

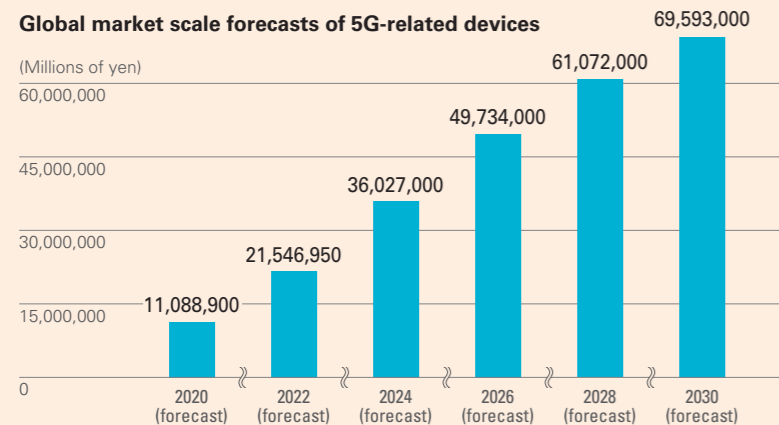
Technologies for Sustainable Development

—Creating Shared Value with Stakeholders—



Contributing to the achievement of a new normal

with state-of-the-art photoresists



Note 1: Manufacturer shipment amount basis
 Note 2: All figures are forecast-based
 Note 3: Included circuits and substrates (RF circuits, substrates, etc.), key components and devices (active components, LCD, antennas, passive components, memories, and other devices), materials and evaluation systems (materials, evaluation systems, etc.)
 Source: Yano Research Institute Ltd. *Global 5G Related Devices Market* (2020) (released on July 31, 2020)

● TOK technologies

—Upgrading world-leading technologies in cooperation with stakeholders—

In the 5G communications market, which has experienced continuous growth as the social infrastructure linked to IoT and AI, the TOK Group will steadily take advantage of business opportunities in the further acceleration of data processing speed, downsizing of electronic components, increases in the need for high-frequency materials, and enhancement of the functionality of sensing devices. While upgrading its world-leading microprocessing technology and high-purification technology in cooperation with stakeholders, TOK will develop and provide EUV/ArF/KrF photoresists, create diverse shared values, and thereby contribute to the achievement of a more convenient and comfortable new normal.

● Megatrends

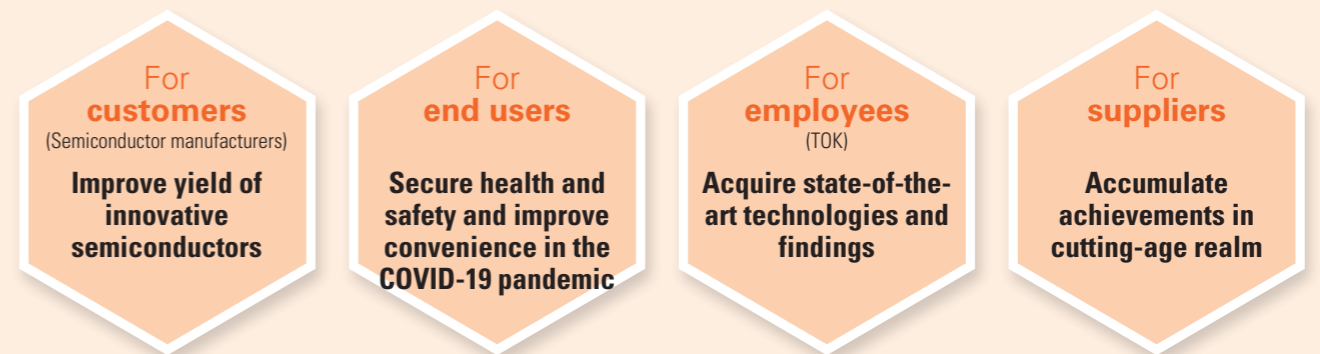
The spread of the COVID-19 infection started in 2020 and has substantially transformed lifestyles with noncontact behavioral patterns becoming the *new normal* in order to protect human health and safety.

DX has accelerated around the world in support of the new normal from the technological aspect. In particular, 5G communications, which achieves high speed and large capacity combined with low latency, are expanding as indispensable technology for the sustainable development of society, as well as in all categories of circuits, substrates, components, devices, materials, and evaluation systems.



