Kimiaki Tanaka President

ZEON CORPORATION（4205）

Company Information

Market	TSE 1st Section
Industry	Chemicals
President	Kimiaki Tanaka
HQ Address	Marunouchi 1-6-2, Chiyoda-ku, Tokyo
Year-end	March
HOMEPAGE	http://www.zeon.co.jp/

Stock Information

Share Price	Shares Outstanding		Total market cap	ROE Act.	Trading Unit
1,096	218,498,496 shares		239,474 million	7.2%	100 shares
DPS Est.	Dividend yield Est.	EPS Est.	PER Est.	BPS Act.	PBR Act.
20.00	1.8%	100.69	10.9 x	1,172.40	0.9 x

* Share price as of closing on May 21, 2019. Number of shares outstanding as of the last year-end and does not include treasury shares. ROE and BPS are from the last year-end.

Earnings Trend

Fiscal Year	Sales	Operating Income	Ordinary Income	Net Income	EPS	DPS
Mar. 2014	296,427	29,901	32,561	19,650	85.15	13.00
Mar. 2015	307,524	28,245	31,098	19,080	84.13	14.00
Mar. 2016	295,647	29,856	32,153	18,079	79.86	15.00
Mar. 2017	287,624	30,767	31,805	23,152	104.31	16.00
Mar. 2018	332,682	38,881	40,893	13,056	58.81	17.00
Mar. 2019	337,499	33,147	36,319	18,458	84.06	19.00
Mar. 2020 Est.	330,000	30,000	32,000	22,000	100.69	20.00

*Unit: million yen, yen

*Estimates are those of the Company. Net income is net income attributed to parent shareholders.

This Bridge Report presents ZEON CORPORATION's earnings results for the fiscal year March ended 2019.

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Key Points

- **Sales for the fiscal year March 2019 were 337.5 billion yen, up 4.8 billion yen year-on-year. As for elastomer business, sales increased 3.5 billion yen due to strong sales of rubber and chemicals. As for specialty materials business, sales decreased by 1.3 billion yen. Specialty chemicals and battery materials sales remained robust, while sales of optical films were sluggish due to inventory adjustments by customers. Operating income was 33.1 billion yen, down 5.7 billion yen. The profit from elastomers decreased 4.5 billion yen due to the increase in raw materials costs. The quantity of battery materials has increased but the profit from specialty materials decreased 600 million yen due to the fall in prices and increase in raw materials costs, etc. Net income was 18.5 billion yen, up 5.4 billion yen. As for the consolidated subsidiary in Singapore, Zeon Chemicals Singapore Pte. Ltd., after considering the future business plan and collectibility after the changes in the business environment, the company posted an impairment loss of 8.6 billion yen as an extraordinary loss for the fixed assets (production facilities, etc.) that it owns, however, the impairment loss has decreased by 6.1 billion yen from the previous term. The results are almost as the revised forecasts.**

- **Sales for the fiscal year March 2020 are estimated to be 330 billion yen, down 2.2% year-on-year, and operating income is projected to be 30 billion yen, down 9.5% year-on-year. As for specialty materials, battery materials are expected to continue growing, while optical films are forecasted to bottom out, thus sales and profit are predicted to increase. Sales and profit from elastomers are predicted to drop due to the impact of the strong yen. Dividends are estimated at 20.00 yen per share, up 1 yen per share from the previous term. Payout ratio is estimated at 19.9%.**

- **The company thinks that although this term will see a drop in sales for the first time in 3 terms, sales rose up one level reaching the 330 billion yen range. As for the elastomers business, the SSBR, in which the company has been proactively investing in Singapore, is mainstay. As for specialty materials, battery materials are acting as a major growth driver as it has made further progress than planned and its market is continuously expanding. In addition, both businesses have products and materials that are starting to emerge. We are watching closely how far the company can go towards its goal “to achieve consolidated sales of over 500 billion yen in FY 2020.”**

1. Company Overview

ZEON CORPORATION is a petrochemical manufacturer that maintains numerous products with a large share of the global markets including synthetic rubber used in automobile parts and tires, synthetic latex used in surgery-use gloves, and other products. The Company's strengths include its creative technology development function, R&D structure, and high earnings generation capability. Many of the products and materials manufactured by Zeon are used in a wide variety of products including automobile parts and tires, rubber gloves, disposable diapers, cell phones, LCD televisions, perfumes and other products commonly used in everyday life. The Zeon Group is comprised of the parent company, 58 subsidiaries and 8 affiliated companies. Zeon also has manufacturing and marketing facilities in 16 countries around the world.

（Source: the company）

1-1 Company Name and Management Vision

The company name "Zeon" is derived from the Greek word for earth "geo" (phonetically pronounced "zeo" in Japanese) and the English word reflecting eternity "eon," and reflects the Company's principle of **"deriving raw materials from the earth and perpetually contributing to human prosperity"** through the development and application of creative technologies.

(Zeon's original name "Geon," used at the time of its establishment, was derived from the trademark acquired for the vinyl chloride resin "Geon" from B.F. Goodrich Company in the United States, with which it had capital and collaborative technological agreements. The company name was changed to "Zeon" when the capital agreement was dissolved in 1970.)

1-2 Corporate History

Zeon was established as a joint venture company formed by the Furukawa Group of companies: Nippon Light Metal Co., Ltd., Furukawa Electric Co., Ltd., and Yokohama Rubber Co., Ltd. in April 1950 to acquire and use the vinyl chloride resin technology from B.F. Goodrich Chemicals Co.

In 1951, Goodrich acquired 35% of the shares of Zeon for full-scale technological and capital partnership, and in 1952 mass production of vinyl chloride resin began in Japan for the first time.
In 1959, Goodrich transferred synthetic rubber manufacturing technologies to Zeon, which, in turn, started Japan's first mass production of synthetic rubber. Manufacturing facilities were also expanded to match the growing demand for automobile parts.

