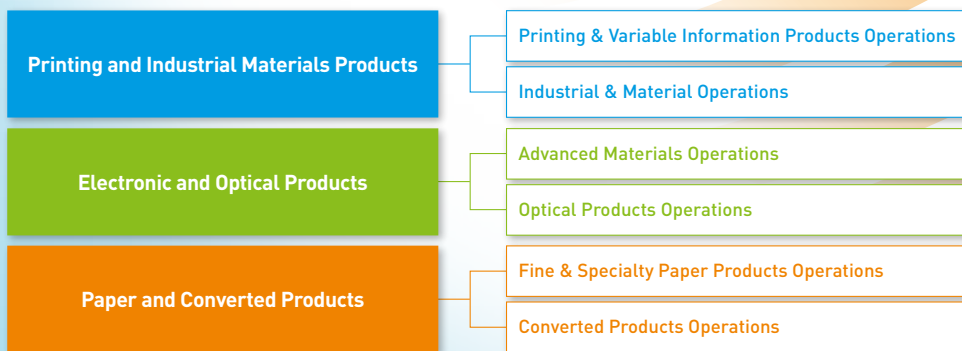


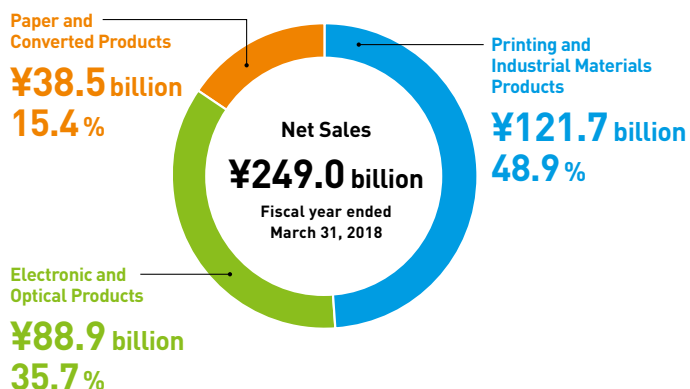
# LINTEC's Value Creation

Working at the leading edges of its fields, LINTEC has combined original technologies fostered over many years to develop numerous groundbreaking products. Under the Business Administration Div., six operations bring these products to market and help address issues in a variety of industries.

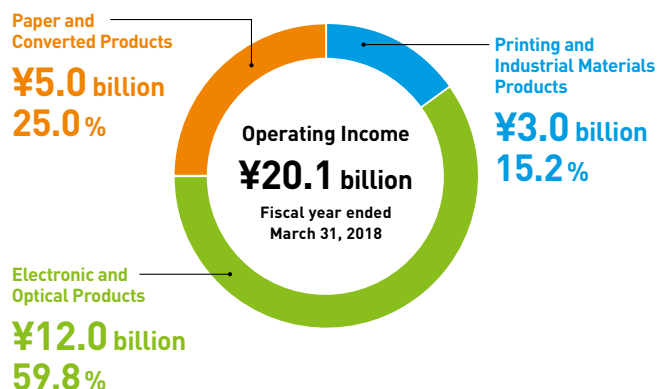
Note: Based on the similarities of their products, technologies, and markets, the Group's six operations are classified into three segments—Printing and Industrial Materials Products, Electronic and Optical Products, and Paper and Converted Products.



Share of Net Sales by Segment



Share of Operating Income by Segment



Note: Operating income composition data is based on figures before the elimination of intra-segment transactions.

## A Message from the Executive General Manager, Business Administration Div.

Regarding consolidated business results in the fiscal year ended March 31, 2018, which was the first fiscal year of our LIP-2019 medium-term business plan, overall we largely reached our initial numerical targets. This performance was thanks to each operations' efforts to advance measures steadily in accordance with the plan and rigorously discover what customers really need. In the current fiscal year, the plan's second year, we will proactively advance measures to tackle several tasks that we were unable to finish in the first fiscal year. At the same time, we will accelerate efforts to develop and offer new products.

