Business Strategies

Semiconductor and Electric Materials

Front-end / Back-end Semiconductor Materials

Hiroyuki Yamashita
General Manager,
Electronics Business Headquarters

Please visit our website for more details.

Vision for the future (2030)

- **Supply advanced semiconductor materials to support the advancement of the digital society, such as the rapidly growing AI demand, and realize a sustainable society by contributing to energy conservation and reducing environmental impacts.**

Issues to Be Addressed

- Driving the semiconductor materials industry as a leader in co-creation
- Aim to gain an overwhelming position in next-generation semiconductors by strengthening our product capabilities
- Contributing to energy conservation and reducing the environmental impact of semiconductors by enhancing the performance of semiconductor materials
- Amid geopolitical risks such as soaring raw material, energy, and logistics costs and supply chain disruptions, we are working to further strengthen our supply chain management system

Results in 2024

- Revenue and profit increased year-on-year due to the acceleration of demand for AI and server applications
- Decided to invest ¥15.0 billion to expand the production capacity of advanced semiconductor materials
- Pursued product portfolio reform to increase the weighting of high-margin products in total sales and strengthen our revenue base
- Announced the establishment of US-JOINT as part of efforts to strengthen marketing for key customers and global R&D activities
- Completed the introduction of a global supply chain management (SCM) enhancement system at bases in Japan
- Fostered organizational culture and developed human resources through workshops and top interviews

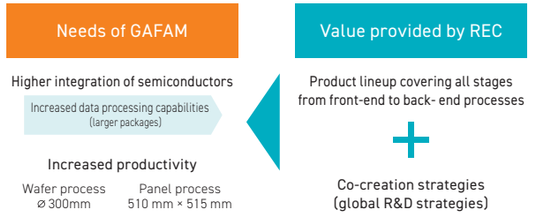
Plans for 2025

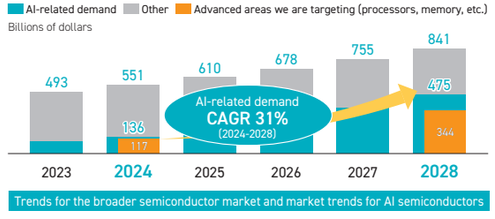
- Pursue product portfolio reform to aim for a business that generates even higher profits
- Aim to achieve steady growth of strategic products and actively introduce new products in next-generation fields to become the de facto standard
- Strengthen and implement co-creative marketing for key customers
- Move forward with preparations to start US-JOINT operations in 2025
- Introduce a global SCM enhancement system for multiple products at overseas bases
- Foster a sense of unity at business headquarters and develop human resources through global town-hall meetings and other activities
- Strengthen manufacturing capabilities by fully utilizing SPC (Statistical Process Control)
- Hold supplier meetings for the first time to build strong, sustainable co-creative relationships with suppliers

Strengths and Competitiveness for Realizing our Long-Term Vision

- Because we have a lineup of products that cover a wide range of semiconductor processes from front-end to back-end and we own several products that command the top market share, we can anticipate growth exceeding the increase in the number of chips as the number of components used rises with the higher integration of semiconductors. (Average growth rate of AI semiconductors from 2024 to 2028: 31%/year)
- With the limit to density increases in front-end processes becoming apparent as semiconductor design processes become more sophisticated and complex, attention has been turning to moves aiming for higher integration through the evolution of back-end technologies. As our particular strengths lie in our ability to make proposals for back-end materials, we are able to flexibly respond to customer needs.
- Japan and the U.S. lead JOINT, a consortium of material, equipment, and substrate manufacturers aimed at establishing next-generation semiconductor packaging and evaluation technologies. We use our expansive network to quickly grasp changes and create high-value-added products that meet the needs of our customers

Customer Needs in AI Semiconductors





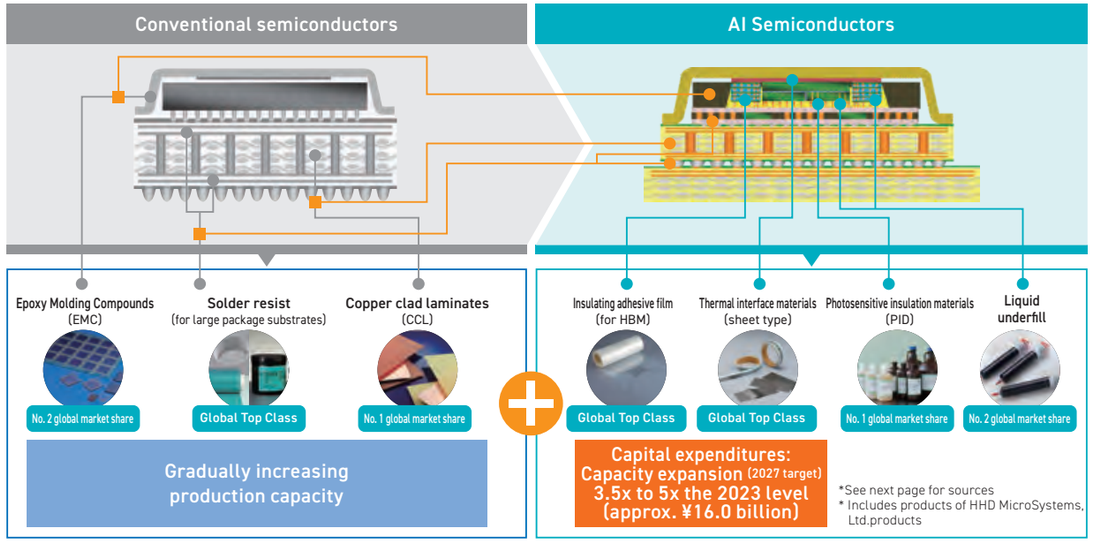
Trends for the broader semiconductor market and market trends for AI semiconductors

