



CORPORATE REPORT 2016

**ZEON**

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### Report Policy

Since FY2013, Zeon Corporation and Zeon Group (below "Zeon") has been publishing an annual Corporate Report in a magazine format, which provides an overview of general business activities and corporate information functions. Previously, Zeon published the CSR Report so that our stakeholders could understand our approach to CSR and environmental activities.

In FY2016, in addition to renewing our Business Profile, which summarizes Zeon's business, we strengthened the explanation of each business' strategy.

Further, as a highlight, we introduced our new material, single wall carbon nanotube, which has superior properties, and included follow-up reports on roundtables held to be considering the strengths of Zeon and *Taimatsu* (torchlight) activities on cultural innovation.

We ask for your honest feedback and opinions so that they may be used to improve our activities in the future.

### Period Covered

April 2015 to March 2016  
(also includes some new information from April 2016 and later)

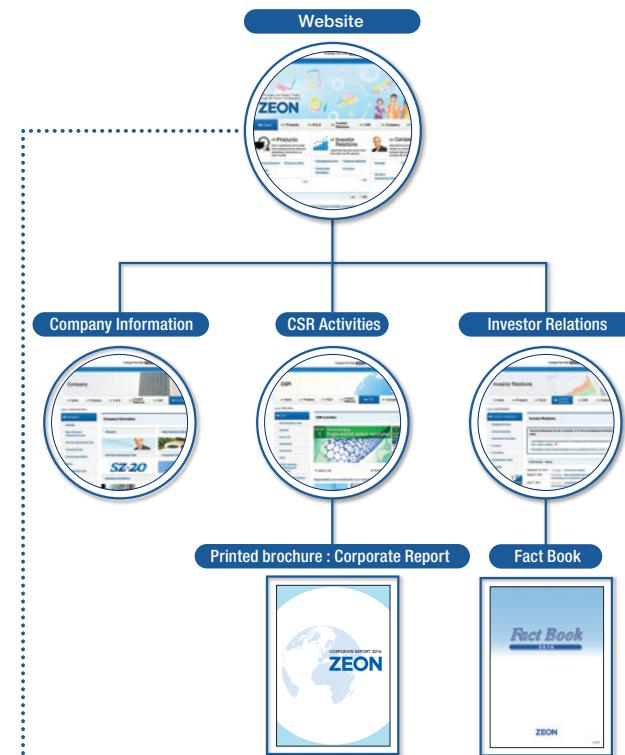
### Information Disclosure at Zeon

Basic information on Zeon Corporation and the Zeon Group is available on the "Company Information" section of our website.

The Corporate Report contains a wide range of information about management and CSR, while the CSR website contains detailed performance and site reports regarding CSR information.

More detailed management information is disclosed on the IR website and in the Fact Book.

**Website** ▶ [http://www.zeon.co.jp/index\\_e.html](http://www.zeon.co.jp/index_e.html)



### All about Zeon! Website (Japanese Only)



*All about Zeon!* is a special website updated yearly showcasing employee interviews and also featuring an online video of the domestically broadcasted Zeon TV commercial.

### Organizations Covered

The report covers Zeon Corporation and Group Companies in Japan and overseas. Some data only covers Zeon Corporation.

## Message

# Zeon makes the future today through the Power of Chemistry

Following our corporate philosophy, which states "Zeon is contributing to the preservation of the Earth and the prosperity of the human race," we have consistently released new products to the world using our pioneering, inimitable technology. Zeon's products support society through their presence all around us.

In order to fulfill our responsibility as a company to society, we are advancing our business activities under our Enterprise Blueprint for 2020, titled "Zeon makes the future today through the Power of Chemistry."

In order to achieve our goals, it is important that every employee at every field, from R&D to production, continues to take on new challenges without the fear of making mistakes. I truly believe that great results will come from this approach.

In 2015, after spending a long period of time developing new production technology to overcome several difficulties, we completed construction of a plant for single-walled carbon nanotubes and are now in the commercialization stage.

By using new technology to reduce traditional production costs by a factor of 1,000, we have successfully turned a material that was previously too expensive for practical use into an affordable industrial material. Additionally, by combining single-walled carbon nanotubes with other components, we can create new materials with unprecedented properties, opening up endless possibilities. This highlights that chemical companies have the potential to significantly change the world through the power of developing new, innovative materials.

This sums up the philosophy of Zeon - Contributing to the advancement of society and solving problems by introducing new products to the world through the creation of pioneering technologies.

We deeply appreciate your ongoing support and encouragement.



Naozumi Furukawa  
Chairman  
Zeon Corporation



## Corporate Philosophy

# Zeon is contributing to the preservation of the Earth and the prosperity of the human race

Zeon, with its name drawn from words signifying the Earth (geo) and eternity (eon), is committed to responsible stewardship of the global environment as the foundation for human prosperity through the development and application of unique, world-leading technologies.

## CSR Policy

- We will ensure compliance and meet society's needs for safety and security
- We will contribute to sustainably developing society and protecting the global environment through our corporate activities
- We will ensure that each and every Zeon person is aware of CSR and acts accordingly

## Management Policy

### Basic Business Strategy

Continually focus on creating new businesses in our Specialty Materials Business by taking full advantage of steady revenue generated by existing businesses in the Elastomer Business.

#### ● Elastomer Business Strategy

To secure stable profits by achieving the world's highest quality and cost competitiveness and optimizing our global supply system.

#### ● Specialty Materials Business Strategy

Further enhance our unique technology platform by strengthening precision processing technology which makes use of Zeon's proprietary materials. Conduct user-oriented market deployment in order to dramatically expand business.

### ZΣ Activities: Objectives

ZΣ Activities are part of a continuous improvement campaign and are pursued on a company-wide basis, focusing on strengthening cost-competitiveness to build a solid corporate structure. The "Z" in "ZΣ" signifies Zeon method, while "Σ" stands for combination, concentration of resources and company-wide participation. Zeon Corporation promotes its management reform by placing ZΣ Activities at the core of its management system.

## Enterprise Blueprint for 2020

Based on its Corporate Philosophy and CSR Policy, Zeon announced its Enterprise Blueprint for 2020: "Zeon makes the future today through the Power of Chemistry" and "Zeon will continue to contribute to the realization of customer dreams and a prosperous society."

The Mid-Term Management Plan to achieve this is SZ-20, and currently Zeon is at the second stage, SZ-20 Phase II.

From fiscal 2014 to fiscal 2016, in the SZ-20 Phase II Mid-Term Management Plan, we are making efforts to promote reforms and improvements and develop corporate culture with the concept of "Changing the company to realize the Enterprise Blueprint for 2020."

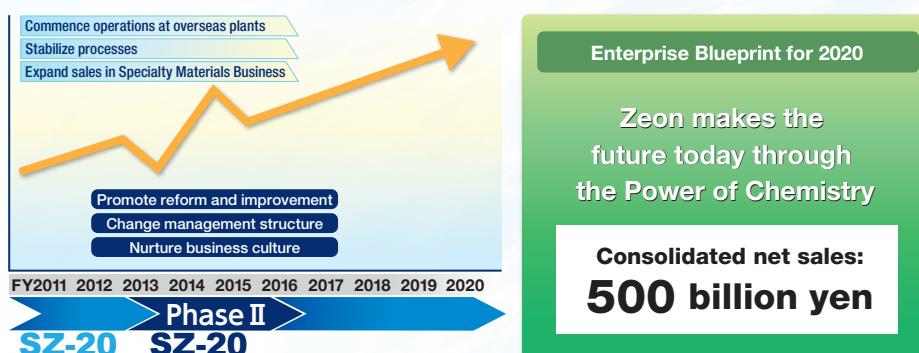
### Business Strategy under SZ-20 Phase II

We will further strengthen our Elastomer Business (which includes synthetic rubber, synthetic latex and C5 chemical products) and Specialty Materials Business (which includes specialty chemicals, IT components, specialty plastic and components and medical equipment materials) to expand our operations toward achieving consolidated net sales of 500 billion yen and an overseas production ratio of 50% in fiscal 2020.

#### ■ Changing the company to realize the Enterprise Blueprint for 2020



#### ■ Taking on challenges as a second step toward realizing the Enterprise Blueprint for 2020



#### Key Concepts in SZ-20 Phase II

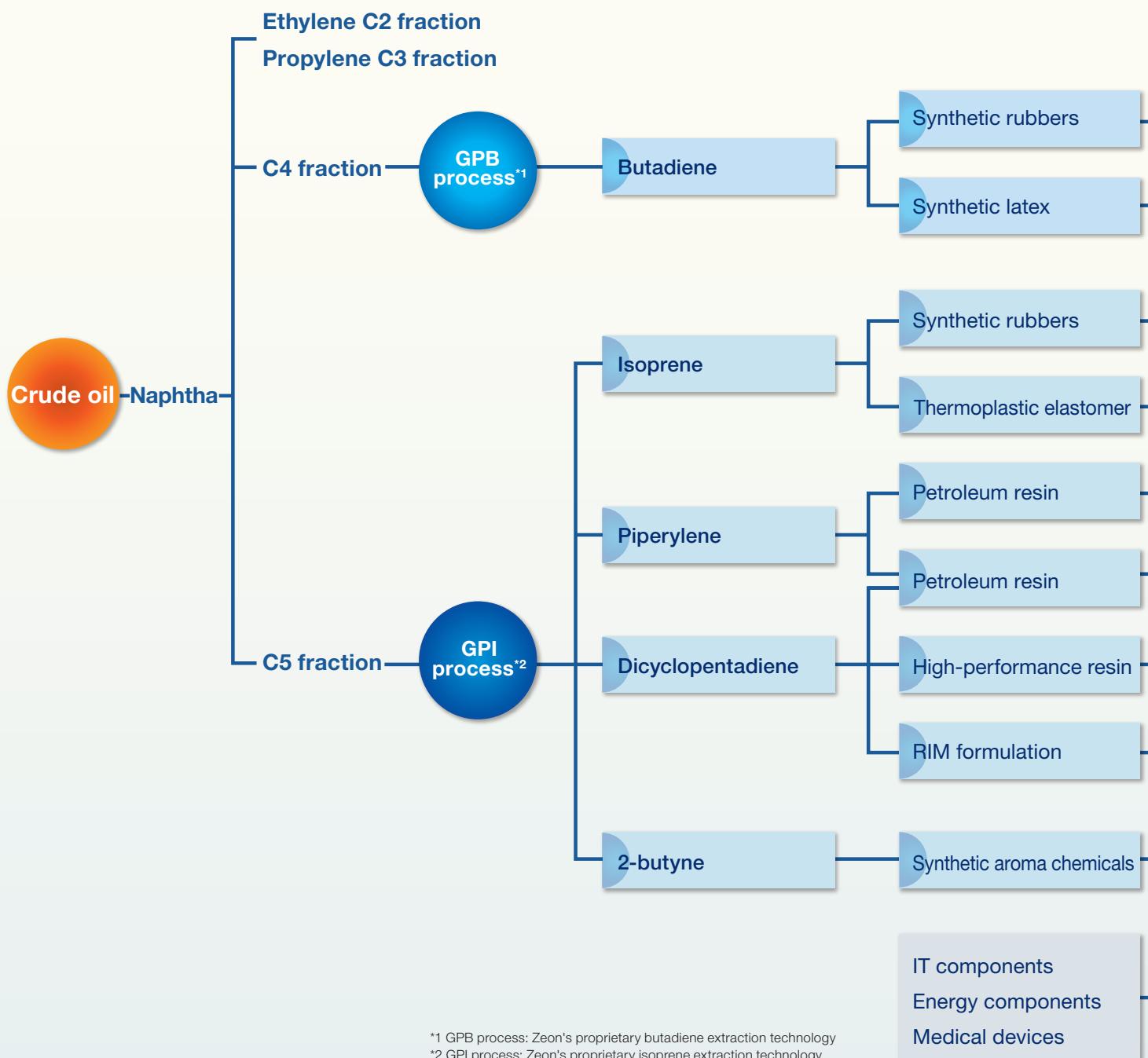
SZ-20 Phase II embodies Zeon's values of speed, dialogue (based on sincerity, frankness and honesty), and social contribution. It also signifies the treasured Zeon characteristics which include mutual trust and fellowship (based on sincerity, frankness and honesty), safety, the 3S\*, standardization and spiral up.

\*The 3S: Seiri (sort), Seiton (straighten) and Seisou (scrub)

## Business Profile

Zeon's main products are created from the raw materials butadiene and isoprene which are extracted from the C4 and C5 fractions of naphtha using Zeon's proprietary technology.

Business segments are divided into the Elastomer Business, Specialty Material Business and Other Businesses.



Company name: Zeon Corporation

Establishment: April 12, 1950

Capital: 24.211 billion yen (as of March 31, 2016)

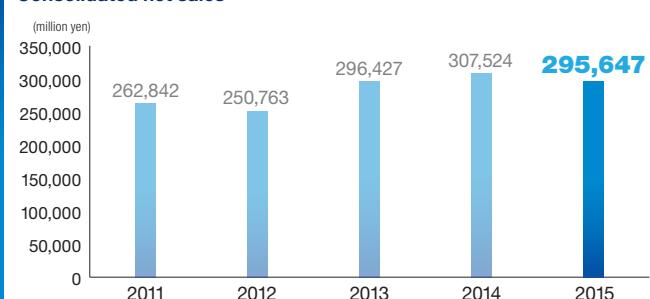
Market capitalization: 172.5 billion yen (as of March 31, 2016)

Total number of shares outstanding: 237,075,556 shares

Employees: 3,164 (consolidated), 1,624 (non-consolidated)

(as of March 31, 2016)

### Consolidated net sales



## Applications

Automobile components, tires

Gloves for medical and food processing applications, powder puffs

Automobile components, tires

Adhesives

Adhesives, traffic paints

Paints/coatings, ink

Lenses, optical films, medical containers

Housing equipment and components, large-size plastic products

Fragrances, food additives

Electronic materials, toner

Binder for Lithium-ion rechargeable batteries

Medical catheters

## Elastomer Business

In 1959, Zeon became Japan's first company to mass-produce synthetic rubbers. Even today the Elastomer Business is our core business, providing 60% of the total net sales and operating income.

### Main products

Synthetic rubbers, synthetic latex, chemical products (thermoplastic elastomers, petroleum resins)

## Specialty Materials Business

Specialty materials refer to materials and components with high added value that use macromolecular design and processing technology. In the Specialty Materials Business we place IT components, energy components and medical devices as the three main business areas.

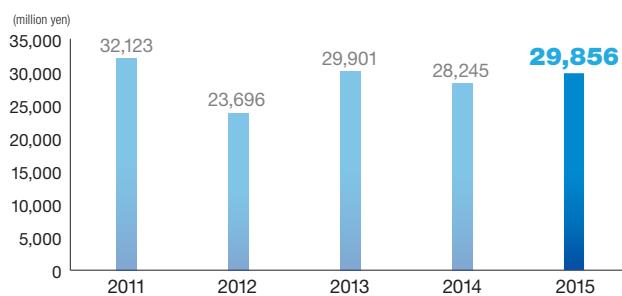
### Main products

Specialty plastics and components, electronic materials, toner, battery materials, medical devices

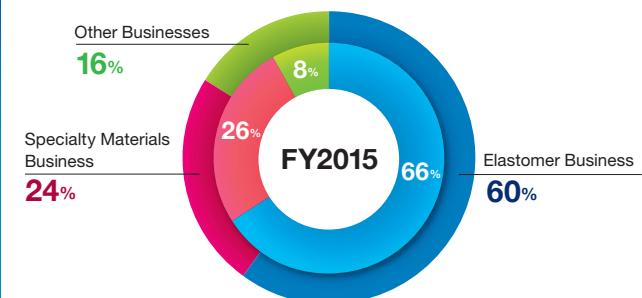
## Other Businesses

Engineering, packaging materials, construction materials, deodorants, RIM formulation, single-walled carbon nanotubes, paints/coatings, and trading, etc.

### Consolidated operating income



### Segment net sales (outer) and operating income (inner)



## Elastomer Business

### ① Synthetic Rubbers for Tires

Zeon has developed many kind of synthetic rubbers for tires using its excellent molecular control technologies. In particular, S-SBR (solution-polymerized styrene-butadiene rubber) has contributed to both the fuel efficiency of eco-tires and wet grip performance.

### ② Specialty Synthetic Rubbers

Zetpol® Hydrogenated nitrile rubber has excellent heat and oil resistance, and is used in important safety components in vehicles such as timing belts, gaskets, and fuel hoses.

### ③ Synthetic Latex for Gloves

Synthetic latex is used in disposable gloves for medical and food

processing applications. Synthetic latex gloves have better oil and chemical resistance than those made of natural rubber.

### ④ Chemical Products

#### ● Petroleum resin

Petroleum resin is used in road marking paints, such as pedestrian crossings.

#### ● Thermoplastic Elastomer SIS (Styrene Isoprene Block Copolymer)

Thermoplastic elastomer SIS has rubber-like elasticity and excellent tackiness and adhesion. Used in elastic film for disposable diapers.



## Other Businesses

### ⑩ RIM Formulation

RIM (Reaction Injection Molding) refers to an injection molding process whereby a two-component liquid system is injected into a mold and undergoes a polymerization reaction to form a solid, thermoset plastic part. Zeon's RIM products are based on dicyclopentadiene (DCPD) chemistry. Large-size plastic products with a good physical balance can be obtained by using RIM formulation which uses dicyclopentadiene as a raw material.

### ⑪ Paints/Coatings

In 2013, Zeon integrated its business with the paints/coatings manufacturer TOHPE. We develop and market paints and coatings suitable for various applications.

### ⑫ Single-Walled Carbon Nanotubes

The world's first single-walled carbon nanotube production plant was completed inside Zeon Corporation's Tokuyama Plant in November 2015, using the super-growth method developed by the National Institute of Advanced Industrial Science and Technology (AIST). We aim to assist in the development of new materials that contribute to technological innovation and conservation of the global environment with this dream material.

## Specialty Materials Business

### ⑤ IT Components

ZeonorFilm™ is the world's first optical film manufactured using a melt extrusion process. It is used in LCD TV and Smartphone displays.

