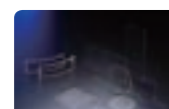


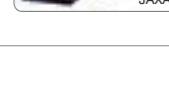
## OHARA History



Provided by: National Astronomical Observatory  
In cooperation with: Mitsubishi Electric Corporation



Provided by: SIGMA Corporation



- **1935 October** Established OHARA Optical Glass Mfg. Co. Ltd. in Kamata, Tokyo by Jinpachi Ohara.
- **1936 November** Started Optical Glass Melting.
- 1944 February** Reorganized as a Joint-Stock Company. Built Sagamihara factory.
- 1954 May** Started Platinum Pot Melting.
- 1958 April** Started Production of "Lanthanum Glass".
- 1961 January** Started Production of "Strip Glass by Continuous Melting Method".
- 1962 October** Acquired the stock of Ashigara Optical Inc. (Japan).
- **1969 July** Installed OHARA Glass in Apollo 11.
- 1975 August** Started Production of "Low Refractive Index Low Dispersion Glass (S-FPL51)".
- 1981 August** Established Ohara Corporation (USA).
- 1982 March** Installed OHARA Glass in Space-Shuttle "Columbia".
- 1983 March** Started Mass Production of "High Homogeneity Glasses". ( $\Delta n \pm 0.5 \sim \pm 1.0 \times 10^{-6}$ ).
- **1984 March** Began Supplying "Cherenkov glass" to National Laboratory for High-Energy Physics.
- 1985 May** Introduced New Company Name "OHARA INC.".
- 1986 September** Established TAIWAN OHARA OPTICAL CO., LTD. (Taiwan).
- 1987 March** Started Production of "High UV (365nm) Transmittance Glass".
- May** Established OPC Corporation (Japan).
- 1988 August** Started Production of "Glass Ceramics".
- 1990 January** Established OHARA GmbH (Germany).
- **1991 September** Started Production of "Eco-Optical Glass".
- November** Established OHARA OPTICAL (M) SDN.BHD. (Malaysia).
- **1993 March** Started Production of "Ultra Low Expansion Glass-ceramics (CLEARCERAM™-Z)".
- 1994 November** Started Production of "Glass Ceramics for Hard Disk Substrates".
- 1997 March** Switched All 112 Recommended Optical Glass Types at that time to Eco-Glasses.
- 1998 April** OHARA acquired ISO9001 certification.
- **1999 January** Installed OHARA Glass in Suprime-Cam in Subaru telescope.
- 2000 January** Started Production of "Low Photoelastic Glass".
- April** OHARA acquired ISO14001 certification.
- October** Started Measurement service for refractive indices at Vacuum UV region.
- 2002 May** Established OHARA OPTICAL (HONG KONG) LTD. (China).
- June** Started Large-scale Continuous Melting.
- December** Established OHARA OPTICAL (ZHONGSHAN) LTD. (China).
- **2005 October** Listed on First Section of Tokyo Stock Exchange.
- 2006 November** Started Production of "Eco-Glasses for optical fiber (for endoscope)".
- 2007 February** Started Production of "Low fluorescence Glasses (for microscope)".
- **September** Installed OHARA Glass in the Lunar Orbiter "KAGUYA (SELENE)".
- 2008 July** Ohara Quartz Co., Ltd. (Japan) became a consolidated subsidiary.
- 2011 March** Established NHG-OHARA OPTICS (XIANGYANG) CO., LTD. (China) (JV).
- 2012 March** Established Taiwan Ohara Optical Material Co., Ltd. (Taiwan).
- August** Installed OHARA Glass in Hyper Suprime-Cam in Subaru telescope.
- **2013 May** Began Sales of "Lithium-ion Conductive Glass-ceramics (LICGC™)".
- 2014 February** Withdrew from the "Glass Substrates for Hard Disks" business.
- **March** "Ultra Low Expansion Glass-ceramics (CLEARCERAM™-Z)" was adopted in the TMT astronomical telescope.
- 2015 March** Began Mass Production and Supply of "Aspherical Glass Mold Lenses".
- October** 80th anniversary of OHARA's foundation.
- **December** Began Sales of "Shock Resistant and High Hardness Clear Glass-ceramics (NANOCERAM™)".
- **2016 January** "Shock Resistant and High Hardness Clear Glass-ceramics (NANOCERAM™)" has been used as high-grade filters "WR CERAMIC PROTECTOR" for interchangeable lenses.
- August** Prototype of solid-state battery that use "Lithium-ion Conductive Glass-ceramics (LICGC™)" worked at -30°C.
- **2017 May** For the first time in the world, we have started dealing with optical glasses designed for automotive cameras.
- **December** "Ultra Low Expansion Glass-ceramics (CLEARCERAM™-Z)" was adopted to the Super Low Altitude Test Satellite "Tsubame" (SLATS).

# OHARA Report 2018



### CONTENTS

Message from Top Management	1
Special Feature 1: About the New Medium-term Management Plan	3
Special Feature 2: Toward Future Growth	5
CSR as Conceived by OHARA	8
About the OHARA Group	9
OHARA Spirit	11
Business Overview (Optical Business)	13
Topics 1: OHARA's Technology to Create Innovative Products, Satisfying a Wide Range of Demands!	14
Business Overview (Electronics Business)	15
Topics 2: Products' Excellent Properties to Create Various Added Value!	16
Sincere Activities	17
Harmony with Society	19
Disclosure of Information	20
Environmental Protection	21
Employee Respect	23
Consolidated Financial Highlights	25
Corporate Profile	26

### Editorial Policy

The OHARA Report informs readers of OHARA INC.'s business activities and initiatives regarding CSR in an effort to present a more easily accessible format to our stakeholders for their understanding.

In our special features, we explain about the new medium-term management plan and management strategies in detail. Along with the voices of our employees who are involved in our business activities, we will report on the business overview of the OHARA Group and its ongoing initiatives including self-assessments.

We hope the readers become more familiar with OHARA through this Report.

### Scope of Report

This report mainly covers the activities of non-consolidated OHARA INC.

\*The figures in the financial reports, however, denote numbers that include the results of the Group companies.



### Inquiries

General Affairs Department, Management Center  
15-30, Oyama 1-chome, Chuo-ku, Sagamihara-shi, Kanagawa, Japan 252-5286  
TEL: (81) 42-772-2101 (Reception) FAX: (81) 42-774-1071  
Website: <http://www.ohara-inc.co.jp/>  
E-mail: [info@ohara-inc.co.jp](mailto:info@ohara-inc.co.jp)

### Reporting Period

FY 2017

From November 1, 2016 to October 31, 2017

\*There are, however, some references to activities for FY 2018.

### Date of Issue

January 2018

Previous issue: January 2017

Next issue: Scheduled for January 2019

### Reference Guidelines

GRI, *Sustainability Reporting Guidelines 4 Edition (G4)*

Ministry of the Environment, *Environmental Reporting Guidelines 2012*





## ● Looking Back on the Previous Medium-term Management Plan

### Advancing “Conversion of the Business Structure” for the Three Years that Led to Business Recovery

For the OHARA Group, FY 2017 was the year to conclude the three-year medium-term management plan, positioned as the third phase of the “Long-term Vision 2020”. In this previous medium-term management plan, the themes of “conversion of the business structure” and “building a new driver for growth” were raised in response to decreasing demand for optical glass, and reforms were carried out to recover growth capabilities and profitability over three years, beginning in FY 2015.

Regarding the business environment during the period of the plan, the shrinking of the digital camera market proceeded at a faster pace than expected. Particularly in FY 2016, the suspended operations of the melting furnace restarted in line with a temporary recovery of optical glass demand, but the demand fell again, resulting the capital efficiency to worsen. Therefore, sales in the Optical business deteriorated significantly.

In these circumstances, regarding the operating conditions in FY 2017, demand for lens materials for high-luminance, high-definition projectors and car-mounted sensing cameras increased, and initiatives on downstream products progressed steadily. Furthermore, measures to improve raw materials procurement and manufacturing yield also succeeded, compensating for the sluggish sales of products for digital cameras, and the Optical business successfully returned to profitability. For the Electronics business, we captured the booming capital investment demand backed by the development of IoT and increase in data communication volume, expanded sales of products for semiconductor manufacturing equipment and FPD exposure equipment, as well as sales of glass materials related to optical communication, which led to increased sales and profit. As a result, regarding consolidated operating results for FY 2017, both net sales and profit exceeded the forecasts at the start of the fiscal year. We achieved all the numerical targets set in the previous medium-term management plan (revised in December 2015): “24.0 billion yen or more in net sales”, “1.0 billion yen or more in operating income”, “ROA of 2% or more”, “rate of interest-bearing liabilities to total assets of 12% or less”, and “sales ratio of the Electronics business of 30% or more”.

In the previous medium-term management plan, we aimed for a “conversion of the business structure”. We achieved the above results while implementing a shift of manufacturing facilities and resources from the Optical business to the Electronics business. Therefore, we believe we have successfully built the foundation of the conversion. However, for the other theme of “building a new driver for growth”, we are still working towards the goal, as the central pillar of the theme—the adoption of shock resistant and high hardness clear glass-ceramics (NANOCERAM™) for smartphone devices—did not proceed as planned.

## ● Aims of the New Medium-term Management Plan

### Strategic Shift to Key Markets, Working Towards a “Return to the Re-growth Track”

The new medium-term management plan (FY 2018-2020) that has begun strives for a “return to the re-growth track” as the fourth phase of the “Long-term Vision 2020,” and OHARA is building a strong business foundation to achieve sustainable growth from 2020 onwards. Accordingly, we need to continue reducing our dependence on the digital camera market where demand has decreased, and maintain the operation rate of manufacturing facilities by drawing on demand from new markets, while working to improve profitability by creating high added value products.

Our initiatives are positioning “the mobile and mobility market” as a new key target, including advancing the development of electric vehicles (EV) and automatic driving in automobiles, the practical application of 5G communication systems and the expansion of optical communication infrastructure and the widespread popularization of mobile wearable devices and aiming to capture the demand from this growth market that utilizes the next-generation technology of optoelectronics.

To realize a contribution to this new market, we created a policy of “Materials & Solutions”. Over the past 82 years, the OHARA Group has accumulated a track record by providing value in the existing optics market through “a customer-oriented approach and material-tuning capabilities”. However, for business development in the mobile and mobility market, as a newcomer, OHARA needs to build up the reputation. Therefore, besides getting a good grasp of our customers’ entire supply chain—from processing companies, manufacturers of assembled products, to manufacturers of end products, we also need to promote utility values of materials by making proposals that include solutions.

Going forward, we will continue to closely “observe” our clients and markets to identify the needs more clearly, display proposal capabilities to “resolve” specific problems in the supply chains, and “lead” ourselves to transform into an organization that can realize the above goals. Accordingly, OHARA will carry out internal branding based on the keywords “observe, resolve, lead”. Aiming to shift from a materials supplier that melts glass, to a company that melts and resolves customers’ issues by providing “Materials & Solutions”, we will strive to instill the concept in all employees of the OHARA Group.

## ● Targets and Business Strategies Going Forward


### Promote Company-wide Strategies Through “MMB Promotion Project”

In the new medium-term management plan, we have set the targets of “30 billion yen or more in net sales” and “2.4 billion yen or more in operating income”, and aim to raise the sales ratio of the Electronics business from the current 38% to 40% or more in FY 2020. Our initiatives include the establishment of NANOCERAM™ as a new growth driver, and the promotion of downstream products development through aspherical glass mold lenses, where an investment of 0.9 billion yen is scheduled for construction of a new factory. While implementing these growth investments, we are aiming for “ROE of 5% or more” and “rate of interest-bearing liabilities to total assets of 8% or less”.

