

INTEGRATED REPORT

2020

Fiscal year ended March 31, 2020



Seventy-one years supporting scientific  
technology around the world.

Carrying on the founding principles of  
“Creativity” and “Research and Development,”  
we will continue to contribute to scientific  
progress and societal development.

# Solutions for Innovation

Providing optimal solutions to support customer innovations

## Company Philosophy

On the basis of "Creativity" and "Research and Development,"

JEOL positively challenges

the world's highest technology, thus

forever contributing to the progress

in both science and human society

through its products.

## Guiding Principles for JEOL Staff

On the basis of our company philosophy emphasizing "Creativity" and "Research and Development," we will act up to the following guiding principles, with pride as JEOL staff and realize our responsibilities as members of the society.

1. We will take pride in our work and endeavor to reform our present situation with challenging spirits.
2. We will be grateful to our customers for their support and do our best to offer the best products and service to them.
3. We will keep ourselves in good physical and mental health and create a nice and rewarding working environment.
4. We will understand other's positions and fulfill our responsibilities through good teamwork.
5. We will be constantly cost-minded and utilize time and goods to their best advantage.
6. We will absorb a wide range of knowledge and put it in practice for our own growth.

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# Our Value Creation History

The name JEOL is an acronym for JEOL is now a brand that is known

1947

## DA-1 magnetic field electron microscope

This was the first electron microscope made by our predecessor, Electron Science Laboratory.

Based on the belief that there could be no post-war reconstruction in Japan without progress in science and technology, our founder Kenji Kazato and young associates began the development of electron microscopes.

It was a challenge that was almost a shot in the dark in the days immediately following the end of World War II when both supplies and information were not always available, but the members of the team were passionate about contributing to society through science. They came together and succeeded in completing this development in a year and a half.

At the time, manufacturing electron microscopes was a rarity, so this made national news, and even Emperor Showa and the Crown Prince (later Emperor Akihito) came to see the microscope.

In 2010, a milestone in the development of electron microscopes, the National Museum of Nature and Science recognized the DA-1 as an Essential Historical Material for Science and Technology.



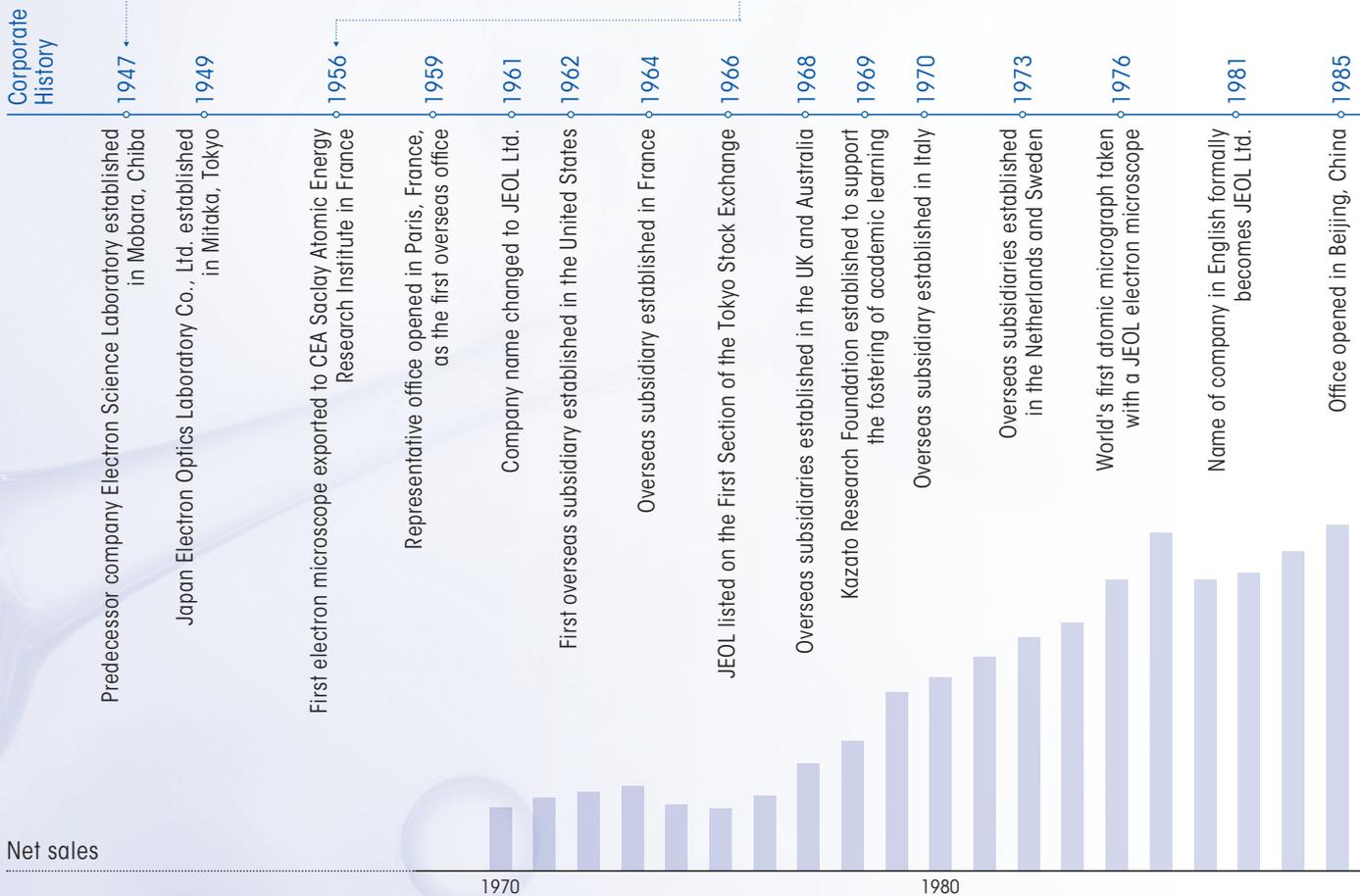
1956

## JNM-1 nuclear magnetic resonance (NMR) system

The history of NMR goes back to 1944 with the discovery of this phenomenon, for which the scientists received the Nobel Prize in Physics. In 1950, an overseas manufacturer released the first commercial product. At the time, it was seen as a very special type of equipment for research. However, recognizing that it was a highly niche market with few entrants, JEOL began work on NMR development as a new business. In 1956, JEOL launched the JNM-1, the first domestically produced NMR system.

NMR systems observe the molecular structure in the substances, and today, they are essential in the world of organic chemistry.

Since the release of the JNM-1, JEOL has contributed to progress in both science and society by continuing to hone our NMR technology. Despite the changing business environment, we have maintained our NMR business out of a sense of social responsibility, and now there are only two companies in the world that manufacture NMR systems, including JEOL.



## Visits by Nobel Prize winners



1972 Dr. Shinichiro Tomonaga (Physics, Japan)



1980 Dr. Linus Pauling (Chemistry and Peace, USA)



1980 Dr. Alexander Prokhorov (Physics, Soviet Union)



1987 Dr. Klaus von Klitzing (Physics, Germany)

the name of the Company at our founding: Japan Electron Optics Laboratory.  
worldwide.

1996

### JCA-BM12 clinical chemistry analyzer

Biochemical analysis is performed to manage people's health and to obtain information necessary for treating diseases. The JCA-BM12 was developed as a new generation clinical chemistry analyzer based on the concept of being faster, more economical, and more reliable.



As the first machine in our BioMajesty series, the JCA-BM12 was released in a bid to break free from conventional technology and to respond to changeable market requirements.

This series greatly reduced the sample volumes and reagent amounts required for testing compared with conventional machines, allowing tests to be performed with one-fifth the sample volume and one-third the amount of reagent. This reduced the work load for those involved in clinical testing and has helped improve medical treatments.

In 2008, we received the Japan Society of Clinical Chemistry Technology Award for our development of the BioMajesty series and for our contribution to clinical testing.

1999

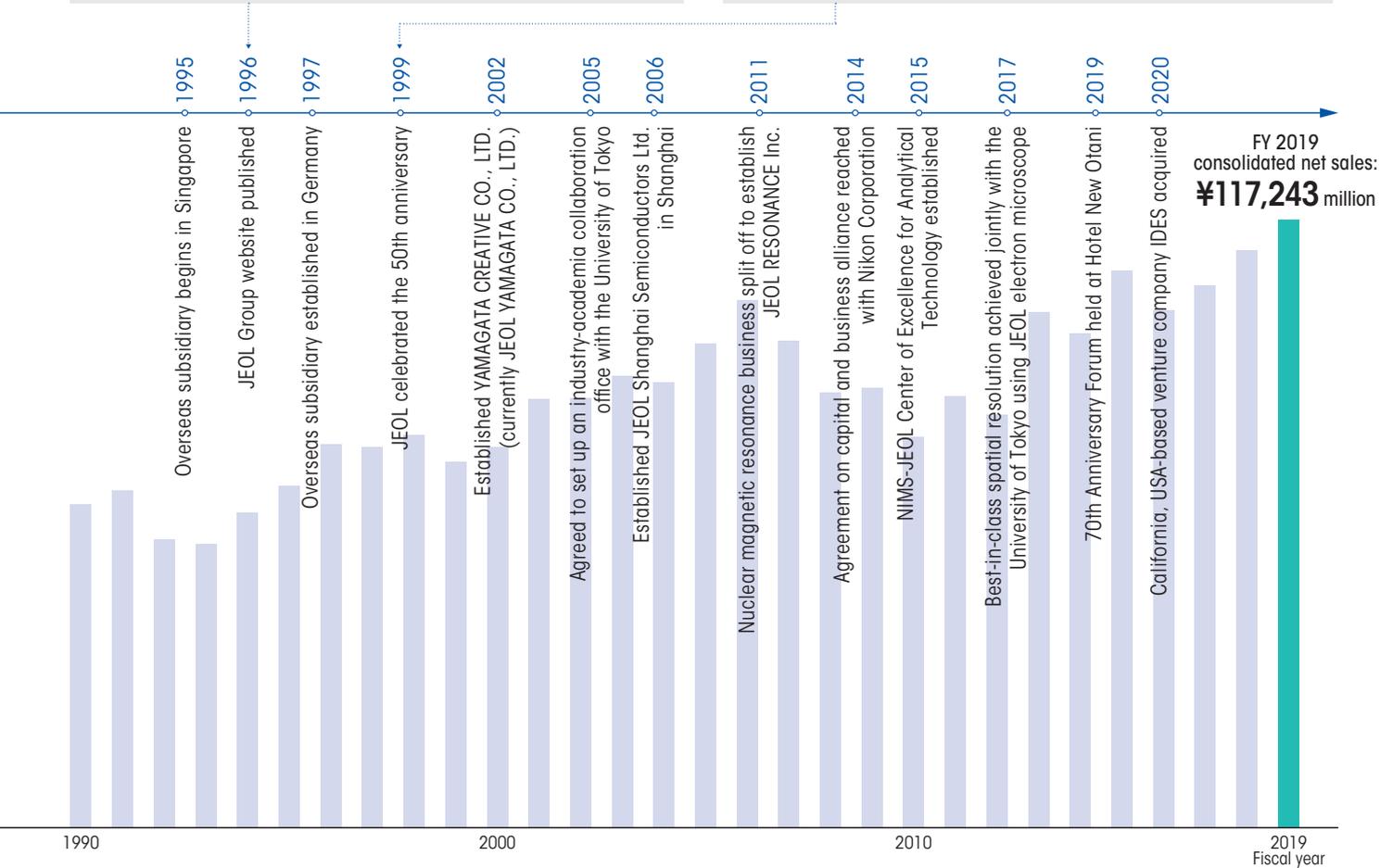
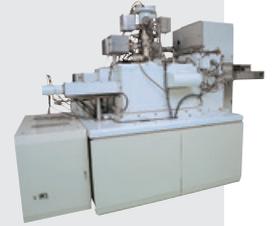
### JBX-9000MV electron beam lithography system

This is an electron beam lithography system for fabricating the photo masks that are essential for manufacturing semiconductors.

JEOL was a participant in the Association of Super-Advanced Electronics Technologies, established to boost the competitiveness of the Japanese electronics industry. Applying the research results obtained by this association, we created the JBX-9000MV, a world-class lithography system supporting the contemporary 130 nm–180 nm process rule.

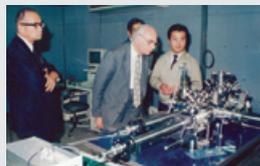
The global market was dominated by American manufacturers at that time, and the US market was considered impregnable, but the high potential of the JBX-9000MV was recognized, and it made its debut in the US market in 2000.

As a result, our share of the global market for electron beam lithography systems used for fabricating photo masks increased significantly from 7% in 1997 to 33% in 2002.



**1988** Dr. Kai Siegbahn  
(Physics, Sweden)

**1989** Dr. Leo Esaki  
(Physics, Japan)



**1991** Sir Andrew Huxley  
(Physiology or Medicine, UK)



**1998** Dr. Heinrich Rohrer  
(Physics, Switzerland)

**2016** Dr. Ryoji Noyori  
(Chemistry, Japan)

**2018** Dr. Richard Henderson  
(Chemistry, UK)

**2020** Dr. Yoshinori Ohsumi  
(Physiology or Medicine, Japan)

# Creating New Value

The biggest goal of value creation at JEOL is to contribute to scientific progress and societal development, starting from the founding principles of "Creativity" and "Research and Development." Now, 71 years after our founding, we continue to maintain that founding spirit and put every effort into improving corporate value every day that provides optimal solutions to support our customers' innovations.

In recent years, science and technology have progressed rapidly, and the roles required of companies are becoming increasingly diverse. We have two strategies that provide a firm base as we take up the challenge of value creation, even as society changes.

In this section, we provide information on our Evolving in the 70th Year vision and our YOKOGUSHI (cross-sectional collaboration) strategy.

## Evolving in the 70th Year

In 2019, the year we celebrated our 70th anniversary, we announced "Evolving in the 70th Year" as our new growth vision. The main initiatives are improving our core technologies, proactively entering growth markets, and providing total solutions.

