



Since our founding in 1887 as Tokyo Jinzo Hiryo, established through the foresight of TAKAMINE Jokichi and SHIBUSAWA Eiichi, we have placed the utmost importance on “product development grounded in core technologies,” over more than 130 years. We have refined our five core technologies—Ultrafine Particle Control, Functional Polymer Design, Biological Evaluation, Fine Organic Synthesis, and Optical Control—and, by integrating them, have created new product lines. Today, our framework of core technologies has further evolved to include Information Science and Microbial Control.

In April 2025, we launched Vista2027 Stage II, covering the latter three years (FY2025–FY2027) of our medium-term business plan. Having completed Vista2027 Stage I (FY2022–FY2024), we regard the creation of new products as the highest priority for Stage II. Furthermore, in Stage II, we have redefined our ideal state for FY2027 as a milestone toward the realization of our long-term business plan “Atelier 2050.” Under the policy of building foundation for continuous growth and stable earnings, we have established three basic strategies: expanding profits in existing businesses, developing new products Looking toward 2030, and strengthening business foundation. We are committed to achieving the slogan of Vista2027: “To be an Enterprise that Faces Challenges toward the Future through Value Co-creation.”

Human Resource Strategy to Support Sustainable Growth

In our existing businesses, we are focusing capital investment on strengthening growth sectors such as semiconductors and

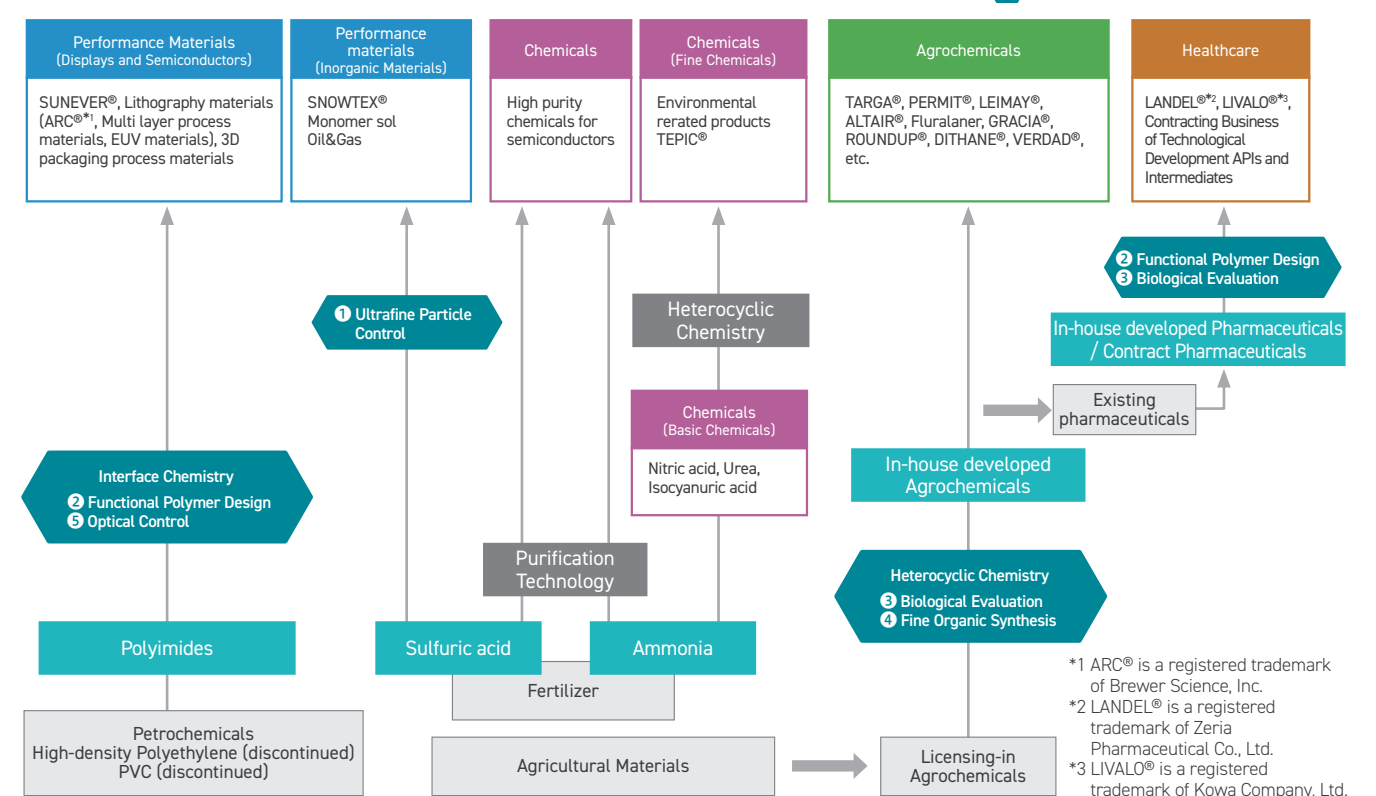
agrochemicals. In semiconductors, we plan to concentrate on developing next-generation materials such as 3D packaging process and EUV materials, while in agrochemicals, our focus will be on biological pesticides and new veterinary drug products. For new product development, we will identify target materials with a view to 2030 and concentrate resources on them, enabling us to make swift “Go/Stop” decisions. We also plan to actively pursue strategic investments such as M&A.

