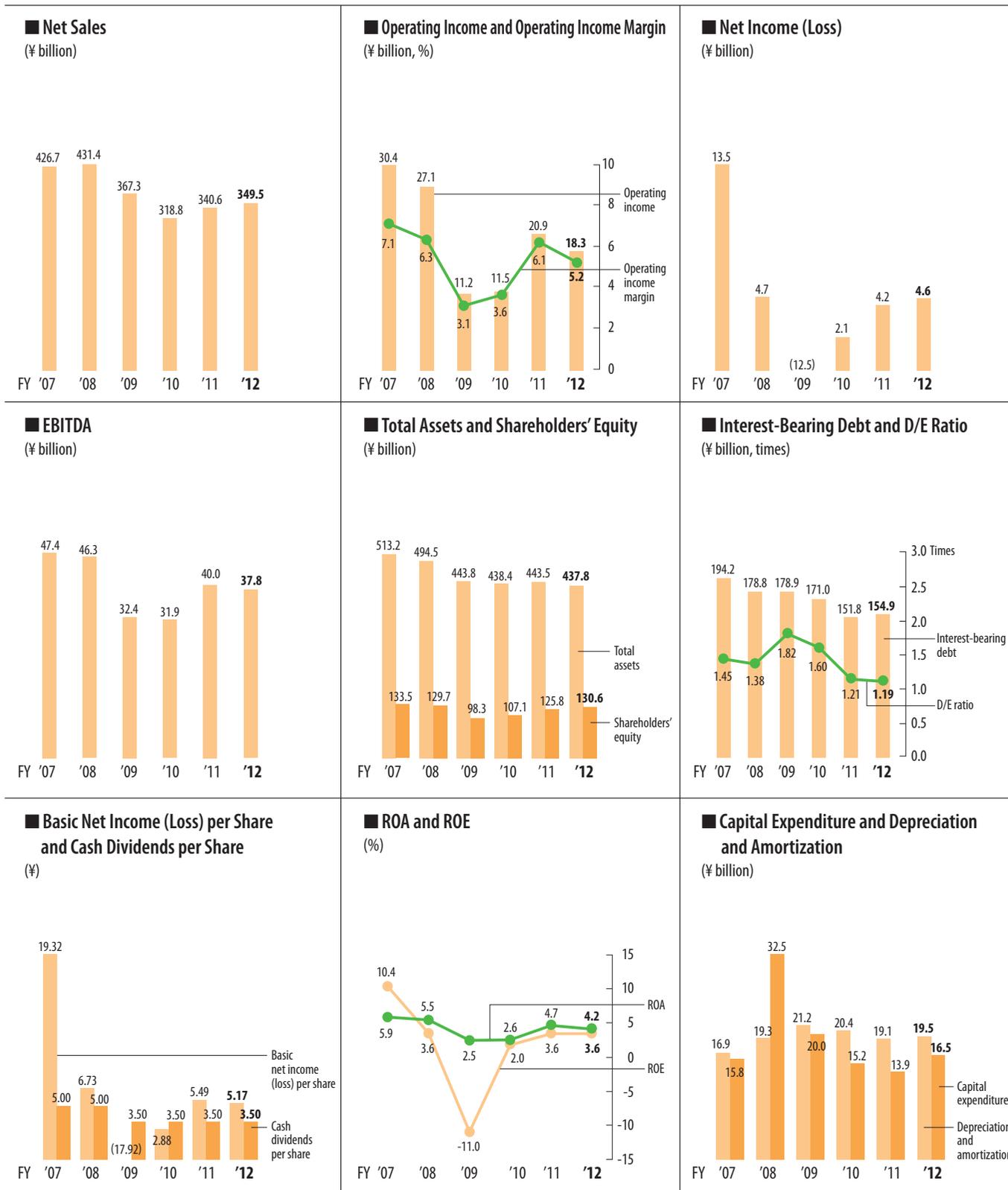
ROA (%) (Note 3)	<b>4.2</b>	4.7	2.6	2.5	5.5	5.9
ROE (%)	<b>3.6</b>	3.6	2.0	(11.0)	3.6	10.4
Equity ratio (%)	<b>29.8</b>	28.4	24.4	22.1	26.2	26.0
D/E ratio (times) (Note 4)	<b>1.19</b>	1.21	1.60	1.82	1.38	1.45

Notes: 1. The U.S. dollar amounts in this report represent translations of yen for convenience only at the rate of ¥82.19 to \$1.00.

2. The real estate leasing business was previously included as part of the Other Businesses segment, but since the value of the assets in this business has exceeded 10% of the total value of assets in the segment, from the year ended March 31, 2009, the segment classification has been changed to include the Real Estate segment. Segment information for the year ended March 31, 2008 has been restated.

3. ROA: Operating income basis.

4. D/E ratio: Interest-bearing debt/net assets excluding minority interests.





Ryuzo Sakamoto  
President and Chief Operating Officer

## Review of Fiscal 2012

During fiscal 2012 (ended March 31, 2012), the business environment in Japan showed a trend toward improvement from the effects of the Great East Japan Earthquake that occurred just before the beginning of the fiscal year. However, conditions remained challenging because of the combined effects of the floods in Thailand, the appreciation of the yen, the increase in crude oil prices, and other factors. In overseas economies also, the overall outlook continued to be uncertain because of slower economic growth in China and other countries that have been drivers of economic growth and the debt crises in Europe.

Amid this operating environment, based on our four-year medium-term management plan that we began to implement in April 2010, the Toyobo Group took initiatives in a range of areas. These included making investments to expand capacity, accelerating overseas business development, and improving the product portfolio through the development of new products. However, performance for the fiscal year was strongly influenced by the deceleration in demand for and declines in prices of films used in LCDs. As a consequence, Toyobo reduced production in its films business overall and restrained inventories in the second half of the fiscal year to improve asset efficiency. At the same time, to improve its portfolio of industrial films, Toyobo focused on expanding sales of films other than those for large-sized LCD use, including films for the manufacturing process of ceramic capacitors and touch screens as well as synthetic paper. Also, Toyobocs "VYLOAMIDE" biomass high-melting-point polyamide is expected to be adopted for use in LED lighting in Japan and overseas. The results of these and other newly developed products are now contributing to performance in Toyobo's businesses.



As a result, consolidated net sales for the fiscal year increased ¥8.9 billion (2.6% year on year) from the previous fiscal year, to ¥349.5 billion; operating income declined ¥2.6 billion (12.4%), to ¥18.3 billion; and net income rose ¥0.4 billion (10.4%), to ¥4.6 billion.

## Forecast for Fiscal 2013

Toyobo has revised its forecast, issued in May 2012, for fiscal 2013, ending March 31, 2013.

The operating environment for the Company is forecast to remain highly uncertain because of the effects of various factors, including the increase in raw material prices, concerns about financial instabilities accompanying the debt crisis in Europe, and the concerns about electric power supply in Japan.

Amid these conditions, as of May 2012, Toyobo was expecting improvements in performance because of recovery in its automotive-related products, accompanying an increase in the unit production of

automobiles, and an increase in the unit sales volume of industrial films because of the shift in its product portfolio away from industrial films used in large-scale LCDs.

Nevertheless, performance results for the first quarter of the current fiscal year indicated that the operating environment is severer than initially thought because of declines in sales prices of industrial films for use in large-scale LCDs, a decline in the unit volume of sales in the packaging films business due to fluctuations in demand, delays in expansion of sales of products to China in the environmental field, and a revision of the life cycles of Toyobo's products and reported inventory valuation losses.

From the second quarter onward, Toyobo will move forward with improvements in its product portfolio in its specialties business and focus on improving profitability. However, the Company forecasts that conditions in the operating environment will be severer than was anticipated in May. Accordingly, Toyobo has revised its initial forecasts as follows. The forecast for consolidated net sales has been reduced from ¥365.0 billion in the May forecast to ¥355.0 billion; the operating income forecast\* has been lowered from ¥24.0 billion to ¥18.0 billion; also, the forecast for net income has been reduced from ¥10.0 billion to ¥6.4 billion.