### ⑥ Energy Components

Zeon Binder is a binder for the electrodes of lithium-ion rechargeable batteries. Offering high strength and flexibility, the binder limits expansion of the electrodes, dramatically improving cell life. With excellent binder performance and electrochemical stability, it is also suitable for high-capacity batteries.

### ⑦ Synthetic Aroma Chemicals

Zeon manufactures synthetic aroma chemicals using unique

synthesis technologies. Green Notes and Jasmine Notes products are used very popular in the flavor and fragrance markets all over the world.

### ⑧ Polymerized Toner

ZEOGLOBULE™ is the world's first industrialized polymerized toner. It has a uniform spherical capsule structure, and contributes to improving the quality of page printers, print speed, and energy efficiency.

### ⑨ Medical Devices

Zeon manufactures and sells catheters for endovascular treatment and digestive endoscopy. In particular, our catheters for removal of bile duct stones are rated highly.

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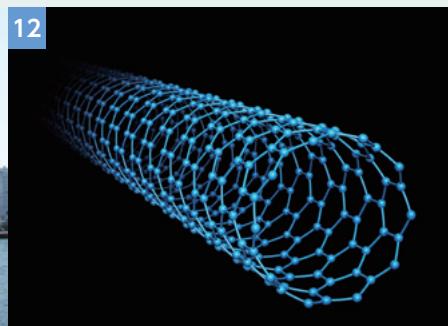
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# Strengthening the Foundation to Achieve the Enterprise Blueprint for 2020

President Kimiaki Tanaka explains the status of the Zeon Group and its future outlook in a Q&A format.



Kimiaki Tanaka  
President  
Zeon Corporation



**Q.1** Please tell us about the recent business environment and the status of Zeon Group.

**A.1** [Summary] Due to the weak natural rubber market and LCD panel film market, combined with the strong yen, net sales and operating income for fiscal 2016 are expected to be lower than the previous year.

The **Elastomer Business** and the **Specialty Materials Business** are the two main business areas that we are advancing. In particular, the **Elastomer Business** has suffered significantly due to the strong yen. With the exception of the US market, the overseas rubber market continues to slump. Additionally, naphtha prices are slowly decreasing, meaning that we had to use up our stock which was bought at a higher price.

For the **Specialty Materials Business**, the key point is the status of the film business for LCD panels, as it makes up a large share of net sales. The market for films for large-size TVs is weak due to inventory adjustments by manufacturers, but we expect to

see a slow recovery going forward. For medium-size films used for tablets and smartphones, demand changes significantly with sales trends of final products, so the situation is very sensitive.

Overall, the strong yen is a large factor, and net sales and operating income for fiscal 2016 are expected to be lower than the previous year. Unfortunately fiscal 2016 is the last year of the SZ-20 Phase II Mid-Term Management Plan which started in 2014, and is the overall finishing year for establishing a foundation toward achieving the Enterprise Blueprint for 2020. As such, we are making strong efforts to expand globally, accelerate research and development, and reform production and culture.

**Q.2** What is your view looking back at the Elastomer Business in SZ-20 Phase II, and how do you see efforts toward the next mid-term plan from fiscal 2017?

**A.2** [Summary] We will advance our global business presence, continuing to expand production and sales around the world.

[Related ▶ Page 13](#)

Looking back at the **Elastomer Business** in the Phase II period, there were several advances. First, a synthetic rubber plant for fuel-efficient tires was established in Singapore, and the second line began operations in April 2016. Additionally, in Mexico we are constructing a plant for powder slush, a material

which is used in applications such as vehicle dashboards. We also made efforts to increase our global operations by establishing a sales and marketing base for vehicle materials in India, among other initiatives.

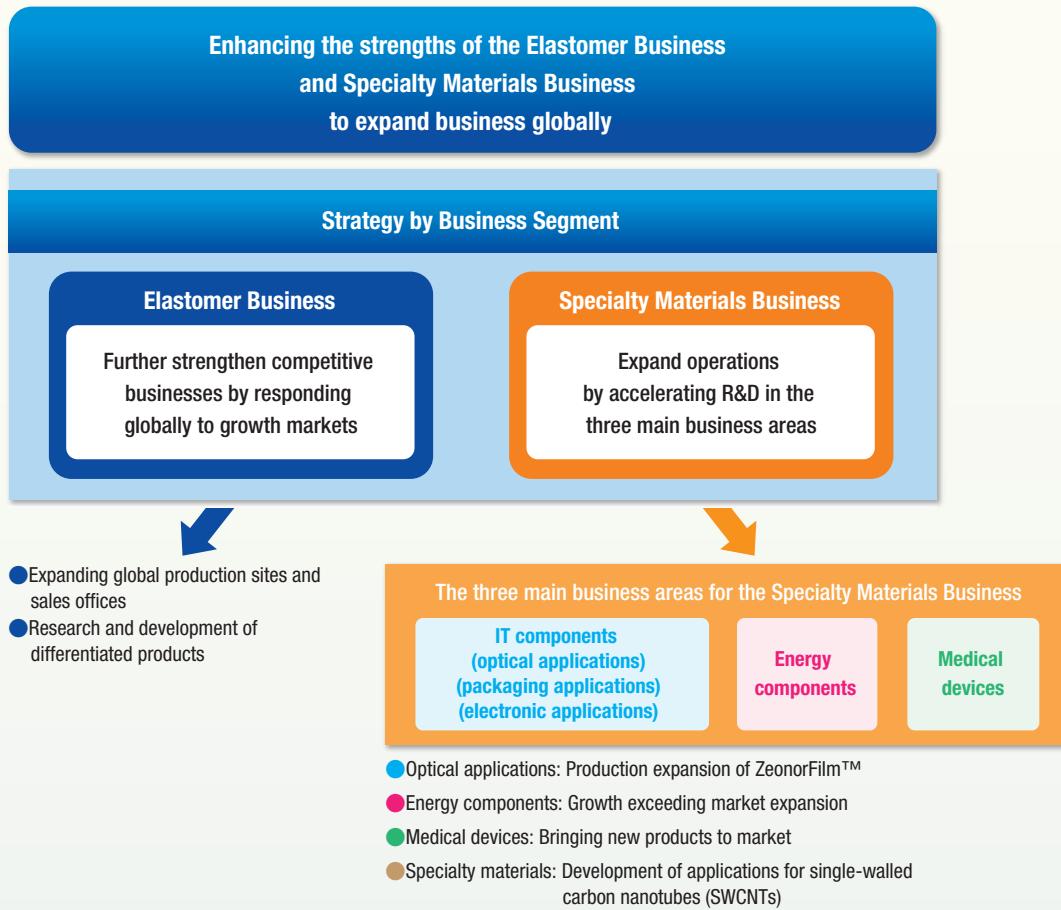
Looking at R&D, we also made efforts in research and

development for proprietary products, and increased investment in equipment for thermoplastic elastomer used in disposable diapers at our Mizushima Plant.

With regards to our C5 specialty chemicals businesses, we

are considering the establishment of overseas bases, including looking at raw material procurement. Going forward, we will fully utilize our operations worldwide and strengthen our global business.

### SZ-20 Phase II Basic Strategy and Progress



**Q.3** What is your view looking back at the Specialty Materials Business in SZ-20 Phase II, and how do you see efforts toward the next mid-term plan?

**A.3** [Summary] We increased our production capacity in the film business, and are also expanding operations in the energy components business. We also brought new medical device products to market.

Related ▶ Page 15

The three main business areas of the **Specialty Materials Business** are **IT components** (for optical, packaging and electronic applications), **energy components**, and **medical devices**.

In the **IT component** business area where optical film makes up a significant part of volume, we started operations of a fifth line in order to expand production capacity for LCD panel films, and made the decision to invest in the sixth line.

Regarding components for electronics and packaging applications, we are beginning to see potential for new products and applications in etching gas, electron beam resist and insulation materials for nitride films, so we have high hopes for the future.

In **energy components**, we are expanding operations which

started from anode sealing materials in lithium-ion batteries. We have attained a market share in anode binders of approximately 60%, and cathode binders are also increasing. We have achieved growth in operations exceeding the growth rate of the lithium-ion battery market, and the business has grown to be one we can have high expectations for in the future.

In **medical devices**, we released a new Fractional Flow Reserve device which measures coronary artery pressure in March 2016. The launch was well received, and we expect significant growth in the future.

Moreover, in fall 2015 we completed the world's first mass production plant for revolutionary **single-walled carbon nanotubes** (SWCNTs). We are now shipping product samples for application development. The three main properties of

## Interview with the President

materials that incorporate SWCNTs are high thermal conductivity, high electrical conductivity and high tensile strength. Development of applications to make use of these properties is advancing. It is expected that SWCNTs will first be used in

capacitor electrodes. Since we are developing applications over the long term, business results are not included in the fiscal 2020 mid-term plan, but we expect growth in the future.

[Related ▶ Page 21](#)

**Q.4**

Could you tell us Zeon's research and development strategy?

**A.4**

**[Summary]** We are always reviewing our research and development environment in order to produce more results and accelerate the rate at which we bring products to market.  
We will respond quickly and accurately to customer needs by combining research and production.

[Related ▶ Page 17](#)

Zeon Group's CSR Policy states that we will contribute to sustainably developing society and protecting the global environment. We believe that we can continue this by increasing research and development output and bringing new products to market.

In fiscal 2016, we improved our monthly research hearings that top management participate in by including other operating divisions to enable deeper discussions. Also, in order to pool

wisdom both inside and outside the company, we allow external parties to see our research laboratories as much as possible.

Regarding organization, we have multiple research and development units, and researchers are stationed at plants. We can more efficiently solve production issues and develop products through the joint efforts of the production floor and research. Also, by inviting customers to visit us, we can now more accurately know their needs and respond more quickly.

**Q.5**

What were the background and aims of "production innovation" and "healthy operations" which are the top internal policies?

**A.5**

**[Summary]** We will go back, review and strengthen production technology and employee health, which are important sources of competitiveness for Zeon.

Zeon's decision to introduce Daicel's method of production innovation 11 years ago was in order to survive in a rapidly changing era by reforming our culture through production innovation so that employees can think and act on their own initiative. We achieved many results, but we believe that further cultural reform is necessary to achieve the Enterprise Blueprint for 2020. Therefore, we set fiscal 2016 as the starting point, and will thoroughly implement production innovation going forward.

[Related ▶ Page 19](#)

The health of every employee is a source of power for Zeon, and we are promoting efforts for all employees to stay healthy and improve their health as necessary. I myself will take the lead and improve my diet first, and inform employees of the results.

We have begun providing an information system where health check results can be checked across the company together with the health insurance society. We are also conducting stress checks. I would like to continue supporting the health of every employee.



## Messages from Outside Directors

Zeon's Outside Directors, who advise the company on the basis of extensive experience and deep knowledge in their respective fields, have provided the following messages on Zeon and its corporate governance.

As a result of our activities on the theme of "change," aiming to achieve the Enterprise Blueprint for 2020, we were able to deliver strong business results in fiscal 2015. On the other hand, with factors such as the political and economic uncertainty due to the UK's exit from the EU, the changing automotive industry due to artificial intelligence (AI), an IT industry where Amazon is beating IBM as the cloud evolves, and the industrial revolution in manufacturing due to the IoT, the environment in which we operate is changing dramatically.

In order to survive and prosper in the midst of these changes, we all must work together and succeed in innovation. Through open innovation (joint R&D with multiple companies and offices) we can see results quickly in diverse markets and needs. In addition to our strong businesses, Zeon has businesses with strong potential for the future such as carbon nanotubes and energy materials, and I believe they can quickly create new businesses. I hope that the employees who advance this will carefully develop their own brand of individuality rather than being model students. I will continue to contribute to building a company that is resilient to changes in the environment together with everyone at Zeon.



**Haruo Itoh**  
Adviser  
FUJI ELECTRIC CO., LTD.

Most listed companies have implemented rules to comply with the Corporate Governance Code. This is a Western Corporate Governance approach that focuses on processes, form, official announcements, and the responsibility to explain. From the perspective of Japanese companies, which normally promote top executives from within the firm, considering the balance of shareholders, customers and employees carefully and focusing on long-term growth, some say that scandals cannot be prevented and growth cannot be assured simply by arranging the form. But I think we should take it as a "common language" which enables foreign shareholders to know the company. I believe it is important to respond with "Japanese spirit with Western learning" that combines the benefits of Japanese business with Western Corporate Governance approaches. The role of outside directors has become even more important. I truly hope to contribute to the development of Zeon Corporation by giving advice and recommendations from a different viewpoint to internal directors.



**Takao Kitabata**  
Chairman of Board  
Sanda Gakuen  
Junior High School & High School

I worked as the Zeon outside corporate auditor for four years, and have been an outside director since fiscal 2015, but I have seen and known Zeon's activities as a member of a tire manufacturer even long before I worked for Zeon.

I feel that the world's automotive and automobile component industries are at a turning point. There is rapid progress in strengthening environmental regulations and initiatives around the world as well as in driving technologies involving newcomers from other industries.

With these major trends, I believe that Zeon's major mission is to contribute to the world's consumers through the latest products with our technology as a Japanese chemical materials manufacturer.

Being in the position of an outside director, I will deepen discussions with people concerned not only in my role as a business observer but also to contribute to the sustainable development of Zeon's business activities for all stakeholders.

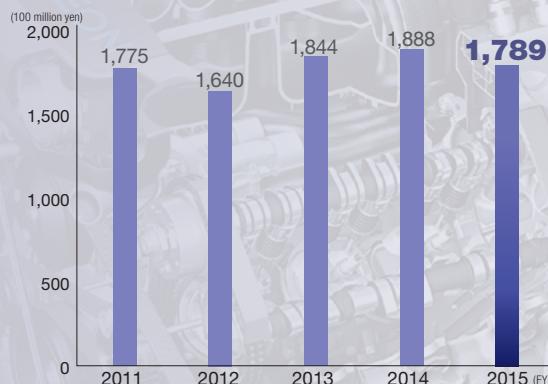


**Tadanobu Nagumo**  
Chairman and Representative  
Member of the Board  
The Yokohama Rubber Co., Ltd.

## Elastomer Business

In elastomer materials, our core business is the three fields of synthetic rubbers, synthetic latex and chemical products, the main materials of which are C4 and C5 fractions derived from naphtha. In 1959, Zeon became Japan's first company to mass-produce synthetic rubbers. Even today, the Elastomer Business is a core Zeon business, providing 60% of the total net sales and operating income.

**Transition in Sales (last five years)**



## Business Outlook and Future Strategy

In fiscal 2015, stagnation in synthetic rubber and natural rubber markets and the rapid rise in the yen lasting to the end of the fiscal year resulted in a decrease in net sales in the Elastomer Business versus the previous fiscal year. However, due to factors such as favorable progress with the transfer to overseas production of general rubber, the firming up of demand for chemical products, and strong export sales of synthetic latex, operating income increased 23% versus the previous year.

For synthetic rubber, our Enterprise Blueprint for 2020 calls for "taking a front-runner position globally in synthetic rubbers." To us, being a "front-runner" means to be a supplier that can propose the highest number of values that customers can firmly emphasize with. Aiming for a leading market share where we can leverage our strengths, we will establish Zeon's presence in emerging markets focused on Asia.

Within general rubbers, demand is increasing for **S-SBR\*** used as a special rubber in fuel-efficient tires. Our Tokuyama Plant is positioned as a production site for the development of new products and proprietary products, while mass-produced products are manufactured in our Singapore Plant. Development is proceeding in collaboration with our tire manufacturer

customers, and I would like to strengthen our business by delivering products with high added-value. Zetpol®, our main specialty rubber product extends product lifetime by 2 to 3 times by increasing heat-resistance by 20°C, contributing to raising product performance. I believe that the focus of the future specialty rubber market will shift to emerging markets particularly in Asia where automobile production is expanding. In order to achieve differentiation from other companies in new markets, we will upgrade the technical support system that supports our formulation and processing technologies.

I want to technically support and contribute to regional development in emerging markets where the rubber processing industry is immature.

\* S-SBR: Solution-polymerized styrene-butadiene rubber

There is strong demand for **synthetic latex** in surgical gloves. In addition to medical applications, food processing uses are also expanding. I expect stable demand in emerging markets in the future as awareness of health and safety increases. Our NBR latex for powder puffs is an extremely strong product with a 90% world market share (Zeon estimate). Since more people are wearing cosmetics using high grade powder puffs as economies grow in Asia,



**Hiroyuki Hirakawa**

Director & Senior Corporate Officer  
Elastomers and Chemicals Business



Our NBR latex for powder puffs has a 90% world market share.

we can expect continued growth. In addition, we will search for possibilities for inter-departmental collaboration to determine whether latex can be used as a formulation material for products in other business divisions.

In the area of chemical products, demand for our main **thermoplastic elastomer SIS** (Quintac®) and C5 petroleum resin (Quintone®) is strong. The market for adhesive tapes and disposable diapers, the major application for these products, is growing 3-5% per year, and similar growth is expected in the future. We completed production capacity expansion for the thermoplastic elastomer SIS at our Mizushima Plant in 2016, establishing a structure to

respond to future strong demand. C5 petroleum resin is produced at the Mizushima and Thai Plants and both are running at full capacity. In 2015, the Thai Plant recorded its highest production level and profit since it began operations in 1996. Additionally, we plan to construct a plant to manufacture hydrogenated petroleum resin at the Mizushima Plant in 2017.

Currently, both products are No. 2 in terms of global market share, but we plan to strengthen and expand the business in future, offering value to satisfy customers through the development of new products.

## Product Introduction

### Solution-polymerized styrene-butadiene rubber (S-SBR)

Zeon's solution-polymerized SBR that has achieved a variety of molecular structures for customer needs through batch polymerization, has enabled both the low fuel consumption performance of eco-tires around the world and wet grip performance, contributing to global CO<sub>2</sub> reductions.