To advance these basic strategies, it is essential to strengthen the business foundation that supports each area of R&D. People are at the core of our R&D efforts, and we recognize that strengthening human resource development is crucial. Beyond enhancing expertise through on-the-job training and developing researchers through tiered training programs, we have also introduced our own training program aimed at improving literacy in information science. This program, conducted in collaboration with external consultants, includes pre- and post-training assessments to visualize actual proficiency levels. We also provided practical, hands-on programs with a focus on real-world application.

As another initiative in human resource development, in FY2025 we established a Human Resource Development Group within the Materials Research Laboratories. Its aim is to build a comprehensive training and development support system, including the development of materials informatics (MI) and DX talent, improving research efficiency, and supporting the growth and career advancement of outstanding researchers.

Not every R&D theme leads to successful

Research and Development -Our Five Core Technologies-



commercialization. It is therefore essential to nurture “discerning talent” with the ability to evaluate whether a project can evolve into a viable business and to foresee its future market potential. To this end, we not only create opportunities for researchers to accompany sales staff in direct customer visits, but also have implemented an Intrapreneurship Program since FY2019, designed to foster in-house entrepreneurs. Under this program, themes and team members are selected, and participants receive coaching from entrepreneurs while collecting information and testing hypotheses. They then visit customers directly to confirm demand before moving forward with business development considerations.

These initiatives are not merely about improving employees’ skills, but are directly connected to fostering talent that autonomously and creatively generates new value, functioning as a vital source of our competitiveness.

Enhancing R&D Infrastructure and Strengthening the Use of Intellectual Property

To reliably translate product functions and performance into market value, enhancing our R&D infrastructure is essential. We continue to invest actively in state-of-the-art evaluation and analytical equipment, including, for example, systems capable of inspecting defects in semiconductor materials at the same level as our customers. These investments enable us to grasp customer requirements from the same perspective, thereby facilitating speedy development and dramatically improving the

reliability of our research outcomes.

With respect to strengthening the use of intellectual property, we are further advancing the use of IP landscape analysis. In the past, we have applied IP landscape methods to capture shifts in technology trends and market structures, make Go/Stop decisions on research themes, explore opportunities for new applications, examine synergies with potential partners, and evaluate the intellectual property value of potential M&A targets. Going forward, we will cultivate and assign specialized personnel proficient in IP landscape, such as highly skilled Certified Specialists of Intellectual Property Management, and proactively integrate these insights into our R&D activities.

R&D for Growth Toward 2030 and Beyond

By steadily executing the basic strategies of Vista2027 Stage II, we plan to achieve new product sales of 23.9 billion yen in FY2027 and exceed that level by FY2030.

Our R&D vision is to create No.1 products in niche areas across a wide range of fields. To realize this vision, we are committed to refining strategies that design commercialization pathways in advance, pursuing customer-oriented, rapid development that accurately captures the essence of market demands, and precisely reflecting customer challenges in product characteristics. Through this cycle, we aim to achieve sustainable growth while creating social value.