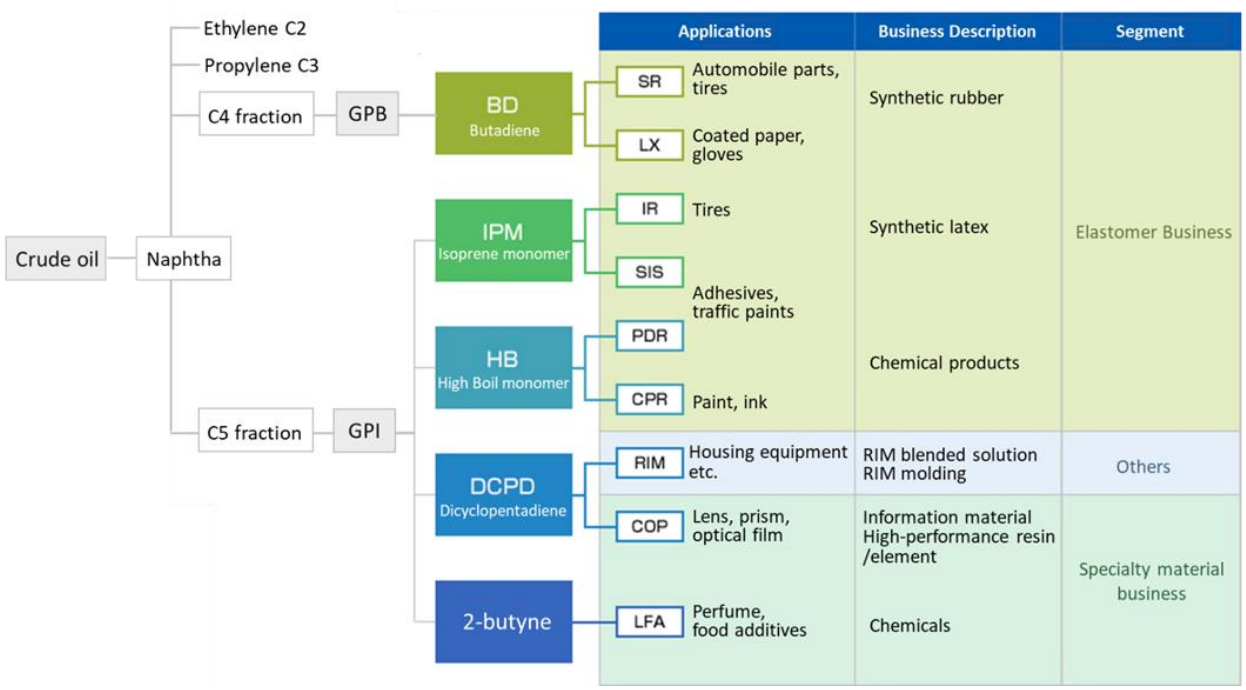
In 1965, use of the Company's unique technology called Geon Process of Butadiene (GPB) for the efficient manufacture of butadiene (main raw material of synthetic rubber) from C_4 fraction was operational.
Goodrich transferred its specialty synthetic rubber business to Zeon along with the shift in its main business focus toward vinyl chloride resins. Capital ties were dissolved in 1970. Along with these changes, the Company name was changed from Geon to Zeon in 1971.
Also in 1971, Zeon developed a unique technology called Geon Process of Isoprene (GPI) and began using it to manufacture raw materials including high-purity isoprene, hydrocarbon resins, and synthetic perfume ingredients from C_5 fraction.

After entering the 1980s, Zeon aggressively launched new businesses in various fields including photoresists and other information materials, and medical-related applications in addition to its main synthetic rubber business.
In 1984, production of hydrogenated nitrile rubber Zetpol®, which currently has top share of the worldwide market, began at the Takaoka Plant.
In 1990, manufacture of cyclo olefin polymer (COP) ZEONEX®, which is the main product of the specialty material business using the GPI method to extract and synthesize products, was started at the Mizushima Plant.
In 1993, Zeon entered China with its electronics materials business.
In 1999, Zeon Chemicals L.P. (Consolidated subsidiary in the United States) acquired the specialty rubber business of Goodyear Tire & Rubber Company of the United States to become the world's top manufacturer of specialty rubber.

In 2000, Zeon discontinued production of vinyl chloride resins at the Mizushima Plant, and thus withdrew from the Company's founding business.
Since the 21st century came, the company has been operating business actively. For example, by releasing ZeonorFilm®, an optical film for LCD, strengthening global production and sales systems, starting the commercial operation of solution-polymerized styrene-butadiene rubber (S-SBR) in Singapore, upgrading the equipment for optical films for LCD in Himi-shi, Toyama Prefecture, starting the operation of the world's first mass-production factory for super-growth carbon nanotubes, and establishing a joint venture for manufacturing and selling S-SBR in cooperation with Sumitomo Chemical.

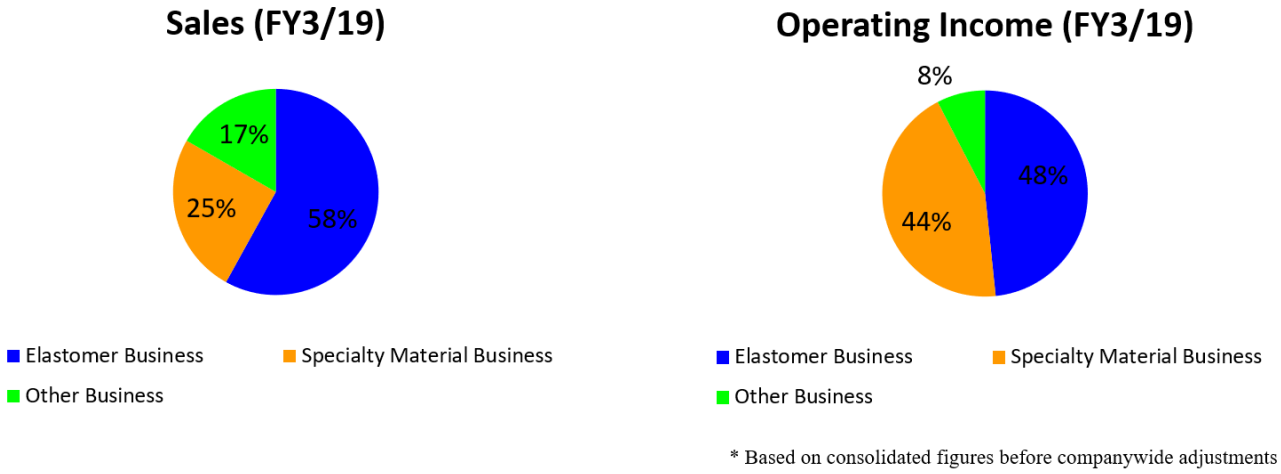
1-3 Business Description

Zeon's main products use various extracted from naphtha, which is extracted by distillation of crude oil.
Zeon uses **butadiene** extracted in the GPB method developed in-house from C_4 fraction, **isoprene monomer, piperylene, dicyclopentadiene,** and **2-butyne** extracted from C_5 fraction using the GPI method, as raw materials to be processed into synthetic rubber, synthetic latex and various other materials.



（Source: the company）

Zeon has three business segments: 1) the **elastomer business**, where manufactured basic materials are sold to customers; 2) the **specialty material business**, where basic materials are submitted to primary processing for sale to customers as processed materials, and 3) the **other business**.