In terms of business strategies, we facilitate information sharing and strengthen marketing function by launching the “MMB (Mobile Mobility Battery) Promotion Project” in a horizontal organization and approaching the mobile and mobility market. The project’s initiatives over the three years are as follows: Expand the adoption of optical glass exclusively for car-mounted sensing cameras, focus on winning adoption of NANOCERAM™ for smartphone devices, and in the batteries field, develop additives for existing liquid batteries while observing a practical application of solid-state lithium ion batteries, so as to spread the OHARA brand in the market.

In FY 2018, the first year of the plan, the increased demand in both the Optical business and the Electronics business is expected. As we also anticipate further improvements in the profit of the Optical business, we forecast net sales of 25.4 billion yen (up 3.1% year on year), and operating income of 1.8 billion yen (up 4.9% year on year).

By steadily implementing the new medium-term management plan, we will realize sustainable growth and corporate value enhancement, and also continue creating and providing new values that will contribute to the creation of a future for people and society. We would like to ask for the continued support and understanding of our shareholders, investors, and all other stakeholders of the OHARA Group.



Hirokazu Saito  
President, Chief Executive Officer

# OHARA VISION 2020 & BEYOND

## Review on the Third Phase of Long-term Vision 2020

In the FY 2015-2017 medium-term management plan (the third phase), we set “conversion of the business structure” and “building a new driver for growth” as the basic strategies in order to recover profitability, which had decreased due to effects such as a lower operation rate of optical glass melting facilities in line with the shrinking of the digital camera market, and soaring prices of rare earth, the main raw material of optical glass.

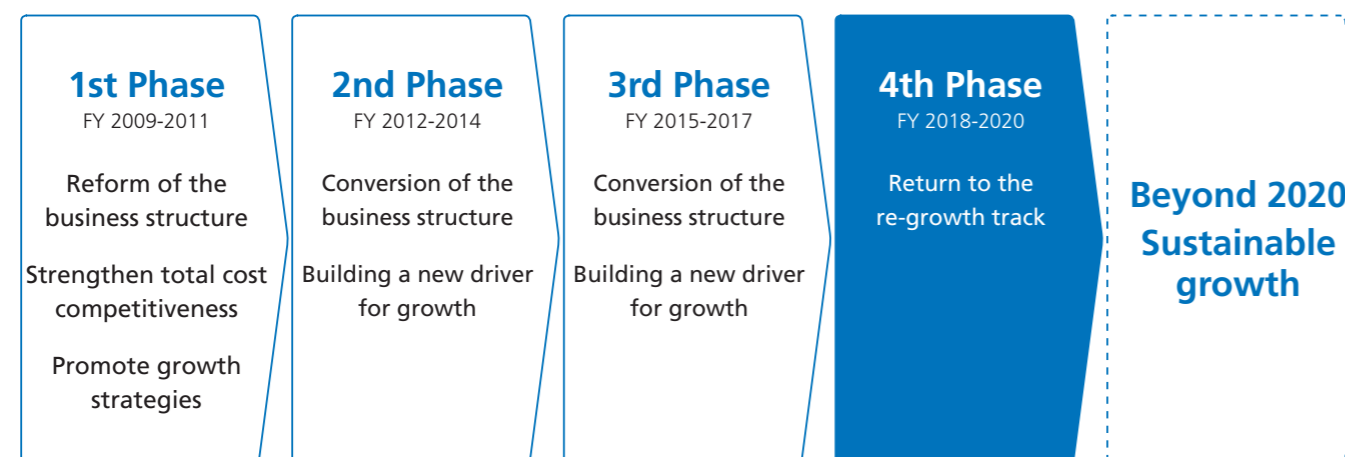
We advanced the optimization of our manufacturing capacity in the Optical business, and promoted the business structure conversion by actively shifting management resources to the Electronics business. In addition, backed by the active capital investment in related markets such as semiconductor exposure equipment, FPD exposure equipment, and optical communication, the sales ratio of the Electronics business exceeded the initial numerical target and rose to 38%. Initiatives to improve the operation rate and reduce costs in the Optical business were also successful, and we achieved all the numerical targets (Revised targets: Announced in December 2015) in the medium-term management plan.

FY 2017 Management Indicators	Initial Targets (Announced in December 2014)	Revised Targets (Announced in December 2015)	Actual Results
Net sales	26.0 billion yen or more	24.0 billion yen or more	24.6 billion yen
Operating income	1.6 billion yen or more	1.0 billion yen or more	1.7 billion yen
ROA (return on assets)	—	2.0% or more	4.3%
Rate of interest-bearing liabilities to total assets	15.0% or less	12.0% or less	10.1%
Sales ratio of the Electronics business	30.0% or more	30.0% or more	37.7%

## The Fourth Phase: New Medium-term Management Plan

The new FY 2018-2020 medium-term management plan represents the final stage of the Long-term Vision 2020.

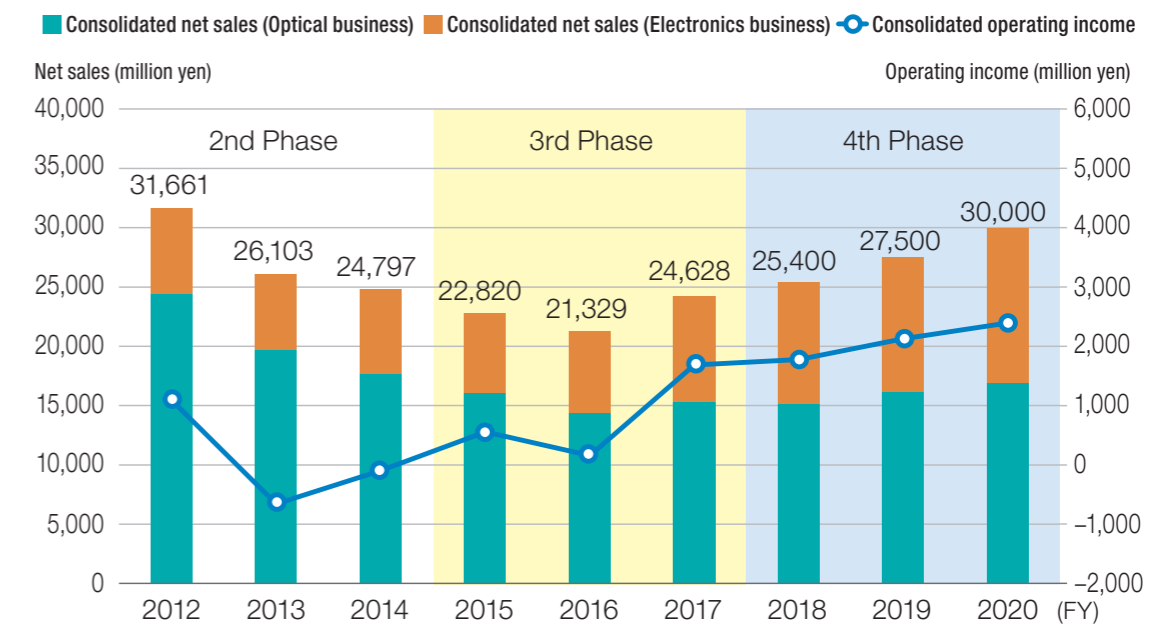
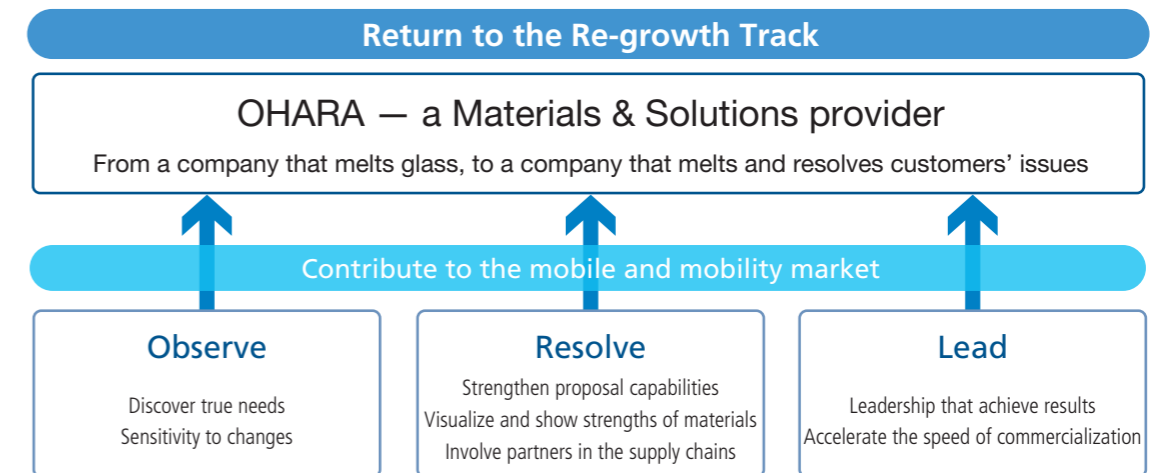
Positioned as the fourth phase and entitled “OHARA Vision 2020 & Beyond,” we will implement initiatives aimed at further improving the financial structure and a “return to the re-growth track” which promotes a next-generation growth strategy, working towards “soaring growth” not only for 2020 but also in the years beyond.



## Key Concept : “OHARA — a Materials & Solutions provider”

The key concept was created with the intention of shifting from a materials supplier to a materials and solutions provider—from a company that melts glass, to a company that melts and resolves customers' issues.

We focus on the “mobile and mobility market” as a growth market that utilizes the next-generation technology of optoelectronics. To make contributions in this new market, we will closely observe the needs of the market, properly communicate the value of our materials, and connect necessary partners for the supply chain in our proposals to introduce the strengths of our products to customers. Through these efforts, we aim to be a company that will resolve the issues of our customers.



Management Indicators	FY 2020 Targets
Net sales	30.0 billion yen or more
Operating income	2.4 billion yen or more
ROE (return on equity)	5.0% or more
Rate of interest-bearing liabilities to total assets	8.0% or less
Sales ratio of the Electronics business	40.0% or more



## Key targets in the growth strategy have shifted to new markets. We will steadily build a business foundation that leads to our next round of soaring growth, and aim for development as we progress towards becoming a century-old corporation.

The three-year period of the final stage of the long-term vision in 2020 has begun. The OHARA Group will further promote the “conversion of the business structure” through existing initiatives, and shift the key targets in the growth strategy to new markets, working towards the next round of soaring growth. In this feature, we interviewed three Directors in charge of managing the main divisions across the entire Group about the missions of the new medium-term management plan and future direction.

### Beyond enhancing and expanding our own technologies, we will realize a paradigm shift in technological development through an open innovation orientation.

The source of sustainable growth the OHARA Group aims for lies in its technology as well as research and development capabilities. The mission of the technology division in coordination across organizations based on the new medium-term management plan is to pursue value creation that leads to the resolution of customer and market issues while serving as a “brain” in technologies, by integrating sales and marketing activities that cultivate the mobile and mobility market, thereby to contribute to a higher profitability.

In the production division, while maintaining the solid base in the Optical business and advancing the shift of manufacturing facilities and resources to the Electronics business, the main goals include keeping the flexibility to adapt to changes in demand and strategies, and achieving improved efficiency.

Initiatives of the production and technology divisions which support the provision of “Materials & Solutions” will focus on the following: Accelerate the development of thin plate technology that facilitates our entering into new businesses; add further value to and differentiate downstream products; and developing applications for energy-related components and in the smart life field by enhancing the high- and multi-functionality of glass ceramics.

