

R&D (Innovation) Strategy

R&D Supporting the Growth Strategy

Basic policies

Our Group positions R&D and intellectual property (IP) as an integrated function to support the growth strategy in the key focus areas under the Medium-Term Management Plan. At the same time, we are engaged in research and exploration that will lead to future competitive advantages and are nurturing the seeds of medium- to long-term growth.

Based on the above, in 2026 we will pursue initiatives in accordance with the following basic policies on research and development.

Basic policies on research and development

- Reinforcement of the research foundation aimed at rapid and steady profit generation
- Acquisition of large-scale themes by Research Solution Department
- Acquisition of new technologies and new businesses through the promotion of open innovation
- Promotion of environmentally friendly themes for business expansion and strengthening of overseas expansion

To strengthen marketing, we have reinforced the Research Solution Department at both the Nagoya and Kawasaki R&D Centers to accelerate the discovery of high-value-added themes in the short-, medium-, and long-term. We are also strengthening efforts to acquire new businesses and new technologies through open innovation with academia and venture companies.

Furthermore, we are promoting the protection and utilization of IP to establish the results created through R&D as a competitiveness. In addition to protecting our key focus areas, we are driving business growth by advancing risk management including responses to third-party rights and activating discussions through the IP landscape.

Strategy

R&D strategy

Our Group is strengthening R&D investment in our key focus areas of mobility, semiconductors, medical, and environment & infrastructure system. With the expansion of application (breadth) and the deepening of technological differentiation (depth) as the two axes, we are promoting the strengthening of technical capabilities and the expansion of our business areas.

Moreover, we are focusing on acquiring new technologies such as next-generation communications, Drug Delivery Systems (DDS), oligonucleotide therapeutics, carbon-neutral solutions, biomass utilization, and biosynthesis, and will continuously create highly competitive, highly functional product groups.

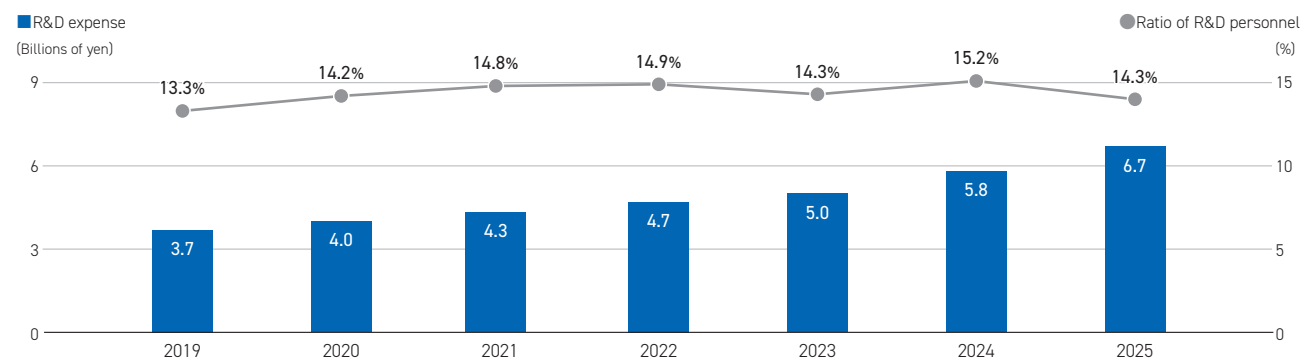
Our Group is advancing the expansion of R&D investment and the strengthening of R&D personnel to establish competitive advantages in its key focus areas.

R&D expense in 2025 was 6.7 billion yen (4.1% of net sales). To further strengthen our innovative R&D capabilities and make our technological foundation unshakable, we will continue to increase R&D expenses and maintain a ratio of at least 4% to net sales.

We will also actively introduce external technologies through collaborative research with universities and investment and partnerships with startups. At the same time, we will promote the acquisition of higher-order processing technologies as well as analysis and evaluation technologies to expand and deepen our core technologies.

Furthermore, we are promoting the utilization of DX and AI, including materials informatics (MI), to improve R&D efficiency. Through the use of data, we will streamline exploration and process optimization, as we aim to accelerate development speed and improve the investment efficiency of R&D.

