

OHARA History

- 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 Sagami-hara 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". ($\Delta nd \pm 0.5 \sim \pm 1.0 \times 10^{-9}$).
- 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).
- 2018 June** Participated in evaluation and technological development (second stage) of NEDO project advanced and revolutionary storage battery materials.
- September** Began operations of new "Aspherical Glass Mold Lenses" factory.

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

Provided by: SIGMA Corporation

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.

Business activities will be presented through the voices of those in charge along with topics. In our special features, we explain the progress made in our medium-term management plan and MMB Promotion Project, and report on the ongoing initiatives of OHARA in a structure that follows OHARA's philosophy based on our corporate principles.

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.

Reporting Period

FY 2018

From November 1, 2017 to October 31, 2018

*There are, however, some references to activities for FY 2019.

Date of Issue

January 2019

Previous issue: January 2018

Next issue: Scheduled for January 2020

Reference Guidelines

GRI, GRI Sustainability Reporting Guidelines

Ministry of the Environment, Environmental Reporting Guidelines 2012

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OHARA Report 2019

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Management Philosophy

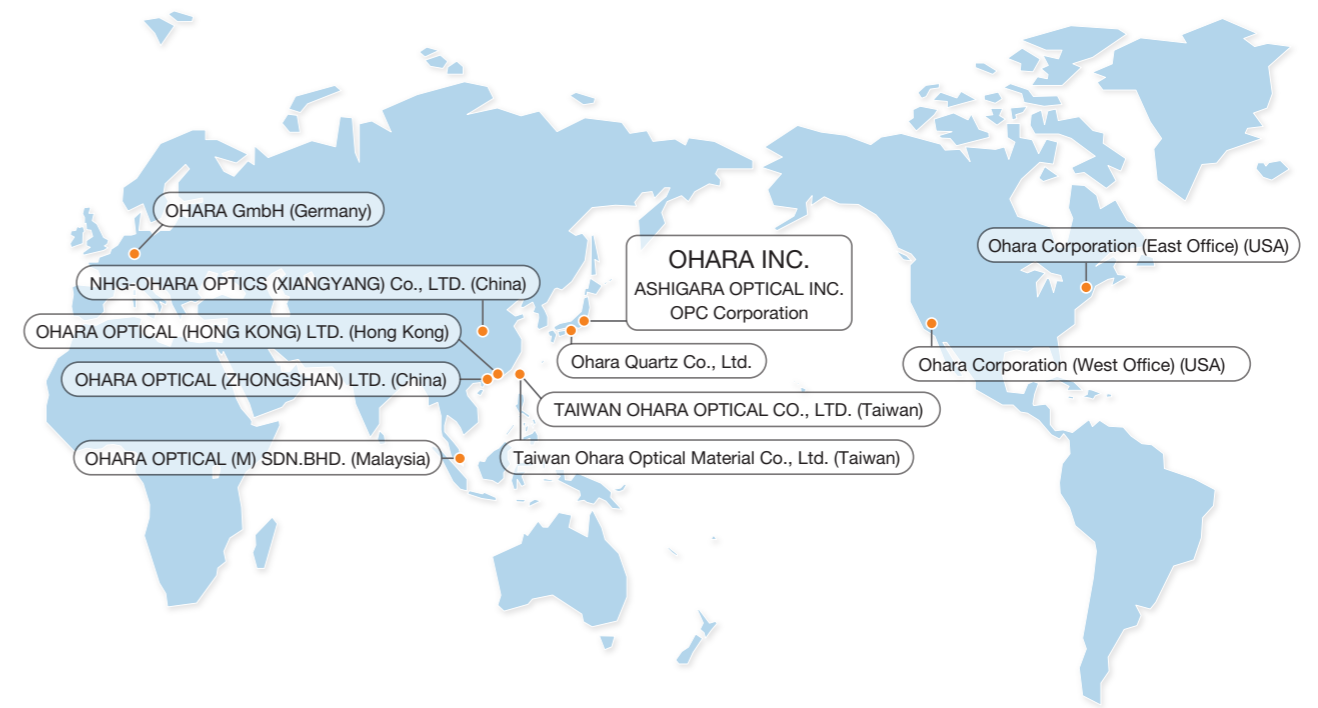
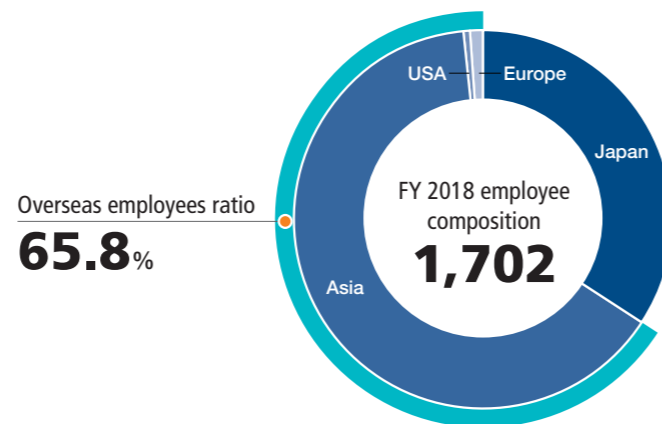
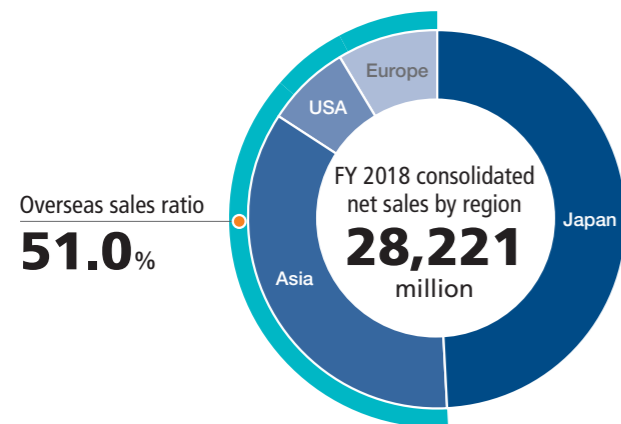
The OHARA Group is honored to keep on creating unique and new values in order to establish a strong company structure for its employees' happiness and for the prosperity of the society.

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".

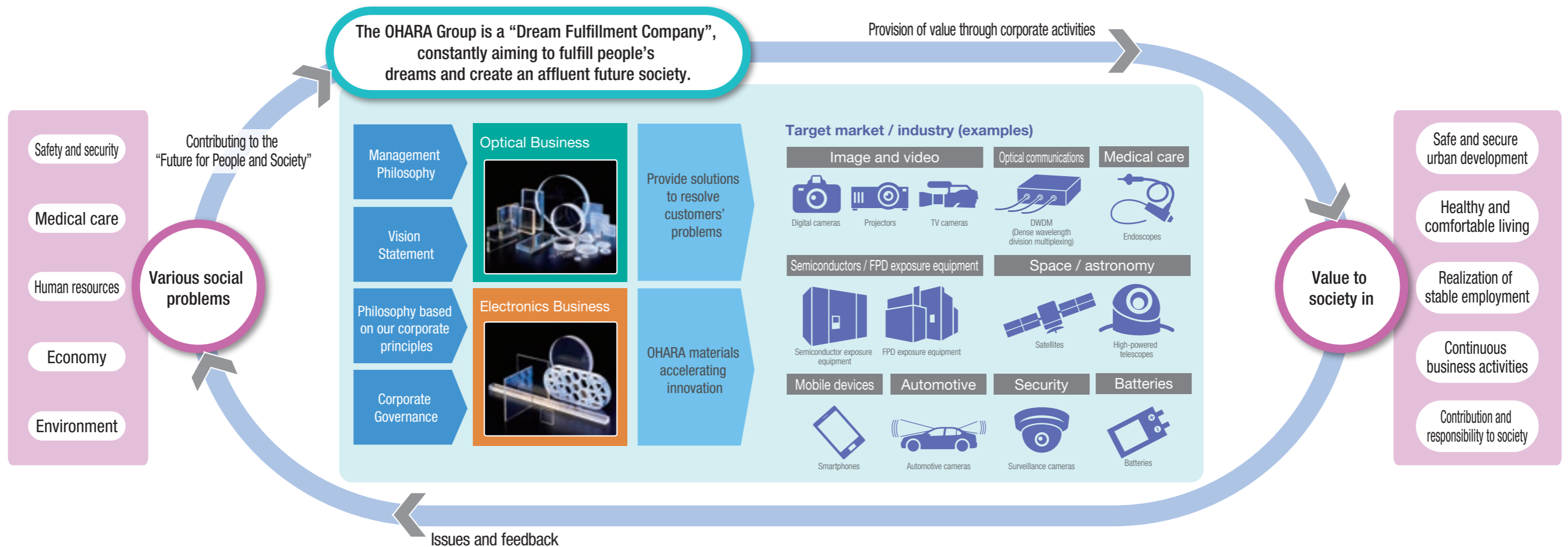


The OHARA Group develops global business in the fields of optical and electronics products.



