Our Resources

Management Resources Supporting Continued Cutting-Edge Value Creation

TOK has never stopped refining its core value in the semiconductor-related business, addressing customer needs and social issues in each era, while accumulating robust financial capital and unique non-financial capital.

Financial capital

- Financial foundation for the super-long term
- Dividend policy based on net assets

■ Balance Sheet Management

Pursuing an optimal balance between investment, cash reserves, and shareholder returns

- Executing the niche top strategy in cutting-edge fields
- Aggressively taking risks as an R&D-driven company

■ Strategic Policy on Cash Reserves

Established policy on cash reserves comprising working capital, investment reserves, and risk reserves

- Developing technologies with a super-long time frame, continuously tackling challenges over a super-long time frame, and responding to unexpected events such as major disasters, etc.
  - Representing top-class financial soundness in the chemicals sector (equity ratio 77.5%, D/E ratio 0.08 times*)

* Both as of December 31, 2019

■ Enhancement of Dividends

A dividend policy targeting a DOE of 3.5%

- Steady and continuous shareholder returns

■ Pursuit of Higher Asset Efficiency

Minimum target ROE: 8%

- Promoting investment and business strategies using ROIC, IRR, etc. as monitoring indicators

Manufactured capital

- World-leading microprocessing technology
- World-leading high purification technology

■ Microprocessing Technology

Development and manufacture of materials to make semiconductor circuit line widths fine and materials used to make high-density semiconductor packages

Development and manufacture of materials for stacking semiconductor devices in three dimensions

- Continuing to satisfy the sophisticated needs of customers such as manufacturers of semiconductor and electronic components

■ High Purification Technology

Supplying clean solutions, thinner, developing solutions, etc. with the highest purity in the world by absolutely minimizing impurities in the product

- Realizing shared value with customers by improving yields on their mass production lines for cutting-edge devices
- Making our strengths effective in highly challenging domains, such as controlling performance down to the molecule

■ Niche Top Products

DNA of the founder, Shigemasa Mukai: "Create materials that are supported by advanced technologies and that cannot easily be imitated by other companies"

- Focusing on niche business fields shaped by radical and rapid technological change
- Developing a business model that continues to develop and bring to market new, high-end, high-value-added products

Intellectual capital

- Sustaining high levels of R&D investment
- Corporate culture supporting long-run development

■ High Ratio of R&D Costs to Net Sales

Maintaining a ratio of R&D costs to net sales around 8%

- Strengthening R&D functions in Japan, the U.S., South Korea, and Taiwan
- Continuing development for further evolution of microprocessing and high purification technologies centered on research into functional polymer materials and the development of applied technologies
- Focusing on development of new high-functional materials, equipment, and production technologies. Also expanding and accelerating open innovation

■ Marketing Capabilities in R&D

Blue ocean strategy

- 40 percentage points increase in R&D efficiency* in the past five years as a result of setting development fields with a view to future blue oceans and refining the marketing of technologies

* R&D efficiency = Operating income in the most recent five years/R&D costs over the previous five years

■ Long-Run Development

A willingness to take on challenges based on the management principle of "creating a frank and open-minded business culture"

- Fostering a frank and open-minded business culture that can support persistent pursuit of development over 10 years as difficulty of development in cutting-edge fields increases year by year

As global risks continue to grow, the Company will further advance each of its capitals in order to strengthen its capabilities for sustainable value creation in cutting-edge fields.

Human capital

- Personnel measures that emphasize happiness
- Advances in diversity

■ Policy on Utilizing Human Resources—Never forget that business begins with "people"

Increasing investment in human capital

- Average annual salary per person increased by ¥1.66 million over the past 10 years*1, and average tenure figure rose by 5.6 years*1
- Ratio of paid leave taken stood at 78.2%, significantly higher than the national average of 52.4%*2

*1 Non-consolidated basis

*2 Source: Ministry of Health, Labour and Welfare's 2019 Summary of General Survey of Working Conditions for 2018 or fiscal 2017

■ Pursuit of Happiness in Personnel

Pursuing measures that align with individual values of personnel and their happiness

- Introduction of new personnel system (planned for 2021)
- Establishment of the Executive Fellow system (implemented in 2019)
- Revision of remuneration system for directors (implemented in 2020)

■ Advancing Promotion of Non-Japanese Employees and Female Personnel

Merit-based hiring and promotions regardless of nationality or gender

- The consolidated ratio of non-Japanese employees has increased, and local personnel with a deep understanding of the management principles in the sales, development, and manufacturing divisions are making a significant contribution to cutting-edge value creation
- The number of female employees and women in management positions has increased along with appointment of the first female General Manager of the Human Resources Division, leading to a new stage in diversity and inclusion

Social and relationship capital

- Staying abreast of customers who are leading global cutting-edge technology
- Supplier engagement

■ Establishing Development and Manufacturing Sites in the U.S., South Korea, and Taiwan, Where Many Customers Are Located

Introducing prototype production lines equal to the ones of customers who are leading global cutting-edge technology

- Quickly commercialize the results of development, and build a robust customer base with solid trust relationships in the fast-changing semiconductor and electronics industry

■ Building Innovation Ecosystems with Various Stakeholders

Collaborating with stakeholders other than customers as well to drive innovation in cutting-edge semiconductor fields where difficulty of development has been increasing year by year

- Discovering and supporting venture companies with technological advantages, engaging in joint research with academics, and participating in a variety of consortiums

■ Creating Cutting-Edge Value with Suppliers

Strengthening and improving supplier engagement

- Creating cutting-edge materials for semiconductors from the formulation of raw materials together with suppliers
- Cooperating closely with suppliers to manage chemical substance risk to protect the global environment

Natural capital

- Creating environmental value through business activities
- Minimizing environmental risks

■ Creation of Environmental Value in Both Materials and Equipment

Provision of environmentally beneficial products

- Contributing to reducing energy consumption through miniaturization of semiconductors by supplying cutting-edge photoresists
- Having a top share* of the world market for g-Line and i-Line photoresists that are essential in the manufacture of power semiconductors used to conserve and control energy in renewable energy systems, electric vehicles and hybrid cars. Sales of g-Line and i-Line photoresists have reliably accounted for almost 10% of consolidated net sales.
- Developing multiple types of power semiconductor manufacturing equipment, with repeat orders from many customers

* Projected Sales Volume Share in 2019
(Source: Fuji Chimera Research Institute "2020 Electronics Advanced Materials Current Status and Future Outlook")

■ Responsible Care Activities

Appropriate management as a manufacturer that handles chemical substances and uses large volumes of water in production processes

- Focusing efforts on minimizing environmental risk in the production process and throughout our supply chain
- Focusing on Responsible Care activities* as a part of our GMS (Group Management System) that reinforces the Group management structure globally

* Activities in which companies handling chemical substances voluntarily take environmental, safety and health measures in every process from chemical substance development through manufacturing, logistics, use and final consumption to disposal and recycling, and announce the results of these activities while engaging in dialogue and communication with the public. (Defined by Japan Chemical Industry Association)

Our Material Issues

Initiatives to Address Material Issues for Enhancing Corporate Value

By focusing on initiatives to address material issues for enhancing corporate value, we aim to evolve further in both the financial and non-financial fields.

—Continuing Contributions to Society—

Following the source of our founder's management principles, TOK has deeply embedded the idea of "integrated thinking," making sure that all management resources and initiatives ultimately become "contributions to society." **(See the first page "Publication of the Integrated Report 2019")**. Based on this corporate DNA, we are working on "development and provision of high value-added products that will contribute to innovation," which we have identified as one of TOK's material issues, aiming to achieve the maximum potential of our sustainable value creation capabilities.

In addition, to create sustainable value in the cutting-edge field of fine chemicals, we need to minimize risks in the areas of environment, laws and regulations (chemical substance management), and human resources, mainly through governance. We therefore identified these themes as part of our material issues and continue to work through a PDCA cycle to lower our capital cost.

Material Issues Identification Process

Step 1

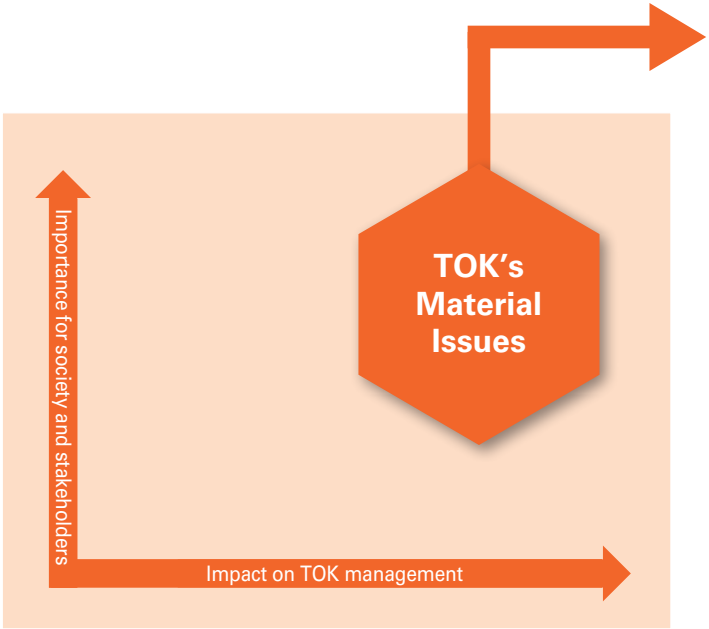
TOK selected issues it needs to address for sustainable value creation, taking into account global frameworks such as ISO 26000, GRI Standards, the International Integrated Reporting Framework, SDGs, and the Japan Chemical Industry Association's Responsible Care Code.

Step 2

To prioritize the selected issues, TOK evaluated from the two axes of "importance for society and stakeholders," which takes into account evaluation items by ESG survey organizations and day-to-day dialogue with stakeholders, and "impact on TOK management," which considers the overall strategy of the new medium-term plan and strategies of each division, and identified the six largest impact items as proposed material issues.

Step 3

A main initiative was also set to go through the PDCA cycle for each material issue, approved by the management level and identified as TOK's material issues.



Sustainable enhancement of corporate value through shared value creation

Material issues for enhancing corporate value

Material issues	ESG fields	Key initiatives	Risks and opportunities	SDGs to which we contribute
Development and provision of high value-added products that will contribute to innovation	Social (S)	Further improve customer satisfaction	■ Medium- to long-term semiconductor market expansion in both miniaturization and 3D packaging ■ Increase in needs for ultrahigh purification in semiconductor materials ■ Intensifying global competition in the semiconductor industry	
		Contribute to innovation and solving social issues	■ Expanding role of the semiconductor industry in solving social issues ■ Expanding semiconductor market driven by development of the data economy, accompanied by growing geopolitical risk concerning conflict over data hegemony	
Enhancement of personnel measures		Strengthen personnel capabilities	■ Global personnel development in conjunction with the increase in overseas sales ratio	
		Diversity and inclusion	■ Increasing competitiveness through growing active participation by diverse personnel ■ A growing number of ageing employees and utilizing their "know-why"	
		Respect for human rights and fair working conditions	■ Creation of workplaces that follow the management principle of "frank and open-minded business culture" to accommodate diverse work styles	
Enhancement of corporate governance	Governance (G)	Strengthen the effectiveness of governance	■ Increase in the ratio of outside directors in the Board of Directors and the Nomination and Compensation Advisory Committee to maintain management transparency	
		Compliance	■ Building a system to respond to revisions to laws and regulations in each country	
		Risk management	■ Flexible implementation of risk management system directly controlled by the president	
Environmental protection	Environment (E)	Promote environmental management	■ Expansion of energy-saving effects from advances in miniaturization of semiconductors ■ Tighter global environmental regulations	
		Address climate change issues	■ Expansion of power semiconductor materials and equipment markets ■ Cost increase due to spread of carbon pricing ■ Cost increase due to greater sophistication of temperature management for cutting-edge products	
		Promote resource recycling	■ Growing development opportunities for recycling ecosystems ■ Increase in water stress due to global warming ■ Increased interest in the marine plastics issue	
		Preserve air, water, and soil environments	■ Further risk reduction due to clearing standards stricter than regulations	
		Preserve biodiversity	■ Risk reduction through initiatives addressing biodiversity and water resources as a single issue ■ Increased risk of global biodiversity loss	
Chemical substance management		Precisely address laws and regulations	■ Increase in product value by thorough chemical substance management from the initial stages of material development ■ Tighter chemical substance control regulations in major developed countries	
Occupational health and safety/Security and disaster prevention	Social (S)	Occupational health and safety/Reduction of risks posed by chemical substances	■ Further risk reduction through acquisition of ISO 45001 certification	

Material Issues/2019 Results & 2020 Issues and Goals

Material issues	ESG fields	Key initiatives	Issues and goals of FY2019/12 (Posted on August 2019)
Development and provision of high value-added products that will contribute to innovation	Social (S)	Further improve customer satisfaction	■ Rapidly and steadily work to develop a support structure rigorously focused on customer satisfaction along with R&D ■ Through rigorous marketing, TOK will carefully identify and intensively and proactively address solutions that lead to the creation of new value for customers
			■ Improve detection sensitivity for metal impurities that comply with customer development roadmaps
		Contribute to innovation and solving social issues	■ Ambitiously develop the technologies required by 5G, IoT and other innovations
			■ Advance development and strengthen commercial viability of high-functional films, optical materials, and life science-related materials
			■ Smoothly commence operations of new R&D Building ■ Expand collaborative projects with other companies and groups
Enhancement of personnel measures		Strengthen personnel capabilities	■ Personnel measures for a "100-year company" ■ Bolster human resources that will pursue the possibilities of business with a variety of customers and continue to tackle challenges until they succeed
			■ Continue promoting a good work-life balance ■ Promote initiatives to increase the ratio of paid leave taken
		Diversity and inclusion	■ Continue promotion of corporate activities that leverage diversity
			■ Continue to promote women in the workplace
		Respect for human rights and fair working conditions	■ Promote initiatives to introduce a new personnel system in January 2021
			■ Continue efforts to prevent harassment
Enhancement of corporate governance	Governance (G)	Strengthen the effectiveness of governance	■ Settle in and smoothly operate Nomination and Compensation Advisory Committee (meet once a year) ■ Continue PDCA cycle for improving the effectiveness of the Board of Directors (assess its effectiveness once a year) ■ Review decision-making authority of the Board of Directors, etc. (already reviewed at TOK in April 2019, plan to do at subsidiaries in January 2020) ■ Continuously update internal control regulations throughout the entire Group ■ Continue PDCA cycle for internal controls (confirm progress and review policies twice a year)
			■ Instill the Global Management System (GMS) for reducing risks across the Group and sustainably increasing its corporate value ■ Improve business processes ■ Create systems for CSR entrenchment and RBA Code of Conduct compliance
		Compliance	■ Continue activities to instill compliance
			■ Minimize legal risks
			■ Further enhance internal reporting system
		Risk management	■ Work to reduce risks previously and newly identified in risk assessments
			■ Create a unified BCP for the Group that addresses various risks
			■ Continue to hold drills to increase awareness, aim to keep response rate high
			■ Maintain and entrench information management standards ■ Promote effective use of information, retrain employees on scope of confidential disclosures ■ Better understand and fix problems related to email usage

[Self-assessment of goal achievement]
○ Undertook, achieved results
△ Undertook, but need to do more
× Did not undertake or achieve yet