Developing Data Scientists

As part of efforts to position “Information Science” as a new core technology, we launched a development project in FY2023 aimed at improving the data science literacy of our researchers. Under Vista2027 Stage I, we set a goal of assigning at least one core data science researcher to each research department, and we worked across the entire R&D department to achieve this.

In FY2023, to understand the current skill levels of participants and strengthen their foundational abilities (particularly digital skills), we implemented a training program combining e-learning with periodic assessments. The assessments evaluated two axes: digital skills (such as data science, digital marketing, software engineering) and innovative skills (such as ability to ask questions, discover, make connections, and build networks). After completing the program, participants showed steady improvement in their digital skills.

In FY2024, building on the previous year’s results, we conducted individualized, hands-on programs that emphasized practical application to each participant’s own research themes. Participants selected from multiple programs offered by universities and private institutions. As a result, for example, the number of researchers who answered “unable to use” when asked about programming languages dropped to zero after the training, while the number of those able to utilize such skills increased significantly. Many have already begun applying the newly acquired skills in their actual work.

From FY2025 onward, we plan to assign information science coordinators to each research department, who will set goals and action plans aligned with the department’s R&D themes, thereby promoting data-driven research.

Skill Changes Before and After Training (Excerpt from skill assessments conducted before and after the Data Science Training)

Item	Can Do with Support	Can Do Independently	◎Examples of Courses Utilized UTokyo Data Science School [UTokyo Extension Co.,Ltd.] - Challenge Course in Data Science with Python - Data Science Full-scale Training Program Tohoku University Data Science College [Tohoku University Knowledge Cast Co., Ltd.] - Practical Training Course TECH PLAY Academy [Persol Innovation Co., Ltd.] - Data Science Training
Integrated analysis using Python	10%→ 50%	25%→ 50%	
Implementation of machine learning using Python	5%→ 55%	30%→ 45%	

Theme Management of Research and Development

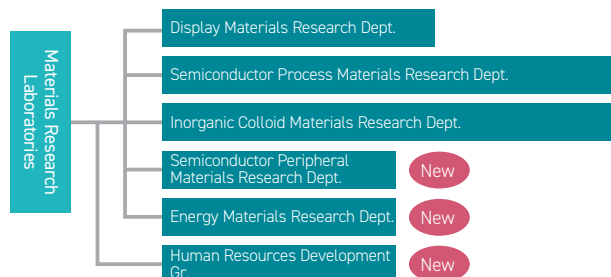
We are considering many R&D themes, mainly in the fields of performance materials and life sciences, and managing progress and gaps from targets for all themes. We conduct this management every six months, and evaluate and report on R&D progress from many angles, mainly on the technology axis, including the state of technological progress, technical goals for the next six months, schedules for commercialization, intellectual property information, and the status of manpower allocation. The head of each research laboratory and supervising officer of each research field participate in the debriefing sessions, and for R&D

themes that are behind schedule, they discuss the background to the delays and ways to make up for them. When it is necessary to discuss theme interruptions, we make our decision taking into account whether there are recovery strategies, changes in market conditions, and business models for each theme area.

On the other hand, at the debriefing sessions, newly initiated R&D themes are also shared, allowing each research and development department to recognize newly started themes and to exchange effective ideas for advancing research.

Identification of Roles and Responsibilities (Materials Research Laboratories)

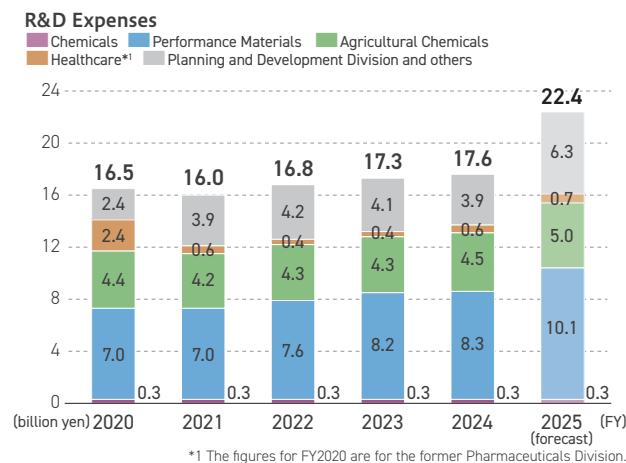
In April 2025, we reorganized the Materials Research Laboratories to accelerate R&D, positioning it as a core base of performance materials development.