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.



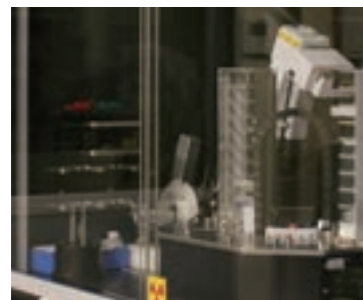
We introduce “research and development”, “quality assurance”, and “production process” that support the business activities of the OHARA Group.

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.

Positioning “the mobile and mobility market” as a new key target, going beyond the development of advanced materials, through the provision of solutions such as technical data and supply chain construction, we continued research and development activities while engaging in dialogue with our customers. We are gradually seeing results such as in lens materials for automotive cameras, and we will continue to conduct development activities via a customer-oriented approach, and to propose new value.



X-ray diffractometer



Film formation mold

Staff's Voice

Lenses for automotive cameras and projectors, etc. require different properties from existing lenses for cameras. As it is hard to judge such properties from the data stated in the catalogs, this creates a source of problems for customers when they select glass materials. To solve this problem, we considered evaluation methods, acquired data and provided them to customers, and felt a great sense of satisfaction when customers were delighted. We plan to continue such efforts.



Akihiro Ninomiya
Optical Material Development Department
Optical 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.

The OHARA 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.

In October 2017, our certification for the ISO9001:2015 international standard was renewed through an inspection by a third-party certifying body. By aligning the OHARA quality management system with corporate strategy policies, we clarified risks and issues that would affect quality, allowing us to provide products and services trusted by customers. At OHARA, quality is also assured through analysis and evaluation via high-accuracy measurement technology. Therefore, we can proudly provide the best quality to our customers.

Quality Goals

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



ISO9001 inspection

Staff's Voice

In the measurement evaluation division, our foremost duty is to contribute to the stable provision to the market of products of the high quality that customers desire, based on the idea of “providing evaluation results for evaluation items promptly and with a high accuracy”. In order to do so, in addition to keeping up the accumulated technical skills and training employees, we also continue challenging to establish technologies that go one step ahead to correspond to advanced technological changes in the market.



Yasuhiko Niitsu
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.

In optical glass production, OHARA works on improving quality and reducing costs each day, by advancing manufacturing technology development without being restricted by existing methods. Furthermore, based on technologies cultivated through optical glass, we are also actively working on the development and production of glass used for specialized applications.

Regarding NANOCERAM™, the glass ceramics with distinct characteristics, full-scale mass production will begin from FY 2018, and we are constructing a manufacturing structure that can achieve the quality desired by customers.

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.



Glass immediately after automatic cutting (*1 in the right diagram)



Molding (*2 in the right diagram)

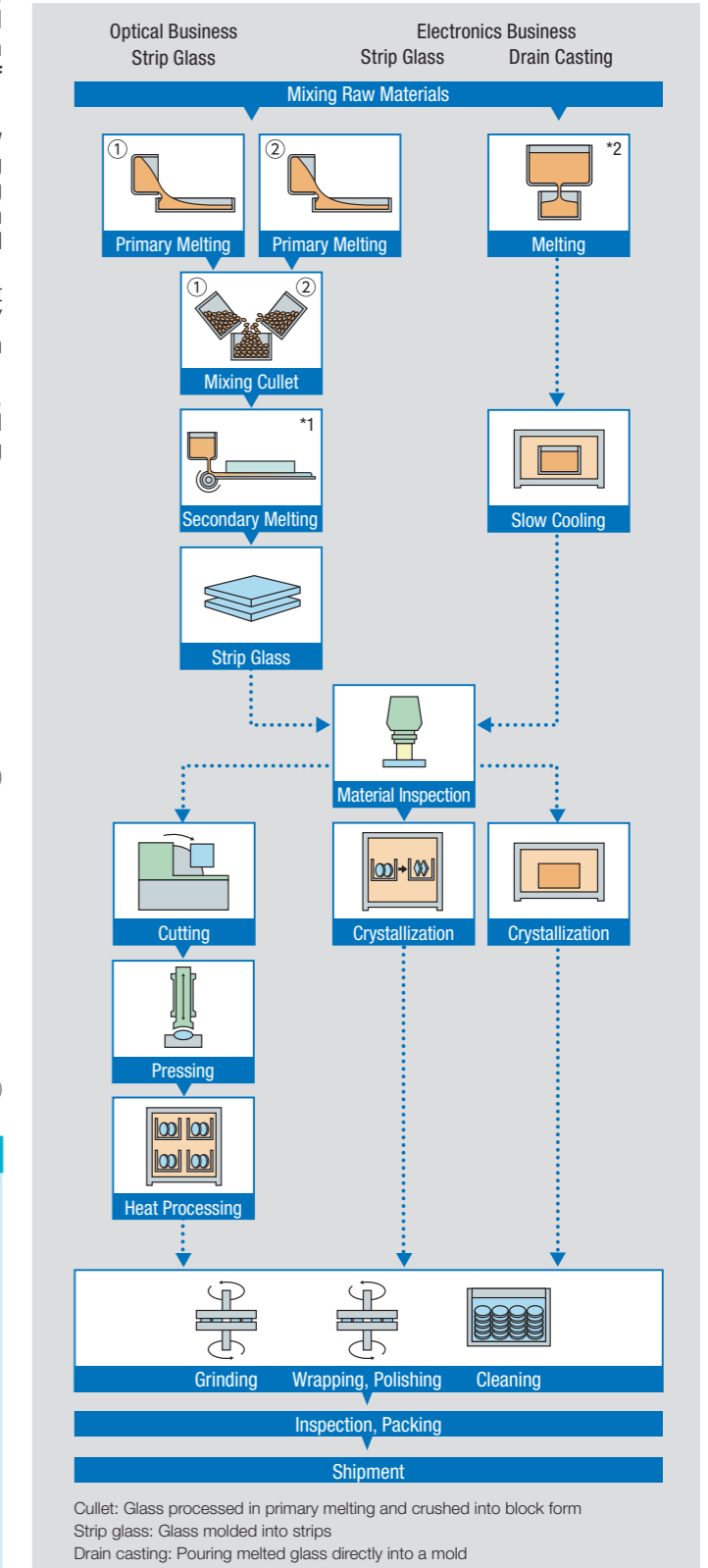
Staff's Voice

Each day, we at the production division work on solving problems and improving yield by checking quality and production statuses and accumulating data on production conditions. Without being restricted by preconceived notions, we make efforts to ensure we do not miss results or occurrences that can lead to technological innovation. By strengthening our cooperation with departments in charge of production control and previous processes, we aim to improve productivity.



Ryosuke Sakai
Manufacturing Department
Material Production Center

Manufacturing Methods and Processes



We introduce the OHARA Group's Optical business.

Optical Business

Products

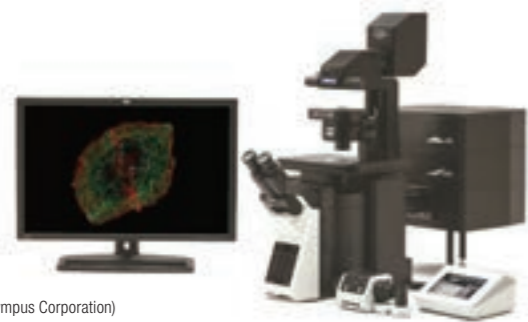
- Optical Glass for Polished Lenses
- Optical Glass for Aspherical Glass Mold Lenses (Low Tg Optical Glass)

Optical glass is used in various optical devices such as digital single lens reflex cameras, projectors, television cameras, automotive 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.



Mirrorless camera, EOS R SYSTEM
(image provided by Canon Inc.)