* Based on consolidated figures before companywide adjustments

Elastomer Business

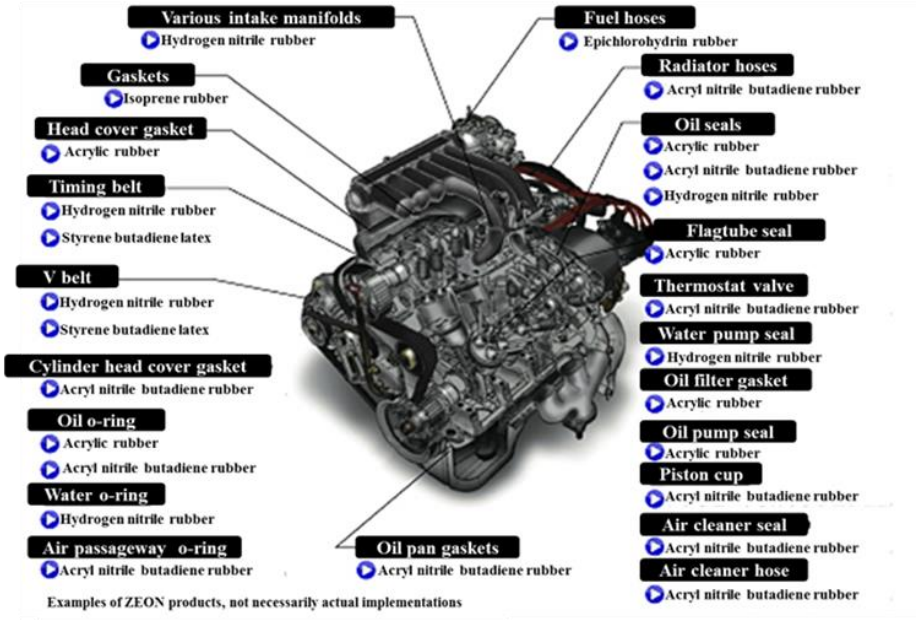
Elastomers are “high molecular compounds that have rubber-like elastic properties,” an example of which is synthetic rubber. As described in the corporate history section of this report, in 1959 Zeon became the first company in Japan to mass-produce synthetic rubber, which became the foundation underlying all of Zeon’s businesses. This business includes the segments of synthetic rubber, synthetic latex, and chemical products (hydrocarbon resins, thermoplastic elastomers) businesses.

1) Synthetic Rubber Business

Example of final product: Tires

Zeon provides the world’s leading tire manufacturers with the world’s highest-quality synthetic rubber for use in tires. Among the various types of synthetic rubber manufactured are styrene butadiene rubber (SBR), which promotes superior abrasion resistance, aging resistance and mechanical strength properties, butadiene rubber (BR), which includes a superior balance between elasticity, wear and low-temperature properties, and isoprene rubber (IR), which features similar properties as natural rubber but with higher quality stability.

Example of product: Automobile Parts



（Source: the company）

Radiator hoses, fuel hoses, fan belts, oil seals, and various other car engine parts use specialty synthetic rubber that has superior oil resistance and heat deterioration-resistant qualities.
Zeon is the world's number one manufacturer of specialty synthetic rubber and features high quality levels and high market share of specialty synthetic rubber automobile parts. In particular, Zeon's Zetpol® hydrogenated nitrile rubber, used for timing belts, displays superior heat and oil resistance and claims high share of the worldwide market.

Furthermore, a new grade of Zetpol® has vastly improved the performance of products using the original versions of Zetpol®.
Products using the new grade of Zetpol® are heat resistant at temperatures that exceed the limits for the original version of Zetpol® by 10 degrees centigrade, thereby extending the life of seals and gaskets, and are in strong demand for use in next generation bio-fuel engines. The new grade of Zetpol® is well suited to extrusion processing which is being leveraged to expand its usage in various hoses.
Products using Zetpol® have also been well received by customers, and are being used increasingly as a replacement material for more expensive competitive rubber in Japan, Asia, Europe and North America.

2) Synthetic Latex Business

Synthetic latex is liquid rubber that synthetic rubber dispersed in water. It is used to manufacture gloves, paper coating, textile processing, adhesives, paints, and cosmetic puffs, etc. Zeon has high share of NBR latex used in cosmetic puffs in the world.

3) Chemicals Business

Zeon produces C_5 fraction by its unique in-house GPI method, and turn it into materials for adhesive tapes and hot melt adhesive traffic paint binder and a wide variety of other products.

Specialty Material Business

Zeon deals in high value added materials and parts that are created using its unique technologies including polymer design and processing technologies.

1) Specialty Plastics and Electronic Materials

Cyclo olefin polymer is thermoplastic polymer developed using raw material extracted from C_5 fraction using GPI methods and synthesized with Zeon's own unique technologies. The commercial products are ZEONEX® and ZEONOR®.
ZEONEX® leverages its high transparency, low water absorption, low absorptive and chemical resistance properties for use in camera and projector lenses and other optical applications, and in medical use containers including syringes and vials.
ZEONOR® leverages its high transparency, transferability, and heat resistance properties for use as transparent general use engineering plastics used in light guide plates, automobile parts, semiconductor containers and a wide range of other product applications.

ZeonorFilm® is the world's first optical film by the melt extrusion method from the cyclo olefin polymer. It is excellent in optical properties, low water absorption / low moisture permeability, high heat resistance, low outgassing and dimensional stability. Not only for displays for LCD TV, smartphones and tablets, is it expected to be used in a wide range of applications such as OLED displays.

（Source: the company）

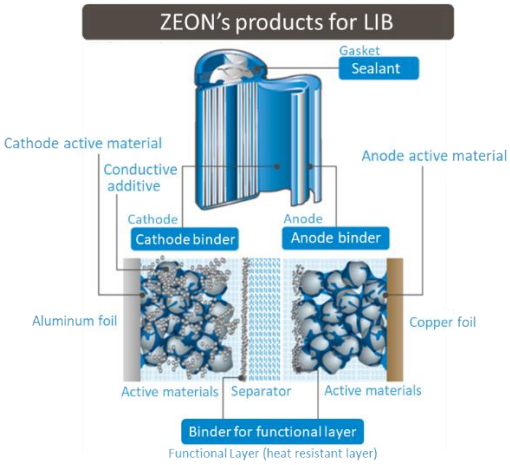
"Diagonally-stretched optical film" is also Zeon's world first development.
The OELD application as anti-reflection film is progressing, and demand for small- to medium-sized flat panel display applications is growing. In addition to the current plants in Takaoka and Himi (an annual output of 15 million square meters for optical film in total), the construction of a plant in Tsuruga, Fukui Prefecture was completed in October 2013.

ZEOCOAT® is organic insulation material used in electronic devices such as cellphones, smartphones, and LCD televisions.

ZEOCOAT® was successful in improving both the picture quality and reliability of displays because of its high transparency, extremely low water absorption and low gas generation properties. Zeon will aggressively expand its marketing efforts for OELDs, which will be thinner displays than LCD, thin-film transistors using new semiconductors, and flexible displays.

2) Battery Materials

Zeon provides materials for lithium ion battery in this segment; anode / cathode binders, binder for functional layer (heat resistant separator), and sealant.
Currently, Li-ion batteries are widely used as a power source for mobile devices such as mobile phones and notebook computers. Due to the rapid popularization of smartphones, there is a strong demand for higher capacity batteries. Adoption for electric vehicles, including hybrid and plug-in hybrid cars, and industrial power sources (such as smart grids, etc.) also have begun, since it is lightweight, compact and can store a lot of energy. On the other hand, there was a problem that lifetime tends to decrease under high temperature usage.
The company has advanced the function of Li-ion battery binder and succeeded to develop an aqueous cathode binder, which greatly contributes to longer battery life. In addition, Zeon succeeded in commercializing anode binder, which can raise the storage capacity of Li-ion battery by 5% to 15%.
Zeon believes that its materials contribute to safety, long life and battery capacity increase of Li-ion batteries and contribute to the widespread of hybrid and electric cars.
The company focused on the promising future of Li-ion batteries and worked on it for a long time. In this business segment for 2020, Zeon seeks to keep its top share in the Li-ion battery binder market, aims to expand the diffusion of new material functions that meet the needs of the application and propose functional materials to realize the next generation of new batteries.