Main achievements and progress in FY2019/12	Evaluation	Issues and goals of FY2020/12	Pages	SDGs to which we contribute
■ Consolidated net sales: Decreased by 7.9% from the initial plan ■ Despite decreases in net sales, sales of cutting-edge photoresists (EUV, ArF, and KrF) increased	△	■ Rapidly and steadily work to develop a support structure rigorously focused on customer satisfaction along with R&D ■ Through rigorous marketing, TOK will carefully identify and intensively and proactively address solutions that lead to the creation of new value for customers.	P40–47 P54–57	
■ Improved detection sensitivity for metal impurities that comply with customer development roadmaps	○	■ Improve detection sensitivity for metal impurities that comply with customer development roadmaps	P10 P41	
■ Increased total net sales of cutting-edge photoresists by 5% year on year	○	■ Ambitiously develop the technologies required by 5G, IoT and other innovations	P32–33 P54–57	
■ Promoted development and commercialization of high-functional films for use in separators for lithium-ion secondary batteries, optical materials for use in UV nanoimprint materials, and life science-related materials for use in biochip manufacturing materials and cell sequencing chips	○	■ Continue development and strengthen commercial viability of high-functional films, life science-related materials, and optical materials	P29 P36–37	
■ Commenced operations of new R&D Building ■ Number of collaborative projects with other companies and groups: Increased by approx. 15% year on year	○	■ Expand cutting-edge materials development at the new R&D Building ■ Expand collaborative projects with other companies and groups	P29–30 P41–43 P56–57	
■ Number of participants in Level-Based Training Program: 294 people	○	■ Strengthen human resource development by introducing new training	P64	
■ Ratio of paid leave taken: 78.2% ■ Expanded the range of eligibility for childcare support systems (shorter working hours, childcare time, occupational rehabilitation system) (Previously: up to the child's third year of elementary school; now: up to the child's fourth year) ■ Increased childcare leave taken by both male and female employees	○	■ Continue promoting a good work-life balance	P64–65	
■ Ratio of non-Japanese employees: 23.9% ■ Ratio of local hires in overseas management positions (consolidated basis): 50.0% ■ Promoted personnel exchanges within the Group ■ Created new value by promoting diverse personnel	○	■ Continue promotion of corporate activities that leverage diversity ■ Promote personnel exchanges within the Group	P62–65 P69	
■ Ratio of women in senior and middle management: 3.3% ■ Ratio of female new graduates hired: 39.4% ■ Held Female Manager Exchange Meetings	○	■ Continue to promote women in the workplace	P62–65 P69	
■ Completed basic plan for new personnel system	○	■ Further develop details of the system ■ Raise awareness and conduct training in preparation for introduction of new personnel system	P63–64	
■ Percentage of employees who have received harassment prevention training: 100% ■ Established new consultation contact points, including external institutions	○	■ Implement training based on new themes ■ Continue efforts to prevent harassment	P64–65	
■ Held Nomination and Compensation Advisory Committee meetings (8 times/year) ■ Conducted evaluation of the Board of Directors for the fiscal year ended December 31, 2018 and made improvements on identified issues ■ Revised the content of the questionnaire for the Board of Directors evaluation for the fiscal year ended December 31, 2019 ■ Formulated proposal for reform of remuneration system for directors ■ Reviewed decision-making authority of the Board of Directors and delegated it to the Committee of Officers, etc. ■ Visited overseas subsidiaries for hearings on existing authority issues, and generated proposals for changes	○	■ Confirm implementation status of new remuneration system ■ Further enhance the nomination system and related issues ■ Increase transparency of the Nomination and Compensation Advisory Committee ■ Introduce a new remuneration system for directors ■ Continue to thoroughly run PDCA cycle for improving the effectiveness of the Board of Directors (assess its effectiveness once a year) ■ Set out authority for subsidiaries inside and outside Japan ■ Enhance internal control functions	P66–70 P74–86	
■ Average progress rate on controlling organizations for each GMS function for business process improvements: 89% ■ Set up business processes for CSR entrenchment and RBA Code of Conduct compliance ■ Progress rate on issue resolution in Group internal operations: 97% ■ Progress rate on resolution of correction points identified in Group internal operations through self-inspection: 97%	○	■ Continue to improve business processes ■ Promote sharing of business operations throughout the Group and review organization roles ■ Create systems for CSR entrenchment and RBA Code of Conduct compliance	P83	
■ Established Entertainment and Gift Guidelines, and raised awareness of them ■ Conducted compliance training	○	■ Continue activities to instill compliance	P83–84	
■ Identified laws and regulations related to the Group's businesses, including at overseas sites, and changed the cycle for checking for revisions from once to twice a year (every six months). In addition, conducted a survey of relevant departments and sites in Japan and overseas regarding the legal and regulatory management and information gathering systems	△	■ Minimize legal risks ■ Establish and implement legal and regulatory management systems	P83–84 P88	
■ Based on four reports received, as understanding all the facts, took actions and other corrective measures for those involved from an objective viewpoint	△	■ Continue appropriate operation of internal reporting system ■ Further enhance internal reporting system	P84	
■ Continued activities to reduce risks judged to have a high level of impact on business continuity, such as patent infringement or personal information leakage ■ Created and reinforced safe supply system in response to tightened controls over exports to South Korea	△	■ Work to reduce risks previously and newly identified in risk assessments	P83–88	
■ Identified risks at overseas subsidiaries	×	■ Create a unified BCP for the Group to begin implementation in 2021	P84–85	
■ Conducted drills to improve awareness of safety confirmation system during major natural disasters. Four company-wide drills held, with high response rate maintained in all	○	■ Continue to hold drills to increase awareness, aim to keep response rate high ■ Conduct desktop drills	P84–85	
■ Created "Guidebook for Using Email" ■ Issued "Information Management Guidebook Version 2" and "Confidentiality and Scope of Disclosure Guidebook 3" ■ Conducted information management training	○	■ Revised information security countermeasures and information management rules, etc. to align with work style reforms and open innovation ■ Promote effective utilization of information through digitalization ■ Maintain and entrench information management standards	P85–86	

Material Issues/2019 Results & 2020 Issues and Goals

Material issues	ESG fields	Key initiatives	Issues and goals of FY2019/12	
Environmental protection	Environment (E)	Promote environmental management	Develop and produce environmentally friendly products	■ Stably supply i-Line photoresists for power semiconductors
			Eradicate environmental accidents that affect external parties	■ Number of environmental accidents: Severe accidents: Zero
			Proactive response to new environmental regulations	■ Address key issues on the list of legal requirements for responding to new environmental regulations, and construct a more robust system ■ Introduce electronic manifests at every site
			Proactive disclosure of environmental information	■ Proactively disclose information Publish the integrated report, and disclose environmental information on the website
			Create an environmental ISO organization and systems	■ Launch and start operating the company-wide environmental committee
		Address climate change issues	Improve energy-related CO_2 emissions per base unit [Medium-term target]: Reduce energy-related CO_2 emissions (per base unit) by 10 points by 2019 compared with 2009 (reduction of 1 point annually)	■ Reduce energy-related CO_2 emissions (per base unit) by 10 points compared with 2009
				■ Reduce energy-related CO_2 emissions (per base unit) by at least 1 point compared with the previous year
			Improve energy consumption per base unit [Medium-term target] Reduce energy consumption (per base unit) by 10 points by 2019 compared with 2009 (reduction of 1 point annually)	■ Reduce energy consumption (per base unit) by at least 1 point compared with the previous year
				■ Reduce energy consumption (per base unit) by 10 points compared with 2009
			Improve energy consumption per base unit in distribution	■ Reduce energy consumption (per base unit) by at least 1 point compared with the previous year
			Measures to prevent global warming at overseas manufacturing sites	■ Develop production activities from standpoint of energy conservation
		Promote resource recycling	Initiatives to address water risk	■ Start a project to reduce water risks and examine plans to reduce water risks and water usage, including a reassessment of water drainage paths at all sites
			Reduce industrial waste [Medium-term target] Reduce industrial waste (per base unit) by 5 points by 2020 compared with 2015 (reduction of 1 point annually)	■ Reduce industrial waste (per base unit) by 4 points compared with 2015 and by 1 point compared with the previous fiscal year
				■ Industrial waste disposed in landfills ⟶ less than 1% Achieve zero emissions
		Preserve air, water and soil environments	Prevent air, water and soil pollution	■ Incidents where operational thresholds are exceeded: None
			Countermeasures against ozone-depleting substances	■ Manage leakage volume of greenhouse gas such as CFCs through proper management of equipment ■ Formulate plan for upgrading facilities
			Comply with PRTR Law	■ Review factors for PRTR-regulated substance emissions and transportation volume
		Preserve biodiversity	Improve awareness of biodiversity based on TOK Biodiversity Protection Declaration and encourage participation in related activities	■ Implement ongoing employee training ■ Continue activities to preserve forests
Chemical substance management		Precisely address laws and regulations	Carry out appropriate and reliable management of chemical substances	■ Maintain upstream management system ■ Continue to strengthen and operate chemical substance management system
			Properly comply with PCB Special Measures Act	■ Finish disposal of all PCB waste (high concentration) in April 2019 ■ Create a roadmap for disposing PCB waste (low concentration) by 2027 deadline, and properly implement the plan
Occupational health and safety/ Security and disaster prevention	Social (S)	Occupational health and safety/Reduction of risks posed by chemical substances	Foster a safety culture	■ Prepare to acquire ISO 45001
			Safety education and training, disaster drills	■ Systematically implement emergency response training ■ Periodically implement environmental awareness training ■ Create Third-Party Vendor Management Guidelines and raise awareness at each site
			Promote risk assessment in handling chemical substances	■ Improve risk assessments (take action to reduce high-severity risks at each site) ■ Enhance level of safety through collaboration with external organizations
			Zero workplace accidents	■ Maintain zero workplace accidents

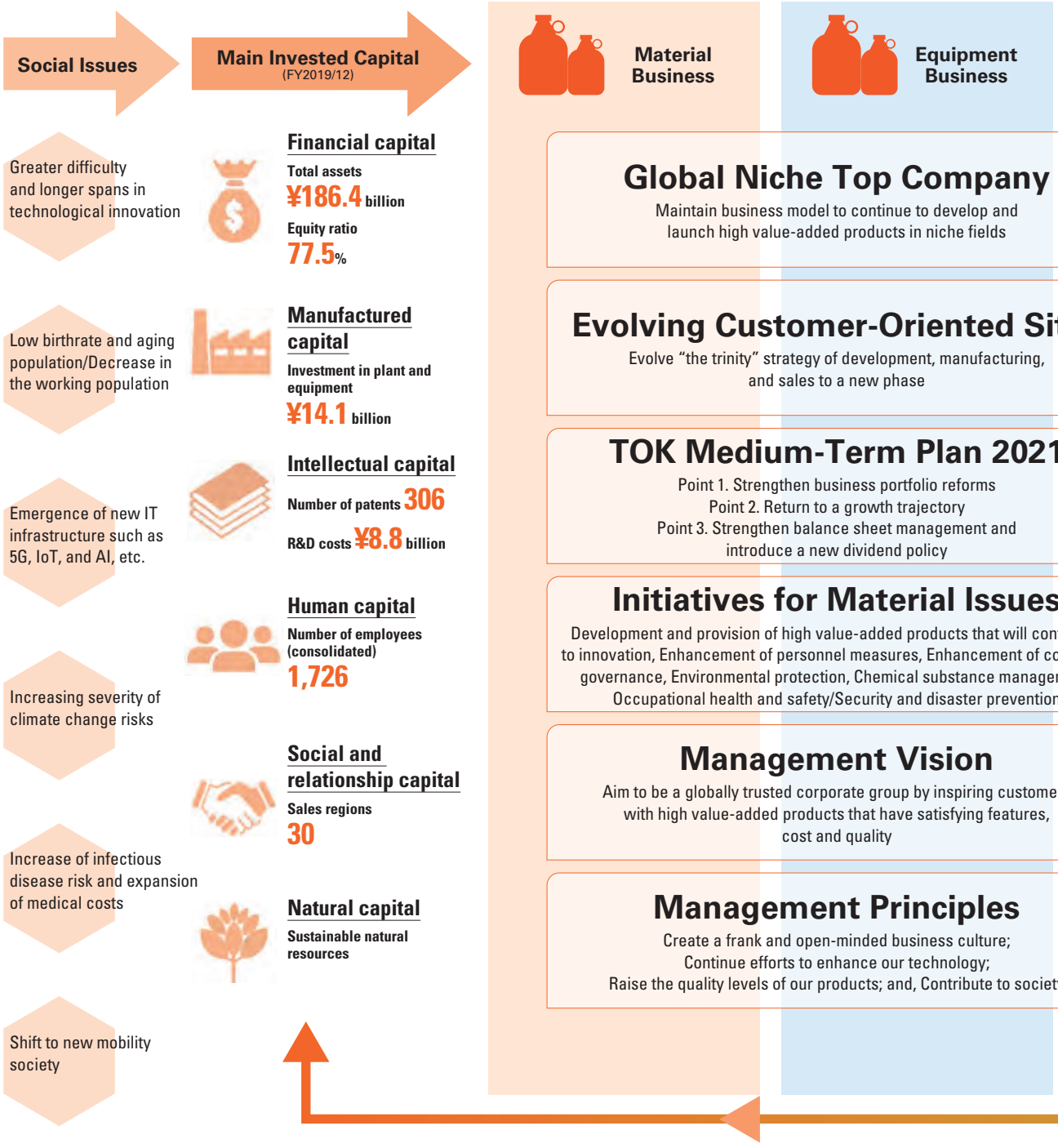
[Self-assessment of goal achievement]
○ Undertook, achieved results
△ Undertook, but need to do more
× Did not undertake or achieve yet

	Achievements in FY2019/12	Evaluation	Issues and goals of FY2020/12	Pages	SDGs to which we contribute
	■ Stably supplied i-Line photoresists for power semiconductors	○	■ Stably supply i-Line photoresists for power semiconductors ■ Expand sales of equipment for power semiconductors	P34–35 P45–46	
	■ Number of environmental accidents: Severe accidents: Zero	○	■ Number of environmental accidents: Severe accidents: Zero		
	■ Completed introduction of electronic manifests at the Gotemba Plant and Utsunomiya Plant	△	■ Introduce electronic manifests at sites where they have not been introduced ■ Examine introduction of an integrated waste management system	P96–97	
	■ Proactively disclosed information by publishing the integrated report and disclosed environmental information on the website	○	■ Proactively disclose information by publishing the integrated report and disclose environmental information on the website	P86	
	■ Launched Headquarters environmental committee and started operations	△	■ Examine methods for effective implementation of company-wide environmental management activities		
	■ Reduced energy-related CO_2 emissions (per base unit) by 6 points compared with 2009	×	■ Reduce by 11 points compared with 2019 by 2030 ■ Reduce energy-related CO_2 emissions (per base unit) by 1 point compared with 2019 in 2020	P92–93	
	■ Reduced energy-related CO_2 emissions (per base unit) by 4 points compared with the previous year	○	■ Reduce by 11 points compared with 2019 by 2030 ■ Reduce energy-related CO_2 emissions (per base unit) by 1 point compared with 2019 in 2020	P92–93	
	■ Reduced energy consumption (per base unit) by at least 1 point compared with the previous year	○	■ Reduce by 11 points compared with 2019 by 2030 ■ Reduce energy consumption (per base unit) by 1 point compared with 2019 in 2020	P92–93	
	■ Reduced energy consumption (per base unit) by 16 points compared with 2009	○	■ Reduce by 11 points compared with 2019 by 2030 ■ Reduce energy consumption (per base unit) by 1 point compared with 2019 in 2020	P92–93	
	■ Reduced energy consumption (per base unit) by 3 points compared with the previous year	○	■ Reduce energy consumption (per base unit) by at least 1 point compared with the previous year	P92–93	
	■ Developed production activities from standpoint of energy conservation	○	■ Develop production activities from standpoint of energy conservation	P93	
	■ Created measures to prevent water pollution	○	■ Propose and execute plans at each site	P94–95	
	■ Set targets and proposed plans for initiatives	○	■ Reduce by 13% compared with 2017 by 2030 ■ Reduce by 3% compared with 2017 in 2020		
	■ Reduced industrial waste (per base unit) by 26 points compared with 2015 and by 9 points compared with the previous fiscal year	○	■ Reduce industrial waste (per base unit) by 5 points compared with 2015 and by 1 point compared with the previous fiscal year	P96–97	
	■ Industrial waste disposed in landfills → less than 1% Achieved zero emissions for six consecutive years	○	■ Industrial waste disposed in landfills → less than 1% Achieve zero emissions		
	■ Incidents where operational thresholds were exceeded: None ■ Soil pollution incident at Koriyama Plant, no leakage outside the plant	△	■ Incidents where operational thresholds are exceeded: None	P98–99	
	■ Managed CFC leakage volume through proper management of equipment ■ Introduced non-CFC equipment when renewing facilities	○	■ Manage CFC leakage volume through proper management of equipment ■ Examine introduction of non-CFC equipment when renewing facilities		
	■ Reviewed factors for PRTR-regulated substance emissions and transportation volume	○	■ Review factors for PRTR-regulated substance emissions and transportation volume		
	■ Employee training: 731 people participated ■ Dispatched employees to participate in activities at the Kanagawa Trust Midori Foundation	○	■ Implement ongoing employee training ■ Continue activities to preserve forests	P99	
	■ Maintained upstream management system ■ Continued to strengthen and operate chemical substance management system	○	■ Maintain upstream management system ■ Continue to strengthen and operate chemical substance management system	P100–101 P102	
	■ Completed disposal of all PCB waste (high concentration) ■ Examined creating a roadmap for disposing PCB waste (low concentration) by 2027 deadline	△	■ Examine creating a roadmap for disposing PCB waste (low concentration) by 2027 deadline		
	■ Selected the Gotemba Plant as the first plant for acquiring certification and started preparing for acquisition of certification ■ Conducted training of internal auditors for ISO 45001 by an external consulting organization ■ Conducted first internal audit at the Gotemba Plant	○	■ Establish and improve occupational health and safety management systems ■ Prepare to acquire ISO 45001 certification and to extend the scope of certification	P102–103	
	■ Systematically implemented emergency response training ■ Periodically implemented environmental awareness training ■ Formulated and started implementation of Third-Party Vendor Management Guidelines as common company-wide rules governing matters to be confirmed before/after projects and matters to be transferred to third-party vendors, in order to prevent environmental accidents and workplace accidents during construction, caused by third-party vendors working at TOK sites	○			
	■ Conducted risk assessment and improvement activities for operations handling heavy objects ■ Conducted health and safety audit by an external consulting organization at the Aso Plant ■ In response to the health and safety audit results, formulated internal guidelines for handling of highly corrosive chemical substances and started implementing them	○	■ Improve risk assessments (take action to clarify high-risk, high-severity operations and equipment and reduce risks at each site) ■ Continue implementation of internal guidelines for handling of highly corrosive chemical substances ■ Confirm and improve handling status of chemical substances through internal and external audits, etc.		
	■ Workplace accidents: 13	×	■ Achieve zero workplace accidents		

Our Value Creation Process

TOK's Sustainable Value Creation Process

As a global niche top company, TOK is contributing to solving social issues by developing products that are useful to society and are not offered by other companies, based on a solid customer foundation it has built within and outside of Japan. Cutting-edge value creation in the semiconductor-related and electronics-related businesses, where technologies change at an extremely fast pace, is supported by a financial foundation with a superlong-term view, world-leading technological

