IT-related Chemicals

Businesses

Display-related Materials Business
Polarizing films, Color resists, Touch-sensor panels, Polymer light-emitting materials, etc.

Semiconductor Materials Business
Photoresists, Processing chemicals for semiconductors, Compound semiconductors, Aluminum targets, etc.

Strengths of the IT-related Chemicals Sector

We have been working to build a market-oriented global supply chain, utilizing it to develop and supply products. In addition to this development and supply system, we are able to provide high value-added products by combining multiple materials and technologies that only an integrated chemical manufacturer can offer. Another of our strengths is our ability to develop products in borderline areas by making full use of the know-how we have accumulated through our technologies and quality response in both the display and semiconductor fields.

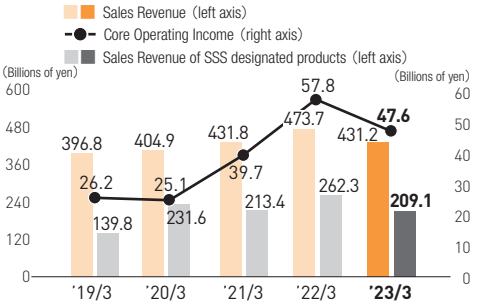
Initiatives in FY 2022

We have decided to construct a new plant for semiconductor process chemicals in the United States. As a strategic base for this business in the U.S. market, we aim to expand the business by capturing robust demand. The new plant is scheduled to start operation in fiscal 2024. By expanding the production system of process chemicals for semiconductors on a global scale and providing a stable supply of high-quality products, we will contribute to the realization of a smart society and smart mobility.

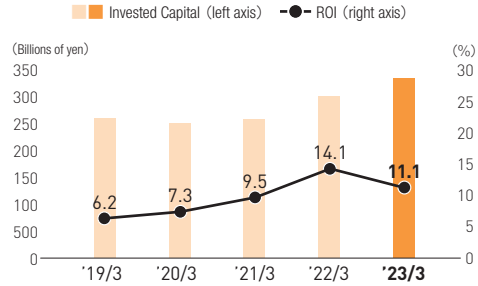
Future Initiatives

In the display-related materials business, we will further increase the ratio of high value-added products such as materials for OLED displays by utilizing our core technologies, and try to develop and launch materials for next-generation displays. In the semiconductor materials business, we will develop and expand sales of advanced materials for silicon semiconductors that respond to customers' process innovation, while steadily capturing growing demand. For compound semiconductors, we aim to commercialize next-generation power device materials that contribute to solving social issues such as energy saving. In terms of new business development, we will focus on the development of materials for next-generation high-speed communications and high-sensitivity image sensors, while actively collaborating with external parties.

Sales Revenues and Core Operating Income/ Sales Revenue of SSS designated products



Invested Capital・ROI



Transition to date

ROI has been above the hurdle rate since FY 2019 due to semiconductor-related investment returns and favorable conditions in display materials. In addition, due to further semiconductor-related new construction expansion, invested capital has been on an upward trend since FY2021.

Future Measures and Issues

We will accelerate structural reforms because the competitive environment has changed for polarizing films, which used to be a major product of the sector. In addition, we are taking steps toward the next stage of growth, such as establishing a U.S. base for semiconductor process chemicals and developing a compound semiconductor materials business structure, and we will ensure that the results will lead to higher sales and profits.

Corporate Business Plan Policy & Progress

Basic Policy

We create new core technologies and products by adding our unique wisdom, technology, experience, and network to existing core technologies.

Policies by Business Area

Display-related materials

Maintain competitive advantage by leveraging our own core technologies

Focus on materials for high-end TVs, OLED smartphones, automotive and next-generation displays by differentiating technologies and quality.

Our Initiatives

- Secure market share in existing high value-added Fields
- Capture demand for materials for next-generation displays
- Continue restructuring of commodity LCD materials business

Materials for Next-generation Displays

Foldable/ Rollable Displays

Next-generation large displays

Micro Displays for AR/VR Devices

Polarizing Films for Automobile

Silicon semiconductor materials

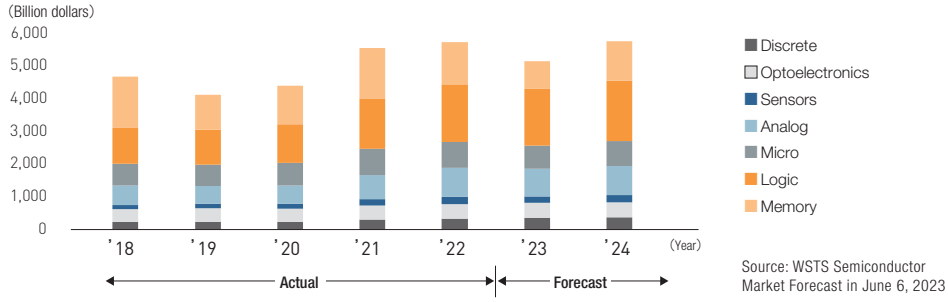
Capturing business opportunities in response to market expansion

We will ensure to capture the demand that is expected to steadily expand for the coming several years in the context of increasing CAPEX of data centers to accommodate DX, full-fledged deployment of 5G communications, and electrification/autonomous driving. We have decided to build a new plant for semiconductor process chemicals in the U.S., and we are taking measures to capture growing demand, such as the operation of a semiconductor photoresist development and evaluation facility for cutting-edge processes at our Osaka Works.