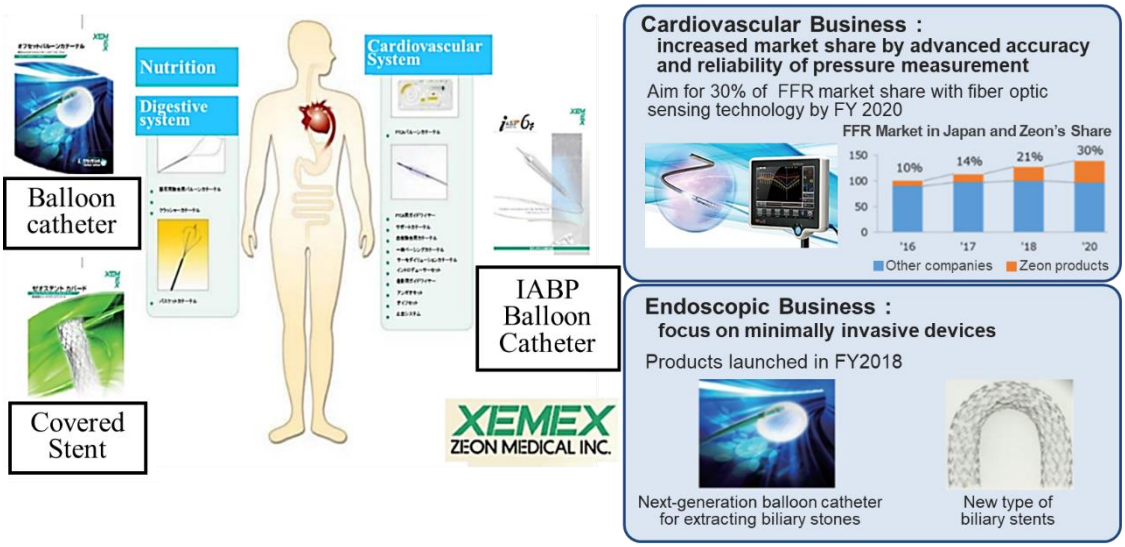


（Source: the company）

3) Medical Devices

The medical device market is relatively well insulated from fluctuations in the economy, and is anticipated to grow with the aging society in Japan and expansion in developing countries. Furthermore, medical device companies are subject to strict laws and regulations, and they need to submit approval applications to regulatory bodies. In addition, the need to develop relationships with healthcare professionals is critical and the subsequent high barriers to entry makes this a highly attractive market.
Along with the start of development of artificial kidneys in 1974, Zeon aggressively promoted its medical device business. In 1989, a

subsidiary Zeon Medical Inc. was established to conduct development, manufacturing, sales and all other functions of the medical field for the Zeon Group. Zeon has shown bountiful development track record both in gastroenterology and cardiovascular area. The Offset Balloon Catheter as a means of differentiation in the gallstone removal process and with Japan's first biliary covered stent Zeostent Covered in the area of gastroenterology products, and the world's smallest diameter XEMEX IABP Balloon PLUS as a device to aid the heartbeat at times of acute myocardial infarction in the area of cardiovascular products.



（Source: the company）

Currently Zeon is focusing efforts in the development of the biliary stone removal devices that eliminate pain. Zeon has a lineup of products for extracting biliary stones ranging from extremely large stones to sludge and sand with products such as XEMEX Crusher Catheter, XEMEX Basket Catheter NT, Extraction Balloon Catheter, and is aiming at a 50% share of the gallstone removal market.
In March 2016, the Company launched the world's first optical sensor FFR device as a type of guide wire. Because it uses an optical fiber sensor, mistaken readings of blood pressure measurements rarely occur. The operability as a guide wire has also gained a high evaluation and Zeon is aiming for a 30% share of the Japanese market by 2020.

4) Specialty Chemicals Business

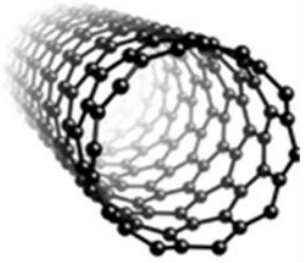
Zeon deals in specialty chemicals that use derivatives from C_5 fraction, such as synthesized fragrances for cosmetics and flavor used in foods, solvents and plant growth regulator. The Company holds the world's top share of the synthesized fragrances in green note. They provide a wide range of specialty products including ingredients for intermediary bodies used in medical and agricultural chemicals, alternative CFCs solvents, cleaning agents, urethane expanding agent, and functional ether agents.

【New Specialty Materials Development: ~Carbon Nano Tube (CNT)~ 】

Aggressive R&D activities have allowed Zeon to launch various new materials into the market, and particularly high expectation is in the development of "single-wall carbon nanotubes (CNT)".

1) What is Single-Walled CNT?

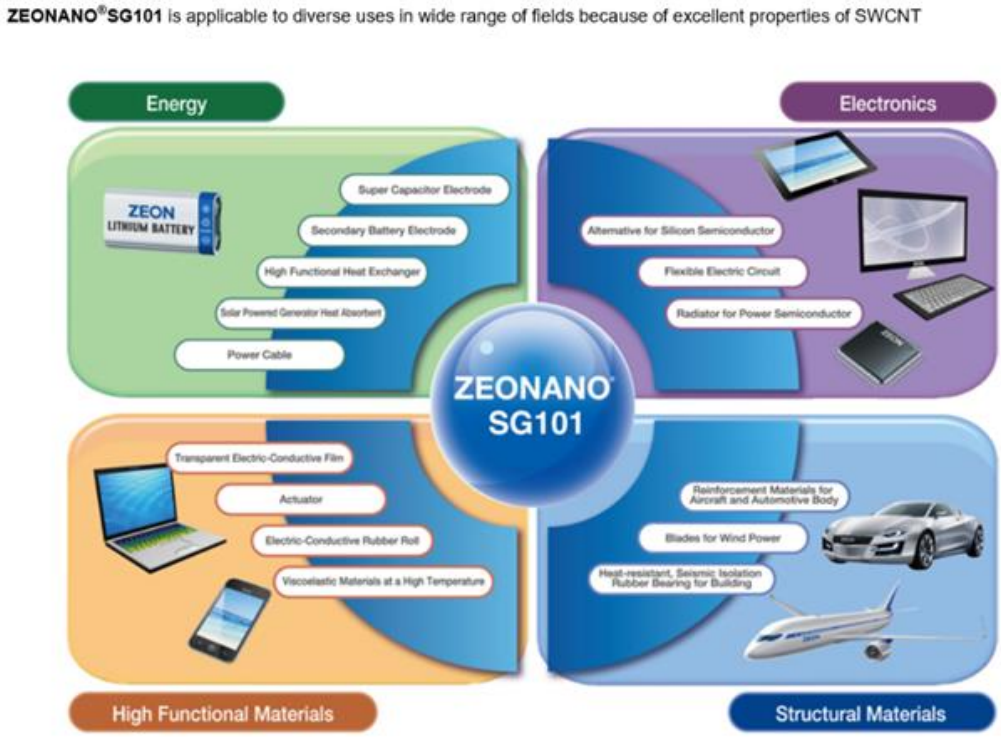
Carbon Nanotubes (CNTs) are cylindrical nanostructure formed by hexagonal lattice of carbon atoms. In 1993, Sumio Iijima, Ph.D., head of the Applied Nanotube Research Center of the National Institute of Advanced Industrial Science and Technology (AIST), discovered this structure for the first time in the world and named *Carbon Nanotubes (CNTs)*. CNTs are categorized into single-walled and multiple-walled CNTs. Multiple-walled CNT is relatively easy to manufacture and the developments for commercial applications already started.