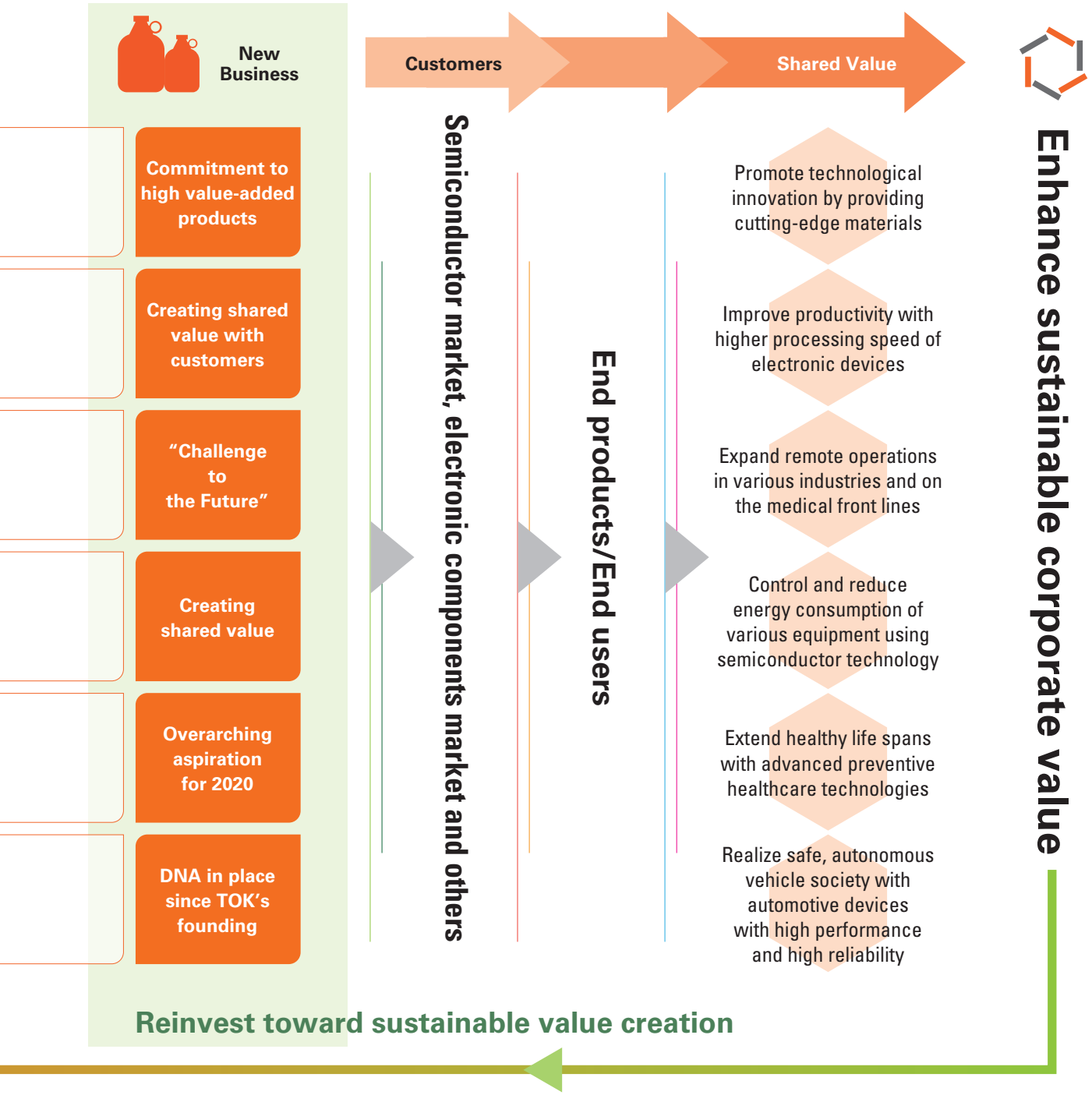


Performance targets for FY2021/12

Net sales
125.0 to 145.0 billion yen

Operating income
15.0 to 20.5 billion yen

capabilities, constant R&D, investment in human capital, and initiatives for material issues. We will continue to flexibly implement and evolve our value creation process while closely monitoring global risk trends. By continuing to contribute to high-level social and scientific issues in this way, we aim to sustainably increase corporate value.



TOK at a Glance

Business Portfolio

We are leveraging the Material Business, our current earnings driver centering on cutting-edge domains, and realizing synergy with our Equipment Business, which is cultivating new niche business domains.

Material Business

Develops high value-added products as an earnings driver

Equipment Business

Getting one step ahead of market needs in synergy with the Material Business

Risks and opportunities by segment
(See pages 42 and 46)

M&E (Materials & Equipment) strategy

Strengthen our value creation in all directions in the 2D and 3D semiconductor markets

Materials

Electronic functional materials

Photoresists
Widely used materials indispensable for **the microprocessing** of devices including semiconductors, LCD panels, and other electronic products

High-purity chemicals

High-purity chemicals
Clean solutions, thinners, developing solutions and other chemicals with **world-leading high purity**

High-density integration materials
Packaging photoresists and MEMS materials compatible with **multilayer stacking** accompanying advances made in semiconductor microprocessing

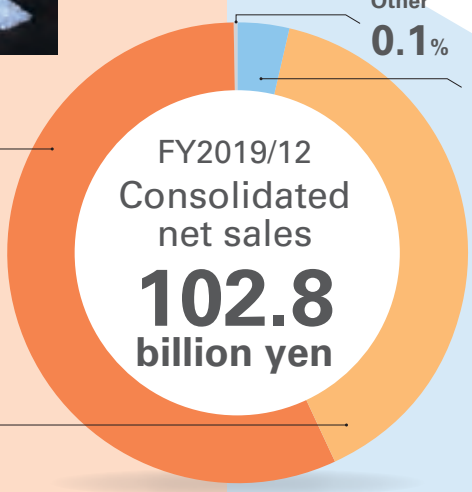
Inorganic and organic chemicals
Chemicals used in a wide range of industries

Equipment

Process equipment

Semiconductor manufacturing equipment
TOK's Zero Newton wafer handling system that enables significant increases in efficiency of **the 3D packaging process** of semiconductors and **the thinning process for power semiconductors**

LCD panels manufacturing equipment
Various types of process equipment including UV curing machines used to manufacture **flexible displays**, coating machines that can achieve high-precision performance, and coating machines for R&D



Material Business: Electronic functional materials **56.7%**

Material Business: High-purity chemicals **39.5%**

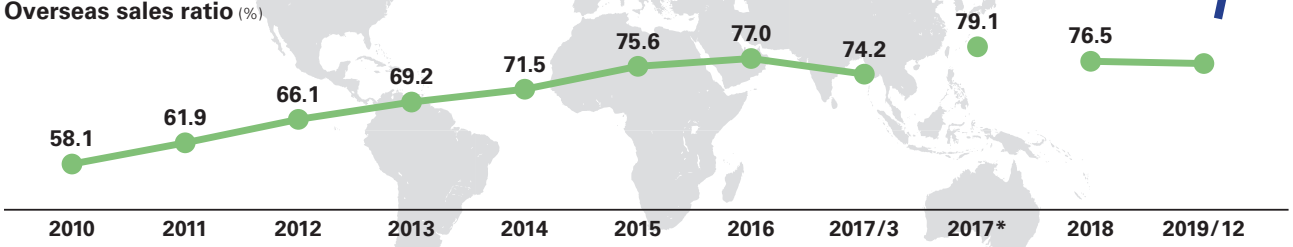
Other **0.1%**

Equipment Business **3.7%**

Global Expansion

As a result of our focus on the semiconductor field and strategy of building close relationships with customers, the overseas sales ratio has increased significantly over the past 10 years to around 75% in recent years.

Overseas sales ratio (%)

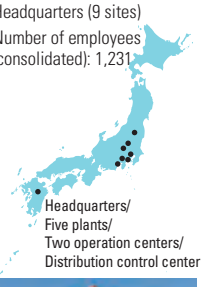


Overseas sales ratio 76.1%

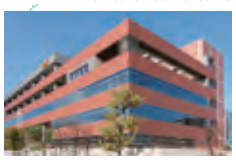
* The Company changed its fiscal year-end from March 31 to December 31 effective from fiscal 2017.

Japan

- Headquarters (9 sites)
- Number of employees (consolidated): 1,231



Headquarters/
Five plants/
Two operation centers/
Distribution control center



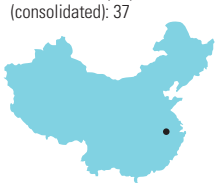
The U.S.

- 1 local subsidiary (2 sites)
- Number of employees (consolidated): 126

TOKYO OHKA KOGYO AMERICA, INC.

China

- 1 local subsidiary (2 sites)
- Number of employees (consolidated): 37



CHANG CHUN TOK (CHANGSHU) CO., LTD.

South Korea

- 1 local subsidiary (1 site)
- Number of employees (consolidated): 121

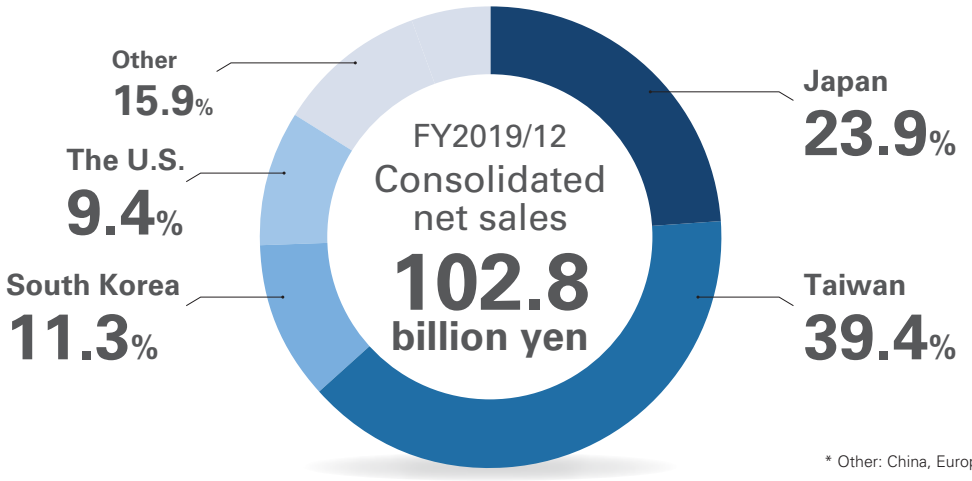
TOK Advanced Materials Co., Ltd.

Taiwan

- 1 local subsidiary (3 sites)
- Number of employees (consolidated): 189

TOK TAIWAN CO., LTD.

* Number of employees: as of December 31, 2019



* Other: China, Europe, and Singapore, etc.

TOK at a Glance

Product Portfolio

We excel in niche areas in both the front-end process and back-end process of semiconductor manufacturing, and we excel at both miniaturization and 3D packaging. We also offer cutting-edge value in the fields of high-purity chemicals, which are non-photosensitive materials, and equipment.

Semiconductor Manufacturing Field

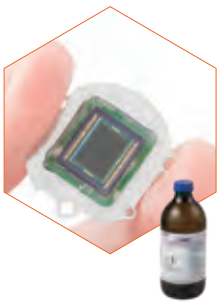
- EUV Photoresists — Global No.1*
- KrF Excimer Laser Photoresists — Global No.1*
- g-Line/i-Line Photoresists — Global No.1*
- ArF Excimer Laser Photoresists
- EB (Electron Beam) Photoresists
- Interlayer Insulating Film
- Diffusing Agents
- Materials for Shrink Process
- Materials for Cover Coat
- Directed Self-Assembly Materials (DSA)
- Plasma Ashing Systems

Semiconductor Packaging Manufacturing Field

- Bump Photoresists
- Resists for Wafer-Level CSP

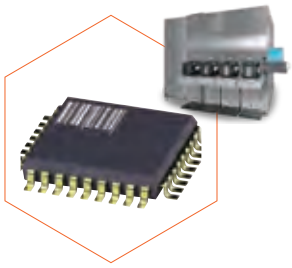
Image Sensor/MEMS Manufacturing Field

- Materials for Photosensitive Permanent Films
- Resists for Micro Lens
- Lift-Off Resists



3D Packaging Field

- 3D Packaging Equipment Zero Newton
- Adhesive Materials



High-Purity Chemicals

- Clean Solutions
- Thinner
- Developing Solutions
- Organic Chemicals
- Stripping Solutions
- Inorganic Chemicals
- Surface Modifiers

Panel Manufacturing Field

- TFT Resists
- Resists for Color Filters
- UV Curing Machines
- Resists for Organic EL
- High-Reliability Transparent Materials

* Projected Sales Volume Share in 2019 (Source: Fuji Chimera Research Institute "2020 Electronics Advanced Materials Current Status and Future Outlook")

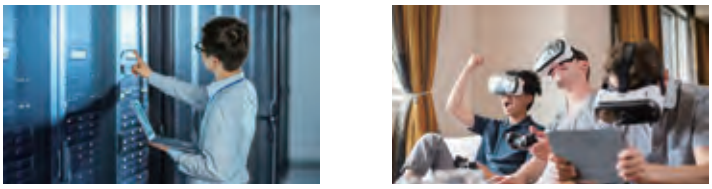
SDGs to which we contribute

Main Target Markets, Applications, and End Products, etc.

All of TOK's products are based on the B-to-B business, and people never see our products in their daily lives. However, these materials are essential for the evolution of end products, and they contribute to various innovations and to solving a range of social issues.

Smartphones
Tablet devices
PCs
Wearable devices

Large-capacity servers
Supercomputers
Game machines, etc.



IoT, AI
Self-driving vehicles/
Advanced driver assistance systems
Robotics

Renewable energy equipment
Eco-friendly cars, etc.

VALUE

Higher performance, Energy saving, More compact

Semiconductor manufacturing lines, etc.
Panel manufacturing lines, etc.

TVs
Various displays
Smartphones
Tablet devices

VALUE

Higher performance, High resolution, Energy saving

To Our Stakeholders
—Message from the President—

Challenge to the Future

We will create shared value with society by pursuing cutting-edge technologies and evolving our marketing, in order to promote sustainable growth.

Noriaki Taneichi
President and Chief Executive Officer

The Cutting Edge

Expansion of Global Risk and Contribution to Society

The risks of climate change and infectious disease that threaten our world today are increasing steadily. The average global temperature in 2019 was the second highest on record*1 and climate change occupied most of the focus of discussion at the World Economic Forum Annual Meeting in Davos in January 2020. Moreover, since the first case of COVID-19 appeared in November 2019, it has spread with alarming speed, with over 7.85 million people infected and 430,000 fatalities worldwide.*2 This once-in-100-year crisis has brought the global flows of people, products, and money almost to a halt and still shows no signs of being brought under control.*2

Under the management principles that our founder Shigemasa Mukai espoused from the Company's founding, TOK has carried on "integrated thinking" making sure that all management resources and initiatives ultimately become "contributions to society." We will not shrink from this global risk, but rather promote value creation through world-leading microprocessing technology and high purification technology, continuously enhanced over 80 years. In this way, we will contribute to solving issues faced by the human race, both during and after crises, and contribute to its sustainable development.

*1 Source: World Meteorological Organization (WMO)
*2 Source: Ministry of Health, Labour and Welfare's release on June 15, 2020

Continuing Cutting-Edge Value Creation with the Blue Ocean Strategy

The wave of digital transformation (DX) is arriving at companies and all types of industries in society. The recent COVID-19 crisis has certainly accelerated DX. Created using core competences built up over many years, TOK's products can contribute to solutions for various social issues, including COVID-19, and the enrichment of people's lives by increasing the performance of semiconductors, which are vital to DX.

To give an example, cutting-edge semiconductor devices manufactured using TOK's photoresists are found in the heart of the world's fastest state-of-the-art supercomputer, which is working to increase the precision of climate change simulations. This supercomputer, which is installed at research laboratories in Japan, will accelerate research and development to enable increased sophistication of weather and global environment predictions using observation big data. In this way, it is expected to help form environmental policy and prevent disasters.

The supercomputer supporting the development of treatments and vaccines for COVID-19 is also built with advanced semiconductors that use TOK's photoresists. This supercomputer installed at the National Research Institute in the U.S. is being used to discover drugs and natural compounds with the potential to slow the transmission capability of COVID-19. The institute is advancing research on COVID-19 treatment and vaccine development, mainly through testing of these compounds.

Moreover, the introduction of working from home or teleworking spurred by the COVID-19 pandemic has driven an increase in demand related to data centers and networks that could continue over the medium to long term in the post COVID-19 world. Many of the advanced semiconductors that are essential to this trend use TOK's photoresists.

In this way, TOK's photoresists are contributing tacitly to the solutions for various social issues as materials used in semiconductor devices, which are essential for DX. Many of these photoresists have captured a large market share as a result of long-run development focused on "blue oceans" 10 years in the future under a marketing strategy based on communication between "the trinity" of sales, development, and manufacturing. As we go forward, we will continue long-run R&D under a blue ocean strategy based on dialogues with customers, markets, and society, seeking to provide high added value in various cutting-edge fields.

Principle Supporting Long-Run R&D

The Company's intangible assets that support cutting-edge value creation include one of its management principles, "Create a frank and open-minded business culture." Our corporate culture is one where we can engage in various R&D and marketing projects in a frank and open-minded atmosphere, and where we accept one another's unofficial research activities.

For example, TOK's MEMS*1 materials have established a strong position as materials for the SAW*2 and BAW*3 filters that play an essential role in mobile devices such as smartphones. For 10 years one of our engineers conducted "unofficial R&D" based on expertise from the dry film business, then he continued with the challenge freely, marketing the materials and traveling around the world to sell them. As a result of his efforts, MEMS materials have grown to become one of our pillars of earnings.

When I myself started to develop new business in my 20th year since joining the Company, my superior told me to "Go and play for two years. Do whatever you like, it doesn't matter what," and so I was allowed to throw myself into playing for two years. I visited academic conferences around the world involved in cutting-edge technological seeds and shared the information I found inside the Company, building up a group of like-minded people and planning several new businesses. The 3D semiconductor packaging system Zero Newton and the nanoimprint materials businesses started during this time. These businesses are the result of allocating resources to the projects even though markets were not expected to emerge for at least 10 years, and allowing me the freedom to take on challenges. They have been developed into technological seeds that will drive the Company's business portfolio reforms going forward.

*1 Micro Electro Mechanical Systems
*2 Surface Acoustic Wave
*3 Bulk Acoustic Wave

Enhancement of Personnel Measures in the Development Division

TOK is working on enhancement of personnel measures as one of its material issues. In addition to valuing a frank and open-minded business culture, we are also building systems to support long-run R&D through incentives for our development personnel. When products finally reach maturity after a development period of 10 or more years, personnel who have acquired the basic patents may leave the project. To address this issue, in 2018 we started implementing a "performance-based reward system" that provides a financial reward while closely linking the patent holder(s) with earnings to encourage long-run R&D. In 2019, we introduced the Executive Fellow system for personnel who have outstanding capabilities and track records, which enables them to receive remuneration almost equivalent to officers without taking up management positions. This system enables employees to follow their path as a developer in full.

An example of a challenge undertaken by TOK under this principle and system that is beginning to produce significant results is EUV photoresists.