\*The operating income forecast takes account of ¥4.0 billion due to a change in the depreciation method.

In 2012, we marked the 130th anniversary of  
Toyobo's establishment and adopted  
a new corporate slogan, "Ideas & Chemistry."

# Medium-Term Management Plan

(Fiscal 2011 to Fiscal 2014)

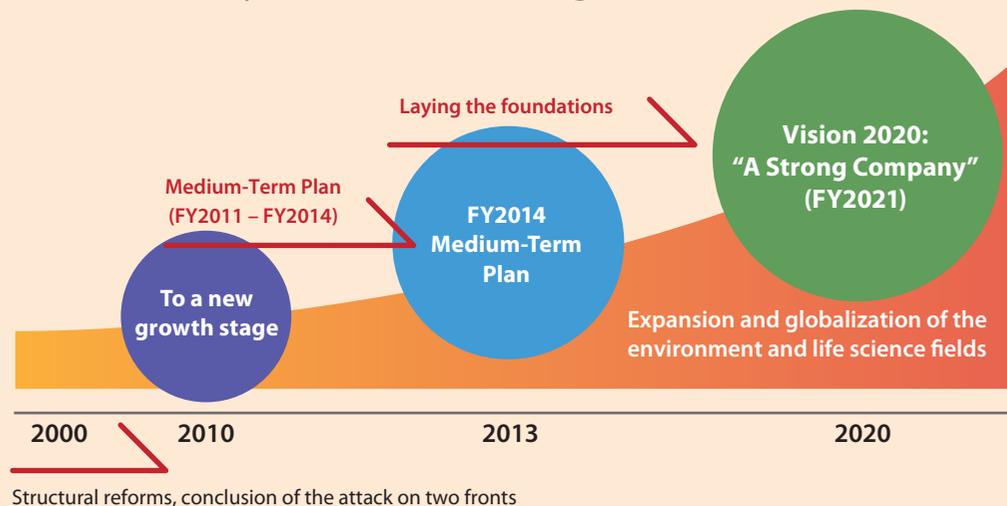
The Toyobo Group has thus far addressed two management issues simultaneously. These are making structural reforms in its textile and other related products business and expanding its specialty businesses: namely, films and functional polymers, industrial materials and life science.

By fiscal 2009, Toyobo had almost completed its restructuring of more common textile products that have low profit margins, and, at present, is giving maximum priority to accelerating growth in its specialty businesses to “enter a new stage in growth.” Under these circumstances, the Toyobo Group is working to become “the category leader for continually providing new value in the environment, life science and high-function products fields” as well as become a strong company with growth and stability. To attain these objectives, Toyobo is devoting its resources to implement the following.

These initiatives to address priority issues remain unchanged from the initial plan, but the operating

By combining “Ideas,” which are the source of creativity, with “Chemistry,” which has the power to develop high-function products, we are aiming for new growth.

## Outline of Toyobo’s Growth Stages





environment has become severer than initially expected. Developments causing this have been increases in raw material and fuel costs, the further appreciation of the yen, the decline in LCD sales prices and other factors. To cope effectively with these conditions, the Toyobo Group is further accelerating its overseas business development and its creation of new products through its R&D initiatives. However, in view of trends in the operating environment, Toyobo has revised its quantitative targets for fiscal 2014, the final year of the medium-term management plan. The revised targets in May 2012 are ¥390.0 billion in consolidated net sales (compared with ¥400.0 billion in the initial plan)

and operating income of ¥27.0 billion (versus an initial target of ¥30.0 billion), including ¥4.0 billion due to a change in the method of depreciation.

### (a) Investments to Expand Capacity

The Toyobo Group is implementing investments, alliances and M&A deals to increase its production capacity in its specialty businesses to capture emerging opportunities.

In fiscal 2012, Toyobo decided to build new production facilities for polyester films for both industrial films and packaging films, and for injectable solutions in the contract manufacturing of pharmaceuticals business. The Company will implement investments at the optimal times also in business fields that generate income and have growth potential.

### (b) Acceleration of Overseas Business Development

The Toyobo Group will accelerate the development of its business activities in overseas markets that are continuing to grow, especially in China. Thus far, the Company's principal business has been exporting products from Japan to overseas markets. Going forward, however, the Company is moving forward to structure a more-autonomous model for overseas operations by establishing and upgrading its business bases that can conduct integrated overseas operations from R&D through manufacturing and marketing.

## Overseas Business Development

### Focus on Asia



In line with this policy, during fiscal 2012, Toyobo made the decision to establish a company to manufacture and sell co-polyester for adhesives in Thailand. Also, in the airbag fabric business, Toyobo made the decision to follow on from its market development activities in China and form a sales company in the United States. Similarly, in the water treatment membrane business, Toyobo's joint venture with local business interests in Saudi Arabia went into operation.

Looking ahead, Toyobo will accelerate the development of its international business activities, including alliances, with activities centering around the newly formed Global Business Planning Division.

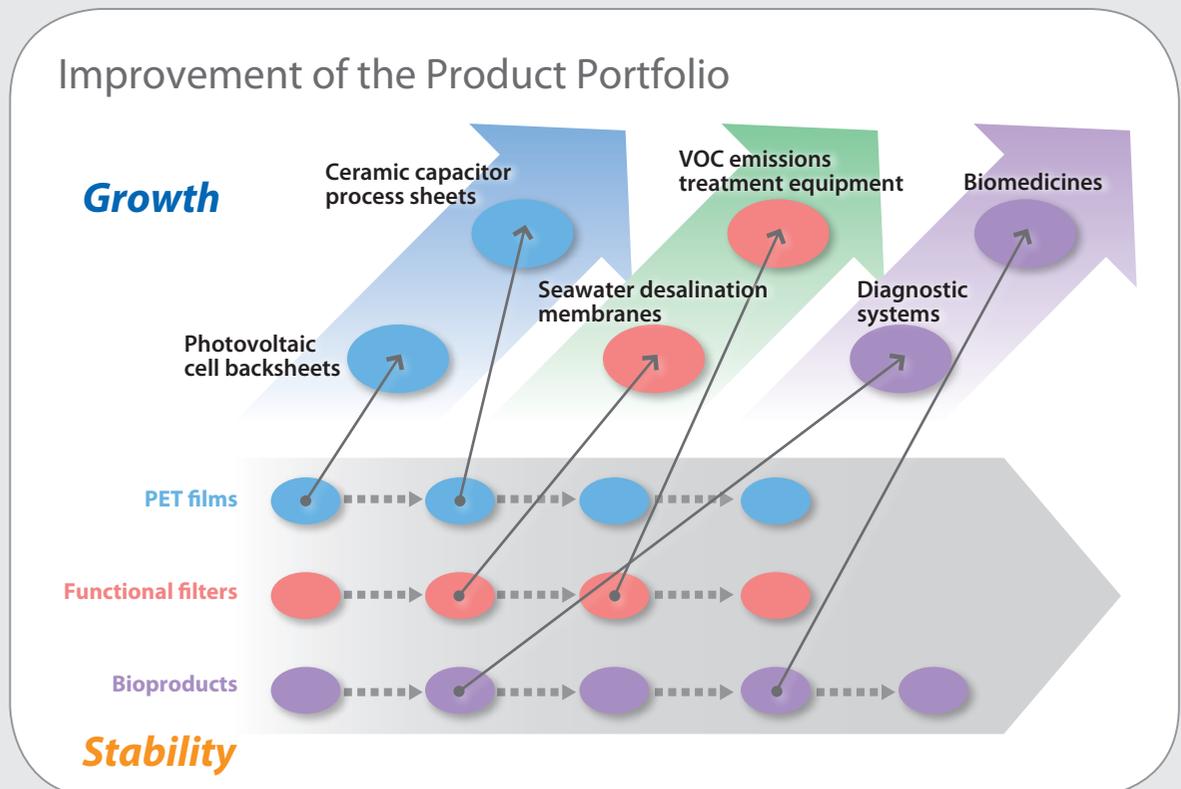
### (c) Improvement of the Product Portfolio

The activities of the Toyobo Group comprise many specialty businesses. To build positions of strength in each of these businesses, we believe it will be important to continue developing new products and increasing value added.