Technologies Enabling the New Normal

● Value for stakeholders—Creating shared value



● Collaboration with stakeholders—For continuous improvement of technologies



Technologies for Sustainable Development

—Creating Shared Value with Stakeholders—



Technologies Reducing Climate Risk

● Social Issues

Decarbonization initiatives have accelerated around the world. In Japan, the revised Act on Promotion of Global Warming Countermeasures was enacted in May 2021, which stated the achievement of virtually zero GHG emissions by 2050. To attain this goal in combination with the target of reducing GHG emissions by 46% versus the FY 2013 level by FY 2030, it is necessary to lead new technological innovations through public-private funding and other means, in addition to enhancing ongoing renewable energy systems and accumulating energy-saving measures.

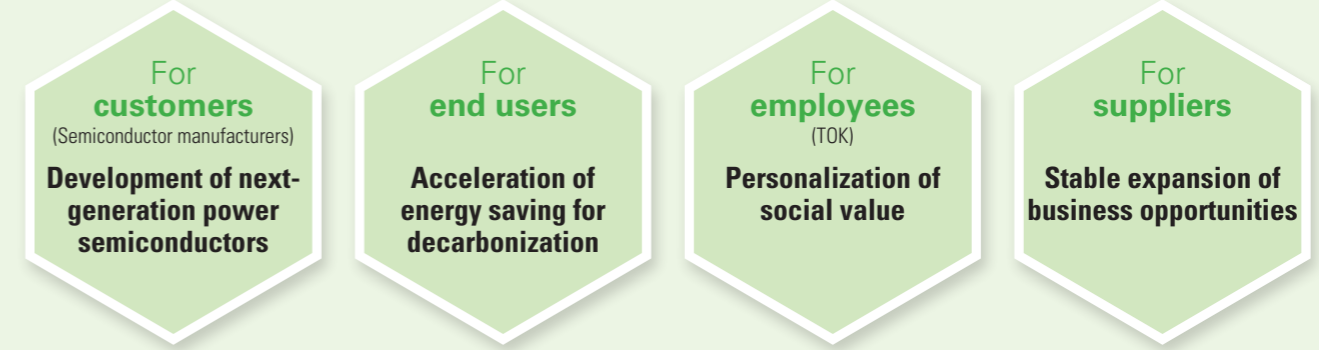


i-Line photoresists for power semiconductors / plasma ashing systems

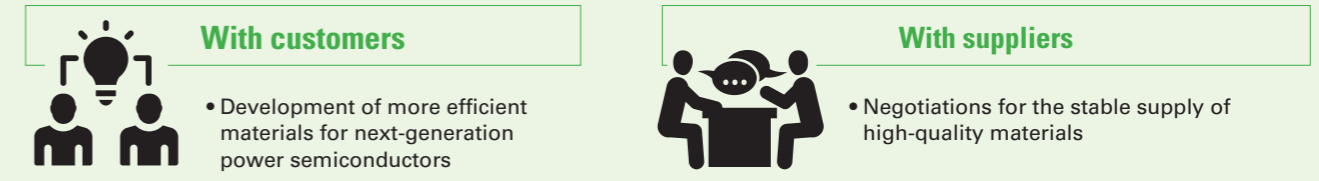
Supporting decarbonization on a long-running basis with i-Line photoresists, plasma ashing systems, and WHS*

*Wafer handling system

● Value for stakeholders—Creating shared value



● Collaboration with stakeholders—For innovation and stable supply



● TOK technologies —Contribute to a sustainable future through chemistry

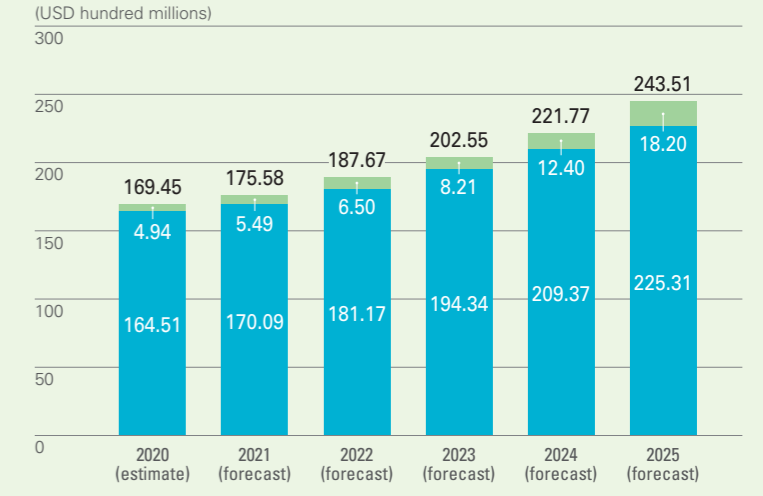


To contribute to decarbonization through business, TOK focuses on the development and stable supply of EUV/ArF photoresists to achieve further miniaturization and power consumption reductions for semiconductors, as well as KrF excimer laser photoresists for 3D-NAND, and i-Line photoresists for power semiconductors, plasma ashing systems, and wafer handling systems.