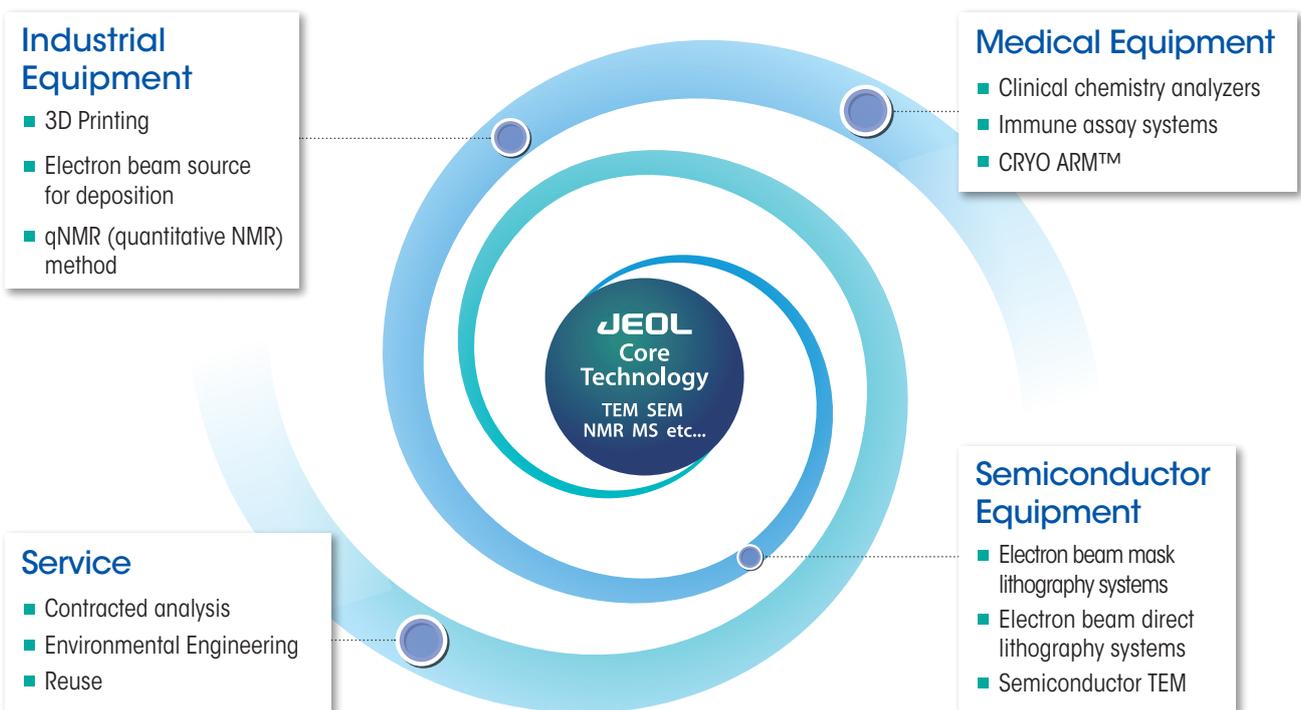
The illustration below shows business creation by proactively entering growth markets.

This illustration expresses our approach toward markets expected to grow based on our strengths by starting with the core technologies—built up in the

scientific and metrology instruments segment, including electron microscopes and nuclear magnetic resonance systems—and spiraling out from there.

Under Triangle Plan 2022, our current medium-term management plan, equipment for semiconductors, industry, and medicine have been defined as our growth markets, and we aim to further improve corporate value by introducing new products and solutions into these markets.

In this way, JEOL will continue to move into new business domains.



# YOKOGUSHI

The YOKOGUSHI strategy is our unique model of behavior for providing solutions in cutting-edge technological fields.

To create products and services that do not currently exist requires new ideas and connections that go beyond conventional boundaries—not just existing methods.

As a leading manufacturer of scientific and metrology instruments, we have provided equipment in a range of fields to meet complex market needs. Because of that, we possess a broad product lineup that you will not find anywhere else. Combining each of these products across categories in an organic way allows us to develop next-generation solutions and applications no one has ever seen before.

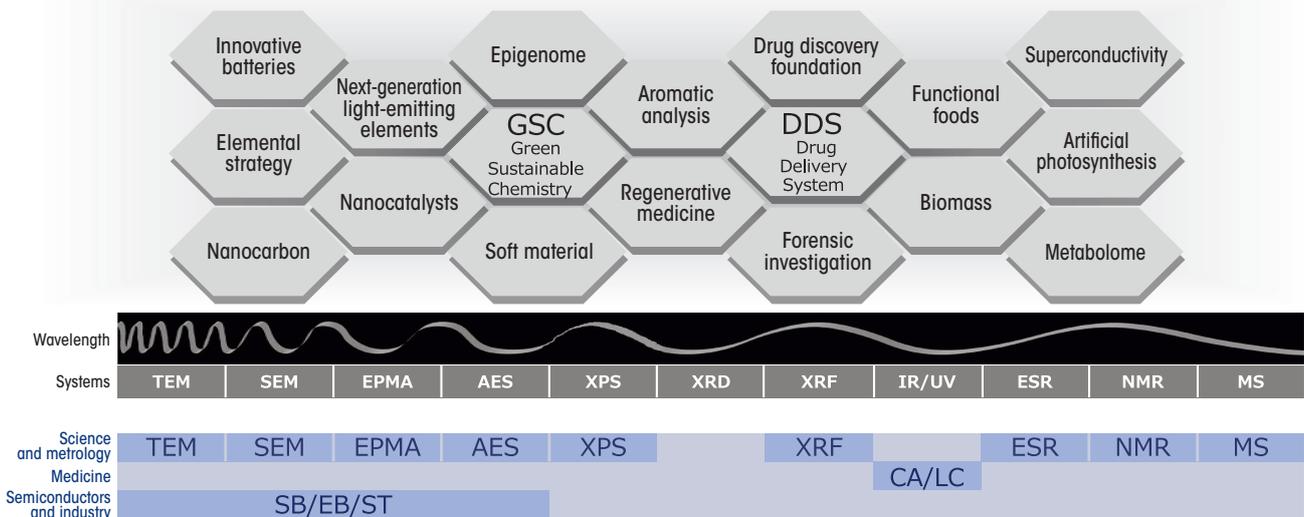
The model of behavior for creating these innovations is set out in our YOKOGUSHI strategy.

Having collaborated up to now with companies, organizations, and research institutes (both public and private), we have established a foundation for open innovation. YOKOGUSHI produces strong cross-sectional ties not just within our Company but with outside parties, making it possible to create new value not previously possessed by either party. We already have a track record in several product fields that includes favorable reception by the market for the unique systems we have developed in collaboration with other companies.

Through YOKOGUSHI, we will promote innovations that lead to the future so that we create solutions that completely satisfy our customers.

## YOKOGUSHI

### Co-creation, from Products to Services, Connection



# Message from the Chairman



Gon-emon Kurihara  
Chairman & CEO

# We are accelerating business development in new growth markets based on our history of supporting scientific progress around the world since our founding in 1949.

When 2020 started, COVID-19 began spreading, and it has had a tremendous impact on the global economy. JEOL, too, has felt that impact. I pray that the pandemic ends soon. I would like to express my deepest condolences to those who have lost friends or family members and my sincere sympathy to those who have contracted COVID-19.

Corporate management is often heavily swayed by uncontrollable external factors such as the COVID-19 pandemic. In the past, we have been put into very difficult circumstances by the global recession triggered by the bankruptcy of Lehman Brothers Holdings Inc., the Great East Japan Earthquake, and other similar events. However, we see these as opportunities for management reforms and have been working on improving our corporate structure. In the same way, the JEOL Group will come together and overcome the current situation that has been brought about by COVID-19.

In May of last year, we celebrated our 70th anniversary. I have nothing but deep gratitude for the support we have received from a great number of people over the years.

JEOL was founded as a developer and manufacturer of electron microscopes in 1949, shortly after the end of World War II. The founder's desire to contribute to Japan's reconstruction by developing electron microscopes that support scientific progress has been continued by employees over different generations, and the noble principles of our founding continue to shine brightly.

On the occasion of our 70th anniversary, we published a message entitled, *Evolving in the 70th Year*. This message expresses our strategy for further growing our business operations. We will provide equipment and services to the markets for medical equipment, semiconductors, and other industrial equipment, which are now orders of magnitude larger. We will do this by capitalizing on the technology and human networks we have cultivated so far in our scientific and analytical

instrument businesses, including the electron microscope business from our founding as well as the nuclear magnetic resonance system market.

We have been rolling out specific strategies based on three-year medium-term management plans. Beyond that, we have been consistently communicating a message, both internally and externally, designed to promote long-term corporate activities. The important concept behind that message is not to lose the "DNA" from our founding. One aspect of the JEOL's DNA is putting "community before self" and another is "Born Global."

We, of course, seek to maximize our own gains, but more than that, we are a company that emphasizes social contribution. Moreover, we are a company that was "born global" and that has a strong global network for direct sales and service that we have built up since our founding.

For the past decade, we have put forth our YOKOGUSHI strategy as our strategy for the long term. At first, this was a strategy where we aimed to strengthen our business through cross-sectional operations within the Company, but today it is positioned as a strategy for promoting collaborations between industries and between academia and industry, or in other words open innovation.

These days there are limits to going it alone when it comes to business development. It is more important to promote cross-sectional collaboration with other companies, universities, and organizations, so that we can create completely new value.

Since our founding, JEOL has grown as a company that contributes to scientific progress around the world. Never forgetting our founding principles of "Creativity" and "Research and Development," we will continue to work on growing our business. Thank you in advance for your continued support.

# Triangle Plan 2022

(FY 2019–2021)

## Basic Approach

### JEOL Continues to Move into New Business Domains

Triangle Plan 2022, our medium-term management plan, was launched in 2019, the 70th anniversary of our founding. Based on the direction of the previous medium-term management plan, the Triangle Plan, JEOL will implement the following measures to accelerate growth by “Evolving in the 70th Year” and by taking the next step toward further growth (after the current medium-term management plan). JEOL will provide optimal solutions to support customer innovations with “Solutions for Innovation” as our corporate motto as we aim for continual growth over the long term.

### Evolving in the 70TH Year

1

#### Enhance core technologies

We will continue to develop core technologies, the high-end measurement and analysis technologies that are the source of the added value provided to society by the JEOL Group.

2

#### Proactive entry into growth markets

Based on these core technologies, JEOL will proactively enter into large markets where growth is expected to accelerate (overseas markets as well as those for semiconductor, industrial, biotechnology, and medical equipment).

3

#### Provide total solutions

JEOL will provide total solutions, including services that lead to improved usability and efficiency, focused not just on equipment, but our customers’ entire workflow.

4

#### Make the required investments and improve profitability

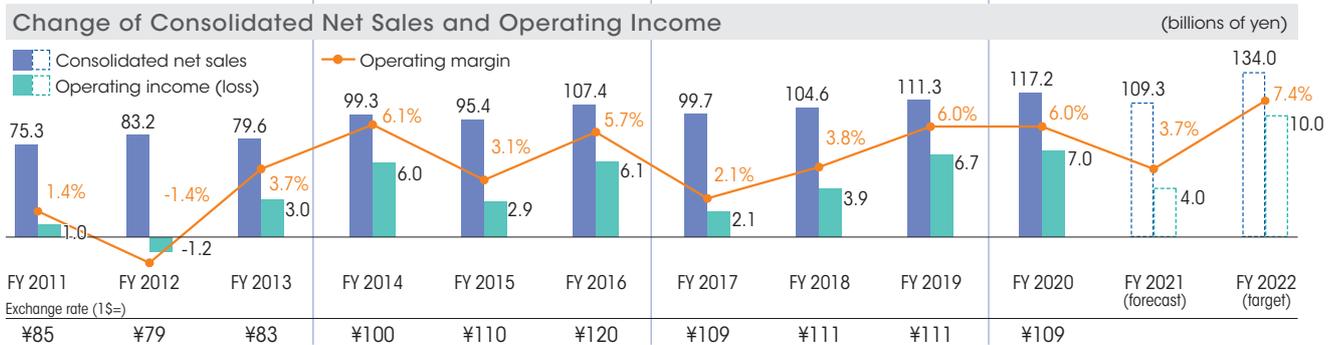
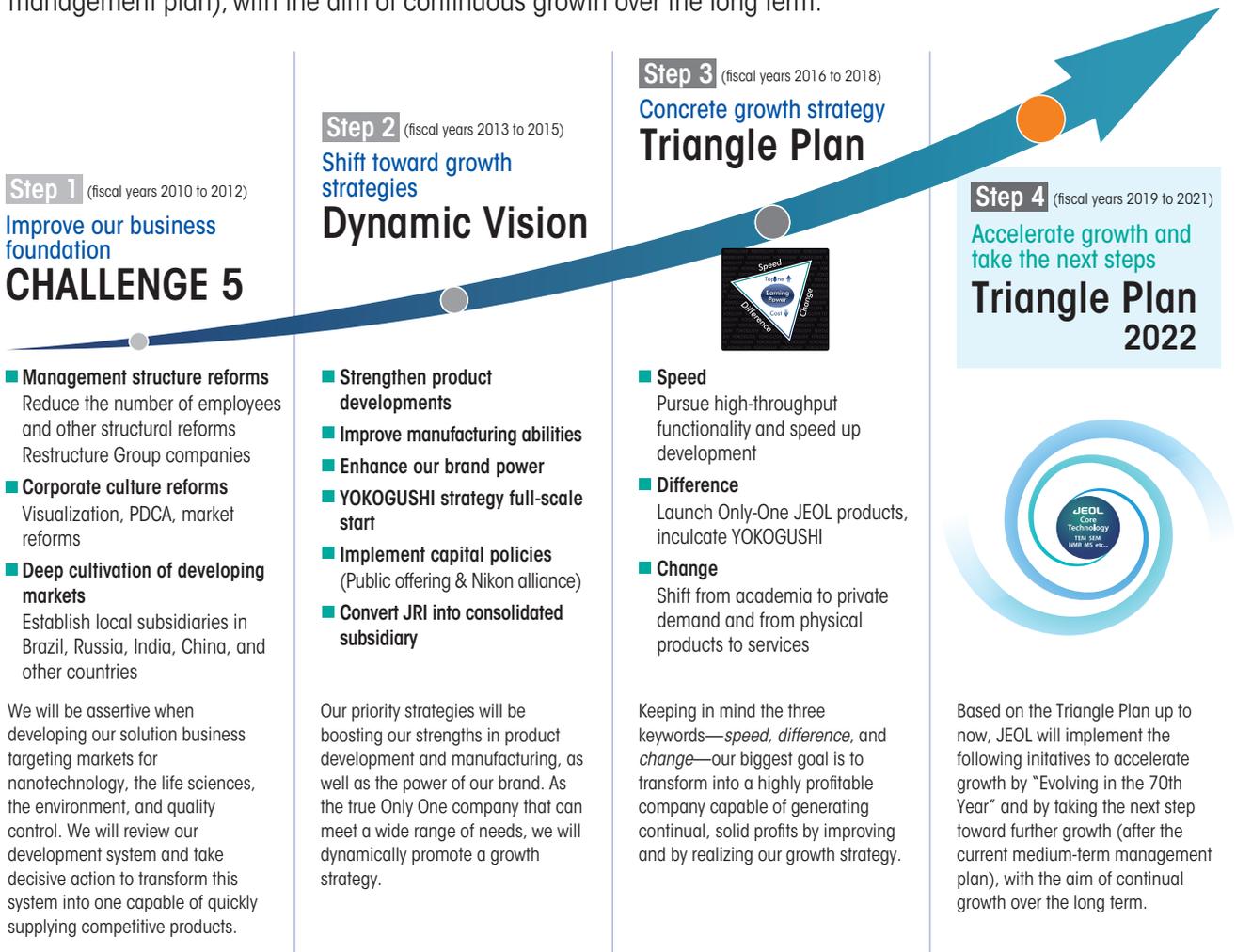
We will make all necessary investments at the opportune time to take advantage of business opportunities as the scale and scope of our business grows. At the same time, we will promote efficiency and constantly improve profitability.

