# Chemistry With Truly Wide-Ranging Applications

Green Innovation and a focus on growth countries and regions are at the heart of Toray Group's Medium-term Management Program AP-G 2013. Leveraging the distinct themes of our three business categories and their corresponding six segments, and by bringing them together, we are able to deliver integrated solutions—creating Chemistry the Toray way.

We will continue to provide advanced products and services that meet the needs of customers and markets globally, and maintain good chemistry with our stakeholders in each country and region. "



# **FOUNDATION BUSINESSES**

- FIBERS & TEXTILES
- **PLASTICS & CHEMICALS**

# STRATEGICALLY EXPANDING BUSINESSES

- IT-RELATED PRODUCTS
- CARBON FIBER COMPOSITE MATERIALS

Our Kind of Chemistry

# INTENSIVELY DEVELOPING AND EXPANDING BUSINESSES

- ENVIRONMENT & ENGINEERING
- LIFE SCIENCE





# **Business Categories**

# Foundation Businesses

# Strategically Expanding Businesses







# Operating Income Ratio

Net Sales Ratio

Segments

FIBERS & TEXTILES

PLASTICS & CHEMICALS

# IT-RELATED PRODUCTS







### Main Products

Filament yarns, staple fibers, and woven and knitted fabrics of nylon, polyester and acrylic fibers, etc.; non-woven fabrics, man-made suede and apparel products

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 other plastics; zeolite catalysts; fine chemicals for pharmaceuticals and agrochemicals; veterinary medicine (excludes film and resin covered in IT-related Products segment)

Films and plastic products for information and telecommunications related products; materials for electronic circuits and semiconductors; color filters for LCDs and related materials and equipment; materials for plasma display panels; magnetic recording materials; graphic materials and related equipment

# Application Examples

- Women's and men's clothes (coats: man-made suede, dress shirts: polyester-cotton blended fabric, stockings: nylon fiber, apparel products, swimwear)
- Automobiles (car seats: polyester fiber, airbags: nylon fiber, seatbelts: polyester fiber)
- Sportswear
- Furniture & interior (sofas: man-made suede, carpets: BCF nylon, curtains: halogen-free, flame retardant materials)
- Disposable diapers: polypropylene filament yarn non-woven fabric
- Tents: polyester fiber

- Automobiles (radiator tanks: nylon resin, intake manifold: nylon resin, connectors: PBT resin, capacitor for hybrid cars: polypropylene film)
- Home appliances (housing for washing machines, vacuum cleaners, air conditioners: ABS resin)
- Power tools (circular tools housing: nylon resin)
- Helmets (nylon resin)
- Solar battery panels (PET film)
- Potato chip bags (polypropylene film)
- Veterinary medicine (for dogs and cats)
- Flat panel display televisions (PET film, PDP)

- Flat panel display televisions (PET film, PDP rear panel pastes, LCD color filter manufacturing equipment)
- PCs (circuit materials, PET film, polyimide coatings)
- Cellular phones (color filters, LCP resin, circuit materials, PET film)
- Printing (waterless printing plates, relief printing on resins, printing equipment)
- Digital video camera recording film (PET film)
- In-vehicle multimedia LANs (optical fiber)
- Semiconductors (semiconductor coating materials)

Note: Excludes other businesses equivalent to 0.9% of net sales and 0.9% of operating income.

# Intensively Developing and **Expanding Businesses**

**Business Categories** 







# **CARBON FIBER COMPOSITE MATERIALS**

**ENVIRONMENT & ENGINEERING** 

LIFE **SCIENCE** 

Segments







Main Products

Carbon fibers, carbon fiber composite materials and their molded products

Comprehensive engineering; condominiums; industrial equipment and machinery; environment-related equipment; water treatment membranes and related equipment; materials for housing, building and civil engineering

Pharmaceuticals and medical products; analysis, physical evaluation and research services

Application Examples

- · Aircraft structure (carbon fiber composite materials)
- Bridge pier reinforcement (carbon fiber woven fabrics)
- PC chassis (carbon fiber molded products)
- Wind-power generator blades (carbon fibers)
- Marine vessels (carbon fibers)
- Industrial equipment materials (carbon fiber, carbon fiber composite materials)

- · Seawater desalination facilities (water treatment membranes and equipment)
- Sewage and waste-water treatment facilities (water treatment membranes and equipment)
- Condominiums
- · Housing (wall siding for houses,
- · Pharmaceuticals (natural interferonbeta preparation, prostacyclin, antipruritus drug)
- Medical treatment devices (hemodialyzers, artificial dialyzer and equipment)
- Physical analytical services

At a Glance

# **FOUNDATION BUSINESS**

# **FIBERS & TEXTILES**

Fiscal	2009	2010	Changes	(Billions of yen) 2011 Forecast
Net sales	525.2	584.1	+11.2%	620
Operating income	16.3	32.4	+98.8%	43

Fiscal 2011 forecasts announced on Aug. 4, 2010.