To lead technological innovation, TOK accelerated the development of materials for next-generation Ga₂O₃ (gallium oxide) / SiC (silicon carbide) / GaN (gallium nitride) power semiconductors that substantially improve power efficiency, as well as materials for 6G (next-generation communication standard), which will consume only 1/100 power of 5G systems.

In particular, TOK will create shared value for decarbonization on a long-running basis by further developing the relationship of trust built over more than 20 to 30 years with many customers, particularly in the power semiconductors-related industry.

Outlook for global power semiconductor market



Note 1: Manufacturer shipment basis
 Note 2: Figures for 2020 are estimates, and those for 2021 onward are forecasts
 Source: Yano Research Institute Ltd. Global Power Semiconductor Market (2020) (released on July 27, 2020)

Technologies for Sustainable Development

—Creating Shared Value with Stakeholders—



i-Line photoresists and biochip materials

Contributing to improvement of patient QOL

● Social Issues

In the medical setting, it has been necessary to improve the patient QOL and outcomes (with reduced patient burden and improved therapeutic efficiency) by upgrading diagnoses and drug discovery. These needs have substantially increased during the COVID-19 infection that started in 2020.

In response to the healthcare systems overwhelmed during the COVID-19 pandemic, TOK contributes to improvements in diagnoses and viral analysis efficiency and expediting of drug discovery and vaccine development through the stable supply of i-Line photoresists for power semiconductors, which are indispensable for Extracorporeal Membrane Oxygenation (ECMO), and the development and provision of biochip materials and cell sequencing chips.



i-Line photoresists



Extracorporeal Membrane Oxygenation (ECMO)

* The photos are conceptual images.

● TOK technologies

—Applying semiconductor-related technologies to the life science field—

SDGs to which we contribute



Biochip for a next-generation DNA sequencer
* The photos are conceptual images.

TOK started full-scale marketing of biochip production materials in 2015 and has achieved high performance by leveraging the microprocessor technology and MEMS material technology as accumulated in the semiconductor segment. This material is used for next-generation biochips (in DNA sequencers) to reduce the time required for sequencing and to improve sequencing accuracy.

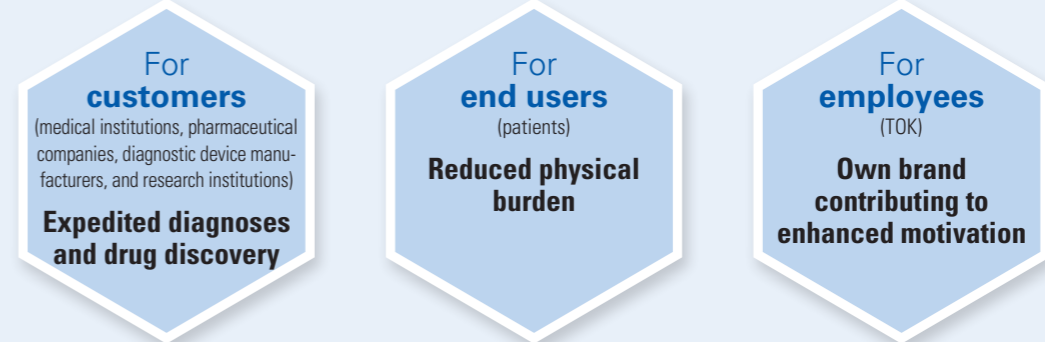
Sales have increased through strategies focused on negotiations with customers in selected markets combined with the emerging need for biochips resulting from the spread of the COVID-19 infection. We will further develop and promote this material because the need for expediting diagnoses, viral analyses, and drug discoveries will continue to increase under escalating infectious disease risks.

—Develop new markets by strengthening online marketing—

The SIEVEWELL™ cell sequencing chip was marketed as a TOK brand in 2019 from the internalized production processes comprising design and lithography. This product has been evaluated for sequencing and archiving many cells, thereby facilitating and quantifying the difficult process of analysis and has contributed to research and development aimed at pathological diagnoses with a reduced physical burden on patients from infectious diseases to oncology. In FY 2020/12, there was progress in its application to a variety of different purposes in the Japanese and overseas markets, and in the development of new products, owing to strengthened online marketing.



● Value for stakeholders



● Collaboration with stakeholders