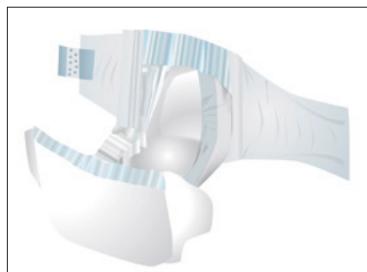
### Synthetic Latex

NBR latex is used widely in applications such as disposable surgical gloves and powder puffs since it combines low levels of impurities and allergens and high resistance to oil and chemicals.



### Thermoplastic Elastomer Asymmetric SIS

For our thermoplastic elastomer, we are developing materials that possess asymmetric SIS structures to replace conventional SIS with demand expanding in elastic film applications for disposable diapers. We are pioneering new applications that take advantage of its high strength and flexibility. As a higher performance elastic film and a higher-definition and more durable flexographic printing material, we can expect adoption in protective films and hot melt pressure-sensitive adhesives as well.



## Product Topics

### Biosynthetic Hydrin Rubber

By changing the raw material from epichlorohydrin to plant-derived bio-material, it has become possible to reduce CO<sub>2</sub> emissions in the life cycle of automotive parts. This material has been used in automotive vacuum sensing hoses since fiscal 2016, and is expected to be used in brake and fuel hoses in future.



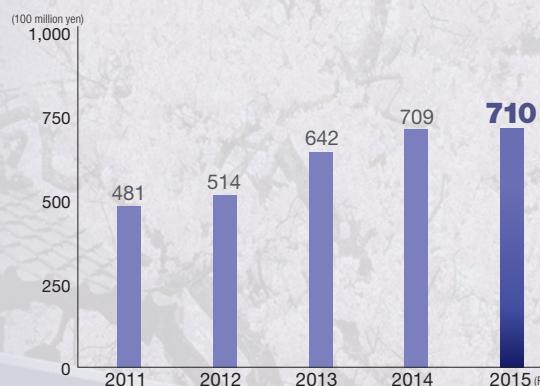
US Mississippi Plant manufacturing hydrin rubber

## Specialty Materials Business

Specialty materials refer to materials and components with high added value that use macromolecular design and processing technology.

Focusing on future growth areas, we are positioning IT components (optical, packaging, and electronics), energy components, and medical devices as three key business domains.

Transition in Sales (last five years)



## Business Outlook and Future Strategy

In the Specialty Materials Business, we are using unique product concepts based on innovative original technology to produce various high added-value products without being overly influenced by the conditions of the materials market. We will strive to expand the business further toward the Enterprise Blueprint for 2020.

The optical film business is the core of the Specialty Materials Business. With the growth of large-screen LCD televisions, we expect the film market to continue growing. Since **ZeonorFilm™** performs excellently in large-screen LCD televisions, we can expect continued stable growth. We are increasing production equipment to respond to this demand. For small and medium-sized devices such as smartphones, since sales trends are impacted by the final product, we aim for a structure that can rapidly respond to customer demands. In addition, Organic EL panel (OLED) film is a highly profitable product, and although the volume is still small, we are putting effort into its development.

In the optical resin business, since the market for lenses is contracting, we are putting effort into the development of alternative applications such as pharmaceutical packaging materials. In packaging and electronics components, we are continuing research and development on etching gas for nitride film that

will enable the further miniaturization of semiconductors.

For energy components, we are expanding products such as cathode binders and separator materials, focusing on anode binders for **lithium-ion batteries** and sealing materials. Due to growth in hybrid cars and electric vehicles in particular, we see strong growth in components that are used in automotive lithium-ion batteries. Zeon leads in the anode binder field that uses elastomer as a material with a 60 to 70% share. The use of cathode binders together with anodes is growing, and we can expect further growth in sales volume of both binders in the future.

In chemicals, the main aromatic chemical is well regarded for its high quality and safety. In particular, demand for **green aroma chemicals** is growing stably. In addition, we see stable demand for solvents used in chemical synthesis. Furthermore, we expect demand expansion of the plant growth regulator Prohydrojasmon developed by Zeon as an agent to increase plant quality and yield.

Regarding toners, printing itself is contracting, but by gaining full trust by carefully dealing with customer demands, we expect to maintain a certain level of net sales.



Noboru Yanagida

Director & Corporate Officer  
Specialty Materials Business  
President of Zeon Medical Inc.

In medical devices, in March 2016 we brought two new circulatory system devices to market, IABP<sup>\*1</sup> drive unit and FFR<sup>\*2</sup>. In particular, because the FFR device is the world's first guide wire type to use a light sensor, it can pass through blood vessels more easily than conventional products and can reduce variations in measured values.

In gastrointestinal system devices, we started selling an improved biliary stent product at the end of 2015.

In addition, we offer many products for removing bile duct stones and have a top tier industry market share. We can expect growth of both circulatory and gastrointestinal systems.

\*1 IABP : Intra-aortic Balloon Pumping

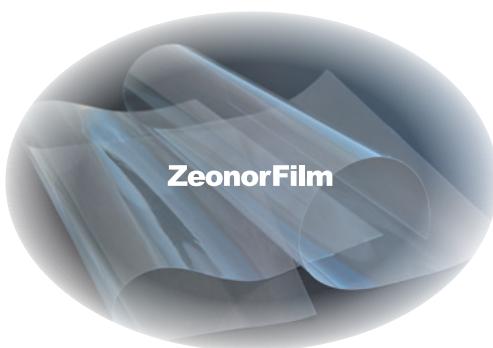
\*2 FFR : Fractional Flow Reserve

We started operating the production equipment for single-walled carbon nanotubes (SWCNTs) at our Tokuyama Plant in fall 2015 and have started manufacturing samples. We will continue developing in order to maximize added-value sales, for example by combining SWCNTs with Zeon's core Elastomer Business. Additionally, expanding applications also leads to reduction of production cost, so we will aim to further reduce costs and improve production volume through the collaborative research lab with the National Institute of Advanced Industrial Science and Technology (AIST).

## Product Introduction

### Optical Film "ZeonorFilm™"

The world's first optical film successfully manufactured using a melt extrusion process. Excellent optical properties, low moisture absorption and low permeability, high heat resistance, low outgassing, and dimensional stability, and used mainly as a phase contrast film for LCD panels.



### Rechargeable Battery Materials "Battery Binder (Adhesive)"

Cathode and anode binders used in lithium-ion batteries for mobile and automotive applications. By reviewing the molecular design utilizing the polymer design technology that Zeon has developed over many years, we have been able to restrict the swelling of electrodes, and increased lifetime and capacity. We are contributing to improvement of the safety and performance of batteries.



## Product Topics

### FFR Devices "OptoMonitor® Invasive Intravascular Pressure Measurement Monitor" "OptoWire® Guide Wire with Sensor for Intravascular Pressure Measurement"

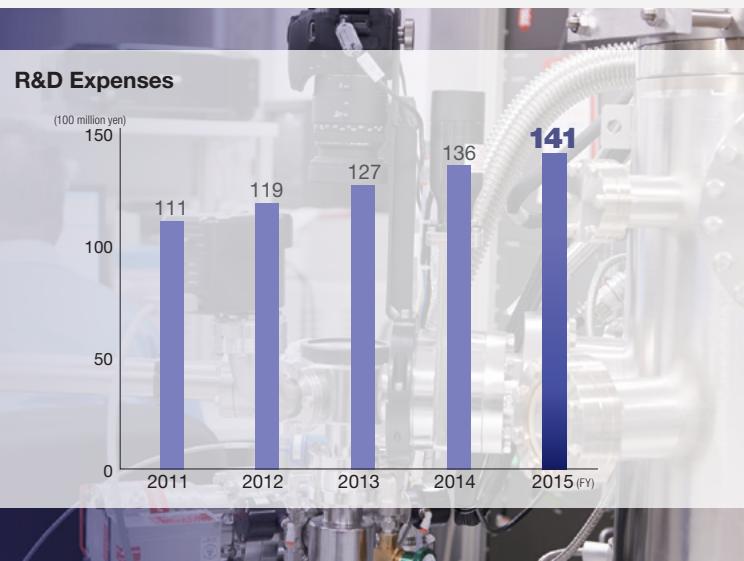
FFR (Fractional Flow Reserve) uses an index to understand the state of coronary artery stenosis to find the internal coronary artery pressure.

OptoWire® is the world's first guide wire-type product to use an optical fiber sensor. Additionally, by using the touch panel-type small display OptoMonitor®, FFR measurement can be conducted easily regardless of the installation location.



## Research and Development (R&D)

The R&D Center conducts Zeon Group's R&D activities and is the company's largest operational sector with over 400 researchers. In addition to the R&D Center's ten research buildings located adjacent to the Kawasaki Plant, we have a Precision Optics Laboratory and Medical Laboratory next to the Takaoka Plant, a Toner Laboratory and CNT Laboratory in the Tokuyama Plant, a Chemical Products Laboratory in the Mizushima Plant. Through close collaboration with business units, we develop new products and improve existing products to meet the needs of customers. Additionally we are advancing the search for new materials at our New Materials Development Laboratory, developing and using new analytical and simulation techniques at our Foundation Technology Laboratory, and developing and improving production processes and equipment at our Production Technology Laboratory.



## Research and Development (R&D) Strategy

Toward the achievement of the SZ-20 Phase II Mid-Term Management Plan, in which the field of research and development plays an important role, we are employing policies to raise research outputs and connect to social contribution.

Regarding the single-walled carbon nanotubes (SWCNTs) for which we launched full-scale production in FY2015 with our new CNT Laboratory as a center, we have strengthened existing collaboration with the National Institute of Advanced Industrial Science and Technology (AIST) and also with other external organizations.

While also carrying out similar collaboration in other areas, we work to strengthen cooperation across the boundaries of individual research laboratories to accelerate research and improve the output of the R&D Center overall.

We will continue to secure a stable investment into research and development of around 13 billion yen per year.

In order to create the new business seeds that will follow SWCNTs, we are working to spark each individual researcher's motivation and foster a corporate culture that will generate ideas for new themes.

Our newly established lounge for example is taking an important role to exchange information and to promote research without boundaries of R&D Center. To create such a corporate culture, personnel transfers that generate new perspectives and ideas are critical. We will regularly perform personnel transfers not only among research laboratories but also among the business units where customer interaction takes place and the plants where we engage in production.

At research and technology presentations, individual researchers present their research themes and discuss with our top executives directly to make themes' strategic position clear.

Also, we have been providing support for the "Polymer Journal Zeon Corporation Award" which recognizes young researchers with outstanding papers for ten years together with The Society of Polymer Science in Japan. Each year, we hold an exchange event with previous winners and university teachers, making efforts to contribute to future science and technology.

### R&D System

#### Research & Development Center



R&D Center

- New Materials Development Laboratory
- CNT Laboratory (Tokuyama)
- Precision Optics Laboratory (Takaoka)
- Specialty Materials Laboratory
- Advanced Performance Material Laboratory
- Specialty Plastics Laboratory
- Toner Laboratory (Tokuyama)
- Chemical Products Laboratory (Mizushima)
- Elastomer Laboratory
- Production Technology Laboratory
- Foundation Technology Laboratory
- Medical Laboratory (Takaoka)
- Manufactured Product Development Laboratory



**Yoshiyuki Mitsuhiro**

Director & Senior Corporate Officer  
Research & Development

## Recent Zeon Research Results

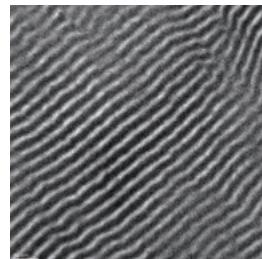
### Thermoplastic elastomer newly developed products "Asymmetric SIS"

Chemical Products Laboratory

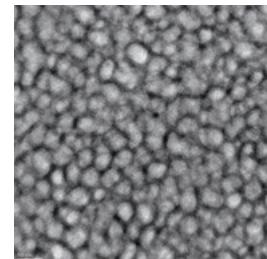
The styrene portion of Zeon's thermoplastic elastomer SIS (styrene-isoprene block copolymer) hardens like glass at room temperature, and supports the isoprene portion physically, but when heat is applied, the chains are broken and the substance becomes a liquid. Since it can be formed freely like plastic, it is used widely in applications such as protective films, tapes and labels.

If the amount of styrene in SIS is reduced restorability (flexibility) improves and stress (tensile strength) reduces, while if the amount of styrene is increased the opposite phenomenon occurs.

However, in recent years, we have succeeded in achieving both flexibility and strength. The newly developed products are used in adhesive tapes for disposable diapers and adhesive for labels. There are high expectations for this new technology which controls morphology structure to be used in new applications.



Symmetric SIS



Asymmetric SIS

### Newly developed product of powder slush compound

Manufactured Product Development Laboratory

Zeon's powder slush compounds are powdered molding materials that are used as coverings for automotive interiors (instrument panels, doors etc.). With the trend in recent years of improved design in interiors, there is now demand for coverings in which sewing with real thread is possible and that have more luxurious textures.

Since there is a trade-off between customer demands for covering properties and ability to mold, it was hard to achieve both with traditional coverings. But, as a result of research and development, we have succeeded in establishing technology that can deliver both the desired covering properties and ability to mold, and this technology has been adopted by major automotive manufacturers.

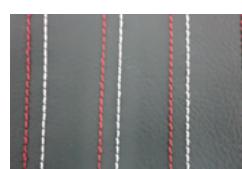
Our Mexico plant will start operations in 2017, and we will develop operations globally in order to respond to the growing world automotive industry.



Zeon Kasei Mexico S.A. de C.V. operational in 2017



Powder slush compound



Sewing with real thread is possible



### Development of FFR Guidewire

Medical Laboratory

Myocardial infarction and angina pectoris are caused by blockage (narrowing) of the blood vessels surrounding the heart (coronary arteries). In recent years, there has been focus on FFR (Fractional Flow Reserve), a technique in which the blood pressure of the distal and proximal side of a blockage in a blood vessel can be measured. The difference of those blood pressures is used to quantitatively diagnose the degree of blockage of blood flow, and objectively determine the treatment.

The medical laboratory collaborates with a Canadian optical sensor manufacturer for development of superior products with higher measurement accuracy and higher operability. As a result of discussing and working beyond the research laboratory in our company, we have developed a ground-breaking, world first FFR guidewire using an optical sensor that has low pressure fluctuation. This technology helps with objective diagnosis, and assists doctors in determining whether treatment is needed or not.



# **Production Management and Safety**

In order to implement the Enterprise Blueprint for 2020, "Zeon makes the future today through the Power of Chemistry," it is essential that we both develop groundbreaking new materials and improve production in terms of greater cost competitiveness and stabilized production quality.

Accidents occurring at chemical plants not only affect employees working at the plants, but also they have a strong effect on society, with regard to environmental pollution within the local community, as well negatively influencing customers if the supply of products is interrupted. Therefore, Zeon places safe and secure production as themes of particular importance for management.

## **Improving Stability and Safety along with Cost Competitiveness through Production Innovation and Process Innovation**

Zeon engages in production management innovation primarily from two approaches (as shown on the figure 1), Production Innovation and Process Innovation. Production innovation (Daicel's method of production innovation) is the activity by which we consider every task caused by various changes on the production sites to be a load, considering the cause of the workload and how it can be prevented in order to standardize the solutions.

On the other hand, process innovation is to completely change a part of our manufacturing processes to something new, so that we can achieve great results in a short period of time which could not have been done otherwise (refer to figure 2).

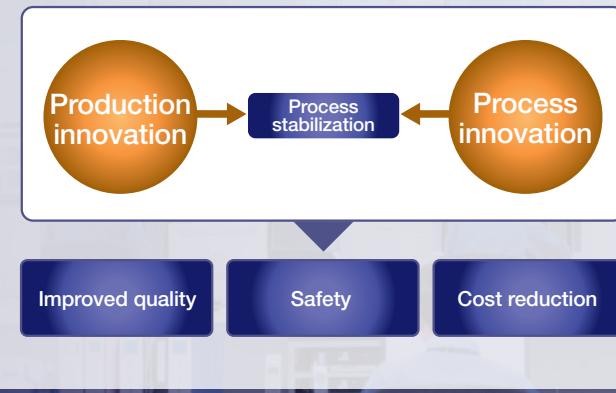
Production innovation finds and eliminates the causes of existing loads from an on-site perspective. Process innovation rethinks and changes current processes in light of the latest technology. Zeon uses both of these approaches to tackle the challenges of improving quality, safety, and cost competitiveness. This know-how will be extended to the global production system, and will be used to achieve the Enterprise Blueprint for 2020.



# Toru Nishijima

Director & Senior Corporate Officer  
Production and Engineering Technology  
Division Manager - Production Center

**Figure 1 Production Innovation and Process Innovation**

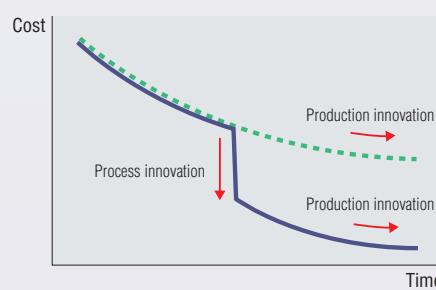


## Returning to First Principles to Tackle 3S

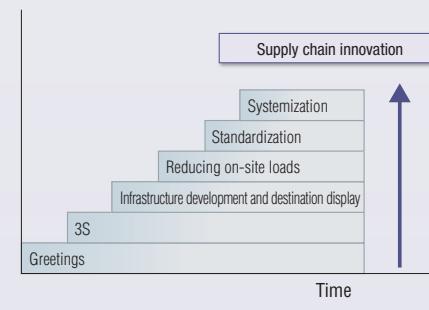
Currently, we are returning to first principles to strongly promote 3S (sort, straighten and scrub) based on the President's policy, "Thoroughly implement production innovation." Four domestic plants in Japan have improved step by step from 3S and three plants have achieved the stage of systemization, while the Kawasaki Plant has reached the stage of standardization (refer to figure 3). However, while spending time on production innovation, we came to realize that we may be losing focus on our initiatives. So we made teams comprising new and experienced staff and returned to first principles to investigate the initiatives again. With these actions we aim to continue to improve the situation by encouraging new and experienced staff to exchange information in the production sites, passing on technology traditions and an improvement mindset.