Segment components have been changed based on a management approach from Fiscal 2010.

ROA: Operating income to net	8.0% sales: 5.6%		525.2	584.1		16.3	32.4
Capital expenditures:	¥16.6 billion					10.5	
Net sales Operating (Billions of yen)	g income	(FY)	2009	2010	(1	FY) 2009	2010

# Summary of Consolidated Financial Results for Fiscal 2010 (Ended March 31, 2011)

Net sales for the Fibers & Textiles segment increased by 11.2% year on year to ¥584.1 billion, and operating income jumped 98.8% to \$32.4\$ billion.

Toray, the parent company, recorded sales growth of industrial applications, including materials for airbags and other automotive applications, as well as general industrial materials. The sales volume expanded in apparel applications.

Among domestic subsidiaries, some of the Group's trading subsidiaries recorded excellent results from their garment business with specialty store retailers of private label apparel (SPAs). Manufacturing subsidiaries also performed strongly.

Results for overseas subsidiaries reflect bullish trends in the garment business in China, a market that also showed solid growth trends for our textile business and polyester fiber business. We also recorded strong performance in our high-performance polypropylene (PP) spunbond business for disposable diapers in the Republic of Korea and China, as well as in our fibers and textiles business for air bag applications in Thailand, the Czech Republic, the Republic of Korea and ASEAN.

# Outlook for Fiscal 2011

In Japan, several factors continue to cause uncertainty, including the persistent strength of the yen and wildly fluctuating raw material and fuel prices. In addition, automotive applications have been affected by the Great East Japan Earthquake, and we also foresee restrained demand for garment applications.

Globally, weak demand caused by the unstable financial situation and high raw material and fuel prices is likely to continue. However, demand for fibers and textiles continues to expand in emerging economies. Overall, it is at present very difficult to predict the business environment for the latter half of the year.

In this business environment, we will implement measures to maintain and strengthen a stable income structure in Foundation

# High-performance Polypropylene Spunbond

44 This product is used in various fields, including disposable diapers, and sanitary materials, as well as surgical gowns, covers and other medical products. It is also used in industrial and agricultural applications. 39



Businesses and to expand our business globally. We intend to expand our business in growth regions, especially China, and in growth business fields, such as automobiles and environment-related businesses. We also aim to strengthen and expand our garment business, which is structured around a planning and proposal model based on the development of materials.

We predict net sales of ¥620 billion and operating income of ¥43 billion in fiscal 2011.

### Topic

# Strengthening the High-performance PP Spunbond Business in China and Indonesia

Toray Group has decided to expand its production capacity for PP spunbond in China, and to establish a new company with new production facilities in Indonesia. The market for PP spunbond is expected to benefit from rapidly growing demand for disposable infant diapers in China and ASEAN, where lifestyles are changing as a result of high economic growth and rising national income levels.

We sell PP spunbond to a diverse range of users in Asian markets, including Japan, the Republic of Korea, China and ASEAN. Toray Advanced Materials Korea Inc. has an annual production capacity of approximately 43,000 tons, while the Chinese company Toray Polytech (Nantong) Co., Ltd. (TPN) has capacity for around 38,000 tons per year. Additional production facilities with an annual capacity of approximately 20,000 tons are scheduled to commence production in July 2012 at TPN, and new facilities with a capacity of around 20,000 tons will come on line in Indonesia in June 2013. These additions will bring the Group's total capacity to about 121,000 tons, allowing us to expand our sales to meet rapidly expanding demand in emerging markets, including China and ASEAN.



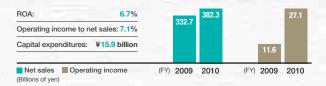
# **FOUNDATION BUSINESS**

# **PLASTICS & CHEMICALS**

Fiscal 2009 2010 Changes  Net sales 332.7 382.3 +14.9%	(Billions of yen)						
	2011 Forecast	Changes	2010	2009	Fiscal		
On evention in come 11.0 07.4 +10.4.00/	440	+14.9%	382.3	332.7	Net sales		
Operating income 11.6 27.1 +134.2%	31	+134.2%	27.1	11.6	Operating income		

Fiscal 2011 forecasts announced on Aug. 4, 2010.