Microscope
(image 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

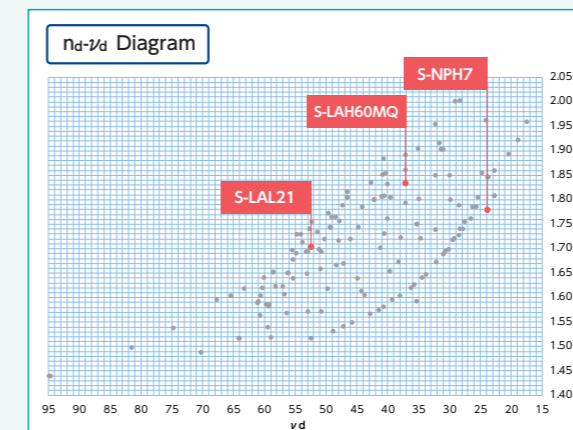
Products fabricated by heating and softening polished preforms and transferring it in an ultra-high accuracy aspheric mold and then supplied after centering and coating

Topics 1

Paving the Way for the Future via Expanding Optical Glass Possibilities and Creating Value

Expansion of Optical Glasses for Automotive Camera Lenses

By leveraging OHARA's special technology in the efforts to develop optical glass for automotive camera lenses, improving chemical durability and mechanical properties, we developed and released three products in FY 2018 of lens materials that consider changes in refractive index in response to temperature changes (refractive index fluctuations). While designed exclusively for automotive camera lenses, these lens materials can also be used for various optical products including projectors, digital cameras, etc.



Refractive index (n_d-1/λ) diagram of optical glass products

Operations of New "Aspherical Glass Mold Lenses" Factory Began

In FY 2014, we succeeded in the mass production of aspherical glass mold lenses, which use low refractive index low dispersion glass that is known to be extremely difficult to manufacture. We are now providing the lenses to numerous customers.

As we have received many inquiries from customers regarding aspherical glass mold lenses, we constructed a new factory within the premises of our headquarters factory, and have begun increasing production since October 2018.

At the new factory, besides the newest clean system, production facilities that leverage OHARA's special technology have also been installed.

Going forward, we will promote technology development to meet the diverse needs of customers, and through aspherical glass mold lenses, we will continue providing new value to customers.



New factory

Staff's Voice

As automotive cameras are usually attached externally, they are used in an environment where they are exposed to dust and flying objects in the air, and rainwater. We developed and commercialized glass materials that can be reliably used even under such conditions. We obtained many new insights from this round of product development, and we will advance the development of next new product by leveraging these technologies, and contribute to the world.



Hiroto Nojima
Material Production Control Department
Material Production Center

Staff's Voice

Since operations at the new factory began, in the clean environment, I feel stimulated and motivated every day. To provide even better aspherical glass mold lenses to customers, we are cooperating within the company, and working hard to execute our duties while refining our skills and accumulating experience.



Akimi Kawachi
Optical Product Manufacturing Department
Optical Product Division

We introduce the OHARA Group Electronics business.

Electronics Business

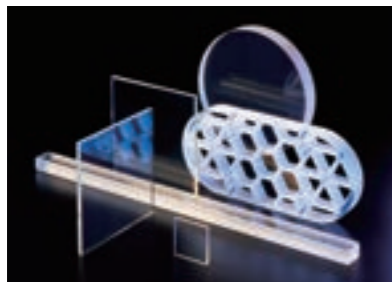
Products

- 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

Special glass, developed using technology acquired from optical glass, is applied in a wide range of market sectors such as space industries, semiconductors/FPD exposure equipment, optical communications, measurement, and the environment and energy.

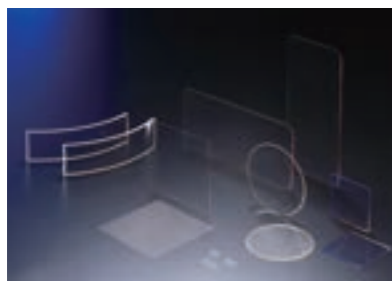
OHARA will continue to develop new products and improve the quality of products for use in cutting-edge areas.

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



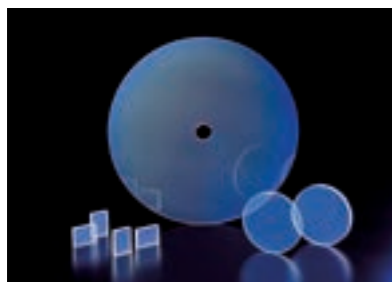
Glass-ceramic of zero-expansion, developed by our knowledge of the homogeneous glass melting and nanocrystallization technologies

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 top-class ion conductivity from its oxide-based solid electrolyte materials, and high levels of chemical stability and water resistance

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 that has excellent properties from deep ultraviolet to far infrared, developed from manufacturing technologies of optical fiber

Topics
2

Developing Materials & Solutions that Meet the Expectations of the World

Glass Ceramics that Meet Requests for the "Strongest Material" that Exceeds Glass

Shock resistant and high hardness clear glass-ceramics (NANOCERAM™) are glass-ceramics that have excellent mechanical properties and realized a high transmittance, after further evolving OHARA's glass ceramics technology, which have been acclaimed in various fields in the past.

In various products such as optical devices and mobile devices where shock resistance is required, we can make new proposals that sapphire crystal glass or chemically strengthened glass cannot realize.

For instance, smartphone manufacturers worldwide face the issue of cover glass breaking problems. Furthermore, going forward, as cellphone radio waves move to the next generation (5G), for the body on the back (casing), existing metal casings will reflect the radio waves and resin does not feel luxurious enough (texture), glass will break, and ceramics will be difficult to process. We have received requests from manufacturers worldwide for NANOCERAM™ to solve all of these problems. Looking ahead, we will fulfill requests of and contribute to customers in a wide range of fields, including wristwatches, smart watches, and automobiles which are increasingly electrified and require glass with high hardness and strength.

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



New Usage for Lithium-ion Conductive Glass-ceramics (LICGC™): Cathode Additive

LICGC™ is an excellent solid electrolyte material with high ion conductivity, and special characteristics of being stable and incombustible against the air, water and organic solvents. LICGC™ is used in the research and development initiatives of many companies and research institutes as a solid electrolyte material for solid-state batteries, air batteries, etc., which are expected to be next-generation batteries.

At OHARA, as a new form of value from the material, we have discovered a usage for LICGC™ as a cathode additive. By adding a small amount of the powdered form of LICGC™ (LICGC™ powdered material) to the cathode of lithium-ion batteries, the time required for charging can be reduced, and the drop in battery capacity in cold regions can be countered. The method of adding LICGC™ powdered material to the cathode is compatible with general cathode manufacturing processes, and the above effects can be achieved by adding LICGC™ powdered material to the cathode slurry, then dispersing and distributing it inside the cathode.

Anticipating the additive effect of LICGC™ in the improvement of functions of lithium-ion batteries for mobile use such as in smartphones and computers, and in automotive batteries for use in HEV, PHEV and EV, companies are conducting the relevant evaluations.

LICGC™ powdered material



Staff's Voice

In the past, OHARA's glass was "an unsung hero that was well-known in the industry, but not known among consumers". However, NANOCERAM™ is extremely close to consumers' lives, such as in how the NANOCERAM™ name can be seen in the end products sold at electronics retail stores. Beyond being a material with high performance, it will grow into a material brand that allows OHARA's tradition and track record to be conveyed to people all over the world.



Kei Chiba
Advanced Material Business Unit
Advanced Material Division

Staff's Voice

In line with the material development of the LICGC™ powdered material, we also worked on the development of applications. Currently, in addition to the usage of LICGC™ as a solid electrolyte material for next-generation batteries, its usage as a cathode additive is also gaining recognition, and OHARA's business activities are receiving a great amount of attention in the battery industry. We will continue working hard to meet customers' expectations and contribute to society.



Ryohei Sato
LB Business Unit
Advanced Material Division

● Initiatives and Results of FY 2018

Optical Business and Electronics Business Both Boomed, with Large Profit Increases

With "OHARA — a Materials & Solutions provider" as its key concept, the OHARA Group formulated the three-year medium-term management plan (FY 2018-2020), and began initiatives aimed towards a return to the re-growth track with the plan as the final stage of "Long-term Vision 2020".

In the first year of the plan, amid the shrinking of the digital camera market, while the compact type continued to be sluggish, for the lens exchange type, demand for mirrorless cameras grew. Furthermore, besides digital cameras, as the demand for high-grade products for projectors, surveillance cameras, and automotive cameras grew, performance in the Optical business including these items expanded. In the Electronics business, there was significant growth, owing to favorable demand for semiconductors in the exposure equipment market, and progress in the adoption of shock resistant and high hardness clear glass-ceramics (NANOCERAM™) in smartphone-related products.

Regarding the factors that led the increase in sales, in recent years, the Optical business has actively advanced the development and investment of new glass materials adaptable to function improvements of optical devices, and their increased adoption led to growth larger than the market growth. Sales of lenses in the downstream domain also increased, and the trend of higher added value pushed net sales up. In the Electronics business, sales of glass for semiconductor exposure equipment which are high in added value grew, and net sales of NANOCERAM™ also boomed from 0.1 billion yen in FY 2017 to 1.4 billion yen.

