

R&D Activities and Intellectual Property

As a technology-centered company, we realize that strengthening R&D capabilities is one of our most important management strategies for achieving sustainable growth. Through research based on advanced technological capabilities and dialogues with our markets, we develop and offer innovative, market-creating products and rapidly resolve customer's technological issues.

Pressure-sensitive adhesive applications

Through the development of pressure-sensitive adhesives and substrate and the combination of related technologies, we are expanding the range of fields in which the basic functions of pressure-sensitive adhesive products are utilized.

Material quality and functionality enhancement

Through the chemical and physical processing of paper, film, and pressure-sensitive adhesives, we are enhancing their characteristics and adding new functionality.

Our Four Core Technologies

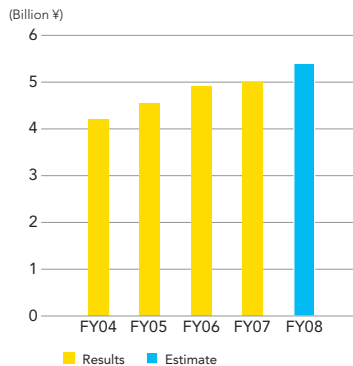
Specialty paper and composite materials production

We use original papermaking technologies and coating, impregnation, and laminating technologies to develop specialty papers and high-value-added materials that transcend traditional concepts of paper.

System development

Through systematizing machinery and equipment and building high-level systems that draw on the distinctive characteristics of materials, we are providing advanced solutions.

R&D Expenses



R&D Laboratory



Ina Technology Center

R&D Activities

BASIC POLICY

As a technology-centered company, developing innovative products that generate demand and offering solutions based on these products drives our growth. We have built our preeminent market position by advancing and linking individual technologies for pressure-sensitive adhesives and other areas to add further value to our sheet materials and increase their applications. At the same time, we are stepping up the pace of our product development through research and development that addresses the needs of customers by maintaining a constant dialogue with our markets.

In the fiscal year under review, the Lintec Group invested a total of ¥5.0 billion in R&D, which comprised continued technology development and active development of new products based on its medium-to-long-term R&D plan.

ORGANIZATIONAL STRUCTURE

With approximately 180 research staff, the Technology Administration / R&D Division's laboratory in Saitama Prefecture plays a central role in our R&D activities. Fully equipped with the most up-to-date research devices as well as pilot coaters and clean-room facilities, the laboratory develops a range of coating agents through close collaboration with production engineering divisions.

Our equipment development and manufacturing facility, the Ina Technology Center in Saitama Prefecture is focusing on bolstering systems for the development and production of semiconductor-related equipment. Moreover, the Group also has an R&D base in Boston, in the United States, which conducts research and development in such areas as industrial-use multilayer materials and coating technology.

TECHNOLOGICAL FOUNDATIONS

Our technological foundations comprise materials development technologies for agents, including pressure-sensitive adhesive agents, release agents, and various kinds of surface coating agents; compounding technologies and precision coating technologies for these coating materials; and technologies for producing specialty papers, equipment development, systemization, and other applications.

Supported by data that we have accumulated over many years of research, we develop and supply industry-leading pressure-sensitive adhesive-use technology and products. We also develop many types of devices for the application and removal of our products. This ability to provide total solutions is Lintec's major strength.

Through such initiatives to develop materials and equipment, we intend to add further value to our sheet products and extend their range of applications.



EXAMPLES OF R&D ACTIVITIES IN THE FISCAL YEAR UNDER REVIEW

Semiconductor field

We have developed new tapes for IC chip mounting and stacking that also function as dicing tapes. These new products include tapes that can attach chips to uneven circuit boards as well as tapes that can accommodate wire protrusions and be used with same-size stacked package chips. We expect increasing adoption of these products.

Healthcare field

We have established basic technology for the creation of film pharmaceuticals that are easy to swallow because they become a jelly on contact with small amounts of saliva. These films are suitable for patients that have difficulty swallowing, such as the elderly or young children. We are working with several pharmaceutical companies to develop the films as therapeutic agents.

RFID field

We have developed label materials and systems technologies that enable repeated non-contact printing and deleting through the use of laser beams. With a view to applying this technology in the RFID field, we have developed an adhesive label-type IC tag on which printed information can be rewritten.

Environment-related field

We have developed environment-friendly label materials, which include new labels using biodegradable plastic film. Further, we have increased the introduction of release agent and adhesive agent coating processes that do not use organic solvents.



Intellectual Property

We aim to increase corporate value by supplying original products developed through our continuous R&D efforts. These products constitute our intellectual property and are important management resources.

To protect these resources, we have established the Intellectual Property Department within the Technology Administration / R&D Division. The department's fundamental functions are to support operational activities through patent applications and to build barriers to protect intellectual property.

The department works to increase the freedom of operational activities, minimize the risks accompanying operations, and increase motivation levels among technical staff. In addition to preparing and submitting patent applications, it monitors for infringement of rights and

consults with researchers in the early stages of product development and also in the discovery stage at our R&D locations. In other words, the department is engaged in comprehensive and strategic activities to protect our intellectual property.

As well as increasing the number and quality of patent applications and rights acquisitions, we are working to supplement and rebuild our portfolio of patents for growth businesses and foundation businesses, to provide intellectual property support for operations shifting to overseas locations, and to train more employees with a view to advancing and accelerating development processes. Through those efforts, we aim to increase profitability based on our intellectual property.

■ AT THE FRONT LINE OF RESEARCH

DEVELOPING NEXT-GENERATION TECHNOLOGY

COMBINING RFID AND NON-CONTACT REWRITABLE TECHNOLOGIES

We develop and produce high-quality IC tags by drawing on our original pressure-sensitive adhesive technologies as well as technologies for fine processing, circuit design and production, and IC chip mounting accumulated over many years of product development. Among the many frequencies of IC tags available, the 13.56 MHz type IC tags are most suitable for communication over short distances.

Consequently the 13.56 MHz frequency is becoming increasingly common for individual product management. The design and manufacture of 13.56 MHz tags and antennas is considered difficult because these tags are unlike UHF bandwidth tags, which rely heavily on the performance of IC chips.

Boasting a wide array of unrivaled technological capabilities, Lintec views those challenges as a business opportunity and has actively invested management resources to establish technological superiority. Our leading-edge tag technologies are already used for a number of purposes,



System that uses laser beams to rewrite or delete information in just a few seconds



Resin-mold-type tag that enables non-contact rewriting and deletion of information and offers increased durability

such as for lending management systems at libraries and the management of rental products. We look forward to significantly higher demand in the future.

In other initiatives, in 2006, we developed label materials and systems technologies that enable repeated non-contact printing and deleting using laser beams. Applying this revolutionary technology to IC tags enables the repeated use of tags with barcodes or identification numbers printed on their surfaces without having to remove the tags from containers or other items. At present, we are engaged in fast-track R&D efforts to realize the early commercialization of non-contact rewritable technology in the RFID field, including efforts to increase the durability of printing surfaces. If successful, those efforts will result in a dramatic leap in the potential uses of 13.56 MHz tags.