Going forward, to realize a paradigm shift to speedier technological development, beyond enhancing and expanding its own base and core technologies, the OHARA Group will actively utilize external technological assets, through conducting open innovation-oriented research and development and expanding the number of technological points of contact with the customers.



**Hitoshi Sekido**  
Director, Senior Managing Executive Officer  
In charge of production and technology

### Improve profitability by narrowing down activities to new markets. Focus on nurturing human resources, and pass on sustainable growth to the next generation.

Business development in the mobile and mobility market and the batteries field is an inevitable direction to take for the OHARA Group to move away from its dependence on the existing optics market and secure growth in the future. For that reason, our mission of the sales and marketing divisions under the newmedium-team management plan is driven by the group-wide “MMB Promotion Project” to concentrate on activities focused on the new market, and to improve profitability.

Up until now, in the optics market, sales were mainly targeted at camera manufacturers that were close to end users, and it was relatively easy to capture needs required from end products and “tune” materials. However, to take a “Materials & Solutions” sales approach in the mobile and mobility market with the long and complex supply chain, we need to raise the degree of exposure and communication skills to enhance the recognition of the OHARA brand and its penetration. At the same time, while aiming to strengthen our proposal capabilities by working on how we present and communicate applications along with the high functionality and added value of materials, we need to show the possibilities that we can offer as business partners more effectively.

Going forward, we will focus on nurturing human resources, particularly marketers, and by passing on sustainable growth to the next generation, the OHARA Group aims to lay the groundwork for a century-old corporation.



**Tetsuya Aoki**  
Director, Managing Executive Officer  
In charge of sales, marketing, and intellectual property

### Working towards a “return to the re-growth track”, we will strengthen corporate governance and cultivate a sense of unity in the Group.

In the new medium-term management plan, we expect net sales to increase by about 22%, operating income to increase by about 40%, the expansion of business activities and improved profitability in three years. From a financial strategic perspective, to achieve these goals in the digital camera market that is in the maturity stage, we will raise profitability through sales expansion of downstream products such as aspherical glass mold lenses and polishing preforms. Simultaneously, in the mobile and mobility market where growth is expected, we will aim to improve profitability by realizing the mass production of new glass materials and NANOCERAM™ at an early stage.

Regarding capital efficiency, improving the total asset turnover rate is the key, and it will be important to raise profitability while increasing sales in such fields where differentiation is possible. As indicators for capital efficiency, we have set “rate of interest-bearing liabilities to total assets of 8% or less” and “ROE of 5% or more” as our targets. While maintaining a stable equity capital ratio as a company, we will endeavor to raise ROE steadily.

At OHARA, under a tight management structure with the same number of standing directors and outside directors, we constantly strive to raise the quality and effectiveness of corporate governance, which leads to higher corporate value. At the same time, by endeavoring to share the same vision within the Group, we will cultivate a sense of unity in the Group by priding ourselves on being a company that supports the foundation of “monozukuri (manufacturing)”.



**Takashi Nakajima**  
Director, Managing Executive Officer, Chief Officer,  
Management Center  
In charge of finance and administration



## Management Philosophy

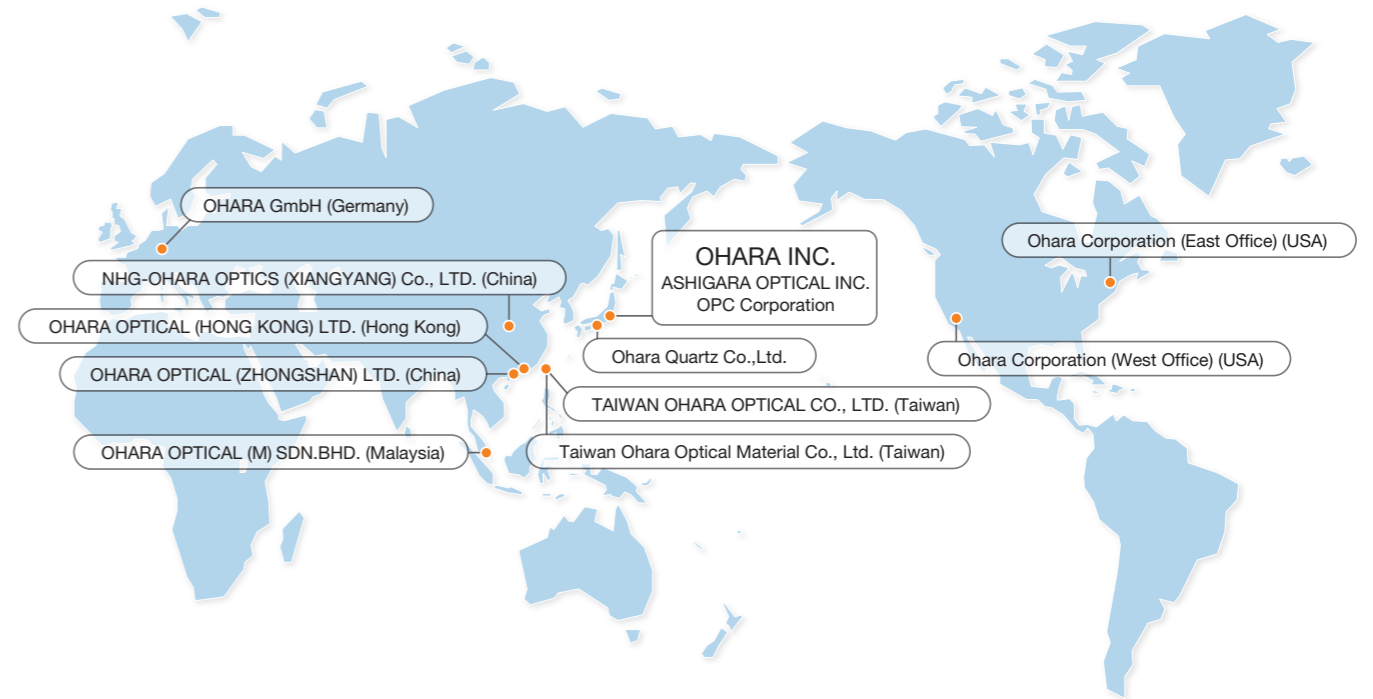
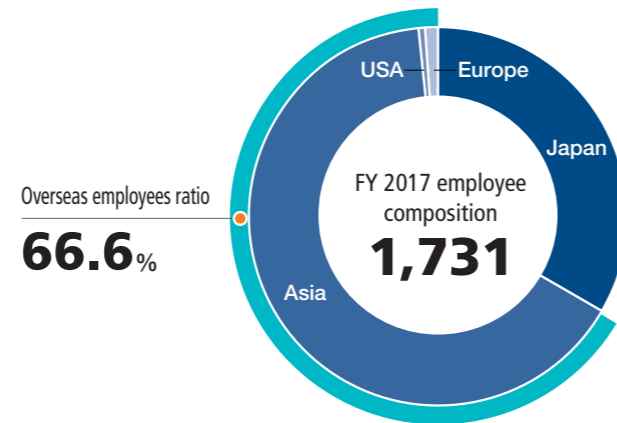
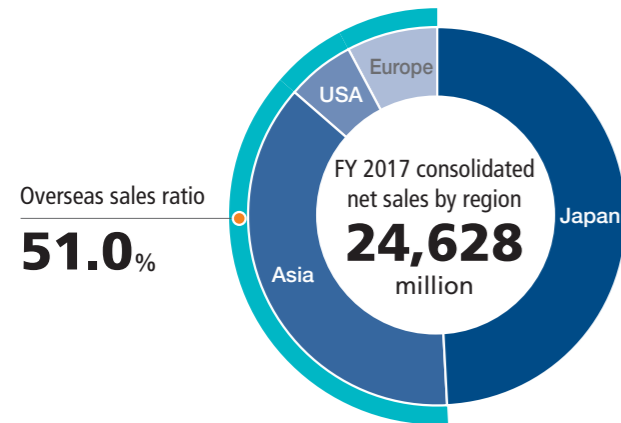
The OHARA Group is honored to keep on creating unique and new values in order to establish a strong company structure for its employees' happiness and for the prosperity of the society.

## Vision Statement

With high aspirations for contributing to the improvement of mankind through technological advances, we will provide high quality, cutting-edge materials for use in the optical, electronics, and environmental / energy fields worldwide. Working closely with our customers, we will constantly pursue innovation and become the "Dream Fulfillment Company".

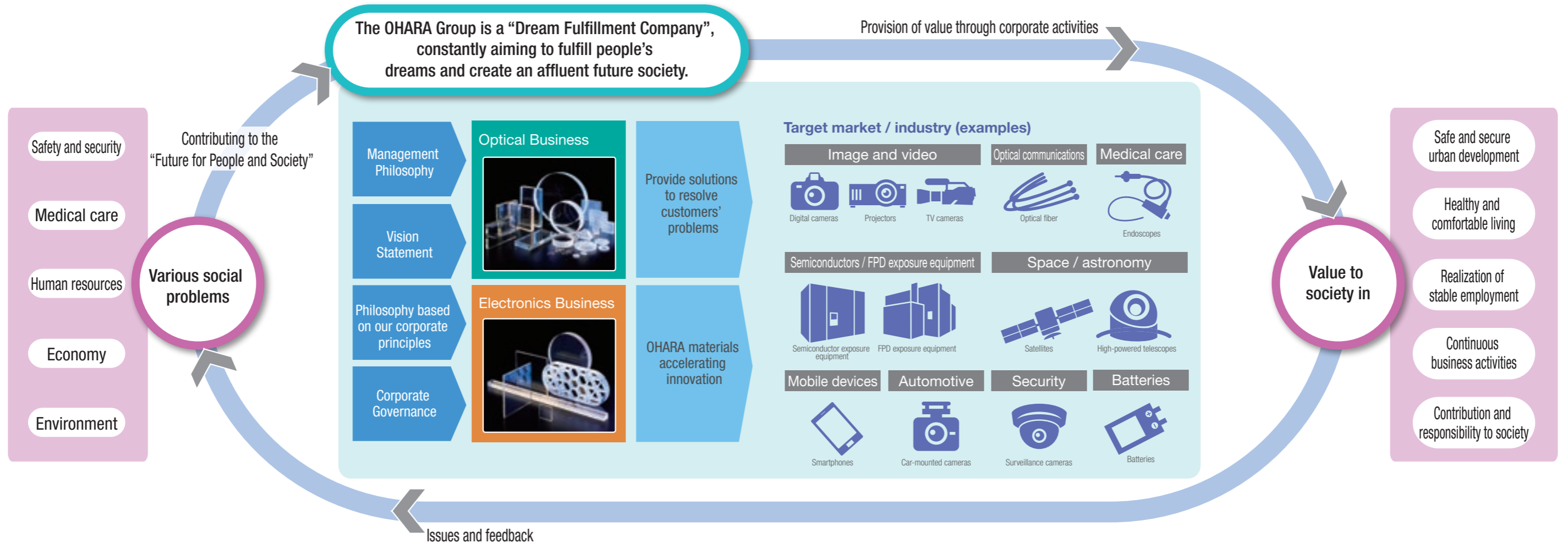


The OHARA Group develops global business in the fields of optical and electronics products.



OHARA Group Value Creation Process

Through these business activities and products, the OHARA Group provides corporate value to all stakeholders. In addition, we invest efficiently to contribute to solving social problems, which will lead us to the provision of the next value.





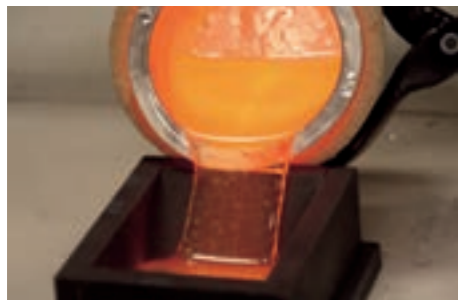
We introduce “research and development”, “quality assurance”, and “production process” that support the business activities of the OHARA Group.