Further, following production innovation at plants, the head office

**■Figure 2** The relationship between production innovation and process innovation



■ Figure 3 Image of production innovation steps



organization is also undertaking 3S in order to improve the entire supply chain. Although manufacturing is carried out in the plants, planning and execution including business planning, purchase planning, shipping planning and sales activities are done at many locations other than the plants. In order to improve the entire supply chain, it is important that the head office organization also has a mindset of work improvement.

The key point here is to share information. By organizing and sharing information through 3S and sharing and passing on know-how that is kept within departments and individuals, we will increase the overall efficiency of the company.

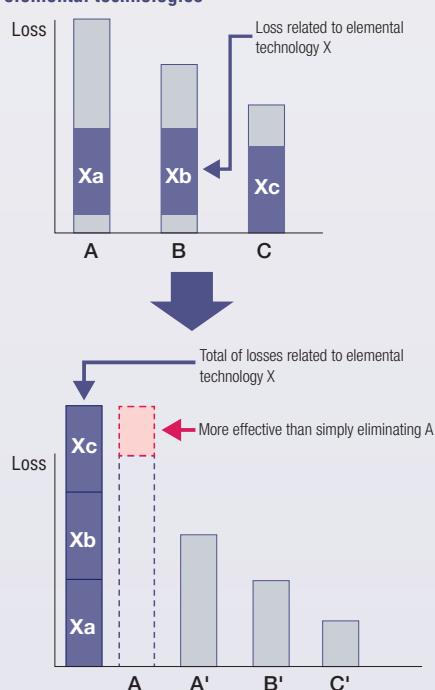
## Process innovation keyword "Elemental technology"

For example, if three types of events, A, B and C cause a loss cost, the normal approach would be to try to eliminate the largest event A (refer to figure 4). However, after carefully analyzing the three events, it was discovered that an elemental technology "X" was common to a certain degree in A, B and C. Elemental technologies refer to each of the diverse technologies that make up manufacturing processes.

If the elemental technology X, that is partially responsible for losses in multiple events, can be eliminated (stabilized) by some method, the ripple effect will have more benefits than simply undertaking production innovation on event A.

We think improving multiple processes simultaneously by improving an elemental technology X is also one type of process innovation. Therefore, at Zeon, the head office, research laboratories and plants work on issues together as a project team.

**Figure 4 Image of loss reduction effect through stabilization of elemental technologies**



## Ensure safety of all people who enter the premises

Following multiple major accidents that happened in around 2012 at chemical companies, Zeon thoroughly checked to see if plant emergency stop procedures could actually be carried out as prescribed. As a result, problems were found such as valves not being located in positions where they could be closed rapidly in an emergency situation. Although solving such problems would require changing the piping route to change the height of the valve at high cost, from 2015 a project was started to solve these issues and it is progressing with completion planned for 2017.

Moreover, in recent years, construction company worker accidents (light injuries) have increased. We have always communicated with resident partner companies regarding safety management, and there are almost no accidents. However, construction companies responsible for infrequent works sometimes have workers who have never entered a chemical plant before, and this can lead to injuries from working in unfamiliar environments.

With a sense of urgency about this situation, we have started new activities based on determination of top management to ensure the safety of all people who enter Zeon premises. "All people" includes not only employees but also people who are involved in manufacturing such as employees of construction companies. With this initiative, we have clarified that safety will be dealt with under Zeon's responsibility, and have also implemented another risk assessment.

Zeon and subcontractor workers will check the work site together to evaluate possible risks and work together to improve work procedures and points with high risk.

### Topics

#### Conducting experiential safety education at four plants



Experiential safety equipment which allows workers to experience possible accidents in the plant such as being entrapped has been installed in four domestic plants. In fiscal 2015, we expanded the target for education to employees at research laboratories, resident partner companies, and neighboring group companies.

## Highlight 1

# World-changing single-walled carbon nanotubes

### Key points of single-walled carbon nanotube business

1. Zeon is the first company in the world to commercialize single-walled carbon nanotubes.
2. We have enabled unprecedented properties by mixing with other materials such as rubber and metals.
3. There are wide applications, and the technology holds the promise of changing the world.



The 45th Japan Industrial  
Technology Grand Prize  
Joint winners with AIST of the  
Reviewer's Prize



Joint winners with AIST of the  
2016 Minister of MEXT Award,  
Department of Science and  
Technology in the field of  
science and technology

## Development Background

Carbon nanotubes, discovered by Sumio Iijima in 1991, are categorized into single-walled nanotubes (SWCNTs) and multi-walled nanotubes (MWCNTs). MWCNTs are relatively easy to produce and have been developed in many applications both in Japan and overseas. On the other hand, there has been little development of SWCNTs since they are difficult to mass produce.

Zeon Corporation has developed the SWCNTs "Super Growth Method" discovered by Dr. Kenji Hata's team at the National Institute of Advanced Industrial Science and Technology (AIST), and has set up mass production technology and commercialized **ZEONANO™**. This work has been supported by the New Energy and Industrial Technology Development Organization (NEDO).

### Features of SWCNT

#### ① Length

Up to mm range. Easy to combine with other substances, making them stronger

#### ② Large Surface Area

Large surface areas allow a greater quantity of electric charge to be stored

#### ③ High Purity

Chemically stable since the material contains very few residues of metal catalysts

### The three features of materials with SWCNT added

#### ① High strength

#### ② High thermal conductivity

#### ③ High electrical conductivity



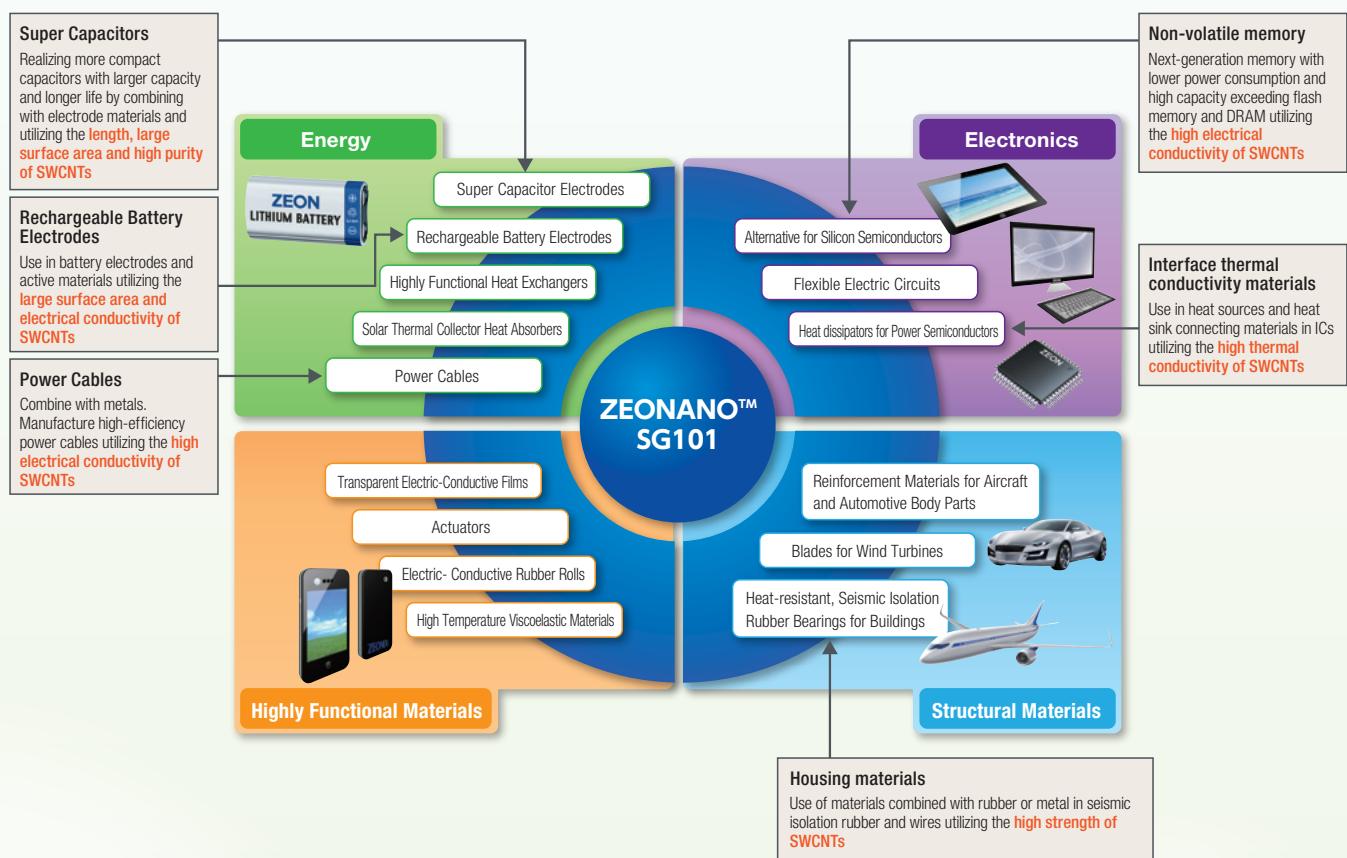
### Using SWCNTs to benefit society

SWCNTs are innovative materials with superior properties that are sure to form a wide range of major industries. Zeon's mission is to use SWCNT technology effectively and supply it to as many customers as possible. In concrete terms, in addition to application development, we are progressing with cost reduction to enable use in mass-produced products such as cars.

Rather than using them on their own, SWCNTs exhibit various properties when combined with other materials such as rubber or metal. Rubber is Zeon's core technology, and we possess advanced technology in rubber based on many years of experience. We will utilize this to efficiently develop applications and bring to market various products in a wide range of fields in future. SWCNTs have the potential to overturn traditional thought in science so please keep an eye on our future research and development.

## Possible Applications

SWCNTs made with the Super Growth Method exhibit many superior properties. We will research diverse applications in various fields utilizing these properties.



### Offer products that can be easily handled as construction materials

SWCNTs are a powder form, but as a result of Zeon's proprietary technology, can be uniformly combined with rubber, water or paints/coatings. We will offer products in a form that is easy to handle according to the application.



## Safety Evaluations and Independent Safety Management

Zeon has evaluated the impact of SWCNTs on people and the environment together with internal and external research institutions as we have worked towards mass production.

### 1) Safety confirmation

We conducted various safety tests for known health problems. To test for mesothelioma, we applied SWCNTs directly to mesothelial cells in mouse lungs and confirmed that there is no occurrence of mesothelioma. In addition, multiple tests indicated no occurrence of cancer.

Further, we will continue to investigate to ensure that we take appropriate measures against health problems that are not yet known.

### 2) Newly created environmental standards

We have created new environmental standards (allowable concentration in work environments) to ensure safe working practices based on various tests. We have provided our environmental test data to organizations such as the OECD and ISO, and they are using it.

In addition, we are constantly providing the latest safety data and proceeding with independent safety management initiatives together with customers, government institutions and regional authorities.

## Highlight 2 Roundtable

Toward the Enterprise Blueprint for 2020

# Considering the strengths of Zeon



We set out Zeon's strong points and challenges toward the Enterprise Blueprint for 2020 and held a roundtable to explore areas that must be worked from now on. Here we present a digest of opinions of eight junior to mid-career staff from various Zeon Corporation operating departments and the Zeon Group.

Roundtable date: June 24, 2016 (Friday) \*Their departments are as of the time of the roundtable

● Zeon's strengths   ◆ Zeon's challenges

●◆ Zeon's name recognition for special rubbers is particularly high both in Japan and overseas. I think our future challenge is to use that name recognition while increasing the recognition for other products.

● I think our company values communication. I have a long experience of sales in China. While there are some differences in business practices in Japan and China, the most important thing in the end is the connection between people, so I place strong importance on dialogue with customers.

Zeon Corporation  
Synthetic Latex Department



● I think we communicate well with a lot of dialogue in this company and I feel connected with people. There is no gap between my impression of the company when I was job hunting and the one after I started working here. The fact that I can still talk freely with the staff who spoke to me when I was a student is a good point. It is not always so with other companies.

Zeon Corporation  
Specialty Plastics & Components Department



● Zeon is quick to start and acts on new challenges that look interesting.  
◆ I think that we are a little weak in making use of our know-how, technology and failure analysis to efficiently lead to sales. I think it would be a good idea to share personal expertise more.

Zeon Corporation  
Energy Material Business Promotion Department





- I think that the company proactively creates opportunities for communication that go beyond group or operating division boundaries through "Taimatsu (torchlight) activities" and various clubs, not only business.
- I feel that the top management has a hands-on management style with a clear attitude of listening to the workers on site.
- ◆ I felt from my experience of working overseas that we need to improve in sharing our policy with the head office.

Zeon Corporation  
Synthetic Rubber Department



- I was a member of the union for two years. Compared to other unions, Zeon has less distance between the company and the union, and they maintain a very good relationship. Of course, labor relations are not simply better the closer the relationship, but it is good that there are many opportunities for dialogue and I think that both sides respect each other.

Zeon Corporation  
Raw Material & Logistics Department Raw Material Unit



- I think that while we have a stable base of creative technology, we are continuing to take on challenges in areas such as carbon nanotubes.
- ◆ I think that it is urgent to develop staff who can proactively find new businesses in response to globalization.
- ◆ We believe that in order to fully demonstrate the synergy of the Zeon Group it is essential that we intensify sharing of information between work sites and respond to the globalization of users.

Tokyo Zairyo  
Basic Materials Department Rubber Sales Unit 1



- I think we have a culture with a short distance between managers and workers with an open atmosphere. Also, I can proactively take on whatever challenges I want.
- ◆ I think that promoting standardization of work across the whole company and even further horizontal development of effective initiatives will become a base for advancing Zeon in the future and will lead to the achievement of the Enterprise Blueprint for 2020.

Zeon Corporation  
Production Research and Development Center Facilities Management Department



- ◆ I feel that more employees are taking care of their health since we employed "Improving Employees' Health" as a key company theme. How about creating a system such as providing incentives? If everyone is healthy it will reduce health care costs, leading to company profits.
- ◆ I work with many departments and feel that the great technologies and expertise are not fully shared among them. From a management perspective I think that we should provide opportunities for sharing.

Zeon Corporation  
Raw Material & Logistics Department, Logistics Division

## Closing Remarks

We were able to confirm characteristics of Zeon Group that staff have felt up to now, such as active internal communication and placing importance on the connection between people in the roundtable. Also, we shared the recognition on the needs for cooperation between organizations in global business activities, making rules consistent, sharing knowledge and know-how, and focusing more on employees' health. Through this roundtable we realized the importance of using good communication to find strong points, and by further improvement we can push forward to achieve the Enterprise Blueprint for 2020. (CSR Promotion Department)

### Highlight 3

# Creating corporate culture via *Taimatsu* (torchlight) activities

## - Entering the Fifth Year (Term V) -

We believe that it will not be easy to achieve the goals in our Enterprise Blueprint for 2020 by relying on our current operations. It is our belief that each individual employee must have the initiative to take action to respond to changes and continue to engage in challenges to meet high goals, even in a rapidly changing environment where the outlook is unclear.

As an initiative to nurture and strengthen the treasured Zeon characteristics (mutual trust and fellowship) and the key sense of value (speed, dialogue, and social contribution) shared by all persons in the Group, all departments and group companies have engaged in the *Taimatsu* activities since July 2012, and in July 2016 we entered the fifth year (Term V).



Impetus for attaining the Enterprise Blueprint for 2020

### ***Taimatsu* activities**

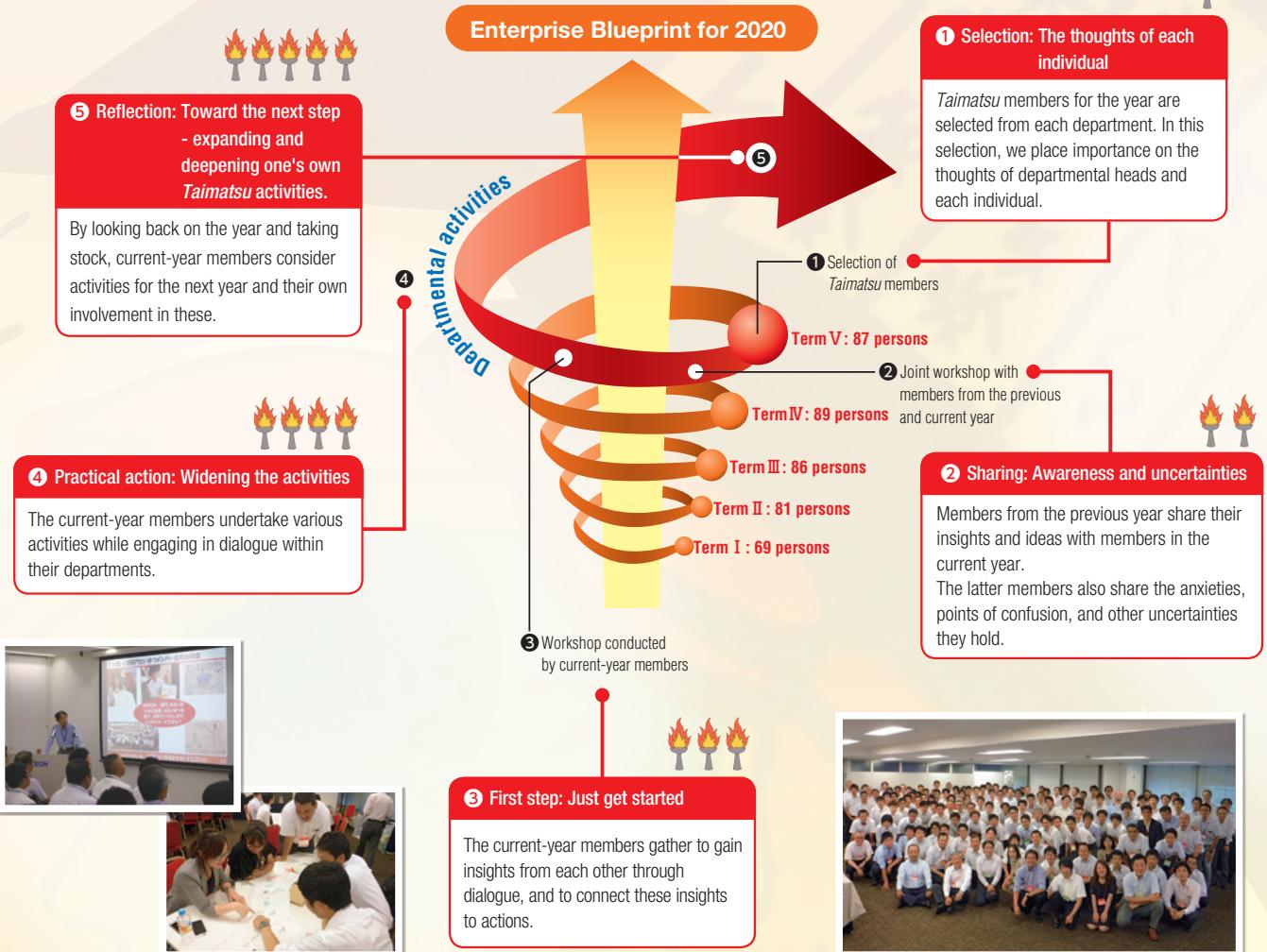
*Taimatsu* means torchlight, and the *Taimatsu* activities are aimed at achieving the mid-term goal through "Awareness," "Aim" and "Acts," expressed through the words, "What do I want to place importance on?" "What do I want to do?" and "What do I want to be?" We named the initiative "*Taimatsu* (torchlight)" based on our passion, using an analogy where each member of staff changes and lights a torch, causing the flames to increase and expand.