EUV Photoresists Blazing a Trail at the Cutting Edge of the Times

EUV lithography is capable of realizing the world's most miniaturized line widths. Since the technology began to spread in 2019, the Company's EUV photoresists have been adopted by major semiconductor manufacturers, and now have the top share in the global market*1. However, the journey has been a long and extremely difficult one.

Semiconductors made by EUV lithography (7nm) offer a 20–30% improvement in processing performance over the previous semiconductors made using ArF excimer lasers (10nm). They also reduce power consumption by 50% to 60%. As such, they can contribute significantly to the creation of more convenient and comfortable lives for people and environmental societies. However, the technology has a major bottleneck in that the light for forming the circuit patterns is only 1/14 of the ArF excimer laser process, and has required a completely new approach to be taken. To meet this challenge, TOK fundamentally revised the design of the raw material polymer while working through open innovation with universities and research institutions to create an original design, as well as refining the reactivity of the photoresists. These efforts bore fruit and we won adoption by our customers.

Nearly 20 years in development, these photoresists are the symbol of the Company's cutting-edge, long-run value creation, and they are also the greatest practical example of our material issue "development and provision of high value-added products that will contribute to innovation." 7nm semiconductors made by EUV are already used in some 5G devices, and when 5nm semiconductors enter mass production in the future, they are expected to be widely used in AI, HPC*2, and automotive equipment. In addition, if 3nm semiconductors, currently under development, are successfully realized, they are expected to contribute to the creation of an even more convenient, comfortable, and environmentally friendly world. We all look forward to seeing TOK contribute to the evolution and technological innovation of all types of industries going forward.

*1 Projected Sales Volume Share in 2019 (Source: Fuji Chimera Research Institute "2020 Electronics Advanced Materials Current Status and Future Outlook")

*2 High-Performance Computing: Massive calculations and data processing performed by supercomputers and other high-performance computers

Contributing Both Materials and Equipment to the Technological Evolution of Semiconductors to Realize Sustainable Growth

All of the TOK photoresists that have been introduced here are high value-added materials that play essential roles in the front-end processes and back-end processes of semiconductor manufacturing. TOK will accelerate its growth by continuing to contribute both materials and equipment to the technological evolution of semiconductors in terms of miniaturization, high-density integration, and 3D packaging. In addition to these fields where technology is changing at a rapid pace, we will also gain stable earnings by manufacturing and supplying high-purity chemicals (clean solutions, thinner, developing solutions, etc.) using world-leading high purification technologies. We will reinvest the funds earned through this business model into cutting-edge fields and new business development continuously reforming our business portfolio to realize sustainable growth.

TOK Medium-Term Plan 2021

Review of the First Year of "TOK Medium-Term Plan 2021"

As our "Overarching aspiration" for 2020, we formulated the long-term management vision of "Aim to be a globally trusted corporate group by inspiring customers with high value-added products." Under this vision, the TOK Medium-Term Plan 2021 includes four company-wide strategies with the stated qualitative goal of "Cultivate niche markets that the TOK Group should develop." In the fiscal year ended December 31, 2019, the first year of the Medium-Term Plan, sales and profits declined as the semiconductor market contracted, mainly due to the impacts of the U.S.-China trade friction, a decline in smartphone demand, and a slowdown in server market growth. On the other hand, in many cutting-edge fields we achieved results that will lead us forward, such as wider adoption of EUV photoresists, an increase in ArF excimer laser photoresist sales for the Chinese market, and expansion in sales of KrF excimer laser photoresists for 3D-NAND. Furthermore, we expanded production facilities at our South Korean site (TOK Advanced Materials Co., Ltd.) and constructed a new R&D Building at the Sagami Operation Center, a facility for developing next-generation technologies. With these and other initiatives, we made steady investments with a view to medium- to long-term growth.

In the fiscal year ending December 31, 2020, the second year of the Medium-Term Plan, we expect the VUCA* environment in the external business conditions to become even more apparent. We will focus on reforming our business portfolio while recognizing the following risks and opportunities, and take maximum advantage of the business opportunities for realizing a society supported by 5G and the IoT.

* Volatility, Uncertainty, Complexity, Ambiguity

Risks and Opportunities for TOK in an Era of VUCA

My analysis is that the background to the conflict between major countries such as the U.S. and China is deeply involved with the battle over data ownership in conjunction with the rise of the data economy. The fact that a major Chinese semiconductor manufacturer continued to operate its plant even in the COVID-19 pandemic demonstrates how the semiconductor industry is positioned as an essential business in each country because it plays a central role in the data economy. As such, we expect this industry to continue following a long-term growth trend. TOK has developed customer-oriented sites in the U.S., China, South Korea, and Taiwan, and will continue to incorporate business opportunities by providing tailor-made advanced materials in a timely manner while staying abreast of the customers in these areas who lead the cutting edge of semiconductor technology. In our development in the Chinese market, although we anticipate the impacts of the U.S.-China trade friction and COVID-19 to persist, we will continue to grasp opportunities despite the risks through sales, marketing, and close communication with customers, and pursue growth potential.

From July 2019, the Japanese government has called for a tightening of controls over exports to South Korea. As one of the companies affected, we have seen an increased workload for export procedures, but there has been no impact on our business results. Also, since the Company opened a development and manufacturing site in South Korea in 2012, we have built trust with our South Korean customers and employees, and endeavored to put down roots in the community, all of which has worked in our favor. Going forward, we will carefully monitor various risk trends while continuing to develop and supply high value-added products distinctive to TOK with a view to maximizing our opportunities.

With regard to the COVID-19 pandemic, at this point in time*1, there is no estimate on when treatments and vaccines will be developed, and so we are preparing for the risk of a protracted pandemic, including the arrival of a second wave. While protecting our human capital, we will fulfill our social responsibility and public mission as the world's leading photoresist manufacturer*2, supporting the semiconductor industry which is essential to the progress of humanity. Moreover, as semiconductor demand expands due to changes in human behavior with the widespread adoption of remote working, we will steadily seize this business opportunity. At the same time, even if sales decrease over the long term due to a sharp decline in the semiconductor market, etc., to ensure that our lifeline R&D activities will not be hampered, we will make active use of our solid financial position, such as our "risk reserves," under the cash reserve policy that we announced last year.

(See pages 48–51 "Message from the CFO")

*1 As of July 15, 2020

*2 Based on projected sales volume in 2019 (Calculated by TOK based on Fuji Chimera Research Institute's "2020 Electronics Advanced Materials Current Status and Future Outlook")

TOK Advanced Materials Co., Ltd. (South Korea)

Growth Drivers: 5G, AI, and Power Devices

In the semiconductor industry, while we have recently seen some delays in development and production in cutting-edge fields due to travel restrictions caused by COVID-19, etc. over the medium to long term, we expect to see steady growth driven by 5G, AI, and power devices, etc. TOK will continue to aggressively seize opportunities to create value, guided by the business concept based on our rewritten mission, "To explore new technologies, enhance technological capabilities and meet social expectations with chemicals for a sustainable earth."

5G: The most important social infrastructure for the next 10 years

5G is set to propel the IoT and the data economy by offering high speed, high capacity, low latency, and multiple simultaneous connections. As one of the most important elements of social infrastructure for the coming 10 years, it is expected to bring a host of benefits to human society with the spread of remote medicine and automated driving, and solutions to labor shortages on the front lines of logistics and construction. In addition to the 5G-capable smartphones that have recently entered service, we expect to see local 5G in the B-to-B domain, such as manufacturing sites, and greater growth in the edge computing* market. These developments will give rise to new technological challenges, and we expect that a greater number of even more sophisticated semiconductors will be required to meet them. Therefore, TOK will develop and supply cutting-edge photoresists such as EUV and ArF, as well as advanced surface preparation, packaging materials, and MEMS materials. We will also strengthen our development in new business fields including functional films for antenna-related devices and nanoimprint materials for sensing devices.

(See pages 32–33 "Special Feature")

* Methods and technologies for processing data from sensors, devices, and so forth in a location close to the origination point

AI: Supporting the advance of software with chemistry

As the software that comprises AI advances, data processing and transmission speeds continue to increase. Therefore, in addition to EUV and ArF photoresists and advanced surface preparation, packaging materials, and MEMS materials, we will strengthen our development and supply of 3D packaging equipment. Furthermore, as storage capacities increase, we will also work to strengthen KrF excimer laser photoresists for 3D-NAND. Currently, TOK's products are selling strongly, with several of our materials being used in the latest DRAM for AI. We will therefore continue to evolve our products in preparation for even greater spread of AI in society and industry.

Power devices: Long-term sustainable growth with many of our customers

Power semiconductors are at the heart of various energy-saving devices and renewable energy systems, so they play an important role in reducing climate change risks. TOK is the leading global manufacturer of the g-Line and i-Line photoresists that are essential for manufacturing power semiconductors. We also have strengths in equipment for power semiconductors, such as plasma ashing systems and wafer handling systems. Technological change moves moderately in this field compared to 5G and AI, but innovation is occurring at a steady rate, and we are concentrating on developing photoresists, advanced surface preparation, etc. for the next generation of power semiconductors based on SiC (silicon carbide). As the power devices field involves a large number of customers in both the materials and equipment segments, many of these relationships are longstanding ones. By maintaining trust relationships with these customers over a long period, we aim to ensure long-term sustainable growth.

(See pages 34–35 "Special Feature")

Equipment Business

In the Equipment Business, the segment has recorded losses for the past few years, despite increasing delivery performance and market share of 3D packaging equipment for OSAT* manufacturers, and in the fiscal year ended December 31, 2019, achieving growth in plasma ashing systems for power devices. However, we have improved the earnings structure by integrating a related subsidiary, reducing expenses, offering after-sales services including maintenance, and strengthening data simulations before prototypes. Furthermore, with the development of cutting-edge fields in semiconductors, needs are becoming more diversified in both materials and equipment. Given this trend, we believe that our unique Materials & Equipment (M&E) strategy that entails proposing "processes" to draw out the maximum performance of materials has the potential to discover blue oceans in niche fields that are difficult for large equipment manufacturers to enter. We will strive to turn this business to profit as soon as possible so that it can contribute to enhancing the Company's corporate value, and will continue our initiatives to discover future blue oceans.

* Outsource Assembly and Test: A business model that focuses on production of semiconductors and specializes in back-end processes

New Business

New business is one part of our business portfolio reforms. We have managed to achieve results in all of the core themes stated in our Medium-Term Plan: high-functional films, life science-related materials, and optical materials.

The Company makes high-functional films by applying dry film manufacturing technologies developed previously in the field of printed circuit boards and spinless coater technologies developed in the field of LCD manufacturing equipment to porous polyimide. These high-functional films have started to be adopted in special applications requiring much stronger durability than conventional mobile devices and automobiles—such as lithium-ion battery separators.

In life science-related materials, the Company's MEMS structure-forming materials have enabled miniaturized and complex structures in biochip manufacturing materials. These have been used for the latest DNA sequencers and are playing a role in genome analysis and vaccine development for COVID-19. Also, another kind of MEMS structure-forming material is used in the SIEVEWELL™ cell sequencing chip, which is sold as one of TOK's brands. This product contributes as a support tool for pathological diagnosis with low burden to patients, and for drug discovery.

In optical materials, we have been working to develop light-controlling materials. An open innovation project with Pixelligent Technologies, LLC in the U.S., in which we invested in 2018, has succeeded in producing UV nanoimprint materials that can control the refractive index of light while maintaining high transparency and durability. The materials have found use in applications such as AR and VR devices and 3D sensors. As such devices advance with 5G capability, the market is expected to expand even further. By replicating this successful example of open innovation in various other domains, we will expand the coverage of our technological seeds, leading to long-term sustainable growth.

R&D Investment and Capital Investment in Growth Markets

While carefully monitoring the current impacts of COVID-19, we will promote R&D investment and capital investment with a view to further strengthening our cutting-edge materials in the fields of 5G and AI with the basic recognition that our target markets are growth fields. In EUV photoresists, as focusing on increasing adoption for 3nm-level technology, we are broadening our new open innovation efforts with the goal of developing new materials. In addition, we are continuing to make capital investments to bolster production of KrF excimer laser photoresists, which have been adopted in 64-layer, 96-layer, and now 100-layer 3D-NAND memories. In high-purity chemicals, we are focusing on bolstering production capacity to prepare for an increase in production of clean solutions for cutting-edge fields as well as making R&D investments for strengthening our advanced surface preparation.

Four Company-Wide Strategies for Sustainable Value Creation

Since taking up my appointment as president in January 2019, at the outset of the TOK Medium-Term Plan 2021, I have steadily promoted these business strategies and investment plans. At the same time, I have held numerous discussions from various angles with each department, business division, and front lines regarding our four company-wide strategies to prepare TOK for the rapid changes in the business environment in the future and enable it to realize sustainable value creation, and worked towards the following objectives.

Relentlessly pursue higher purity

Company-wide strategy (1)

Accurately identify and rapidly address the customers' voice to build an even larger and stronger pipeline to customers—Rapidly and steadily work to develop a support structure rigorously focused on customer satisfaction along with R&D

Since my appointment, I have been working on all fronts to "meet customer and social expectations with chemicals." I have focused on building an even larger and stronger pipeline to customers, such as participating in customer visits in Japan and overseas with our sales and development personnel. One of the policies that I have come up with while listening directly to the needs of customers who are competing at the forefront of global trends is "relentlessly pursue higher purity to the limit." High purification (thorough elimination of impurities) has a huge impact on the quality and yield of cutting-edge semiconductors. Therefore, in January 2020 we started a project that aims to reduce impurities to the absolute limit of possibility with our development team and manufacturing team working together from the stage of raw materials refinement. This project will also utilize the super clean room installed

in the new R&D Building at the Sagami Operation Center to cement the reputation of the TOK brand for its ability to provide world-leading quality.

New R&D Building at the Sagami Operation Center

Promote a marketing approach of "seeing the forest while nurturing the trees"

Company-wide strategy (2)

Strengthen marketing, increase understanding of the customers' value creation processes and translate these efforts into new value creation—Through rigorous marketing, TOK will carefully identify solutions that lead to the creation of new value for customers as it makes intensive and proactive efforts to address those solutions

Through numerous communications with customers concerning cutting-edge fields, I have become acutely aware of the importance of a marketing strategy of "seeing the forest while nurturing the trees." Our strategy of building close relationships with customers has steadily refined our strengths in "nurturing the trees," and we take pride in that. However, to further increase our competitive advantage in cutting-edge fields going forward, we need to strengthen our capabilities in seeing the "forest" from a bird's-eye view, by which I mean the overall electronics market, technology trends, social issues, and social trends. To this end, in January 2020 we established the Strategic Alliance Division, under direct supervision of the president, which will focus on strengthening marketing with a management perspective of preparing for five years in the future. First, the division will firmly establish the marketing strategy of "seeing the forest while nurturing the trees," and then prepare to introduce it into the activities of the entire Marketing Department.

Build systems that enable human resources to maintain high motivation

Company-wide strategy (3)

Strengthen human resources who can perform research, make decisions, and take actions on their own initiative—Bolster human resources that will pursue the possibilities of business with a variety of customers and continue to tackle challenges until they succeed

For TOK to continue creating cutting-edge value, we must further evolve our management principle of a "frank and open-minded business culture." This is the thought behind our Company-wide strategy (3). In other words, it is by "performing research, making decisions, taking actions on our own initiative, and continuing to tackle challenges until we succeed" that we will achieve the "frank and open-minded culture" that TOK should pursue. In the fiscal year ended December 31, 2019, we identified issues using an employee engagement survey and had a deep discussion about the direction we should take. In the fiscal year ending December 31, 2020, we will move forward with creating specific systems based on the results of this discussion, with plans for a new personnel system and human resource development program focused on enabling human resources to maintain high motivation and on increasing employee happiness to enhance corporate value. The new systems are scheduled to be rolled out in the fiscal year ending December 31, 2021.

Started a new remuneration system for directors with ROE and other metrics as evaluation indicators

Company-wide strategy (4)

Strengthen management foundation—Focus on further sophisticating Group management, improving corporate governance, and promoting balance sheet management to utilize management resources more efficiently

We have been working to make further progress in the field of corporate governance, with new initiatives advancing steadily, led by the Nomination and Compensation Advisory Committee, which we established in December 2018. In March 2020, we increased the number of independent directors in the Board of Directors by one, bringing the ratio of outside directors to one third, with outside directors making up more than half of the Nomination and Compensation Advisory Committee. Based on opinions from outside directors and external consultants, we formulated and introduced a new remuneration system for directors that varies the amounts of annual bonuses and performance-linked stock-based remuneration across a wide range from 0% to 200% depending on the degree of achievement of numerical targets. We also made ROE one of the evaluation indicators for the performance-linked stock-based remuneration* as part of a system to promote deep commitment among directors to realizing the Group's sustainable growth and medium- to long-term enhancement of corporate value.

In our financial capital strategy, we will continue our initiatives to strengthen balance sheet management. We will focus on establishing a financial position to support ongoing value creation in a frank and open-minded business culture along with dialogue with our stakeholders. In this way, we will continue the discussion about the overarching aspiration for our balance sheet from a super-long-term viewpoint while pursuing the optimal balance between investments, cash reserves, and shareholder returns. Furthermore, we will continue the dividend policy targeting a DOE of 3.5%, which we started together with the current Medium-Term Plan.

* The initial performance evaluation period is a two-year period from the fiscal year ending December 31, 2020 to the fiscal year ending December 31, 2021. ROE is one of the evaluation indicators for this period.

Evolution of Integrated Thinking and Creation of Shared Value with Society

Material Issues for Enhancing Corporate Value—Summary of the First Year

In accordance with the four management principles of the Company's founder, Shigemasa Mukai, and integrated thinking, we will continue to supply outstanding high value-added products to create shared value with society and realize sustainable enhancement of corporate value.