Segment components have been changed based on a management approach from Fiscal 2010.



# Summary of Consolidated Financial Results for Fiscal 2010 (Ended March 31, 2011)

Net sales for the Plastics & Chemicals segment amounted to ¥382.3 billion, a year on year increase of 14.9%. Operating income increased by 134.2% to ¥27.1 billion.

Toray, the parent company, expanded sales of plastic resins for automobile, electric and electronic applications in emerging markets. We also recorded a pleasing trend in sales of film across the entire industrial material area, including products for use in solar cells.

In Japan, both manufacturing subsidiaries, including a film processing subsidiary, and trading subsidiaries achieved generally good results. Among our overseas subsidiaries, those involved in the films business recorded excellent results thanks to buoyant demand. A plastic resins subsidiary in Malaysia also expanded its sales, especially to home appliance manufacturers in the emerging markets of Asia and elsewhere.

### **Outlook for Fiscal 2011**

Raw material and fuel prices are expected to fluctuate wildly in fiscal 2011. While sales of products for automotive applications will be partially affected by the Great East Japan Earthquake, demand for environmentally friendly products is expected to expand, and we also anticipate substantial demand growth in Asia, especially China.

In this business environment, we will work proactively to increase sales of plastic resins in Asian markets in general and in China in particular. Another goal will be to expand sales of high-value added



films for industrial and packaging applications through our subsidiaries in the EU, the United States and Asia. We are predicting net sales of ¥440 billion and operating income of ¥31 billion in fiscal 2011.

# **Topic**

### Restructuring the Plastic Resins Business in China

Toray Group has restructured its plastic resins production and sales organizations in the Chinese market. Toray Plastics (China) Co., Ltd. (TPCH) was established to coordinate our plastic resins business in China. We also established Toray Plastics (Suzhou) Co., Ltd., a subsidiary of TPCH, to manufacture and sell resin compounds in northern and eastern China. These new companies commenced operations in August 2010.

We have positioned TPCH as the hub of Toray Group's plastic resins business in China. Our goal is to further expand our plastic resins business in the rapidly growing Chinese market. From a sales perspective, we aim to expand existing trading areas while opening up new sales channels. At the same time, we will accelerate the expansion of our production operations and increase the percentage of high-performance resin compounds, such as nylon, polybutylene terephthalate (PBT) and polyphenylene sulfide (PPS) in our product mix. We will also enhance our technological development capabilities and expand our range of new grades to meet user needs in the Chinese market. Through these initiatives, we will fulfill our role as an integrated plastic resins manufacturer through the timely supply of wide-ranging solutions to our customers.



# Eco Toyolac<sup>®</sup>

If Toray is working in partnership with its customers to develop a wide variety of environmentally friendly products. For example, we have created a closed-loop material recycling system to reuse glass fiber-reinforced AS resins (ASG) recovered from fans in end-of-life indoor home air conditioner units for the manufacture of new fans.

# STRATEGICALLY EXPANDING BUSINESS

# **IT-RELATED PRODUCTS**

Fiscal	2009	2010	Changes	(Billions of yen) 2011 Forecast
Net sales	230.4	262.0	+13.7%	270
Operating income	25.0	42.2	+68.9%	41

Fiscal 2011 forecasts announced on Aug. 4, 2010. Segment components have been changed based on a management approach from Fiscal 2010.

ROA: 12.6% Operating income to net sales: 16.1%			230.4	262.0		42.2
Capital expenditures:	¥9.2 billion				25.0	
Net sales Operating (Billions of yen)	g income	(FY)	2009	2010	(FY) 2009	2010

# Summary of Consolidated Financial Results for Fiscal 2010 (Ended March 31, 2011)

Net sales for the IT-related Products segment increased by 13.7% year on year to ¥262.0 billion, and operating income by 68.9% to ¥42.2 billion.

Toray, the parent company, worked to expand sales of films and processed film products, including products for use in flat panel displays (FPDs) and electronic components. We also increased sales of color filters for liquid crystal displays (LCDs), semiconductor-related materials and plasma display materials.

Among our subsidiaries in Japan, a film processing subsidiary increased its sales of FPD-related processed film products, and a fine chemicals subsidiary also achieved pleasing results.