Our Initiatives

- Securely capture growing demand
- Develop products that support innovations in customer processes

Semiconductor Market Trends



Source: WSTS Semiconductor Market Forecast in June 6, 2023

New businesses

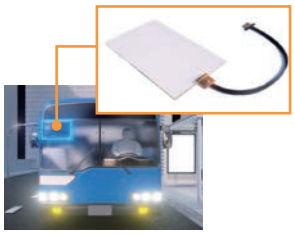
Creation of new businesses for the next generation

We aim to establish the third business by the late 2020s, following the display-related materials business and the silicon semiconductor materials business. In the power device field, we have begun production of large-diameter gallium nitride substrates and will work to further increase diameter and productivity.

Our Initiatives

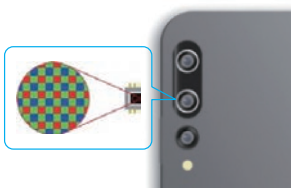
- Establish business in materials related to Telecommunications and sensors
- Launch next-generation power device materials business and contribute to evolution in energy saving technologies

Repeater for mobile communications



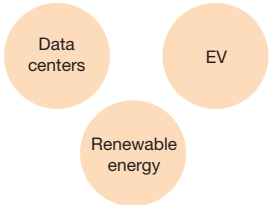
These are transparent, thin antennas that can be mounted on the windshields of cars. They are compatible with 5G high-speed communication and contribute to improving the communication environment in public transportation and expanding the communication area of mobile devices.

Image sensor-related materials



Materials related to image sensors for smartphone cameras, automotive and security applications. They contribute to higher sensor performance, such as higher sensitivity and pixel counts.

Next-generation power device materials

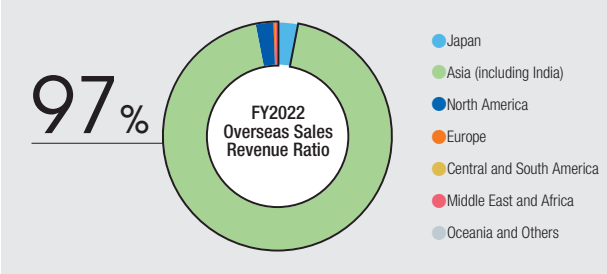


Gallium nitride substrates for next-generation power devices. It can reduce the size and loss of power conversion circuits used in data center servers, wind power generation, EVs, and other applications. It contributes to carbon neutrality through energy saving.

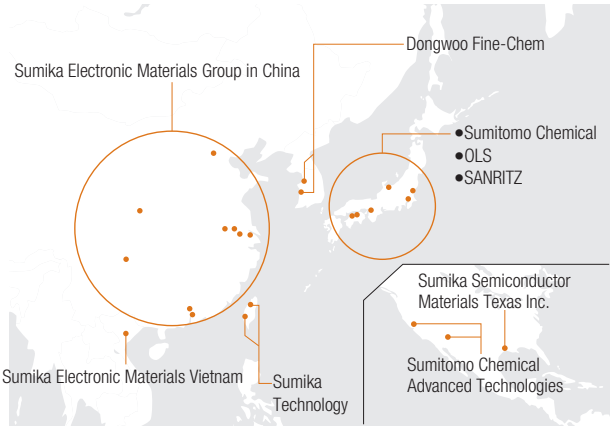
Status of Global Expansion

Building a Market Oriented Supply Chain

Sales Revenue Ratio by Region



We have worked to build a market oriented global supply chain, building good relationships with customers by establishing our production facilities close to customer manufacturing facilities, comprehending their needs and developing/supplying products as quickly as possible. Specifically, the Sumika Electronic Materials Group in China has many facilities, which conduct their businesses in such a way as to respond to the needs of their respective customers. In addition, we have decided to construct a new plant for semiconductor process chemicals in the U.S. in FY2022, further strengthening our global production system. This structure is one of the strengths of our company. The sector's overseas sales revenue has been increasing year by year as a result of its business network, especially in East Asia and the U.S., where the display and semiconductor industries are concentrated. In Japan, we manufacture mainly display materials at our Ohe Works and semiconductor materials at our Osaka Works in addition to compound semiconductors at our Ibaraki Works In addition, the company owns SANRITZ CORPORATION which has strength in the automotive polarizing film business.



Q&A

Q : What specific actions are you taking to reliably capture demand for semiconductor materials?

A: In the semiconductor market, demand is expected to grow for cutting-edge semiconductors going forward, due to background factors such as the evolution of artificial intelligence (AI) technology and the full-scale commercialization of next-generation communication systems (5G). With the expectation that EUV lithographic exposure, a new type of light source, will become dominant in this field, there will be demand for photoresists suited for even greater miniaturization in pattern formation.