Among the above increases in sales, particularly the results achieved in new glass materials for automotive cameras and the smartphone-related NANOCERAM™ were shared across the company in the

"Mobile Mobility Battery (MMB) Promotion Project" aimed at penetrating the mobile and mobility market. We are also expanding our presence in the said market.

On the other hand, in terms of profits, due to the shift in melting resources from the Optical business to the Electronics business that has been underway since FY 2017, the operating rate of each production facility has improved significantly, which, coupled with the promotion of cost reduction activities, has contributed to profitability improvement. Furthermore, in terms of net sales composition, as the ratio of higher added value products increased, profit growth in FY 2018 was much higher than predicted.

● Progress of the Medium-term Management Plan and the Future

Making Steady Progress in Entering a New Market, Numerical Targets Revised Upward

The above-mentioned MMB Promotion Project is responsible for the following initiatives: 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 entering "the mobile and mobility market" where the widespread popularization of mobile wearable devices is expected. For business development in this new market, we need to capture the customer's entire supply chain including the end products, and appeal to customers about the utility value of materials we created through proposals that include solutions. The key concept of the medium-term management plan "OHARA — a Materials & Solutions provider" is the result of clarifying this direction and formulating a policy.

Regarding progress in the first year of the plan, starting from the adoption of the NANOCERAM™ prototype for the smartphone body in the mobile market, we aim to expand the adoption to the cover glass, casing, lens cover, etc., as well as make efforts in strengthening the production structure. In the mobility market, the new glass materials for automotive cameras have been highly acclaimed, and are steadily showing results. Currently, as the new "Materials & Solutions", we released optical glass that can correct changes in the refractive index in response to temperature changes, and we are proposing them to automobile manufacturers and component manufacturers.

Regarding numerical targets for the final year of the plan, the targets for operating income and ROE have already been surpassed by a large margin, and we have achieved progress far exceeding our expectations in the first year. Accordingly, we have revised the targets as follows: "30.0 billion yen or more in net sales", "3.5 billion yen or more in operating income", "ROE of 8% or more", "rate of interest-bearing liabilities to total assets of 8% or less", and "sales ratio of the Electronics business of 45% or more".

In FY 2019, demand and production levels are expected to temporarily drop in line with the shift to mirrorless cameras in the digital camera market. On the other hand, in terms of expenses, due to an increase in depreciation costs in line with the enhancement of production facilities,

sales and profit are expected to decrease. Under such conditions, in the Optical business, we will strive to maintain market share by launching new glass materials, and to increase net sales by increasing the production and sales of glass mold lenses. In the Electronics business, we aim to expand sales of NANOCERAM™ to 2.8 billion yen, which is twice of the amount in FY 2018, and steadily accumulate our track record in the field for smartphones.

● To All Stakeholders

Providing Materials & Solutions as a Dream Fulfillment Company

This year, we have increased the year-end dividend by 10 yen year on year, to 30 yen per share. In FY 2019, as mentioned above, although we expect decreases in sales and profit, for the year-end dividend, based on the policy of aiming for long-term stable shareholder returns, we plan to continue with the same dividend amount. In order to repay our shareholders who supported us through times of sluggish performance in the past, we plan to maintain the same level of dividends for the moment.

Manufacturing processes in our business activities, especially the melting of glass, are processes that require a large amount of energy consumption. Therefore, we recognize that the products created as a result should have a great effect in terms of environmental protection. For optical glass products, we have realized products free from lead and/or arsenic, and we are contributing to the manufacturing of environmentally-friendly products. Going forward, from the perspective of responding to increased demand for NANOCERAM™, we will begin to innovate melting processes. This will raise the melting capabilities of glass-ceramics beyond its current capabilities, and is expected to be an innovation not only for the production of NANOCERAM™, but also one that will lead to improvements in overall energy efficiency. On the other hand, in the batteries field, while we advance the material development that will support the practical application of solid-state lithium-ion batteries, we will also improve functions of existing liquid batteries using cathode additives, and contribute to the energy conservation efforts of the world.

Through our participation in the mobile and mobility market, the OHARA Group's businesses have more contact points than ever with society. We will lead technological innovation through advanced materials of the highest quality. While supporting our differentiation in later processes and end products, with the aim of fulfilling the dreams of mankind and creating an affluent future society, we will construct relationships that leverage the strengths of materials across the entire supply chain, and provide solutions. We would like to ask for the continued support of our shareholders, investors and all other stakeholders of the OHARA Group, and for them to have expectations for the OHARA Group as a "Dream Fulfillment Company".



Hirokazu Saito

President, Chief Executive Officer

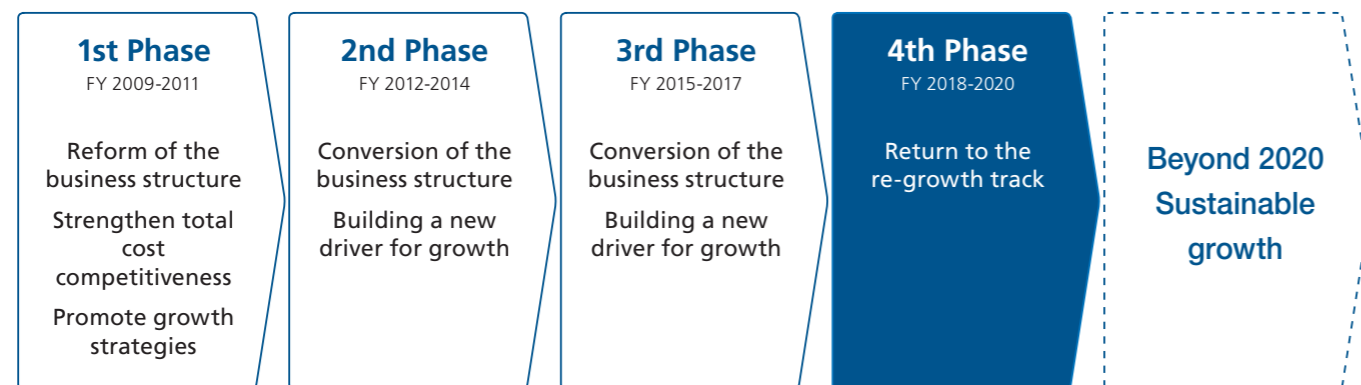
OHARA VISION 2020 & BEYOND

Long-term Vision 2020

In the early 2000s, the camera market expanded in line with improvements in digital camera functions. However, due to the Lehman shock and the subsequent financial crisis that occurred on a global scale in September 2008, the business environment surrounding the optical glass industry deteriorated rapidly.

Faced with such an external environment, in order to construct a business foundation that aims for a recovery in profitability through a review of the production system and development of high value added products, we formulated the “Long-term Vision 2020” in FY 2009. The current medium-term management plan (FY 2018-2020) falls under the fourth phase of the “Long-term Vision 2020”, and is its final stage.

In this fourth phase, 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 FY 2020, but also in the years beyond.



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

In “OHARA VISION 2020 & BEYOND”, in order to grow from a materials supplier to a materials and solutions provider, we came up with the phrase “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.



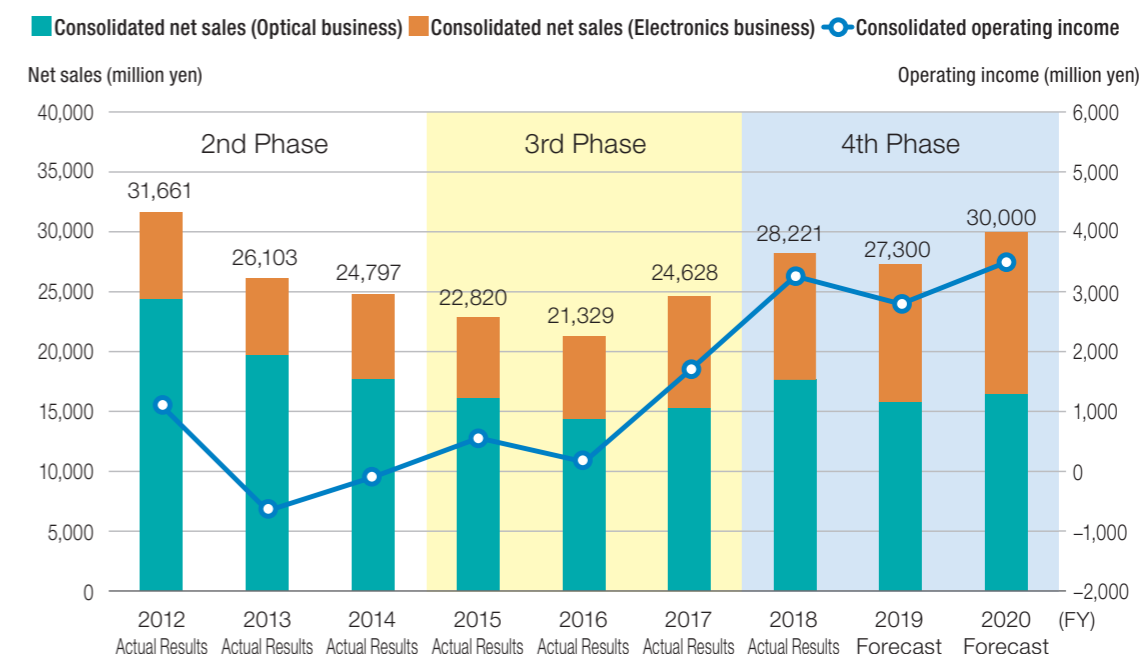
Progress of the Fourth Phase of Long-term Vision 2020

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.