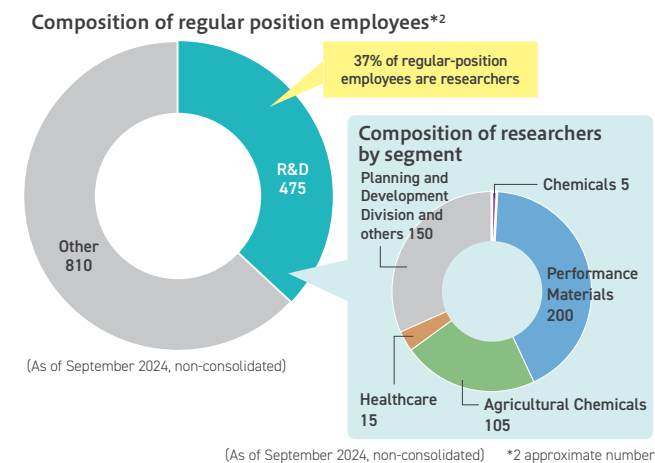
R&D Expenses

We consider R&D to be the source of growth, and have intensively invested our management resources in R&D.

Our sales-to-R&D expenses ratio has remained at a high level of 7-9% and continues to show an upward trend in functional



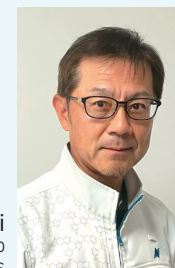
materials, particularly semiconductors, as well as agrochemicals. In addition, approximately 40% employees in regular position are working as researchers.



Voices of Researchers

Supporting the Success of Materials Research Talent and Their Contribution to Business

OZAWA Masaaki
Leader, Human Resource Development Group
Materials Research Laboratories



In FY2025, a Human Resource Development Group was established within the Materials Research Laboratory. Its purpose is to build a framework that enables the entire laboratory to support the development of ace researchers capable of leading large-scale new themes, as well as outstanding project management talent. The mission of this group is (1) identifying high-potential talent and supporting their career development in collaboration with department heads, (2) forming cross-functional task forces for new themes and promoting their project development, (3) fostering MI and DX talent, and (4) implementing training programs for younger researchers. As a human resource development unit embedded directly in the research field, we aim to provide close, hands-on support to researchers. We have defined three talent models: “business-oriented research talent” who contribute to the expansion of existing businesses; “innovation-oriented research talent” who take on the challenge of creating new businesses; and “digital-driven research talent” who lead data-driven research. For each category, we will implement measures to



strengthen the necessary experience and skills. Our goal is to create an environment where each researcher can establish their own core, maximize their abilities, and drive the creation of research outcomes.

Creating New Materials to Open the Future of the Hydrogen Society

ITO Jun
Energy Materials Research Department
Materials Research Laboratories



Our team is engaged in the research and development of “ion-conductive polymers,” which are key constituent materials of catalyst layers for hydrogen production via water electrolysis and power generation via fuel cells—both technologies for realizing a hydrogen society. We are conducting research aimed at technological innovation that contributes to the realization of a sustainable society, focusing not only on enhancing material performance but also on developing PFAS-free materials with high environmental compatibility. Water electrolysis and fuel cells are fundamental technologies that contribute to reducing greenhouse gas emissions and addressing climate change, thereby helping achieve the SDGs. Since FY2024, I have been responsible for this theme. As a new area for Nissan Chemical, it presents numerous challenges, including the need for a long-term perspective before achieving social implementation.



Nevertheless, I remain committed to advancing daily research, driven by the belief that the materials I design and develop have the potential to contribute to solving societal issues. Looking ahead to the arrival of a hydrogen society, I hope to contribute to the further growth of Nissan Chemical through the creation of materials that respond to social needs.

Intellectual Capital Intellectual Property

We regard intellectual property as both “the foundation of our business” and “the source of our growth.”