Single Wall Carbon Nanotube

（Source: the company）

At the same time, single-walled CNT exhibits the following properties and is superior to multiple-walled CNT:
- 20 times stronger than steel
- 10 times more heat conductive than copper
- Half as dense as aluminum
- 10 times the electron mobility of silicon
- lightweight but highly flexible
- has extremely high electric-and heat-conductivity properties

Possible CNT applications are electrical conductivity assistance agent in Li-ion batteries, transparent conductive film used in electronic paper and ultra-thin touch panel because of its high elasticity and strength, and as a thermal interface material. Because of its ability to absorb a wide spectrum of light, practical applications of single-walled CNT are being promoted in the area of electromagnetic wave absorbing materials for use in a wide range of fields including energy, electronics, structural materials, and other specialty materials.



(Source: Homepage of Technology Research Association for single Wall Carbon Nanotubes)

Conventional single-walled CNT has several major issues including high levels of impurities, low levels of productivity and high manufacturing costs, which are about several tens of thousands to hundreds of thousands of yen per gram.

2) Zeon's Efforts and Position

Against this backdrop, the company aims at establishing technologies that are necessary for the commercialization of new products using single-walled CNT developed in Japan with its numerous superior qualities in response to the worldwide social demands to realize a low-carbon society.

Using the synthesizing technology *super growth method* developed by Dr. Kenji Hata (Ph.D.) of the AIST as a base, Zeon has been conducting R&D for mass production and application development for compound materials at a validation plant that was established in December 2010 on the premises of the Tsukuba Center of the AIST. Among the main reasons that the AIST Nanotube Application Research Center selected Zeon to become its partner were the impressive track record and results obtained by Kohei Arakawa, Zeon's former Managing Director, as a personnel in CNT R&D. The company is very important to realize commercial applications of this new material.

3) Future Endeavors

Having established the mass production technology based on the *super growth* method, Zeon completed the CNT production facility and started mass production, the first in the world in November 2015 in its Tokuyama plant at Shunan-city, Yamaguchi Prefecture.

Zeon is the only company in the world that has established mass production technologies for single-wall CNT. About 100 companies around the world request for its product samples. Consequently, shipments of samples have already begun. Zeon has also begun to propose practical applications of this product.

At the same time, single-wall CNT is a type of nanomaterial that is extremely small and fiber shape. Therefore, there is a concern that it may have some impact upon biological processes depending upon its size and shape. Currently, the AIST is conducting standardization of the evaluation process, and activities for the OECD endpoint measurement are being conducted, with global standardization and legal and regulatory aspects being considered.

Other Business

The combination liquid for Reaction Injection Molding (RIM) using the ingredient dicyclopentadiene (DCPD) as a raw material.

1-4 ROE Analysis

	FY Mar. 14	FY Mar. 15	FY Mar. 16	FY Mar. 17	FY Mar. 18	FY Mar. 19
ROE (%)	**11.7**	**9.8**	**8.6**	**10.3**	**5.3**	**7.2**
Net income margin (%)	6.63	6.20	6.12	8.05	3.92	5.47
Total asset turnover (times)	0.82	0.80	0.75	0.72	0.78	0.79
Leverage （ x）	2.15	1.98	1.86	1.77	1.71	1.69

Since the ratio of net income to sales and leverage are showing a declining trend, ROE was below the 8% that Japanese companies are told to aim for.

The company is expected to improve the profitability by focusing on the growth of the specialty materials segment.

1-5 Characteristics and Strengths

1. World's Leading Creative Technology Development Capability

The GPB method used to manufacture butadiene from C_4 fraction is the most important development in Japan's postwar history of chemicals, and is licensed to 49 plants in 19 countries around the world.

In addition, the Mizushima Plant is the world's only plant with GPI method to extract high-purity isoprene and other effective substances from C_5 fraction. This Zeon's GPI method is a completely unique technology, which is not provided to other companies.

These two technologies represent the creative technological capabilities that are among the strengths of Zeon. They also are highly regarded and have received numerous awards in the global markets. With regard to technologies, Zeon has received 48 awards since 1960 including the GPB and GPI methods, in addition to 26 awards since 1982 for its environment conservation and safety efforts.

2. High Worldwide Share

Zetpol®, ZEONEX®, and ZEONOR® are representative of the products born from Zeon's highly creative technologies, which have allowed it to acquire high shares of worldwide markets. In addition, their Leaf alcohol for in cosmetics and food flavorings and NBR latex for cosmetic puffs have the world's top share.

3. R&D Structure that Continues to Yield Creative Technologies

Zeon seeks to conduct R&D activities based upon its basic corporate philosophy of "developing creative technologies in special fields of strength that enables Zeon to contribute to society by generating the world's leading businesses."
The Company's main R&D center is located in Kawasaki City, Kanagawa Prefecture. Zeon has also established the Precision Optics Laboratory and Medical Laboratory at the Takaoka Plant, the Specialty Chemical Product Research Facility at the Yonezawa Plant, the Toner Research Facility at the Tokuyama Plant and C_5 Chemicals Laboratory at the Mizushima Plant for more efficient R&D activities to be conducted closer to the manufacturing sites. The technical support bases are in the U.S., Germany, Singapore, and China.

The R&D personnel are never satisfied with the current conditions, and always keep conscious of the threat that their competitors pose in their research activities. Furthermore, Zeon bases its valuation on a positive point awarding system that places high priority on speed and creativity. R&D expenses were formerly measured as a percentage of sales, but now it has established an annual value amount of ¥16.0 billion as an investment budget to ensure that stable R&D activities can be maintained in the future.

2. Fiscal Year ended March 2019 Earnings Results

2-1 Consolidated Earnings

	FY Mar. 18	Ratio to sales	FY Mar. 19	Ratio to sales	YoY	Compared with the initial forecasts	Compared with revised forecasts
Sales	332,682	100.0%	337,499	100.0%	+1.4%	+5.5%	-0.7%
Gross profit	101,272	30.4%	96,742	28.7%	-4.5%	-	-
SG&A	62,392	18.8%	63,595	18.8%	+1.9%	-	-
Operating Income	38,881	11.7%	33,147	9.8%	-14.7%	+3.6%	-2.5%
Ordinary Income	40,893	12.3%	36,319	10.8%	-11.2%	+6.8%	-1.8%
Net Income	13,056	3.9%	18,458	5.5%	+41.4%	-23.1%	+2.5%

*Unit: million yen. Revised forecast was announced in Jan. 19.