First of all, we view rebuilding overseas subsidiaries that are unprofitable as urgent task. Last year, we began radically rationalizing the management of MADICO, INC., and its figures are beginning to reflect the benefits of this effort. Further, PT. LINTEC INDONESIA has been recovering since a labor issue lowered its production volume, and we will continue improving the company's profitability. Also, we are taking various steps to rapidly create synergy benefits with MACTAC AMERICAS, LLC, acquired in 2016. These steps include introducing personnel to the subsidiary.

Meanwhile, markets in Japan in which we offer adhesive products for labels and products related to construction materials and automobiles do not have high growth rates. Nonetheless, these are still large markets. We will heighten

### Makoto Hattori

Director, Managing Executive Officer, Executive General Manager, Business Administration Div.



the profitability of products—even if they are existing products—by thoroughly analyzing how to increase profit based on the ways we sell, manufacture, or handle them. Further, with our sights set on the plan's final year and beyond, we will plan and offer new products and ideas to unearth demand.

Other new initiatives include our launch of the SDGs Committee in February this year with the aim of helping address social issues through mainstay operations. Naturally, environmental measures are an important focus for us as a manufacturer. In my capacity as the officer in charge, I also intend to create new businesses that contribute to the realization of non-environmental SDGs.

# At a Glance

## ■ Printing and Industrial Materials Products

### Printing & Variable Information Products Operations

Accounting for approximately 35% of the sales of the LINTEC Group, these are its largest operations. They manufacture and sell the Group's mainstay adhesive papers and films for labels. In particular, these operations have an approximately 60% share of Japan's market for adhesive films, which have particularly high added value. Overseas, we increased the scale of operations by expanding our manufacturing and sales network in China and Southeast Asia and by taking measures that included acquiring U.S. company MACTAC AMERICAS, LLC in 2016.

### Industrial & Material Operations

These operations manufacture and sell an extremely wide range of products, from window films with various functions such as cutting out heat and ultra-violet light when they are attached to building and automobile windows through to motorcycle- and automobile-use adhesive products for such applications as vehicle body decoration and protection, industrial-use adhesive tapes for bonding components in mobile and other devices, labeling machines for automated labeling, films for outdoor signs and advertising, and decorative films for interiors.

## ■ Electronic and Optical Products

### Advanced Materials Operations

In recent years, these operations have grown significantly. We are building a unique position in the electronics industry with products such as specialized adhesive tapes that are essential in semiconductor chip manufacturing and mounting processes, and we also make equipment that leverages these tapes' special features fully. In addition, we produce and sell release films that are crucial in the production of multilayer ceramic capacitors, which are electronic components.

### Optical Products Operations

We deploy our development technologies for special adhesives and surface coating agents as well as precision coating technology and use leading-edge production facilities to provide adhesive processing for various types of optically functional films, such as polarizing films and retardation films that are used in LCDs and organic light-emitting diode (OLED) displays. We also undertake surface improvement processing for polarizing films, such as antiglare hard coat processing, which protects films from scratches and reduces reflectivity.

## ■ Paper and Converted Products

### Fine & Specialty Paper Products Operations

We have the leading share in the Japanese market for color papers for envelopes and colored construction papers. We also manufacture and sell specialty papers including oil and water resistant papers used in food packaging, dust-free papers for use in places such as clean rooms, high-grade printing papers with special textures, and high-grade papers for paper products used in business cards and postcards. Currently, these operations are centered on Japan. Going forward, however, we will also concentrate on sales activities with a view to increasing sales overseas.

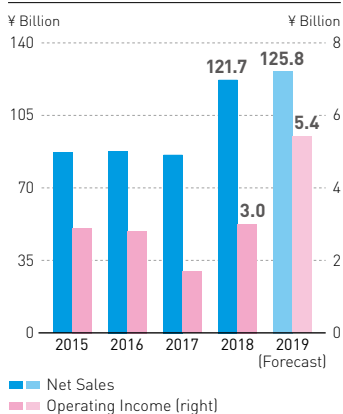
### Converted Products Operations

We endow papers and films with special functions, such as releasability and resistance to water, heat, and abrasion to create release papers and films that protect the adhesive surfaces of a variety of adhesive products. We also produce casting papers that are used as patterning papers for placing designs on synthetic leather and casting papers used in the manufacture of carbon fiber composite material sheets from fibers.