R&D expense and ratio of R&D personnel*



*Ratio of R&D personnel (%): number of research, technology and development personnel ÷ Consolidated number of employees × 100

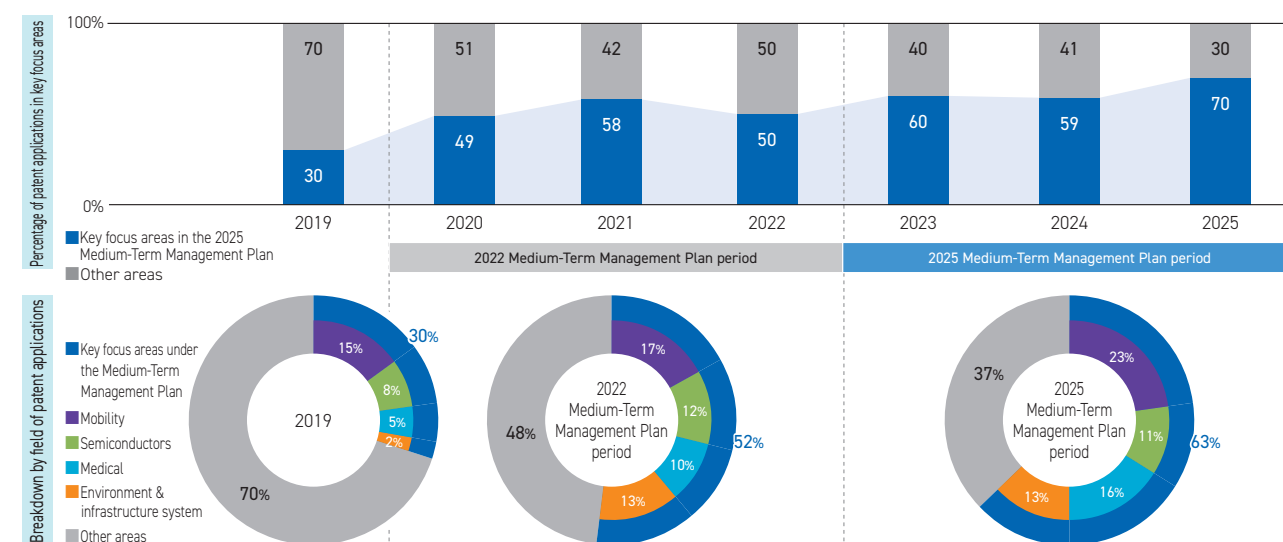
IP strategy

In the key focus areas under the Medium-Term Management Plan, our Group is prioritizing efforts to discover short-term themes aimed at deepening technology and achieving early profit generation. At the same time, we are also advancing the exploration of medium- to long-term themes, both within our key focus areas and beyond them.

The status of R&D investment for each period of the Medium-Term Management Plan is shown in the figure as a comparison between the percentage of patent applications in key focus areas and the breakdown by field. In 2025, by continuing focused investment in key focus areas, the proportion of patent applications in these areas grew. Furthermore, regarding the composition of applications within key focus areas, we are building a well-balanced patent portfolio with an eye to future business development.

Going forward, we will continue to enhance competitive advantages in our key focus areas while working to expand our business domains.

Comparison of the percentage of key focus areas and the breakdown by field in our Group's patent applications



*Percentage of patent applications = Calculated as a percentage of the total number of patent applications filed by the Group in Japan

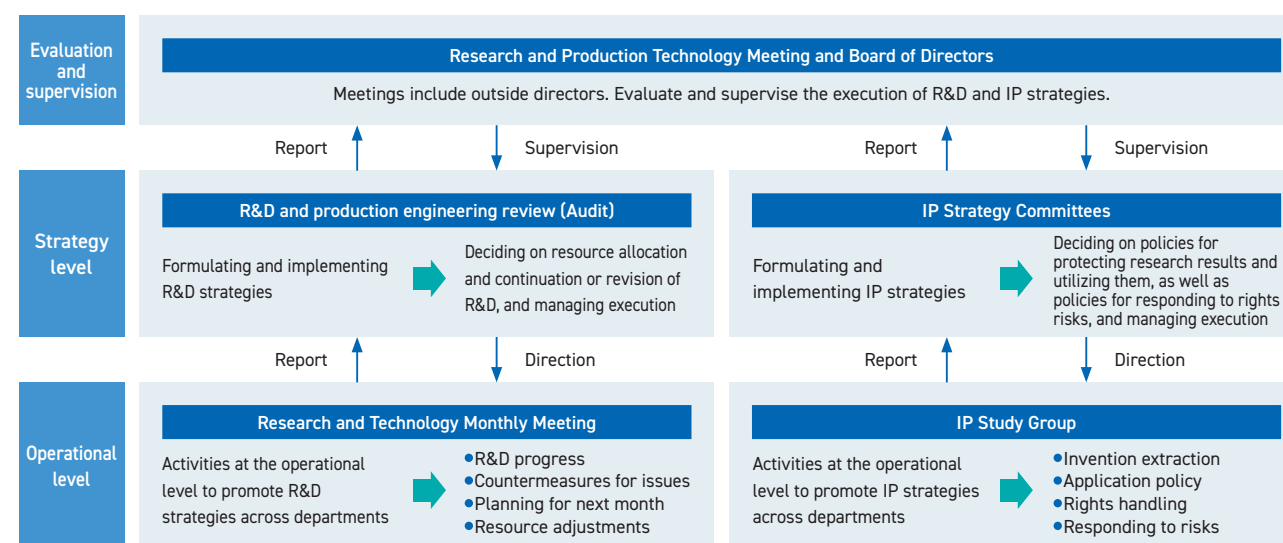
Governance system

In order to promote R&D and IP activities consistent with its business strategy, our Group has established a governance system, as shown in the figure below, in which the Research and Production Technology Meeting and the Board of Directors including outside directors supervise the execution of strategies for business, R&D, and IP.