The key to this is the development of new products. We must anticipate changes in the market, and with our development, manufacturing and marketing functions working together, we must offer new products and services to customers. In addition, in our product development activities, we will collaborate proactively with other companies, universities and others to speed up the development process.

### (d) Improving Asset Efficiency

In the textile business, in those more common product fields with low profitability, we have moved ahead without hesitation to implement structural reforms that have involved the downsizing and scrapping of facilities. Going forward, we foresee difficult conditions continuing;



therefore, we are continuing to sharpen our focus on the functional textile field, such as sportswear and underwear. In addition, we are promoting the development of these businesses overseas at the same time we are working to build close ties with excellent customers and improve profitability.

In our specialty businesses also, we will continue to insist on positioning asset efficiency as a major management indicator.



We will become **"The category leader for continually providing new value in the environment, life science and high-function products fields."**

## Return to Shareholders

Toyobo considers providing returns to shareholders to be one of its highest priorities. Our basic policy is to continually provide a stable dividend, determined in a comprehensive consideration of such factors as improving the financial position, profit levels and retention of earnings for future investment.

In accordance with this policy, Toyobo paid a year-end dividend for fiscal 2012 of ¥3.50 per share. For fiscal 2013, assuming that net income is at the forecast level of ¥6.4 billion, we expect to pay a dividend of ¥3.50 per share. We will conclude by emphasizing that we are grateful

to our shareholders and to investors for their interest in Toyobo, and look forward to their continuing support and understanding.

August 2012

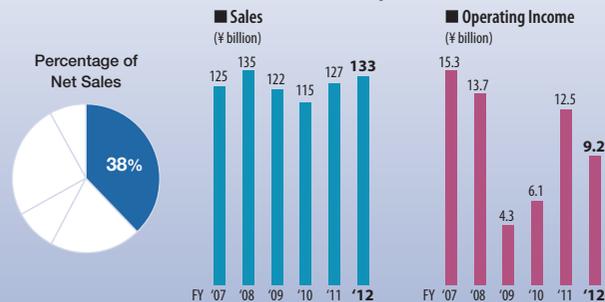
Ryuzo Sakamoto  
President and Chief Operating Officer

# Business Segments

Fields ►

## ▼ Business Segments

### Films & Functional Polymers



#### Industrial films

- PET films for (i) FPD use, (ii) photovoltaic backsheets, (iii) touch screens, (iv) ceramic capacitor process sheets and (v) other industrial uses
- Synthetic paper

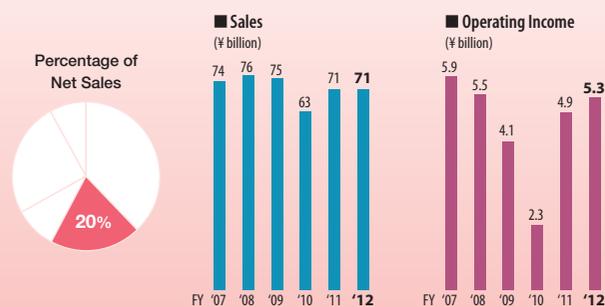
#### Packaging films

- PET, polyolefin, polyamide for food packaging, heat-shrink films for labels

#### Functional polymers

- Engineering plastics
- For industrial adhesives, coatings: co-polyester, modified polyolefin
- Acrylate polymers

### Industrial Materials



#### Functional fibers

- Airbag fabrics, polyester yarn for tire cords

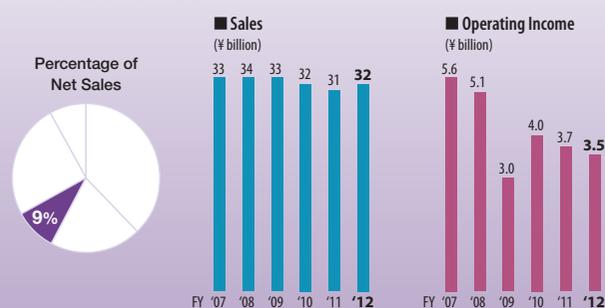
#### High-performance fibers

- Ultra-high-strength polyethylene fiber
- PBO fiber: extreme heat-resistance, high-tenacity fiber

#### Functional filters, non-woven fabrics

- Filters for (i) automotive components, (ii) office equipment and (iii) air purifiers
- VOC emissions treatment equipment and systems with activated carbon filters
- Non-woven fabrics for automotive parts and construction materials

### Life Science



#### Bioproducts

- Enzymes for diagnostics, diagnostic systems and reagents, research reagents, cosmetic ingredients

#### Pharmaceuticals

- Contract manufacturing (injections, raw pharmaceuticals, antibody drugs)

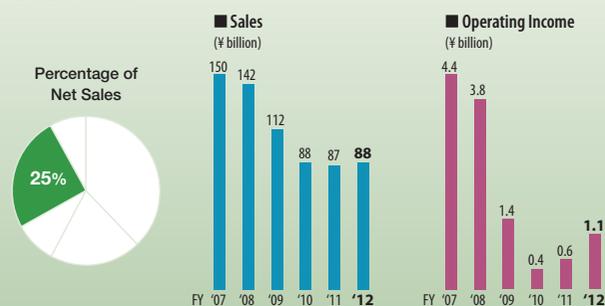
#### Medical membranes, equipment and devices

- Hollow fiber membranes for artificial kidneys, anti-clotting materials

#### Water treatment membranes

- Seawater desalination reverse osmosis membranes
- Ultra-filtration membranes for tap water