Overseas, subsidiaries in the areas of film and processed film products in the Republic of Korea recorded excellent results, but an electric circuit material subsidiary was affected by production adjustments by FPD manufacturers.

			(Billions of yen)
Sub-segment	Fiscal 2009	Fiscal 2010	Changes
Display materials	85.4	105.6	+24%
Electronic components, semiconductors,			
electric circuit materials	81.0	92.7	+15%
Data storage materials	31.3	32.8	+5%
Equipment, others	32.7	30.9	-6%

### Outlook for Fiscal 2011

Demand for mobile phones, especially smartphones, remains strong, and we anticipate healthy trends in shipments of related products. In the large-sized FPD market, production adjustments continue to take place among panel manufacturers due to sluggish demand for consumer products, including TVs, but we expect a gradual recovery to begin in the second half of fiscal 2011.

Toptical<sup>®</sup>

44 Toptical® is the ideal display filter material for LCDs. In addition to precise color reproduction, it offers excellent durability and high resistance to heat. Toptical is also friendly to the environment, since it contains no toxic heavy metals. 99



Our strategy in this market environment is to expand sales of films and processed film products for use in FPDs and electronic components. We also aim to enhance our cost competitiveness by optimizing our global production structure for film, expand our share of this market, and increase sales of semiconductor coating materials.

We predict net sales of ¥270 billion and operating income of ¥41 billion in fiscal 2011.

### **Topic**

# Decision to Increase Optical Film Production

We anticipate further expansion of the FPD-related market in the medium-term future. To maintain our capacity to supply optical film in this market, we have decided to increase our production capacity. By August 2012, the installation or modification of film production facilities at Toray's plants in Mishima and Gifu, at the Nakatsugawa Plant of Toray Advanced Film Co., Ltd. and at the Gumi Plant of Toray Advanced Materials Korea Inc. (TAK) will double our present supply capacity for products for use in reflectors and touch panels and also add 50% to our supply capacity for polarizers and protection film. In addition to base film, TAK will also expand its production capacity for processed film products by 30% by January 2012. We plan to invest approximately ¥22.0 billion in these capacity expansion projects.

In addition to the buoyant market for LCDs and other types of FPDs, which are the main uses for optical film, we also anticipate further demand growth resulting from the increasing use of film parts and materials in thin-layer, lightweight touch panels. Toray is currently optimizing its optical film production organization to meet surging demand in the FPD market.



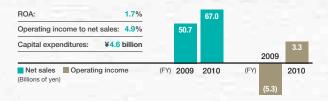
### STRATEGICALLY EXPANDING BUSINESS

# **CARBON FIBER COMPOSITE MATERIALS**

				(Billions of yen)
Fiscal	2009	2010	Changes	2011 Forecast
Net sales	50.7	67.0	+32.2%	80
Operating income	(5.3)	3.3	_	10

Fiscal 2011 forecasts announced on Aug. 4, 2010.

Segment components have been changed based on a management approach from Fiscal 2010.



# Summary of Consolidated Financial Results for Fiscal 2010 (Ended March 31, 2011)

In fiscal 2010, net sales for the Carbon Fiber Composite Materials segment increased by 32.2% year on year to ¥67.0 billion. Operating income moved back into positive figures at ¥3.3 billion.

Demand continues to recover for aircraft, sporting goods and industrial applications. Through proactive marketing, Toray Group was able to expand its market share and achieve volume growth in both sales and production of Torayca® carbon fiber and Torayca® prepreg (carbon fiber sheets impregnated with epoxy resin). There was also growth in sales of carbon fiber composite products, especially PC chassis. In addition, the Group strove to raise sales prices to counter steep rises in raw material and fuel prices.

			(Billions of yen)
Sub-segment	Fiscal 2009	Fiscal 2010	Changes
Aircraft	22.4	27.7	+24%
Sporting goods	9.7	13.8	+43%
Industrial	18.6	25.5	+37%

### Outlook for Fiscal 2011

Demand for carbon fiber shrank in 2009 under the impact of the global economic downturn. However, the market recovered rapidly in 2010, and 2011 has brought sustained growth in demand for aircraft applications, as well as a dramatic increase in demand for industrial applications, especially for environment and energy-related use. There has also been steady growth in the use of



carbon fiber for sporting goods applications, including bicycle parts. We expect demand to increase by more than 15% year on year.