# Reflection on and Progress of the Medium-Term Management Plan

## Triangle Plan 2022 Positioning

# Accelerate Growth and Take the Next Steps

Based on the direction of the Triangle Plan, JEOL will implement the following measures to accelerate growth by “Evolving in the 70th Year” and by taking the next step toward further growth (after the current medium-term management plan), with the aim of continuous growth over the long term.



## Numerical Targets

FY 2021 targets:

consolidated net sales of **¥134.0 billion**

consolidated ordinary profit of **¥10.0 billion**

# Message from the President

Izumi Oi  
President & COO



## Looking Back Since I Assumed Office

Already a year has passed since I was appointed president of the Company in the milestone year of the 70th anniversary of the Company's founding. Before that, I served as General Manager of the Management Strategy Planning Office and was involved in formulating the medium-term management plans three times under the current Chairman, Kurihara. Because of that, I felt a deep responsibility when placed in the position of implementing the medium-term management plan I had helped put together and for producing results, but just as I was set to begin, we were hit, out of the blue, with the COVID-19 pandemic.

In recent years, it has become common to hear that the power of science is needed now more than ever. JEOL is a company that puts that idea into practice based on our Company Philosophy of contributing to progress in both science and human society. Since our founding, we have continued to provide the world's top scientists with cutting-edge scientific instruments.

I have come to believe that the crisis arising from the spread of COVID-19 and the subsequent dramatic changes in society mean that there will be an increase in the value to society of companies such as ours that contribute to science and technology. For that reason, I go about my management duties these days with an even greater determination.

## Net Sales and Operating Income Break Internal Records New Medium-Term Management Plan Gets Off to a Smooth Start

In FY 2019, consolidated net sales and consolidated operating income came to ¥117.2 billion and ¥7.03 billion, respectively, breaking the previous records set in FY 2018. Thanks to your support, Triangle Plan 2022, our medium-term management plan, has gotten off to a favorable start in its first year. We also implemented measures (including M&As and the acquisition of a new plant) based on our “Evolving in the 70th Year” vision for growth of the JEOL Group, taking steps for sustainable development during and after the current medium-term management plan.

On the other hand, it is also a fact that we find ourselves in a very uncertain situation when it comes to the economic outlook, including shrinking economic activity in conjunction with the COVID-19 pandemic and concern over deceleration of the global economy due to protracted trade friction between the United States and China.

At JEOL, based on our fiscal 2019 backlog of orders and current sales circumstances, we have determined that there has been no significant impact at this time. However, the future remains uncertain, so we will monitor trends in the business environment and promptly disclose any revisions to our management policies or strategies that we see as necessary.

## Achieving Further Growth with Three Steps Based on “Evolving in the 70th Year”

Triangle Plan 2022, announced last year, continues with the approach of the previous medium-term management plan, the Triangle Plan, centered on three axes: *speed*, *difference*, and *change*. At the same time, the new plan is designed to bring about sustainable growth in the medium to long term by implementing the next steps based on the “Evolving in the 70th Year” vision for growth announced last year. Triangle Plan 2022 is a three-year plan, but the Company must continue to grow over the next 10, 20, and more years, so I believe in the importance of both continuity between every medium-term plan as well as the “Evolving in the 70th Year” vision, which

focuses on medium- to long-term growth.

A lot of initiatives have been implemented using the “Evolving in the 70th Year” vision, and we have already seen some results. In addition to these results, we implemented three big steps for further growth in the previous fiscal year.

The first big step was the acquisition of the Musashimurayama Plant of Yamaha Motor Robotics Holdings Co., Ltd. This plant is near the Akishima Head Office where our headquarters is located and will be used to increase production capacity for products with growing demand, such as our electron beam lithography systems.

While there is concern over a global recession due to the COVID-19 pandemic, the semiconductor market is being supported by demand arising from new workstyles, such as telecommuting, and the dawn of the 5G era. For these reasons, the photomasks required for their production are also expected to experience increased demand. Under this circumstance, the market is expected to grow for the multi-beam electron beam lithography system that we jointly developed with Austria-based IMS Nanofabrication GmbH. We therefore made the decision to acquire this plant in order to quickly establish a structure capable of meeting market demand without missing this opportunity for growth.

The second big step was **making JEOL KOREA LTD. a wholly owned subsidiary by acquiring its shares**. We will reinforce our sales and service under the JEOL Group management policy by making this sales company a local subsidiary in South Korea, which has a large market and where some of our major semiconductor-related customers are located.

The third big step was **making California, USA-based Integrated Dynamic Electron Solutions, Inc. (IDES) a wholly owned subsidiary by acquiring its shares**. Electron microscopes reveal the structure of substances at the nanometer scale, and IDES possesses the technology to record still and moving images at high spatial resolution and ultra-fast temporal resolution from nanoseconds (one billionth of a second) to femtoseconds (one quadrillionth of a second). This technology makes it possible to provide innovative systems that contribute to ultra high-speed dynamic observation of substances and exploration of quantum phenomena not possible with electron

microscopes before now. We expect that the application of this new electron microscope-related technology will continue to be promoted, and this will lead to market growth.

I am confident that by steadily implementing the above steps based on the “Evolving in the 70th Year” vision and by attaining results, JEOL will be able to achieve further growth.

## Tackling Social Challenges with the Only One Technological Strength

Every time a picture of the COVID-19 virus taken with an electron microscope is shown on the news, I keenly realize the reason for the Company’s existence and our responsibility to society. To get the COVID-19 situation under control and to return to our normal lives requires the development and distribution of vaccines or antiviral drugs. At the same time, electron microscopes are required to understand the structure of the virus itself, and nuclear magnetic resonance (NMR) systems are needed to determine the molecular structure of the pharmaceuticals that are developed. JEOL is alone in the world in being able to supply both the electron microscopes and NMR systems required for studying this novel coronavirus.

As set out in the JEOL Company Philosophy, “contributing to progress in both science and society,” we have been deeply involved in cutting-edge scientific

research and have contributed to solving social challenges and societal progress since before the Sustainable Development Goals (SDGs) rose to prominence.

If progress on scientific technology is directly tied to achieving individual SDGs, I am confident that the growth of JEOL will naturally lead to a contribution to the SDGs. I hope that more and more people will become familiar with JEOL through our contribution to the SDGs.

## To Our Stakeholders

Our basic policy for profit distribution is to maintain consistent dividends from a long-term perspective based on our business initiatives to improve our financial standing and corporate structure. For the fiscal year under review, in light of our business performance and financial condition, the year-end dividend was ¥12 per share. Added to the interim dividend, this brings the total annual dividend to ¥24 per share.

The COVID-19 pandemic had a severe effect on social and economic activity around the world. Now is the time to show the great power of science. We will do our best to boost our corporate value and improve our earnings base so that we can contribute to progress in both science and society by providing products and solutions. Thank you in advance for your understanding and support.

Message from President Oi



# Initiatives for the SDGs

## Contributing to the Achievement of the SDGs through Business Development that Leverages JEOL Advantages

	Materiality	Key Initiatives	Targeted SDGs
SDGs being addressed through business	Provide products that contribute to people's health, safety, and security	<ul style="list-style-type: none"> <li>Provide medical equipment indispensable for the diagnosis and prevention of illness</li> <li>Provide equipment with high sensitivity and accuracy that can analyze substances harmful to the human body</li> <li>Provide manufacturing equipment that contributes to the further development of sensing technology</li> </ul>	 
	Contribute to scientific progress and the sustainable development of society	<ul style="list-style-type: none"> <li>Develop world-class scientific instruments supporting advancements in science</li> <li>Contribute to higher performance semiconductors supporting the communication infrastructure</li> <li>Create advanced technology by promoting partnerships</li> </ul>	 
	Contribute to the conservation and sustainability of the global environment	<ul style="list-style-type: none"> <li>Provide measuring equipment indispensable for the R&amp;D of green devices</li> <li>Manage chemicals throughout the supply chain by using green purchasing</li> <li>Develop equipment that reduces CO<sub>2</sub> emissions by conserving energy</li> </ul>	  
SDGs being addressed through ESG initiatives	Conduct distinctive activities that contribute to the community and society	<ul style="list-style-type: none"> <li>Provide science education support (lessons) using electron microscopes at elementary and junior high schools</li> <li>Support academic promotions and the fostering of young researchers by donating to public interest incorporated foundations</li> <li>Promote open innovation in collaboration with domestic and overseas research institutes and universities</li> </ul>	 
	Contribute to the conservation and sustainability of the global environment	<ul style="list-style-type: none"> <li>Streamline electricity use by introducing energy-saving equipment and other initiatives</li> <li>Reduce CO<sub>2</sub> emissions at business locations throughout the Group</li> <li>Thoroughly separate, reduce, and recycle waste</li> <li>Deploy the Don't Litter campaign, a cleanup drive for beautifying the surroundings</li> </ul>	  
	Develop human resources and respect human rights	<ul style="list-style-type: none"> <li>Promote the creation of a workplace where females can more easily develop their careers</li> <li>Enhance systems to help bring balance to work and family in line with every person's stage in life</li> <li>Improve the awards program for employees making exceptional achievements</li> </ul>	 

### The SDGs

The Sustainable Development Goals (SDGs) refer to global objectives to create a better, more sustainable world by 2030. They were adopted at the United Nations Summit in September 2015 and are included in the 2030 Agenda for Sustainable Development.

The SDGs consist of 17 goals and 169 targets. These goals and targets deal with issues in such areas as the economy, industry, and society. Corporations, which lead economic activities, are expected to play an important role as one of the actors responsible for achieving the SDGs.



# Overview by Business Segment

## Scientific and Metrology Instruments Segment

### Business description

With our roots in the development of electron microscopes, the scientific and metrology instruments segment has been nurtured and grown since our founding as a part of our DNA.

By developing the scientific and metrology instruments that are among the best-in-class in the world, we continue to support top scientists, including Nobel Prize winners, and others working at the frontiers of cutting-edge research.

Our products are used by universities and laboratories in more than 130 countries worldwide, and we provide top-class solutions in various fields, such as nanotechnology, biotechnology, and the life sciences.

As a business that contributes to progress in both science and society, we will continue working on making advances in our core technologies: measurement and analysis.

### Main instruments

#### Electron optics instruments and measuring instruments

We are developing many instruments that apply electron beam, ion beam, X-ray, and other technologies, starting with electron microscopes.

We provide instruments that offer robust support for seeing and measuring in the nano world. These include transmission electron microscopes for seeing substances at the atomic level; electron probe microanalyzers that accurately detect elements contained in micro areas on the specimen surface; and multi-beam milling/imaging systems for milling and observation of samples at the nanometer level.

Our business fields are broad-ranging, from cutting-edge academic research to quality control in the manufacturing industry.

#### Analytical instruments

While electron optics instruments and measuring instruments approach substances from the outside, analytical instruments examine the nature of substances from the *inside*. Our main products in this category are nuclear magnetic resonance systems and mass spectrometers.

Nuclear magnetic resonance systems are another one of our core research instruments, as our electron microscopes are the first core research instruments. As these systems analyze the structure of substances from the inside, they are essential in the world of organic chemistry. Advanced technical capabilities are required for their development and manufacture, so there are only two companies in the world, including JEOL, that are currently doing this.

Mass spectrometers tell you what a specific substance is made of and in what concentrations. One example is their use in quickly analyzing the presence of substances in food that are harmful to health, such as agrochemical residue, so they contribute to our health and safety.



JEM-F200  
transmission  
electron  
microscope



JNM-ECZ700R  
nuclear magnetic  
resonance system

**Main customers** ..... Research institutes, educational institutions, manufacturing industry (chemistry, steel, machinery, food, nonferrous metal, electrical and electronic, etc.), public institutions, and analytical research companies

### Market trends

( ● Electron optics instruments and measuring instruments ● Analytical instruments)

- These instruments are essential in a wide range of fields, from basic research to the industrial application of nanotechnology, life sciences, semiconductor devices, and more, so the market is growing
- Demand remains strong in developed countries and is growing in China and other emerging countries
- Nuclear magnetic resonance systems are essential for developing certain materials as well as basic research in such fields as life sciences and drug discovery, and the market growth is being boosted by rising R&D costs in developed and emerging countries
- Mass spectrometers are experiencing significant growth in the fields of environmental analysis and life sciences

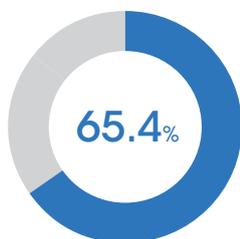
### Technology and product strategies

( ● Electron optics instruments and measuring instruments ● Analytical instruments)

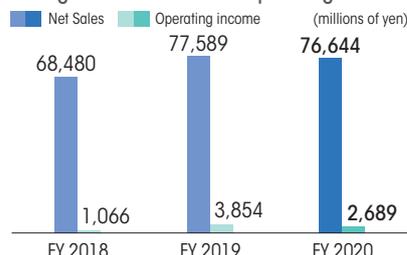
- Launched JEM-ARM300F2, which offers both ultra-high spatial resolution observation and high sensitivity analysis, as the next new product, following the JEM-ARM300F high-end flagship transmission electron microscope
- New models were added to our lineup of proprietary soft X-ray emission spectrometers (SXES), which have been well-received in a wide range of fields, from trace element analysis to chemical state analysis
- Sales of the JCM-7000 benchtop scanning electron microscope, which offers improved performance and usability, are expected to continue growing, driven primarily by private-sector demand
- Addressing the sharp rise in overseas sales ratio of JNM-ECZ series of nuclear magnetic resonance systems following tremendous market reception owing to performance and quality
- An initiative to increase our share in the environmental analysis field, which is expected to grow significantly, with the JMS-TQ4000GC triple-quadrupole mass spectrometer

## Overview of the Fiscal Year Ended March 31, 2020

### Net Sales by Segment



### Change of Net Sales and Operating Income



## Topics

### Acquiring all shares of IDES, a development venture for electron microscope-related technology, and making it a wholly owned subsidiary

JEOL acquired all shares of Integrated Dynamic Electron Solutions, Inc. (IDES; based in California) and made it a wholly owned subsidiary.

Integrating the technology of IDES has made it possible for us to record still and moving images at a high spatial resolution at the nanometer scale and ultra-fast temporal resolution from nanoseconds (one billionth of a second) to femtoseconds (one quadrillionth of a second). We will provide innovative systems that contribute to ultra high-speed dynamic observation of substances and exploration of quantum phenomena not possible before now.