In the Optical business, through efforts such as actively shifting management resources to the Electronics business, we advanced the optimization of our manufacturing capacity and worked on the business structure conversion. At the same time, we focused on cost reduction activities. In the Electronics business, backed by the active capital investment in related markets such as semiconductor exposure equipment, FPD exposure equipment, and optical communication, we successfully increased net sales.

In the first year of the FY 2018-2020 medium-term management plan (the fourth phase), in the Optical business, results of strengthening cooperation with customers began to show, and owing to increased demand for new products for high-end optical devices and processed lens products, performance was robust. In the Electronics business, although some markets were undergoing inventory adjustments, performance of products for semiconductor exposure equipment continued to be favorable, and we focused on establishing supply chains of our new product NANOCERAM™ for smartphones, and achieved favorable results.

As a result of these activities, we achieved the operating income numerical target for the final year of the medium-term management plan (FY 2020) in the first year. Therefore, we revised the numerical targets for operating income and ROE upward.



Management Indicators	FY 2018 Actual Results	FY 2020 Initial Targets (Announced in December 2017)	FY 2020 Revised Targets (Announced in December 2018)
Net sales	28.2 billion yen	30.0 billion yen or more	30.0 billion yen or more
Operating income	3.2 billion yen	2.4 billion yen or more	3.5 billion yen or more
ROE (return on equity)	7.6%	5.0% or more	8.0% or more
Rate of interest-bearing liabilities to total assets	8.3%	8.0% or less	8.0% or less
Sales ratio of the Electronics business	37.5%	40.0% or more	45.0% or more

MMB Promotion Project

~Group-Wide Initiatives Aimed Towards Cultivating New Markets~

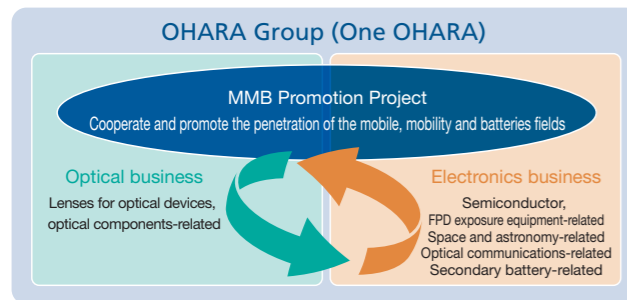
Based on its base and core technologies cultivated over the years, OHARA develops its business mainly in the fields of optical products, semiconductors and information communications centering on the camera industry. However, in recent years, due to the popularization of smartphones, we have been shifting towards the photo-taking culture. Accordingly, we launched a project across business organizations, and are implementing initiatives aiming to enter the new mobile, mobility and batteries markets, which are unknown fields to us, by strengthening cooperation between divisions.

We will shift to activities that propose value truly desired by the customer (solutions) and realize a “return to the re-growth track”.

Tetsuya Aoki Project Owner

When trying to cultivate new markets, under the conditions where it is difficult to use sales channels and networks constructed using existing businesses, we need to advertise OHARA's products and technologies to customers we do not yet know. In addition, there are many players between the company and manufacturers that handle the end products, forming a complex supply chain.

Therefore, we established the MMB Promotion Project, as an organization that spans across businesses to break through these difficult circumstances, and cultivate the markets while sharing knowledge and information.



MMB is an acronym of the markets it aims to target, namely the mobile, mobility and batteries market. This is a three-year project, with the same period as that of the medium-term management plan, from FY 2018 to FY 2020.

When cultivating new markets in unknown fields such as the above, the common values (core values) that is raised is the shift from “OHARA — a provider of advanced materials” to “OHARA — a Materials & Solutions provider”. This refers to the shift from merely talking about the materials and their properties, to imagining the situations where the materials would be used, and then making proposals of value that customers truly desire (solutions).

Provision of Materials & Solutions that Consider even the End Users

<p>Disseminate information on strengths of the materials</p> <p>In order to convey the strengths of the materials, we will complete the prototype and mockup before we make proposals.</p>	<p>Construction of a customer-oriented supply chain</p> <p>Build deep relationships of trust with customers, and determine their true needs.</p>	<p>Reaching end users together with our customers</p> <p>Convey the value of material tuning capabilities even to the end users</p>
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In the mobile field, we have already proposed the shock resistant and high hardness clear glass-ceramics (NANOCERAM™), and proposed a solution of it as a smartphone casing material that displays superior properties in 5G communications. We have also implemented similar initiatives for optical glass which contribute to the improvement of automotive camera functions, and lithium-ion conductive glass-ceramics (LICGC™) which improve properties of secondary batteries. From FY 2019, we will continue making proposals of various solutions such as these, to establish the core values of “OHARA — a Materials & Solutions provider”, and to contribute to the realization of a “return to the re-growth track”.

We will focus on the mobile market, and grow our business of special glass, centering on NANOCERAM™.

Hiroyuki Minamikawa Project Leader

Among the MMB categories, the mobile market has formed a huge market from a pool of products including smartphones that are already indispensable to people's lives. The Advanced Material Division that I belong to puts extra focus into the mobile market, carrying out market cultivation and application development. The mobile market is expected to continue expanding, along with the mobility and batteries markets, and there are high expectations for our new product NANOCERAM™ to be developed in the mobile market. Through the MMB Project, in order to meet these expectations, we carry out sales and marketing activities to raise the recognition level of NANOCERAM™ among customers. Currently, various forms of mobile applications are evaluated, and we are beginning to see results.

We will strive to grow the special glass business, centering on NANOCERAM™, to an even bigger business, to make it a thick pillar of OHARA.

Focusing on the changing behavior of the optical glass refractive index in response to temperature changes (refractive index fluctuations), we will enhance the product lineup of optical glass, which has distinct characteristics.

Hiroyasu Endo Project Leader

In recent years, automotive cameras have been used in ADAS (advanced driver assistance system). As they bear the role of the sensor that directly controls the automobile by using digital image recognition technology, cameras used in this manner are named “automotive cameras”.

From cold regions to the area inside the car under the hot sun, automotive cameras need to work properly under various environments. Therefore, it is crucial to always reduce the blurring of the camera image due to temperature changes.

At OHARA, we focused on the changing behavior of the optical glass refractive index in response to temperature changes (refractive index fluctuations). In order to correct the refractive index fluctuations by combining multiple lenses, we enhanced the product lineup of optical glass, which has distinct characteristics for refractive index fluctuations. We have received positive feedback from our customers who are optical designers about how “there is greater freedom in optical design when there are more optical glass options”.

Based on the technologies cultivated up until now, we will further accelerate development leveraging technologies held by the LB business.

Kosuke Nakajima Project Leader

The “B” in “MMB” refers to batteries. This is an indispensable energy tool used in convenient mobile devices and in powering mobility. Based on the technologies cultivated up until now, OHARA developed the lithium-ion conductive glass-ceramics (LICGC™), and promoted the development of the battery components (LB) business which uses LICGC™ as the core. In the MMB Project, we are focusing on customer acquisition and supply chain construction that leverage the OHARA global network, and on cultivating new markets by leveraging technologies held by the LB business. Through free, unrestricted discussions of the MMB Project, various results are being produced, including acquiring new overseas customers through cooperation with OHARA Group's distributors that leads to future business development, and consideration of collaborations with companies in other industries to create new value for customers. We plan to link activities of the MMB Project to further accelerate development in the LB business going forward.