### Research and Development

OHARA pursues all possibilities as we aim to provide advanced materials that can freely control optical, electronic, and other physical properties.

Since its foundation in 1935, OHARA has contributed to the development of Japan's optical industry as a specialized maker of optical glass. Subsequently, in 1985, in line with our 50th anniversary, we transformed into a proposal-based materials manufacturer in response to the diversification of customer needs in the advanced information society.

Shock resistant and high hardness clear glass-ceramics (NANOCERAM™), a proposal-based material, has been adopted in smartphone LCD protection glass films, and OHARA is striving for its adoption in top-grade covers. As it can be dyed in different colors, we are also proposing it to customers as a material for casings, and are conducting tests and development in preparation for its adoption. We are advancing research and development to at least double the level of shock resistance and hardness of new materials as we work towards technology for the next and future generations.



Melting experiment



Colored NANOCERAM™ series

#### Staff's voice

In order to create a new business or application, we are conducting initiatives to develop thin plate forming technology by using melting and molding method which is very suitable for the characteristics of glass.

The mobile and mobility market requires materials with special characteristics not found in existing thin plate glass, or for which research needs to be done on a scale (flexibility) or in a domain (material characteristics) that makes it difficult for thin plate glass manufacturers to conduct. Accordingly, we aim to establish thin plate forming technologies towards the mobile and mobility market by utilizing OHARA's glass composition development capabilities as well as melting and forming technologies.



**Naoto Sato**  
Mold Engineering Development Section  
Advanced Material Product Engineering Department  
Advanced Material Product Division

### Quality Assurance

The “pursuit of the highest quality” is in OHARA's DNA. It leads us to technology that allows us to provide products and services which satisfy our customers, as well as develop and manufacture new world-class materials in the electronics field.

The quality policy states that we will constantly strive to gain greater trust and satisfaction from customers, and we must fully understand the customer's request first. The basis of the OHARA quality assurance is the “customer first” concept whereby quality is determined by the customer.

The OHARA quality management system's conformity with the ISO9001:2015 international standard, which was revised in 2015, was confirmed through an inspection by a third-party certifying body in October 2017, and the certification has been renewed. Since we obtained the certification, through continuous improvements conducted over 20 years, products and services are manufactured using an optimized process, and undergo the analysis and evaluation of OHARA's high-accuracy measurement technology. Therefore, we can proudly provide these products and services to our customers.

#### Quality Goals

- Achieve strategic goals through provision of “Materials & Solutions”
- Improve customer satisfaction level
- Achieve cost reduction goal
- Reduce number of complaints from stakeholders
- Improve quality of operations



Inspection meeting for ISO9001 renewal and migration

#### Staff's voice

In the ISO9001:2015 international standard, requirements related to the strategic direction of the organization have been strengthened. In line with the migration to the new standard, OHARA has established a company-wide horizontal working group, setting quality goals that reflect the business plan and renewing all processes of the quality management system, thereby promoting the integration of the new ISO9001's requirements with business processes. Looking ahead, in response to processes becoming increasingly global, we are aiming to expand quality assurance to our domestic and overseas subsidiaries.



**Yasunaka Kanemitsu**  
Quality Assurance Department  
Business Support Center

### Production Processes

OHARA delivers to the world trusted products and one-stop services from raw material design, characteristic design, to melting, processing and shipment using its technological capabilities, in order to meet both current and future needs of customers.

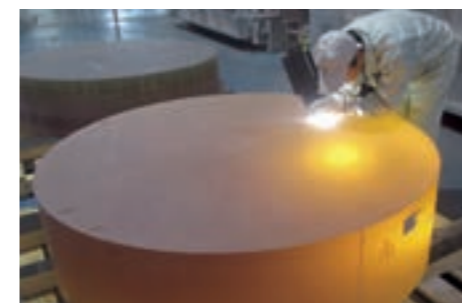
As a result of conducting reforms, improvements and upgrades of manufacturing technology over 80 years, we are always able to stably provide products in the optical glass field, owing to the construction of melting technology that can implement small-scale manufacturing of multiple varieties. In the special glass field, we have developed glass ceramics with distinct characteristics including CLEARCERAM™-Z and NANOCERAM™, contributing to technological innovation in the world.

Also, we have been implementing a manufacturing reform movement throughout the Company since 2004. The activities have borne fruit in recent years, and we are beginning to see signs of massively successful results.

Accordingly, to ensure all elements of OHARA's QCDE (quality, cost, delivery, environment) meet customers' needs, we will continue conducting our own unique activities regarding technological innovation and raising efficiency.



Primary melting (\*1 in the right diagram)



Inspection (\*2 in the right diagram)

#### Staff's voice

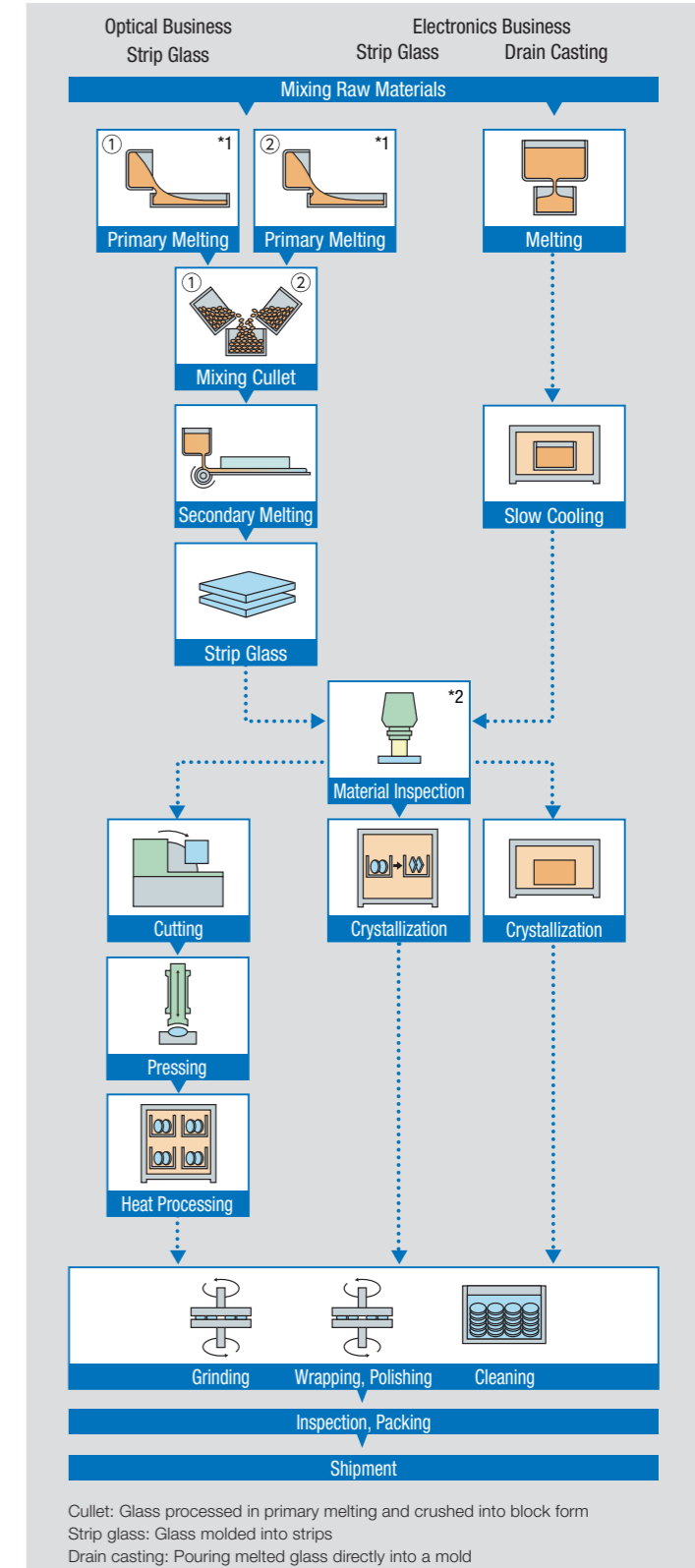
On top of conducting technological innovation to provide quality that leads to customer satisfaction, in order to aim for process management with a high level of accuracy, all members of the staff engage in improvement activities on a daily basis.

Furthermore, we make efforts in nurturing human resources, increasing the number of talented personnel who can make quality evaluations of and conduct maintenance of facilities at their own divisions, leading to achievements of quality and productivity improvements.



**Junichi Andoh**  
Material Production Section 2  
Optical Material Business Unit  
Optical Product Division

#### Manufacturing Methods and Processes



We introduce the OHARA Group's Optical business.

## Optical Business

### Products

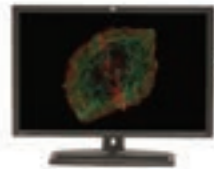
- Optical Glass for Polished Lenses
- Optical Glass for Aspherical Glass Mold lenses (Low Tg Optical Glass)

Optical glass is used in various optical devices such as digital single lens reflex cameras, projectors, television cameras, car-mounted cameras, security cameras and medical devices. At OHARA, we meet all optical design needs with a line-up of over 150 types of optical glasses with the characteristics that enable optical devices to attain higher performances, miniaturization and cost reduction.

The cutting-edge glass materials of the highest quality that OHARA provides support people around the world in their smiles and sense of wonder.



Digital single lens reflex camera  
(Provided by Canon Inc.)



Microscope  
(Provided by Olympus Corporation)

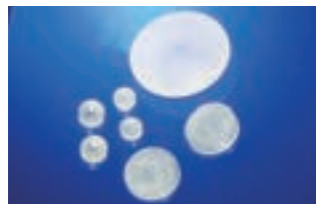


### Optical Glass Products

The optical parts of optical devices are composed of combinations of optical components, including spherical lenses, aspherical lenses, prisms and filters, which are made with multiple types of optical glass with characteristics in its refractive index and/or its transmittance.

In order to attain optical designs for various optical devices, OHARA deals with over 150 types of optical glasses and meets the needs of a wide variety of optical designs for optical devices to enable higher performances, miniaturization, weight reduction and cost reduction. In addition, depending on requests from our customers, we supply lens blanks in a suitable shape to be processed, finished lenses and so on. OHARA provides our customers optical glass products in a wide variety with not only glass materials but also glass components.

### Product Types



#### Reheat Pressings

Products molded in heat press to shapes suitable for spherical polished lenses and prisms



#### Polished Preforms

Spherically polished product in a suitable shape to be processed into aspherical glass mold lenses



#### Spherical Lenses

Finished lenses produced by polishing, centering and coating



#### Aspherical Glass Mold Lenses

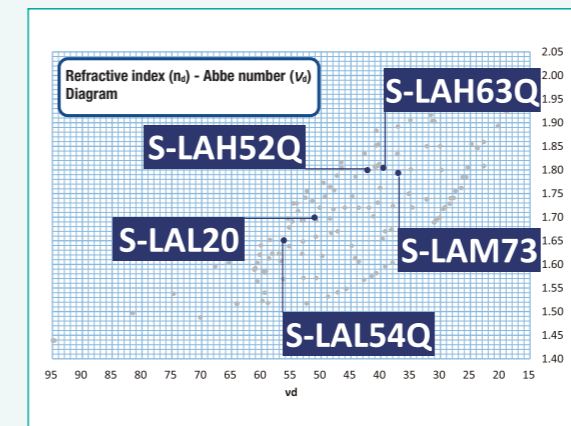
Products fabricated by heating and softening polished preforms and transferring it in a ultra-high accuracy aspheric mold and then supplied after centering and coating

### Topics 1

## OHARA's Technology to Create Innovative Products and Satisfy a Wide Range of Demands!

### For the First Time in the World, optical Glasses for Automotive Camera Lenses

By leveraging OHARA's special technology in the efforts to develop optical glass for automotive camera lenses, we succeeded to produce lens materials solely designed for automotive camera lenses for the first time in the world and have been offering five types of products since the launch of May 2017 (as of November 30, 2017). While designed exclusively for automotive camera lenses in consideration of changes in refractive index in response to temperature changes (refractive index fluctuations), these lens materials can also be used for various optical products including projectors, digital cameras, etc.