To guide these efforts, we formulated material issues last year, and our initiatives have produced various results in the fiscal year ended December 31, 2019. We are also making steady progress on important themes right now. In "enhancement of personnel measures," we appointed a female General Manager of the Human Resources Division as the Company's first female senior manager. In the area of "environmental protection," we have taken our first step towards information disclosure in accordance with the TCFD* recommendations. In "occupational health and safety/security and disaster prevention," we plan to increase the number of sites with ISO 45001 certification at an accelerating rate from 2020 to 2021. Finally, our achievements and next steps in "development and provision of high value-added products that will contribute to innovation" and "enhancement of corporate governance" are as I have already described.

The fiscal year ending December 31, 2020 marks our 80th anniversary. Under our 80th anniversary concept "SHINKA," we are working to systematically strengthen our initiatives not only in business, but also material issues, SDGs, and CSR, aiming to achieve "evolution, innovation, and deepening" (all expressed by the word "*shinka*" using different Chinese characters). Moreover, by reviewing the sources of our growth over 80 years, we will also refine the "true value" (also expressed by the word "*shinka*" in Japanese) of the Company. Also, by steadily executing measures focused on 10 years from now in 2030, and 20 years from now, when we will become a 100-year company, we will strengthen our value creation foundation for the future while all of our human resources become "resilient" (also expressed by the word "*shinka*" in Japanese) and keep trying until they succeed.

* Task Force on Climate-related Financial Disclosures

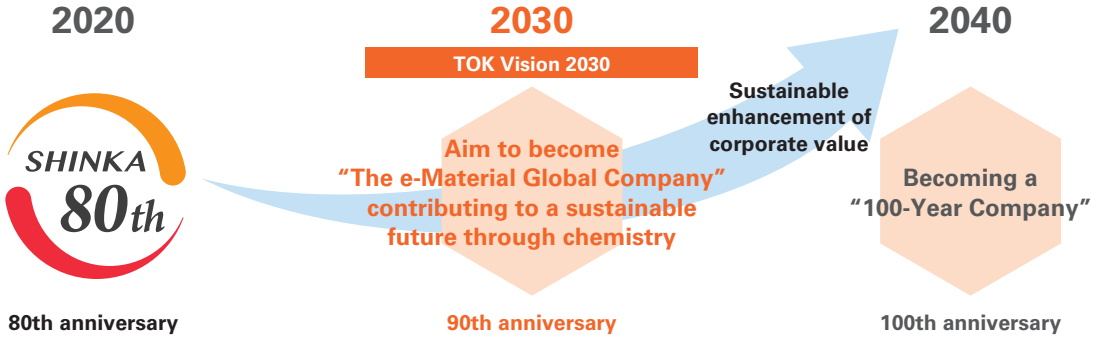
TOK Vision 2030—Aiming to Become "The e-Material Global Company" Contributing to a Sustainable Future through Chemistry

The fiscal year ending December 31, 2020 is the final year for our initiatives to achieve our overarching aspiration for 2020, which we formulated in 2010. Currently, we are in the final stage of formulating TOK Vision 2030, which includes new quantitative targets for our overarching aspiration for 2030. We will communicate the overall image and details of the vision in Integrated Report 2020, which we will publish in 2021. In this report, we will first share our basic approach with our stakeholders.

Starting in August 2020, the Group will promote further deepening and development of the electronic materials field with the aim of contributing to a sustainable future through chemistry as "The e-Material Global Company." Specifically, we assume that semiconductor manufacturing will continue to evolve both in the front-end process and back-end process, and its associated materials will also continue to evolve. Under this basic assumption, we will pursue further miniaturization in preparation for 1nm-level technology in the front-end process, while in the back-end process, we will evolve 2.5D packaging and 3D packaging, and in associated materials, we will meet new needs for clean solutions.

Ultimately underlying these efforts is our philosophy of "contributing to a sustainable future through chemistry" by contributing continuously to solving important social issues, earning the trust of stakeholders throughout the world, and providing new added value that will inspire customers, based on the integrated thinking that has been passed down since our founding.

I hope our stakeholders look forward to seeing TOK's further value creation.



Special Feature

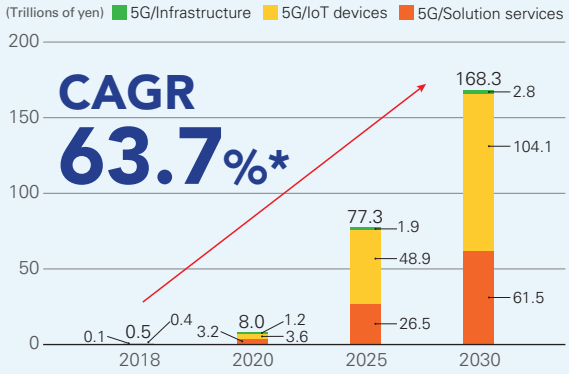
The Cutting Edge

—Long-Term Value Creation

Megatrends

The 5G market is now gradually beginning to take off and is projected to grow at an average annual rate of 63.7% over the next 10 years to a scale of ¥168.3 trillion by 2030, a 300-fold increase from 2018*. Offering high speed and high capacity, low latency, and multiple simultaneous connection capabilities, 5G is expected to provide enormous social value by creating new services in various areas of the B-to-B and B-to-C sectors while increasingly serving as a social infrastructure and combining the IoT with AI.

☐ Projected global demand for the 5G market*



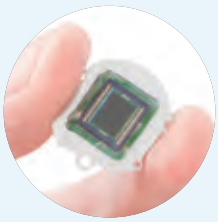
* Source: Japan Electronics and Information Technology Industries Association (JEITA)'s press release on December 18, 2019

Risks and Opportunities

The global risks and social issues that are expected to be mitigated or solved by 5G are wide-ranging. 5G can mitigate the recently emergent risk of infectious disease by enabling the wider spread of remote medicine, remote construction, drone logistics, etc. The risk to agriculture posed by climate change is also expected to be reduced through the combined use of 5G and IoT sensors. The advance of 5G and IoT is giving rise to business opportunities for the Group in the form of further increase in data processing speed, miniaturization of electronic components, expanded needs for high-frequency devices, and increased functionality of sensing devices. By steadily capturing these opportunities, we will create both social and economic values.

Data servers

Smartphones



IoT sensors

KrF excimer laser photoresists for 3D-NAND

EUV/ArF photoresists for 10nm-level to sub-3nm semiconductors

Shared value **Solving social**

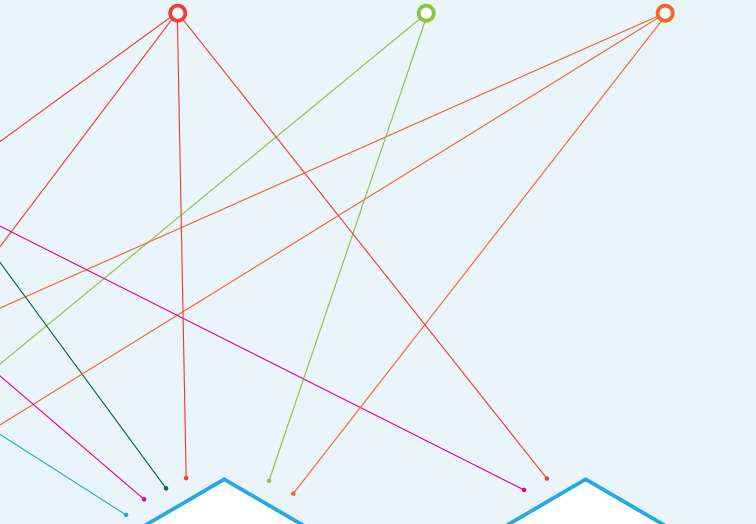
SDGs to which we contribute

Capability in Cutting-Edge Fields

HPC

AI

Autonomous vehicles



High-purity chemicals
(thinner, advanced surface preparation)
for
10nm-level to sub-7nm semiconductors

High-density integration materials
for
Cutting-edge packaging process
High-frequency devices

issues with 5G & IoT

TOK's Cutting-Edge Products

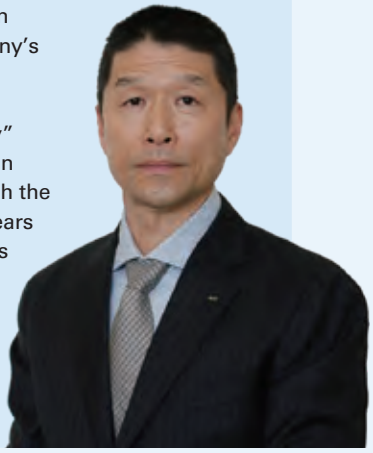
TOK provides a wide range of cutting-edge photoresists and high-purity chemicals for various semiconductor devices used both in 5G base stations and in fields that are strongly connected to 5G, such as data servers, smartphones, IoT sensors, HPCs, AI, and autonomous vehicles. We are also focusing our efforts on R&D with a view to "unknown domains," such as promising fields including 5G-capable VR and AR, edge computing, and B-to-B local 5G devices.

A Message from the Executive Fellow

Remaining on the Cutting Edge by Continuing Product Evolution Even after Launch

Many of the Company's products used in cutting-edge fields such as 5G and IoT are innovative products that are the result of engineers following through on their ideas. Even after they have been launched, we continue to evolve them over many years to retain their cutting-edge value. For example, high-purity chemicals such as thinners and advanced surface preparation have continued to evolve together with the Company's mainstay photoresist products.

Raw materials and the structure of semiconductors have been changed constantly and repeatedly to improve semiconductor performance. In developing cutting-edge clean solutions, at some points we held daily meetings with our customers to keep pace with the daily changes in their needs. The Company's management principle of "continuing efforts to enhance our technology" has been passed down in an unbroken line through the Company over the 80 years since its founding, and is still a vital part of who we are today.



Kazumasa Wakiya
Executive Fellow

Special Feature

The Cutting Edge

—Long-Term Value Creation

A Message from the Executive Fellow

Digging Down into the Essential Nature of Raw Materials and the Mechanisms of Material Synthesis to Find Breakthrough Technologies

The Company is helping to reduce climate change risk indirectly by reducing semiconductor power consumption through advances in microprocessing and providing a stable supply of materials and equipment for power semiconductors.

Since we started full-scale production of photoresists in 1968, our business environment has changed rapidly, from g-Line and i-Line photoresists through to KrF/ArF excimer laser photoresists and EUV photoresists. Despite the challenges, we have met customers' needs, using our technological capabilities to remain constantly on the cutting edge of miniaturization. As a developer, I was also involved in the development of each generation of products, from materials design to product composition. One of our major customers is about to commence mass production of 5nm semiconductors using EUV photoresists. Going forward, we will need further breakthroughs in our development work for 3nm and 1nm semiconductors. For this reason, we approach product development by constantly digging down into the essential nature of materials and the mechanisms of material synthesis rather than getting caught up on previous successful approaches. Through a process of repeated hypotheses and verifications, we will establish the seeds of new technologies.

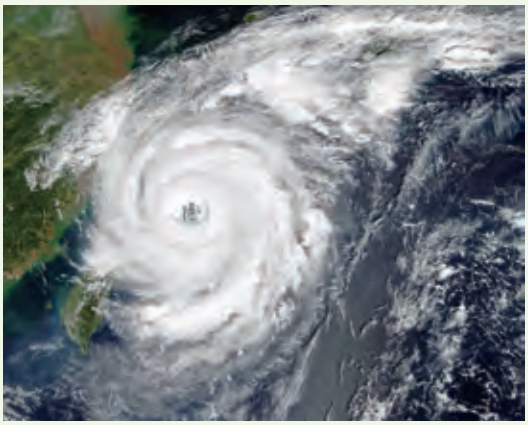
Kazufumi Sato
Executive Fellow

Megatrends

In 2019, the average world temperature was the second highest on record, having risen 1.1˚C above the estimated pre-industrial revolution average, while atmospheric greenhouse gases also reached the highest concentration ever*1. While fluctuating up and down, the average annual world temperature has followed an uptrend, with more years with high temperatures since the mid-1990s*2, and a large body of research reports that this climate change has brought about extreme weather events, such as larger hurricanes and typhoons, and natural phenomena such as swarms of locusts.

*1 Source: "WMO Statement on the State of the Global Climate in 2019" (projection based on preliminary reported figures of greenhouse gases)

*2 Source: Japan Meteorological Agency



Risks and Opportunities

As a countermeasure to global warming, a major factor in climate change risk, the uptake of renewable energy systems including wind and solar power generation, as well as electric vehicles, hybrid cars, and energy-saving home appliances is driving progress on curbing greenhouse gas emissions and electricity consumption, etc. We believe that the key to expanding these efforts lies in achieving higher performance and greater energy savings through the further miniaturization of cutting-edge semiconductors and the evolution of power semiconductors. This will lead to widening opportunities for TOK to create value using the microprocessing technologies and power semiconductor manufacturing equipment that it has cultivated over many years.

(Direct impact of climate change risk on the Company's operations: See page 61 "Initiatives toward Information Disclosure in Accordance with the TCFD Recommendations")

SDGs to which we contribute

Capability in Cutting-Edge Fields

Materials for IGBT circuit board i-Line photoresists for
Power semiconductors

EUV/ArF photoresists for
Miniaturization and energy saving of semiconductors

Plasma ashing system Wafer handling system for
Power semiconductors

Shared value **Mitigating climate change risk**

TOK's Cutting-Edge and Long-Selling Products

TOK has contributed to the miniaturization of semiconductors by continuously providing cutting-edge photoresists for every era. Over nearly 50 years since 1970, we have provided value by reducing energy consumption in semiconductors to approximately 1/2,040,000*3 of the initial level.

From the 1980s to the 1990s, g-Line and i-Line photoresists were on the cutting edge of the miniaturization of semiconductors. Today, these photoresists are essential materials in the production of power semiconductors, LEDs, and sensors, and have become the most widely used photoresists in the world*4. In addition, we have received repeat orders from many customers over many years for our plasma ashing system for power semiconductors, which was launched in the mid-1980s.

TOK will continue to contribute to reducing climate change risk through cutting-edge photoresists and many long-selling products going forward.

Energy-saving effect by miniaturization of semiconductors involving TOK (1970–2020)

Power consumption

Approx. **1/2,040,000*3**

*3 A rough estimate for two-dimensional semiconductors (1970: 10,000nm → 2020: 7nm). Based on scaling laws where a miniaturization in line width to approximately 1/1,429 of its original size leads to power consumption of approximately 1/1,429², or approximately 1/2,040,000.

*4 Projected Sales Volume Share in 2019 (Source: Fuji Chimera Research Institute "2020 Electronics Advanced Materials Current Status and Future Outlook")

Special Feature

The Cutting Edge

—Long-Term Value Creation

Megatrends

In the world of medical diagnostics, a growing interest in personalized medicine and early diagnosis is driving increased activity around development of more accurate diagnosis and testing through genome analysis and pathology diagnosis with a low burden on patients. In particular, the market for diagnosis and drug discovery using next-generation DNA sequencers that can rapidly decode complex base sequences of genes is projected to grow at an average annual rate of 18.1%, increasing approximately 5.4-fold over 10 or so years from 2018 to by 2028, reaching a scale of US$18.03 billion*.

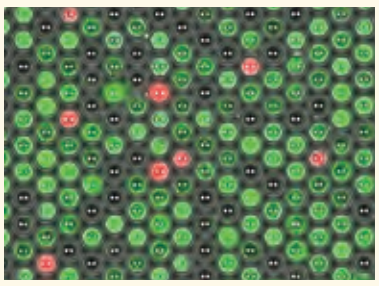
* Source: BIS Research Inc.'s news release on August 28, 2019

Shared value Development and acceleration of diagnostics and drug discovery

Biochip for a next-generation DNA sequencer *The photo is a sample image.

Next-generation DNA sequencers, etc. make use of the Company's materials for manufacturing biochips. These materials offer high resolution, high adhesion, high aspect, and low cellular toxicity, helping to develop and accelerate diagnostics and drug discovery by shortening analysis times of DNA base sequences and improving accuracy.

Shared value Improving patient QOL



SIEVEWELL™ cell sequencing chip

The Company's SIEVEWELL™ brand of cell sequencing chip is the only product on the market that can array a large volume of cells with high precision at once. This original characteristic has been highly evaluated, and by enhancing the efficiency of rare cell recovery and analysis on the front lines of drug discovery research and pathology diagnosis, we are contributing to pathology diagnosis research that does not place a heavy burden on patients.

SDGs to which we contribute

Capability in Cutting-Edge Fields

Risks and Opportunities/TOK's Cutting-Edge Products

TOK will continue to leverage its cutting-edge semiconductor materials as a growth driver, while taking up the challenge of new fields such as life sciences to promote business portfolio reforms. In the life sciences field, we will make use of our accumulated semiconductor-related technologies to expand business opportunities associated with materials for manufacturing biochips used in next-generation DNA sequencers and cell sequencing chips.

DNA sequencers made using TOK's materials are used for early gene data analysis of viruses and vaccine development, and are expected to contribute to the development and acceleration of various diagnostic and drug discovery technologies going forward.

SIEVEWELL™

Looking ahead, we will continue to expand sales through promotion in target markets and the development of new products, aiming to enhance QOL for as many patients as possible.

A Message from the Officer

Developing Cultivated Core Technologies in Unknown Domains to Open New Markets

In developing materials for manufacturing biochips used in DNA sequencers, etc., the Company has worked hard to come to grips with needs and evaluation methods unique to the life science market, which was an unknown domain for us. However, we won customers by proposing the application of microprocessing technology and MEMS material technology that we cultivated in the semiconductor field to the manufacturing process of microchannels to meet a need for increased precision.

Furthermore, in developing the SIEVEWELL™ cell sequencing chip, we succeeded in commercializing the product by efficiently applying our own cycle of prototypes, improvement, and evaluation from the design stage through to the manufacturing process using lithography.

Looking ahead, we will continue to develop diverse applications of the core technologies that we have cultivated in the cutting-edge field of semiconductors to open up new markets and provide products that contribute to society.

Yusuke Narumi
Officer, Department Manager, New Business Development Dept.

TOK Medium-Term Plans

Review of the Past Two Medium-Term Plans/
Overview of the TOK Medium-Term Plan 2021

TOK Medium-Term Plan 2015

(FY2014/3–FY2016/3)

In 2012, TOK established customer-oriented sites that use an integration of "the trinity" platform covering development, manufacturing, and sales in South Korea where the semiconductor industry was displaying remarkable growth, and accelerated its strategy of building close relationships with customers overseas, especially in the U.S., South Korea, and Taiwan, under the TOK Medium-Term Plan 2015.