Toray Group will take advantage of this business circumstance to expand its sales of products for aircraft, sporting goods, and industrial applications, and to develop markets in China and other emerging economies. We will also seek to overcome higher raw material and fuel prices through increased product prices.

We are predicting net sales of ¥80 billion and operating income of ¥10 billion in fiscal 2011.

### Topic

# Full-scale Carbon Fiber Business to be Established in the Republic of Korea

Toray and Toray Advanced Materials Korea Inc. (TAK) have decided to build a carbon fiber production facility with an annual nominal capacity of 2,200 tons at TAK's No. 3 Gumi Plant (in Gumi City, Gyeongsangbuk Province) in the Republic of Korea. We, the global leader in quality competitiveness, will introduce the most advanced technology in the Group to the plant and invest approximately 63.0 billion won (about ¥5.0 billion yen) in the construction. Construction started in early 2011, and the plant is scheduled to be in operation in January 2013. TAK will produce high-strength, standard-modulus carbon fiber, a material that has become the de-facto standard in industrial and sporting goods applications.

Until now, the Republic of Korea has been almost totally reliant on imported carbon fiber for its domestic demand. We believe that the start of domestic production at the new plant will create a reliable supply chain. We will work with our customers in the Republic of Korea to accelerate the development of the market for carbon fiber composite materials in a wide range of sporting goods and industrial applications, while also continuing to respond effectively to the rapidly expanding demand for carbon fiber in Asia, especially the Republic of Korea and China.



# Torayca<sup>®</sup> (PAN-based carbon fiber)

44 Torayca® is extremely light, strong and tough and is used for purposes ranging from aerospace applications to sports and leisure goods and general industrial applications. There is considerable potential for demand growth. 35

# **ENVIRONMENT & ENGINEERING**

Fiscal	2009	2010	Changes	(Billions of yen) 2011 Forecast
Net sales	159.8	178.2	+11.5%	190
Operating income	3.9	3.3	-13.0%	8

Fiscal 2011 forecasts announced on Aug. 4, 2010. Segment components have been changed based on a management approach from Fiscal 2010.

ROA:	2.0%	159.8	178.2	3.9	
Operating income to ne	t sales: 1.9%				3.3
Capital expenditures:	¥5.6 billion	-			

Net sales Operating income (Billions of yen)

(FY) 2009 2010 (FY) 2009 2010

# Summary of Consolidated Financial Results for Fiscal 2010 (Ended March 31, 2011)

In fiscal 2010, the Environment & Engineering segment delivered net sales of ¥178.2 billion, a year-on-year increase of 11.5%. Operating income was 13.0% below the previous year's level at ¥3.3 billion.

In the water treatment business, there was an increase in sales of Toray's reverse osmosis (RO) membranes for use in major overseas projects. There was also sustained growth in the sales of water treatment subsidiaries in the United States and China. Among subsidiaries in Japan, the trading subsidiary expanded its machinery exports, but the performance of the engineering business remained slow.

# **Outlook for Fiscal 2011**

In some regions, the water treatment business has been affected by political instability. However, the basic trend is toward market expansion. In this business environment, Toray will pursue comprehensive cost-cutting initiatives while also working to win contracts on a global basis. One of our goals is to gain a foothold in the Chinese market through our Beijingbased joint venture, Toray BlueStar Membrane Co., Ltd. (TBMC), which commenced production and sales of RO membranes and elements in early 2011.

Our goal for the engineering business is to take advantage of anticipated growth in capital investment in environmental and energy-related areas, in order to win more orders for equipment relating to lithium-ion batteries and solar cells.

Net sales of ¥190 billion and operating income of ¥8 billion are predicted for this segment in fiscal 2011.



# Series of Orders for Toray RO Membranes for Seawater Desalination Plants in China

Toray has delivered a series of RO membranes for seawater desalination plants in Qingdao City, Shandong Province, and at Caofeidian in Tangshan City, Hebei Province. These two plants, which together will produce 150,000 m3 of water per day, are scheduled to become operational in 2011. With a daily capacity of 100,000 m3, the plant in Qingdao will be one of the biggest in China and the country's first major facility for drinking water.

China's rapid economic growth has been accompanied by a rapid increase in water consumption, resulting from both industrialization and the growth of urban populations. There has also been a drought in northern China. As a result, China now faces water shortages. This situation is reflected in growing demand for RO membranes for use in seawater desalination and wastewater reuse, and the Chinese market for RO membranes is expanding by over 20% annually.