### Staff's voice

Because Automotive camera lenses are often used in a harsh environment, there is a great demand for lenses that have specific characteristics in dn/dT (a coefficient which shows changes in refractive index in response to temperature changes), and in chemical properties, etc. The property of glass is subject to the composition of raw materials, and our team succeeded to produce the lens material by leveraging technologies which we have fostered so far.

To provide solutions for our customer's problems, we will continue working hard to the development of optical glasses for various applications by focusing on the raw material composition.



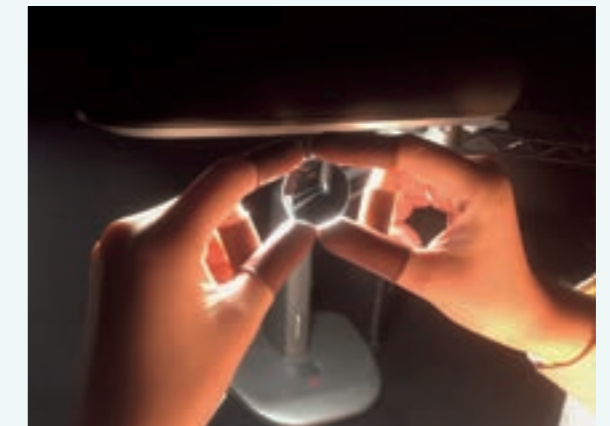
Katsuyuki Mukogawa  
Optical Material Development Section  
Optical Material Business Unit  
Optical Product Division

### Succeeded in Producing Aspherical Glass Mold Lenses with S-FPL55

In order to respond to the wide range of requests from our customers, OHARA continuously strives to develop technologies for aspherical glass mold lenses by utilizing our strengths of glass structure development and manufacturing technology development as a manufacturer of optical glass.

As a result of our special technology development, we succeeded in Producing ultra-low dispersion aspherical glass mold lenses with S-FPL55 which are highly effective for the correction of chromatic aberration, making it possible to homogenize internal quality.

From now on, OHARA aims to supply products to the wide range of markets such as automotive cameras, security cameras, virtual-reality devices, and 4K optical devices for high image quality, and will continue trying to increase the flexibility of optical design.



### Staff's voice

We used to have a great difficulty in inspections in the early stage of development because of the detection of many scratches. However, product quality gradually improved as we repeated tests and improvement, and we finally succeeded in producing the lenses.

We will continue to conduct meticulous inspections so that our customers can trust in good quality of OHARA's aspherical glass mold lenses and use it.



Ayana Hoshi  
Optical Product Production Section  
Optical Product Business Unit  
Optical Product Division

OHARA Optical Data Applications

Android version (Ver 4.0-4.3)

Search for "OHARA" on "Google Play"



iOS version (iOS 7 or later)

Search for "OHARA" on the "App Store"





We introduce the OHARA Group Electronics business.

## Electronics Business

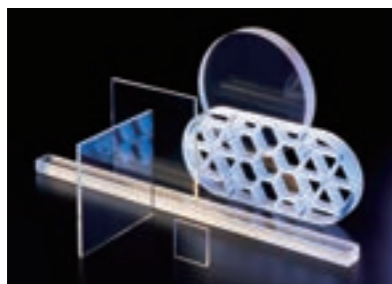
### Products

- Ultra Low Expansion Glass-ceramics (CLEARCERAM™-Z)
- Shock Resistant and High Hardness Clear Glass-ceramics (NANOCERAM™)
- Glass-ceramic Substrate for DWDM Thin-Film Filter (WMS™-15)
- Lithium-ion Conductive Glass-ceramics (LICGC™)
- High Transparent Glass
- i-Line High Homogeneity Glass
- Synthetic Quartz Glass (Ohara Quartz Co., Ltd.)
- Ultra-precision Planar Polishing (OPC Corporation)
- Glass for Art

OHARA's special glass, developed using technology acquired from optical glass, is applied in a wide range of market sectors such as space industries, semiconductors, optical communications, measurement, and the environment and energy.

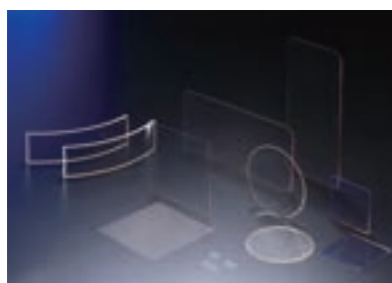
OHARA will continue to develop new products and improve the quality of products for use in cutting-edge areas.

### Ultra Low Expansion Glass-ceramics (CLEARCERAM™-Z)



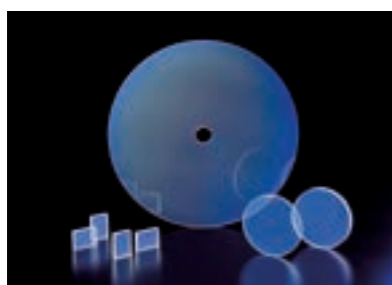
Glass-ceramic of zero-expansion material, developed by our knowledge of the homogeneous glass melting and precise crystallization technologies

### Shock Resistant and High Hardness Clear Glass-ceramics (NANOCERAM™)



Glass-ceramic which we have further improved OHARA's nanocrystallization technology, achieving both superior mechanical properties and high transmittance

### Glass-ceramic Substrate for DWDM Thin-Film Filter (WMS™-15)



Glass-ceramic which achieved the best thermal expansion coefficient and the optimal Young's modulus for multilayer filters

### Lithium-ion Conductive Glass-ceramics (LICGC™)



Glass-ceramics with high lithium ion conductivity. With its excellent material stability, now widely used not only for next generation battery but also for additive to improve current LiB's performances

### i-Line High Homogeneity Glass



Optical glass with excellent internal transmittance and optical homogeneity

### Synthetic Quartz Glass



Synthetic quartz glass with high purity and high quality produced by VAD method (Vaporphase Axial Deposition) originally developed as a manufacturing technology of optical fiber

## Topics 2

## Product's Excellent Properties to Create Various Added Value!

### Unveiling i-Line High Homogeneity Glass

Although optical glass used for camera lenses is well known as glass with high transmittance, it was unnecessary to take into account invisible light at a short wavelength (400nm or less) such as ultraviolet rays in its application.

In the semiconductor industry, however, there is a great demand for glass with excellent transmittance at i-line (365nm) for semiconductor manufacturing equipment and related equipment, following the increase in storage capacity and processor speed.

The high transmittance of i-line high homogeneity glass was achieved by using high-purity raw materials as well as producing through the dedicated production process where impure substances are thoroughly removed.

In addition, this product features another property that almost the same refractive index is measured at any points inside a lens (optical homogeneity), which was achieved by OHARA based on our knowledge of the homogeneous glass melting technology.

Because of this remarkable property, i-line high homogeneity glass is employed in the semiconductor industry and even in space and astronomical fields which require the highest and leading-edge technologies, namely for Subaru telescope, etc.

In order to respond to the demand from the semiconductor industry as well as space and astronomical applications, which is expected to grow even further, we will continue to produce high-quality optical glass.



(provided by Canon Inc.)  
Adopted for an i-line stepper lens

### Staff's voice

i-line high homogeneity glass was developed by refining optical glass of high-quality in itself.

In addition to the high-purity of raw materials, the thorough production process, process management, and quality management surely represent the strength of "Made in Japan".

We will continue to contribute to the world leading-edge technology with our "highest quality".



Ryota Kikuchi  
Advanced Material Product Sales Section  
Advanced Material Product Business Unit  
Advanced Material Product Division

### "Evolution of Lithium-ion Batteries" and "Realization of Next-generation Batteries"

OHARA developed safe lithium-ion conductive glass-ceramics (LICGC™) with high ion conductivity. In contrast to many other solid electrolyte materials, this excellent material is chemically stable against water and an organic solvent and can be handled even in the air. Currently, the substrate material of LICGC™ is used in various companies and research institutes as a solid electrolyte material for solid-state batteries, air batteries, etc., which have received a great deal of attention as next-generation batteries.

In addition to the application for next-generation batteries, we found the input/output property of lithium-ion batteries can be enhanced by adding this material to a cathode of current lithium-ion batteries while maintaining battery capacity. Therefore, this material has in fact received attention from battery manufacturers and automakers. We aim for the launch of this battery additive in 2019. Along with additives, we also worked on the research of solid-state batteries which lately receive increasing attention, and succeeded in a low temperature operation at -30°C in 2016.



Substrate of LICGC™ and powdered material



Demonstration of a solid-state battery operation at -30°C

### Staff's voice

We have been working on the development of battery components including those for solid-state batteries. Following the EV boom in recent years, solid-state batteries and solid electrolyte materials have come to receive a great deal of attention and expectation. We will continue to make efforts to develop solid electrolyte materials, the key component of next-generation batteries with safety and reliability, with which we can contribute to the realization of next-generation batteries and an energy-efficient society.



Yasushi Inada  
LB Section  
LB Business Unit  
Advanced Material Product Division

We will endeavor to develop and provide useful products and services for the benefit of humanity, and to gain the satisfaction and trust of our customers. To achieve this goal, we will observe all laws and regulations. We will respect the culture, customs, and traditions of local societies. We will conduct socially suitable corporate activity through fair, transparent competition, and business dealings.

## Basic Views on Corporate Governance

OHARA's Management Philosophy is that "The OHARA Group is honored to keep on creating unique and new values in order to establish a strong company structure for its employees' happiness and for the prosperity of the society", and we conduct our business activities in accordance therewith.

OHARA endeavors to streamline internal organizational structure and administrative schemes and take necessary measures to realize above Management Philosophy. Moreover, toward our various stakeholders including shareholders, customers, employees and local communities, OHARA strongly believes that fulfilling responsibility as a public instrument of society will maximize our corporate value, and management with transparency and soundness in line with our corporate philosophy is the best approach to corporate governance.

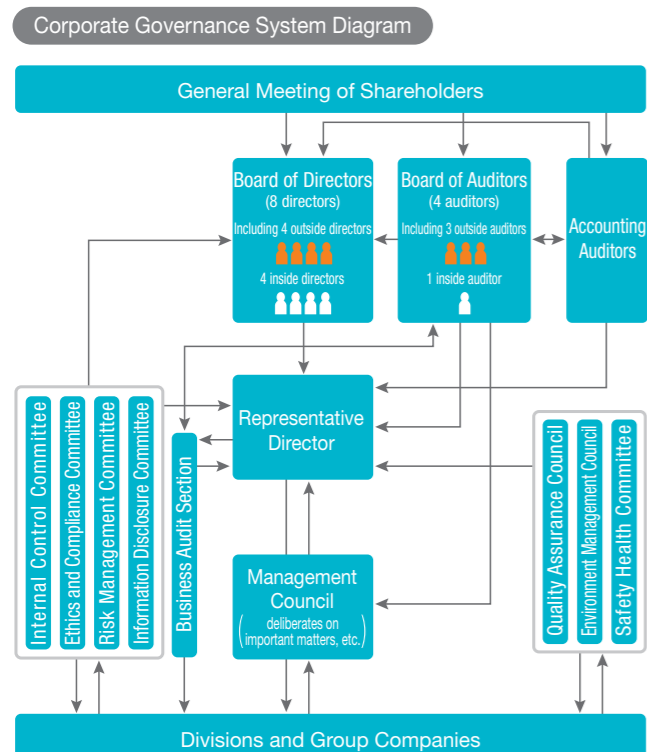
## Initiatives to Enhance Corporate Governance

### Basic Policies on Corporate Governance

Based on the intent and spirit of the Corporate Governance Code, OHARA has established the "Basic Policies on Corporate Governance", with the objective of pursuing the best corporate governance and its enhancement, for the sustainable growth and the improvement in the corporate value of the OHARA Group.