Sales grew, but profit dropped due to the rise in prices of raw materials.

Sales were 337.5 billion yen, up 4.8 billion yen year-on-year. As for elastomer business, sales increased 3.5 billion yen due to strong sales of rubber and chemicals, while sales of specialty materials business decreased by 1.3 billion yen. Specialty chemicals and battery materials sales remained robust, while sales of optical films were sluggish due to inventory adjustments by customers. Operating income was 33.1 billion yen, down 5.7 billion yen. The profit from elastomers decreased 4.5 billion yen due to the increase in raw materials costs. The quantity of battery materials has increased but the profit from specialty materials decreased 600 million yen due to the fall in prices and increase in raw materials costs, etc.
Net income was 18.5 billion yen, up 5.4 billion yen. As for the consolidated subsidiary in Singapore, Zeon Chemicals Singapore Pte. Ltd., after considering the future business plan and collectibility after the changes in the business environment, the company posted an impairment loss of 8.6 billion yen as an extraordinary loss for the fixed assets (production facilities, etc.) that it owns, however, the impairment loss has decreased by 6.1 billion yen from the previous term. The results were almost as the revised forecasts.

Trends by Business Segments

【Elastomers】

	FY Mar. 18	FY Mar. 19	YoY
Sales	1,946	1,981	+1.8%
Rubbers	1,380	1,388	+0.6%
Latexes	192	188	-2.1%
Chemicals	347	383	+10.4%
Others, eliminations	26	22	-15.4%
Operating Income	222	177	-20.3%
Sales Volume (1,000 Tons)	621	616	-1.0%
Rubbers	360	355	-1.4%
Latexes	130	123	-5.4%
Chemicals	131	138	+5.3%

*Unit: 100 million Yen

Sales increased, but profit decreased.

Sales were 198.1 billion yen, up 3.5 billion yen year-on-year. The selling price of rubber has increased, and sales robustly increased domestically and internationally. As for chemicals, SIS has expanded. Sales increased thanks to proceeding price pass-on measures to offset the rise in raw materials prices. Meanwhile, both quantities and sales of latex aimed at domestic resin modification and China have decreased. The sales volume of rubber went down 1%. The sales volume of general-purpose rubber in Japan and overseas has been sluggish, but the S-SBR was brisk and the decrease in its sales volume stopped at 1%. The sales volume of specialty rubber went down 4% year-on-year. Exports were sluggish, but subsidiaries in Japan and overseas were healthy.

Operating income was 17.7 billion yen, down 4.5 billion yen, year-on-year. Operating income margin was 8.9%, down 2.5 points from 11.4% in the previous fiscal year.

The increase in quantities of chemicals accounted for an increment of 1 billion yen, and the rise in sales prices made up an increment of 4.2 billion yen. The cost factor attributable to the rise in raw material price was negative 6 billion yen and the factor of SG&A expense due to rubber inventory storage fee and freight increase was negative 0.3 billion yen.

【Specialty Materials】

	FY Mar. 18	FY Mar. 19	YoY
Sales	865	851	-1.6%
Specialty Chemicals	243	276	+13.6%
Specialty Plastics	565	519	-8.1%
Medical Devices, Others	56	57	+1.8%
Operating Income	167	161	-3.6%

*Units: 100 million yen

Sales and profit decreased.

Sales were 85.1 billion yen, down 1.3 billion yen, year-on-year. Specialty chemicals were healthy as chemicals including synthetic fragrances increased by 1% year on year and battery materials increased by 32% year on year. On the other hand, sales of optical films were down 10% year on year due to customer inventory adjustments. The sales volume of optical films decreased by 1% year on year, and sales ratio of optical films for small- to medium-sized display fell to 21% from 28% in the last year.

Operating income was 16.1 billion yen, down 600 million yen, year-on-year. The operating income margin was 18.9%, down 0.5 points from the 19.4% in the previous fiscal year.

The quantity factor of 1.8 billion yen attributable to the increase in the quantity of battery materials couldn't offset the price factor of negative 200 million yen, the cost difference of minus 1.7 billion yen, and SG&A expense of 400 million yen.

【Others】

	FY Mar. 18	FY Mar. 19	YoY
Sales	539	567	+5.2%
Operating Income	32	28	-12.5%

*Units: 100 million yen

Sales increased, but profit decreased.

Sales of the trading divisions were healthy. The RIM business has also expanded. Operating income margin was 4.9%, down 1 point from the 5.9% in the previous year.

2-3 Financial standing and cash flows

◎Main Balance Sheet

	FY Mar. 18	FY Mar. 19	Increase/decrease		FY Mar. 18	FY Mar. 19	Increase/decrease
Current Assets	224,859	227,238	+2,379	Current liabilities	139,264	130,039	-9,225
Cash	41,666	37,534	-4,132	Payables	84,003	82,414	-1,589
Receivables	79,344	78,352	-992	ST Interest-Bearing Liabilities	26,573	12,125	-14,448
Inventories	63,896	71,125	+7,229	Noncurrent liabilities	41,315	35,742	-5,573
Noncurrent Assets	215,660	197,700	-17,960	LT Interest-Bearing Liabilities	12,000	12,000	0
Tangible Assets	115,559	102,323	-13,236	Total Liabilities	180,579	165,781	-14,798
Intangible Assets	3,355	3,197	-158	Net Assets	259,940	259,156	-784
Investment, Others	96,746	92,179	-4,567	Capital	257,167	256,168	-999
Total assets	440,519	424,937	-15,582	Total Liabilities and Net Assets	440,519	424,937	-15,582

* Unit: million yen. Receivables include electronically booked receivables; likewise, payables include electronically booked payables.

Cash decreased due to bond retirement, but current assets grew 2.3 billion yen from the end of the previous term due to an increase in inventories assets, etc. Total noncurrent assets decreased 18 billion yen from the end of the previous term due to a decrease in property, plant and equipment and investment securities, etc. Total assets decreased by 15.6 billion yen year-on-year.
Total liabilities decreased 14.8 billion yen year-on-year, as interest-bearing debts shrank 14.4 billion yen due to bond retirement.
Net assets decreased 700 million yen year-on-year due to the decrease in the valuation difference on available-for-sale securities, etc. As a result, equity ratio grew 1.9 points from the end of the previous term to 60.3%. Debt-to-equity ratio was improved 0.06 points from 0.15 at the end of the previous term to 0.09.

◎Cash Flow

	FY Mar. 18	FY Mar. 19	Increase/decrease
Operating Cash Flow	54,462	40,393	-14,069
Investing Cash Flow	-14,951	-21,426	-6,475
Free Cash Flow	39,511	18,967	-20,544
Financing Cash Flow	-11,625	-23,575	-11,950
CF	39,791	34,846	-4,945

* Unit: million yen

The surplus of operating CF decreased due to the decrease in trade payables, etc., while free CF maintained its surplus.
The deficit of financing CF increased due to bond retirement.
The cash position declined.