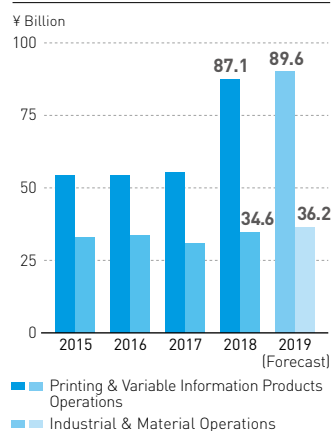
[Fiscal year ended / ending March 31]



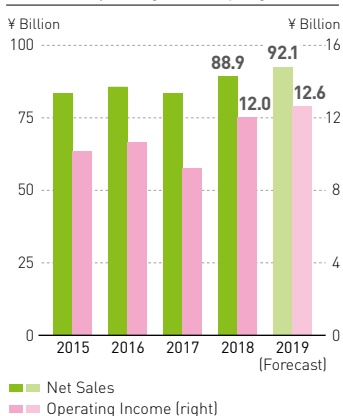
**Net Sales / Operating Income by Segment**



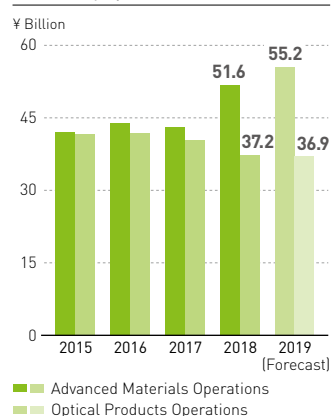
**Net Sales by Operations**



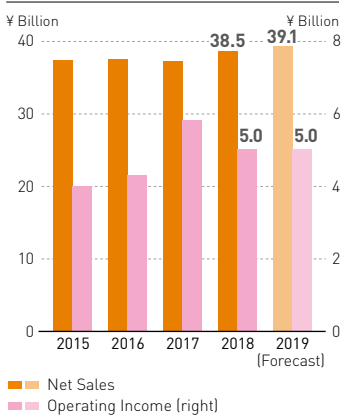
**Net Sales / Operating Income by Segment**



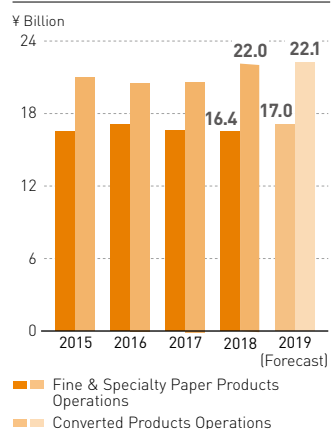
**Net Sales by Operations**



**Net Sales / Operating Income by Segment**



**Net Sales by Operations**



# Printing and Industrial Materials Products

## Main Products

### Printing & Variable Information Products Operations

- Adhesive papers and films for labels

### Industrial & Material Operations

- Window films
- Automobile-use adhesive products
- Industrial-use adhesive tapes
- Labeling machines
- Films for outdoor signs and advertising
- Interior finishing mounting films

## Printing & Variable Information Products Operations



**Masaaki Yoshitake**

Executive Officer  
Executive General  
Manager, Printing &  
Variable Information  
Products Operations  
Business  
Administration Div.

Although Japan's market for adhesive papers and films for labels has matured, LINTEC claims a large share of it by catering painstakingly to client companies' exacting quality requirements. In the fiscal year ended March 31, 2018, we continued proactively unearthing new demand and expanding our market share. In particular, we grew sales of adhesive films centered on campaign labels and eye-catching labels.

On the other hand, in North American and European markets our brand profile is still not high enough. Further, our client base in Asian markets primarily comprises Japanese companies. Going forward, as well as leveraging our strengths through the provision of high-value-added products to the industrial field, we must boost sales in the fields of daily necessities, food, and distribution with a focus on offering high-end products. As part of such efforts, we are actively increasing the visibility of the LINTEC brand by displaying at expos. Further, I believe that another important task under the medium-term business plan is to expedite the realization of synergy benefits with MACTAC AMERICAS, LLC—which we acquired to establish a foothold for the strengthening of operations in the North American market.