Hiroyuki Minamikawa
Executive Officer
General Manager
Advanced Material Business Unit
Advanced Material Division

Hiroyasu Endo
Senior Executive Officer
Chief Officer
Optical Product Division

Tetsuya Aoki
Director,
Managing Executive Officer

Kosuke Nakajima
Executive Officer
General Manager
LB Business Unit
Advanced Material 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

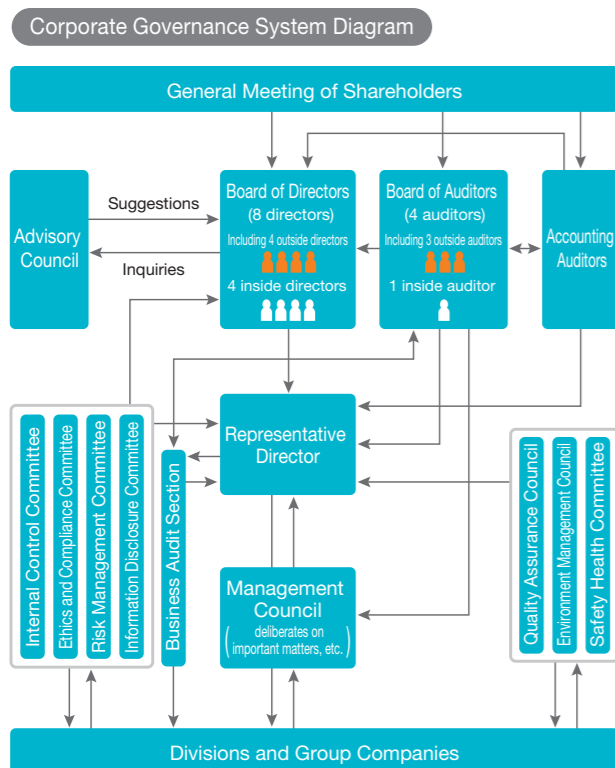
Basic Policies on Corporate Governance

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. The Basic Policies have been updated in line with the revision of the Corporate Governance Code in June 2018.

*For the "Basic Policies on Corporate Governance", please visit our website. (In Japanese only)

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.



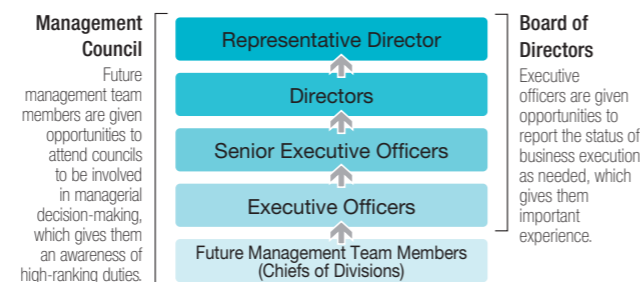
Analysis and Evaluation concerning the Effectiveness of the Board of Directors

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. In the evaluation results, it was verified that improvements were made to a certain extent in the following issues recognized as issues to be addressed in FY 2017: improving the preliminary explanation to outside officers, and discussion on our medium- to long-term business strategy, management direction, and the plan for the successor of Representative Director. In FY 2018, we worked on making further improvements on such issues, as well as on the selection of discussion topics and the length of discussions, and on communication between outside officers and the Internal Audit Department. We also strove to further strengthen our corporate governance structure.

*For the "Summary of Analysis and Evaluation concerning the Effectiveness of the Board of Directors", please visit our website. (In Japanese only)

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>

- 1 Experience in business operation and operating location management, or Group-wide business experience such as strategic planning, etc.
- 2 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.
- 3 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 2018, we held seminars for general employees regarding foundational knowledge on insider trading restrictions.



Insider trading restrictions seminar

2. Compliance Seminar for All Employees

Compliance seminars are held regularly for all employees working at OHARA.

In FY 2018, seminars were held with the following themes: "Prevention of Sexual Harassment", "Prevention of Power Harassment", "Elimination of Unjust Discrimination in Human Resources and the Workplace", and "Prevention of Health Hazard due to Overwork".



Compliance seminar for all employees

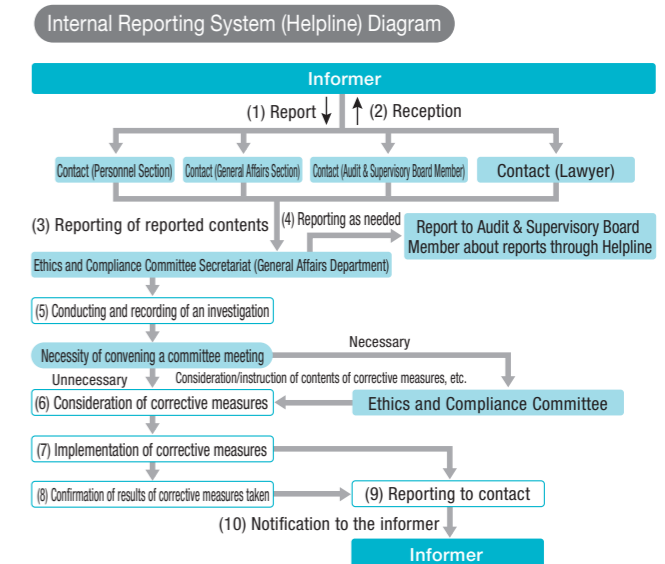
Codes of Conduct: Guidelines

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 2018 Activity Review

Sincere Activities

As measures aimed at the sustainable growth of OHARA Group and improvement in the corporate value, we put the successor training plan in concrete terms, and worked on measures to train successors for the next and future generations. Furthermore, based on the analysis and evaluation of the effectiveness of the Board of Directors, we made efforts to improve the selection of discussion topics and the length of discussions, as well as communication between outside officers and the Internal Audit Department, and strove to further strengthen our corporate governance structure.

Self-assessment ... ★★★

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

Issues for FY 2019

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 to steadily implement the successor training plan, while continuing to make improvements based on the analysis and evaluation of the effectiveness of the Board of Directors.

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 Award from Kanagawa Trust Midori Foundation

We received an award for donating a part of the revenue from vending machines within the building to the Green fund-raising campaign. To commemorate the receipt of the award, the planting of Japanese beautyberries was conducted by the parties involved.



Awards ceremony

Commemorative tree planting

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.

Voice of Regional Association

When they saw our employees undergo training for earthquake simulation vehicles and firefighting drills, participating members of the regional association expressed their thoughts of “seeing is believing”, and that they deeply felt the importance of self-help and mutual assistance during a disaster.

We will continue striving to promote the integration between the company and the region.



Participating members of the regional association

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 2018, 121 fifth-grade elementary school students participated in the factory tours. In addition to glass, they also deepened their understanding of environmental initiatives.

Further, two second-grade junior high school students visited the Company. They commented that they realized how their work lead to the next stage, and it was a valuable experience that would be useful to them in the future.



Factory tours for elementary school students Working experience

Participating in the Sagami River Cleanup Operation

In Sagami City, where OHARA is located, the Sagami River flows and joins into the Sagami Bay. The “Sagami River Cleanup Operation”, organized by the “Love Sagami River Club” which protects the rich nature, and promotes the creation of a better environment, is held twice a year, where the cleanup of the entire river area is conducted.

As OHARA agrees to the intent of this activity, 125 of its employees and their families also participated in it in FY 2018, along with groups and individuals in the city. To conserve nature, which connects to the future, we will continue our environmental protection activities.



Employees and their families who participated in the event

FY 2018 Activity Review

Harmony with Society

Besides conducting ongoing education activities for employees, we valued our ties with local society, and successfully conducted social contribution activities while constantly considering what we were able to do as a corporation.

Self-assessment ... ★★★★★

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

Issues for FY 2019

We will continue striving for harmony with society, while working on communication with local society and continuing to implement activities to raise our employees' awareness regarding harmony with society.

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 and telephone conferences twice a year for institutional investors and securities analysts, the IR division also responds to individual interviews as needed.



Financial report briefing session

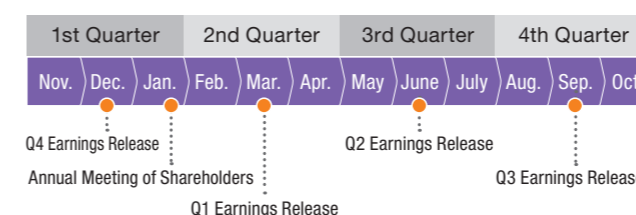
Communication with Individual Investors

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



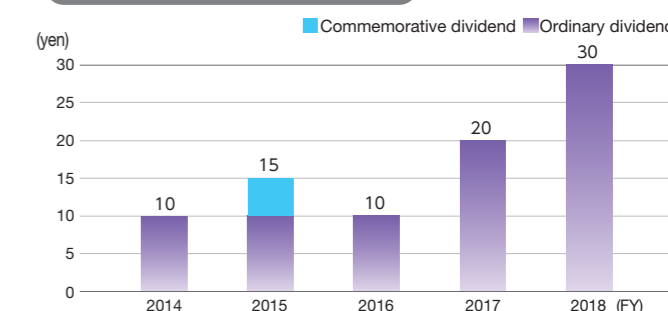
Record of IR Activities

December 14, 2017	Announcement of financial statements for FY 2017
January 25, 2018	109 th Annual Meeting of Shareholders
March 16, 2018	Announcement of financial statements and telephone conference for the first quarter FY 2018
June 14, 2018	Announcement of financial statements for the second quarter FY 2018
September 14, 2018	Announcement of financial statements and telephone conference for the third quarter FY 2018

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 2018 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™, net sales were significantly higher than FY 2017 as a result of progress in the mass production prototype for smartphone casings. 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 2019

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 were introduced in April 2018, we will proactively conduct IR activities, and aim to enhance the mutual communication that we have with shareholders and investors.