### Corporate Governance System

OHARA has streamlined an organizational structure with the aim of making prompt managerial decisions as well as strengthening business execution function and supervisory function.

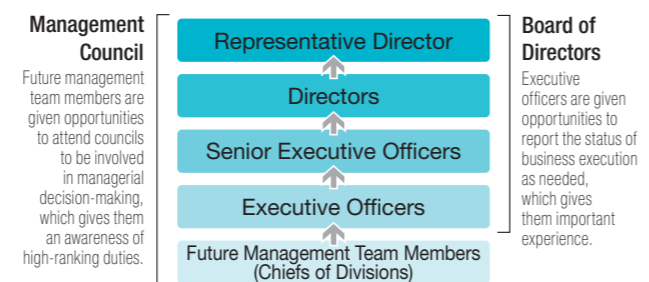


### Analysis and Evaluation concerning the Effectiveness of the Board of Directors

OHARA, in its Basic Policies on Corporate Governance, states that "The Board of Directors shall annually analyze and evaluate the effectiveness of the Board of Directors as a whole, and disclose the summary of the result". Accordingly, we conducted a survey for all directors, which was followed by related analysis and evaluation. Based on the evaluation results, we have been making efforts to improve the preliminary explanation to outside officers for their better understanding of proposals. In addition, recognizing our medium- to long-term business strategy, management direction, and discussion on the successor of Representative Director as issues to be addressed, we have been striving to make improvements on such issues and further strengthen our corporate governance structure.

### Successor Training for CEO (Representative Director), etc.

OHARA selects human resources who are highly qualified as a leader to fulfill the responsibility of CEO and other managerially important posts. We have also established a framework to train such potential leaders by appointing them to positions where they are always given an awareness of high-ranking duties.



- <Requirements for OHARA's Managerial Human Resources>
- Experience in business operation and operating location management, or Group-wide business experience such as strategic planning, etc.
  - Determination and fortitude as a manager - Ability to take risks, make decisions, and execute decisions with an aim to achieve the improvement in the corporate value.
  - Ability to reform - Ability to heighten the morale of an organization and reform an organization to realize what OHARA aims to be, with a perspective not bound to industrial common practice, organizational common sense, or past customs.

## Initiatives to Strengthen Ethics and Compliance

### Compliance Promotion System

OHARA has established the "Guidelines of Conduct" in accordance with OHARA's philosophy based on our corporate principles. The Ethics and Compliance Committee holds a variety of in-house seminars in accordance with such Guidelines on a continuous basis in order to ensure that directors and all employees comply with laws and regulations and execute business activities with a high sense of ethics and in a fair and proper manner.

#### 1. Insider Trading Restrictions Seminar

OHARA holds seminars to deepen the understanding of insider trading on a regular basis.

In FY 2017, we held a seminar mainly concerning the basket clause for employees in managerial posts and staffs who potentially handle important matters, inviting an adviser of Japan Exchange Regulation as a lecturer.



Insider trading restrictions seminar

#### 2. Compliance with Amended Act on the Protection of Personal Information

OHARA has established "Policy for the Protection of the Personal Information" with the aim of ensuring proper handling of personal information as an organization in accordance with "Act on the Protection of Personal Information". Based on this policy, OHARA has also established "Rules for the Handling of the Personal Information" and "OHARA's Handling of the Personal Information". Related seminars are held on a regular basis in order for these rules to be complied with.

In line with the enforcement of Amended Act on the Protection of Personal Information in May 2017, in addition to revising rules, we held a compliance seminar for all employees to deepen the understanding of the act. In this



Compliance seminar for all employees

seminar, in order to deepen the understanding of LGBT as well as Act on the Protection of Personal Information, we also presented a screening of an educational video.

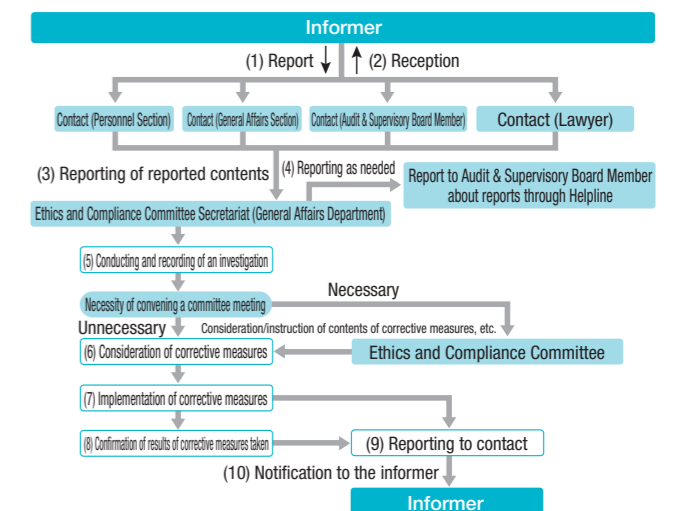
### Codes of Conduct: Guidelines

Based on OHARA's philosophy given our corporate principles and the Guidelines of Conduct, OHARA has stipulated the Codes of Conduct: Guidelines, which specify major points of laws and regulations, response policies and matters of caution to be complied with in conducting business activities and has been holding compliance seminars and providing educational activities for all employees using the intranet.

## Human Rights Initiatives

### Internal Reporting System (Helpline)

OHARA has established an internal reporting system (Helpline) in which a person seeking advice (or informer) can report directly to the Ethics and Compliance Committee.



### FY 2017 Activity Review

## Sincere Activities

In addition to conducting analysis and evaluation of the Board of Directors which we had taken as a task, we addressed the issues recognized in the evaluation such as the improvement of information provision to outside officers, discussions on medium- to long-term business strategy and the successor of CEO, etc. As a result, we have further accelerated our efforts aimed at the sustainable growth of OHARA Group and improvement in the corporate value.

### Self-assessment ... ★★★★★

Target achievement level : ★★★★★ = 100-85% ★★★★★ = 84-70% ★ = 69% or lower

### Issues for FY 2018

To achieve sustainable growth and further improvement in the corporate value, we must continuously evolve the current corporate governance structure into a more effective one. Therefore, we believe it is necessary in FY 2018 to make more substantial discussions on medium- to long-term business strategy and a successor of CEO, etc., while continuing the analysis and evaluation of the Board of Directors for further improvements leading to higher effectiveness.



We will maintain proper company activities so that harmony with local and international societies can be sustained. As “a good corporate citizen”, OHARA is determined to contribute to society.

## ○ Ties with Local Society

### Received the Cleanup Campaign Promotion Contributor Award

OHARA has been conducting cleanup activities of the area around the company site since 2004. The activities were acclaimed by a regional association which nominated us, and we received the Cleanup Campaign Promotion Contributor Award from the Sagami City Cleanup Campaign Promotion Council. We are deeply honored that our activities and persistent efforts were acclaimed by people in the local community, and we shall continue our local cleanup activities in the days ahead.



Awards ceremony

### Conducting Disaster Prevention Drills

To prepare for a disaster and ensure that we can act swiftly when one happens, we conduct disaster prevention drills for all employees of OHARA every year.

In FY 2017, first aid firefighting drills were conducted by the Self-defense Firefighters Team formed by employees of OHARA. Under the guidance of the Sagami City Fire Department, drills for participants to experience firefighting and smoke were also conducted, and members of associations in the area also participated.

We will continue making efforts to strengthen crisis management going forward.



Drill with experience of smoke

## ○ Social Contribution Activities

### Accepting Factory Tours and Allowing Experience of Working

As part of the local social contribution activities, OHARA accepts activities such as factory tours given to students from nearby schools.

In FY 2017, 108 third-grade elementary school students participated in the factory tours. Captivated by glass production processes that are normally not shown to the public, their interest in glass grew.

Further, four second-grade junior high school students visited the Company, and deepened their understanding of the manufacturing industry through the direct experience of working in it. In addition, by coming into contact with those who work in the industry, the students commented that they learned about the importance of taking pride in one's work.



Factory tours for elementary school students Working experience

### Participating in the Sagami River Cleanup Operation

In Sagami City, where the OHARA headquarters are located, the Sagami River flows and joins into the Sagami Bay. To protect the rich nature, the “Sagami River Cleanup Operation” organized by the Love Sagami River Club is held twice a year, where the cleanup of the entire river area is conducted.

As OHARA agrees to the intent of this activity, the employees and their families also participate in it along with groups and individuals in the city. To ensure the nature that is currently present can be conserved and connected to the future, we will continue our environmental protection activities.



OHARA employees and their families who participated in the event

### FY 2017 Activity Review

#### Harmony with Society

We proactively conducted ongoing education activities for employees and participated in cleaning activities held by local communities, and successfully raised our employees' awareness regarding harmony with society.

### Self-assessment ... ★★★★★

Target achievement level : ★★★★★ = 100-85% ★★★★★ = 84-70% ★ = 69% or lower

#### Issues for FY 2018

While cherishing our ties with local society, we will continue to accept factory tours and the like, mainly from nearby schools, and participate in events such as enlightenment activities together with other companies, and deepen communication.

To secure the understanding and support from society, we are prepared to maintain a dialogue with the community and, if necessary, to make our company information public.

## ○ Communication with Stakeholders

### Communication with Shareholders and Investors

At the annual general meetings of shareholders held in late January each year, we make efforts to explain our strategy to shareholders in a manner that is easy to understand, and we also send out the “OHARA Report”, a comprehensive report, once a year.

Also, in addition to holding financial report briefing sessions twice a year for institutional investors and securities analysts, the IR department also responds to individual interviews as needed.



Financial report briefing session

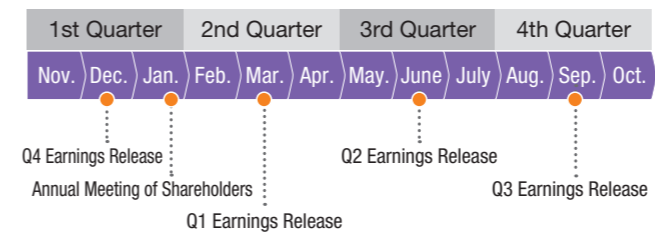
### Communication with Individual Investors

On our website, we disclose various documents, including timely disclosure materials such as flash report result summaries, notices of convocation for general meetings of shareholders, and presentations of financial results materials. In addition, we held briefings for individual investors at securities companies. Furthermore, information relating to opinions received at these briefings and the like is promptly shared with the management, and referred to for corporate activities.