Basic policy

Three pillars of intellectual property (IP) activities: (1) Prompt acquisition of IP rights, (2) Appropriate utilization of IP, (3) Through IP risk management

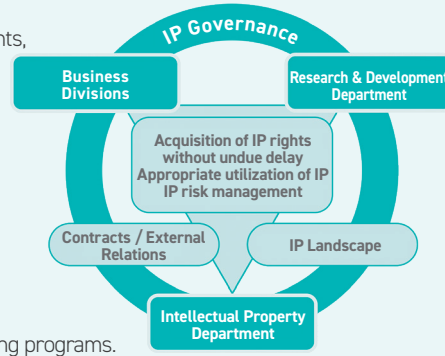
Recent key IP activities

Enhancing the IP governance system, Promoting IP landscape, Supporting contracts and external negotiations

Features of Nissan Chemical Group's IP governance system

IP governance across all divisions

- Engagement in IP activities by IP liaisons appointed in each division in collaboration with the Intellectual Property Department.
- Regularly held of company-wide IP conference and strategy meetings for each business field.
- Human resource development and enhancement of IP literacy through IP training programs.



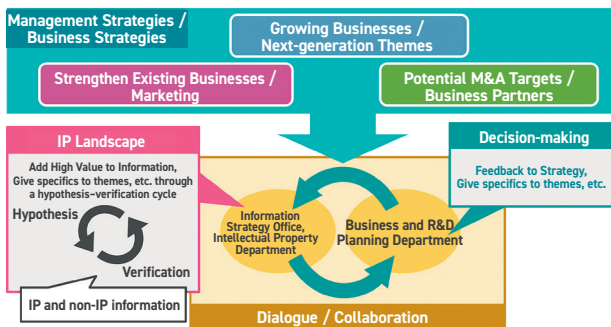
Characteristics of Nissan Chemical Group's IP Governance System

The Group's IP governance is centered on seamless, tripartite collaboration among the business divisions, R&D departments, and the Intellectual Property Department. Within systematically structured committees, discussions, approvals, and information sharing are carried out to ensure effective IP governance. For example, in strategy meetings attended by IP liaisons appointed in each division and core members of R&D and business divisions, we comprehensively discuss each strategy of business, R&D, and IP. Similarly, assessments and decisions regarding IP risks in business activities, as well as the enforcement of IP rights, are addressed collectively with full organizational commitment. In particular, within the IP Development Office, Intellectual Property Department, representatives from all business fields gather to discuss countermeasures against other companies' rights. Through rigorous risk assessment, our Group works to build a stable foundation for its business operations.

Accelerating the Promotion of IP Landscape

In 2018, we established a framework for leveraging IP landscape and have since actively provided information and conducted awareness-raising activities for the business divisions and R&D departments. As a result, leveraging insights derived from information analysis has become firmly embedded in both business and research activities, and IP landscape is now applied to a wide range of decision-making processes.

Within the Information Strategy Office, Intellectual Property Department, the objectives of IP landscape utilization



have been clearly defined as threefold: (1) the strengthening of existing businesses through its application to marketing activities, (2) the selection of next-generation themes and the creation of growth businesses, and (3) the consideration of potential candidates for M&A and business partnerships to expand business operations. By clarifying these objectives and presenting concrete use cases internally, we are further accelerating the promotion of IP landscape.

Development of Human Resources for Intellectual Property

At Nissan Chemical, we are committed to developing IP human resources tailored to each role and responsibility in order to promote both the protection and utilization of IP and to make advanced use of information. Through training programs and individual guidance, we help all employees deepen their understanding of IP and enhance the use of their knowledge and experience, thereby reducing legal risks, strengthening competitiveness, and fostering innovation.

Specifically, in hypothesis verification-based training (training before promotion, P.29), the Intellectual Property Department provides guidance on skills to collect essential IP information and offers support through IP analysis and IP landscape. These initiatives are designed to further improve the IP mindset of each employee.

Building and Managing a Strategic IP Portfolio

While we actively promote patent applications as an outcome of R&D, we also review the necessity of various post-application procedures— application to foreign countries, entry of PCT applications into the national phase, requests for examination, etc.—in light of the business situation through discussions among the business divisions, the R&D departments, and the Intellectual Property Department, and obtain rights appropriately.