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.

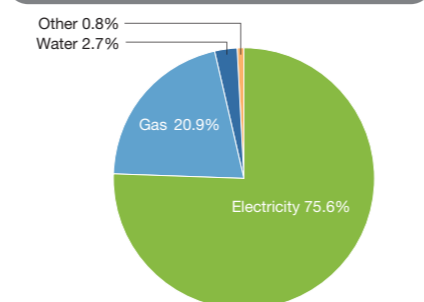
Environmental Management

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.

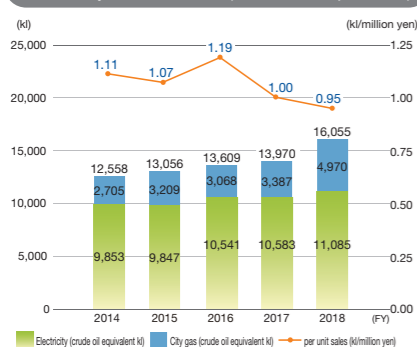
Energy and Resource Conservation Initiatives

Glass manufacturing requires the consumption of many resources (in the form of electricity and city gas). To keep the consumption of the limited resources to a minimum, we have been working on switching equipment to energy-saving types, and promoting efficient production. We will continue promoting various activities aimed at saving energy and resources, which are linked to curbing energy use.

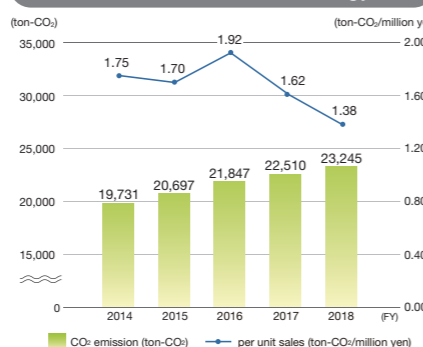
Breakdown of Energy Use (Based on Price)



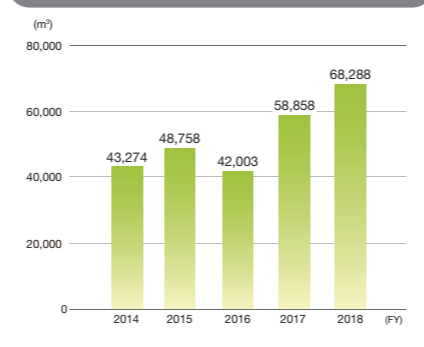
Electricity and Gas Use (Crude Oil Equivalent)



CO₂ Emissions in line with Energy Use

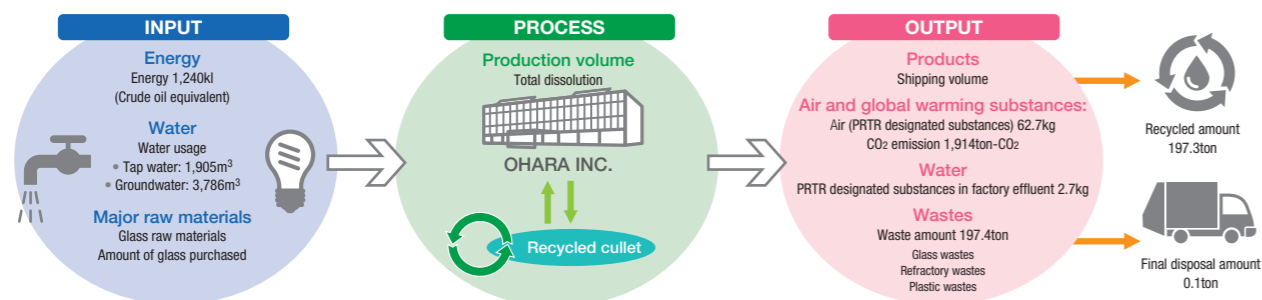


Water Resource Use



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



Company-Wide Education on ISO14001

In February 2018, environment education seminars were conducted for all employees working at OHARA. External experts were invited, and employees recognized the importance of basic knowledge on environmental laws and legal compliance, and the high level of interest in environment.



Company-wide education on ISO14001

Environmental Protection

OHARA successfully obtained the ISO14001:2015 certification in April 2017.

After transiting to the 2015 version of the certification, the first year was spent searching for an effective way of operation. However, through company-wide education, employees have come to understand Environmental Management System (EMS), and we were successfully able to conduct appropriate EMS operations.

We will continue to operate the EMS while meeting all our stakeholders' expectations.

FY 2018 Activity Review

Issues for FY 2019

Reducing and Recycling of Wastes

We reduced unit consumption of glass wastes by 8.6%. The reuse of drain glass and improvement in the usage rate of recycled cullet produced significant results.



We will aim to reduce unit consumption of glass wastes by 1% (compared to FY 2018). We will aim for the reductions by having domestic and overseas Group companies work together as one.

Energy Conservation

We successfully reduced unit consumption of energy by 11.3%. As the production control and manufacturing divisions cooperated to conduct the formulation of an efficient production plan, the unit consumption of energy improved significantly.



We will aim to reduce unit consumption of energy by 1% (compared to FY 2018). We will also aim for the reductions by having domestic and overseas Group companies work together as one.

Harmony with Environment in Local Communities

We implemented cleanup in the area outside the company 19 times, as part of our efforts to promote cleanup activities within and outside the company.



We will continue conducting cleanup activities in the area outside the company by involving all employees of the company.

We promoted the "No Car Day" campaign and reduced CO₂ emissions by 18.3 tons in a year.



We will continue conducting the "No Car Day" campaign to reduce CO₂ emissions by 15 tons annually.

Contribution to Improving the Global Environment

To develop products with little environmental burden, proposal-based sales were promoted, and new information obtained through customer visit exhibitions and technology assemblies was shared within the Company.



We will share customer needs related to environmental burden reduction within the Company.

Adherence to Laws and Regulations

We reviewed the "environmental system research list", and conducted research on our business partners' environmental systems.



We will continue to strengthen the business partner management.

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.

Successor Training Plan for Future Generations

We are advancing the training of successors for the next generation (for Chiefs of Divisions and above, including those in charge of subsidiaries). For the company and its businesses to grow sustainably, we are conducting initiatives to systematically nurture human resources who can lead the company from an early stage. In order to stably and continuously produce candidates for managerial positions, we are operating a training program that has widened its target beyond the managerial and supervising positions. We are also strengthening our promotion of female employees' active involvement, and the training plan includes many female candidates.

Utilization of Foreigners

Besides their linguistic abilities, foreign human resources are expected to possess the ability to take action and initiative, with capabilities and knowledge acquired from their experience studying overseas. With flexible response capabilities, vitality, communication abilities and such that allow them to coexist in a global society, we are also working on increasing the diversity level of our employees by expanding the range of foreigners utilization. Currently, they are active in the sales and production control divisions, as the bridges between the company and overseas locations and customers.

Awards System

Awards systems have been introduced for the anniversary foundation ceremony, the nationwide safe week and the nationwide labor health week. Awards are given to those who are deemed to have made notable contributions or have a notable track record, including the excellent employee award, the achievements award, the perennial perfect attendance award, etc. At the anniversary foundation ceremony in FY 2018, besides the existing awards, two special awards were given, to reward employees' efforts and results in the form of awards.

Childcare Support System

We enhanced the childcare leave system and shorter work hours for childcares system (valid until the employee's child enters elementary school), to support employees who are working while raising their children. To allow more employees to use the shorter work hours for childcares system, out of the two hours available, one hour is paid. In recent years, more male employees have made use of the system, and the Company as a whole is backing up employees' childcare efforts.

VOICE



As a Manager

I participated in many training sessions and received many learning opportunities. Through the training sessions and discussions with my superiors, I understood what was expected of me, and the differences in perspectives of people in the different positions. Using the knowledge acquired in the training sessions and my experience up until now, I aim to create a strong, bonded team that respects each individual's opinions, and strive towards achieving significant results in the aspherical glass mold lenses business.