### Agreement reached with Rigaku for joint development of the Micro ED platform

JEOL reached an agreement with Rigaku Corporation (Akishima City, Tokyo), a leading company in X-ray diffraction technologies, for the joint development of a Micro ED (Electron Diffraction) platform to solve the structures of sub-micron crystals using electron crystallography. Rigaku has long been at the forefront of advanced analytical X-ray diffraction instrumentation and has captured the top share of the global market. Integrating JEOL's high-performance transmission electron microscope technology with Rigaku's high-speed, high-sensitivity photon-counting detector and other technologies will create an integrated solution that covers everything from measurement to analysis. The synergy between the companies will contribute to exploration of the molecular structure of sub-micron crystals at the nanometer level, a requirement for those on the frontlines of cutting-edge research.



## Aiming for further growth



**Toyohiko Tazawa**  
Director  
& Senior Executive Officer

### Playing a role as a place of co-creation, while pursuing the observation of ever-smaller structures

The focus of this business has been on perceiving ever-smaller structures. Our aim has been to contribute to R&D in academic to industrial fields. As is often said in this industry, you can't create what you can't measure (observe). The act of observing (measuring) in R&D settings is one of the basic acts of manufacturing.

Up to now, we have devoted ourselves to observations (measurement), but we also hope to play a major role as a place of co-creation to complement our exploratory approach using thorough investigative techniques. In other words, we will enable versatile and complementary analysis that increases analytical throughput by combining various methods, so that we can realize multifaceted analysis based on single functions.

While mastery of individual functions is necessary when it comes to co-creation, it is also important to increase the convenience and flexibility of our equipment. Flexible support for remote environments is also a must so that equipment can be used routinely in the midst of the current COVID-19 pandemic.

We had already been working on an initiative called the Analytical Robot = Remote + AI (artificial intelligence) + DB (database). This initiative is consistent with today's circumstances, so we will work on further advances in analytical robotics, aiming to create a place of co-creation.

# Overview by Business Segment

## Industrial Equipment Segment

### Business description

In 1952, three years after our founding, we entered the industrial equipment field, starting with an induction hardening system that applied the knowledge we gained from the development of electron microscopes. Today, having developed expertise from electron beam control and RF power supplies, which we cultivated as core technologies in the scientific and metrology instruments segment, we supply the industrial equipment that is essential for fabricating semiconductors, electronic devices, and optical components, such as electron beam lithography systems, electron beam sources for deposition, and RF induction thermal plasma systems.

We are promoting R&D on 3D metal printers by applying our electron beam technology as part of our initiative to enter new business segments, and we plan to take them to market in FY 2020. We expect that they will be used in fields that require high levels of precision, such as aerospace, medicine, and automobiles.

### Main instruments

#### Electron beam lithography systems

Electronic devices such as computers, smartphones, and home appliances contain semiconductor components called large scale integrated (LSI) circuits. LSI circuits have extremely fine patterns made possible with progress on refinement and densification. Today, these patterns are 10 nanometers (1/10,000th of the diameter of a human hair) or smaller.

Precise fabrication of ultrafine circuits like this requires electron beam lithography. As demand for semiconductors grows further due to such factors as the development of an IoT society and the dawn of the 5G era, the role of electron beam lithography systems is expected to increase in importance.

Partnering with Austria-based IMS Nanofabrication GmbH (IMS), we are supplying multi-beam electron beam lithography systems with improve throughput ahead of the global competition.



JBX-8100FS  
electron beam lithography system

#### Electron beam source for deposition

Electron beam deposition is a method of vaporizing metals or oxides in a vacuum using an electron beam to have them adhere to the surface of a lens, circuit board, or other component as a thin film. Our electron beam source is used to heat the material to cause it to evaporate. Because the power density of electron beams is high, they can vaporize various materials, including metals with high melting points.

When a thin film is deposited onto glass or a camera lens, it creates an antireflective and infrared cut coating. Electron beam deposition is also used to form electrodes and wiring film for electronic parts, LEDs, and other products. Although you may not see it, electron beam sources for deposition play an active role as a technology that supports everyday life behind the scenes.

Main customers ..... Manufacturing industry (semiconductors, optical devices, electric machinery, electronic parts, chemistry, etc.) and research institutes

### Market trends

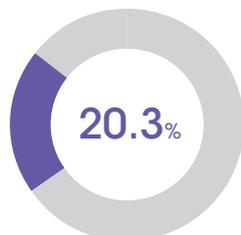
- Demand for high-performance optical films for smartphones, in-vehicle cameras, and surveillance cameras is on the rise
- Demand for electron beam lithography systems for manufacturing optical communication devices and millimeter-wave devices is also increasing
- Market size of semiconductor device industry, including 5G-related, 3D memory, and in-vehicle devices is growing

### Technology and product strategies

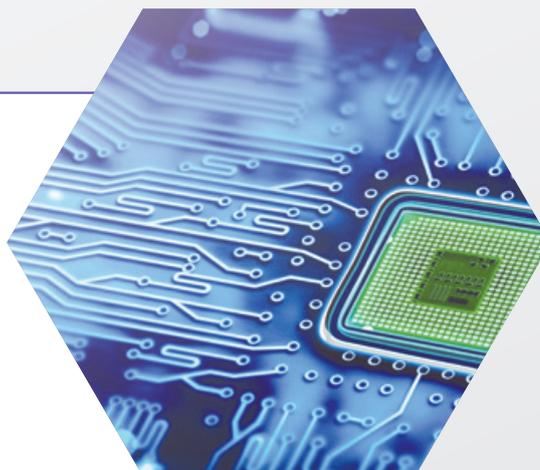
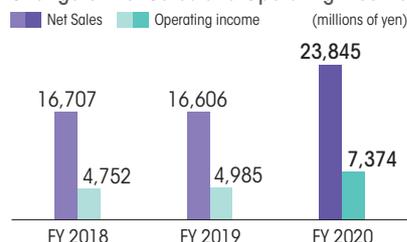
- Launch of low-defect, low-optical-loss bombardment deposition source for infrared cameras and sensors
- Cultivation of markets in collaboration with related companies in new application fields: nanoparticle synthesis and spherical powder using thermal plasma
- Development of market for new state-of-the-art JBX-8100FS spot electron beam lithography system

## Overview of the Fiscal Year Ended March 31, 2020

### Net Sales by Segment



### Change of Net Sales and Operating Income



## Topics

### Decision made to acquire new plant to address growing demand for semiconductors

JEOL made the decision to acquire a building and land from Yamaha Motor Robotics Holdings Co., Ltd. to boost production capacity for electron beam lithography systems, which are growing in demand, and other products.

We will work to improve our corporate value and strengthen our management foundation by steadily implementing measures for our next stage of growth.



Appearance of the new plant

Address: 2-11-1 Inadaira, Musashimurayama-shi, Tokyo

### Success in 3D metal printer prototyping: Commercial machine to be launched within the fiscal year

Applying electron beam technology, we successfully developed a powder bed fusion-based electron beam 3D metal printer that melts and shapes metal powder using an electron beam.

This allows optimal shaping of difficult-to-machine material with fewer cuts compared with conventional casting or cutting. Our proprietary technology extends the life of cathodes and eliminates the need for helium to prevent electric charging, allowing low-cost forming in a clean space with little gas contamination.



Titanium alloy turbine blade (prototype)

## Aiming for further growth



Tadashi Komagata  
Executive Officer

### JEOL industrial equipment supports the production of electronic devices that are growing with digitization

Electronic devices such as IC chips, optical devices, and sensors have come to be used everywhere in conjunction with digitization and the spread of networks in society, and the production volume is increasing year after year.

In the industrial equipment segment, we develop, manufacture, and sell manufacturing equipment and components for electronic devices based on applied electron beam technology developed with electron microscopes at the core.

Large numbers of electronic devices are used in our ultra-high-speed communication society, including in 5G systems that are expected to become more widespread. Our products are essential for their production, so we will continue to develop and provide systems that quickly address the needs of the times.

The multi-beam mask writer we developed jointly with Austria-based IMS is already an essential system for fabricating photo masks in the age of extreme ultraviolet (EUV) lithography, so it is no exaggeration to say that it has brought about a seismic shift in this field.

We are also about to release our first commercial 3D metal printer. This project began with participation in a national project. This is certain to be an innovative system that makes the impossible possible in the manufacturing industry of the future.

# Overview by Business Segment

## Medical Equipment Segment

### Business description

In 1972, we released the first clinical chemistry analyzer by applying the measurement technology we honed in the development of analysis and inspection systems for the medical field. The series was called Clinalyzer, and by expanding the lineup and developing products matching requirements, these analyzers became more common, and we contributed to medical progress and helped maintain people's health.

In 1996, this was replaced by the BioMajesty™ series featuring an enhanced analysis method, better economic efficiency, and improved processing. This series remains available to day.

As part of our YOKOGUSHI strategy, we partnered with FUJIREBIO Inc. to link our system with theirs, providing integrated immunological and biochemical testing. In this and other ways, we address increasingly diverse clinical testing needs.

### Main instruments

#### Clinical chemistry analyzers

Measuring sugar, cholesterol, protein, and other components in blood, urine, or other fluid samples is useful for discovering diseases and managing health. In recent years, services have been made available for individuals where blood samples are taken at home and mailed to a lab for results. The evolution of clinical chemistry analyzers has greatly contributed to blood testing becoming a familiar routine.

Our BioMajesty™ series of clinical chemistry analyzers has been delivered to small and medium-sized hospitals, testing centers (private companies specializing in analysis), and large hospitals, such as university hospitals. Using a proprietary method for diluting samples, we now minimize sample volume and reduce the amount of reagents required. This alleviates the physical stress placed on patients and contributes to lowering running costs for medical institutions.

Through ultra-micro measuring and ultra-high-speed processing technology, the BioMajesty™ series supports medical progress.



BioMajesty™ JCA-BM6070G

#### Laboratory information systems

This information solution helps increase efficiency and introduces IT to the frontlines of medicine by linking and managing all the data involved in clinical chemistry analyzer operations. The centralized management of everything from receiving samples to testing and reporting by the system allows for fast and accurate processing.

All the data from testing, including when the test was performed, who made the request, which device was used for registration, and who approved it, is stored by item, ensuring traceability in clinical testing.

Main customers ..... Hospitals, clinical testing centers, and reagent manufacturers

### Market trends

- Clinical chemistry analyzer and immunoassay system markets remain strong
- Overseas, China and other emerging markets continue to grow, as they did last year
- In Japan, replacement demand for the JCA-BM8000 series remains strong, primarily at testing centers

### Technology and product strategies

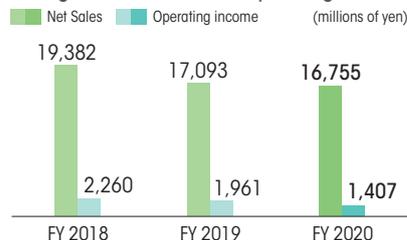
- Launch of the BioMajesty™ JCA-BM6070G flagship model offering IoT support and improved reliability, functionality, and safety
- Assignment of our staff to a German subsidiary and installation of demo machines to promote overseas expansion via our own brand and distributors
- Promotion of steady profits through further strengthening of solutions businesses (sales of reagents, consumables, services, etc.)

## Overview of the Fiscal Year Ended March 31, 2020

### Net Sales by Segment



### Change of Net Sales and Operating Income



## Column

### YOKOGUSHI strategy in the medical equipment segment

In April 2016, we collaborated with FUJIREBIO, a global supplier of clinical testing equipment, and launched the JCA-ZS050 clinical chemistry analyzer, which can be linked with FUJIREBIO's fully automated chemiluminescent enzyme immunoassay (CLEIA) system, LUMIPULSE® L2400. Linking these systems allows a wide range of measurements for immunological and biochemical tests on a single platform.

Both our BioMajesty™ series of clinical chemistry analyzers and FUJIREBIO's LUMIPULSE® series of CLEIA systems are widely used at medical institutions across Japan, having sold around 3,000 and 1,300 units,

respectively. This integrated biochemical and immunoassay system allows us to address the diverse requirements for testing sites and to increase the efficiency of testing.



BioMajesty™ ZERO JCA-ZS050

## Aiming for further growth



**Kiyotaka Fujino**  
Corporate officer

### Providing solutions to support our social contribution in the clinical testing field

In 2020, society was hit hard by the COVID-19 pandemic. We have been providing solutions to the clinical testing fields, but taking a further lesson from the circumstances surrounding COVID-19, we will gradually develop the testing solutions that are necessary but not yet established to contribute to society through emergency medical treatment.

Advanced testing is important, but in some cases, it can only be performed a limited number of times. Versatility and convenience are social requirements in times of emergency. We will provide solutions that offer quick results no matter in which medical institution the examination takes place.

Moreover, we have a diverse lineup of analyzers. Taking advantage of that strength, we will develop new testing equipment that offers high precision and accuracy. In the future, this equipment will be a useful for supporting the diagnosis of rare and incurable diseases.

We plan to provide one-stop solutions that deliver testing results to those on the frontlines of medicine. I am confident that we can provide a reliable, error-free testing system, in addition to our analyzers, by organically linking solutions that promote greater efficiency in medical settings, including reagents, consumables, integrated systems, ISO-certified testing, compliance with medical law, and preventive diagnosis via IoT.

## New Services

Promoting wider use of technology in society



### Online

The number of companies and organizations encouraging employees to work from home is increasing in response to the COVID-19 pandemic. Currently face-to-face sales and interactions at exhibitions and other events are difficult, so there is demand for solutions that make full use of the Internet. To prevent customer research and analytical operations from falling behind, we are expanding our online support and working to maintain customer relations via the Internet.

#### 1. Online demonstrations

We introduce systems and provide operating instructions over the Internet to customers considering their adoption. These are Web conference-based sessions that allow bi-directional discussions without needing to visit our company.

#### 2. Online exhibitions

Many exhibitions and academic conferences have been canceled or postponed to prevent the spread of COVID-19. We publish the panel discussions, catalogs, technical material, and more that we had planned for these events on our website, where they can be viewed from anywhere at any time. We are also working on publishing videos of the seminars and lectures that were planned so that they can be watched online.

#### 3. Webinars

We provide live streams of seminars (webinars) where we provide information useful for research and analysis, including operating our equipment, analytical know-how, and information on the latest technologies and products. After the webinars, we focus on follow-up with participants, including online question and answer sessions. Additionally, we are actively putting together an archive of recordings from past seminars.

#### 4. Web content

We are working to improve our online educational content to give back to society by sharing the knowledge and technology we have cultivated and to promote learning even when it is difficult to leave home. This includes publishing *JEOL NEWS*, which summarizes the latest research results, glossaries explaining academic and technical terminology related to scientific and metrology instruments, and on our website we publish *Introduction to JEOL Products*, easy-to-understand explanations of the principles and application of our products for beginners.

## Contracted Services

We provide the experience and results we have cultivated over our more than 70 years through a contracted analysis service.

We address varied needs with the latest equipment and analytical know-how, as only a manufacturer can.

#### 1. Contracted analysis

We measure, observe, and analyze samples provided by customers. Our comprehensive support of customer research includes everything from recommendations on methods of analysis to advice on the results of analysis.

#### 2. Observed analysis

Our customers can come to us and consult with expert operators on site as they conduct analyses according to their requirements. Customers can specify where to observe and what conditions to use for analysis on the spot while checking the status.