3. Fiscal Year ending March 2020 Earnings Forecasts

【Full Year Earning】

	FY Mar. 19Act.	Ratio to sales	FY Mar. 20Est.	Ratio to sales	YoY
Sales	3,375	100.0%	3,300	100.0%	-2.2%
Elastomer	1,981	58.7%	1,900	57.6%	-4.1%
Specialty Materials	851	25.2%	860	26.1%	+1.1%
Others	567	16.8%	565	17.1%	-0.4%
Eliminations	-25	-	-25	-	-
Operating Income	331	9.8%	300	9.1%	-9.5%
Elastomer	177	5.2%	144	4.4%	-18.6%
Specialty Materials	161	4.8%	170	5.2%	+5.6%
Others	-7	-	-14	-	-
Non-Operating Income	32	0.9%	20	0.6%	-37.5%
Ordinary Income	363	10.8%	320	9.7%	-11.9%
Net Income	185	5.5%	220	6.7%	+19.2%

*Units: 100 million yen. Segment income share can be considered to be the same as operating income to sales ratio (Operating margin)

【Various Assumptions】

	FY Mar. 19 Act.	FY Mar. 20 Est.	YoY
Yen/ US Dollar	110.7	105.0	-5.1%
Yen/ Euro	128.7	120.0	-6.8%
Domestic Naphtha Price (¥/ kiloliter)	49,500	39,000	-21.2%
Asia Butadiene Price (US $/ ton)	1,372	1,250	-8.9%

Sales and profit are estimated to decrease.

Sales are estimated to decrease 2.2% year on year to 330 billion yen while operating income is projected to decline by 9.5% to 30 billion yen.

As for specialty materials, the battery materials are expected to continue growing, while optical films are forecasted to bottom out, thus sales and profit are predicted to increase. The sales and profit from elastomers are predicted to drop due to the impact of the strong yen.

Dividends are estimated at 20.00 yen per share, up 1 yen per share from the previous term. Payout ratio is estimated at 19.9%.

4. “New Mid-term Management Plan SZ-20 Phase III”

Progress of “New Mid-term Management Plan SZ-20 Phase III” covering a four-year period beginning from fiscal year March 2018 is as follows.

Groupwide Strategy

Growth	Reinforce the combined strengths of the Zeon group. Explore ways of going beyond boundaries and collaborating with external players to provide solutions globally as a contribution to society. Accelerate the pace of new businesses creation and product development in key development areas: global environment, smart devices, and health and living.
Corporate Culture	Cultivate a corporate culture that places value on taking proactive action by harnessing diverse idea and trying them.

As for the key development areas, the company applies for “global environment (e.g. energy conservation, automobile-related, power generation and storage)”, “health and living (e.g. self-driving cars, medical devices/materials, daily necessities)” and “smart devices (IoT-related),” which are estimated to have a high growth rate and probability of innovation.

Under the themes of “speed,” “dialogue,” and “social contribution,” the company fosters more mutual trust with its group members. As the way it wants to be in FY 2020, the company pursues “Zeon makes the future today with the power of chemistry” and aims to achieve consolidated sales of more than 500 billion yen.

Overall performance

Sales hit records high consecutively in the fiscal year March 2018 and the fiscal year March 2019 after entering SZ-20 Phase III. Although sales will slightly decline in the fiscal year March 2020, the company thinks that it will establish sales in the 330 billion yen range.
The main drivers for increasing sales were the dissemination of price revision due to the sharp rises in the market prices of raw materials in the elastomers business, and regarding the specialty materials, the sales growth of cyclo olefin polymer and battery materials.

Strategies by Business Segment

Elastomer Business	Specialty Materials Business
・Reinforce competitive business by responding globally to growth markets and raising cost effectiveness. ・Explore new opportunities and achieve growth based on the trust built in the market and relationship with customers.	・Expand business in step with the speed of market growth and technological progress through focused investment of resources and stronger collaboration with outside players.

Elastomer Business

◎SSBR (Solution-polymerized styrene-butadiene rubber)

By combining the polymer modification and production technologies of Zeon and Sumitomo Chemical, the company is committed to providing products that meet Tire customes’ requirements such as “good wet grip,” “low fuel consumption” and “good abrasion resistance”. It is aiming to seize the leading position in the world
The sales volume of SSBR is estimated to increase about 1.5 times between 2017 and 2020.

◎Specialty Rubbers

The company established “Zeon Chemicals Asia Co., Ltd.”, a new company that manufactures and sells acrylic rubber in Thailand.
The plant has a production capacity of 5,000 tons/year. It is the company's third site following Japan and the United States, and fourth plant. It will strengthen the network of manufacturing, marketing, and technical capabilities, and cover the demand expected to expand steadily in the Asian region, led by the growth of internal combustion and turbocharged engine vehicles.
Completion of the construction is scheduled for the spring of 2020.

◎Latexes
Due to the raised awareness of occupational health and safety, the working gloves market is growing mainly in Europe and the company is working towards developing new products. It plans to launch them during FY 2019.
Sales volume of Latex used in work gloves is estimated to increase by about 1.8 times between 2017 and 2020.

◎SIS (Styrenic thermoplastic elastomer)
By further promoting asymmetric SIS that has superior strength and elasticity, the company will further expand the domain of SIS, while differentiating products, such as flexography, protective films, adhesive tapes, and hot-melt adhesives, in addition to elastic films and adhesive labels. Recently, the applications are expanding in sanitary fields, for example, for disposable diapers.
Sales of disposable baby diapers are growing by 6% a year. In the future, further development of products other than sanitary materials such as adhesive labels and flexography are expected, and it's predicted to exceed the initial plan by FY 2020.
The sales volume of asymmetric SIS in the fiscal year 2020 is expected to increase by about 15 times from that of the fiscal year 2017. (It grew six times as of April 2018.)

◎ PSC (Powder Slush compound)
The company copes with market expansion by a structure based on its three bases in Japan, China, and Mexico.
Powder Slush compound (PSC) is a compound for slush molding and made from PVC. It's used in interior skins of automobiles for its superior design, mold processability, and low-temperature properties.
The utilization of PVC/PSC by automobile manufacturers in Japan and overseas is expanding, furthermore, it's being acclaimed by new users, and it's estimated to be used in more models in the future.

Specialty Material Business

◎COP
From 2017, the company is proceeding with a consignment business of molding prototypes of plastic microfluidic chips, etc. using COP by its subsidiary, as the needs for high-quality and affordable chips for conducting analysis and diagnostic tests in the diverse medical and bio markets fields increase.
In this background, the company established the Zeon Opto Bio Lab Co., Ltd. in April 2019 in order to improve its prototyping capabilities in the optics, medical, and bio markets, and offer products and services more actively and quickly by collaborating with domestic and international universities, research institutions, and ventures more than ever.

◎ZeonorFilm®
The company aims to expand the use of its new components, phase contrast film (ZA-Film, liquid crystal coated film), sensor substrate materials (ZC-Film), in the OLED (organic EL display) market aimed at small- to medium-sized display that are expected to grow in the future.
As for cellphones' FPD (flat panel display) market, it is expected to shift from LCD panels to OLED ones in the future.