Our Strengths

We have established advanced product design and evaluation technologies based on organic synthesis technologies cultivated in our various fine chemical businesses, and have expanded our business by leveraging our ability to respond to customers in a timely manner through the consolidation of manufacturing, research, and sales centered on the Osaka Works area. In particular, we have a high global market share in photoresists for immersion ArF lithographic exposure, which is mainly used in the formation processes of miniaturized circuits, due to our performance advantages and reliability in quality. In addition, we not only expect to increase shipments of photoresists for EUV lithographic exposure, to align with the mass production schedule of major customers that have decided to adopt our products, we are also continuing development of new EUV photoresists to accommodate even greater miniaturization needs for securing future orders.

Specific Actions

In FY2019, we completed a new plant for cutting-edge photoresists, which began operations in FY2020. In addition, to strengthen the development and evaluation system for semiconductor photoresists for cutting-edge processes, we constructed a new building at our Osaka Works which started operation in fiscal 2022. We plan to continue strengthening our production system for semiconductor photoresists for cutting-edge processes on a global basis. The semiconductor market is expected to continue to grow continuously due to the further acceleration of data communication speed and capacity, and we are considering further reinforcement of our system in anticipation of long-term demand.

Aiming for Dramatic Business Expansion

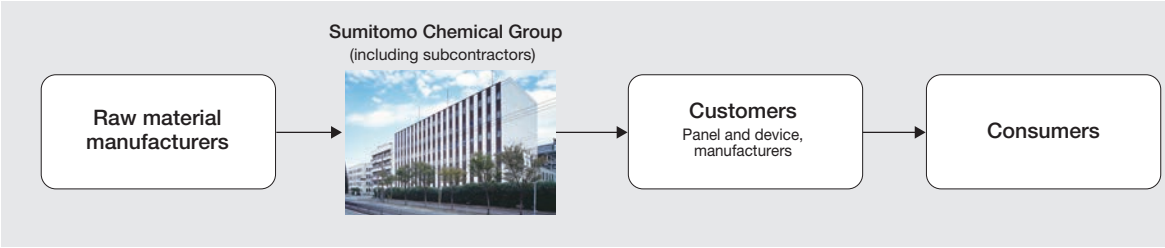
Semiconductor Business Sales Revenue: 1.5 times* by the Mid-2020s

(Including photoresists, processing chemicals for semiconductors, and compound semiconductors)

*Compared to results for FY2021

Value Creation Model: Materials for OLED/Next-generation Displays

Value Chain



Materials for OLED Displays Currently on the Market

We manufacture liquid crystal coated-type retardation film based on proprietary technology, process it into the final product, circularly polarizing film, and ship it to customers. In addition, we supply circularly polarizing films and display cover materials that have outstanding folding durability for flexible OLED displays.

Materials for OLED/Next-generation Displays in Development

We are working to develop materials for OLED displays (printing methods) and micro displays for AR/VR devices to meet customer needs.

System for Providing Added Value

Sumitomo Chemical's Competitive Advantages

Our unique strength is in the liquid crystal material used in circularly polarizing film for OLED displays. Our proprietary liquid crystal materials have excellent functions in preventing reflections of sunlight, lighting, and other light and in expressing a clear black color without color change, regardless of the angle from which the screen is viewed, thereby contributing to the realization of high-definition OLED displays.

Major Processes Generating Competitive Advantages

In order to develop retardation and polarizing functions using liquid crystal materials, the liquid crystal molecules must be systematically oriented in a specific direction. We are working to develop molecular designs that will achieve this sort of optical performance. Moreover, we are also manufacturing liquid crystal materials in-house, and optimizing optical designs for circularly polarizing film suitable for the various OLED displays of TVs and smartphones.

Providing Customer Value

The market is highly interested in creating next-generation displays. The level of development demand is high. To reach the level of development requirements from our customers, we are proposing high-functionality materials, for flexible OLED displays, multi-functional flexible materials that realize foldable and even rollable displays, for large-sized OLED displays, polymer light emitting materials that will lead to improved display quality and lower production costs, and even for ultra-small, ultra-fine next-generation displays applicable for AR/VR/MR glasses, color conversion materials that will enhance the optical characteristics of them through quantum dots or color photoresists technologies.

Added Value Provided to Society

Creating More Abundant and Convenient Daily Lives for People

Displays are the interfaces between people and ICT and will continue to evolve alongside changes in people's lifestyles and the progress in communications technology, part of the infrastructure of society. In addition to displays that provide even better portability or even more realistic viewing experiences, new displays, which are indispensable for technologies such as mixed reality, are being developed actively and these technologies even might change the nature of peoples' experiences. By developing and producing materials and components for OLED displays and next-generation displays, Sumitomo Chemical is contributing to the creation of new items that have never existed before, and thereby creating more abundant and more convenient daily lives for everyone.