# Sharing

Moving from ownership to use of analytical instruments. With our sharing service, we promote the use of high-end equipment.

As science progresses, demand is on the rise for using the high-end scientific and metrology instruments required for cutting-edge research, including nanotechnology and material analysis. On the other hand, there are many challenges when it comes to universities, companies, and public research institutes purchasing and maintaining high-end equipment on their own with limited budgets.

In response, we fully launched a metered rate sharing service in 2018 that allows use of our equipment on an as-needed basis, reducing the burden of initial investment and running costs. By providing the best analysis via sharing to customers that had previously given up on adopting high-end equipment due to budget constraints, we are capturing demand and continually strengthening relationships with customers. With various plans, contracts are flexible, including remote operation plans offered over the Internet so that customers do not need to come to our facilities, and concierge services are provided by our expert staff.

Through our sharing service, we will build a new business model by proposing value in keeping with the current trend in a shift from products to services and addressing diverse needs on the frontlines of research.

In the last fiscal year, our sharing service was awarded with the Accreditation of Partnership on Research Assistance Service certificate by the Ministry of Education, Culture, Sports, Science and Technology.

## Equipment available via sharing service



Accreditation of Partnership on Research Assistance Service

Accreditation of Partnership on Research Assistance Service (A-PRAS) logo



JNM-ECZ600R/JNM-ECZ800R  
nuclear magnetic resonance systems



JEM-ARM200F  
NEOARMex atomic resolution analytical electron microscope



JAMP-9510F  
field emission Auger microprobe

### 3. Online remote analysis



Customers can connect with expert operators via the Internet. Conditions for observation and analysis can be specified while checking the status in real time via video without visiting our facilities. The data obtained is delivered quickly and safely via online storage.

### 4. Sample preparation

Preparation of high-quality samples is essential for obtaining good analytical data. Our experienced staff use the latest equipment to prepare samples on behalf of the customer according to the requirements for analysis.

### 5. Customized lectures/sample preparation lectures

We offer lectures according to customer requests as well as person-to-person lectures on sample preparation.



# International Standards Compliance for the Environment and Quality

## JGMS Overview

JGMS (JEOL Group Management System) is a management system that defines the actions that JEOL must take to meet the requirements for ISO 9001:2015 and ISO 14001:2015 certifications from an outside certification authority. ISO 9001 is a certification that helps to improve customer satisfaction and the quality of products and services. ISO 14001 is a requirement that defines environmental requirements, including monitoring and reducing waste and other environmental factors as well as compliance with environmental laws and regulations. All of the rules, standards, and procedures specifically designated for operations included in these systems are integrated into Company management.

## Policy

The quality and environmental policies are clearly communicated both internally and externally through media such as the website.

### Quality and Environmental Policy

In support of our Corporate Philosophy, offering advanced products and services to the users of scientific and metrology instruments, semiconductor equipment, industrial and medical equipment, and contributing to the development of a sustainable, recycling-based society.

### Commitment to Quality

- In support of our mission, the JEOL Group is committed to the role of a total solution provider, providing high quality products and well-organized services to best serve our clients.
- Continually improve products and services in cross-departmental approach.
- Promote quality control initiatives through execution and continual improvement of our quality management system in compliance to international standards.

### Commitment to Environmental Protection

- Product development and process control in an environmentally friendly manner.
- Never-ending effort in environmental quality improvement at every step of our business from development to production to service.
- Compliance with laws and regulations as a socially responsible global corporation.
- Promote environmental control initiatives through execution and by continually improving our quality

management system in compliance with international standards.

## JGMS Operations

Senior management assesses the conditions, issues, and needs—in and outside the Company—and then evaluates risks for basic, quality, and environmental policies. Then precise guidance is provided to the people responsible in the divisions. Every division then sets the goals and plans for their departments based on this guidance and develops, manages, and evaluates them, making continual improvements so that the PDCA\* cycle can be implemented throughout the Company. In this way, senior management guidance permeates all levels of the organization. These activities are managed as one JGMS system to ensure better products and services and to protect the global environment.

\*PDCA: plan, do, check, act cycle (continual improvements)

## Audits

### External Audits

The activities of the JEOL Group are regularly audited by an external audit company, and the audit company provides an evaluation of the continuing certification, including assessment of the effectiveness and conformance with international standards and JGMS. The issues that are pointed out in the audits are regarded as opportunities for improvement, and we make a full use of them as a tool for improving business operations.

### Internal Auditing

Two internal auditing periods are scheduled every year so that the JGMS activities conducted in every division can be independently audited. Internal auditing is done objectively from a neutral perspective by certified internal auditors who have completed education and training and who meet certification standards.

Recommendations made for improving operations during internal audits are not limited to improvements in a specific division, but are deployed horizontally across the Company.

## Publication of International Certification

Headquarters and Group companies obtained the first certifications for ISO 9001 in December 1995 and ISO 14001 in December 2002. Since then, the certifications have been updated and the JEOL Group companies have

complied with the newest standards: ISO 14001:2015 and ISO 9001:2015. ISO certification information is shown at the right. You can always see up-to-date information on the JEOL website.

<p><b>Certification authority</b> Bureau Veritas Certification Holding SAS-UK Branch</p> <p><b>Registration numbers</b> ISO 9001: 4380808 1.0 ISO 14001: 4380809 1.0</p>
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## Compliance

### CSR Committee

Recently corporations are being required to comply with regulations concerning "Pollution Control, Chemical Reduction, Quality/Environmental Control" as part of their corporate social responsibility (CSR).

JEOL organized a committee to address this issue in 2006. The CSR Committee, headed by the president and advised by JEOL's attorney, meets quarterly. The committee's purpose is to promote JEOL's activities to continually improve and reinforce compliance, quality control, social contribution, corporate ethics, and risk management.

### Environmental Regulations Committees

Environmental Regulations Committees have been established to handle issues of environmental regulations that apply to JEOL products, starting with the RoHS directive.

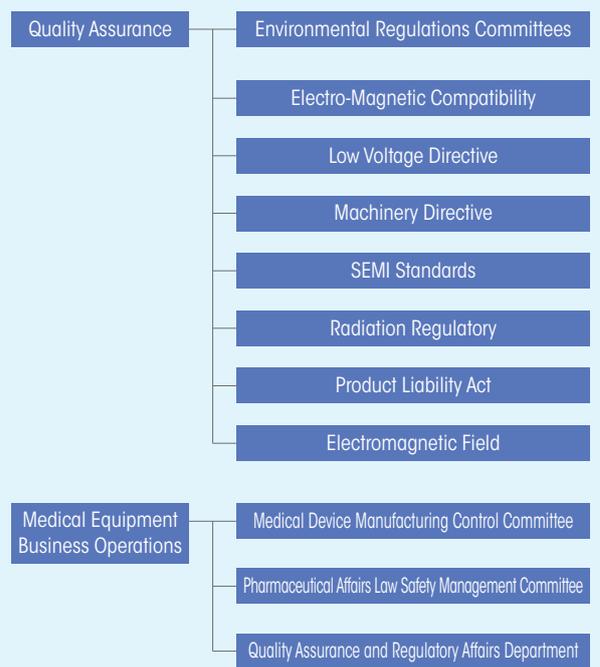
All departments related to products, including sales, development, design, procurement, manufacturing and service, participate and are working on legal compliance. Laws and regulations change over time.

### Technical Regulation Committees

To respond effectively to the laws and regulations in every country, we have established special committees within the Quality Assurance Division and are taking appropriate action. Every committee considers all items related to product technical regulations and the latest trends in laws.

Any provisions affecting the JEOL Group are discussed in the committee specializing in that area, and a review is quickly distributed among all concerned through the Quality Assurance Division .

For medical equipment, RA (Regulatory Affairs), along with QA (Quality Assurance) is responsible for the ME quality assurance within the Medical Equipment Division, and ensuring compliance with the various rules and regulations throughout the world.



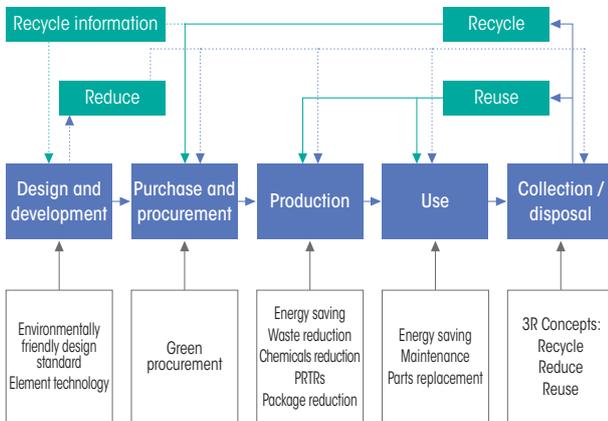
# Together with the Environment

## Environmental Protection through Products

### Initiatives for Environmentally Conscious Product Lifecycles

JEOL is implementing initiatives that incorporate the concept of reducing environmental impact in each part of the product lifecycle, from procurement and production to distribution, through to operation, disposal, and recycling. In development and design, we not only comply with environmental laws and regulations but we also include the reduction of CO<sub>2</sub> emissions as a goal of design. When procuring materials, we ask component manufacturers to comply with our environmentally preferable (green) purchasing requirements and to use appropriate levels of environmental management. In the production phase, we strive to reduce CO<sub>2</sub> emissions in the whole factory as well as to ensure that the disposal of waste materials is being done properly. When in use, we ensure stable operation of instruments through maintenance and inspection. We strive to reduce the environmental impact of instruments that are no longer being used through the comprehensive execution of the 3Rs – recycle, reduce and reuse – during collection and disposal.

### Scope of JEOL product assessment



### Environmental Contribution through Products

JEOL's key products are ones that stimulate environmental improvement, including the tools that are the basis of R&D, instruments that improve production processes, and environmental analysis equipment.

In this section, we introduce the products that contribute to environmental improvement.

### Atomic Resolution Analytical Electron Microscope

To both counter global warming and for economic viability, it is essential to conduct R&D aimed at improving the performance and reducing the size of energy devices, including rechargeable batteries, light-emitting devices

such as LEDs and OLEDs, and semiconductor devices such as CPUs and IoT sensors. Analysis at the atomic level is necessary for the development of innovative materials for that purpose. JEOL's Atomic Resolution Analytical Electron Microscope has the performance and quality to meet these R&D needs.

JEM-ARM300F2  
GRAND ARM™2



### Field Emission Electron Probe Microanalyzer

Analysis of trace components contained in materials is critical for the development and quality control of structural materials, including high-tensile steel, which can save energy by reducing the weight of automobiles. The JXA-iHP200F Field Emission Electron Probe Microanalyzer meets the requirements for the high-speed, high-precision analysis of trace components. In addition, this analyzer contributes to environmental improvement in a wide range of fields such as research into the decommissioning of nuclear reactors and research for the exploration of natural resources.

JXA-iHP200F



### High Throughput Triple Quadrupole Mass Spectrometer

Triple Quadrupole Mass Spectrometers can detect harmful substances in food, water, and the environment with a high degree of accuracy and speed. JEOL's Triple Quadrupole Mass Spectrometer can analyze many harmful substances at high speed and enhances the efficiency of analysis for pesticide residues.

JMS-TQ4000GC



### Green Procurement measures

The JEOL Group communicates our environmental policies to our clients and business partners and asks for their

cooperation in complying with environmentally preferable (green) purchasing requirements.

JEOL Group companies promote the development and design of products that do not contain certain chemical substances.

Our suppliers, provide services without adding specified chemicals, and deliver goods that do not contain the specified chemical substances, in accordance with the terms of their contracts with us. Working with our partners based on a "green contract," JEOL Group companies provide, to their business partner companies, information related to chemical regulations and helps them with analysis of chemical substance to achieve specific targets.

**JEOL Group Green Purchasing Requirements** [excerpts]\*1  
Version 5 (June 2010)

The JEOL Group is committed to activities to encourage environmental protection throughout the business cycle from material purchasing, product delivery, service, maintenance, and disposal.

We form an alliance with our clients, vendors, and partners to establish environmentally preferable purchasing worldwide. To insure green purchasing from our supply chain, we have defined a set of rules as the JEOL Group Green Purchasing Requirements.

### RoHS Compliant Products

Since 2017, the JEOL Group has been providing products that comply with the European RoHS Directive, a directive that limits harmful substances used in electrical and electronic products. In addition, the number of regulated harmful substances will increase from six to ten in July 2021, so the Group is making every effort to ensure that our products remain compliant.

Going forward, the Group will continue to work on the development, production, and supply of products that contribute to the environment and products that are environmentally conscious by complying with the RoHS Directive in an increasing number of countries worldwide as well as the reduction of environmental impact\*2.

## Protecting the environment through business activities

### Reducing Greenhouse Effect Gases

The JEOL Group, in compliance with the Global Warming Policy promoted by the Tokyo Metropolitan Government, implemented various measures through the Energy Saving Committee to reduce the amount of CO<sub>2</sub> emissions.

In cooperation with initiatives from the Tokyo Metropolitan government aiming for Zero Emissions Tokyo, on October 15, 2019 JEOL donated 23,077 tons of CO<sub>2</sub> credits based on the metropolitan cap and trade system. For details of these initiatives by the Tokyo Metropolitan

government, please see the Bureau of Environment website.

### Improving Efficiency of Energy Use

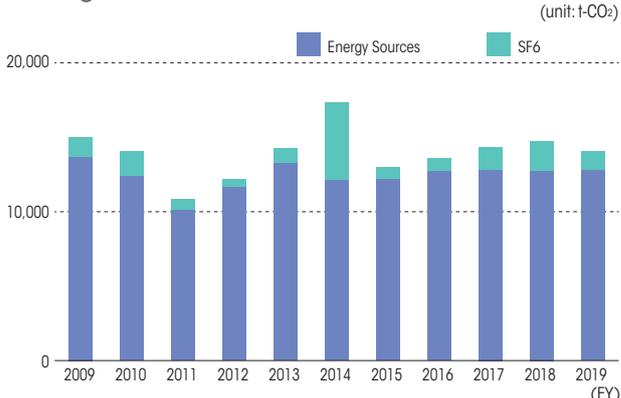
JEOL is working to improve energy efficiency, starting with electricity and fossil fuels. Specific examples include upgrading air conditioning systems, introducing some separate air conditioners, clean room equipment renovations, progressive upgrading to LED lighting, more effective use of nighttime electricity by introducing ice storage air conditioners, light-shielding sheets and films installed on buildings to reduce the burden on cooling in summer, and using heat-shielding coatings.

In addition, Company-wide initiatives aimed at reducing energy consumption include Cool Biz and Warm Biz office clothing campaigns as well as managing the amount of electricity used in every building.

In February 2020, we received an award as an excellent energy conservation business from the Kanto Bureau of Economy, Trade and Industry under the Ministry of Economy, Trade and Industry (METI) for our excellence in managing energy. JEOL improved the energy consumption rate (index for measuring efficient use of energy) by 4.2% on average over a five-year period against a target of 1% or more annually on average. This 1% or more target is stipulated by the Act on the Rational Use of Energy and is primarily achieved through the day-to-day conservation of energy and is overseen by the Energy Saving Committee.