Management Objectives/ Features

- **Deepen and expand existing business domains**
- **Swiftly launch new business domains**
  - Surpass record-high profits
  - Carry out large-scale investment to enhance business foundations that support sustainable growth
  - Expand business domains to include the renewable energy field

Results

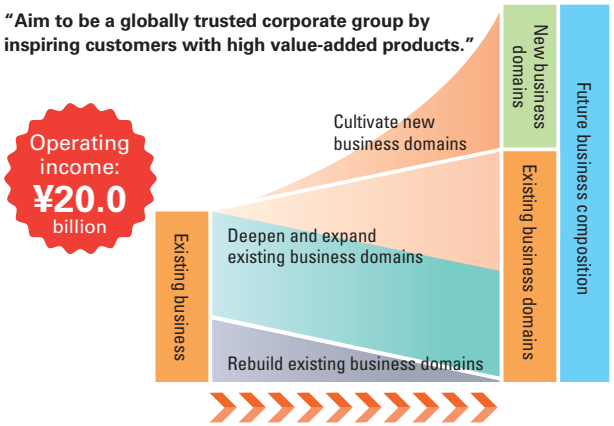
- **Achieved record-high profits**
  FY2015/3 Operating income: ¥13.2 billion
- **Strategy of building close relationships with customers made significant progress**
- **Diversified earnings drivers**
  - **ArF excimer laser photoresists:** Growth in North America
  - **KrF excimer laser photoresists:** Double-digit annual growth rates for Asia
  - **g-Line and i-Line photoresists:** Secured positive growth
  - **High-density integration materials:** Expanded to major OSAT manufacturers, made progress in developing new customers
  - **High-purity chemicals:** Succeeded in development and sales expansion of high-grade products

Strategy

- **Company-wide strategies**
  Build close relationships with regional users/
  Reform business portfolios/Develop global personnel
- **Important strategies**
  [Earnings drivers]
  Continue growth of semiconductor photoresists/Capture business for advanced packaging materials/Expand LCD materials by capturing demand related to high-resolution LCD panels for tablet devices and smartphones/Continue multifaceted development of existing technologies that will contribute to sales/Recover earnings in the Equipment Business/Fully commercialize TSV equipment
  [Strengthen business potential]
  Strengthen development of ArF excimer laser photoresists (for the 10nm level) to secure market share/Develop next-generation clean solutions/Develop new materials in the renewable energy field/Enter the optoelectronics field

Long-Term Management Vision (formulated in 2010) —Overarching aspiration for 2020

"Aim to be a globally trusted corporate group by inspiring customers with high value-added products."



TOK Medium-Term Plan 2018

(FY2017/3–FY2018/12)

Achieving record-high profits under the TOK Medium-Term Plan 2015 provided us with momentum for the overarching aspiration for 2020 (operating income of ¥20 billion), and TOK began proactive investments to focus on strengthening the management foundation and reforming business portfolios.

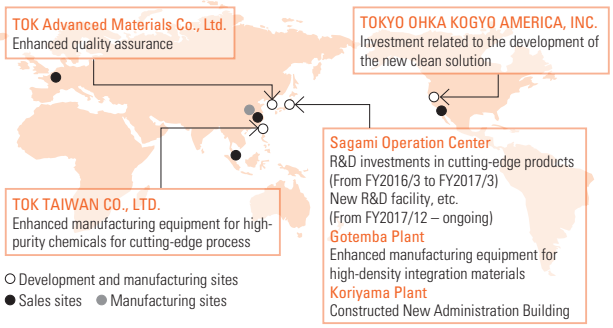
Positioning/ Management Objectives/ Features

- **Key three years for achieving the overarching aspiration**
- **Continue striving to deepen existing business domains and swiftly launch new business**
  - Continue proactive investments for the overarching aspiration
  - Aim for record-high profits in the final year
  - Aim for ROE of over 7% and enhance returns to shareholders

Results/Issues

- **Strengthened R&D and production bases**
  Conducted capital investments of ¥21.7 billion
- **Leveraged strengths in the cutting-edge semiconductor field**
  - **EUV photoresists:** Highly evaluated by major customers
  - **KrF excimer laser photoresists:** Adoption for 3D-NAND (Japan, Asia)/ Increasing demand accompanying expansion of 3D-NAND mass production (Japan, Asia)
  - **High-density integration materials:** Adoption for FOWLP (semiconductor field) by a major customer/Adoption by customers in Japan and overseas resulting in expanded adoption and application (electronic components field)
  - **High-purity chemicals:** Expanded adoption for next-generation process by a major customer (Asia)/Adoption of and increased demand for new clean solution (Asia, the U.S.)
- **Midway through reforming business portfolios**
  - **ArF excimer laser photoresists:** A major customer did not adopt (Asia)/ Major customers' production plans delayed (Asia, the U.S.)
  - **Equipment Business:** Delayed expansion of 3D packaging process market
  - **New business:** Delay in commercializing focused themes (high-functional films, nanoimprint, etc.)

Main Capital Investments under the TOK Medium-Term Plan 2018



Strategy

- **Company-wide strategies**
  [Reform business portfolios]
  Renew mainstay products/Create new business and new materials/ Recover earnings in the Equipment Business and develop versatile applications of TSV technology
  [Evolve strategy of building close relationships with customers]
  Strengthen development of ArF excimer laser photoresists (10nm or less)/Further increase market share of KrF excimer laser photoresists (thick-film photoresists for 3D-NAND)/Strengthen customer support structure in Chinese market
  [Develop global personnel]
  Promote development of core human resources with a group-wide perspective, as well as recruitment and promotion of diverse personnel appropriate for global business
  [Strengthen management foundation]
  Build a governance system aiming to reduce risks accompanying globalization and to raise corporate value

Overview of the TOK Medium-Term Plan 2021

(FY2019/12–FY2021/12)

2019–2021

Management Vision

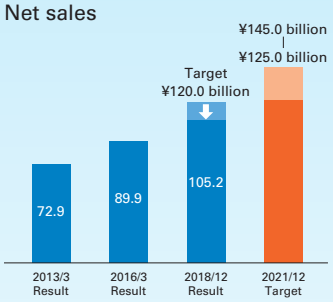
Aim to be a globally trusted corporate group by inspiring customers with high value-added products that have satisfying features, low cost and superior quality.

Performance/Targets

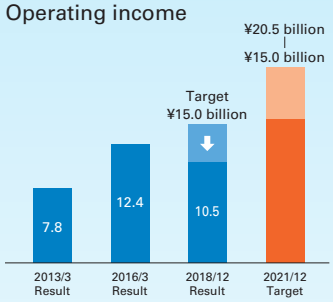
(Billions of yen)	2018/12 Result	2019/12 Forecast	2020/12 Target	2021/12 Target
Net sales	105.2	111.6*	120.0–130.0	125.0–145.0
Operating income	10.5	10.5*	13.5–15.0	15.0–20.5
ROE (%)	4.7%	–	–	Over 8.0%
Exchange rate (Yen/US$)	111.0	105.0	105.0	105.0

* Figures announced on February 14, 2019

Net sales



Operating income



Features of the TOK Medium-Term Plan 2021

Point 1: Strengthen business portfolio reforms → Ambitiously develop the technologies required by 5G, IoT & Innovation

Point 2: Return to a growth trajectory → Operating income target: ¥15.0 billion to ¥20.5 billion (Fiscal year ending December 31, 2021)

Point 3: Strengthen balance sheet management and introduce a new dividend policy

→ A new dividend policy targeting a DOE of 3.5% Dividends applicable to the year per share forecast = ¥120 (Fiscal year ending December 31, 2019)

→ Flexibly conduct share buyback as a means of returning profits to shareholders

Background and Aims behind Formulation

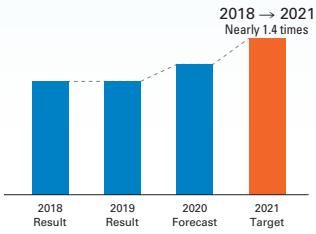
5G, IoT & Innovation

Sales Results and Target of Each Growth Driver

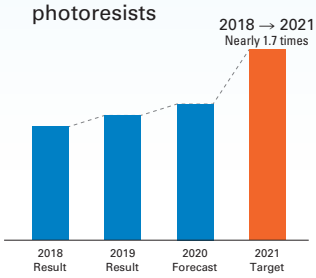
TOK's Drivers

- EUV/ArF photoresists
- KrF excimer laser photoresists
- High-density integration materials
- High-purity chemicals
- Equipment Business

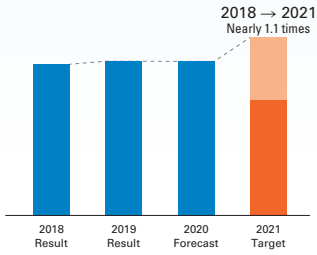
Cutting-edge photoresists (EUV/ArF photoresists)



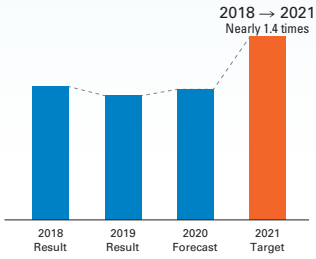
KrF excimer laser photoresists



High-density integration materials



High-purity chemicals



Company-Wide Goal

"Cultivate niche markets that the TOK Group should develop"

Company-Wide Strategies

(1) "Accurately identify and rapidly address the customers' voice to build an even larger and stronger pipeline to customers"

(2) "Strengthen marketing, increase understanding of the customers' value creation processes and translate these efforts into new value creation"

(3) "Strengthen human resources who can perform research, make decisions, and take actions on their own initiative"

(4) "Strengthen TOK management foundation"

Strategy for New Business

High-functional films | Optical materials | Life science-related materials | Collaboration/ Support

Financial Capital Strategy

[Balance Sheet Management] As a long-run R&D-driven company, TOK will pursue the optimal balance between **investment**, **cash reserves**, and **shareholder returns**.

(1) Pursuit of asset efficiency **(2)** Cash reserves **(3)** Shareholder return policy and dividend policy

Review of Operations

Material Business

Manufacturing and sales of electronic functional materials and high-purity chemicals

Quality policy

Aim to be a globally trusted corporate group by inspiring customers with high value-added products that have satisfying features, low cost and superior quality. Deepen and expand existing business domains and swiftly launch new business domains. Each one of us clearly understands the current situation and challenges ourselves with a sense of crisis.

1. Strengthen marketing ability, be motivated by a strong sense of crisis, prepare well, and take immediate action.
2. Promote human resource development for global operation.
3. System to capture customer's voice accurately and to respond to them immediately.

Kosuke Doi

Executive Officer, Department Manager, Marketing Dept.

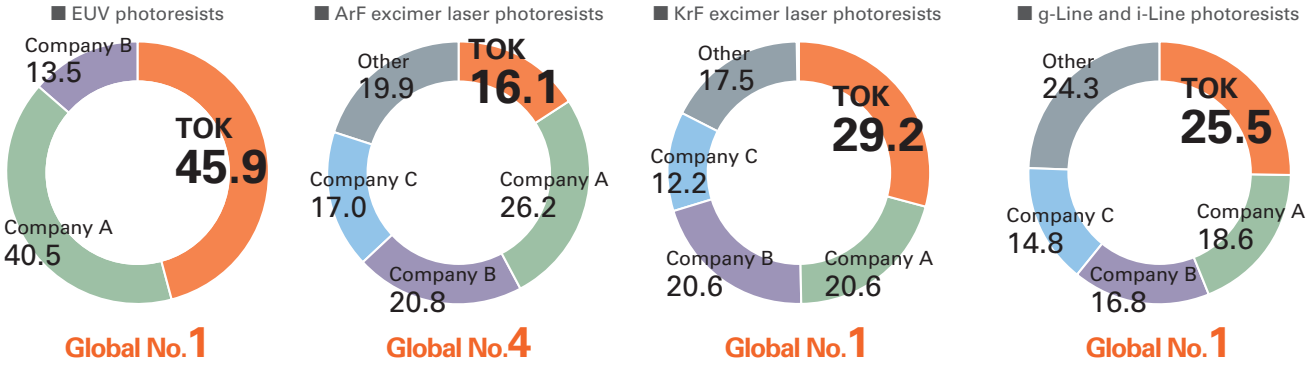
Material Business Performance

(Millions of yen)

	FY2017/12 Result*	FY2017/12 Calendar year adjustment*	FY2018/12 Result	FY2019/12 Result		
					Change	%
Net sales	90,531	98,250	102,621	98,986	(3,635)	(3.5%)
Electronic functional materials	51,230	56,947	58,793	58,249	(544)	(0.9%)
High-purity chemicals	38,676	41,165	43,733	40,674	(3,059)	(7.0%)
Other	623	134	95	63	(32)	(33.3%)
Operating income	12,816	14,868	14,765	13,462	(1,303)	(8.8%)
Segment income margin	14.2%	15.1%	14.4%	13.6%	–	–
Segment assets	106,220	–	104,125	113,079	+8,954	+8.6%
Depreciation	5,833	–	6,852	7,009	+157	+2.3%
R&D costs	6,371	–	7,856	8,370	+514	+6.5%

* Due to the change in fiscal year-end, revised results for the fiscal year ended December 2017 are presented as adjusted figures for 12 months' (January–December 2017) earnings of companies that end their fiscal years in March (the Company and its domestic consolidated subsidiaries).

Global market share for semiconductor photoresists (projected sales volume share in 2019 (%))



Source: Fuji Chimera Research Institute "2020 Electronics Advanced Materials Current Status and Future Outlook"

Issues for Society and Customers and TOK's Solutions

Reducing impurities —the key to semiconductor advancement

Digital transformation (DX), 5G, and IoT are being accelerated to support solutions to social issues that have emerged during and after the COVID-19 pandemic and the transition to new patterns of human behavior—the "new normal." The advancement of semiconductors is essential to the success of this effort.

Semiconductor materials underpin such advancement, and we are striving to achieve new evolution on all fronts. Recently, developments include widespread adoption of EUV lithography following advances in miniaturization in front-end processes; while in back-end processes, progress in the development of new packaging materials is realizing multiple layering of semiconductors that is driving the evolution of large-scale data centers, thick-film photoresists used in IoT sensors for cameras, and higher performance in supercomputers.

The most important challenge that has been shared with the Group in its daily conversations with customers, who are global semiconductor industry leaders, is "ultrahigh purification," referring to the extreme elimination of contaminants from the manufacturing process and semiconductor materials.

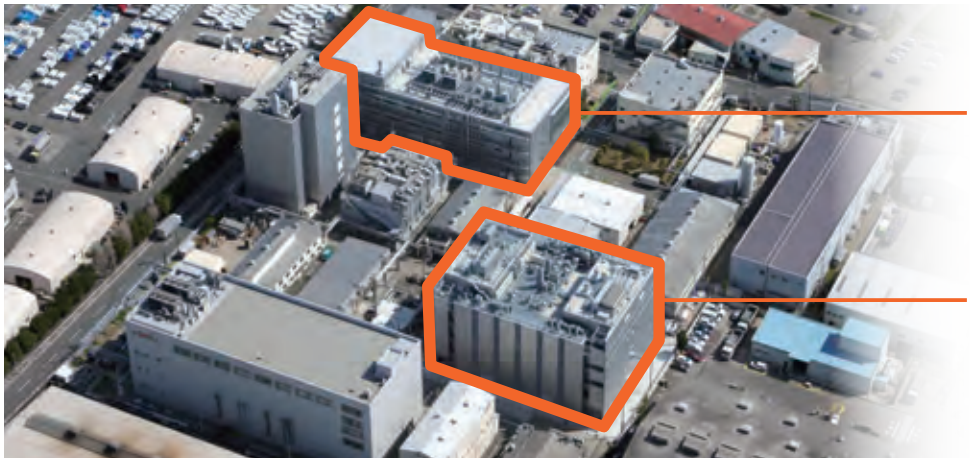
Contributing to higher yields of cutting-edge semiconductors by realizing ultrahigh purification

One of the Company's core competences since its foundation has been world-leading high purification technology. Over many years, we have continued to meet the challenge of attaining higher levels of purity in the fields of raw material refining technologies, cleaning technologies for production facilities and product containers, and production environments. Furthermore, in 2019 we started operation of a super clean room in the new R&D Building at the Sagami Operation Center. Using the super clean room's world-leading levels of cleanliness to handle hazardous substances, we will accelerate our initiatives to eliminate contaminants to the lowest possible level. This will enable us to supply products with outstanding high purity for both front- and back-end processes in semiconductor manufacturing, contributing to higher yields of cutting-edge semiconductors.

Aiming to capture higher market share through ultra-high purification of ArF excimer laser photoresists

The pursuit of ultra-high purity is necessary not only for high-purity chemicals such as clean solutions, surface modifiers, and developing solutions, but also for EUV photoresists and ArF excimer laser photoresists, which support cutting-edge miniaturization.

With ArF excimer laser photoresists in particular, since the resolution performance is about the same as the products of other companies, our policy for increasing market share is to pursue improved "ease of use" for the customer by striving for further improvements in roughness and uniformity and even higher levels of purity. **(See page 43 "The Cutting Edge")**



The new C-1 Building of the Sagami Operation Center, where the super clean room has started operations, and the new B-6 Building for open innovation.