Briefing for individual investors

### Annual IR Calendar



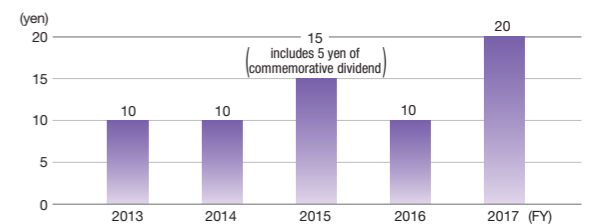
### Record of IR Activities

December 14	Announcement of financial statements for FY 2017
September 14	Announcement of financial statements for the third quarter FY 2017
June 14	Announcement of financial statements for the second quarter FY 2017
March 17	Announcement of financial statements for the first quarter FY 2017
January 26	108 <sup>th</sup> Annual Meeting of Shareholders

### Dividend Policy

OHARA's basic dividend policy is to return profits to shareholders in a stable, continuous manner through a year-end dividend, while also accumulating the necessary internal reserves for strengthening management foundations and future business expansion.

### Dividend Changes



### FY 2017 Activity Review

#### Disclosure of Information

On top of a recovery in performance, as we received a high level of attention for products such as NANOCERAM™ and LICGC™, we had the opportunity to conduct dialogue with many shareholders and investors. Regarding NANOCERAM™, we unfortunately did not achieve our initial planned targets. However, besides explaining the initiative in detail at the financial report briefing session, we also published a summary of the Q&A session on that day on our website, as part of our efforts to enhance information disclosure.

### Self-assessment ... ★★★★★

Target achievement level : ★★★★★ = 100-85% ★★★★★ = 84-70% ★ = 69% or lower

#### Issues for FY 2018

Regarding the new medium-term management plan where we aim for a “return to the re-growth track,” besides explaining it clearly, we believe we are obligated to truthfully report its progress. While adhering to the fair disclosure rules that we are planning to introduce in 2018, we will proactively conduct IR activities, and aim to enhance the mutual communication that we have with shareholders and investors.

# Environmental Protection

We cherish our one precious earth. In all phases of our company activities the preservation of our environment is strongly emphasized. We strive to accomplish this through independent and positive activities.

## Environmental Management

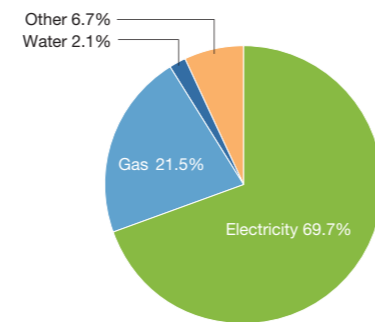
OHARA is promoting a variety of activities with the philosophy and policies for environmental management, aiming at harmony between corporate activities and the global environment.

### Energy and Resource Conservation Initiatives

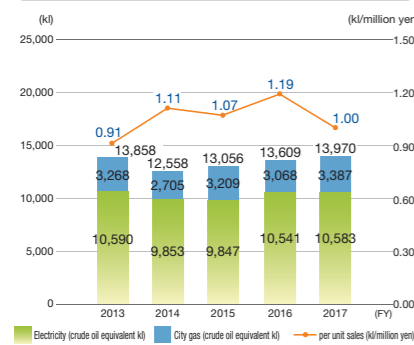
Glass manufacturing consumes much energy (in the form of electricity and city gas). We have been making efforts to curb energy use through changing equipment to energy-saving ones at various facilities, and taking measures to improve efficiency in production.

We will continue to strive to make efficient use of limited resources.

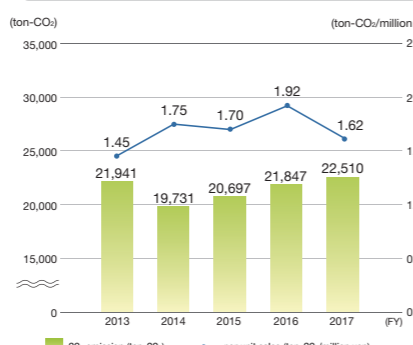
Breakdown of Energy Use (Based on Price)



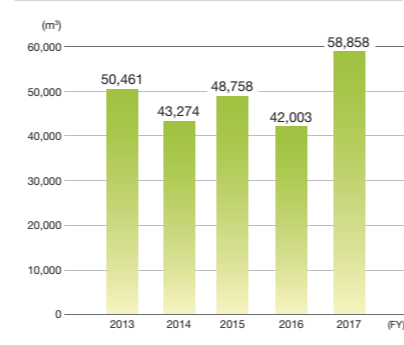
Electricity and Gas Use (Crude Oil Equivalent)



CO<sub>2</sub> Emissions in line with Energy Use

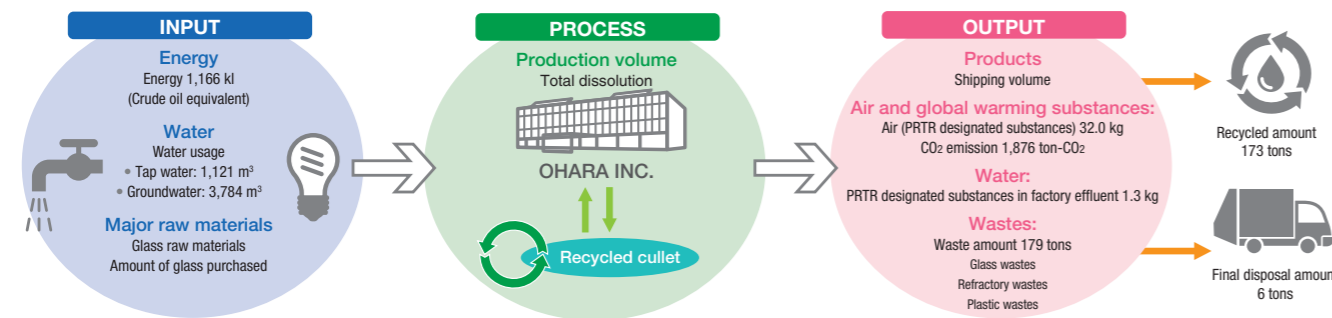


Water Resource Use



## Material Balance

OHARA develops environmental protection activities by quantitatively understanding the amount of energy and resources used in OHARA's business activities (INPUT) and products or substances that burden the environment generated from such activities (OUTPUT). Figures are monthly averages



## Obtaining ISO14001:2015 Certification

OHARA has obtained the international standard ISO14001:2015 certification. Taking into consideration "internal and external issues", "identification of risks and opportunities", "the needs and expectations of stakeholders" and "life cycle", we have established an environmental management system united with our business strategy, and have been operating the system in a way that can lead to "intended results".



Inspection for migration to ISO14001:2015 edition

## Environmental Protection

OHARA successfully obtained the ISO14001:2015 certification in April 2017. We operate the environmental management system while constantly being conscious of all our stakeholders' expectations for OHARA.

In addition, by sharing the importance of environmental protection and improvement activities with manufacturing locations of the OHARA Group, we conducted initiatives by upholding a unified OHARA Group goal for the fiscal year.

In FY 2018, we will make our activities more specific, and do our utmost to contribute to environmental protection and improvement activities on a global scale.

### FY 2017 Activity Review

#### Reducing and Recycling of Wastes

Target achievement level: ★★★

We reduced unit consumption of glass wastes by 19.4%. In FY 2017, various soft measures produced significant results, including yield improvement, and the realization of efficient manufacturing through optimized operations of manufacturing furnaces.

### Issues for FY 2018

We will aim to reduce unit consumption of glass wastes by 1% (compared to FY 2017). We will also aim for similar reductions in both domestic and overseas Group companies.

#### Energy Conservation

Target achievement level: ★★★

We successfully reduced unit consumption of energy by 11.0%. An increase in production volume owing mainly to large furnaces, and improvements in operation rate and acquisition rates contributed largely to the reduction in the unit consumption of energy.

Also, in FY 2017, as per the reduction in unit consumption of glass wastes, various soft measures such as the realization of efficient manufacturing through optimized operations of manufacturing furnaces produced significant results.

We will aim to reduce unit consumption of energy by 1% (compared to FY 2017). We will also aim for similar reductions in both domestic and overseas Group companies.

#### Harmony with Environment in Local Communities

Target achievement level: ★★

We promoted the "No Car Day" campaign and reduced CO<sub>2</sub> emissions by 13.03 tons in a year, but regrettably failed to achieve our target.

We will continue conducting the "No Car Day" campaign to reduce CO<sub>2</sub> emissions by 13.5 tons annually.

#### Contribution to Improving the Global Environment

Target achievement level: ★★

We proceeded with initiatives to promote newly-developed and improved products free from lead and/or arsenic. We implemented principle verifications for the slight schedule delay we had and for improvement needs of existing products in development.

We will continue to promote newly-developed and improved products free from lead and/or arsenic.

#### Adherence to Laws and Regulations

Target achievement level: ★★★

As a measure to strengthen the management structure of chemical substances within our products, we conducted research, evaluation and education activities on our business partners' environmental systems.

We will continue conducting research, evaluation and education activities on our business partners' environmental systems.

#### Countermeasures to Natural Disasters

Target achievement level: ★★★

We conducted the formulation and approval of the long-term plan as well as individual construction work regarding the construction project to resolve rainwater flooding within the building.

We will continue preparing for construction work in the second phase.

Target achievement level: ★★★ = 100-85% ★★ = 84-70% ★ = 69% or lower



The human rights and individual personalities of our employees will be observed and protected. Comfortable working conditions must be arranged. Through an open and fair atmosphere in our work place, we will be able to create solid corporate principles.

## Human Resources Development

### Concept of Human Resources Development

In order for a company to grow and continuously develop, human resources development is of utmost importance, and is positioned as an activity that should be implemented from an organizational and strategic perspective as one of the management strategies. Accordingly, we provide opportunities for employees to learn and grow by themselves, starting from OHARA's new employee training, we adopt a dual approach, providing soft skills of training aimed at strengthening skills for communicating with people in all positions and leadership skills, as well as hard skills taught as specialized education programs related to each employee's work requirements. Therefore, we aim to develop human resources that will contribute to society or to OHARA's development through their personal growth.

### Securing Global Human Resources for Global Operations

We are strengthening our efforts to secure international students from foreign countries, in order to respond to the spread of business fields that OHARA operates in around the world, which will exceed the level thus far. By proactively appointing students that come to study in Japan with high aspirations, we hope that they will help develop business strategies based on ways of thinking in each country for customers around the world, as well as further strengthen communication between different operating locations of the Group.

## Creating a Comfortable Work Environment

OHARA conducts two organizational examinations from 2016, to identify issues and implement measures, aiming to increase job satisfaction and create a comfortable work environment. Also, using the survey results of union members as a reference, opinions were frequently exchanged between labor and management.

We are striving for the creation of a comfortable work environment where each and every employee can build trust relationships with their superiors, colleagues, junior employees and other departments, as well as work with mutual understanding and support.

**VOICE**

**Receiving Training for Sub-Managers**




**Takumi Nishinosono**  
Material Production Control Section  
Optical Material Business Unit  
Optical Product Division

Through the training, I learned that people in different departments and positions have varying perspectives and mindsets due to their differing standpoints, and that my behavioral style was a flexible and powerful one. By utilizing my own behavioral characteristics that I discovered through this training, I plan to proactively take actions such as managing cooperation with other departments, setting up opportunities for dialogue with managers to allow the honest exchange of opinions, and promoting improvement activities in my department.

**VOICE**

**Receiving Training for Team Managers and Leaders**




**Risa Yagi**  
Optical Product Production Section  
Optical Product Business Unit  
Optical Product Division

I reaffirmed my role as a leader, and what my superiors, colleagues and people from other companies require from me. I also learned about my own characteristics, so the training was a precious experience that heightened my awareness towards my responsibilities in my job. While utilizing the characteristics I discovered through this training, I will focus on assigning tasks in a way that is efficient and does not waste resources.