For granted patents, we regularly take their “inventories.” We review not only patents directly related to the ongoing businesses but also the effectiveness of patents that constitute a barrier to entry against competitors, to determine whether to maintain or abandon their registration. As described below, by managing IP appropriately according to the characteristics of each business area, we are building a valuable IP portfolio that can contribute to

the expansion of our business.

In the field of Performance Materials, we promote our business and protect our products by strategically building a patent portfolio ahead of our competitors in order to obtain a high market share.

In the fields of Agrochemicals and Pharmaceuticals, where products have long life cycles, we are working to optimize patent portfolios in response to changes arising from long-term business activities. We also obtain trademark rights globally. Through these measures, we are able to enforce rights appropriately, including handling of litigation with generic companies and addressing infringing products.

Active Establishment of Patent Rights

As shown in the trend in the number of patents owned (p.14), we

are actively establishing patent rights both in Japan and overseas.

Our overseas percentage of patents owned ([number of overseas patents owned / total number of patents owned × 100] %) is approximately 70%, which is significantly higher than the average of thirty major domestic chemical manufacturers. This is the result of pushing forward with our patent application strategy to ensure that we can conduct our business with confidence both domestically and internationally.

In the same way, among thirty major domestic chemical manufacturers, the number of our patents owned as a percentage of sales, and the number of our patents owned as a percentage of R&D expenditures are high levels. Only in our Performance Materials field, its number of patents owned as a percentage of R&D expenditures is more than double the average of thirty major domestic chemical manufacturers.

Comparison of our overseas percentage of patents owned and the number of patents owned among thirty major domestic chemical manufacturers.*1
(calculation method revised, using a commercial database)

	FY2022		FY2023		FY2024	
	Nissan Chemical	Average of 30 manufacturers in the chemical industry	Nissan Chemical	Average of 30 manufacturers in the chemical industry	Nissan Chemical	Average of 30 manufacturers in the chemical industry
Overseas percentage of patents owned (%)	69.8(1)	50.2	69.4(1)	50.3	69.6(2)	49.1
Number of patents owned / Sales (cases/100 million yen)	2.5(2)	1.0	2.7(2)	1.0	2.6(1)	0.9
Number of patents owned / R&D expenses*2 (cases/100 million yen)	33.4(5) 54.7	25.2	35.1(5) 55.6	23.9	36.8(3) 57.9	23.3

*1 Figures in parentheses indicate our ranking among thirty major domestic chemical manufacturers

*2 Figures in the lower row are calculated only for our Performance Materials field

Intellectual Property Topics

Received the National Commendation for Invention for two consecutive years

Following our receipt of the Invention Prize last year, Nissan Chemical was awarded the Prize of the Chairman of the Japan Institute of Invention and Innovation (JIII), a special prize, in FY2025 at the National Commendation for Invention organized by JIII. Award-winning for two consecutive years at the Commendation demonstrates that our IP activities have been highly recognized as contributing to our business.

FY2025 Prize of the Chairman of JIII: Photo-alignment materials for IPS mode liquid crystal displays (LCDs).

This invention made a major contribution to the commercialization of the “photo-alignment layer,” a core technology for high-definition LCDs such as 4K televisions.

Although the photo-alignment layer was theoretically an excellent technology, its practical application faced two challenges: weak liquid crystal alignment force and display defects caused by byproducts generated during the light irradiation process. While initially focusing on developing materials that would not generate byproducts, our researchers shifted their approach and conceived a new solution: washing after light irradiation. Further studies showed that using a specific cleaning solvent not only removed byproducts but also

improved alignment force. Through this series of inventions, including the washing method, our photo-alignment materials for IPS liquid crystal displays have been adopted in cutting-edge smartphones and have become key products that paved the way for the era of high-definition displays. We support our highly profitable business by building a strategic patent portfolio and efficient utilization of patents.

FY2024 Invention Prize: Veterinary pharmaceutical Fluralaner

This prize was awarded for a compound patent of Fluralaner, the active ingredient of our veterinary pharmaceuticals. In the judging process, the compound was highly evaluated for having a novel skeletal structure and mechanism of action, outstanding efficacy and safety, and a duration of effect far exceeding that of existing drugs. We believe that this award also reflects recognition of our long-cultivated core technologies “Fine Organic Synthesis” and “Biological Evaluation”.

Award ceremony of the National Commendation for Invention