Resonac Semiconductor Materials are Becoming More Prevalent in AI Semiconductors

Compared to conventional semiconductors, AI semiconductors have a higher number of components and larger packages, which will lead to increased demand for semiconductor materials. We will continue to lead the semiconductor materials industry, as we have multiple products with top market share in both materials used in conventional semiconductors and AI semiconductors, as well as materials for AI semiconductors.

Evolution to realize functions for entire packages through the full utilization of back-end technologies

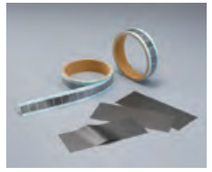
Accelerating growth by strengthening industry-leading materials and production foundations



*See next page for sources
* Includes products of HHD MicroSystems, Ltd.products

Accelerating New Product Development and Increasing Production Capacity for Advanced Semiconductor Packaging Materials

We are gradually increasing our production capacity for NCF insulating adhesive films and TIM heat dissipation sheets, which are attracting attention as materials for AI semiconductor packages, from 3.5x to 5x, with the aim of strengthening our stable supply capacity. We will continue to increase our production capacity in a timely manner to meet the rapidly expanding demand in the AI semiconductor market in a bid to further strengthen our market advantage. Additionally, we will accelerate our development of new products for advanced semiconductor packages, aiming for contribution to improving semiconductor performance from the materials side.



Next-generation TIM

Technology for vertical alignment of carbon

- Vertical alignment technology that supports high thermal dissipation
- Adhesion design that achieves low thermal resistance
- Sheet shape that enhances workability

Thermal conductivity and reliability against temperature changes

Differentiated technologies that support cutting-edge devices

Thinner film

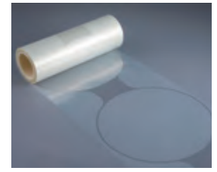
- Contributing to the multilayering of HBM* chips through ultra-thin film processing

* High Bandwidth Memory

Resin design

- Ensuring high reliability through narrow gap filling
- Further differentiation through the enhancement of thermal radiation properties and expansion of applications to next-generation devices

High-performance material that balances workability and connection reliability



NCF with high thermal dissipation

Co-Creative Development Strategy

We are leading JOINT consortium activities in Japan and the U.S. together with external semiconductor material manufacturers, equipment manufacturers, and substrate manufacturers. Furthermore, the Packaging Solution Center, which possesses semiconductor manufacturing equipment, can verify technology during the manufacturing process, and as such serves as a hub for co-creation. Resonac will promote the co-creative development of cutting-edge technologies in a bid to continue leading the semiconductor materials industry..

P65/Discussion: Resonac's Co-creation "Kata"

Resonac will promote the co-creation and development of cutting-edge technologies in a bid to continue leading the semiconductor materials industry

Co-creation activities

JOINT (Ending 2026)

Development of advanced PKG technology

RESONAC, AIMECHATEC, YAMAHA, UYEMURA, Aji, tok, DNP, DISCO, JOINT2, SHINKO, Panasonic CONNECTA, EBARA, IMEC, NAMICS, ORC

Co-creation hub

Packaging Solution Center

US-JOINT (Launching 2025)

3M, RESONAC, ULVAC, Packaging Open Innovation in Silicon Valley, KLA, TOWA, US-JOINT, Kulicke & Soffa, TOPPAN, tok, IMEC, MLI, NAMICS

Heat management/microbump technology

We are conducting co-creative research and development with IMEC (Interuniversity Microelectronics Centre), an international research Institute based in Belgium.

Photoelectric fusion

We participate in IOWN (Innovative Optical and Wireless Network) Global Forum, Advanced Photonics Coalition and Micro Photonics Center to strive technological development of photoelectric integration.

Hybrid bonding technology

We are the first Japanese manufacturer and materials company to participate as a strategic partner in the Texas Institute for Electronics (TIE), which aims to advance the roadmap for cutting-edge semiconductor technology by five years and to develop it in the U.S.