Yukio Kitajima
Optical Product Manufacturing Department
Optical Product Division

VOICE



As a Foreign Employee

In my opinion, OHARA is a company where each and every employee can fully display their capabilities and strengths in their work, regardless of their nationality. As I am originally from China, my superiors and coworkers who have joined the company before me kindly help me in understanding business practices in Japan. As a member of OHARA, I will contribute to the growth of NANOCERAM™ into a world-class business, and to OHARA's further global development.

Lin Zhanpeng
Advanced Material Business Unit
Advanced Material Division

VOICE



Receiving the Special Award

After discussing with members of other departments multiple times and making progress in our work, all members of the team received this award. I feel really proud and happy that the results of our efforts have been recognized. I will continue working on each and every duty carefully, and strive to continue contributing to the Company.

Emina Toya
Quality Assurance Department
Business Support Center

VOICE



Using the Shorter Work Hours for Childcare

It has been four years since I became balancing childcare and work. Balancing the two has been harder than I imagined, and I use the shorter work hours for childcare system when necessary, which allows me to have time to be with my children. Thanks to the understanding and cooperation from my superiors and coworkers at work, I can be closely involved in the process of my children's growth, and it is an amazing experience.

Tadashi Takura
Manufacturing Department
Material Production Center

FY 2018 Activity Review

Employee Respect

To enhance work-life balance, we proactively obtained opinions from employees, and conducted activities with the aim of improving employee satisfaction and reducing overtime work. We also focused our efforts on measures to counter heatstroke, and worked on implementing measures aimed at creating a safe and comfortable work environment, and at health maintenance.

Self-assessment ... ★★★

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

Issues for FY 2019

We plan to promote effective reforms in working styles, and measures aimed at enhancing work-life balance at OHARA. We plan to create a comfortable work environment, where meaning in work and life are created, with further reductions in overtime work, promotion of female employees' active involvement and an expansion in the employment of the disabled.



Everyone together

The OHARA Group aims to create an even better company.

Instances when we felt happy at work

<p>When I contributed to the company by creating maximum profit from the limited glass material.</p>  <p>TAIWAN OHARA OPTICAL CO., LTD. Manufacturing Yang Li Huang</p>	<p>When I got to meet people from different OHARA operating locations, and we combined our strengths and worked together</p>  <p>OHARA OPTICAL (HONG KONG) LTD. Sales Issac Chan</p>
<p>When I truly felt the connection between people through the intellectual property business.</p>  <p>OHARA INC. Business Support Center Mika Hirai</p>	<p>When there were numerous opportunities and I got to be involved with meaningful work.</p>  <p>OHARA OPTICAL(M)SDN.BHD. Production Department Lim Boon Ping</p>
<p>When I interacted with those working at each OHARA operating location, adopted the good parts, and non-defective products increased as a result.</p>  <p>ASHIGARA OPTICAL INC. Production Department Junichi Saito</p>	<p>When I summed up all the import and export materials, and raw materials and products were smoothly transported.</p>  <p>Taiwan Ohara Optical Material Co., Ltd. Operations Department Liao Wan Jung</p>
<p>When a product I was involved with was acclaimed for its good quality.</p>  <p>OPC Corporation Management Site Kazu Terao</p>	<p>When I processed the customer's order according to their request, and was appreciated.</p>  <p>OHARA GmbH Management Department Bettina Maler</p>
<p>When I completed the trading operation smoothly as I obtained the cooperation of each division.</p>  <p>OHARA OPTICAL (ZHONGSHAN) LTD. Production Control Li Mei Juan</p>	<p>When a beautiful piece of glass slowly emerged from the melting device, in my sixth year of working as a technician.</p>  <p>NHG-OHARA OPTICS (XIANGYANG) Co., LTD. Production Department Liu Xiao Qin</p>
<p>When I conducted improvements in the inspection operations, and improved the precision of inspections.</p>  <p>Ohara Quartz Co., Ltd. Production Department Kohei Mori</p>	<p>When I learn new things as I work with the members of the team.</p>  <p>Ohara Corporation Sales Engineer Nicholas Bilis</p>

Consolidated Financial Highlights

	2014	2015	2016	2017	2018(FY)
Main Financial Results (millions of yen)					
Net sales	24,797	22,820	21,329	24,628	28,221
Operating income	△ 110	538	143	1,715	3,270
Ordinary income	494	1,316	△ 84	2,242	3,705
Profit attributable to owners of parent	17	545	△ 372	1,513	3,220
Net assets	40,672	41,522	37,040	41,204	44,040
Total assets	54,823	55,130	50,161	54,433	58,731
Net cash provided by (used in) operating activities	3,969	1,573	1,447	1,960	3,016
Net cash provided by (used in) investing activities	△ 576	△ 979	△ 850	△ 1,410	△ 937
Net cash provided by (used in) financial activities	△ 1,510	△ 1,137	△ 354	△ 1,736	△ 1,158

Per Share Data (yen)					
Net assets	1,650.60	1,706.97	1,522.70	1,693.90	1,810.47
Net profit	0.71	22.43	△ 15.31	62.23	132.37
Dividend	10.00	15.00 [☆]	10.00	20.00	30.00

☆includes 5 yen of commemorative dividend

Main Indicators (%)					
Equity capital ratio	73.2	75.3	73.8	75.7	75.0
ROA (return on asset)	0.9	2.4	△ 0.2	4.3	6.5
ROE (return on equity)	0	1.3	△ 0.9	3.9	7.6
PER (price earnings ratio)	809.86	26.36	–	35.64	18.02
Payout ratio	1,402.7	66.9	–	32.1	22.7

Segment Data (millions of yen)						
Optical business	Net sales	17,693	16,105	14,418	15,334	17,625
	Operating income	74	366	△ 107	688	1,373
Electronics business	Net sales	7,103	6,714	6,911	9,294	10,596
	Operating income	△ 184	171	251	1,027	1,897

*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, 2018)

Company Name: OHARA INC.
Address: 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
Established: October 1, 1935
Capital: 5,855 million yen
Business contents: Manufacture and sale of glass materials for optical and electronics applications
Number of Employees: 411 (1,702 for the entire Group)

Stock Information (As of October 31, 2018)

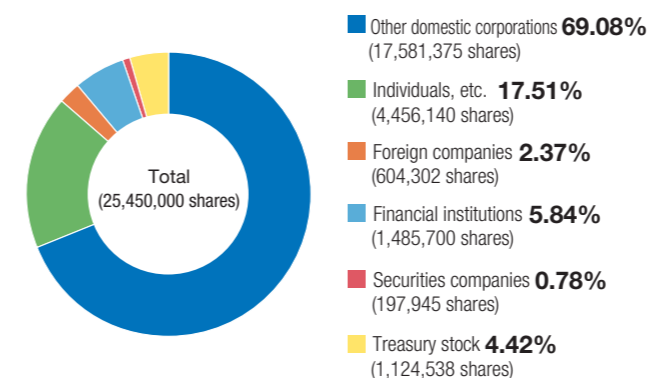
Status of Shares
Total number of authorized shares: 76,000,000
Total number of issued shares: 25,450,000
Number of shareholders: 9,410

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	1,651,400	6.79
TOPCON CORPORATION	673,600	2.77
Japan Trustee Services Bank, Ltd. (trust account)	648,400	2.67
Seiko Instruments Inc.	610,000	2.51
Olympus Corporation	400,000	1.64
The Master Trust Bank of Japan, Ltd. (trust account)	321,600	1.32
Japan Trustee Services Bank, Ltd. (trust account 5)	154,300	0.63

(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	Takashi Nakajima
Director Managing Executive Officer	Tetsuya Aoki
Director Managing Executive Officer	Naoyuki Goto
Outside Director	Akihiro Okuma
Outside Director	Go Tokura
Outside Director	Seiju Uchida*
Outside Director	Akira Nokina*
Audit & Supervisory Board Member	Keishi Kubota
Outside Company Auditor	Seiichi Mikami
Outside Company Auditor	Kazuhiko Nagashima
Outside Company Auditor	Mitsuyoshi Sugita*

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

Information for Shareholders

Fiscal year: November 1 through October 31 of the following year
Record date for dividends: October 31 (April 30, in case of interim dividend)
General Shareholders meeting: End of January of each year
Number of shares per unit: 100
Business Handling Office of shareholder registry: Stock Transfer Agency Department of head office of Mizuho Trust & Banking Co., Ltd. 1-2-1, Yaesu, Chuo-ku, Tokyo
Method of public notice: 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.