We also garnered the highest rank of "S" for four consecutive years in a system that evaluates businesses every year being implemented by METI. Further, the Kanto Region Electricity Usage Rationalization Committee has recognized our exceptional accomplishments with outstanding achievement awards for four consecutive years, from fiscal 2015 to 2018, for our effective use of electricity and for promoting energy conservation, which culminated in the latest award, a first for the Company.

Change in CO<sub>2</sub> Emissions



\*1 Visit JEOL site for the entire document <https://www.jeol.co.jp/corporate/envi/activity/> (Only available in Japanese)  
\*2 Visit JEOL site for more details on our environmental projects <https://www.jeol.co.jp/en/corporate/envi/report/>

### Storage and Disposal of PCB Waste

Although the JEOL Group stored PCB waste (used in high-voltage capacitors, transformers, and stabilizers), we regularly treated both high-concentration and low-concentration waste. Processing of fluorescent lamp ballasts took place in February 2020, marking the end of treating PCB waste.

### Management of Chemical Substances

- JEOL protects employees and prevents the inappropriate distribution or leaks of chemical substances used in the production process and during R&D. We also introduced a chemical management system in October 2019 aimed at effectively managing daily use and inventories. We educate managers on the correct use of chemical substances as well as effective ways to manage storage locations and amounts, and to ensure best management practices for chemical substances received and used via the chemical management system.
- PRTR Law (Pollutant Release and Transfer Register) and Tokyo Metropolitan Environmental Preservation Code  
JEOL reports on specified chemical substances that are subject to reporting. These materials are carefully managed, even at JEOL Group companies that do not handle reportable quantities, so that the quantities at each business location can be continuously monitored.

### Verification of Waste Material Processing and Processing Results

For waste materials, the main issue is to improve the rate of recycling, which we achieve by completely separating

waste products by the type of material, by improving the rate of recycling of waste plastics, and by adopting reusable packing crates and materials.

For the disposal of waste materials, we make the effort to monitor the final disposal method, even for those items that are handled outside the company grounds. We do not rely solely on the control manifests for industrial waste. Waste materials disposal managers ensure compliance with the stipulations of Japan's Wastes Disposal and Public Cleansing Act, as well as those of local regulations. We also perform on-site checks to confirm that the disposal of waste materials is being conducted properly.

### Measures at JEOL Yamagata Co., Ltd.

JEOL Yamagata Co., Ltd. is a production base of the JEOL Group located in Tendo City, Yamagata Prefecture. Employees of several companies on the same premises perform all the production tasks, from parts assembly to final production. This is part of our initiative to develop environmentally friendly manufacturing processes. In this way, we are reducing and/or eliminating the need for packaging materials to transfer parts and materials between companies as well as reducing our fuel consumption and the exhaust gases usually associated with transportation.



JEOL Yamagata Co., Ltd.

### Reporting to the Metropolis of Tokyo

Reporting business locations of the certified company: 1 company: JEOL

(Unit: kg / year)

Substance/Fiscal Year (amount used)	FY 2017	FY 2018	FY 2019
1) Methanol	100	—	110
2) Acetone	—	—	100
3) Isopropyl alcohol	—	—	100
4) Sulfuric acid	100	—	—

# Together with Employees

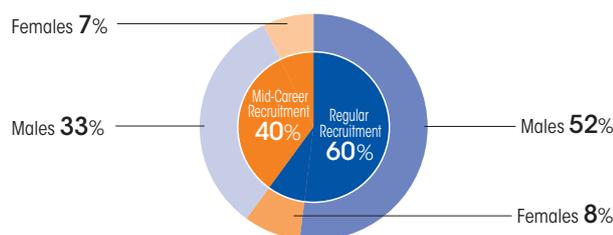


To ensure that we live up to our company philosophy sustainably, we are striving to secure outstanding employees that have diverse understanding and perspectives. As well, we will provide an environment for them to maximize their abilities. In addition, we are working to maintain and improve our business activities by creating an environment in which employees can work safely and in good health, and that enables a variety of workstyles.

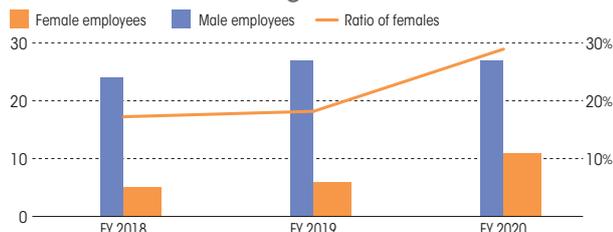
## Recruitment and Human Resource Development

We continue to cultivate the DNA that we have built up over more than 70 years by hiring new graduates while bringing in mid-career workers with diverse backgrounds. The open and mutual exchange of ideas between these two groups serves to challenge the ever-evolving world of science and technology.

Comparison of Regular Recruitment and Mid-Career Recruitment (as of March 31, 2020)



Ratio of Females among New Graduates Recruited



	FY 2018	FY 2019	FY 2020
No. of male employees	24	27	27
No. of female employees	5	6	11
Ratio of females(%)	17.24(%)	18.18(%)	28.94(%)

## Promoting Diversity

JEOL actively recruits people regardless of their gender, nationality, age, or disability to create an organization where everyone can play an active role. The fact that JEOL is a company where people can work with peace of mind for a long time is reflected in our low turnover rate in recent years.

In July 2019, JEOL received Eruboshi certification (2nd level) from the Ministry of Health, Labor and Welfare in recognition of our accomplishments in advancing women in the workplace. We emphasize the hiring of females, and in recent years female workers have accounted for approximately 20% of new employees. In addition, the rate of employees who take childcare leave and return to work is close to 100%. Many employees make use of a shortened work hour system, etc. after returning to work following childbirth and childcare. We also established a job return system in January 2019. We support a work and family life balance by introducing a return-to-work registration system targeting employees who need to stop work for reasons such as childcare or nursing care.



	FY 2017	FY 2018	FY 2019
Job Turnover Rate	1.2%	1.4%	1.3%

## Initiatives to Safeguard Health

At JEOL, we conduct health management programs to ensure that employees stay physically and mentally healthy.

Almost all employees receive regular medical examinations every year. Our resident industrial physician pays close attention to the daily health of employees.

Further, over 90% of employees undergo stress checks every year to help prevent mental health problems. We have also established multiple points of contact to provide counseling and support, which includes talking with an industrial doctor specializing in mental health or getting advice from people outside the Company via telephone or email.

	FY 2017	FY 2018	FY 2019
Health checkup participation rate	99%	99%	99%
Stress check exam rate	93%	92%	91%

## Initiatives for New Workstyles

JEOL encourages employees to take paid leave to help balance work and private life. In fiscal 2019, all employees took the five days of paid leave as stipulated by the national government, with the average number of days of paid leave taken reaching 11 per employee. Going forward, to respond to flexible work that suit diverse lifestyles, we will promote the systemization of "paid leave by the hour."

# Together with Local Communities

## Contributions to Society

### Science Class Support and Math and Science Special Programs

The Science Class Support Project was started in October 2007 as part of the commemoration of the 60th anniversary of the JEOL Group. Initially, the activities were held at nearby elementary schools, but was later expanded to include teachers, and is now being conducted at a variety of sites, not just elementary schools. Through FY2019, 559 demonstrations on 335 days have been performed.

The Science Class Support programs are mainly conducted in classrooms by demonstrators sent from the JEOL Group using benchtop scanning electron microscope (NeoScope™). Students are able to observe pollen, insects and various mechanisms of the body in detail. Students seeing electron microscope images for the first time display a lot of interest, making comments like “It was so interesting to see the bugs so clearly and the different pollen shapes”, and “I really liked being able to see what goes on inside the human body in the micro world.” By participating in local community events and workshops for elementary and junior high school teachers we hope to provide a chance for many people to become more familiar with the microscopic world.

Examples of these activities include The 75th Annual Meeting of the Japanese Society of Microscopy and Public Lectures (held at Nagoya Congress Center); JAIMA Science Summer School: Experiments with Analytic Instruments for High and Junior High School Students (National Museum of Emerging Science and Innovation); Youngsters’ Science Festival 2019 (Science Museum); Suginami City Future Science Club for Junior High School Students (Suginami Municipal Suginami Dai-4 Elementary School); Institut Culturel Franco-Japonais – École Japonaise de Paris (Paris, France); and Akiruno Municipal East Akiru Elementary School (Akiruno City)

In 2019, there were also visits to two elementary schools in the city of Ishinomaki, two in Kesenuma city, and one in Sendai city to work with some of the children affected by the Great Eastern Japan Earthquake.

In the future, we hope that the everyone, including teachers, students, and the general public will be interested in science.

Additionally, the JEOL Group worked in collaboration with universities and other businesses to increase the number of children with an interest in math and sciences, through a two-year special support program organized by the Tokyo Board of Education starting in FY 2015. After the end of Tokyo Board of Education program in 2017, JEOL

activities have continued through a Math & Science Special Support Program organized in Hino City. JEOL Group instructors utilize benchtop scanning electron microscopes (NeoScope™) to conduct the science support classes. In 2019, three elementary schools and one junior high schools in Hino city were visited (14 classes with 524 students) giving the children a chance to experience the micro-world using an electron microscope.



Science class support activities



The Japanese Society of Microscopy public lecture

### Support of the Kazato Research Foundation

The Kazato Research Foundation was established in 1969, in commemoration of the 20th anniversary of JEOL Ltd. funded by a contribution from Kenji Kazato, the founder of JEOL Ltd. The purpose of the organization is to promote the research and development of electron microscopes and other related devices, as well as application research using these instruments (medical science, biology, physics, chemistry, materials science, nanotechnology, and others). The foundation has helped many young researchers over the years, and JEOL continues to support the foundation activities with annual donations. (<http://www.kazato.org/english/>) The young researchers below received awards in FY 2019.

#### Kazato Prize

Akihiko Hirata  
(Professor, Faculty of Science and Engineering, Waseda University)  
Local structure analysis of amorphous materials using STEM electron diffraction method

Atsunori Oshima  
(Professor, Cellular and Structural Physiology Institute, Nagoya University)  
Structural analysis of intercellular communication channels by cryo electron microscopy

#### Kazato Research Encouragement Prize

Yukihiko Sugita  
(Specially appointed Assistant Professor, Institute for Frontier Life and Medical Sciences, Kyoto University)  
Structural analysis of negative-strand RNA viruses by cryo electron microscopy

Tomoka Hasegawa  
(Assistant Professor, Faculty of Dental Medicine, Hokkaido University)  
Elucidation of the novel effects of PTH in the bone-blood vessel linkage

Prize winners are expected to play active roles in the fields of materials research and life sciences.

## Local Communities

### Don't Litter Campaign (Commute Route Clean-up)

The Don't Litter campaign is a volunteer community service that JEOL employees have been performing since 1994, and it has become a regular part of the routine. About once every two months, employees engage in these clean-ups during their morning commute.

Employees will continue these activities, never forgetting the original spirit and enthusiasm that prompted the start of the Don't Litter campaign.

*"It was depressing to see cigarette butts and other trash littering the sidewalks around the company, and along the paths to the train station. Believing that there must be something that we could do, something that we should do, we began to regularly clean the commuting routes. The name given to this clean-up activity is the Don't Litter Campaign."*



Don't Litter Campaign rally

### Participation in the Akishima Environment Consideration Enterprise Network

The activities of the Akishima Environment Consideration Enterprise Network were started in April 2005, with 16 member organizations. By the end of FY 2019, the organization had grown to 41 member enterprises.

JEOL has been involved in the activities as an executive member since the inception of the network.

During the major revision of the organization between FY 2009 and FY 2010, JEOL filled the role of chairman of the network, continued in the role of vice for FY 2011 and FY 2012, and as executive secretary in 2015, continuing to promote environmentally friendly activities and practices in collaboration with the network members. Exhibits were halted and many other activities were limited in FY 2011 due to the Great East Earthquake and Disaster, but the activities were revived in FY 2012.

The activities are low-profile but we intend to continue to make steady dedicated efforts to "Promote environmentally friendly practices in the local community".

### Activities at JEOL Yamagata Co., Ltd.

JEOL Yamagata Co., Ltd. has earned the goodwill of the people of nearby Tendo City, Yamagata Prefecture. To continue doing business for many years to come, the following initiatives are being undertaken.

- 1 We are accepting on-the-job trainees from high schools and colleges every year and provide factory and carrier experiences to assist the development of human resources and professional awareness.
- 2 Factory tours are offered to provide opportunities to see the products being produced. In FY 2019, 260 visitors from 14 organizations visited our site.
- 3 Crossing guards and patrols are provided on the roads around the company during the traffic safety campaigns in the spring and autumn. The goal is not only to prevent traffic accidents during the commute to school by the young students, but also to improve the traffic manners and practices of the employees.
- 4 We participate in local festivals, social gatherings and events. In particular, for the local Autumn Festival, a benchtop scanning electron microscope was prepared at the festival site to allow visitors to see magnified images of insects and other objects.