Back-end process automation and human resource development

We are involved in the Semiconductor Assembly and Test Automation and Standardization (SATAS), d.lab at the University of Tokyo , X-NICS at Tohoku University , SEMI, and other collaborative research, and are also engaged in manufacturing process development and human resource development through a comprehensive partnership with Yokohama National University .

Resonac Corporation and Yokohama National University concluded a comprehensive partnership agreement

Results of JOINT2 Activities

JOINT2 is a consortium aimed at developing next-generation semiconductor packaging technology joined by 14 Japanese companies. By promoting the mutual use of technology and information, we succeeded in creating a chip-embedded interposer* prototype with a view to increasing the size. This prototype uses 510 x 515 mm panels, with 20 bridge dies mounted on each panel, and insulating film and copper wiring were formed to demonstrate high-density wiring technology. We expect to commercialize this between 2027 and 2028, ahead of which we will work to enhance performance and establish mass production technology.

*510 x 515 mm panel chip-embedded interposer

US-JOINT: Building Relationships and Forums for Customers and Consortium Members to Chat Casually in the U.S.

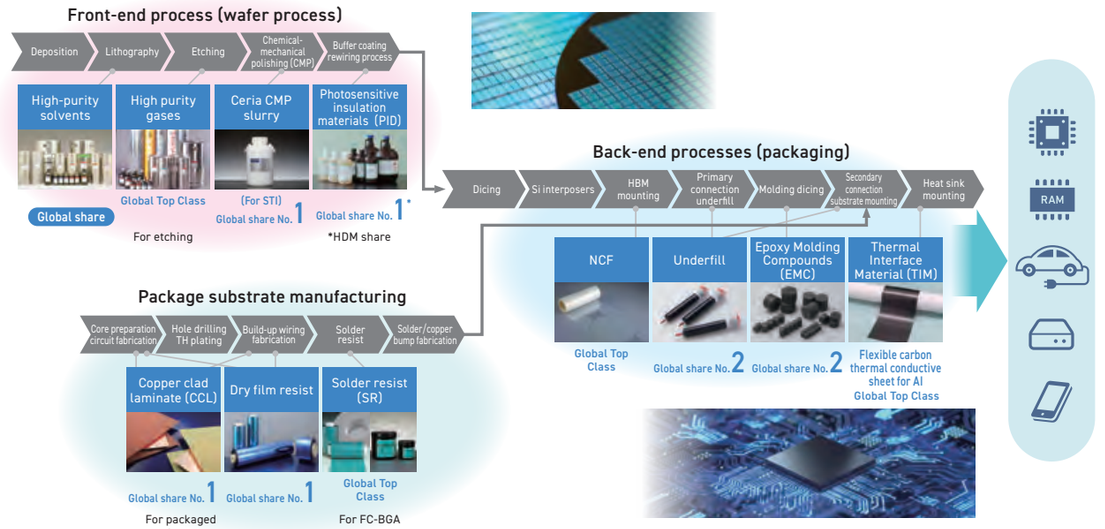
US-JOINT is a consortium for joint research on next-generation semiconductors, and is scheduled to start operations during 2025. By working closely with hyperscalers and major semiconductor manufacturers based in Silicon Valley and elsewhere in the U.S., and through co-creation with the 12 participating material- and equipment-related companies, we will contribute to realizing the concept of next-generation semiconductor packages ahead of the rest of the world.

In recognition of the consortium's efforts, Resonac received the Special Consortium Award at the 2025 3D InCites Technology Enablement Awards.

Please see A "Great Alliance from Japan and Silicon Valley. Don't Miss the New Trend in Semiconductors" (in Japanese only)

Resonac's Semiconductor Material Lineup for Semiconductor Manufacturing Processes

We offer an extensive lineup of materials for semiconductor manufacturing, covering both front-end and back-end processes, and also have several products that command top global market share. This enables us to respond to customer requests by combining our material technologies.



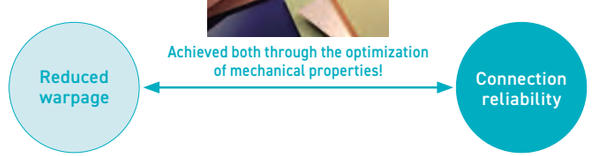
Source: Fuji Chimera Research Institute "2024 Electronics Jisso New Material Handbook",
- Photosensitive insulating materials*(PID), Buffer Coat/RDL Material, Actual Shipping Quantity of 2023 achieved **No.1** share on a volume basis.
  *HD Microsystems products: HD Microsystems L.L.C. is Joint venture between Resonac and DuPont.
- Underfill, Underfill for Primary Jisso, Actual Shipping Amount and Quantity of 2023 achieved **No.2** share on a volume and value basis.
- Epoxy Molding compounds (EMC), Semiconductor Molding Material, Actual Shipping Amount and Quantity of 2023 achieved **No.2** share on a volume and value basis.
- Copper clad laminate (CCL), Copper Clad Laminate for Package, Actual Shipping Amount of 2023 achieved **No.1** share on a value basis.
- Dry film resist, Dry Film Resist, Actual Shipping Amount of 2023 achieved **No.1** share on a volume and value basis.