◎Battery materials
Along with the increase in capacity of lithium ion batteries and applications in automobiles, the use of separators forming functional layers are rapidly expanding to improve safety.
As for the company's battery materials, the sealing materials contribute to preventing leakage of electrolyte and help increase batteries life spans. Additionally, since the launch of binders for batteries' functional layers in 2015, its use has been expanded especially for automobiles and is greatly improving safety. Furthermore, the cathodes and anodes binders do not only contribute to the safety and long life of batteries by reducing the expansion and contraction resulted by charging and discharging, but also catalyze the chemical reaction that occurs on the surface of the active materials enabling more power output.
The sales growth of the company's battery materials is expected to significantly exceed the growth of the overall lithium-ion batteries market.

◎Medical devices

The domestic market of less-invasive medical devices has continued to grow at 2.2% year-on-year, especially the FFR* is a high growth market, which grew more than 20%.

As for the cardiovascular business, the company aims to increase its market share to 30% by the fiscal year March 2021 by improving the accuracy and reliability of optical sensor FFR.

As for the endoscopic business, the company is focusing on providing minimally invasive devices. It launched a new balloon catheter for extracting biliary stones and a new model of biliary stents in the fiscal year March 2019. The company aims to launch new models of biliary stents, hemostatic forceps and clips, FFR successor model, etc. in the fiscal year March 2020 focusing on the endoscopic business.

The company's sales of medical devices are estimated to increase 2 times between FY 2017 and FY 2020.

* FFR (functional flow reserve measurement)

This indicator measures how much blood is obstructed in the case of lesion-caused stenosis in the coronary artery.

◎High thermal conductivity heat release sheet

The company has developed a high-performance pad-type thermal interface material (TIM) with high thermal conductivity in the vertical direction, and it is expecting that this material will solve thermal problems of servers and power devices.

5. Conclusions

The company thinks that although this term will see a drop in sales for the first time in 3 terms, sales rose up one level reaching the 330 billion yen range. As for the elastomers business, the SSBR, in which the company has been proactively investing in Singapore, is mainstay. As for specialty materials, battery materials are acting as a major growth driver as it has made further progress than planned and its market is continuously expanding. In addition, both businesses have products and materials that are starting to emerge. We are watching closely how far the company can go towards its goal “to achieve consolidated sales of over 500 billion yen in FY 2020.”

Reference: Regarding Corporate Governance

◎Organization type, and the composition of directors and auditors

Organization type	Company with an audit and supervisory board
Directors	11 directors, including 3 external ones
Auditors	5 auditors, including 3 external ones

◎Corporate Governance Report

Last update date: : November, 30, 2018

Basic policy

Our company respects the interests of a broad range of stakeholders, including shareholders, and aims to earn revenue and continuously improve our corporate value while adjusting the relations of interests. To do so, we will make continuous efforts to establish a system for realizing efficient, sound business administration through corporate governance.

In addition, we will make decisions and execute business operations swiftly after clarifying the functions and roles of each institution and each in-company organization by developing internal control systems. We will properly monitor and disclose its progress and results and strive to improve the transparency of our business administration.

Reasons for Non-compliance with the Principles of the Corporate Governance Code (Excerpts)

(All principles are stated based on the code before the revision in June 2018.)

Our company follows the principles of the corporate governance code.

Disclosure Based on the Principles of the Corporate Governance Code (Excerpts)

Principles	Disclosure content
Principle 1-4 So-called strategically held shares	・Before strategically holding shares of any other companies, we consider carefully if the strategically held shares of a company strengthen the relationship between us and our business partners, the society and other stakeholders and will eventually enhance our corporate value in a medium- to long-term perspective. ・As for shares held based on these considerations, the company will annually verify the appropriateness of holding shares of each company by considering the appropriateness of its holding purpose and whether the benefits, risks, etc. that come along are commensurate with the capital cost. In this year, the Board of Directors will make the verification in their meeting, which will be held on October 31, and will decide whether to reduce shares of companies that are acknowledged to have lost their holding purpose. ・We will determine when to exercise our voting right of strategically held shares based on a medium- to long-term viewpoint on enhancement of the corporate value of the company that we invest in.
Principle 5-1 Policy on constructive communication with shareholders	・In our company, the Department of Corporate Communications is in charge of interacting with our shareholders, and the executive responsible for CSR manages the office. ・ The Corporate Communications Dept. appropriately exchanges information with the Corporate Planning Dept., the Accounting & Finance Dept., the General Affairs Dept., the Legal Affairs Dept., etc. and provides precise and unbiased information to our shareholders. ・ Our company will continuously strive to enrich methods of communication other than individual interviews, such as holding information sessions for investors on a quarterly basis, improving explanatory materials for our financial results disclosed on our website, and participating in company information sessions for individual investors. ・The Corporate Communications Dept. collates and analyzes opinions obtained through interaction with our shareholders when necessary and report them to the Representative Director. ・ Our company thoroughly manages unreleased important facts in accordance with the “Insider Trading and Timely Disclosure Management Rules”, and communicates with our shareholders to prevent information leak.

Disclosure Based on the Principles of the Corporate Governance Code (Excerpts)

Principles	Disclosure content
Principle 1-4 So-called strategically held shares	After thoroughly considering the business strategy and the relationship between us and our business partners, and depending on the number of shares held, the Board of Directors and the Representative Director will strategically hold shares only after verifying the appropriateness of the strategic holding of these shares, whether the benefits and risks that come along are commensurate with the capital cost, and whether there are more effective ways to utilize funds. Moreover, decision to exercise our voting right of strategically held shares is not made through a formal decision based on concrete standards, instead the approval or disapproval of each agenda is decided after we evaluate whether this agenda meets our

	holding policies, furthermore, we comprehensively consider whether it can benefit the sound management of the issuing company and whether it will enhance the corporate value of the company that we invest in.
Principle 4-8 the effective use of Independent Outside Directors	The Board of Directors consists of 5 members, 3 of which are Outside Directors (audit and supervisory committee members). Giving audit and supervisory committee members voting rights on the board of directors allow to have not only more effective supervision of the Directors and executive officers from an independent and objective standpoint but also fair and transparent management. Furthermore, we registered the 3 Outside Directors (audit and supervisory committee members) as independent Outside Directors.
Principle 5-1 Policy on constructive communication with shareholders	We actively respond to dialog requests from shareholders. Moreover, in addition to holding financial results briefings for shareholders and investors once every half-term, sequentially, we hold small meetings. In our company, the Director and Manager of Administration Division is elected as the IR manager. He/she manages the positions related to IR activities in the Administration Division, etc. and manages daily interdepartmental coordination. The IR manager proactively handles the investors' phone interviews, small meetings, etc. Furthermore, we hold the interim financial results briefing for analysts and institutional investors and the IR manager or the company president offer explanations. Also, we take great care in managing insider information when having a dialog with investors either in a financial results briefing or a small meeting or not, by building a communication themed on topics related to the company's sustainable growth and medium to long term corporate value improvement.