### Textiles



#### Textiles

- Functional textiles

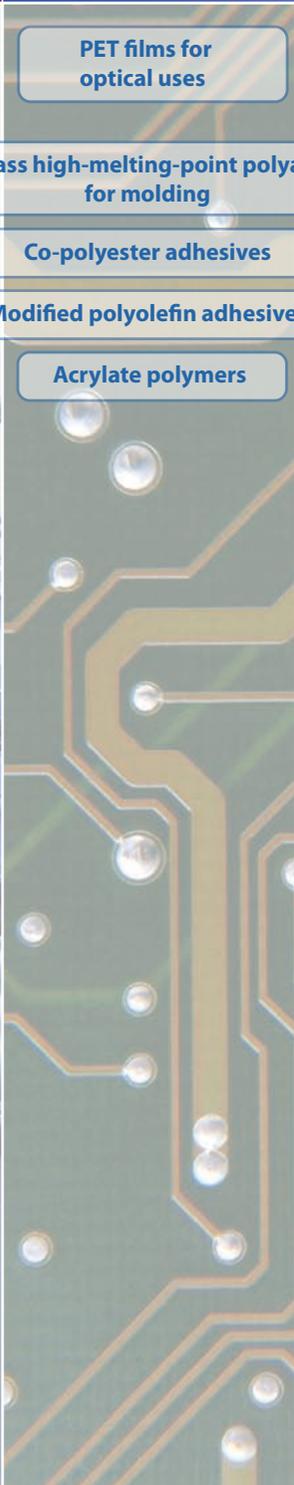
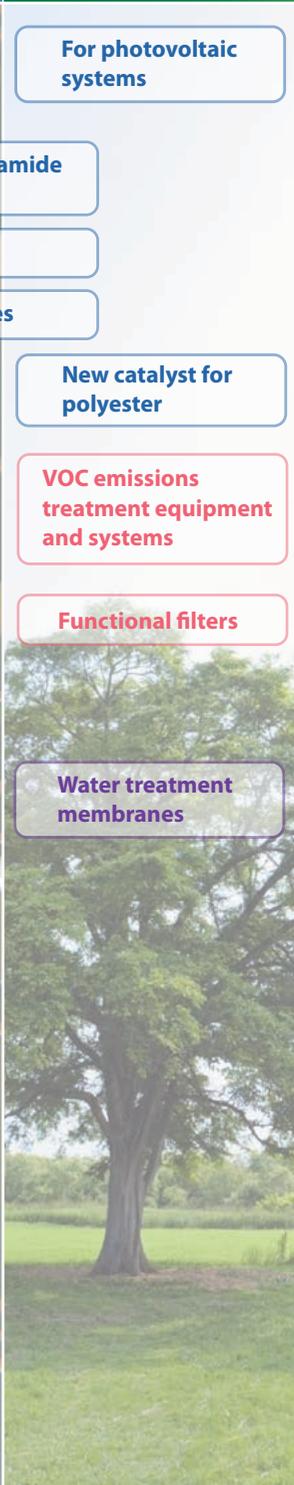
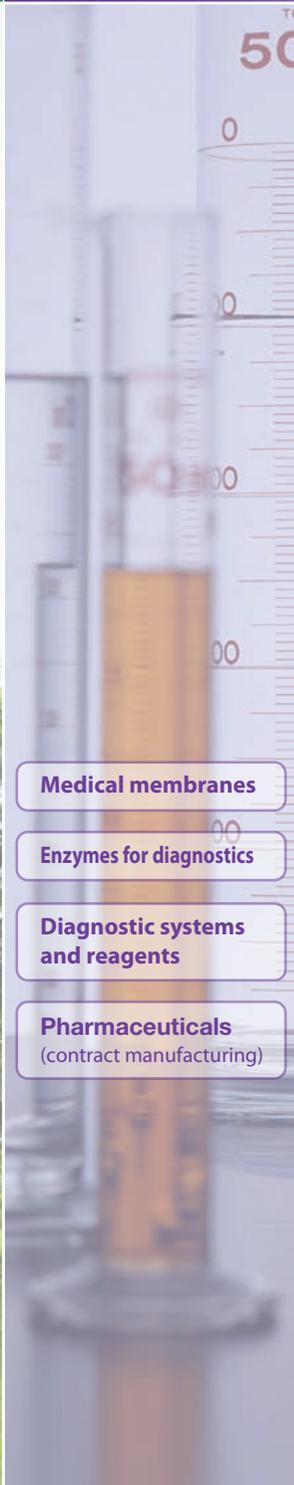
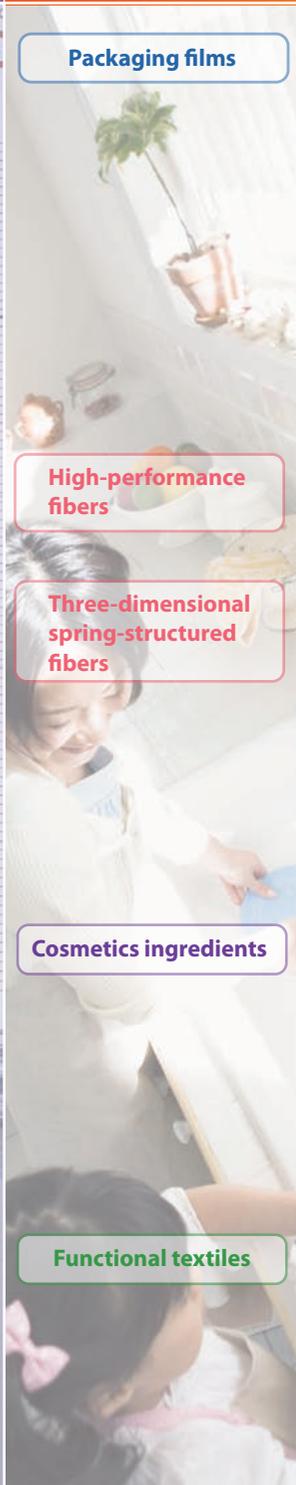
#### Apparel products

- "Munsingwear": sportswear

#### Acrylic fibers

- "EXLAN": acrylic fibers

# and **F**ields

Automotive	Electronics & Information Displays	Environment	Life Science	Lifestyle & Safety
 <ul style="list-style-type: none"> <li>Engineering plastics</li> <li>Airbag fabrics</li> <li>Functional filters</li> <li>Non-woven fabrics</li> </ul>	 <ul style="list-style-type: none"> <li>PET films for optical uses</li> <li>Biomass high-melting-point polyamide for molding</li> <li>Co-polyester adhesives</li> <li>Modified polyolefin adhesives</li> <li>Acrylate polymers</li> </ul>	 <ul style="list-style-type: none"> <li>For photovoltaic systems</li> <li>New catalyst for polyester</li> <li>VOC emissions treatment equipment and systems</li> <li>Functional filters</li> <li>Water treatment membranes</li> </ul>	 <ul style="list-style-type: none"> <li>Medical membranes</li> <li>Enzymes for diagnostics</li> <li>Diagnostic systems and reagents</li> <li>Pharmaceuticals (contract manufacturing)</li> </ul>	 <ul style="list-style-type: none"> <li>Packaging films</li> <li>High-performance fibers</li> <li>Three-dimensional spring-structured fibers</li> <li>Cosmetics ingredients</li> <li>Functional textiles</li> </ul>



# Films and Functional Polymers

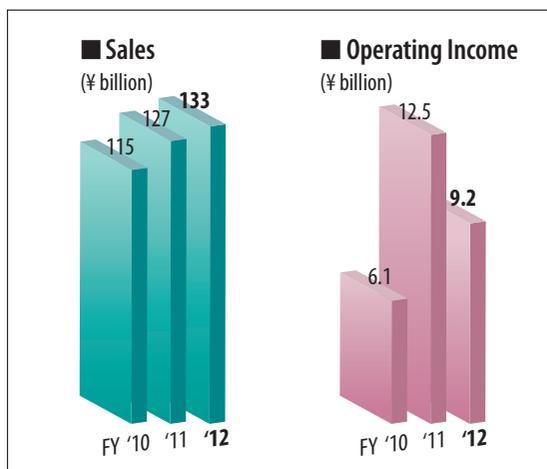
**Fumiaki Miyoshi**  
Corporate Senior Executive Officer, in Charge of the Films and Functional Polymers Segment

## Business Division Policy

This segment comprises the Films business and Functional Polymers business. Using polymer modification, film and other technologies, we provide specialty products to meet market needs.

## Results for Fiscal 2012

In the Films business, revenues from packaging films held firm during the first half of the fiscal year, but, in the latter half, they were adversely affected by temporary users' adjustments in inventories. In the Industrial Films business, this segment worked to develop businesses outside films for liquid crystal displays (LCDs), including films for electronic parts in the information and telecommunications field, but the decline in prices and production adjustments in the LCD panel related field had an adverse impact on sales. For this reason, the segment endeavored to reduce inventories through reduction in production. In the Functional Polymers business, the "VYLON" series of industrial adhesives experienced difficulties in applications related to electronic parts because of the downturn in the world economy. In the engineering plastics business, demand from the automotive industry, which is the principal customer sector for this



business, was adversely affected by the Great East Japan Earthquake and the flooding in Thailand, but demand in volume terms recovered in the latter half of the fiscal year and remained firm for the fiscal year as a whole.

As a result, sales increased in comparison with the previous fiscal year but income decreased year on year.

## Issues and Policies

Important issues for this division included improving the product portfolio of the industrial films business and expanding the overseas markets for functional polymers.

Toyobo's industrial films feature a high degree of transparency, and we have expanded sales and income from products sold for use in LCDs. At present, we are drawing on the special characteristics of these products and expanding sales of films for use in touch screens. We are also

increasing the volume of sales of films for use in ceramic capacitor production processes and films for photovoltaic backsheets as the percentage of sales for standardized LCDs declines. In addition, in contrast with overseas markets where the volume of sales to the electronics and automobile industries is expanding, we are accelerating the creation of manufacturing, sales and development centers for functional polymers.