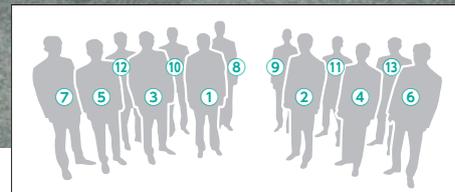


Traffic safety on school commuting routes



Students from Yamagata city elementary school

# Board of Directors, Audit & Supervisory Board Members, and Corporate Officers (As of June 25, 2020)



## Gon-emon Kurihara ①

Chairman & CEO

- Apr. 1971 Joined the Company
- Apr. 2000 General Manager of Medical Sales Division
- Jun. 2002 Director
- Apr. 2004 Assumed the position in charge of sales
- Jun. 2004 Managing Director
- Apr. 2005 Head of Sales Division
- Jun. 2005 Senior Managing Director
- Apr. 2006 Assumed the position in charge of analytical instruments
- Jun. 2006 Director and Senior Executive Officer
- Jun. 2007 Executive Vice President
- Jun. 2008 President
- Apr. 2012 Assumed the position in charge of overall management (to the present) and Corporate Planning & Strategy Office
- Jun. 2019 Chairman and Chief Executive Officer (CEO) (to the present)

## Izumi Oi ②

President & COO

- Apr. 1986 Joined the Company
- Apr. 2012 General Manager of Management Strategy Planning Office
- Jun. 2013 Corporate Officer of the Company
- Jun. 2015 Director and Corporate Officer of the Company
- Jun. 2016 Director and Executive Officer of the Company
- Apr. 2019 Assumed the assistant position in charge of overall management
- Jun. 2019 President and Chief Operating Officer (COO), in charge of overall management (to the present)

## Koichi Fukuyama ③

Director & Senior Executive Officer

- Apr. 1982 Joined the Company
- Apr. 2005 General Manager of Management Strategy Planning Office
- Apr. 2006 General Manager of Internal Auditing Division
- Jun. 2006 Corporate Officer
- Jun. 2009 Director and Corporate Officer
- Jun. 2011 Director and Executive Officer
- Apr. 2016 Assumed the position in charge of sales (to the present) and the position in charge of brand strategy
- Jun. 2016 Director and Senior Executive Officer (to the present)
- Apr. 2017 Assumed the position in charge of brand communication
- Apr. 2018 Assumed the position in charge of the Business Operation Center (to the present)

## Atsushi Seki ⑦

Director & Executive Officer

- Apr. 1983 Joined the Company
- Oct. 2009 Assistant General Manager of General Affairs Division, General Manager of Human Resources Dept., and Manager of Recruitment and Training Group
- Apr. 2012 General Manager of General Affairs Division
- Jun. 2014 Corporate Officer
- Apr. 2015 Manager of Internal Auditing Division (to the present)
- Apr. 2018 Assumed the position in charge of General Affairs (to the present)
- Jun. 2018 Director and Executive Officer (to the present)

## Satoshi Nagakubo ⑧

Outside Director

- Jun. 2001 Executive Officer of Nissho Iwai Corporation (currently Sojitz Corporation)
- Jun. 2003 President and Representative of Nissho Iwai Plant Equipment Co., Ltd. (currently Sojitz Machinery Corporation)
- Jun. 2009 Director and Chairman of Sojitz Machinery Corporation
- Oct. 2012 Corporate Adviser of the Company
- Jan. 2015 Representative Director and President of HR Consultant Co., Ltd. (to the present)
- Jun. 2016 Outside Director of the Company (to the present)

## Koji Nakao ⑨

Outside Director

- Jun. 2007 Director and Senior Managing Executive Officer of Terumo Corporation
- Jun. 2010 Director and Executive Vice President of Terumo Corporation
- May 2011 Chairman of the Board of Terumo Corporation
- Apr. 2013 Chairman of The Japan Federation of Medical Devices Associations
- Feb. 2017 Representative of Art Management Shimanami (to the present)
- Jun. 2018 Outside Director of the Company (to the present)
- Nov. 2019 Advisor to Biodesign Japan (to the present)



### Hideyuki Nimura ④

Director & Senior Executive Officer

- Jul. 2004 Joined the Bank of Tokyo-Mitsubishi, Ltd. (currently MUFG Bank, Ltd.) Director-General of Thailand Region and General Manager of Bangkok Branch
- Dec. 2006 General Manager of International Compliance Division of the Bank of Tokyo-Mitsubishi UFJ, Ltd. (currently MUFG Bank, Ltd.)
- Apr. 2009 Joined the Company Councillor of Finance Division
- Jun. 2009 Executive Officer in charge of finance
- Jun. 2011 Director and Executive Officer
- Apr. 2016 Assumed the position in charge of finance, IT and export trade control (to the present)
- Jun. 2016 Director and Senior Executive Officer (to the present)

### Atsumi Nakamura ⑤

Director & Senior Executive Officer

- Jan. 2001 General Manager of Manufacturing Division, Instruments Company of Nikon Corporation
- Jun. 2012 Operating Officer and General Manager of Business Planning Department and Bioscience Marketing Department, Instruments Company of Nikon Corporation
- Jun. 2014 Corporate Vice President, General Manager of Microscope Solutions Business Unit and Department Manager of Marketing Department of Nikon Corporation
- Oct. 2015 Corporate Vice President and General Manager of Microscope Solutions Business Unit
- Jun. 2017 Director and Senior Executive Officer in charge of corporate planning of the Company (to the present) Corporate Adviser of Nikon Corporation (to the present)

### Toyohiko Tazawa ⑥

Director & Senior Executive Officer

- Feb. 1984 Joined the Company
- Apr. 2009 General Manager of SA Business Unit
- Jun. 2011 Corporate Officer
- Apr. 2013 Assumed the position in charge of Advanced Fundamental and Core Technology Center (to the present) Peripheral Equipment, SA, SM, & IB Business Units, in charge of SA & SM Design & General Manager of IB Business Unit
- Jun. 2013 Executive Officer
- Apr. 2014 Assumed the position in charge of MS Business Unit (to the present) and EM Business Unit
- Apr. 2015 Assumed the position in charge of R&D Management Center (to the present), Scanning System Business Operations, Design Management, and Cost Center
- Apr. 2016 Assumed the position in charge of Application Management Department and 3D Additive Manufacturing Business Project (to the present)
- Jun. 2016 Director and Executive Officer
- Apr. 2018 Assumed the position in charge of administration of development technology and intellectual property (to the present)
- Jun. 2018 Director and Senior Executive Officer (to the present)
- Apr. 2019 Assumed the position in charge of EX Business Unit (to the present)

### Takashi Wakasa ⑩

Audit & Supervisory Board Member

#### Executive Officers

- |                   |                   |
|-------------------|-------------------|
| Katsumoto Yaguchi | Yasuo Hijikata    |
| Yoshihiro Ohkura  | Tadashi Komagata  |
| Hiroaki Fukuda    | Akihiro Kobayashi |

### Kazunori Fukushima ⑪

Audit & Supervisory Board Member

#### Corporate Officers

- |                   |
|-------------------|
| Peter Genovese    |
| Mitsuru Takahashi |
| Tadashi Okubo     |

### Akifumi Goto ⑫

Outside Audit & Supervisory Board Member

- |                     |
|---------------------|
| Shintaro Yazuka     |
| Kiyotaka Fujino     |
| Toshikatsu Kaneyama |

### Norio Kuroiwa ⑬

Outside Audit & Supervisory Board Member

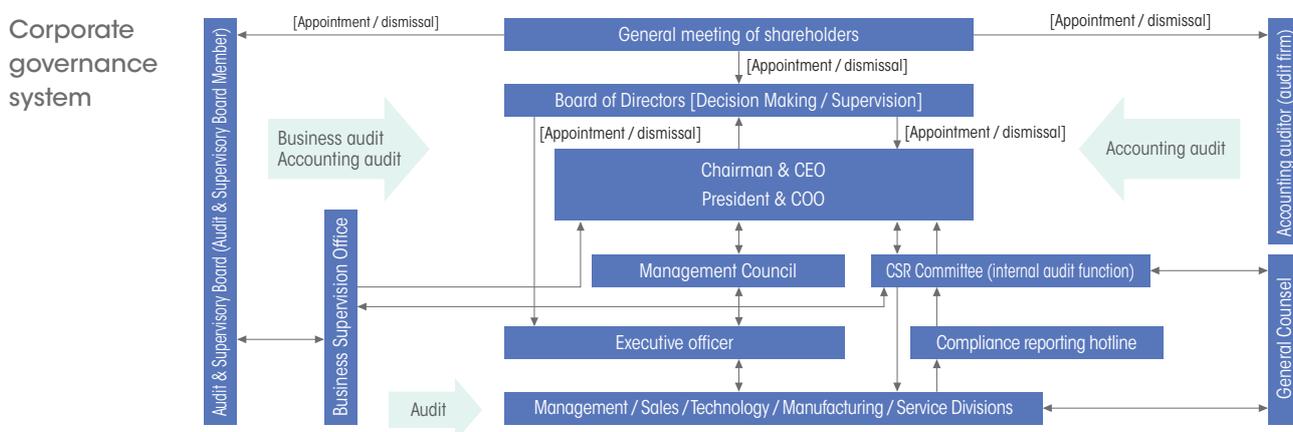
- |                    |
|--------------------|
| Osamu Wakimoto     |
| Masayuki Kobayashi |
| Hirohisa Yoshida   |

# Corporate Governance

## Basic Approach

JEOL's basic approach to corporate governance is to build a stable profit structure and to realize basic management policies that focus on enhancing corporate value while achieving future-oriented development and growth. These goals will be reached by implementing various measures, including setting up an organizational management structure with efficient, highly transparent management that upholds our responsibility to respect the position of shareholders and all other stakeholders.

## Corporate Governance Structure



## Number of Major Meetings Held during the Fiscal Year

Board of Directors	19
Management Council	50
Executive Officers' Meeting	11
Audit & Supervisory Board	16

## Internal Control System

### Internal Control System Status

Listed below are the systems that ensure the execution of duties by directors adhere to all laws, regulations, and the Articles of Incorporation as well as other systems (internal control systems) that ensure the appropriateness of operations by the Company and the corporate Group, comprising the Company and all subsidiaries.

### Internal Control System Overview

- 1 System for storing and managing information on the execution of duties by directors
- 2 Rules and other systems for risk management to prevent loss
- 3 System for ensuring the efficient execution of duties by directors
- 4 System for ensuring that the execution of duties by directors and employees complies with all laws, regulations, and the Articles of Incorporation
- 5 System for ensuring the appropriateness of operations in the corporate Group comprising the Company and all subsidiaries
- 6 Matters relating to the employees who support the duties of Audit & Supervisory Board members when those members request their assistance
- 7 Matters relating to the independence of the employees from directors (stated in the preceding item) and ensuring the effectiveness of instructions given by Audit & Supervisory Board members to employees
- 8 System for reporting to Audit & Supervisory Board members by directors, etc. and other systems relating to reports to these members
- 9 System for ensuring people who have made reports, as provided in the preceding item, will not be treated unfavorably after making a report
- 10 Matters relating to policies for the procedure of payments made in advance or reimbursement of expenses in the execution of duties by Audit &

Supervisory Board members and for other treatment of expenses and liabilities associated with the execution of these duties

- 11 Other systems for ensuring that audits performed by Audit & Supervisory Board members are conducted effectively

### Status of Internal Audits, Audits by Corporate Auditors, and Accounting Audits

To ensure thorough legal compliance within the Company and at affiliated companies and to improve management efficiency, audits at affiliated company are conducted in accordance with the Internal Audit Rules for Domestic Affiliated Companies. For operations overseas, Tokyo meetings are held biannually to achieve mutual understanding through dialogue. In addition, internal auditing has been strengthened and a business supervision office (consisting of five members) has been established to supervise our head office and affiliated company operations, as well as to assist and coordinate with corporate auditors.

### Evaluating the Effectiveness of the Board of Directors

Since fiscal 2017, JEOL has analyzed and evaluated the efficiency of the Board of Directors to ensure that it is functioning effectively. Based on the results of this analysis and evaluation, we intend to improve the overall effectiveness of the Board of Directors through an ongoing process of identifying and improving issues and further augmenting the strengths of the Board.

The results of Board of Directors' analyses and evaluations in fiscal 2019 have been compiled and are disclosed below.

#### Evaluation Method

Self-assessment questionnaires evaluating the effectiveness of the Board of Directors were completed by all Directors and Audit & Supervisory Board members at the Board of Director meetings held in fiscal 2019 (April 2019 to March 2020). The results were reported at the Board of Directors meeting held on June 30, 2020.

#### Evaluation Items

Evaluation items were categorized into three areas:

- 1 Board composition
- 2 Management of the Board of Directors
- 3 Provision of information to outside officers

### Summary of Evaluation Results

After reviewing the self-evaluation questionnaires for all directors and Audit & Supervisory Board members, 17 evaluation items out of 18 were found to be above average and the overall effectiveness of the Board of Directors was found to be generally maintained.

### Issues and Major Initiatives for Evaluating the Board of Directors

#### Issues raised by questionnaire results

- 1 The agenda of the Board of Directors should focus on the most important issues.
- 2 Additional time is needed to discuss medium- to long-term management issues.
- 3 Although improvements were made over the previous fiscal year, explanatory materials should be more clearly summarized and simplified.
- 4 The distribution of materials to outside officers is slow from the perspective of ensuring enough time for their evaluation.

#### Measures Taken for Issues Recognized in the Fiscal 2018 Questionnaire

- The meeting of the Board of Directors was changed from the morning to the afternoon to ensure enough time for deliberation and to increase the time for preliminary examination of the materials.
- Summaries were prepared for materials to explain the main points with detailed explanations attached for reference to complement each summary.

For the measures mentioned above, continued improvements are required, as evidenced by issues 3 and 4 of the latest questionnaire.

#### Measures to Be Taken for Issues Recognized in the Fiscal 2019 Questionnaire

- A review will be conducted of the Board of Directors agenda standards and report content in order to focus on the most important issues.
- Opportunities will be created to deepen discussions on medium- to long-term management issues.
- Efforts will be made to distribute materials to outside officers more quickly.

#### Future Responses

The Board of Directors will respond to issues based on the results of these evaluations and will continue to conduct evaluations and further analysis to improve the efficiency of the Board of Directors.

# Risk Management

## Status of the Risk Management System

JEOL's risk management system complies with all laws and regulations, and there is close cooperation among the Management Strategy Planning Division, Internal Auditing Division, Security Export Trade Control Division, General Affairs Division, Financial Affairs Division, IT Division, Intellectual Property Strategy Division, Quality Assurance Division and other divisions. Related committees collaborate to educate and raise awareness within the Company.

The CSR Committee is also responsible for internal control and risk management committees as well as

internal audit departments, and in response to reports from JGMS and MDQMS, consults and makes proposals on CSR activities and reports to the Board of Directors.

JEOL formulates Company rules and creates committees in line with Group management, including establishing Compliance Management Rules, the JEOL Corporate Ethics Code of Conduct, and the protection of personal information by observing our information security policy. We also established a compliance reporting hotline and business continuity plan (BCP), initiatives that will be promoted throughout the entire Group.



To thoroughly implement the Action Guidelines / to instill corporate ethics / and to develop KF activities (activities aimed at generating a good corporate culture)

## Initiatives to prevent the spread of COVID-19

After the state of emergency was imposed by Japan's government, we strengthened COVID-19 countermeasures by establishing the COVID-19 Response Headquarters represented by Izumi Oi (President and COO) as the chief executive of the headquarters from April to June. As of August 31, we have continued implementing countermeasures (see below) to prevent the spread of infections.

- Employees are prohibited from taking overseas business trips, in principle
- Recommended holding Web meetings, regardless of whether they were in-house or outside of work
- Strictly enforced employees wearing masks, washing hands, gargling, and disinfecting hands with sanitizer
- Reduced contacts among employees in staff restaurants by staggering lunch times
- Promoted work from home and staggered work hours
- Checked body temperature and health conditions of visitors, and requested them to wear a mask and disinfect their hands with sanitizer

To prevent infections, we will continue to place the highest priority on the health and safety of our clients and employees until COVID-19 is fully contained.

# Messages from Outside Directors

JEOL introduced an outside director system in fiscal 2012. When appointing outside officers, the Company makes sure every candidate meets the requirements for objectivity as stipulated in the Companies Act and the criteria for independence as stipulated in the Financial Instruments and Exchange Act, after considering the appropriate number of officers and their diversity. These appointments are made from the perspective of maintaining sound corporate governance through checks of corporate management by an outside third party.

## Taking a Leap Forward from Science to Industry



Satoshi Nagakubo  
Outside Director

Four years have passed since I was appointed as an outside director. Discussions have become increasingly active under the leadership of the Chairman of the Board, helping to create an open atmosphere.