Risks and opportunities — Material Business —

Risks

- Rising cost of development due to increasing technological difficulties
- Impact of deterioration in market environment with U.S.-China trade friction and tensions between Japan and South Korea
- Increased investment outlays for inspection and production equipment in connection with ultrahigh purification
- Impact of higher costs of equipment following advances in exposure equipment and miniaturization
- Impact of decrease in customers, with the same number of photoresist manufacturers
- Impact of over-concentration of main business domains in the electronics industry

Opportunities

- Increasing needs for ultra-miniaturization (EUV and ArF photoresists)
- Growing needs for cutting-edge packaging technologies (2.5D, 3D semiconductor packaging)
- New semiconductor needs from launch of 5G
- Volume of data growing due to 5G, IoT, and AI.
- Expansion in business opportunities through the global structure of close relationships with customers (Japan, the U.S., South Korea, Taiwan)
- Capture growth opportunities through strengths in both the front-end process and back-end process of semiconductor manufacturing
- Increase in proposal opportunities for semiconductor manufacturing processes due to further diversified needs in both materials and equipment (synergies with the Equipment Business)

Building Ecosystems with Various Stakeholders to Expand Technological Seeds

Increasing the number of collaborative projects with other companies and groups

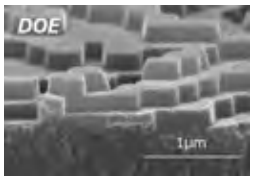
In the cutting-edge field of semiconductors, the pace of technological change is accelerating and development grows increasingly difficult year by year. To continue making breakthroughs in this field and realize long-term sustainable growth, we need to further expand our technological seeds through collaboration with various stakeholders other than customers. Since the fiscal year ended December 2019, we have been accelerating our efforts on this theme, working through a PDCA cycle with a KPI of "growth in the number of collaborative projects with other companies and groups," to address the material issue of "development and provision of high value-added products that will contribute to innovation." The number of collaborative projects underway in the fiscal year ended December 31, 2019 increased by approximately 15% year on year, a 10 percentage point increase in growth compared with a 5% year-on-year rise in the fiscal year ended December 31, 2018.

One of our recent open innovation initiatives that has made the most progress is our collaborative development with Pixelligent Technologies, LLC (U.S.), which has strengths in the development of inorganic high refractive index materials, and in which we invested approximately ¥220 million in April 2018.

Making use of optical materials that we developed together with Pixelligent Technologies, we have developed UV nanoimprint materials for optical elements. This material is characterized by high transparency and durability, and it enables control of the refractive index. It is being used in AR and VR devices, as well as 3D sensors, etc. and in the future, we are aiming for it to be adopted for use in smart glass, etc. by major customers. The new nanoimprint materials are the products of cooperation, made in the New Business Development Dept. from high refractive index materials developed by the Research and Development Dept. in collaboration with Pixelligent. The material enables high-speed data processing and image display in smart glass and AR and VR devices, which are expected to be popularized with the innovation of 5G and IoT. We expect it to contribute to the creation of unique and innovative immersive experiences.

tok × pixelligent THE CLEAR SOLUTION™

Open innovation



Development of materials for optical elements

Realization of comfortable AR and VR devices

The Cutting Edge

TOK's Human Resource

JhaoRong Lin
Advanced Material Development Div. 4

Understanding the true objectives behind customers' requests to meet their expectations

I was hired by TOK TAIWAN CO., LTD. in 2019, and today I am involved in development of high-purity chemicals at the Research and Development Dept. of TOK in Japan. As I have wanted to be involved in basic chemistry research since I was a student, I chose to work at TOK, which is focused on the basic research for photoresists and high-purity chemicals. Recently I have been working on development of advanced surface preparation for cutting-edge semiconductors. To clarify the mechanism for chemical phenomena, we emphasize basic knowledge as a matter of course, but we also consider various techniques such as statistical approaches. Working in Japan has been challenging at times due to differences in language and working culture, but I aim to continue acquiring the necessary knowledge for materials development and to meet customers' expectations by understanding the true objectives behind their requests through close and frequent communication with them.

The Cutting Edge

Developing further strengths in cutting-edge AI semiconductor materials

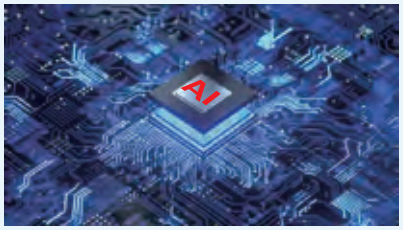
The Company is focusing on the development of semiconductor materials in relation to 5G, AI, and power semiconductors as medium- to long-term growth drivers. We are beginning to produce steady results in our development of semiconductor materials for cutting-edge AI and HPC*1, which will enable high speed, large capacity, and low power consumption in the processing and transmission of data.

*1 High-Performance Computing: Massive calculations and data processing performed by super computers and other high-performance computers

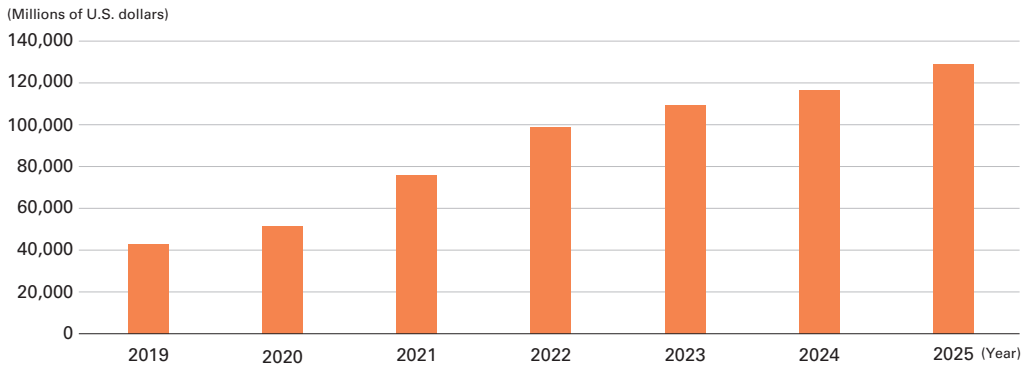
High growth potential in the AI semiconductor market

AI semiconductors are used in high-speed AI-based analysis services and HPC such as supercomputers. The market for AI semiconductors is expected to grow rapidly going forward, increasing roughly three-fold from US$42.8 billion in 2019 to an expected US$128.9 billion in 2025*2.

A large portion of this market is represented by memory for AI, which is expected to increase over the same period from US$20.6 billion to US$60.4 billion*2.



Outlook for AI semiconductor market*2



*2 Source: Omdia's press release on January 29, 2020 © 2019 Informa Tech LLC.

Supplying various photoresists for cutting-edge AI semiconductors that enable high speed, large capacity, and low power consumption

Development of AI memory up until now has been focused on advancing the second generation of High Bandwidth Memory (HBM), known as HBM2, which is comprised of vertically stacked DRAM. In 2020, major semiconductor manufacturers launched cutting-edge AI memory with third-generation HBM2E as the core device. This memory realizes high speed and large capacity, with the ability to transfer several dozen to around 100 full high definition videos in a second. It also achieves a dramatic reduction in power consumption compared to the previous generation. Since the first generation of HBM, the Company has been focused on materials development under its strategy of building close relationships with customers. We have supplied packaging photoresists for multiple layering of DRAM in the back-end process for the first and second generation, and for the new generation that has been launched as cutting-edge AI memory, customers have also adopted our ArF excimer laser photoresists and KrF excimer laser photoresists for the front-end process of DRAM manufacturing in addition to packaging photoresists. Moreover, since the new generation memory offers vastly superior performance to the second-generation memory currently installed in the world's fastest supercomputer, it is expected to spur the further evolution of supercomputers. In this way, we expect to realize further acceleration of next-generation basic science and applied science in the fields of climate change, biology, medicine, and space exploration, thereby contributing to the further solution of social issues.

Review of Operations

Equipment Business

Manufacturing, sales and maintenance of semiconductor manufacturing equipment and panel manufacturing equipment

Shonan Operation Center

VALUE

Tsukasa Honkawa

Officer,
Department Manager,
Process Equipment
Manufacturing Dept.

Equipment Business

Equipment Business Performance

(Millions of yen)

	FY2017/12 Result*	FY2017/12 Calendar year adjustment*	FY2018/12 Result	FY2019/12 Result		
					Change	%
Net sales	1,880	2,174	2,655	3,833	+1,178	+44.4%
Segment income (loss)	(664)	(1,073)	(883)	(286)	+596	–
Segment income margin	–	–	–	–	–	–
Segment assets	3,026	–	4,245	3,612	(633)	(14.9%)
Depreciation	24	–	63	36	(27)	(42.9%)
R&D costs	423	–	497	509	+12	+2.4%

* Due to the change in fiscal year-end, revised results for the fiscal year ended December 2017 are presented as adjusted figures for 12 months' (January–December 2017) earnings of companies that end their fiscal years in March (the Company and its domestic consolidated subsidiaries).

TOK's plasma ashing system and wafer handling system for power semiconductors are used by many customers.

Plasma ashing system

Zero Newton bonding machine

Zero Newton debonding machine

Issues for Society and Customers and TOK's Solutions

Rising demand for power semiconductors to reduce climate change risk

The average global temperature in May 2020 was the highest on record*, despite the impact of movement restrictions and city lockdowns under the COVID-19 pandemic. Climate change continues to be one of the greatest global risks. In this situation, many market reports expect medium- to long-term expansion in demand for power semiconductors, which are key components in energy-saving controls for renewable energy systems, such as wind and solar power, and electric vehicles, hybrid cars, and energy-saving home appliances—all of which contribute to mitigating climate change risk.

Having identified "environmental protection" as a material issue, in the Material Business, the TOK Group is committed to providing a stable supply as the global market leader in manufacturing i-Line photoresists for power semiconductors and developing materials for next-generation power semiconductors. We are also helping to reduce climate change risks by developing and supplying EUV photoresists and ArF excimer laser photoresists, which help to miniaturize semiconductors and reduce their power consumption.

To expand these initiatives even further, we identified "power management" as a growth driver for the Company in the TOK Medium-Term Plan 2021. Then, in our Equipment Business, we decided to further strengthen our lineup of plasma ashing systems and wafer handling systems, which have recorded steady sales for use in power semiconductors. Accordingly, we have been focusing on expanding sales and developing new models.

*Source: Japan Meteorological Agency (Highest since records began in 1891)

Toward further strengthening of plasma ashing systems, a long-selling product for power semiconductors

Plasma ashing is a technology that uses plasma reactions to decompose and remove (strip) photoresists that are no longer needed in the semiconductor production process. As cutting-edge technologies in photoresists and etching equipment continue to be sought to enable further miniaturization of semiconductors, new demand for ashing systems is expanding, mainly due to the following three points.

The first point is an increasing need for the powerful and efficient photoresist-removing capability of plasma for the removal of photoresists that have been more extensively denatured in efforts to improve the performance of power semiconductors. In this respect, we recognize that the "powerful photoresist removal capability," which has been a sales point of the Company's plasma ashing systems since they were first introduced, has fitted well with the technology trend for power semiconductors.

The second point is that when customers who have been satisfied using the Company's equipment over the long term of over 20 or 30 years decide to replace it with the same model, currently their only option is the used equipment market.

The Cutting Edge

TOK's Human Resource

Jun Matsushita
Equipment Marketing Dept.

Contribution to evolution of power semiconductors for reducing climate change risk and their market expansion

Power semiconductors are an essential type of semiconductor for efficient electric power operation, and the market is expected to expand strongly going forward. Moreover, Japan and Asia have an extremely high supply capacity for power devices, with several local manufacturers ranking among the top in terms of global market share. TOK has long-standing relationships with many power semiconductor manufacturers, and has built up strong trust relationships with them. We have a track record of supplying around 1,000 plasma ashing systems in aggregate. In recent years we have also supplied systems for extremely difficult cutting-edge processes, such as two-sided processing of thinned 300mm wafers. Going forward, TOK will continue to meet customers' requests, aiming to contribute to the evolution and market expansion of power semiconductors, and thereby to reducing climate change risk.

Risks and opportunities — Equipment Business —

Risks

- Impact of intensifying competition with full-scale entry by major companies as competitors catching up
- Deterioration in market environment with U.S.-China trade friction and tensions between Japan and South Korea
- Introduction of high integration processes aside from 3D packaging
- Impact of still being in the development phase and business scale and profit contribution remaining small
- Impact on profits from investments in development of prototypes, etc.

Opportunities

- Expansion of growth opportunities in the 3D packaging market following diversification of high integration technologies
- Expansion of business opportunities in the next-generation display market
- Opportunities for adoption are relatively equally obtained as the market is new
- Increase in opportunities to appeal track record in TSV equipment adoption and advantage in technology and technological improvement
- Expansion of business opportunities through the supply of high-performance equipment for coating and stripping using knowledge of materials developed in the Material Business
- Securing of earning opportunities leveraging lower break-even point thanks to the fabless production method

Therefore, we are planning to supply plasma ashing systems with usability improved to a level comparable with the latest models, while retaining reasonable pricing and characteristics.

The third point is that we will focus on expanding our lineup of plasma ashing systems that can handle larger diameter wafers. This is a response to power semiconductor manufacturers who are beginning to invest in larger wafer diameters to bolster their manufacturing efficiency and strengthen their cost competitiveness in the same way as cutting-edge semiconductor manufacturers pursuing miniaturization.

Zero Newton wafer handling system that contributes to the evolution of power semiconductors with advanced thinning technology

The flagship product of the Equipment Business is the Zero Newton, a wafer handling system that stacks semiconductor wafers in 3D layers. Sales of the system are expected to grow as 3D packaging equipment. The core technology in the system is its ability to thin the wafers. For this reason, it has also been adopted by customers who need to thin wafers to the extreme to manufacture power semiconductors with higher efficiency and performance.

In particular, cutting-edge power semiconductor wafers are thinned to below 100um, making them very difficult to handle. Moreover, there is also a need to increase yield by widening the wafer diameters. Since Zero Newton offers superior performance for both of these objectives, we will focus on expanding sales of the product going forward.

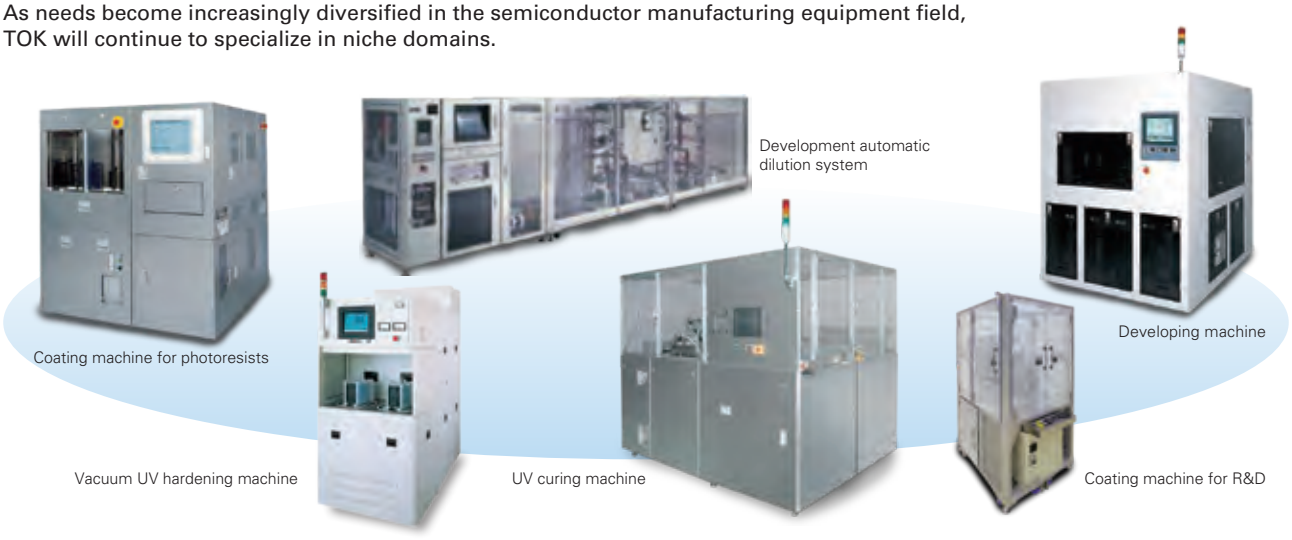
Key Measures of the Second Year of the "TOK Medium-Term Plan 2021"

Promote further measures to improve earnings

We will continue to focus on further improvements of earnings by carrying on the following measures in the fiscal year ending December 31, 2020. The measures address the segment's high cost structure, a feature of providing individually customized units as original solutions.

Regarding the provision of relevant materials, consumables, and components for each unit and the proposal of modification and overhaul services to ensure stable earnings, in April 2019 we integrated the relevant subsidiaries to bolster our workforce in the maintenance division and increased our operating efficiency. Through these measures, we have established the above operations as tasks for sales engineers and expect to achieve a further increase in customer satisfaction and a contribution to earnings in the fiscal year ending December 31, 2021. In particular, we forecast a further expansion in the sales of relevant materials in line with sales of equipment in the Chinese market, which we are currently promoting.

As needs become increasingly diversified in the semiconductor manufacturing equipment field, TOK will continue to specialize in niche domains.



The Cutting Edge

Engaging in initiatives with a long-term perspective in cutting-edge fields

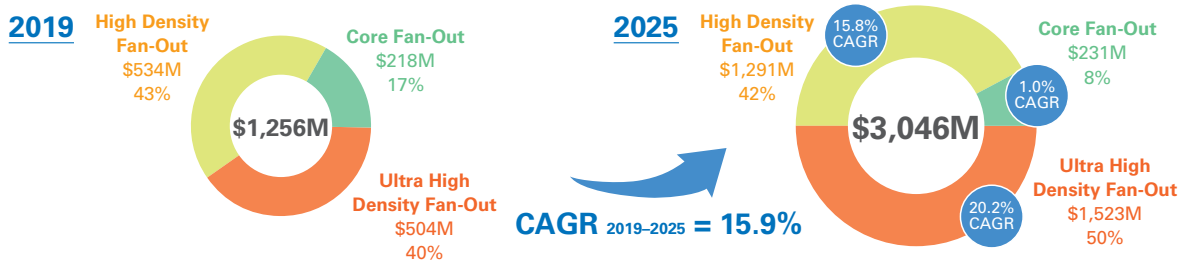
In the Equipment Business segment, recently the Company has been working to turn to profit as soon as possible through further promotion of measures for sales expansion and earnings improvement in its business portfolio, as mentioned previously. Meanwhile, from a long-term perspective, we are engaging in initiatives focused on establishing solid pillars of earnings for the future in cutting-edge fields.