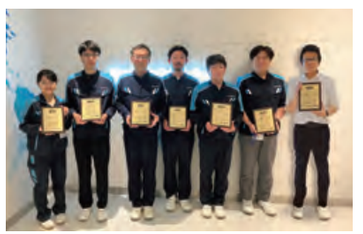
Source: Fuji Keizai "2024 Current Situation and Future Prospects of Semiconductor Material Market"
- Ceria CMP slurry (for STI), CMP slurry (for STI) Actual Sales Amount of 2023 achieved **No.1** share on a value basis.

TOPICS 2024

Awarded Outstanding Interactive Presentation Paper at the 74th ECTC

The Electronic Components and Technology Conference (ECTC) is the world's largest international conference on semiconductor packaging and mounting technologies. The award ceremony was held at the ECTC 2025 event held in Dallas, U.S. in May. The increasing size of AI semiconductor packages presents the challenge of controlling warpage while maintaining connection reliability. By optimizing the mechanical properties of our MCL products, we proposed and demonstrated a solution that can address the above issues, which was appreciated for the award.





▶ See here for co-creation examples for NCF and hard disk.

P21/The unsung heroes behind the increase in NCF production: The power of collaboration between HD, image analysis, and NCF!

Business Strategies

Semiconductor and Electronic Materials: Device Solutions

Hard Disk Media

Yasushi Makabe
General Manager, Hard Disk Business Unit

Please visit our website for more details.

Vision for the future (2030)

- Meet increasing data storage demand as a large-capacity media technology leader by accelerating the development and mass production of next-generation recording technologies HAMR and MAMR media
- Quickly and strategically adapt to market and customer changes to gain a competitive advantage
- Reduce GHG (Greenhouse Gas) emissions in production processes

Issues to Be Addressed

- Through the development of our proprietary technology, achieve a thinner substrate with the aim of accelerating the increase in recording density and increasing the number of media in the drive for HAMR and MAMR
- Establishing strategic partnerships with customers and key suppliers
- Speeding up decision-making at five global bases
- Responding flexibly to fluctuations in demand

Results in 2024

- Sales of HD media increased significantly due to a recovery in demand for data centers
- Transferred the business in July 2024 through a company split with the aim of speeding up decision-making as well as stabilizing and optimizing business operations
- Commenced solar power generation (PPA agreement) at Resonac HD Singapore
- Switched the solvent used in the lubricant application process to an eco-friendly alternative at full scale

Plans for 2025

- Gain world's first certification for max capacity PMR
- Accelerate joint development of HAMR with three customers with an eye to full-scale mass production from 2026 onward
- Improve productivity of media and aluminum substrates, strengthen cost competitiveness, and establish a flexible supply system at all bases
- Explore and implement labor-saving and automation measures
- Formulate a GHG emission reduction plan for SBTi certification
- Decide on fuel conversion at the Yamagata Plant

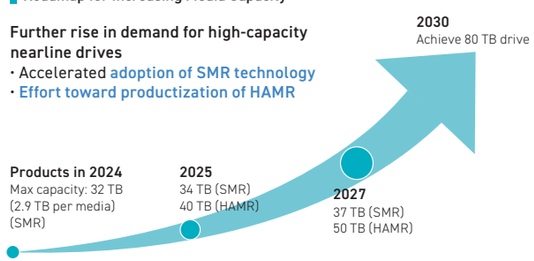
Initiatives to Strengthen Competitiveness and Examples

We possess the technological capabilities to develop and mass produce the world's most advanced media ahead of the rest of the industry, and provide Best Fit products optimized to meet customer needs through close cooperation with all three HDD customers

In current magnetic recording, combining a customer's shingled magnetic recording (SMR) technology with our own proprietary media has enabled the said customer to achieve the first certification for the max capacity program.

To meet the further rise in demand for high-capacity nearline drives expected going forward, we are conducting joint development with the three customers for next-generation HAMR technology. By combining this with our proprietary technology, we aim to continue our efforts to achieve world's first certification for the max capacity program.

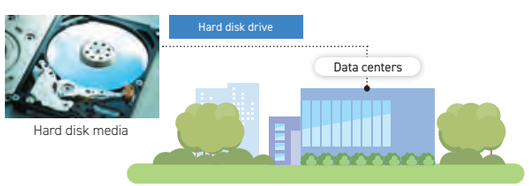
Roadmap for Increasing Media Capacity



* When magnetic particles are made smaller to achieve a higher recording density, the thermal stability of a hard disk deteriorates and data cannot be stored for long periods of time. Meanwhile, using a type of magnetic material with high thermal stability would make it impossible to write to the recording medium. Microwave Assisted Magnetic Recording (MAMR) and Heat Assisted Magnetic Recording (HAMR) are recording technologies that solve this recording density problem and support writing to the recording medium.