### An overview of *Taimatsu* activities

– Passing on the torch of change in an upward spiral –

*Taimatsu* activities have reached their fifth year (Term V), with 412 persons (about 13% of all employees) from all departments and Group companies active as *Taimatsu* members.





## Voices of Taimatsu members (Terms I to V)

Taimatsu members from Term I engaged in activities under the slogan "Just get started!"

Term V departmental Taimatsu members will indeed "Just get started" from now.

Below is a look at the thoughts and realizations of some Term I - V members (the torchlight flame is steadily expanding from Term I to V).

### By changing myself, the workplace and the company change too

**Term III/IV** member Chemicals business division

I was active as a Term III and Term IV member. I think that *Taimatsu* is a bottom up approach where you change yourself, and in doing so change your workplace and the company. While there is nothing concrete that I can boast about, having exchanges with other departmental *Taimatsu* members links to increased motivation for working at Zeon Group, and I feel that I became more positive about taking things on than before over the two years. I have now passed on to my successor *Taimatsu* members, but I will work so that they can continue to support handing on the flame in future.



### The importance of personal connections

**Term IV/V** member Tokuyama Plant

What I learned from *Taimatsu* activities is the importance of personal connections. The reason I became a *Taimatsu* member was because I wanted to know other people at the plant better, and really wished to speak proactively with people that I didn't normally interact with. By deepening our exchanges we got to know each other, and I personally felt that by building better relationships, an environment where work naturally went more smoothly was created. In term IV I mainly worked on supporting the establishment of a new association and talking with colleagues with the same interests. I think that we can spread the flame of *Taimatsu* as each person's personal network expands. I will continue to serve as a member in Term V so I am looking forward to working with colleagues.



### I will start from what I can do myself

**Term V** member TFC Inc.

Be safe! I was chosen as a new *Taimatsu* member. I have taken part in *Taimatsu* activities in the past, but this was in a passive role without taking the initiative myself, so when I was nominated I was very nervous about how to proceed and whether I would produce results. However, I found out at the Term IV and Term V joint meeting that other Term V members feel the same, and Term IV members told me many stories and advised me about what they enjoyed and what was tough, so while I am still unsure, I will start from what I can do myself. And I will be happy if I can light the *Taimatsu* flame for even one extra colleague.



### Remember the thought of "Just get started"

**Term II** member Kawasaki Plant

Be safe! I worked as a Term II member on visualizing activities through the "*Taimatsu* news," promoting exchange of views through "*Taimatsu* Networking Events" and raising awareness of what *Taimatsu* is all about across the plant. Through my *Taimatsu* member activities I was able to talk with other Kawasaki Plant staff, and this made me more aware of the importance of conversation. I think it was a good experience for me to share many ideas and thoughts.

As the *Taimatsu* activities enter Term V, I personally feel that the flame of *Taimatsu* is steadily expanding. I myself would like to enjoy changing to become an even bigger flame, remembering the thought of "Just get started."



### The role of a *Taimatsu* member is useful in childcare?

**Term IV** member R&D Center

*Taimatsu* activities are for each person to proactively take action to achieve the Enterprise Blueprint for 2020, and I think that the role of *Taimatsu* members is to support people so that they can each take proactive action.

Before I became a *Taimatsu* member, I had never thought about *Taimatsu* activities. I feel it was good that I had the opportunity to seriously think about *Taimatsu* by becoming a member.

The role of a *Taimatsu* member can also help with childcare. I am the father of three boys and one girl, and I make great efforts to encourage them to proactively take action. I would like to make use of the results of my *Taimatsu* activities in both business and childcare, and create environments where both I and people around me can take proactive action.



### I must do the same!

**Term I** member Tokuyama Plant

It is four years since I was active as a Term I member. At the time I was working on designing the new plant at the Head Office Production Department, but currently I am involved in making improvements and reforms to existing plant in the Plant Manufacturing Department.

Many departments are involved at the front line of the manufacturing site, and work cannot proceed unless you say your own thoughts and gain cooperation while understanding the other person. I personally feel again what I learned in *Taimatsu*. I checked up on who the other Tokuyama Plant Term I members were. I found out that they are the current key players at the plant as section managers, foremen and group leaders. They were all the people that we rely on. "I must do the same!" I thought, receiving a good shock to the system.



# Strengths Supporting our Businesses

## Relationship with Employees



Relationship with Employees  
[http://www.zeon.co.jp/csr\\_e/employee/index.html](http://www.zeon.co.jp/csr_e/employee/index.html)

In the CSR Code of Conduct, Zeon demands respect for human rights and prohibits discrimination. We strive to be a business that is understanding and accepts diverse values and where no person is discriminated against based on gender, age, nationality, or other attributes.

Based on this policy and the following three activities, Zeon aims to be a company where every employee can work with pride; "Cultivate employees" who can think through by themselves with high goals and keep improving," "Create a human resources system in which employees want to keep challenging in their jobs and feel a sense of accomplishment when they achieve their goals," and "Create a comfortable work environment where dialogue is highly valued."

\* In Zeon, when we say "employees," it refers to all workers including full-time workers and part-time workers.

### Basic Information on Zeon Corporation's Employment Conditions (unconsolidated, does not include non-permanent employees)

	(No. of employees)		
	Male	Female	Total
Employees	1,450	174	1,624
No. of new hires			
Newly graduated	32	13	45
Mid-year	10	1	11
Percentage of disabled recruits		2.23%	
Rehiring of retired employees		75 (80.6%)	

Of which, there is a total of 12 foreign employees (6 male employees and 6 female employees).

Newly graduated: Employees that joined the company in April 2016

Mid-year: Employees that joined the company in April 2015 to March 2016



## Employment Conditions

As of March 31, 2016, employees of Zeon Corporation alone numbered 1,624, while employees of the consolidated Zeon Group numbered 3,164. Zeon Corporation's employment ratio of workers with disabilities increased over the fiscal year and was 2.23%.

We have also adopted a re-employment system that is shared across the Group in which retired employees are given opportunities to stay active, passing on skills and training their successors. With respect, we call those re-employed workers "(Zeon) master employees." In fiscal 2015, 75 people became master employees.

We implement diversity training for all employees as a foundation for diversity understanding. We also support employees for balancing work with child care and have acquired the *Kurumin* mark that indicates a "company that supports childcare" under the Act on Advancement of Measures to Support Raising Next-Generation Children.

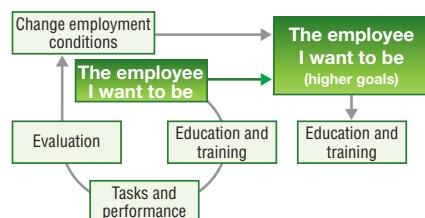
### Topics

### Establishing an easy-to-work environment for single parents



Over 40% of all employees at River Xemex, where development and manufacturing of medical products is being conducted, are single mothers (as of June 2016). An easy-to-work environment even while bringing up children has been established through hiring policies that do not depend on the home situation, multi-skilling and pair working to ensure that work is covered, and no overtime. In 2014, River Xemex was selected as a "Company that supports working single parent families" from the Ministry of Health, Labour and Welfare.

### Resource Development Flow



# Environmental Initiatives



For details on our activities, click the following URL.

Environment  
[http://www.zeon.co.jp/csr\\_e/environment/index.html](http://www.zeon.co.jp/csr_e/environment/index.html)

## Environmental Philosophy (Established August 2001)

1. Environmental protection is a mission of a socially responsible organization
2. Our basic belief is that environmental protection can be achieved with innovative technology
3. Environmental protection will be achieved when all employees work together with a sense of mission to overcome challenges

Zeon established its 'Responsible Care Policy' which embodies the principles of responsible care in 1998, and established its 'Environment Philosophy' in 2001. We have set a goal for the group concerning environmental protection with two major pillars, "Eradication of Environmental Irregularities" and "Reduction of Environmental Impacts" through which each worksite plans and executes these plans.

## Eradication of Environmental Irregularities

Zeon has set zero environment irregularities\* as a goal to be achieved every year. We had one minor infraction on environmental standards in 2012 but we have kept zero infractions after that.

\*Environmental irregularities set by Zeon Corporation: To fail to meet environment related rules and regulations or voluntary standards. An environmental irregularity also refers to a situation in which standards were met but may not have been met if regular measures had been taken. It also refers to a situation in which we received a complaint with no applicable standard set or a situation in which we could have received complaints if we did not take proper measures.

## Reduction of Environmental Impacts

Regarding the reduction of environmental impacts, we have set targets on reducing environmental impact with initiatives in three areas: 1) promotion of a voluntary management plan for air-polluting toxic substances, 2) promotion of a zero-emission plan for industrial wastes, and 3) strengthening of our company-wide project for energy conservation.

### 1) Promotion of a voluntary management plan for air-polluting toxic substances

Acrylonitrile is the substance subject to PRTR with the highest volume raw material processed by Zeon, and is also specified as a substance requiring priority action in measures under the Air Pollution Control Law. As we have worked on reducing emissions according to the plan, the emission volume in 2015 was 5.5 tons, 52% less than the previous fiscal year. With acrylonitrile recovery equipment to be still implemented, we will keep working on reducing emissions.

#### Topics

### Boiler upgrade and new installation of heat storage combustion equipment



The Mizushima Plant increased its thermal efficiency by renewing boilers and installing heat storage combustion equipment in 2015.

### 2) Promotion of a zero-emission plan for industrial wastes

Zeon Corporation's worksites continue to have 5 tons or less industrial waste landfill. The group companies in Japan achieved the goal of less than 0.3 % (7.5 tons) of the amount generated in fiscal 2007.

### 3) Strengthening of our company-wide project for energy conservation

Zeon has set a long-term goal of reducing our emission volume of CO<sub>2</sub> from fuels as defined by Japan's Law Concerning the Rational Use of Energy (the Energy Conservation Law) to 80% of our fiscal 1990 level by fiscal 2020. To achieve this, we have set a target of reducing CO<sub>2</sub> emissions by 1% per year. In fiscal 2015, our CO<sub>2</sub> emissions increased compared to fiscal 2014 due to increase in production volume. We will continue to proceed with our plan to improve our emissions per unit of energy by an average of 1% per year.

# Strengths Supporting our Businesses

## Social Contribution Initiatives



For details on our activities, click the following URLs.

Relationship with Society

[http://www.zeon.co.jp/csr\\_e/community/index.html](http://www.zeon.co.jp/csr_e/community/index.html)

Site Reports

[http://www.zeon.co.jp/csr\\_e/site/index.html](http://www.zeon.co.jp/csr_e/site/index.html)

Response to Great East Japan Earthquake and Tsunami Disaster

[http://www.zeon.co.jp/csr\\_e/introduction/earthquake.html](http://www.zeon.co.jp/csr_e/introduction/earthquake.html)

We believe it is very important to contribute to the development of the local community, build strong relationships of trust to operate stable business activities, and produce improved products and services.

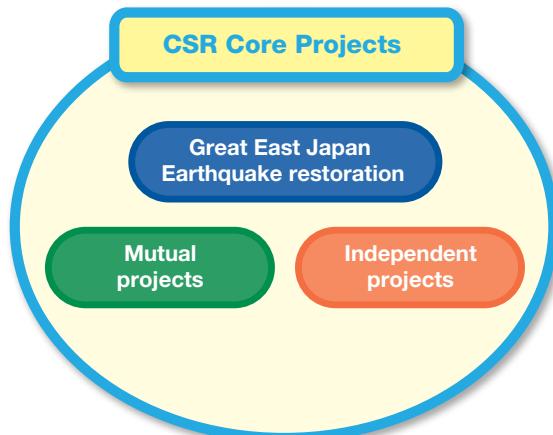
### Zeon's Basic Policies on Social Contributions

We believe that traditionally, social contributions are essentially carried out through core businesses. As long as a company is a member of society, the complex set of issues society is facing and corporate activities are not independent of one another. Zeon is embarking on social contribution activities outside the realm of its core businesses to have a broader perspective for engaging with society.

In 2012, we launched CSR Core Projects, which are initiatives we selected from proposals submitted by group companies. The CSR Core Projects are activities that focus on social contributions outside the scope of core business operations and provide employees with an opportunity to turn their attention toward social issues.

The head office has planned various activities related to supporting reconstruction after the Great East Japan Earthquake and projects mutually implemented by different offices and group companies. Further, there are social contribution activities that are performed independently by each office and group company. We are developing activities in three categories while also focusing on synergistic benefits.

#### Image of Zeon's Social Contribution



### Fiscal 2015 initiatives

#### ① Great East Japan Earthquake Reconstruction Volunteering

We continue to send employees to areas affected by the Great East Japan Earthquake by looking for employees to sign up for a regular restoration volunteer tour. The company covers the entire cost to actively promote employee participation. We turn "support" into "encouragement," and "encouragement" into "exchange." Given the risk that the memory of the devastation will be forgotten, we believe that it is now even more important to continue to undertake these activities.



In September 2015, we participated in earthquake reconstruction volunteering in Rikuzentakata-shi, Miyagi Prefecture

#### ② Cooperating in Tree Planting in Disaster-Stricken Areas

From 2012, the town of Otsuchi Town (Iwate Prefecture) and Yokohama Rubber Co., Ltd. held a tree planting campaign, Heisei-no-mori, in Otsuchi Town as a model case to create a forest embankment to protect the lives of the local community. Zeon has cooperated with this tree planting campaign since 2013. We completed the fourth tree planting campaign in 2015, and continue to participate through maintenance of the tree planting site and tree planting education for local elementary school children via extracurricular lessons.



April 2016, extracurricular tree planting lessons

### ③ Chemistry Classroom

Based on our motto of "nurturing future Nobel Prize winners in chemistry," we are conducting chemistry experiment classrooms in various regions to teach children that chemistry is fun.



We held an exhibition and workshop called "Make a car and run it! Which tire will run the best?" at the "Dream Chemistry 21 Summer Holiday Children's Chemical Experiment Show 2016."

### ⑤ Events

Zeon places great importance on connections with local communities. Zeon offices and group companies hold various events, including summer festivals and actively participate in numerous local events.



The Tokuyama Plant sponsors the Zeon Waraku Odori Dance Festival, which is a regular summer event that was first held in 1974. Every year, more than 2,000 people participate in the festivities.

### ⑦ Activities with the Local Community

We are carrying out activities with local communities in various regions. The US company Zeon Chemicals L.P. has conducted volunteer and contribution activities for many years.



Employees contributed \$16,000 as well as toys and books to Kosair Charities, who help underprivileged children in Kentucky and South Indiana.

### ④ Educational Support

Our offices and group companies implement exchanges with and offer assistance to various educational institutions. Zeon offers internships for high school, vocational high school, and university students and actively give tours of our plants to school children. We also provide support to schools, such as dispatching part-time lecturers.



Acceptance of interns and on-site practical training at the Mizushima Plant

### ⑥ Clean-up Activities

With the goal of implementing activities that are helpful and which will make local residents happy, our offices and group companies are embarking on clean-up activities in local communities, not only in areas around our offices and plants.



Optes and TFC employees who participated in the "Kehi no Matsubara Clean-up Fukui Major Strategy" held by Tsuruga-shi, Fukui Prefecture

### ⑧ Activities with the Local Community

The Thai companies Zeon Advanced Polymix Co., Ltd. and Zeon Chemicals (Thailand) Co., Ltd. have been conducting clean-up volunteering and contribution activities for many years.



Contribution to schools (contributions are made to nearby temples, hospitals and education facilities)

## Strengths Supporting our Businesses

# CSR Implementation Plan

The following includes various initiatives in the Enterprise Blueprint for 2020 for each category and other specific initiatives we implemented.