As Japan recovered from the devastation of World War II, JEOL established a company philosophy of "Creativity" and "Research and Development" with a key focus on bringing the things into vision that the human eye is unable to see. The Company now plays an indispensable role in advanced scientific fields in Japan and around the world, and provides support to Nobel Prize laureates from behind the scenes.

In 2019, the Company took the opportunity, on our 70th anniversary, to further strengthen the YOKOGUSHI strategy or promoting cross-sectional, internal and external collaboration aimed at creating total solutions by not only producing exceptional products but also by providing everything that a customer might need. The aim of this strategy is to take the next leap forward.

Against this backdrop, although the Board of Directors has been seen as operating effectively, to a certain degree, it is necessary to keep the organization in tip-top condition to improve corporate value over the medium to long term. This can be achieved through continual discussions on the appropriate appointment and dismissal of directors, a succession plan for the next president, the creation of a suitable compensation system for executive officers, M&As, new product development, as well as the cultivation of new markets and corporate culture. As a member of the Board of Directors, I aim to provide effective advice at the right time, while referencing best practices as well as some failures based on the knowledge I have gained over approximately 50 years in business.

## Supporting the Resolution of Hard-to-See Issues by Leveraging a Third-Party Perspective



Koji Nakao  
Outside Director

Among the many duties of an outside director, I consider corporate governance as a primary theme. In Japan, guidelines and policies are changing radically every year in this field. Amid these changes, I will do my best to increase my understanding of the Company's operations, particularly the functions of the Board of Directors; the duties of the CEO, COO, and internal directors; and the organizational structure. I will do this from the three perspectives: transparency, fairness, and ethics. At the same time, I will make recommendations and continually examine the situation from a third-party standpoint and by applying my own managerial experience.

Since becoming an outside director, I have gained insight into the exceptional corporate culture at JEOL as a listed company. I feel strongly that the Company is pursuing ever-higher levels of technology and making a solid contribution to advanced science. So, I think that these efforts and attitude are being reflected in JEOL's history and achievements. On the other hand, in consideration of the evolving times, technology, and competition, there are aspects of the corporate culture that should be changed, in addition to aspects that should be maintained. I fundamentally believe that corporate culture forms the bedrock for corporate governance rules and guidance. I will do my utmost to provide support and work with others so that the Company can develop and move to the next level, while I provide advice and point out areas related to the corporate culture that are perhaps difficult to see from an insider's standpoint as well as other areas that are more visible, such as organizational structure.

## Consolidated Five-Year Summary

JEOL Ltd. and consolidated subsidiaries, for the years ended  
March 31, 2020, 2019, 2018, 2017, and 2016

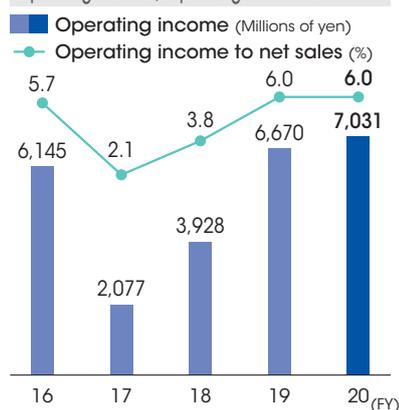
For the year	(millions of yen)	2020	2019	2018	2017	2016
Net sales		117,244	111,289	104,570	99,699	107,373
Scientific and Metrology Instruments		76,644	77,589	68,480	66,510	73,909
Industrial Equipment		23,845	16,606	16,708	11,565	9,988
Medical Equipment		16,755	17,093	19,383	21,624	23,476
Selling, general and administrative expenses		37,834	35,761	33,562	32,798	34,129
Operating income (loss)		7,031	6,670	3,928	2,077	6,145
Ordinary profit (loss)		7,203	7,440	4,363	1,724	5,370
Net income attributable to owners of the parent		5,360	5,940	4,532	596	4,090
Capital expenditures and Metrology Instruments		5,713	2,800	2,727	3,267	2,859
Scientific and Metrology Instruments		3,658	1,943	1,939	2,735	2,216
Industrial Equipment		1,360	517	354	178	200
Medical Equipment		303	134	284	188	302
Eliminations/Corporate		392	205	150	166	141
Depreciation expense and Metrology Instruments		3,191	2,755	2,668	2,526	2,877
Research and development costs		7,757	7,184	6,044	6,130	6,479
Scientific and Metrology Instruments		5,164	4,599	4,185	4,404	4,671
Industrial Equipment		1,654	1,674	1,125	787	668
Medical Equipment		939	910	734	939	1,140

At year-end*1	(millions of yen)	2020	2019	2018	2017	2016
Total assets		136,788	122,665	114,629	109,045	113,501
Total equity		45,080	41,593	37,387	32,285	32,087

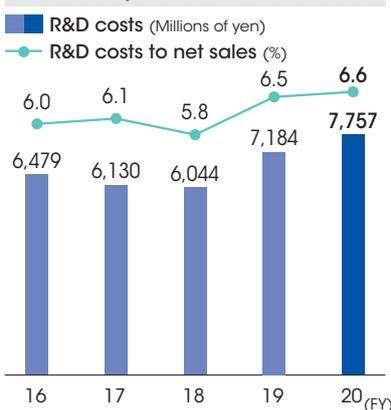
Per share data*2	(yen)	2020	2019	2018	2017	2016
Net income attributable to owners of the parent		110.94	122.95	93.81	12.33	84.64
Total equity		933.07	860.90	773.84	773.84	664.10
Cash dividends						
Common stock		24.00	21.00	16.00	14.00	12.00

Value indicators	(%)	2020	2019	2018	2017	2016
Return on equity (ROE)		12.4	15.0	13.0	1.9	13.1
Return on assets (ROA)		3.9	6.3	4.0	0.5	3.6

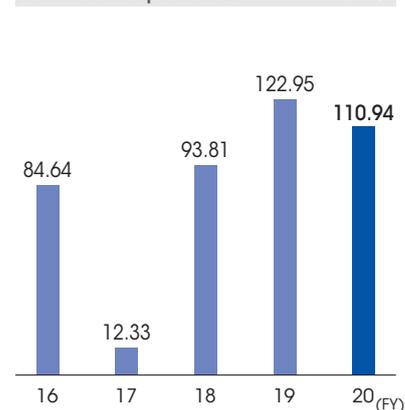
Operating income / Operating income to net sales



R&amp;D costs / R&amp;D costs to net sales



Net income per share\*2 (Yen)



### Overview of the Fiscal Year Ended March 31, 2020

In the consolidated fiscal year under review, the economic conditions in Japan have become extremely uncertain due to the global spread of COVID-19, while there are growing concerns about a slowdown of the world economy because of prolonged trade friction between the US and China.

Under these circumstances, the JEOL Group made an all-out effort to implement the strategic priorities outlined in the Triangle Plan 2022, our medium-term management plan for the fiscal years 2019 to 2021 aimed at boosting corporate value, creating a more robust management base, and ensuring more orders and sales.

Net sales for the consolidated fiscal year under review were ¥117,244 million (up 5.4% compared with the previous year). Looking at profit and loss, operating income was ¥7,031 million (up 5.4% compared with ¥6,670 million in the previous year), ordinary profit was ¥7,203 million (down 3.2% compared with ¥7,440 million in the previous year) and net income attributable to owners of the parent was ¥5,360 million (down 9.8% compared with ¥5,940 million in the previous year).

### Overview of the Financial Position

Total assets at the end of the consolidated fiscal year under review came to ¥136,788 million, up ¥14,122 million from the end of the previous consolidated fiscal year. The major factors behind this rise were an increase in cash and deposits of ¥5,129 million, growth of ¥4,645 million in inventories, and an increase of ¥9,790 million in current assets.

Total liabilities were ¥91,708 million, up ¥10,635 million from the end of the previous consolidated fiscal year. The major reasons behind this move were an increase in short- and long-term borrowings.

Total equity grew ¥3,487 million, to ¥45,080 million, reflecting the recording of ¥5,360 million in net income attributable to owners of the parent. As a result, the shareholders' equity ratio as of March 31, 2020 decreased 0.9 percentage points, to 33.0%.

### Overview of Cash Flows

As of the fiscal year ended March 31, 2020, cash and cash equivalents ("cash") amounted to 14,033 million yen at the end of the fiscal year, up 4,771 million yen from the previous fiscal year end.

Cash flow activities in the consolidated fiscal year under review are shown below.

#### Cash flow from operating activities

For the consolidated fiscal year under review, net cash provided by operating activities was ¥3,741 million, compared with ¥4,758 million provided in FY 2019. This was mainly due to an increase in income before income taxes and inventories.

#### Cash flow from investing activities

Net cash used in investing activities was ¥4,172 million, compared with a net cash outflow of ¥1,461 million in FY 2019. The main reasons for this decline included purchases of property, plant and equipment and purchase of shares of subsidiaries resulting in change in scope of consolidation.

#### Cash flow from financing activities

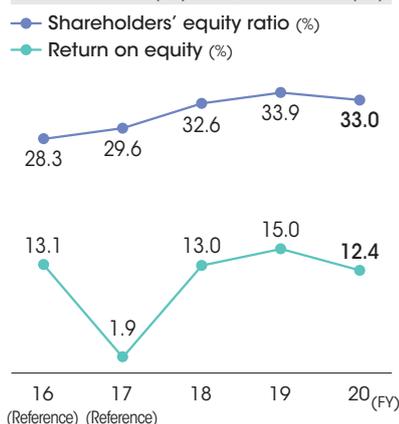
Net cash used in financing activities was ¥5,395 million, compared with a net cash outflow of ¥3,717 million in FY 2019. The primary reason for this was proceeds from long-term borrowings.

### Outlook for the Next Fiscal Year

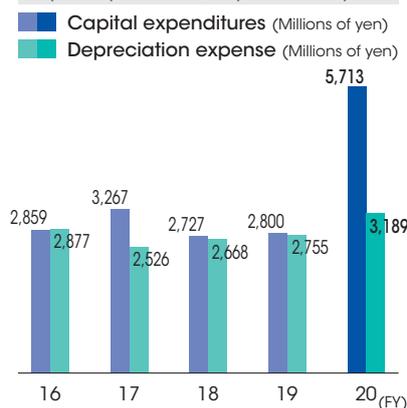
Looking toward the future, due to the global spread of COVID-19, we expect that our outlook will remain uncertain. Given these conditions, we will solidly promote various measures in line with our medium-term management plan Triangle Plan 2022 (FY 2019 to FY 2021), and secure orders and sales, while steadily implementing the cost improvements needed to realize this plan.

For the consolidated operating forecasts for the fiscal year ending March 31, 2021, we expect ¥109,300 million in net sales (down 6.8% year on year), ¥4,000 million in operating profit (down 43.1%), ¥4,200 million in ordinary income (down 41.7%), and ¥3,000 million in net income attributable to owners of the parent (down 44.0%).

Shareholders' equity ratio / Return on equity



Capital expenditures / Depreciation expense



\*1 "Partial Amendments to Accounting Standard for Tax Effect Accounting" (ASBJ Statement No. 28, February 16, 2018) and related guidance have been applied from March 2019. Management indicators and other data reflect the retroactive application of these revised accounting standards.

\*2 Effective on October 1, 2018, the Company conducted a share consolidation that changed a share unit from two shares to one share.

Data for one share (net income attributable to owners of the parent, net assets, and annual dividends) are shown here assuming the stock consolidation occurred at the beginning of the fiscal year ending March 2015.

# Corporate Outline (As of March 31, 2020)



Corporate Name	JEOL Ltd.	
Address	1-2, Musashino 3-chome, Akishima, Tokyo 196-8558, Japan TEL: +81-42-543-1111 FAX: +81-42-546-3353	
Establishment	May 30, 1949	
Capital	¥10,038 million	
Number of Employees	Consolidated: 3,165 Non-consolidated: 1,920	

Head Office and Branch Offices	Head Office: Factory	Nagoya Branch
	Tokyo Office	Osaka Branch
	Tokyo Second Office	West Japan Solution Center
	Tokyo Branch	Hiroshima Branch
	Sapporo Branch	Takamatsu Branch
	Sendai Branch	Fukuoka Branch
	Tsukuba Branch	

Domestic Subsidiaries and Affiliated Companies	JEOL TECHNICS LTD.	JEOL RESONANCE Inc.
	JEOL TECHNOSERVICE CO., LTD.	System in Frontier Inc.
	JEOL YAMAGATA CO., LTD.	Micro Denshi Co., Ltd.
	JEOL INSTRUMENTS INC.	CeSPIA Inc.

Overseas Subsidiaries	JEOL USA, INC. [USA]
	JEOL (EUROPE) SAS [France]
	JEOL (U.K.) LTD. [U.K.]
	JEOL (EUROPE) B.V. [the Netherlands]
	JEOL (GERMANY) GmbH [Germany]
	JEOL ASIA PTE. LTD. [Singapore]
	JEOL TAIWAN SEMICONDUCTORS LTD. [Taiwan]
	JEOL (AUSTRALASIA) PTY. LTD. [Australia]
	JEOL DE MEXICO S.A. DE C.V. [Mexico]
	JEOL CANADA, INC. [Canada]
	JEOL (Nordic) AB [Sweden]
	JEOL (ITALIA) S.p.A. [Italy]
	JEOL Shanghai Semiconductors Ltd. [China]
	JEOL SEMICONDUCTORS KOREA Co., Ltd. [Korea]
	JEOL (MALAYSIA) SDN. BHD. [Malaysia]
	JEOL DATUM Shanghai Co., Ltd. [China]
	JEOL BRASIL Instrumentos Cientificos Ltda. [Brazil]
	JEOL (BEIJING) CO., LTD. [China]
	JEOL (RUS) LLC [Russia]
	JEOL INDIA PVT. LTD. [India]
	JEOL GULF FZCO [UAE]
	JEOL ASIA (THAILAND) CO., LTD. [THAILAND]
	JEOL KOREA LTD. [Korea]
	Integrated Dynamic Electron Solutions, Inc. [USA]
IonSense, Inc. [USA]	

# Stock Information (As of March 31, 2020)

## Stock Information

Authorized shares	100,000,000
Issued shares	48,857,800
Number of shareholders	4,853

## Major Shareholders

Shareholders	Number of shares (thousand)	Percentage of total shares held (%)
Nikon Corporation	4,300	8.8
The Master Trust Bank of Japan, Ltd (Trust account)	3,625	7.4
Japan Trustee Service Bank, Ltd. (Trust account)	3,425	7.0
Invesco Advisers, Inc. - Invesco Oppenheimer Global Opportunities Fund	2,500	5.1
MUFG Bank, Ltd.	1,504	3.1
JEOL Mutual Prosperity Association	1,277	2.6
Japan Trustee Services Bank, Ltd. (Trust Account)	1,249	2.6
JEOL Group Employee Stock Ownership Association	1,148	2.4
JPMorgan Chase Bank 380055	1,107	2.3
Nippon Life Insurance Company	1,042	2.1

Ownership ratio is calculated by subtracting treasury stock.

## Breakdown of Shares

### By type of shareholders



### By number of shares owned