Relationship Between Our Products and Daily Life

HD media is incorporated into hard disk drives and is used in data centers, corporate data servers, and surveillance cameras, among others.



▶ See here for co-creation examples for NCF and hard disk.

P21/The unsung heroes behind the increase in NCF production: The power of collaboration between HD, image analysis, and NCF!

Business Strategies

Semiconductor and Electronic Materials: Device Solutions

SiC Epitaxial Wafers

Makoto Takeda
General Manager, Device Solutions Business Unit

Please visit our website for more details.

Vision for the future (2030)

- SiC epitaxial wafer technology leader to lead the industry's technological innovation
- Provision of high-quality products and solutions that meet the customer (power semiconductor manufacturers) demands for more advanced and specialized chips
- Maintaining "Best in Class" for eight-inch (200 mm) SiC epitaxial wafers, demand for which is growing rapidly in automotive applications

Issues to Be Addressed

- Maintaining and expanding our technological advantages (industry-leading low levels of surface-defect density and basal-plane dislocation, etc.)
- Strengthening technology collaborations and our ability to align with customers
- Differentiating from rivals, and improving productivity of eight-inch SiC epitaxial wafers

Results in 2024

- Sales grew due to increased shipments of SiC epitaxial wafers
- Commenced reliability testing of epitaxial wafers for power devices in addition to the evaluation of materials for power modules at the Power Module Integration Center (PMiC)

P65/Discussion: Resonac's Co-creation "Kata"

- Constructed a new production building for SiC wafers at Resonac Hard Disk's Yamagata Plant (scheduled for completion in September 2025)

Plans for 2025

- Enhance ability to supply high-quality SiC epitaxial wafers to meet customer requirements in line with growth of the power semiconductor market
- Accelerate technology development to realize "Best in Class" in mass production of eight-inch SiC epitaxial wafers

Initiatives to Strengthen Competitiveness and Examples

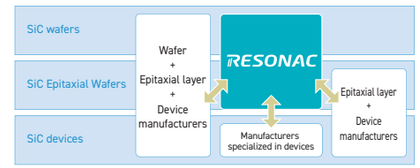
Strengths as a Manufacturer Specialized in Epitaxial Wafers

As a manufacturer specialized in epitaxial wafers that does not handle SiC devices, we attract device manufacturers that manufacture wafers and epitaxial wafers in-house as customers. This unique business model allows us to improve quality and accumulate expertise by gathering the needs of multiple customers and aligning specifications. In 2022, we began test shipments of eight-inch (200 mm) SiC epitaxial wafers, which contribute significantly to larger wafer diameters while enabling us to achieve industry-leading quality by fully utilizing technology that reduces defects.

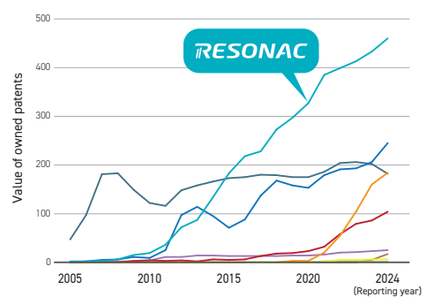
Utilization of IP Landscape in SiC Epitaxial Wafers Businesses and Evaluation of Intellectual Property Value

The value of our patents (PAI = Patent Asset Index*: registered trademark of Lexis Nexis) in the field of SiC epitaxial wafers, acquired as a result of our pioneering technological developments, more than doubled that of industry peers in 2024, demonstrating our competitive advantage. Furthermore, France-based KnowMade, which specializes in the analysis of patents and scientific information, highly rated our IP position in the development of larger diameter, low-defect SiC epitaxial wafers.

Resonac's Business Model as a Manufacturer Specialized in Epitaxial Wafers



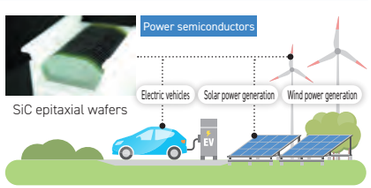
Comparison of the patent asset value of SiC Epitaxial Wafers for Power Semiconductors versus rival companies.



* Evaluation of valid patents using Lexis Nexis' PatentSight+ patent database; PAI is calculated based on Technology Relevance of each patent and Market Coverage.

Relationship Between Our Products and Daily Life

SiC epitaxial wafers are mainly used as substrates for power semiconductor devices and contribute to energy conservation in various fields, such as renewable energy and electric vehicles (EVs).



Business Strategies

Mobility

Mobility

Satoshi Hara
General Manager, Mobility Business Headquarters

Please visit our website for more details.