Toyobo will be the first company in the world to adopt hybrid-type polyester film production equipment that can manufacture both industrial and packaging polyester films. The details of this new production capacity are as follows:

- Investment: Approximately ¥10 billion
- Production capacity: 22,000 tons/year
- Location: Tsuruga Film Plant (in Tsuruga City, Fukui Prefecture)
- Start-up date: October 2013

### Establishment of a Manufacturing and Sales Company for “VYLON” Co-Polyester Resin in Thailand

In recent years, Japanese, European and U.S. companies have established production plants and local subsidiaries in China, ASEAN member countries, India and elsewhere, mainly for electronic and IT equipment. Growth in this field is expected to continue.

In view of these trends, we decided to establish TOYOBO CHEMICALS (Thailand) Co., Ltd., as a joint venture with Mitsubishi Corporation for the production and distribution of “VYLON”. Thailand was selected as the overseas manufacturing base due to the advantages it offers from the standpoints of taxation, logistics and other aspects. The details are as follows:

- Paid-in capital: Approximately ¥1.2 billion
- Ownership percentages: Toyobo 85%, Mitsubishi Corporation 15%
- Location: Chonburi Province, the Kingdom of Thailand
- Schedule: Established in July 2012, start-up in January 2014

## Focus: Strategies and Topics

### Decision to add new “hybrid-type polyester film production capacity” to respond to needs for both industrial films and packaging films

Demand for industrial films for touch screen applications is forecast to increase rapidly along with the wider use of smartphones and tablet PCs. In addition, the usage of renewable energy sources is expected to expand, which will bring increased demand for films for photovoltaic backsheets. However, although the rate of expansion in demand will be high, the market will also experience severe fluctuations.

As the demand for food packaging films decreases gradually, Toyobo will maintain stability in sales and income through differentiation from other producers by the installation of a hybrid-type polyester film production facility and by drawing fully on its polymer technology.



### Additional Production Capacity for "HARDLEN" Chlorinated Polypropylene Goes into Operation

Along with the increase in the number of automotive vehicles manufactured, mainly in China and other emerging countries in Asia, demand for "HARDLEN" for use in the undercoat painting of automobile bumpers is expanding. Moreover, demand is expanding for newly developed inks for printing on food packaging films that make use of "HARDLEN", instead of toluene-based inks, which have been the principal inks used for this purpose thus far but have been subject to restrictions.

To respond to this increase in demand, Toyobo began the operation of additional production capacity for "HARDLEN" in December 2011. Plans call for further expansion of capacity in two to three years. The details of the most-recent investment in this field are as follows:

- Investment: Approximately ¥1.0 billion
- Production capacity: 1.5 times the previous level
- Location: Takasago Plant (Takasago, Hyogo Prefecture)
- Start-up date: December 2011



Along with the miniaturization of parts in recent years, high-temperature processing operations in manufacturing assembly lines, such as surface mounting, have been increasing, and this trend is increasing the need for polyamides, which feature a high melting point. Moreover, along with the growing awareness of environmental issues, demand for plastics that are based on biomass, which is a non-petroleum material, has also been rising.

In view of these trends, Toyobo has developed polyamide with the highest melting point that makes use of biomass derived from non-edible ricinus castor oil plants. The details of this investment are as follows:

- Investment: Approximately ¥2.0 billion
- Business partner: Arkema Inc.
- Production capacity: 1,000 tons/year
- Location: Tsuruga Polymer Plant (in Tsuruga City, Fukui Prefecture)
- Start-up date: April 2011



### Expansion of Applications and the Market for "VYLOAMIDE" Functional Polyamide

Polyamide offers greater resistance to heat and oil as well as greater (mechanical) strength and finds application as a material in automotive production. Recently, the wider adoption of polyamide is expected for reflectors used with LEDs, which have been coming into wider use in lighting and as backlights for various types of displays, as well as in other automotive applications that require resistance to heat.



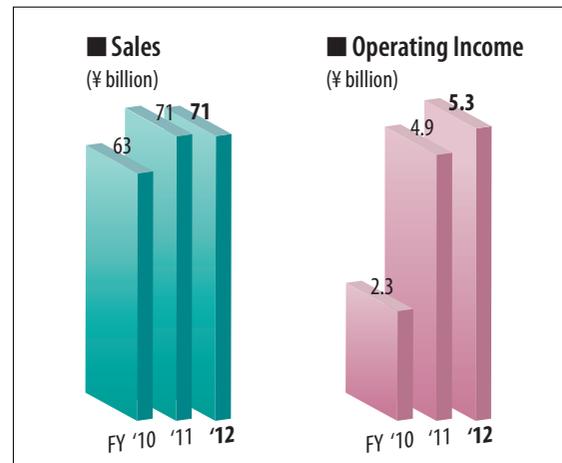


# Industrial Materials

**Kazumasa Koyama**  
Corporate Executive Officer, in Charge of the Industrial Materials Segment

## Business Division Policy

This business segment draws on the textile-related technologies that Toyobo has accumulated thus far to offer high-function materials, especially automotive products, such as airbag fabrics and tire cords as well as high-performance fibers and functional filters. We are planning for further business expansion as we offer differentiated functional materials related to our key words “environment, lifestyle and safety” along with “aggressive expansion in growth markets around the world.”



As a result, sales decreased in comparison with the previous fiscal year but income rose year on year.

## Results for Fiscal 2012

In the automotive products field, revenues from airbag fabrics recovered from the effects of the earthquake in the second quarter and were favorable, but in the tire cord business, users of these products experienced difficulties because of the adverse impact of the flood damage in Thailand and foreign currency fluctuations. In the high-performance fibers business, sales of “ZYLON” for use in heat-resistant applications were steady, but sales of “Dyneema” were affected by the delay in market recovery for certain applications. In the Functional Filters business, sales of filters for use in air conditioners and office equipment continued to be favorable, but, as this segment worked to expand sales of VOC emissions treatment equipment in Asia, sales were adversely affected by adjustments in investment projects among certain users.

## Issues and Policies

The important issue for this division is expansion into overseas markets. Along with the growth in overseas production by automobile manufacturers, which are the principal users of the products of this division, in the airbag fabric business, we began production in China in early 2012 and established a sales company in the United States. In addition, in the Activated Carbon business, which is linked to our strategic environmental field through Functional Filters, demand is expected to rise because of the tightening of environmental restrictions in Asian nations and other emerging countries. In anticipation of this growing demand, we are planning to establish a sales base for VOC emissions treatment equipment in Asia.

**Focus: Strategies and Topics**

**Overseas development of the airbag fabric business**

***In the United States***

At present, Toyobo manufactures airbag fabrics in Japan, Thailand and China, and these materials are sold principally to Japanese-affiliated automobile manufacturers. In recent years, in the emerging countries, including the BRICs, sales of automobiles have increased, and, accompanying the tightening of regulations in the United States, demand for airbags has risen worldwide, and Japanese-affiliated automobile manufacturers have increased their production outside Japan.

In view of these developments, we established TOYOBO INDUSTRIAL MATERIALS AMERICA INC. in the United States as a sales company for airbag fabrics. The details regarding this company are as follows:

- Paid-in capital: US\$9 million
- Share ownership: Toyobo 100%
- Date of establishment: April 2012

***In China***

Toyobo and Toyota Tsusho Corporation established TOYOBO AUTOMOTIVE TEXTILES (CHANGSHU) CO., LTD., a manufacturing and sales company for airbag fabrics, in May 2011, which has begun operations in China's Jiangsu Province. The details of this company are as follows:

- Paid-in capital: US\$5.6 million
- Share ownership: Toyobo 70%, Toyota Tsusho 30%
- Start-up date: April 2012



**Expansion of "Dyneema" Production Facilities**

High-performance polyethylene fiber "Dyneema" is produced by a joint venture, Nippon Dyneema Co., Ltd., which was formed by Toyobo and DSM CO., LTD., of the Netherlands. Because of its high-performance characteristics, "Dyneema" finds application in a wide range of uses, including protective gloves, helmets and other safety gear as well as in mooring cables for ships, fishing lines and other items.