**VOICE**

**Receiving Training for Leadership Positions**




**Ryo Usui**  
Advanced Material Product Sales Section  
Advanced Material Product Business Unit  
Advanced Material Product Division

Through discussions with members of different departments, I reevaluated the meaning of being in a leadership position, and felt that this training was meaningful time spent. I learned how I should act and what is expected of me when I interact with my superiors, subordinates, or members of other departments, and I will adopt the stance of utilizing the knowledge I gained in this training in my work in the future.

**VOICE**

**Using the Shorter Work Hours for Childcare**



**Hitoshi Jingu**  
Environmental Management Office  
Machinery & Purchasing Department  
Business Support Center

As I have gained the understanding and cooperation of others in my workplace, I am able to balance child-rearing and my work. While household chores present a different form of challenge from my work, being able to be with my children and watching them grow allows me to lead a fulfilling life. Also, as I need to go to work at certain designated times, I feel like I have learned how to better use my time. I hope to achieve personal growth through child-rearing and doing household chores.

**Using the skills I've learned and my Chinese language abilities, I will continue to contribute to the company.**

**TAIWAN OHARA OPTICAL CO., LTD. / Taiwan**

Manufacturing Section

**Ding Wen Qing**



**I will contribute to the company by increasing my sales and purchasing capabilities further.**

**OHARA OPTICAL (HONG KONG) LTD. / Hong Kong**

Sales Department

**Tam Ho Yin Sherman**



**Through improved on-site skills and persistent initiatives, I will work on improving productivity.**

**OHARA INC. / Japan**

Material Production Section 2  
Optical Material Business Unit  
Optical Product Division

**Masaki Kato**



**I will build strong relationships of trust through honest communication and interactions.**

**OHARA OPTICAL (M) SDN.BHD. / Malaysia**

Human Resource & Administration

**Siti Masitah**



**I will constantly work hard to improve myself, remembering how I started and always having the spirit of a humble challenger.**

**ASHIGARA OPTICAL INC. / Japan**

Management Department

**Jun Osawa**



**I will enhance my leadership and work skills, and build a structure where local staff can manage the company independently.**

**Taiwan Ohara Optical Material Co., Ltd. / Taiwan**

Management Department

**Huang Sheng Wen**



## Ideal Vision of Oneself in Three Years

**I will construct a structure that enables efficient manufacturing by strengthening cooperation within the Group.**

**OPC Corporation / Japan**

Management Site  
In charge of Yamanashi Factory

**Kazutoshi Yamaki**



**I will move to a position of greater responsibility by further polishing my sales capabilities.**

**OHARA GmbH / Germany**

Sales Department

**Thomas Müllner**



**I will raise my overall abilities by studying information, technologies and such about on-site management.**

**OHARA OPTICAL (ZHONGSHAN) LTD. / China**

Polishing Section

**Che Wei Hua**



**I will raise my work and management abilities along with the company's development.**

**NHG-OHARA OPTICS (XIANGYANG) Co., LTD. / China**

Quality Assurance Section

**Zhang Zhi Yong**



**I will become an engineer that can contribute to the company and society, by improving my knowledge and capabilities.**

**Ohara Quartz Co., Ltd. / Japan**

Production Department

**Yuta Umemoto**



**I will take measures to optimize the billing process using new software and improve efficiency.**

**Ohara Corporation / USA**

Accounting Department

**Donna Phillips**



### FY 2017 Activity Review

### Employee Respect

We implemented initiatives aimed at creating a safe and comfortable environment to work in and at health maintenance of employees. Based on these initiatives, we strive for improved employee satisfaction, reduction of overtime work, and for both work and employees' private lives to be in harmony, in order to enhance work-life balance.

### Self-assessment ... ★★★

Target achievement level : ★★★ = 100-85% ★★ = 84-70% ★ = 69% or lower

### Issues for FY 2018

We plan to proactively obtain opinions from employees, and promote reforms in working styles. Working towards the realization of a work-life balance, reducing overtime work, promoting female employees' active involvement and child-rearing support, and encouraging employees to take annual leave are part of OHARA's planned initiatives to create a comfortable work environment.

# Consolidated Financial Highlights

	2013	2014	2015	2016	2017(FY)
<b>Main Financial Results (millions of yen)</b>					
Net sales	26,103	24,797	22,820	21,329	24,628
Operating income	△ 674	△ 110	538	143	1,715
Ordinary income	765	494	1,316	△ 84	2,242
Profit attributable to owners of parent	△ 4,005	17	545	△ 372	1,513
Net assets	38,971	40,672	41,522	37,040	41,204
Total assets	54,582	54,823	55,130	50,161	54,433
Net cash provided by (used in) operating activities	5,007	3,969	1,573	1,447	1,960
Net cash provided by (used in) investing activities	△ 1,850	△ 576	△ 979	△ 850	△ 1,410
Net cash provided by (used in) financial activities	△ 1,832	△ 1,510	△ 1,137	△ 354	△ 1,736

<b>Per Share Data (yen)</b>					
Net assets	1,582.67	1,650.60	1,706.97	1,522.70	1,693.90
Net profit	△ 164.65	0.71	22.43	△ 15.31	62.23
Dividend	10.00	10.00	15.00 <sup>☆</sup>	10.00	20.00

<sup>☆</sup>includes 5 yen of commemorative dividend

<b>Main Indicators (%)</b>					
Equity capital ratio	70.5	73.2	75.3	73.8	75.7
ROA (return on asset)	1.4	0.9	2.4	△ 0.2	4.3
ROE (return on equity)	△ 10.3	0	1.3	△ 0.9	3.9
PER (price earnings ratio)	—	809.86	26.36	—	35.64
Payout ratio	—	1,402.7	66.9	—	32.1

<b>Segment Data (millions of yen)</b>						
Optical business	Net sales	19,727	17,693	16,105	14,418	15,334
	Operating income	53	74	366	△ 107	688
Electronics business	Net sales	6,375	7,103	6,714	6,911	9,294
	Operating income	△ 728	△ 184	171	251	1,027

\* Beginning FY 2014, with the aim of establishing an efficient management structure, the OHARA Group changed the closing dates of consolidated subsidiaries to match that of OHARA. As a result of this change, consolidated subsidiaries with an August 31 closing date have an irregular financial year of 14 months, from September 1, 2013 to October 31, 2014, and for consolidated subsidiaries with a September 30 closing date, these have an irregular financial year of 13 months, from October 1, 2013 to October 31, 2014.

# Corporate Profile

## Corporate Profile (As of October 31, 2017)

<b>Company Name:</b>	OHARA INC.
<b>Address:</b>	15-30, Oyama 1-chome, Chuo-ku, Sagami-hara-shi, Kanagawa 252-5286, Japan TEL: (81) 42-772-2101 (Reception) FAX: (81) 42-774-1071
<b>Established:</b>	October 1, 1935
<b>Capital:</b>	5,855 million yen
<b>Business contents:</b>	Manufacture and sale of glass materials for optical and electronics applications
<b>Number of Employees:</b>	409 (1,731 for the entire Group)

## Stock Information (As of October 31, 2017)

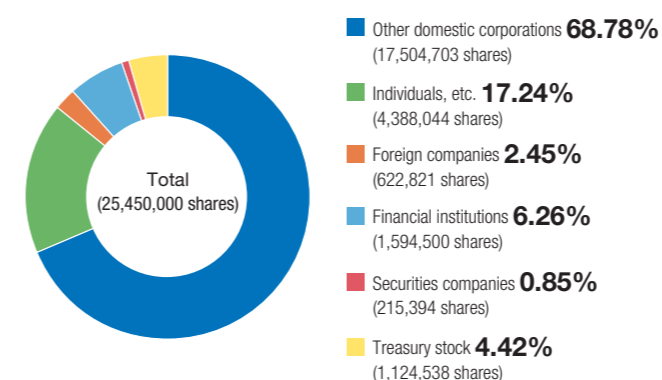
<b>Status of Shares</b>	
<b>Total number of authorized shares:</b>	76,000,000
<b>Total number of issued shares:</b>	25,450,000
<b>Number of shareholders:</b>	7,203

### Major shareholders

Name	Number of shares held	Investment ratio (%)
Seiko Holdings Corporation	4,702,722	19.33
Canon Inc.	4,694,380	19.30
Kyobashi Kigyo Kabushiki Kaisha	4,688,400	19.27
Sanko Kigyo Kabushiki Kaisha	1,638,300	6.73
Japan Trustee Services Bank, Ltd. (trust account)	943,500	3.88
TOPCON CORPORATION	673,600	2.77
Seiko Instruments Inc.	610,000	2.51
Olympus Corporation	400,000	1.64
Japan Trustee Services Bank, Ltd. (trust account 5)	150,200	0.62
OHARA Employee Stockholding Association	140,700	0.58

(Note) Treasury stock (1,124,538 shares) is deducted in calculating investment ratio.  
Treasury stock includes 71,100 of the Company's shares held by the Trust & Custody Services Bank, Ltd. (Trust E Account), in accordance with the introduction of the "Board Benefit Trust (BBT)" system.

## Shareholding Composition



## Member of the Board

President Chief Executive Officer	Hirokazu Saito
Director Senior Managing Executive Officer	Hitoshi Sekido
Director Managing Executive Officer	Takashi Nakajima
Director Managing Executive Officer	Tetsuya Aoki
Outside Director	Akihiro Okuma
Outside Director	Go Tokura
Outside Director	Tatsuya Koizumi*
Outside Director	Seiju Uchida*
Audit & Supervisory Board Member	Keishi Kubota
Outside Company Auditor	Seichi Mikami
Outside Company Auditor	Kazuhiko Nagashima
Outside Company Auditor	Mitsuyoshi Sugita*

Note\*: Outside Directors, namely, Messrs. Tatsuya Koizumi and Seiju Uchida, and Outside Company Auditor Mitsuyoshi Sugita are independent officers based on the regulations of the Tokyo Stock Exchange.

## Information for Shareholders

<b>Fiscal year:</b>	November 1 through October 31 of the following year
<b>Record date for dividends:</b>	October 31 (April 30, in case of interim dividend)
<b>General Shareholders meeting:</b>	End of January of each year
<b>Number of shares per unit:</b>	100
<b>Business Handling Office of shareholder registry:</b>	Stock Transfer Agency Department of head office of Mizuho Trust & Banking Co., Ltd. 1-2-1, Yaesu, Chuo-ku, Tokyo
<b>Method of public notice:</b>	Electronic public notice. (http://www.ohara-inc.co.jp/) If an electronic public notice is impracticable due to unavoidable circumstances, a public notice will be posted in the Nikkei.

	For shareholders with accounts at securities companies	For shareholders without accounts at securities companies (in the case of specified accounts)
Mailing address		Stock Transfer Agency Dept. Mizuho Trust & Banking Co., Ltd. 2-8-4, Izumi, Suginami-ku, Tokyo, 168-8507
TEL inquiries		Toll-free: 0120-288-324 (Domestic calls only) (9:00-17:00, excluding Saturdays, Sundays and holidays)
Handling office	Securities company at which you have your account	Mizuho Securities Co., Ltd. Inquiries will be handled at the head office, branches and the Planet Booth (consultation counter within the Branch) nationwide Mizuho Trust & Banking Co., Ltd. Inquiries will be handled at the head office and branches nationwide *Please note that inquiries cannot be handled at the Trust Lounge.
Payment of accrued dividends	Payment of accrued dividends will be handled at the head office and branches nationwide of Mizuho Trust & Banking Co., Ltd. and Mizuho Bank Ltd. (However, Mizuho Securities Co., Ltd. only acts as the agent).	
Please note:	To request the issue of statements, please apply to the "Mailing address", "Phone inquiries" or "Handling office" stated on the right (in the case of specified accounts).	Specified accounts only handle the purchase or additional purchase of shares of less than one unit. Shareholders will need to open an account at a securities company and take stock transfer procedures.