Vision for the future (2030)

"Unleashing the Power of Chemistry to Reinvent Acceleration, Steering, and Braking"

- Acceleration: The challenge of realizing a highly efficient powertrain
- Steering: Lowering the unsprung mass (for better ride quality) while ensuring driving safety
- Braking: Providing next-generation environmental performance and peace of mind

Issues to Be Addressed

- Contributing to the improvement of basic vehicle performance by making full use of the Group's material, processing, and evaluation technologies
- Achieving a business portfolio that combines sustainable growth, high profitability, and capital efficiency with a focus on areas that are resilient to structural changes in the automotive market
- Promoting structural reforms to optimize business sites and strengthen price negotiation capabilities

Results in 2024	Plans for 2025
● Sales of automotive products declined, impacted particularly by the situation in Thailand ● Negotiated price revision and product withdrawals centered on low-margin products as part of structural reforms ● Revised our business portfolio and sold the SPALF aluminum laminate film business ● Started co-creation with customers on terminal blocks and cooling modules realized by DSI* molding technology	● Moderate year-on-year growth of the automobile market expected as pullbacks in demand ease in various areas ● Expand aluminum suspension materials and environmentally-friendly disc brake pads as core growth businesses ● Promote new businesses through co-creation with customers, such as next-generation heat management systems and next-generation motor cores

* Die-Slide Injection: An injection molding technology that enables the integrated molding of hollow bodies with complex structures and laminated structures

Initiatives to Strengthen Competitiveness and Examples

We are working to develop technologies such as materials and components that significantly improve the basic performance of mobility, such as "Acceleration, Steering and Braking", by utilizing the Group's wide range of materials technologies, including organic, inorganic, and metals, as well as processing and evaluation technologies.

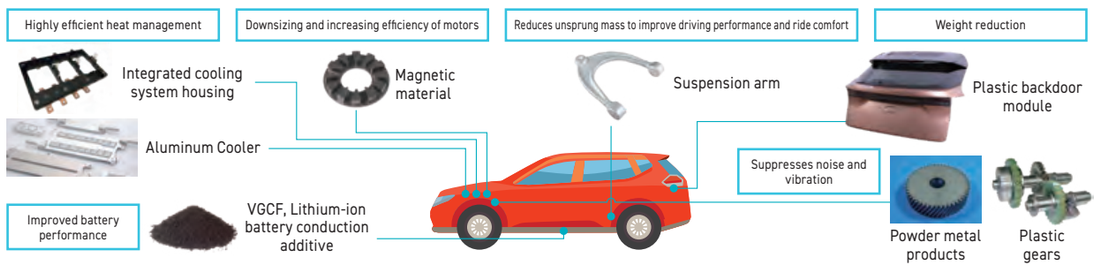
Technological Development Resonac is Focusing On

Acceleration	Steering	Braking
● Development of next-generation heat management system for efficient cooling ● New development of next-generation motor cores that do not use electromagnetic steel sheets ● Development of unique high-strength materials and plastic gears utilizing organic fibers and thermosetting resin	● Material innovation from steel to aluminum through our alloy technology ● Development of lightweight, high-strength aluminum suspension arms ● Development of linkage parts using aluminum suspension arm technology	● Development of brake pads with excellent environmental performance that comply with EURO7 ● Popularization and expansion of green pads that are friendly to people and the planet ● Participation in the development of next-generation brake systems in collaboration with Tier 1 suppliers

Development of High-performance Disc Brake Pads for EVs

We have developed high-performance disc brake pads for EVs by making full use of our wide range of material technologies. They feature high braking performance and wear resistance, low environmental impact, and excellent low noise performance. With a view to mass production in 2026, we are providing samples to Tier 1 brake system manufacturers in Europe to evaluate the suitability of these products for electric brake systems.

Relationship Between Our Products and Daily Life



Business Strategies

Innovation Enabling Materials

Innovation Enabling Materials

Takafumi Sakurada
General Manager, High Performance Materials Business Headquarters

Please visit our website for more details.

Vision for the future (2030)

- Consistently create new materials and technologies as a vessel that supports the Group's innovation and enhanced competitiveness
- Consistently maintain profitability with an EBITDA margin of 15% or more as a leader in specific sectors

Issues to Be Addressed

- In next-generation semiconductor materials and promising domains, strengthen our development and manufacturing capabilities for organic and inorganic materials to be used as components in these domains
- Initiatives to improve profitability, such as the optimization of production lines and fixed costs, and portfolio revision with an eye to business growth backed by our competitive edge

Results in 2024	Plans for 2025
● Promoted the development of materials centered on next-generation semiconductor materials through in-house co-creation and identified commercialization barriers ● Achieved EBITDA margin target (17.9%) ● Year-on-year increase in sales and profit due to passing on soaring raw material prices to product selling prices and an increase in sales volume	● Deepen material development, primarily for next-generation semiconductor materials, through in-house co-creation and promote the commercialization of new materials ● Optimize management resource allocation aimed at creating new businesses and strengthening development capabilities, and establish a framework for efficient utilization ● Although demand is expected to remain strong, we forecast year-on-year sales growth but lower profit due to rising personnel costs

