Contribute to ICT

The evolution of information and communication technology is transforming society in a variety of ways, such as the increasing use of IoT in sensors and various devices, the development of artificial intelligence (AI)/cloud technology, and the resulting widespread use of remote diagnosis and automated driving. Sumitomo Chemical will contribute to the realization of Society 5.0 (super-smart society) and smart mobility through the development of ICT-related materials by leveraging its technological capabilities.

Society 5.0

Society 5.0 is a new society that balances economic development and the resolution of social issues by incorporating advanced technologies such as IoT, robots, AI, and big data into all industries and social life. We are developing a variety of ICT-related materials to realize this new society.

Products currently under development at our company for the realization of Society 5.0

Materials for Micro Displays and Sensors for AR*1/VR*2 Devices

AR/VR is expected to be utilized in a variety of situations, including business, entertainment, and education, and the market is forecasted to expand drastically in the future. Accordingly, it is likely that demand for semiconductor devices used in data centers/telecom-related equipment and next-generation micro displays/sensors used in AR/VR devices grows. To capture this opportunity, we are developing materials for cutting-edge semiconductor processes as well as micro displays/sensors.

*1 Augmented Reality
*2 Virtual Reality

Compound Semiconductors

GaN-on-GaN power semiconductor devices are considered to be one of the key technologies for Society 5.0 because of their energy saving and small-footprint characteristics, and the demand for them is expected to grow mainly in the fields of data centers, renewable energy, and electric vehicles. We will focus on the development of large-sized GaN substrates for GaN-on-GaN power semiconductor devices with the aim of starting full-fledged mass production by fiscal 2024.

* GaN = Gallium Nitride

Smart Agriculture

Expectations are growing for smart agriculture, which aims to reduce the environmental burden by reducing the use of crop protection products, and to increase food production through automation and power saving. We are working on the development of technologies such as the use of drones for the pinpoint application of crop protection products and fertilizers and the optimization of the timing of application.

Solid-state Batteries

As battery capacity increases at an accelerating pace, battery materials must be made safer and more productive, and solid-state batteries that meet these requirements are expected to become the next-generation batteries. We have established an industry-academia joint research course at Kyoto University to jointly develop materials for solid-state batteries and optimal designs for solid-state batteries. We aim to develop solid-state battery materials by 2023.

Transparent Thin-film Antennas for High-speed Telecommunications

The faster wireless communications are, the shorter wavelength of the radio waves increasingly becomes, which leads to limitation of the communication range and quality because of attenuation of them caused by distance and obstructions. In order to promote high-speed, large-capacity wireless communications, it is necessary to expand the signal range and maintain signal quality, for example, by using high-performance antennas that have flexibility on installation locations. We have developed a transparent thin-film antenna for high-speed communications, and demonstration tests are in progress.