In view of firm increases in demand, Toyobo expanded production capacity for "Dyneema" in December 2012, boosting annual output capacity from 2,400 tons/year to 3,200 tons/year.

**Development of Activated Carbon Business in Asia**

In the activated carbon product business, as environmental regulations have become tighter, Toyobo has worked to develop operating, service and marketing centers, mainly in South Korea, Taiwan and China. Also, as the volume of organic solvents used has increased along with the development of high-technology fields, such as lithium-ion batteries, the business environment has been characterized by expansion of the market in Asia.

Toyobo's VOC emissions treatment equipment, which makes use of "K-FILTER" activated carbon fiber, has been adopted in many manufacturing processes that use organic solvents. As a result, at present, we have a high market share for VOC emissions treatment equipment.



Going forward, we plan to develop a maintenance system in the Asian region and further enhance our technology and services in this field.

# Life Science

**Toshiyuki Matsui**  
Corporate Officer, in Charge of the Life Science Segment



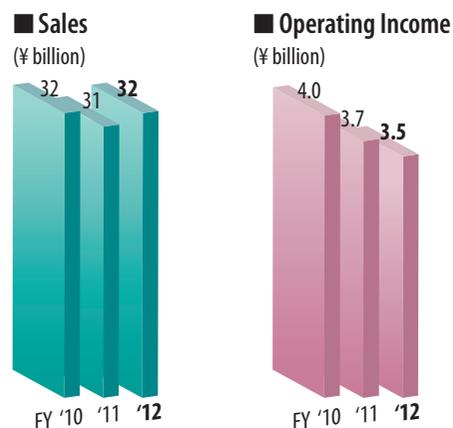
## Business Division Policy

This segment provides products and services to the medical services, healthcare and well-being markets. It covers medical fields, including the bioproducts business derived from Toyobo's microorganism culturing and protein purification technologies, medical membrane and water treatment membrane businesses that have developed from Toyobo's hollow fiber spinning technology and the contract manufacturing of pharmaceuticals. We are actively pursuing expansion in the stable, growing fields that are closely related to people's lives.

## Results for Fiscal 2012

In the bioproducts business, sales of enzymes for diagnostic reagents, which are the principal product in this field, expanded. This was led mainly by exports, but performance was adversely affected by foreign currency fluctuations. In the medical business, in the contract manufacturing of pharmaceuticals, sales of injections remained stable. In the functional membranes for medical-use business, sales remained favorable as a result of expansion in overseas markets. In the water treatment membrane business, shipments for new projects in Saudi Arabia began, but were influenced by foreign currency fluctuations. In the fine chemicals business, the volume of intermediate medicines produced declined substantially because of the expiration of patents on major pharmaceuticals.

As a result, sales increased but income decreased.



## Issues and Policies

The important issue for this division is accelerating growth. Toyobo has a large number of proprietary technologies that other companies do not have, and will accelerate the expansion of its business activities through the launching of new products, the formation of alliances and other strategies. In the contract manufacturing of pharmaceuticals, we expanded production capacity for injections and established a manufacturing and sales joint venture for water treatment membranes in Saudi Arabia. In addition, in the development of new products, we launched an antithrombotic coating material and our Mammalian Power Express System. In the field of intermediate medicines, we reviewed our business structure and worked to strengthen profitability.

### Focus: Strategies and Topics

#### Expansion of production capacity for injections in the contract manufacturing of pharmaceutical business

Toyobo has accumulated experience in providing support for the development of biopharmaceuticals and pharmaceutical manufacturing. Based on this experience, Toyobo has nurtured its capabilities as a special contract manufacturer from investigational products to finished pharmaceuticals' dosages.



Toyobo has concentrated on the development of biopharmaceuticals because in the pharmaceutical industry it has become difficult to create new low molecular weight compounds and because around 2010 the patents on certain major pharmaceuticals expired. However, the world market for biopharmaceuticals is forecast to maintain growth of about 20% annually.

In view of these circumstances, to respond to the anticipated rise in demand, Toyobo is going to expand its production capacity for injections by adding another product line. The details are as follows:

- **Investment:** Approximately ¥1.2 billion
- **Production capacity:** Increase of more than 10% (with filling capacity of 1,800 vials/hour)
- **Location:** Otsu Pharmaceutical Plant
- **Start-up date:** January 2013

#### "HOLLOSEP" Selected for Use in the World's Largest Seawater Desalination Plants



Toyobo's "HOLLOSEP" reverse osmosis (RO) membranes for seawater desalination have been selected for use in the Ras Al Khair Plant, which will be constructed in the Arabian Gulf coast of Saudi Arabia. This plant will be one of the largest of its kind in the world, with a daily output volume of one million cubic meters of water. Of the total output, 345,000 cubic meters will be produced using Toyobo's RO method, and the remainder will be produced using the multi-stage flush method. This plant is scheduled to go into operation in 2014.

Also, since we are expecting to receive orders for large-scale desalination plants besides the Ras Al Khair Plant, we will expand production capacity at our Iwakuni Membrane Plant (located in Iwakuni, Yamaguchi Prefecture) by 30%.

#### Biocompatible Coating Material Developed with Resistance to Complement Activation

During heart surgery, the blood circuit tubes, catheters and other medical devices used cause a foreign matter reaction when they come in contact with blood, causing coagulation and complement activation. Recently, Toyobo has developed a new biocompatible coating material, "SEC-1", which resists complement activation and is suited to the requirements of a wider range of medical equipment.

Since we began to supply this material in December 2011, its use has been extended to a wide range of medical equipment, including blood circuit tubes, where biocompatibility is necessary.

#### Development of Advanced Production Technologies for Antibody Drugs

In recent years, the market for antibody drugs that are used to treat cancer and rheumatism has been expanding rapidly, and the world market for these drugs has expanded to about ¥3 trillion annually. Characteristics of these drugs include a high level of effectiveness in treatment and few side effects. The market for these drugs is expected to expand in the coming years, and growth is also expected in the market for biosimilar antibody drugs.

In view of these circumstances, Toyobo has developed its Mammilian Power Express System, which is capable of producing these drugs quickly and cheaply. We are supplying this system to pharmaceutical manufacturers and are using it for the contract development and manufacturing of biomedicines in Group companies.





**Shigeki Sano**  
Corporate Officer, in Charge of the Textiles Segment

## Business Division Policy

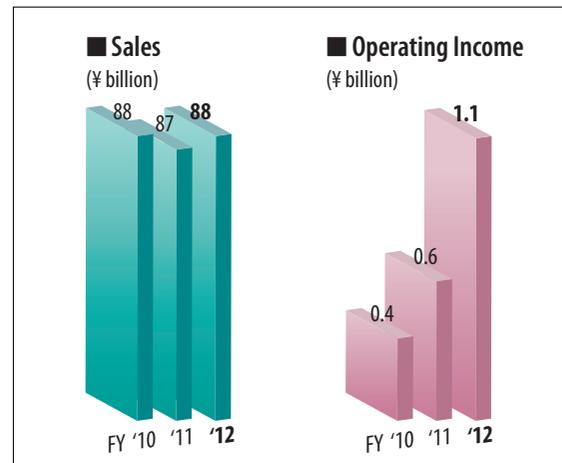
This segment has developed by expanding the range of uses of its functional textile materials, which make use of Toyobo's technology, into sports apparel, innerwear and Arabic traditional menswear of the Middle East (thoub). In addition, based on its policy of emphasizing the efficiency of asset usage, this segment has reduced business activities in commodity products and low-margin fields, while stabilizing profitability by focusing on high-value-added functional textile fabrics.