Initiatives to Strengthen Competitiveness and Examples

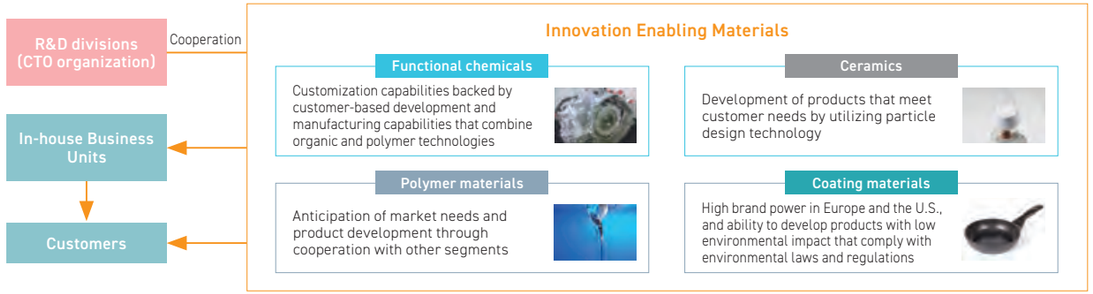
Strengthening On-site Capabilities Through the Promotion of DX and Citizen Development

In the manufacturing section of the Ceramics Business Unit , activities are being carried out to improve work processes through citizen development of RPA and BI tool apps that the operators themselves have learned and developed. These activities contribute greatly to safe and stable operations, ensuring absolute quality, and increasing production efficiency. In order to further expand these activities, the High Performance Materials Business Headquarters has established a DX Promotion Officer to strengthen cooperation with the CDIO organization. This is expected to expand beyond production departments to other operations and business units such as SCM, accounting, general affairs, development and sales, thereby improving customer convenience and contributing to the creation of businesses for the future.

Creation of Vaneetect, Vacuum Insulated Glass Sealing Agent That Enhances Environmental Performance (Low Melting-Glass)

Vaneetect, which enables sealing at low temperatures and does not contain substances restricted by the RoHS Directive, is used as a sealing material for vacuum insulated glass (VIG), which is becoming increasingly popular in building construction. We expect this to improve environmental performance by lowering energy consumption during VIG production, reducing CO_2 emissions by shortening processing times, improving the insulation performance of window glass, and enabling glass recycling. In collaboration with R&D divisions, we are also studying its application to sealing and bonding for electronic devices and sensors.

Relationship Between Our Products and Daily Life



Business Strategies

Chemicals

Basic Chemicals

Hiroshi Adachi
General Manager, Basic Chemicals Business Unit

Please visit our website for more details.

Vision for the future (2030)

- Stably supply products that support the daily lives and social infrastructure in the Tokyo metropolitan area
- Contribute to realizing a decarbonized society and circular economy through the promotion of plastic chemical recycling and carbon neutrality
- Co-create on the global stage based on our technologies as a leading urban chemical park in Japan

Issues to Be Addressed

- Thorough implementation of measures to strengthen our supply system with the aim of ensuring the stable supply of products that support the daily lives and social infrastructure
- Acceleration of cutting-edge initiatives utilizing our technologies geared toward achieving a decarbonized society
- Expansion of our contribution to realizing a circular economy by supplying products derived from plastic chemical recycling

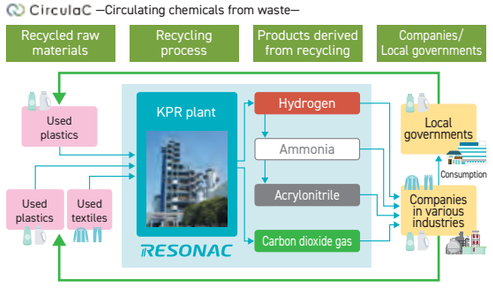
Results in 2024	Plans for 2025
● Demand remained strong. Profit decreased despite having passed on raw material price increases to selling prices for some products ● Continued to implement planned maintenance as part of our efforts to strengthen our supply system ● To meet strong demand, expanded facilities for sodium hypochlorite for tap water and sewerage and liquefied carbon dioxide, which support the infrastructure vital to people's daily lives	● Demand expected to remain strong ● Although raw material and fuel prices are expected to continue soaring, we will respond by passing on these increases to product prices, among other measures ● Launched new brand CirculaC, a circular business model for used plastics and textiles ● Promotion of examining plans aimed at decarbonization and improved recycling, such as fuel conversion of power generation facilities and increasing the mixture ratio of raw materials derived from used plastics