Category	Enterprise Blueprint for 2020	Specific Efforts ( <b>FY2015 goals are shown in blue</b> )
Corporate governance	● Mid-Term Management Plan goals have been achieved, and dividend distribution is stable and continuous	● Implement stable distribution of dividends <b>Annual dividend 15.00 yen (forecast)</b>
	● A world-class risk management system has been built, is being operated throughout the Zeon Group, and has gained the trust of society	● Implement risk management activities in accordance with ISO 31000
	● A business continuity management system is being deployed throughout the group (various types of business continuity plans (BCPs) have been formed and are revised regularly through training, etc.)	● Formulate business continuity plans (BCPs) and switch to business continuity management (BCM) system
Compliance	● Compliance awareness is widespread and allows Zeon to respond to environmental changes	<ul style="list-style-type: none"> <li>● Revise company rules regularly (in accordance with the revision of laws and regulations)</li> <li>● Hold workshops on legal and regulatory compliance</li> <li>● Simultaneously inspect legal compliance</li> <li>● Consolidate and establish clear and concrete company rules among overseas group companies</li> <li>● Support the establishment of compliance systems at overseas group companies</li> </ul>
Information	● Information is disclosed quickly and appropriately (including negative information regarding business conditions, CSR, risks, etc.)	<ul style="list-style-type: none"> <li>● Hold financial results briefings</li> <li>● Publish various reports</li> <li>● Disseminate information via the company website</li> <li>● Hold briefings for individual investors and analysts in Japan and overseas and respond to media inquiries</li> </ul>
	● Information on trade secrets is managed appropriately	<ul style="list-style-type: none"> <li>● Appropriately enforce company rules (information management regulations, personal information protection management rules, etc.)</li> <li>● Provide e-learning courses</li> <li>● Construct and operate information management systems</li> </ul>
Environment safety and quality	● All worksites continue to have zero incidents and zero accidents, and are trusted by society	<ul style="list-style-type: none"> <li>● Eradicate security irregularities <b>Implement plant safety evaluation (100%)</b> <b>Implement RC audits (more than once per year for all four plants)</b> <b>Training to boost accident prevention awareness (implement at four plants and one group company)</b></li> <li>● Eradicate security irregularities <b>Zero security irregularities</b></li> <li>● Achieve eradication of industrial accidents <b>Zero occupational accidents resulting in lost workdays and serious accidents without lost workdays</b></li> <li>● Promote logistics safety <b>Zero logistics accidents</b></li> </ul>
	● All worksites have reduced their environmental impact and gained social appraisal *The numbers to the right are the goals and results for the four domestic plants, unless otherwise specified	<ul style="list-style-type: none"> <li>● Eradicate environmental irregularities <b>Zero environmental irregularities</b></li> <li>● Reduce environmental impact (promote voluntary control plans for air pollution and toxic substances) <b>Acrylonitrile emissions in FY2014 of 11.9 tons ⇒ reduce to 10 tons</b></li> <li>● Reduce environmental impact (promote zero emission plan for industrial waste) <b>Target amount lower than FY2014 actual of 6.5 tons</b></li> <li>● Reduce environmental impact (promote zero emission plan for industrial waste) <b>Final disposal of domestic group company industrial waste for landfill under 7.5 tons (Final landfill disposal rate: FY2007 emissions standard) 0.3%</b></li> <li>● Reduce environmental impact (fortify companywide energy-saving project) <b>Reduce unit energy consumption to 64.5% versus the level in FY1990</b> <b>Reduce unit CO<sub>2</sub> emissions to under 67.5% versus FY1990</b></li> </ul>
	● Levels of both quality and cost are the best in the world	<ul style="list-style-type: none"> <li>● Implement a quality management system based on ISO 9001</li> <li>● Management of quality assurance risks (product liability lawsuits, supply obligation risk, product recall risk, and the risk of credibility loss due to rumors)</li> <li>● Improving processes (reducing losses and improving consistency)</li> </ul>
	● Procurement is being promoted that includes considerations to reduce environmental impacts based on the CSR procurement policy	<ul style="list-style-type: none"> <li>● Determine and understand the state of the CSR procurement guidelines and share with business partners</li> </ul>
	● Promote work-life balance (harmony between work and life) to enable people to work and raise children or care for sick parents	<ul style="list-style-type: none"> <li>● Appropriately operate a system to promote childcare</li> <li>● Implement a program for reinstatement in workplace for employees taking childcare or nursing care leave</li> <li>● Introduce flexible work hours, employ discretionary working systems for management-related work</li> <li>● Appropriately enforce sexual harassment prevention regulations</li> </ul>
Human rights and labor practices	● The workplace has been revitalized by the promotion of diversity and the fair and equitable treatment of personnel *Committee comprised solely of female employees to promote cost cutting	<ul style="list-style-type: none"> <li>● Appropriately operate human resource systems (individual report and evaluation systems, etc.)</li> <li>● Hire non-Japanese employees (mid-career applicants and students studying in Japan)</li> <li>● Expand rehiring program of retired employees</li> <li>● Support development of employee skills and career</li> <li>● Implement MD Committee* activities by female members</li> </ul>
	● An organization has been established to promote volunteer activities for employees including retirees that allows employees to actively volunteer in various ways	<ul style="list-style-type: none"> <li>● Raise employee social contribution awareness (includes CSR training)</li> <li>● Upgrade and enhance CSR promotion system</li> <li>● Introduce volunteer activities and promote and support participation</li> </ul>
Social contribution	● There is understanding and appraisal for Zeon's social contributions (Zeon actively participates in and supports environmental protection and social welfare programs being promoted in each country and region)	<ul style="list-style-type: none"> <li>● Materialize and implement CSR activities being promoted by the entire Zeon Group</li> <li>● Materialize and implement CSR activities being promoted by all worksites</li> <li>● Implement CSR activities unique to individual worksites</li> </ul>

In FY2015, we achieved our goals in the categories of management and human rights and labor practices, but in the category of environment and safety there are still issues that require further attention. We will continue to work as a unified group to implement these initiatives in FY2016.

Evaluation: ★★★Target reached   ★★Target almost reached   ★Improvement needed

FY2015 Results	Evaluation	FY2016 Goals
● Annual dividend 15.00 yen	★★★	● Annual dividend 16.00 yen (forecast)
● Improved risk management activities in accordance with ISO 31000 (Reviewed FY2015 risk list to reflect the horizontal development of actualized risks at other departments)	★★★	● Improve risk management activities in accordance with ISO 31000 (Review list of risks in FY2016 which reflects the horizontal development of actualized risks at other departments, and instill and make risk management activities a permanent feature in overseas associated companies)
● Instilled and made BCM structure a permanent feature	★★★	● Instill and make BCM structure a permanent feature
● Revised company rules regularly (in response to revisions to laws, etc.) ● Held workshops on legal and regulatory compliance ● Simultaneous inspection of legal compliance ● Head of CSR department continued internal CSR briefings	★★★	● Revise company rules regularly (in response to revisions to laws, etc.) ● Hold workshops on legal and regulatory compliance ● Simultaneous inspection of legal compliance ● Revise CSR Code of Conduct and CSR text, and conduct activities to instill contents of revisions ● Support the establishment of compliance systems at overseas group companies
● Financial results briefing: Held quarterly ● Published annual, semiannual and corporate reports ● Disseminated appropriate information via the company website ● Held briefings for individual investors and analysts in Japan and overseas and responded to media inquiries	★★★	● Financial results briefing ● Publish various reports ● Disseminate information via the company website
● Information security training (e-learning): Enrollment rate 99% ● Information security audit (information security voluntary diagnosis): Response rate 99%	★★★	● Appropriately enforce company rules (information management regulations, personal information protection management rules, etc.) ● Improve enrollment and response rates for e-learning
● Implemented plant safety evaluation (100%) ● Implemented RC audits (more than once per year for all four plants) ● Provided training to boost accident prevention awareness (implemented at four plants and one group company)	★★★	● Implement plant safety evaluation (100%) ● Implement RC audits (more than once per year for all four plants) ● Training to boost accident prevention awareness (implement at four plants and one group company)
● Three security irregularities	★☆☆	● Zero security irregularities
● Two occupational accident that resulted in lost workdays	★☆☆	● Zero occupational accidents resulting in lost workdays and serious accidents without lost workdays
● Zero logistics accidents	★★★	● Zero logistics accidents
● Zero environmental irregularities	★★★	● Zero environmental irregularities
● Acrylonitrile emissions totaled 5.5 tons	★★★	● Acrylonitrile emissions under 5 tons
● Final landfill disposal was 3.5 tons	★★★	● Lower than 5 tons
● Final landfill disposal for domestic group companies: 5.9 tons	★★★	● Final landfill disposal for domestic group companies of less than 7.5 tons
● Unit energy consumption 68.0% versus level in FY1990 ● Unit CO <sub>2</sub> emissions 68.0% versus level in FY1990	★☆☆	● Unit energy consumption 64.0% or lower versus level in FY1990 ● Unit CO <sub>2</sub> emissions 67.0% or lower versus level in FY1990
● Underwent ISO 9001 renewal screening and retained certification ● Implemented various initiatives to enhance product safety and quality (Details are on our website: Home > CSR > Quality Assurance (Relationship with Customers))	★★★	● Using quality assurance risk management as a foundation, aim to build a quality assurance structure that satisfies all stakeholders, including customers, the public, and employees, through the supply of products
● Shared information with business partners (through discussions, etc.)	★☆☆	● Summarize the approach to supply chain management and establish a framework for sharing CSR policy
● Established "Rules concerning maternal health care measures" ● Regulated special extension of childcare leave period (up to 2 years 6 months old) ● Implemented research on introduction of diversity and prevention of harassment. Set up harassment consultation service system ● Created Action Plan for Employers in General based on the Act to Advance Women's Success in their Working Life ● 100% of female employees that gave birth in FY2015 took childcare leave ● One male employee took childcare leave in FY2015	★★★	(Handled as a daily management activity)
● Ratio of employees with disabilities (non-consolidated) 2.23% (FY2014 2.04%) ● Rehiring of retired employees 75 out of 93 retirees (80.6%) (Details are on our website: Home > CSR > Relationship with Employees > Employment and Diversity)	★★★	(Handled as a daily management activity)
● CSR briefings held at each office and domestic group companies ● Number of employees that participated in restoration volunteer tours 6 times and 34 employees	★☆☆	● Continue to hold CSR briefings ● Continue to support restoration volunteer work
● Implemented CSR core projects in each region	★☆☆	● Continue to implement CSR core projects



Supporting fishing in Karukawa, Kesennuma Town, Miyagi Prefecture

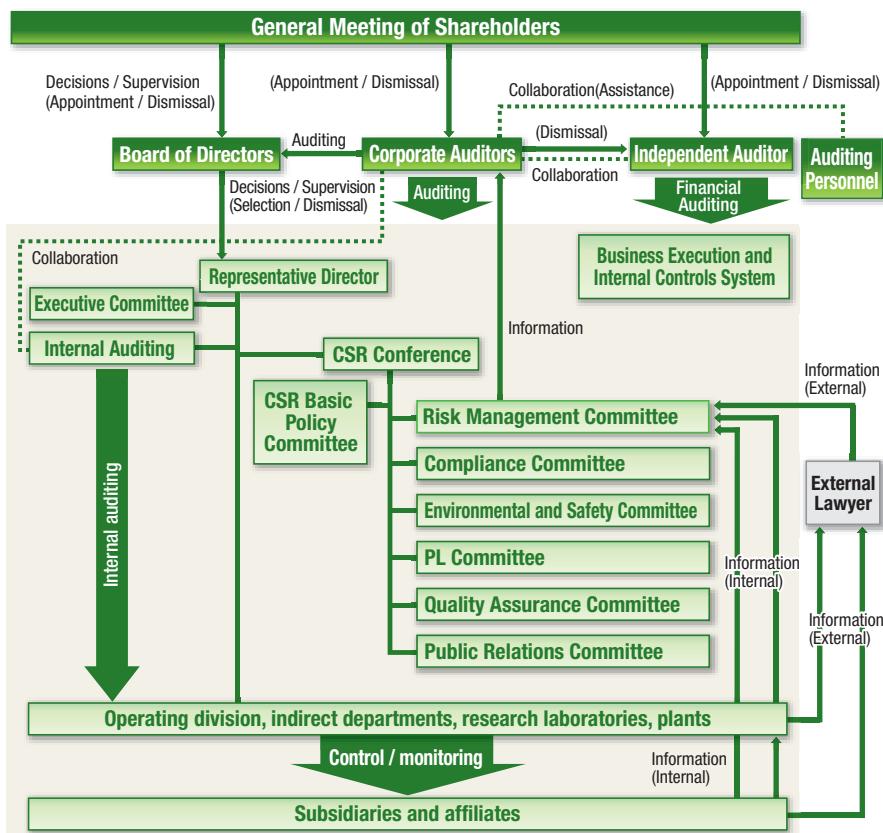
## Strengths Supporting our Businesses

# Corporate Governance

Zeon aims to increase profits and achieve ongoing corporate value enhancement while respecting and balancing the various interests of its shareholders and other diverse stakeholders. To this end, we are making ongoing efforts to establish a system that enables efficient and sound corporate management through corporate governance.

Putting into place a corporate governance system allows us to clarify the functions and roles of each organizational entity within the company and to carry out quick decision-making and execution. We are also improving business transparency through appropriate monitoring and disclosure of activities and their effects. We are determined to further enhance our corporate governance system in order to carry out these functions effectively.

### Corporate Governance System



### Board of Directors

The Board of Directors meets, in principle, every month with corporate auditors in attendance to ensure compliance with applicable laws and the articles of incorporation in the execution of business. The role of the Board of Directors besides statutory duties is to make important decisions about basic management policy and strategy and other aspects of business execution. As of October 2016, the Board of Directors consists of 12 directors, including three outside directors.

### Executive Committee

The Executive Committee, in accordance with Executive Committee regulations, comprises the President and executive officers ranked senior corporate officer or above and meets, in principle, twice a month to examine and make decisions on important business matters after due deliberation involving consultation with attending full-time corporate auditors. Important agenda items, as stipulated in regulations for the Board of Directors, are examined and decided by the Board of Directors.

### Board of Corporate Auditors

The Board of Corporate Auditors comprises five members, including three outside corporate auditors. The board reports, discusses and resolves important matters. In accordance with auditing guidelines established by the Board of Corporate Auditors, each corporate auditor audits the duties executed by directors through various means, such as attendance at Board of Directors meetings and monitoring of business operations, including subsidiaries' operations.

# Risk Management

The Risk Management Committee and the Compliance Committee, along with the Compliance Committee's subcommittees—the Antitrust Law Regulatory Subcommittee, the Export Security Control Subcommittee, the Corporate Governance Subcommittee, and the Information Security Subcommittee—are advancing Zeon's risk management and compliance efforts.

### Risk Management and Compliance System



# Directors and Officers

(as of October 1, 2016)

## Directors



**Naozumi Furukawa**

Chairman  
Chairman of Tohpe Corporation



**Kimiaki Tanaka**

President



**Yoshiyuki Mitsuhiro**

Director & Senior Corporate Officer  
Research & Development  
Division Manager - Research & Development Center



**Hiroyuki Hirakawa**

Director & Senior Corporate Officer  
Elastomers and Chemicals Business  
Division Manager - Synthetic Rubber



**Toru Nishijima**

Director & Senior Corporate Officer  
Production and Engineering Technology  
Division Manager - Production Center



**Hirofumi Imai**

Director & Senior Corporate Officer  
Administration  
Division Manager - Corporate Planning  
Division Manager - Raw Material  
General Manager - Department of China Business Administration



**Kei Itoh**

Director & Corporate Officer  
CSR  
Division Manager - CSR  
Division Manager - Logistics



**Takeo Furuya**

Director & Corporate Officer  
Division Manager - Corporate Administration  
General Manager - Accounting & Finance



**Noboru Yanagida**

Director & Corporate Officer  
Specialty Materials Business  
President of Zeon Medical Inc.



**Haruo Itoh**

Outside director  
Adviser - FUJI ELECTRIC CO., LTD.



**Takao Kitabata**

Outside director  
Chairman of Board - Sanda Gakuen  
Junior High School & High School



**Tadanobu Nagumo**

Outside director  
Chairman and Representative Member of the Board - The Yokohama Rubber Co., Ltd.

## Corporate Auditors

**Tadayuki Minami**

Audit & Supervisory Board Member

**Jun Hasegawa**

Audit & Supervisory Board Member

**Yuzuru Fujita**

Audit & Supervisory Board Member (External)  
Supreme advisor of Asahi Mutual Life Insurance Company

**Akio Kohri**

Audit & Supervisory Board Member (External)  
President - ADEKA CORPORATION

**Nobutake Nishijima**

Audit & Supervisory Board Member (External)  
Vice Chairman - Total Insurance Service Limited

## Corporate Executive Officers

**Hiroshi Fujisawa**

Corporate Officer  
Division Manager - Specialty Chemicals

**Toshihiro Inoue**

Corporate Officer  
Division Manager - Synthetic Latex

**Tomoyuki Kose**

Corporate Officer  
Plant Manager - Mizushima Plant

**Sachio Hayashi**

Corporate Officer  
Plant Manager - Tokuyama Plant

**Tetsuya Toyoshima**

Corporate Officer  
Division Manager - Specialty Plastics & Components

**Makoto Yokota**

Corporate Officer  
General Manager - Business Innovation Promotion

**Makoto Watanabe**

Corporate Officer  
Plant Manager - Takaoka Plant

## Data Highlights

Herein, we disclose a portion of our earnings data.

For more details on our financial data, please see Fact Book 2016 in the IR section of our website:

[http://www.zeon.co.jp/ir\\_e/library/factbook.html](http://www.zeon.co.jp/ir_e/library/factbook.html)

Graphs illustrating our consolidated net sales, operating income, and segment net sales/operating income can be found on pages 5-6.

A graph outlining our R&D expenses is on page 17.