## Results for Fiscal 2012

Despite stagnation in domestic consumer spending and the adverse impact of foreign currency fluctuations, this segment reported increases in sales and operating income. In the sports apparel and innerwear fields, steady expansion was reported in functional textiles. In addition, in the textile materials for traditional Arabic menswear field, sales expanded in volume terms, but sales in monetary value terms were adversely affected by foreign currency fluctuations. Sales of acrylic fiber held firm in Japan and overseas.

## Issues and Policies

The important issue for this division is expanding sales of functional textile materials. In view of trends in foreign currency values in recent years,



Toyobo has worked to strengthen its business and financial positions through shifting production to overseas plants. In addition, in the high-growth markets of East Asia, the division has endeavored to expand overseas sales by developing products that meet local needs and creating business arrangements for local production and sales in the local markets.

## Focus: Strategies

Leading sports apparel companies have given a favorable appraisal to the functional textile materials and the overall quality control in the knitting, dying and sewing of Toyobo's Indonesian operations. As a result, these business activities are expanding, and the Company plans to expand this operation to respond to the requests of customers.

# Research and Development

**T**oyobo began its operations in 1882 as a textile company. From that time to the present, Toyobo has made transitions into new businesses after taking account of social conditions and requirements as well as the business environment. Today, Toyobo positions films, functional polymers, industrial materials and life science as its core businesses, or specialty businesses, and is aiming to grow and develop as the category leader for providing new value in the environment, life science and high-function products fields.

Through making transitions into new businesses, Toyobo has introduced and acquired a wide range of technologies. Among these, Toyobo positions polymerization, modification, processing and biotechnology as its core technologies. Through further in-depth research on and combining of these core

technologies, Toyobo has developed high-function products in the environmental and life science fields and proceeded with the nurturing of new businesses. Toyobo works to accelerate its R&D activities by participating in Japan's national projects, by advancing aggressively into alliances with academia and industry in Japan and overseas and by conducting joint research with other companies in advanced fields in the environmental and energy areas.

At the same time, to substantially expand the businesses of the Toyobo Group in overseas markets, Toyobo is strengthening its teamwork with its overseas subsidiaries and offices and establishing local technology centers with the goals of understanding the needs of the local markets, collecting information as well as being able to respond quickly to customer needs in its R&D activities.

## Intellectual Property Strategy

**T**he Toyobo Group works to secure patent protection for the vast accumulation of technology and know-how that it has created over many years of research and technological development. At the same time, to sustain and further develop its business activities, Toyobo has established systems for responding quickly to the patent-related activities of other companies, such as competitors.

In recent years, as intellectual property functions have received increased attention, Toyobo has worked to give these activities a strategic orientation. For example, Toyobo has created intellectual property databases and used these for analysis, which is then applied in the commercialization of Toyobo's own products and for keeping track of industry trends. In addition, along with the globalization of business activities, Toyobo has formulated and implemented overseas intellectual property strategies.

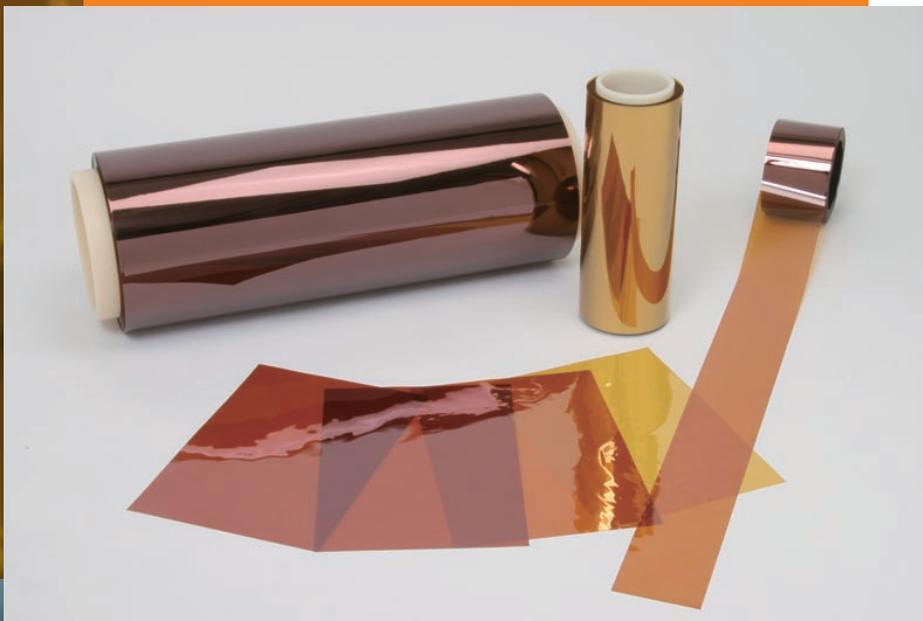
Toyobo's Intellectual Property Operating Office works with the personnel responsible for liaison who have been appointed by the business divisions, R&D divisions and other divisions to convene patent review meetings appropriate to the stage of development of various R&D themes as well as intellectual

property strategy meetings. Through these activities, the office conducts research and analyses, applies for patents and upholds the Company's rights in close coordination with the Toyobo Group's corporate strategies and R&D strategies.

## "XENOMAX" High Heat-Resistant Polyimide Film

One of the materials that Toyobo has conducted R&D on for many years is polyimide film, which has the same linear expansion coefficient as silicon used in semiconductors. Among organic materials, this film has the highest level of resistance to heat and a high degree of dimensional stability over a wide thermal range. In view of these properties, this film

has drawn attention as a flexible material for electronic circuit bases. In addition, Toyobo has established sophisticated manufacturing technologies for this material and has been successful in producing thinner films, thus opening the way for the development of such new fields as digital devices for this product.



This is the spirit of “*Jun-ri-Soku-yu*” which has been handed down from the founder of Toyobo for 130 years.

## CSR Is the Foundation of Corporate Activities.

Toyobo marked the 130th anniversary of its establishment during the year under review. The reasons why Toyobo has been able to continue its operations for more than 100 years is that it has reformed its business portfolio in response to changes in the business environment and, most of all, that it has retained the trust of society for a long period.

Toyobo’s corporate principle is *Jun-ri-Soku-yu* (“Adhering to Reason Leads to Prosperity”). This principle encourages us to make decisions by considering both logical ideas and corporate ethics, and then acting accordingly. To achieve sustained increases in its corporate value, Toyobo works to “strengthen its Group governance” and “enhance its risk management and compliance systems.” Toyobo is also aware that taking initiatives to preserve the environment is an important issue and is implementing environmentally minded measures. Going forward, Toyobo will work to adapt to the needs of the times and behave responsibly as a member of society.

## “*Jun-ri-Soku-yu*”

A personal motto of Toyobo’s founder, Eiichi Shibusawa



The ancient proverb *Jun-ri-Soku-yu* (“Adhering to Reason Leads to Prosperity”) was one of the personal mottos of Toyobo’s founder, Eiichi Shibusawa, and is the fundamental principle for Toyobo today. This calligraphy of that phrase was drawn by him nearly 80 years ago.



Eiichi Shibusawa was one of the modernizers of Japan during the early 20th century, helping to found and develop more than 500 companies. The phrase *Jun-ri-Soku-yu* is composed of four Chinese characters, the second of which (“ri”) has the dual meaning of “reason” and “ethics.” It expresses the idea of thinking and acting rationally and logically, as well as the need to retain respect for morality and ethics, the fundamental nature of being human, and an ethical sense of values.



## Quality Assurance

At Toyobo, we always take the perspective of the customer, and each of us puts quality first at all times. We develop and offer products and services that benefit society, as we give full regard to safety, the protection of the natural environment and the control of information, with the aim of gaining the satisfaction of consumers and business customers.

In addition, we respond in timely ways to changing customer desires and changes in society. At the same time, we make assessments and take other measures to confirm that our Quality Assurance framework is reflected in our activities and work to prevent the emergence of major quality issues.