At the strategy level, we formulate key R&D policies and resource allocation as well as policies for protection and utilization of IP, and regularly monitor the status of execution. We have established cross-functional meetings involving related departments such as R&D, production technology, IP and business divisions to promote themes while ensuring alignment among business strategies, R&D strategies, and IP strategies. On the operational level, we carry out activities to implement the policies decided at the strategy level for research and IP and to manage the progress of these activities.

For priority themes, these meetings are used to determine how to proceed with research and policies on the use of IP particularly quickly as a framework to update these policies in response to changes in the external environment.

R&D and IP governance system



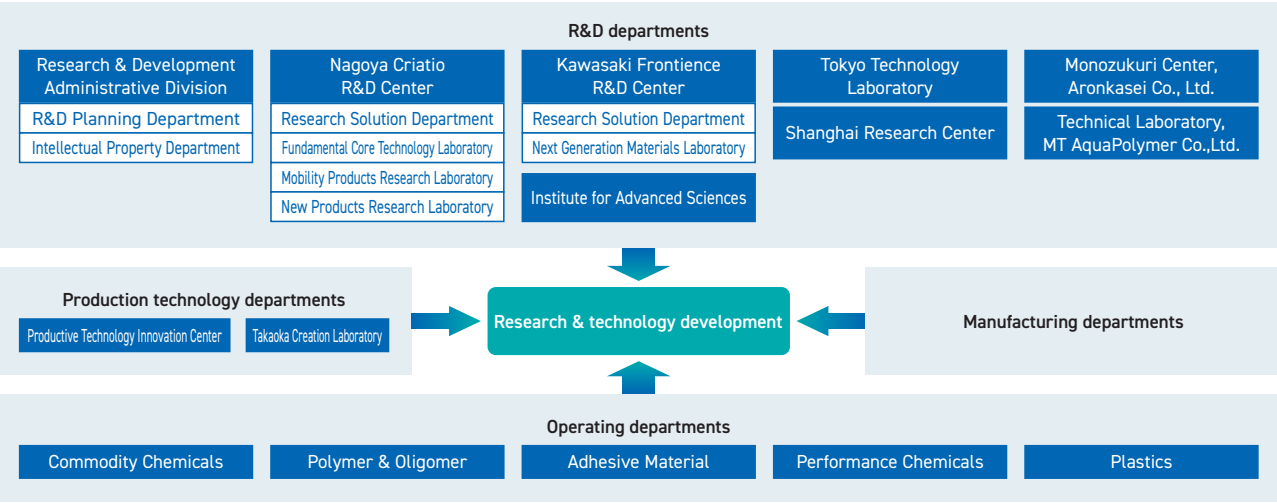
R&D (Innovation) Strategy

System

Research and technology development system and initiatives

Our Group will continually tackle new challenges in the creation and provision of new value through the chemicals business with an eye on the future of society. We also aim to become a corporate group whose created value is trusted by society and contributes to society. We have positioned the Kawasaki Frontience R&D Center and the Nagoya Criatio R&D Center as our two major east-west R&D bases, and we will promote co-creation and value creation by leveraging the strengths of each location. We are strengthening the Research Solution Department to accelerate the acquisition of large-scale themes and overseas expansion. We flexibly deploy R&D personnel to promote effective and efficient research and development to accelerate new product development and strengthen our core competencies.

Research and technology development system



Research and technology development bases

Nagoya Criatio R&D Center

The center is positioned as a core base for R&D of promising technologies and materials, and high-value-added product groups that will open up the future of the Toagosei Group. We have established the Fundamental Core Technology Laboratory, the New Products Research Laboratory, the Mobility Products Research Laboratory, and the Research Solution Department, and the Intellectual Property Department is also stationed there. We are strengthening our core competencies and expanding our core businesses. In addition, we also strengthen research and technology development aimed at acquiring higher-order processing technologies at our two technology development laboratories.