Development of equipment for fan-out panel level packaging

One of our initiatives with a long-term perspective in cutting-edge fields is the development of equipment for fan-out panel level packages (FOPLP). FOPLP is an extension of fan-out wafer level packages (FOWLP), which have helped make mobile devices thinner and lighter, and TOK supplies thick-film photoresists for FOWLP. FOPLP is able to produce roughly five times as many semiconductor packages as FOWLP, so if FOPLP reaches the commercial stage as a mass production technology, it would drastically reduce the cost of popularizing 5G, IoT and innovation, which requires huge volumes of compact, high-performance semiconductor devices. We are therefore focusing on the development of FOPLP equipment using the Zero Newton wafer handling system.

We have acquired basic technology through our initiatives over the past few years. Our focus now is on expanding toward mass production and acquiring users; however, given the high hurdles to development and the fact that this is a new market, we expect to expand in stages. We will persist with long-run development going into the future.

Significant growth expected for the fan-out market



Source: YOLE DEVELOPPEMENT "Fan-Out Packaging Technologies and Market 2020 report, June 2020"

Development of flexible display manufacturing equipment

Our second initiative with a long-term perspective in cutting-edge fields is development of flexible display manufacturing equipment. Based on the Company's UV curing* machines, this equipment has advanced through our initiatives in the past few years and now operates with higher resolution photoresists and offers improved yields in the high-resolution etching process. In addition, the equipment is based on a single-wafer-type system (processes wafers one by one), not a batch-type system (processes multiple wafers collectively), to ensure high usability. As a result, in the fiscal year ended December 31, 2019, we produced a machine that offers advantages from the customer's perspective in terms of maintenance performance over long-term use, durability, and the equipment management system. Currently, we are proceeding to offer samples to a certain customer, aiming to begin receiving orders in the fiscal year ending December 31, 2020.

* Ultraviolet curing

Implementing the M&E strategy

As we have described, the Company's Equipment Business focuses on niche domains that differ from major equipment manufacturers. We are focusing our energies on the M&E (Materials & Equipment) strategy for proposing "processes" that draw out the maximum potential of the characteristics of materials, based on our deep knowledge of semiconductor materials. The initiatives in cutting-edge fields from a long-term perspective described above are also predicated on our M&E strategy. We will continue to provide customers with distinctive added value going forward.

Examples of TOK's M&E strategy

Materials/Material Business		Equipment/Equipment Business		Output
Thick-film photoresists/adhesive materials/thinner Thick-film photoresists/adhesive materials/thinner i-Line photoresists Resists for Organic EL	&	Wafer handling system Zero Newton Equipment for fan-out panel level packages Plasma ashing system Flexible display manufacturing equipment	→	2.5D and 3D semiconductor packaging Cutting-edge semiconductor devices Power semiconductors Flexible display

Message from the CFO

We are evolving balance sheet management ("BS Management") to help realize "TOK Vision 2030" and become a "100-year company" in 2040

Director, Senior Executive Officer,
Department Manager, Accounting and Finance Dept.
Yoichi Shibamura

Progress in Various Aspects of BS Management in 2019

● **Status of Initiatives under the New Financial Capital Strategy from 2019**

We made progress in various aspects of BS Management, aiming for an optimal balance between investments, cash reserves, and shareholder returns in the fiscal year ended December 31, 2019, as the first year in the "TOK Medium-Term Plan 2021." A new capital policy including a dividend policy targeting DOE of 3.5% was also introduced in the fiscal year.

Looking first at investments, we carried out large-scale investments in preparation for becoming a "100-year company," such as the building of a new R&D Building at the Sagami Operation Center. We also made investments to increase production in Japan, the U.S., South Korea, and Taiwan for cutting-edge processes of semiconductors. As a result, the total amount of capital investments made in the fiscal year ended December 31, 2019 came to ¥14,184 million, the second largest amount in a single fiscal year after the fiscal year ended March 31, 2014.

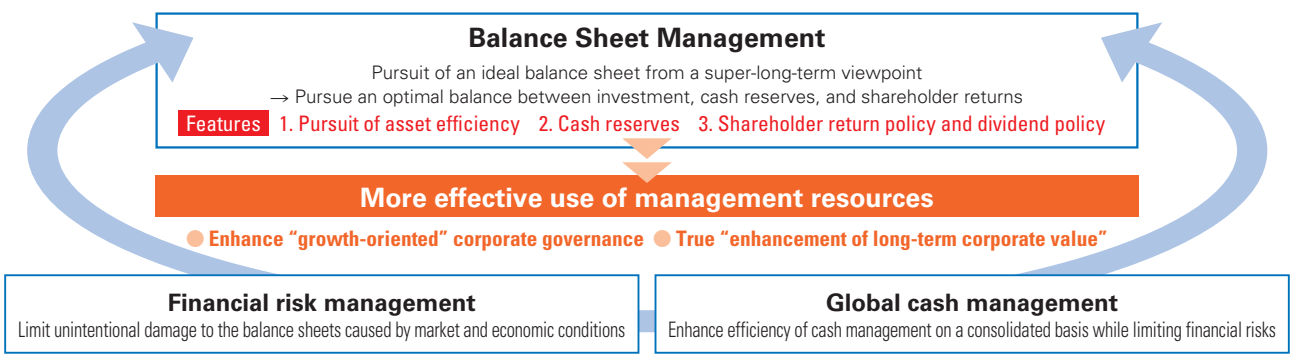
In addition, with an eye on our future long-term growth strategy, we recognize that there is a growing need for new investments to adapt to changes in the post-COVID-19 world, an expansion in cutting-edge fields such as 5G and IoT, and structural changes in the electronics market. In the short-term, we are promoting the following three initiatives to prepare the ground for further strengthening BS Management.

The first is to deepen discussion about "maximizing cash generation capability" and "increasing investment efficiency" in the Budget Committee for investment budget decisions and in the Executives' meeting for investments proposals. We will further clarify the purpose of holding investments in assets and thoroughly discuss the pros and cons and the direction of each investment and business strategies, including the targets for future cash flows to be gained and the return on investment, based on IRR and other KPIs.

The second is an initiative to develop a sense of ownership in the pursuit of investment efficiency. We are promoting efforts to raise awareness and educate everyone in the Group worldwide about the importance of balance sheet thinking, the meaning and purpose of BS Management, and the promotion of new KPIs based on balance sheet thinking such as EBITDA and ROIC, in addition to the traditional accounting concept of profits. **(See page 50 "Financial Capital Strategy Going Forward")**

The third initiative is to reflect our long-term direction and measures to evolve BS Management into "TOK Vision 2030," based on our preparation of the ground through the above two initiatives. Naturally, the long-term direction of our BS Management should be formulated to align with the direction of our long-term business strategy and investment strategy. We will therefore ensure that both are thoroughly linked.

"The trinity" of BS Management, financial risk management, and global cash management



Started Practical Implementation of the Cash Reserve Policy

Another key point of BS Management is the cash reserves. We have been steadily managing these based on our cash reserve policy formulated in 2019 (See the diagram below).

Specifically, we have conducted factorial analysis of cash reserves by application, and run regular balance sheet simulations to calculate our cash reserve requirements over one-year, two-year, and three-year horizons. This forms the basis for our financial capital strategy and control of funding for the entire Group. Moreover, in calculating the range of required cash reserves, we use a moving target system in which we set multiple parameters for working capital, investment reserves, and risk reserves, and adjust the target range depending on movements in projected values.

Furthermore, in responding to the recent COVID-19 pandemic, the impact of the pandemic on the electronics industry and the Company's results is extremely uncertain at this point in time. However, in 2019 we introduced risk reserves envisaging tail risks in the form of a major natural disaster, and these have functioned adequately as a preparation.

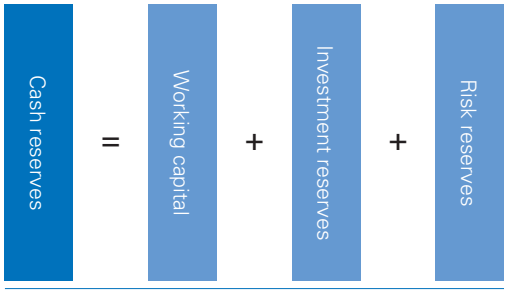
Full-Scale Implementation of the DOE 3.5% Capital Policy for Long-Term Investors

A dividend policy targeting a DOE of 3.5%, one of the main features of innovation of our financial capital strategy since 2019, was implemented half a year ahead of schedule, boosting the annual dividend per share for the fiscal year ended December 31, 2018 by a significant ¥32 year on year, followed by a further increase of ¥24 per year in the fiscal year ended December 31, 2019 for an annual dividend of ¥120 per share. Going forward, we will maintain a stable dividend based on the concept of "TOK Vision 2030." Nevertheless, the most important reason for switching from a consolidated payout ratio standard to a DOE standard in 2019 is to reward the shareholders who are supporting the Company over the long term as a long-run R&D-driven company. As such, we are committed to maintaining our dividend policy of targeting a DOE of 3.5% for the time being.

Policies on cash reserves

As a long-run R&D-driven company, TOK will calculate cash reserves from the standpoint of securing the necessary funds.

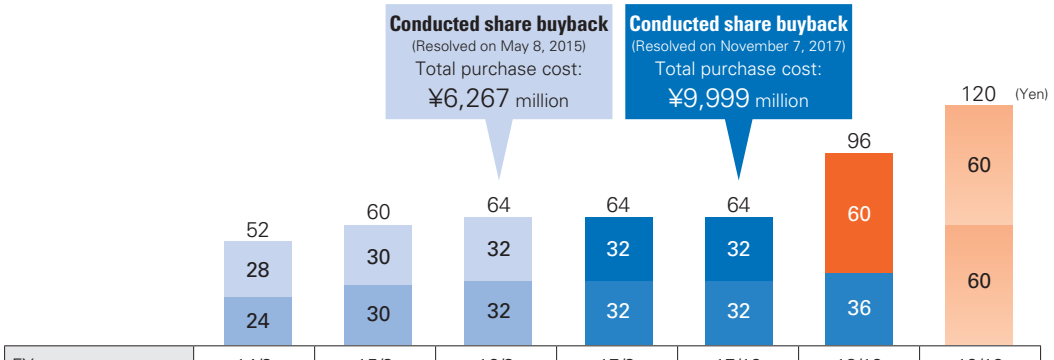
- Develop technologies in anticipation of a super-long time frame
- Continuously tackle challenges over a super-long time frame
- Respond rapidly when the unexpected happens (restoration, rebuilding, etc. from major disasters)



Shareholder returns and dividends per share

Cumulative dividends per share during each medium-term plan

¥176 TOK Medium-Term Plan 2015 → **¥224** TOK Medium-Term Plan 2018 → **Another increase** TOK Medium-Term Plan 2021



FY	14/3	15/3	16/3	17/3	17/12	18/12	19/12
DOE (%)	1.8	1.9	1.9	1.9	1.9	2.8	**3.5**
Payout ratio (%)	30.9	30.5	36.1	43.8	46.3	58.2	92.3

Guidelines on dividend policy	TOK Medium-Term Plan 2015	TOK Medium-Term Plan 2018	TOK Medium-Term Plan 2021
	Consolidated payout ratio of over 30%	Consolidated payout ratio of over 40%	Based on consolidated DOE of 3.5%

Strengthening Financial Risk Management with a Focus on Exchange Rate Risk

Financial risk management is a "defensive strategy" that underpins BS Management. It limits unintentional damage to the balance sheets caused by market and economic conditions. In the fiscal year ended December 31, 2019, a global rise in stock prices and other indicators of active financial markets presented no particular sign of emergent risk. However, with regard to exchange rate risk, as our overseas sales ratio approached 80%, we strengthened various measures with a focus on the extremely active and complex situation evolving around the global flows of commerce and cash. Specifically, we maintained a high exchange rate hedging ratio on a consolidated basis and widened the scope of coverage. We also took steps to control fluctuations in foreign currency translation adjustments at overseas subsidiaries. These measures proved effective, and in our recent stress check, the financial risks such as exchange rate fluctuations when tail risk occurs have been controlled compared to previous checks.

Global Cash Management to Enable Higher Efficiency

Global cash management is an "offensive strategy" that supports BS Management. As with financial risk management, we implement this strategy in consideration of changes in the Group's cash movements and changes in the global market environment, etc. In the fiscal year ended December 31, 2019, the U.S.-China trade friction and a tightening of export controls with respect to South Korea, etc. made commerce and cash flows more complex and diverse than before. Therefore, to enable us to efficiently supply cash to entities as and when required with greater foresight and prediction capabilities, we have accelerated efforts to increase worldwide cash management accuracy in the parent company finance division, and also to construct a flexible system that can move cash between the parent, subsidiaries and other entities.

Financial Capital Strategy Going Forward: Further Evolve BS Management by Linking It to "TOK Vision 2030"

Work to Maximize Cash Generation Capability and to Achieve Both Safety and Efficiency in the Balance Sheets over the Super-Long Term, with a View to Achieving "TOK Vision 2030" and a 100-Year Company in 2040

As I have mentioned, the Group's business model and corporate characteristics can be expressed in simple terms as a **"permanent venture company"** and a **"long-run R&D-driven company."** The Company marks its 80th anniversary this year and has established a position as a global niche top company by repeatedly developing and launching cutting-edge fine chemicals without having a presence in the bulk fields since its founding. As a company that is preordained to be a B-to-B company whose lifeline is constant R&D, we work with a relatively long period from development to mass production and launching, investment recovery, and finally profit making. We will continue to contribute to society by providing a constant supply of high-value-added products to the world.

Given this business model and our corporate characteristics, in aiming to realize "TOK Vision 2030" and a 100-year company in 2040, we will focus on the following two points.

The first point is preparing a solid financial position that will allow us to continue to be a company that keeps growing while ensuring our status as a going concern, which is the main precondition for enhancing corporate value, and continue to be a long-run R&D-driven company even as a 100-year company.

The second point is to increase the number of long-term shareholders who have stayed with us as a long-run R&D-driven company and encourage them to make our relationship a permanent one by engaging in dialogue with the markets, including on financial capital strategy.

In "TOK Vision 2030," we are focused on **creating systems to maximize our cash generation capability in terms of both business and financing**.

Maximizing Our Cash Generation Capability

The Company is focused on various business strategies and company-wide strategies to achieve operating income of between ¥15.0 billion and ¥20.5 billion for the fiscal year ending December 31, 2021, the final year of the TOK Medium-Term Plan 2021.

Furthermore, in our initiatives toward the next medium-term plan and "TOK Vision 2030," we expect to see an increasing need for new investment. We have therefore set EBITDA as one of our KPIs with a view to maximizing cash generation capability, and we intend to deepen our dialogue with shareholders and investors from a more multifaceted and long-term perspective.

Shift to a Structure That Emphasizes ROIC Equally with ROE in Order to Achieve Both Safety and Efficiency in the Balance Sheets

To increase capital efficiency, we will continue to aim for ROE of 8% or more, the target for the final fiscal year of the TOK Medium-Term Plan 2021, and we will generate high-quality profits by continuing to reform our business portfolio. We will also work to increase our net margin by responding in a proper and timely manner to changes in the business and investing environments and financing conditions, etc.

In addition, in our initiatives for the next Medium-Term Plan and "TOK Vision 2030," we will focus on both safety and efficiency in the balance sheets, which are our systems for cash generation. In particular, we will maximize our cash generation capability by establishing an EBITDA target, while treating ROIC as a KPI equivalent to ROE with a view to increasing the turnover ratio of invested business assets. In this way, our front line will shift from thinking exclusively about the income statement to thinking about both the income statement and the balance sheets. In doing so, we will move towards efficient business management and adopt a stance that will enhance corporate value over the medium- to long term.

On the other hand, the cash reserve as a management objective should be retained as a moving target in line with the aforementioned policy.

Pursue improvement of ROE and ROIC to achieve both stability and efficiency of the balance sheets

ROE = ROA × Financial leverage

Improve the numerator of ROA based on the ROIC tree while dividing the denominator into invested business assets and cash reserves and pursuing the medium- to long-term efficiency of each

Invested business assets

Achieve efficient business operations based on the ROIC tree perspective

ROIC

Maximize cash generation capability
- Pursue EBITDA and EBITDA margin

Improve invested capital turnover ratio
- Effective use of assets
- Redefine capital investment judgment criteria and enhance monitoring

Cash reserves

Retain cash reserve as a management objective (moving target)

Cash reserves = Working capital + Investment reserves + Risk reserves

Initiatives for IR and SR, and Tax Governance

● Expand Opportunities for Dialogue with Shareholders and Investors, Using This to Reduce Capital Cost and Enhance Corporate Value

The Company has emphasized dialogue with shareholders and investors for some time. Going forward, however, we want to boost our IR and SR activities even further. Recently, in our SR initiatives we have increased opportunities for the President and Executive Officers to have direct dialogue with shareholders. In particular, we have made more opportunities for regular dialogue with long-term investors and ESG-focused funds in Japan and overseas. We recognize that these initiatives will work together with the Company's existing focus on pursuing an optimal capital composition and rigorous financial risk management as strategies for reducing capital cost, resulting in further capital cost reductions and enhancement of corporate value.

● Further Strengthening of Tax Governance

In December 2019, the Global Reporting Initiative (GRI) Standards added "207: TAX 2019." This is part of a global trend of focusing on stronger tax governance. We are creating an appropriate tax governance system with the parent company as a control tower that gathers know-how about taxation on a consolidated basis and for each entity, with the intention of addressing issues in international taxation including problems associated with transfer price taxation and strengthening base erosion and profit shifting (BEPS) measures by local authorities in each country.

Specifically, we have researched taxation and tax customs in all regions where we conduct business, while assessing conditions in product markets, to formulate a transfer pricing policy. We are also strengthening qualitative enhancement of tax governance at each site and promoting stronger collaboration between sites. These measures have enabled us to speed up the Group's internal handling of transfer pricing and increase its efficacy. Our next step is to promote stronger tax governance on a world-wide basis.