## Five-year summarized financial data

(million yen)

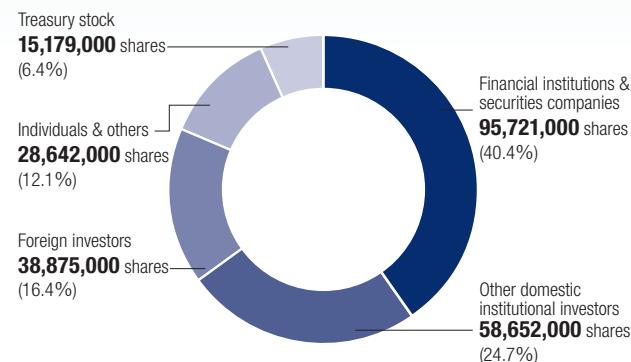
	2011	2012	2013	2014	2015
Net sales	262,842	250,763	296,427	307,524	<b>295,647</b>
Operating income	32,123	23,696	29,901	28,245	<b>29,856</b>
Ordinary income	31,487	25,212	32,561	31,098	<b>32,153</b>
Net income	19,127	14,750	19,650	19,080	<b>18,079</b>
Total assets	311,925	350,508	370,872	399,512	<b>384,753</b>
Net assets	135,480	162,057	181,414	215,631	<b>215,586</b>
Capital expenditures	22,995	23,489	27,111	28,516	<b>27,650</b>
Depreciation & amortization	19,885	18,122	17,068	19,439	<b>20,904</b>
R&D expenses	11,106	11,895	12,661	13,627	<b>14,148</b>
Environmental and Safety Investment*	2,670	2,160	3,470	3,649	<b>5,468</b>
Social Contribution Investment*	101	70	98	98	<b>72</b>
Operating margin	12.2%	9.4%	10.1%	9.2%	<b>10.1%</b>
Return on Equity (ROE)	15.5%	10.1%	11.7%	9.8%	<b>8.6%</b>
Equity ratio	42.5%	45.2%	47.9%	52.9%	<b>54.8%</b>
BPS	572.96	685.64	783.11	931.34	<b>949.91</b>
Interest-bearing debt	67,585	67,585	65,600	58,900	<b>57,100</b>
Cash flows	(1,595)	(1,803)	(5,222)	(4,780)	<b>3,742</b>
Net cash provided by (used in) operating activities	32,009	33,061	36,396	34,006	<b>47,599</b>
Net cash provided by (used in) investing activities	(27,644)	(24,858)	(31,513)	(26,767)	<b>(34,847)</b>
Net cash provided by (used in) financing activities	(5,960)	(10,006)	(10,105)	(12,019)	<b>(9,010)</b>
Dividend per share (yen)	11.0	12.0	13.0	14.0	<b>15.0</b>
Employees (people)	2,857	3,163	3,186	3,216	<b>3,164</b>
Lost-time accident rates	0.47	0.46	0.46	0.46	<b>0.00</b>
Energy usage (crude oil equivalent, 1,000 kL)	256	237	244	261	<b>282</b>
CO <sub>2</sub> emissions (1,000 tons)	670	601	640	675	<b>724</b>

\*Zeon Corporation only

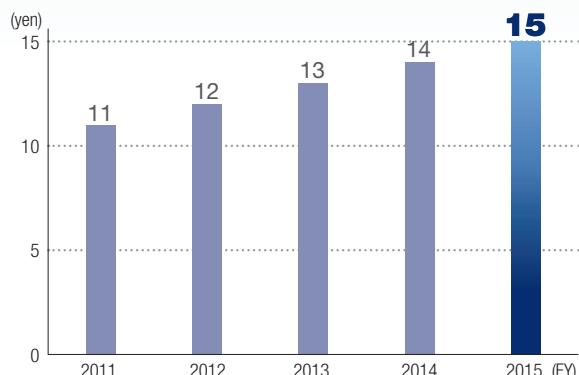
## Stock information

Zeon's shares are listed on the 1st section of the Tokyo Stock Exchange. The company has a total number of common shares outstanding of 237,075,000. As of March 31, 2016, there were 11,328 shareholders (increase of 1,521 registered shareholders at the end of the previous fiscal year). In accordance with our basic policy to consistently and stably distribute surplus earnings to our shareholders, in FY2015 we paid out a per-share annual dividend of 15 yen, an increase of one yen higher than the previous fiscal year.

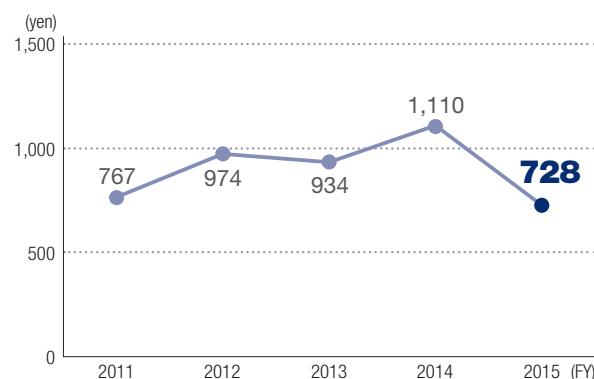
### ■ Shareholder information (as of March 31, 2016)



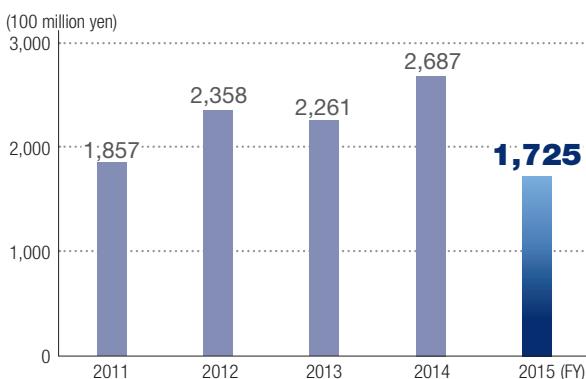
### ■ Dividends



### ■ Share price trends (last day of March)



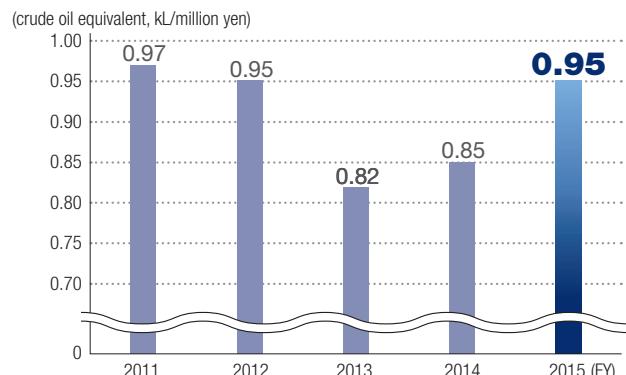
### ■ Market capitalization trends (last day of March)



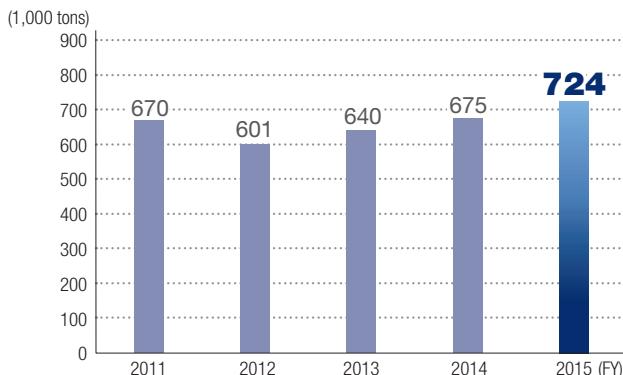
## Environmental information

Each year, we set goals and work to alleviate our burden on the environment. We are moving forward with large-scale investment for a clean fuel conversion program to switch from heavy oils to LNG at our plants to reduce our greenhouse gas emissions and to conserve energy consumption. In FY2009, we achieved the goals for the energy consumption unit, which is a yardstick for energy conservation, set by the Japan Chemical Industry Association (JCIA) (80% of levels in FY1990 by sometime between FY2008-FY2012). Since then, we have set our own independent goals and have been making an average improvement of 1% annually.

### ■ Energy usage per net sales



### ■ CO<sub>2</sub> emissions



## Major Sales & Production Bases

# GLOBAL BASES

as of April 1, 2016

### Europe

#### Zeon Europe GmbH

Hansaallee 249, 40549 Dusseldorf, Germany  
TEL:+49-211-52670 FAX:+49-211-5267160  
Business focus: Sale, export, and import of synthetic rubbers and resins

#### Zeon Europe GmbH - Branch in France

22, rue Guyemer 78600 MAISONS LAFFITTE, France  
TEL:+33-1-39-12-75-20 FAX:+33-1-39-12-75-26

#### Zeon Europe GmbH - Branch in Spain

C/Beethoven, 15, 4º08021 Barcelona, Spain  
TEL:+34-93-183-87-08 FAX:+34-93-183-87-58

#### Zeon Europe GmbH - Branch in Italy

Via Mauro Macchi, 27, 20124 Milano, Italia  
TEL:+39-02-36680101 FAX:+39-02-36680124

#### Telene S.A.S.

2, rue Marie Curie 59910 Bondy, France  
TEL:+33-3-20-69-57-10 FAX:+33-3-20-69-57-11  
Business focus: Development and distribution of Telene® DCP-RIM resin

### India

#### Zeon India Private Limited

Time Tower, Unit No.507, Sector-28, M.G Road,  
Gurgaon-122002, Haryana, India  
TEL:+91-124-4229461 FAX:+91-124-4229462  
Business focus: Sales and import of synthetic rubbers and other Zeon products and marketing

#### Tokyo Zairyo (India) Pvt. Ltd.

Time Tower, Unit No.507, 5th floor, Sector-28, M.G Road,  
Gurgaon-122002, Haryana, India  
TEL:+91-124-424-9011 FAX:+91-124-424-9005  
Business focus: Purchase and sale of synthetic rubbers, chemical products and various products including international trade

### Thailand

#### Zeon Chemicals (Thailand) Co., Ltd.

3 Soi G-14, Pakorn-Songkhrorad Road, Tambol Huaypong,  
Amphur Muangrayong, Rayong 21150, Thailand  
TEL:+66-3-868-5973-5 FAX:+66-3-868-5972  
Business focus: Manufacture and sale of hydrocarbon resins

#### Zeon Advanced Polymix Co., Ltd.

591 UBCII BLDG, Office No.2206, 22thFL, Sukhumvit 33rd,  
Klongton Nua, Wattana, Bangkok 10110, Thailand  
TEL:+66-2-261-0175 FAX:+66-2-261-0172  
Business focus: Manufacture and sale of rubber compounds

#### Tokyo Zairyo (Thailand) Co., Ltd.

29th Floor Room 2903, Empire Tower 1 South Sathorn Rd.,  
Yannawa, Sathorn, Bangkok 10120, Thailand  
TEL:+66-2-670-0285 FAX:+66-2-670-0283  
Business focus: Purchase and sale of synthetic rubbers, chemical products and various products including international trade

### China

#### Zeon (Shanghai) Co., Ltd.

Room 1502, Hongwell International Plaza, No.1600 Zhongshan West Road, Xuhui District, Shanghai, 200235, China  
TEL:+86-21-6167-5776 FAX:+86-21-6040-7258  
Business focus: Provide assistance to and exercise control over the Zeon Corporation Group companies in China with regard to such functions as accounting, finance, personnel management, legal, etc.

#### Shanghai Zeon Co., Ltd.

No.380, Shennan Road, Xinzhuang Industry District, Minhang, Shanghai, 201108, China  
TEL:+86-21-6489-6160 FAX:+86-21-6442-0569  
(Push "0" after announcements)  
Business focus: Manufacture and sale of rubber compounds

#### Zeon Trading (Shanghai) Co., Ltd.

Room 1501, Hongwell International Plaza, No.1600 Zhongshan West Road, Xuhui District, Shanghai, 200235, China  
TEL:+86-21-6040-7255 FAX:+86-21-6040-7258  
Business focus: Sale, export and import of synthetic rubbers and chemicals and related products

#### Zeon Polymix (Guangzhou) Co., Ltd.

Jing Quan 1st Road, Yong He Economic Zone, Guangzhou, 511356, China  
TEL:+86-20-3222-1171 FAX:+86-20-3222-1820  
Business focus: Manufacture and sale of rubber compounds

#### Zeon Kasei (Changshu) Co.,Ltd.

Huangpujiang Road 96, Dongnankaifa District, Changshu City, Jiangsu Province, 215500, China  
TEL:+86-512-5235-7000 FAX:+86-512-5235-7308  
Business focus: Manufacture and sale of PVC powder slush compound

#### Zeon Medical (Guangzhou) Inc.

Room 1706A, Goldlion Digital Network Center, No.138 Ti Yu Dong Road, Tianhe District, Guangzhou, Guangdong, 510620, China  
TEL:+86-20-2283-6788 FAX:+86-20-2283-6789  
Business focus: Sale, export and import of medical devices

#### Takehara Zeon (Shanghai) Co., Ltd.

No.380 Shennan Road, Xinzhuang Industrial Zone, Minhang District, Shanghai, 201108, China  
Business focus: Manufacture and sale of silicon rubber compound

#### Tokyo Zairyo (Shanghai) Co.,Ltd.

Room 1503, Hongwell International Plaza West Zhongshan Road 1600, Xuhui District, Shanghai, 200235, China  
TEL:+86-21-6119-9400 FAX:+86-21-6119-9401  
Business focus: Purchase and sale of synthetic rubbers, chemical products and various products including international trade

### Vietnam

#### Zeon Manufacturing Vietnam Co., Ltd.

No.109, Road No.10, VSIP Haiphong Township, Industrial and Service Park, Dinh Vu-Cat Hai Economic Zone, Thuy Nguyen District, Haiphong City, Vietnam  
TEL:+84-225-3797-027 FAX:+84-225-3797-028  
Business focus: Manufacturing and sale of packing containers

#### Zeon Research Vietnam Co., Ltd.

6th Floor, Building 85 Nguyen Du Str., Hai Ba Trung District, Hanoi, Vietnam 100000  
TEL:+84-4-3632-0557 FAX:+84-4-3632-0557  
Business focus: Design simulation of optical materials and molding products, and market research for Zeon products in Southeast Asia

### Malaysia

#### Tokyo Zairyo (Vietnam) LLC.

4th Floor, Building 85 Nguyen Du Str., Hai Ba Trung District, Hanoi, Vietnam 100000  
TEL:+84-4-3941-3825 FAX:+84-4-3941-3826  
Business focus: Purchase and sale of synthetic rubbers, chemical products and various products including international trade

### Singapore

#### Zeon Chemicals Singapore Pte. Ltd.

100 Banyan Drive, Jurong Island, Singapore 627571  
TEL:+65-6933-4400 FAX:+65-6933-4413  
Business focus: Manufacture and sale of synthetic rubbers

#### Zeon Asia Pte. Ltd.

331 North Bridge Road, #20-01/02, Odeon Towers, Singapore 188720  
TEL:+65-6332-2338 FAX:+65-6332-2339  
Business focus: Sale, export, and import of synthetic rubbers, synthetic latex and hydrocarbon resins

#### Tokyo Zairyo (Singapore) Pte. Ltd.

331 North Bridge Road, #20-01/02, Odeon Towers, Singapore 188720  
TEL:+65-6337-5053 FAX:+65-6337-4557  
Business focus: Purchase and sale of synthetic rubbers, chemical products and various products including international trade

Zeon is continuing with the globalization of its business operations, having first turned its attention to overseas markets in the 1970s. We are setting up sales networks in major markets around the world and establishing a production system for rubber and resin products. In addition, we have R&D facilities in the US and Europe. We are also building an R&D and sales base in China, a market which is growing rapidly. We are aiming to become a company that, through its local production systems, builds close ties with local communities and contributes to the global society.

## North America

### Tokyo Zairyo (Tianjin) Co.,Ltd.

Room 1805, The Exchange Tower 1, 189 Nanjing Road, Heping District, Tianjin, 300051, China  
TEL:+86-22-2302-1268 FAX:+86-22-2302-1278  
Business focus: Purchase and sale of synthetic rubbers, chemical products and various products including international trade

### Tokyo Zairyo (Hong Kong) Co.,Ltd.

Unit 701, 7th Floor, Tower 2, Silvercord, 30 Canton Road, Tsimshatsui, Kowloon, Hong Kong  
TEL:+852-2162-7362 FAX:+852-2162-7616  
Business focus: Purchase and sale of synthetic rubbers, chemical products and various products including international trade

### Tokyo Zairyo (Guangzhou) Co.,Ltd.

Room 1208, Goldlion Digital Network Center, No.138 Ti Yu Dong Road, Tianhe District, Guangzhou, Guangdong, 510620, China  
TEL:+86-20-3878-0671 FAX:+86-20-3878-1336  
Business focus: Purchase and sale of synthetic rubbers, chemical products and various products including international trade

### Zeon Chemicals L.P.

4111 Bells Lane, Louisville, Kentucky 40211, U.S.A.  
TEL:+1-800-735-3388 FAX:+1-502-775-2055  
TEL:+1-502-775-2000  
Business focus: Manufacture and sale of synthetic rubbers

### Zeon Chemicals L.P. - West Coast Office

5 Centerpointe Drive 4th Floor Suite 401 Lake Oswego, OR, 97035, U.S.A.  
TEL:+1-971-204-0245 FAX:+1-971-204-0240

### Zeon Chemicals L.P. - R&D Center

4111 Bells Lane, Louisville, Kentucky 40211, U.S.A.  
TEL:+1-502-775-7765 FAX:+1-502-775-7783

### Zeon Chemicals L.P. - Kentucky Plant

4100 Bells Lane, Louisville, Kentucky 40211, U.S.A.  
TEL:+1-502-775-7600 FAX:+1-502-775-7614

### Zeon Chemicals L.P. - Mississippi Plant

1301 West Seventh Street, Hattiesburg, Mississippi 39401, U.S.A.  
TEL:+1-601-583-6020 FAX:+1-601-583-6032

### Zeon Chemicals L.P. - Texas Plant

11235 Choate Road, Pasadena, Texas 77507, U.S.A.  
TEL:+1-281-474-9693 FAX:+1-281-474-0966

### Tokyo Zairyo (U.S.A.) Inc.

50 Main Street, White Plains, New York 10606, U.S.A.  
TEL:+1-914-285-9070 FAX:+1-914-285-9072  
Business focus: Purchase and sale of synthetic rubbers, chemical products and various products including international trade

## Indonesia

### PT. Tokyo Zairyo Indonesia

Gedung MidPlaza 2, Lantai 12, Jl. Jend. Sudirman Kav. 10-11, Jakarta 10220  
TEL:+62-21-574-6454 FAX:+62-21-573-5661  
Business focus: Purchase and sale of synthetic rubbers, chemical products and various products including international trade

## Korea

### Zeon Korea Co., Ltd.

No.403, 4Fl., 36, Teheran-ro 87-gil, Gangnam-gu, Seoul, 06164, Korea (City Air Tower, Samseong-dong)  
TEL:+82-2-539-8565 FAX:+82-2-538-5190  
Business focus: Sales and import of optical materials, electronic materials, synthetic resins, synthetic rubbers