- Research Solution Department**
Engages in business expansion by creating new markets different from our existing businesses through the exploration of new applications for our high-value-added products and co-creation with customers in Japan and overseas. Consistently executes everything from theme exploration to proposals, and accelerate the discovery of high-value-added themes over the short-, medium-, and long-term.
- Fundamental Core Technology Laboratory**
Promotes the development and strengthening of assessment and analysis technologies that form the foundation of research and development and product differentiation, as well as the establishment and utilization of environments for machine learning and computational chemistry. The laboratory also conducts exploratory research and application research based on our core technologies. As a corporate function, it will accelerate research and technological development by acting as a cross-cutting link connecting related departments.
- Mobility Products Research Laboratory**
Advances the development of innovative materials such as functional adhesives and battery materials in the battery materials field, with a primary focus on automotive applications. At the same time, we are working on the development and enhancement of evaluation technologies and capabilities to promote development efficiency.
- New Products Research Laboratory**
Covers development of high-value-added products based on our Company's core technologies. Accelerates the market launch of differentiated new products by promoting development with customers deeply sharing social issues and the value we provide. In addition, the laboratory also collaborates with our overseas bases to promote the overseas expansion of high-performance products.

Kawasaki Frontience R&D Center

The Kawasaki Frontience R&D Center, which opened in 2024, is promoting research and development of next-generation materials that will form the core of new businesses, while strengthening co-creation with customers in the Kanto region and northward to expand existing businesses. With excellent access to Haneda Airport, the center is aiming to spearhead global research and development efforts.

- Research Solution Department**
Matches our core technologies with market trends, identifies promising new large-scale project topics and develops products through co-creation with customers in the Kanto region and northward, primarily in the Tokyo metropolitan area, and practical verification.
- Next Generation Materials Laboratory**
Conducts research and development into innovative technologies and materials, primarily in the life sciences and environmental fields, such as medical products, cellulose nanofibers, and next-generation battery materials that have potential to become the core of our new businesses.

Institute for Advanced Sciences

Works toward the commercialization of cell penetrating peptides for the next-generation Drug Delivery Systems (DDS), which are expected to be used for oligonucleotide therapeutics delivery and gene delivery. The Institute also actively conducts activities from fundamental research to applied studies in a broad range of life-science-related fields, including functional peptide research and nucleic acid research, via partnership programs with the Center for iPS Cell Research and Application at Kyoto University and with the Graduate School of Agricultural and Life Sciences at the University of Tokyo.

Productive Technology Innovation Center

It was established in 2026. Works in close collaboration with new materials development and takes end-to-end responsibility from the initial stages of R&D through to the basic planning of mass production facilities.

Takaoka Creation Laboratory

The Takaoka Creation Laboratory has been established at the Takaoka Plant, our manufacturing base for Adhesive Material business. We promote product development that is closer to our customers by establishing an integrated manufacturing system encompassing all processes from development to manufacturing for various functional adhesives, including instant adhesives.

Tokyo Technology Laboratory

Taking advantage of its excellent location (next to our Head Office), operating departments and sales departments promote swifter solutions for the issues faced by our customers by conducting tests attended by customers and evaluation and analysis of customer-provided base materials by themselves.

Shanghai Research Center

This is a development base established in 2023 to ensure our products can be adopted even in the highly competitive Chinese market. It mainly develops battery materials and adhesives, and repeatedly conducts evaluations and improvements to meet the needs of local customers. Through these initiatives, it is working to gain trust in our technologies and strengthen our technical capabilities. In addition, by feeding back local customer needs to our domestic development teams, it is enhancing the Company's product development capabilities.

Monozukuri Center, Aronkasei Co., Ltd.

As part of our Plastics business, this center contributes to society by addressing social issues (natural disaster risks, aging infrastructure, super-aged society, and global warming) by promoting the development of sewer pipeline repair materials and nursing care products, as well as the development of recyclable materials. It has shifted to a development system that can propose solutions, including systems, and it will also work on research and development with a focus on growth areas (semiconductors, mobility, and healthcare).

Technical Laboratory, MT AquaPolymer Co.,Ltd.

Leveraging the precision polymer technologies it has accumulated to date, it provides technical services that address increasingly sophisticated and diversified wastewater and sludge treatment. It will provide more advanced solutions by integrating these technologies.

Roles of R&D bases

To visualize the roles of each R&D base, we have organized them into four quadrants using the two axes of "exploration and development to commercialization and mass production" and "existing enhancement themes to next growth themes," and illustrated them in a diagram. The positioning of each quadrant is as follows.

- Existing enhancement themes x commercialization and mass production
Maintenance and strengthening of competitiveness in existing business areas
- Existing enhancement themes x exploration and development
Acceleration of expansion in existing business areas
- Next growth themes x commercialization and mass production
Acceleration of monetization of new business areas that will become the fourth pillar
- Next growth themes x exploration and development
Strengthening of exploration of new business areas that will become the fourth pillar

We have three laboratories (Institute for Advanced Sciences, Mobility Products Research Laboratory, and Next Generation Materials Laboratory) that clearly define resource input and output in key focus areas, and we have put in place an R&D system that conducts balanced research and development from exploration to mass production across both key focus areas and other fields. Each R&D base shares roles while collaborating to promote ambidextrous efforts.