- When our supply chains were altered by the effects of the Great East Japan Earthquake, we took all possible measures and were able to provide stable supplies of our products and continue Quality Assurance.
- As we develop our business activities overseas, we are structuring the same kind of Quality Assurance framework that we have created in Japan, and, by establishing systems for assuring quality, we are working to satisfy and gain the trust of our customers.



## Green Procurement

Toyobo is taking initiatives to protect the natural environment through its products and manufacturing activities.

Toyobo places priority on procuring raw materials that have a minimum impact on the environment and strives to contribute to creating a sustainable society. As part of these activities, Toyobo pursues “green procurement” policies. Toyobo requests its business partners to supply information on the chemical substance content of the raw materials they use to ensure:

(1) that none of the substances forbidden by Toyobo regulations are contained in the products they supply and

(2) that the amounts of harmful substances specified by Toyobo are indicated.

In addition, for other items in general, Toyobo promotes the green procurement of products that bear the “Environment Label.”



## Initiatives to Reduce the Burden on the Environment

To protect the air and water, the Toyobo Group promotes reduction in the volume of its emissions. To reduce the environmental burden of emissions into the atmosphere, Toyobo has promoted the transition from the use of heavy fuel oil to LNG as the energy source in its boilers. In addition, to lower the environmental impact of effluent emissions into bodies of water, Toyobo has upgraded the capabilities of its waste treatment facilities and promoted the treatment of effluent that may have a particularly significant adverse impact on the environment as industrial waste. Also, to reduce the amount of water used and wastewater emissions, Toyobo has worked to reduce the volume of water used for and wastewater emissions from chillers as well as effluent emissions through the supervision of water usage in manufacturing processes and other measures.



## Labor Safety and Health

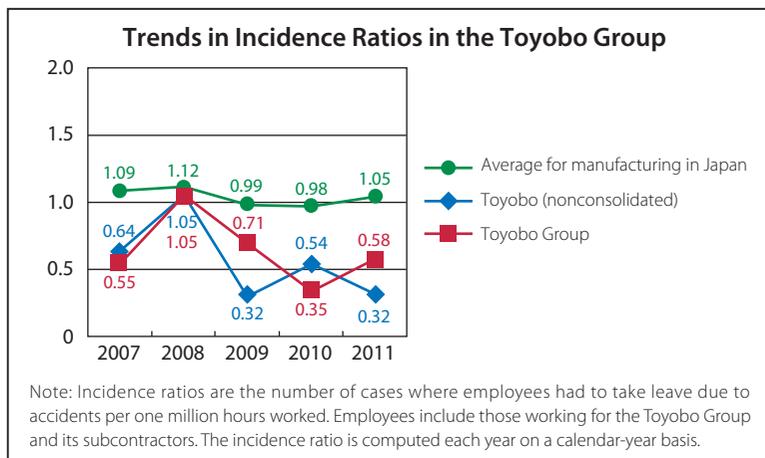
Toyobo’s basic stance is that “ensuring safety is a major prerequisite for the conduct of corporate activities” and has, therefore, worked toward the goal of zero accidents.

Toyobo’s safety management systems are based around its Safety and Security Promotion Committee. In addition, in the Toyobo Group, the Toyobo Group Environmental Safety Committee is responsible for implementing safety measures.

In fiscal 2012, there were eight accidents that resulted in downtime in the Toyobo Group as a whole. Regrettably, this was the same number as

in fiscal 2011, indicating a lack of progress toward the goal of zero lost time due to accidents.

The Toyobo Group has newly prepared and is implementing a medium-term plan for preventing labor accidents that covers the period from 2011 through 2015. In addition to attaining the objective of zero lost time due to accidents, the Group has also set a goal of 20 or fewer accidents per year that do not result in lost time.



### Drawing on Diversity

Toyobo is working to implement personnel evaluation systems that emphasize the capabilities of individual employees and provide incentives unrelated to gender or national origins. At the same time, Toyobo is working to engender a corporate culture where a diversity of personnel can engage in work they feel is worthwhile and rewarding. For example, the percentage of women holding managerial positions is

rising steadily, and Toyobo is providing opportunities and the environment for female employees to use their capabilities to the fullest. In addition, personnel who have passed the regular retirement age of 60 can be reemployed as senior employees and continue to be active in training younger personnel and transmitting their technical skills. Also, in the employment of physically challenged persons, Toyobo's percentage of such personnel is in excess of the legally required minimum.

## Topics

# Commercialization of Plant-Derived Materials

Plant-derived materials are drawing attention as substitutes for materials derived from petroleum, which is a limited, non-renewable resource. In addition, since plants absorb CO<sub>2</sub> during their growth stages, it is believed that a balance with CO<sub>2</sub> emissions resulting from the incineration of organic matter can be maintained.

Using the polymer technology that it has developed over many years, Toyobo has established technologies for the production of PET (polyethylene terephthalate) using a portion of materials derived from sugarcane. Sales of this PET have begun, and in 2010, Toyobo began production of PET products made from plant-derived

materials, including film for use in food packaging and heat-shrinking film used in labels for plastic bottles, cans, glass containers and other items. In 2011, Toyobo worked to develop the market for plant-derived non-woven fabrics sold under the trade name of "Bio-VOLANS®" and expanded usage to wrapping, automotive and construction materials.



Tuft-carpet base fabric



SC film

# Corporate Governance

## Basic Policy

The Toyobo Group, to respond to the changing times and enhance sustainable corporate value, has established the policies of (1) ensuring timeliness and accuracy in decision making, (2) ensuring transparency in management and (3) emphasizing fairness. Based on these principles, we are working to create and strengthen our corporate governance structure.

## Toyobo's Governance Structure

Toyobo, as a "Company with Auditors" as defined by Japan's Companies Act, appoints one outside director to its nine-member Board of Directors, and has adopted the Executive Officer System to clearly separate decision making and the oversight function from business execution. The term of office for a director is set at one year to clarify the responsibility of that director.

The auditing structure consists of four auditors, two of whom are outside auditors. Auditors attend meetings of the Board of Directors and other important meetings and provide their opinions, as well as oversee the business execution of directors through such means as operational audits of each division.

Regarding outside directors and auditors, the Company has appointed three outside officers from other companies who have no conflicts of interest with the Company and are independent. Under this system, the outside officers are able to supervise and audit the conduct of management by the directors. The names of two of these independent officers, one outside director and one outside auditor, have been registered, as specified by the Tokyo Stock Exchange and the Osaka Securities Exchange.

### Strengthening Corporate Governance

## Risk Management Structure

Toyobo has established the Planning Council and Management Council under the Board of Corporate Executive Officers. These bodies examine any significant new business proposals, investments or other initiatives prior to their implementation, and take steps to manage any business risks.

## Compliance Structure

Toyobo has also formulated the Toyobo CSR Charter and the Toyobo Corporate Code of Conduct, and taken steps to ensure that the rules are universally understood.

## Strengthening of Group Governance

Under the Company's governance system, Group companies are organized by the Corporate Planning Division to promote corporate governance from a Companywide perspective.

## Board of Directors



\*Outside Director

### Board of Corporate Auditors

Kazuyuki Yabuki  
Setsuo Shimomichi  
Hiroshi Nishiura\*\*  
Hiroshi Imanaka\*\*

\*\* Outside Corporate Auditor

### Corporate Officers

■ Chief Operating Officer  
Ryuzo Sakamoto

■ Corporate Senior Executive Officer  
Fumiaki Miyoshi

■ Corporate Executive Officers  
Hiroshi Takahashi  
Kazumasa Koyama  
Yukihiro Sogabe  
Shinichi Onizuka  
Hiroshi Takabayashi

■ Corporate Officers  
Seiji Narahara  
Toshiyuki Matsui  
Kunio Yano  
Shigeki Sano  
Hisao Nishinaka  
Toshitake Suzuki  
Hiroyuki Sato  
Jiro Suwa  
Shinichi Teshima  
Yuji Oita



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