### Zeon Shinhwa (Zeshin) Inc.

No.502 CALT B/D (City Airport) 22, Teheran-ro 87-gil, Gangnam-gu, Seoul, 06164, Korea  
TEL:+82-2-761-7030 FAX:+82-2-786-7221  
Business focus: Sale of electronic materials

## Taiwan

### Zeon CSC Corporation

3rd Fl. 266, Sec. 1, Wen Hwa 2 Road, Linkou District, New Taipei City 24448, Taiwan, R.O.C.  
TEL:+886-2-2609-2156 FAX:+886-2-2600-6413  
Business focus: Sale of optical materials

## Mexico

### TOKYO ZAIRYO MÉXICO, S.A. DE C.V.

Boulevard Bernardo Quintana 7001 Torre II Suite 807 Colonia Centro Sur, C.P. 76090 Querétaro; Querétaro, México  
TEL:+52-442-229-3242 FAX:+52-442-229-3244  
Business focus: Purchase and sale of synthetic rubbers, chemical products and various products including international trade

## Brazil

### Zeon do Brasil Ltda

Rua Arandu, 57/cj 23, São Paulo-SP, Brazil  
TEL:+55-11-5501-2120 FAX:+55-11-5501-2122  
Business focus: Sale of synthetic rubbers and resins

## Major Sales & Production Bases

# JAPAN

as of April 1, 2016

1

### Zeon Corporation - Head Office

Shin Marunouchi Center Building, 1-6-2 Marunouchi,  
Chiyoda-ku, Tokyo 100-8246, Japan  
TEL:+81-3-3216-1772 FAX:+81-3-3216-0501

### Tokyo Zairyo Co., Ltd.

Shin Marunouchi Center Building, 1-6-2 Marunouchi,  
Chiyoda-ku, Tokyo 100-0005, Japan  
TEL:+81-3-5219-2171 FAX:+81-3-5219-2201  
Business focus: trading

### Zeon Kasei Co., Ltd.

TEL:+81-3-4808-5111 FAX:+81-3-4808-5290  
Business focus: Manufacture and sale of packing materials, packing  
containers and distribution equipment

### Zeon F&B Co., Ltd.

TEL:+81-3-3216-1410 FAX:+81-3-3216-1421  
Business focus: Agency business for life and nonlife insurance; loan  
and factoring business to each group company

### RIMTEC Corporation

TEL:+81-3-5220-8581 FAX:+81-3-5220-8584

### R&D Center: Mizushima

Business focus: Sales of RIM formulation and the cast products

### ZIS Information Technology Co., Ltd.

TEL:+81-3-3216-6500 FAX:+81-3-3216-6534

Business focus: Consulting about data processing systems; sales and  
maintenance of computer and office automation equipment

### Zeon Nano Technology Co., Ltd.

TEL:+81-3-3216-1766 FAX:+81-3-3216-1767

Business focus: Processing and sale of Carbon Nanotubes and related  
products

### Zeon Medical Inc.

Shiba Park Building, 2-4-1 Shiba Kohen, Minato-ku, Tokyo  
105-0011, Japan

TEL:+81-3-3578-7727 FAX:+81-3-3578-7751

### Plant: Takaoka

Business focus: Manufacture and sale of medical equipment

### Okayama Butadiene Co., Ltd.

Sen-i Kaikan 2F 3-1-11, Nihonbashi-Honcho, Chuo-ku, Tokyo  
103-0023, Japan

TEL:+81-3-3278-0721 FAX:+81-3-3278-0722

Business focus: Manufacturing of butadiene monomer

2

### Zeon Corporation - Kawasaki Plant

1-2-1 Yoko, Kawasaki-ku, Kawasaki, Kanagawa 210-9507,  
Japan  
TEL:+81-44-276-3700 (Direct)  
FAX:+81-44-276-3701

### Zeon Corporation - R&D Center

TEL:+81-44-276-3700 FAX:+81-44-276-3701

4

### Zeon Corporation - Tokuyama Plant

2-1 Nachi-cho, Shunan-shi, Yamaguchi 745-0023, Japan  
TEL:+81-834-21-8501 (Direct)  
FAX:+81-834-21-8793

### Zeon Yamaguchi Co., Ltd.

2-1 Nachi-cho, Shunan-shi, Yamaguchi 745-0023, Japan  
TEL:+81-834-21-8482 FAX:+81-834-21-8663  
Business focus: Purchase and sale of civil engineering materials,  
packing materials, and various facilities; design and construction,  
contracting for various plants; environment analysis

3

### Zeon Corporation - Takaoka Plant

630 Ogino, Takaoka-shi, Toyama 933-8516, Japan  
TEL:+81-766-21-0252 (Direct)  
FAX:+81-766-21-7265

### Zeon North Co., Ltd.

351 Ejiri, Takaoka-shi, Toyama 933-0062, Japan  
TEL:+81-766-25-1111 FAX:+81-766-25-4059  
Business focus: Contracting, design, construction and management for  
various facilities; sale of industrial materials and equipment; purchase  
and sale of petrochemical products; Testing environmental  
measurement, measuring working environment; conducting various  
analysis

### Optes Inc.

422-1, Futagamishin, Takaoka-shi, Toyama 933-0981,  
Japan

TEL:+81-766-32-1590 FAX:+81-766-32-1591

### Plants: Toyama, Fukui and Sano

Business focus: Manufacturing of optical film and optical parts; design  
and manufacturing of metallic molding



**5**

**Zeon Corporation - Mizushima Plant**  
 2767-1 Kojima Shionasu Aza Niihama, Kurashiki-shi,  
 Okayama 711-8511, Japan  
 TEL:+81-86-475-0021 FAX:+81-86-475-1169

**6**

**Zeon Corporation - Osaka Office**  
 4F Furukawa Osaka Bldg., West, 2-1-9 Dojimahama, Kita-ku,  
 Osaka, Osaka Pref. 530-0004 Japan  
 TEL:+81-6-4797-8220 FAX:+81-6-4797-8225

**7**

**Zeon Corporation - Nagoya Office**  
 7F HF Fushimi Bldg., 1-18-24 Nishiki, Naka-ku, Nagoya, Aichi  
 Pref. 460-0003 Japan  
 TEL:+81-52-209-9145 FAX:+81-52-209-9147

**8**

**Zeon Polymix Inc.**  
 1-11-1 Ishizue, Ohtsu-shi, Shiga 520-2272, Japan  
 TEL:+81-77-546-1223 FAX:+81-77-546-0338  
**Plants: Ohtsu**  
 Business focus: Manufacture of rubber compounds (CM)

**9**

**Zeon Chemicals Yonezawa Co., Ltd.**  
 3-446-13 Hachimanpara, Yonezawa-shi, Yamagata  
 992-1128, Japan  
 TEL:+81-238-29-0055 FAX:+81-238-29-0053  
 Business focus: Manufacturing, processing and sale of aromatic  
 chemicals, the middle objects of medicine and agricultural chemicals,  
 and RIM combination liquid

**10**

**Ibaraki Zeon Kasei Co., Ltd.**  
 1175 Kamizushima, bando-shi, Ibaraki 306-0654, Japan  
 TEL:+81-297-34-2111 FAX:+81-297-34-2316  
 Business focus: Manufacturing of processed plastic products (PVC  
 compounds), powdered rubbers and molding products with resin sheet

**11**

**River Xemex Co., Ltd.**  
 2-11-17 Osachigoso, Okaya-shi, Nagano 394-0082, Japan  
 TEL:+81-266-21-2131 FAX:+81-266-21-1550  
 Business focus: Manufacture of medical equipment

**12**

**TFC Inc.**  
 34-23-2 Azono, Tsuruga-shi, Fukui 914-0141, Japan  
 TEL:+81-770-21-1711 FAX:+81-770-21-1775  
 Business focus: Manufacturing of optical films

## **Zeon Group History**

## **Launched PVC and Synthetic Rubber Production**

Zeon Corporation was founded as a PVC manufacturer in 1950, established through capital from three Furukawa group companies – Furukawa Electric Co., Ltd., Yokohama Rubber Co., Ltd., and Nippon Light Metal Co., Ltd. The company acquired its PVC manufacturing technologies from BF Goodrich Chemicals Co. in the United States, which at the time was the global leader in the industry. The PVC business was the company's original business pursuit until its withdrawal from the business in 2000.

Furthermore, in 1959, Zeon acquired technologies from BF Goodrich Chemicals to start up a special synthetic rubber (NBR) plant. This was Japan's first domestic synthetic rubber plant. Following this, the company embarked on the production of general-purpose synthetic rubber(SBR). Zeon thus established its synthetic rubber business, which produces synthetic rubber for tires and engine components, and which it continues to manufacture today.

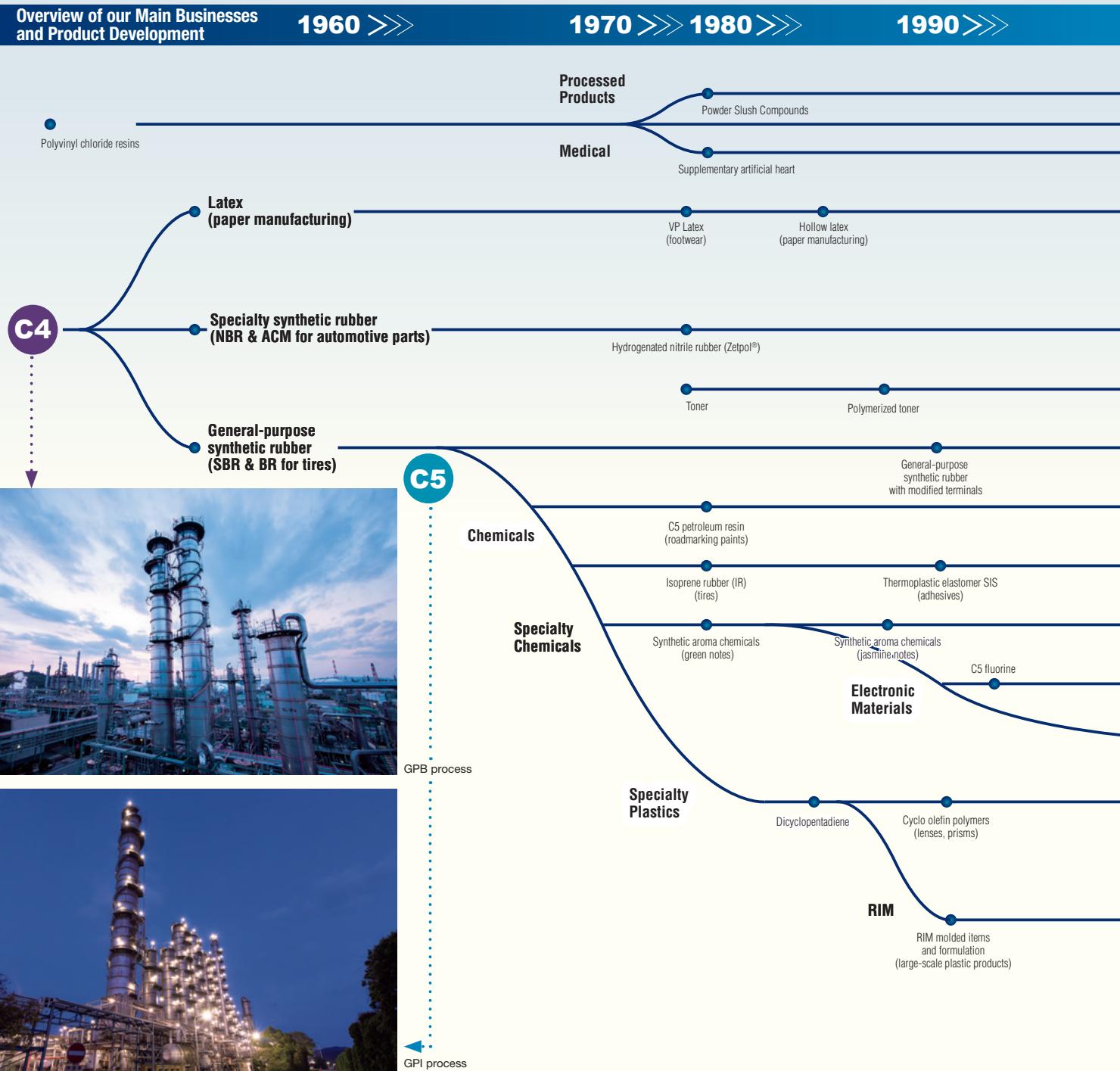
## **Overview of our Main Businesses and Product Development**

1960 >>>

## Fundamental Leadership in C4 and C5 Chemistry with GPB and GPI Technologies

In the petrochemical industry, which uses crude oil as a raw material, technological capabilities are a key element impacting the competitive strength of a company. Zeon, aiming to secure butadiene, which is the raw material used for producing PVC and synthetic rubber, developed the GPB process in 1965 to efficiently extract high-grade butadiene from C4 fractions. Moreover, in 1971, the company developed the GPI process to efficiently extract isoprene, the raw material for isoprene rubber (IR) and other useful components, from C5 fractions.

The company licences its GPB process technology to countries around the world. This contributes substantially to the company's competitive edge and promotes the Zeon brand globally.

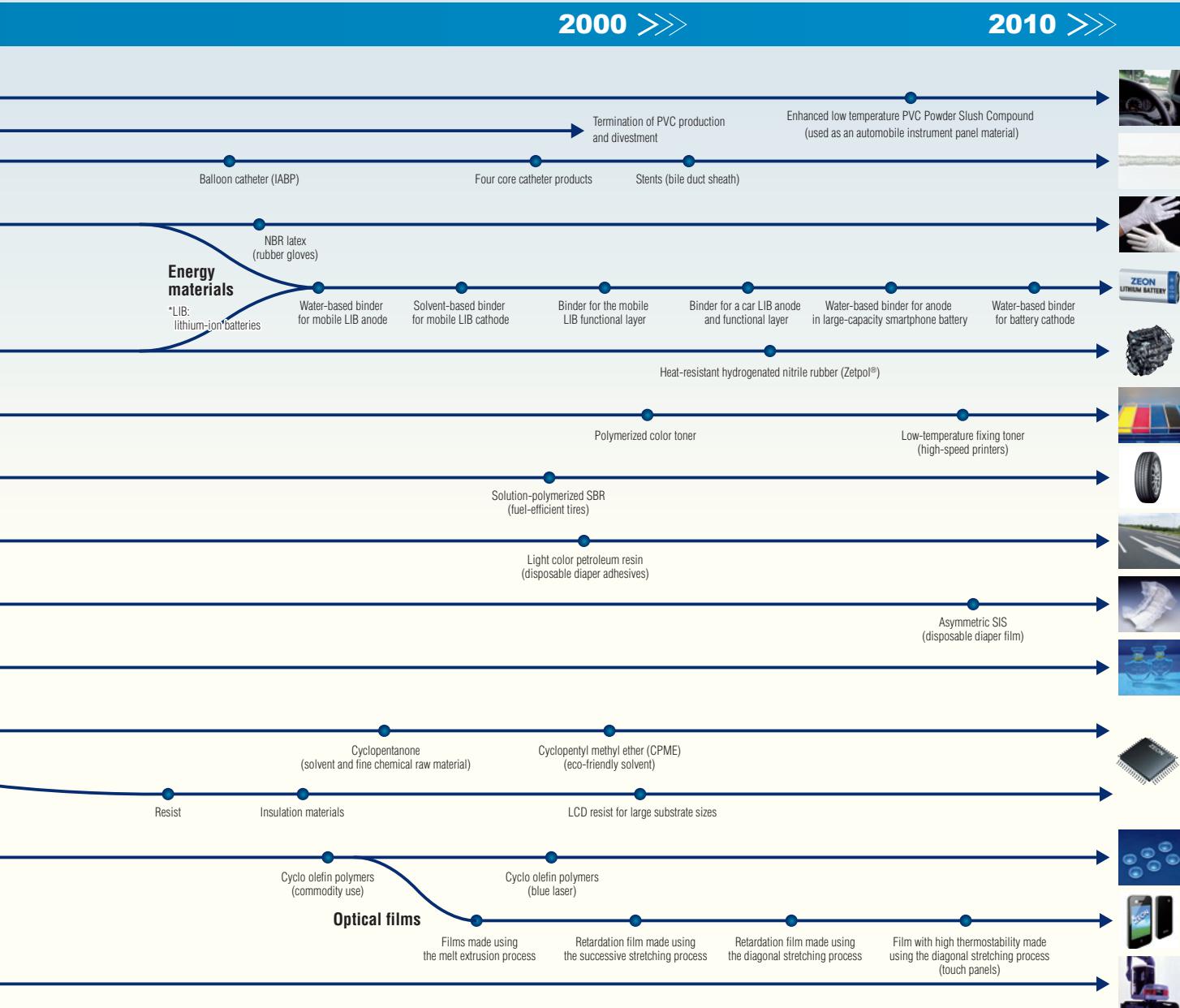


## ■ Developing Comprehensive Uses for C5 Fraction

Isoprene rubber is a useful material which has the same chemical stability as natural rubber. In the process of extracting feedstock isoprene from C5 fractions, many byproducts are derived. The GPI process also has advanced functionality for the separation of these byproducts at a high degree of purity. Zeon has focused on the effective use of these various substances. The process was developed and applied to the production of petroleum resins and thermoplastic elastomer SIS in the 1980s, synthetic aroma chemicals and RIM molded items in the 1990s, and cyclo olefin polymers since the 2000s. As a result, we have grown to be a business that accounts for a large share of the global market. Moreover, the technologies fostered during this development process are being used in areas other than C5 fraction.

## ■ Rolling out Higher-Grade Materials and Establishing Top-Notch Manufacturing Technologies

In recent years, there have been calls for sophisticated products to improve energy efficiency in response to environmental problems and similar expectations are growing for chemical materials. To answer these expectations, Zeon developed Zetpol®, a hydrogenated nitrile rubber, which provides high functionality at a competitive cost and is used in automobile engine components and other applications with strict requirements. In addition, cyclo olefin polymers, developed from a comprehensive use of C5 fraction, are high-performance materials used in optical films, such as for LCD panels and lenses and also as a material for electrical insulation.



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Zeon Corporation.



**Zeon Corporation**  
**CSR Promotion Department**

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