Initiatives to Strengthen Competitiveness and Examples

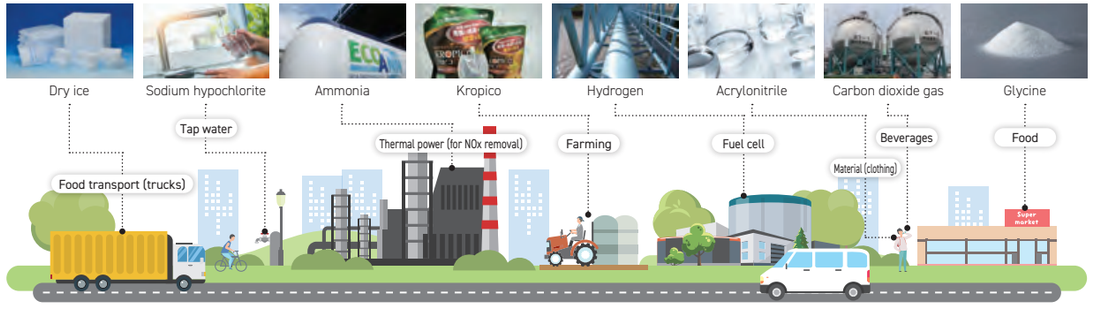
Launched CirculaC, a Circular Business Model for Used Plastics and Textiles

We launched CirculaC, a circular business model for used plastics and textiles. This is a new brand expanding the circle of resource circulation with the aim of realizing a sustainable future. In 2003, we established technology to recycle used plastics into hydrogen and carbon dioxide at the Kawasaki Plant, and by January 2023, we processed over one million tons of plastic in total. Going forward, we plan to sell these products under the CirculaC brand and expand resource recycling through co-creation with external partners. We aim to help build a sustainable society with an eye to achieving carbon neutrality.

Related article:



Relationship Between Our Products and Daily Life



Business Strategies

Chemicals segments

Graphite

César Castiñeira
General Manager, Graphite Business Unit

Please visit our website for more details.

Vision for the future (2030)

- We supply industry-leading Graphite Electrodes and Electric Arc Furnace (EAF) optimization services to steelmakers around the world, supporting the transformation to sustainable steel production and economic growth
- We supply synthetic graphite products for use in multiple industrial applications, promoting decarbonization in the manufacturing process.

Issues to Be Addressed

- Achieving a stable profit structure
- Optimizing product mix in response to expansion of electric furnace market
- Evolving into a business model that offers electric furnace optimization services
- Growing global demand for large-diameter electrodes, reducing carbon emissions in steelmaking, and addressing energy efficiency challenges

Results in 2024	Plans for 2025
● Both sales volume and price decreased due to the weak market condition, resulting in the decrease in operating income; operating loss reduced due to a reversal of inventory write-downs ● Accelerated the integration of AMI's automation solutions to enhance EAF efficiency and optimize electrode consumption ● Expanded renewable energy usage, implemented waste reduction projects, and strengthened data-driven operational efficiencies ● Advanced local production/local consumption strategies to reduce transport-related emissions	● Implement measures to improve profit margin ● Advance/Expand AMI-powered digital optimization at scale to further enhance productivity and energy efficiency in EAF operations ● Expand local supply chains to reduce logistics-related emissions ● Develop new AI-driven automation solutions to support more sustainable steel production

Initiatives to Strengthen Competitiveness and Examples

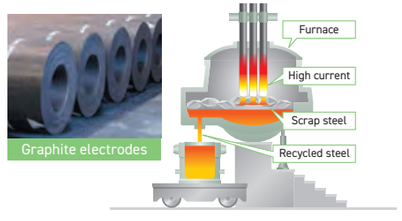
We leverage our unique strengths and competitive advantages to solidify our position as a world-class functional chemical company and a leader in the global graphite electrode market.

- Advancing Sustainable Steelmaking: Resonac is leading the global push for decarbonization as demand for large-diameter Graphite Electrodes in EAF steelmaking accelerates
- Global Production with Local Impact: With production sites in every region worldwide, we maintain strategic inventories to ensure consistent operations and reliable delivery
- Local Production for Local Consumption: Our strategy prioritizes producing close to our customers, reducing emissions, improving efficiency, and enhancing supply chain resilience
- Innovation & Digitalization: The AMI Automation acquisition enhances internal digital transformation while providing advanced Graphite Electrode optimization solutions to customers
- Sustainability: Driving positive impact for society and the environment through expanded renewable energy use

Evolving value proposition through synergies with AMI

The integration of Resonac's Graphite Electrode expertise with AMI Automation's world-leading EAF automation technology strengthens our ability to deliver comprehensive, value-added solutions tailored to the evolving needs of the steel industry.

Beyond product integration, we are also co-developing tailored service offerings with AMI — from EAF startup support to best practices in GE handling. These services are particularly relevant for customers entering the EAF space for the first time, reinforcing our role as a full-scope partner.



Relationship Between Our Products and Daily Life

Graphite Electrodes (GE) are essential to sustainable steelmaking. Traditionally used for melting scrap steel in EAFs, they are increasingly vital in the production of new steel from Direct Reduced Iron (DRI), especially in regions transitioning to low-carbon methods. Whether for recycled or new steel, GE remain critical to decarbonizing the industry.