In July 2009, Toray and China National BlueStar (Group) Co., Ltd. established a joint venture, called Toray BlueStar Membrane Co., Ltd. (TBMC), in Beijing to manufacture RO membranes and elements. The establishment of TBMC as the first foreign-owned company in this field has created a reliable supply structure for these products in China. By combining its advanced water treatment technology with the powerful sales network of the China National BlueStar Group, Toray aims to accelerate the expansion of its water treatment membrane business in China.

# Romembra<sup>®</sup> (Reverse Osmosis Membrane Elements)

These reverse osmosis membrane elements were developed using Toray's advanced polymer technology. Toray offers an extensive lineup of products for purposes ranging from the desalination of seawater and brackish water to the production of ultrapure water, wastewater treatment and recycling, the recovery of valuable materials, and the concentration of food products. ""



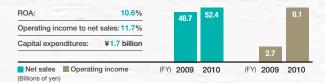
# INTENSIVELY DEVELOPING AND EXPANDING BUSINESS

# LIFE SCIENCE

				(Billions of yen)
Fiscal	2009	2010	Changes	2011 Forecast
Net sales	46.7	52.4	+12.4%	55
Operating income	2.7	6.1	+124.3%	6

Fiscal 2011 forecasts announced on Aug. 4, 2010.

Segment components have been changed based on a management approach from Fiscal 2010.



# Summary of Consolidated Financial Results for Fiscal 2010 (Ended March 31, 2011)

Net sales in the Life Science segment increased by 12.4% year on year to ¥52.4 billion, and operating income jumped 124.3% to ¥6.1 billion.

In the area of pharmaceuticals, Toray expanded sales of its natural-type interferon beta preparation, Feron™, which is used in conjunction with ribavirin to treat chronic hepatitis C, after receiving approval in October 2009 to add a new indication in Japan. We also recorded strong shipments of REMITCH\*, an oral antipruritus drug for hemodialysis patients.

In the area of medical products, there were pleasing trends in shipments of Toraymyxin<sup>®</sup>, a hemoperfusion absorption column for the removal of endotoxins, and dialysis equipment.

\*REMITCH is a registered trademark of Torii Pharmaceuticals, Co., Ltd.

# **Outlook for Fiscal 2011**

We expect the market for pharmaceuticals and medical products generally to remain on an expansionary trend. However, we are also aware of continuing challenges, including escalating competition resulting from the increasing use of generic drugs.

Our strategy for pharmaceuticals in this business environment will focus on expanding sales of REMITCH, which we began selling in March 2009. In the area of medical products, we will work to increase sales of dialyzers. Our results for the Life Science segment for fiscal 2011 will be affected by increased development expenditure, and we are predicting net sales of ¥55 billion and operating income of ¥6 billion.



### Topi

# Full-scale Launch of a New Polysulfone Hollow-fiber Membrane Dialyzer, TORAYLIGHT $^{\text{TM}}$ NV

In April 2011, Toray Medical Co., Ltd. commenced full-scale marketing of TORAYLIGHT™ NV, a polysulfone hollow-fiber membrane dialyzer. Developed by Toray, this nanotechnology-based product is significantly more effective than earlier Toray products in limiting platelet adhesion, which affects antithrombotic performance.

Dialysis systems remove waste products and excess water from the blood, which is passed through hollow-fiber membranes while circulating outside of the body. From a biocompatibility perspective, one of the challenges with earlier artificial dialysis systems was the need to prevent biological defense reactions from causing platelet and protein adhesion when the blood is in contact with the hollow-fiber membranes.

With TORAYLIGHT<sup>TM</sup> NV, platelet adhesion has been reduced to less than one-hundredth of the level that occurred with earlier Toray products. The result is excellent antithrombotic performance. By dramatically reducing platelet adhesion, TORAYLIGHT<sup>TM</sup> NV maintains high dialysis performance throughout the procedure. It is also compatible with Toray's proprietary gamma ray crosslinked polymer sterilization technology, which minimizes elution.

Following the full-scale launch of TORAYLIGHT™ NV, we aim to expand our dialysis business through the continuing development of biocompatibility technology, including the use of polysulfone membranes to further improve the dynamics of external blood circulation.



# 3D-Gene® DNA Chip

44 Toray has surpassed the conventional flat glass substrate by developing a high-sensitivity DNA chip on a bumpy plastic substrate. This design uses 100th the amount of tissue previously required for accurate results, reducing the burden on patients by making it possible to obtain tissue without surgery, during gastroscopic or other examination procedures. 37