## Industrial & Material Operations

In the fiscal year ended March 31, 2018, we saw a steep rise in domestic sales of labeling machines used at logistics and delivery centers in particular as the Internet mail-order sales market continues to grow. Further, we will endeavor to strategically grow orders that are focused on 2020, mainly through our lineups of films for indoor and outdoor signs and decorative films for interiors and exteriors.

Overseas, I believe strengthening the systems of window film businesses will be a major theme going forward. In North America, we are rebuilding manufacturing subsidiary MADICO, INC., and accelerating the marketing of new products. As for Southeast Asia, we are concentrating efforts on strengthening our network of distributors centered on products for automobiles while heightening recognition of the LINTEC brand. Also, we have to increase the utilization rate of the clean coating facilities of LINTEC (THAILAND) CO., LTD. Motorcycle-use side stickers, automobile-use paint replacement films, protective films for aluminum wheels, and other automobile-use adhesive products are selling well in Southeast Asia and India, and we will continue growing sales of these product lineups to automobile manufacturers.

**Shuji Morikawa**

Director,  
Executive Officer  
Executive General  
Manager, Industrial &  
Material Operations,  
Business  
Administration Div.



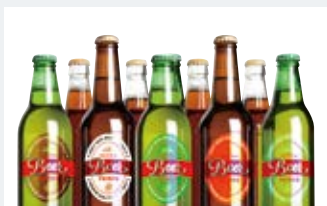
## SWOT Analysis

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Long record of supplying numerous customers and large market share centered on high-value-added products in domestic market</li> <li>• Ability to provide comprehensive solutions that combine adhesive products for labels and labeling machines</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• Sales networks, delivery capabilities, brand power, and price competitiveness in overseas markets</li> <li>• Profitability of manufacturing subsidiaries in the United States and Indonesia</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Expected new demand for products with approach of 2020</li> <li>• Southeast Asia's favorable market and stable growth of U.S. market</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Deceleration of growth in domestic market overall and possibility of major overseas manufacturers' full-scale forays into domestic market</li> <li>• Emergence of local manufacturers in Southeast Asia's market and other markets and intensification of competition</li> </ul>

### TOPICS



MACTAC AMERICAS, LLC



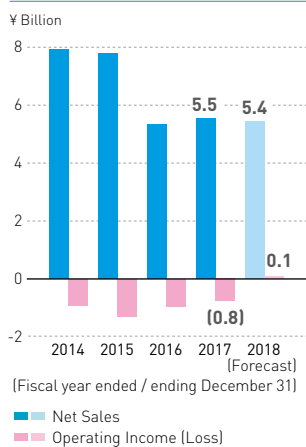
LMGP brand adhesive films

### The Significance of Acquiring North American Adhesive Products for Labels Manufacturer MACTAC AMERICAS, LLC

Acquired in 2016, MACTAC AMERICAS, LLC, boasts the third largest share of the North American market and sales of more than ¥35.0 billion. Acquiring the company was a very large step forward for the LINTEC Group. As well as hot-melt adhesive formulation technology that realizes outstanding environmental and cost performance, the company has sales channels covering North America's vast market.

We will use this acquisition to rapidly create synergy benefits by leveraging these sales channels to increase sales of our high-value-added products in the North American market and by actively rolling out the products of MACTAC AMERICAS, LLC, in Southeast Asia and other markets outside North America. In May, at Labelexpo Southeast Asia 2018 in Bangkok, Thailand, we began a full-fledged rollout of the company's products in the Southeast Asian market under the LMGP (Lintec Mactac Global Products) brand. This product lineup has already established a track record in the region for such application areas as food.

### MADICO's Business Results



### The Rebuilding of Window Film Manufacturer MADICO, INC., an Urgent Task

LINTEC acquired the U.S. company MADICO, INC., in 1987. At the time, its head factory was in the Massachusetts. In response to a rapid increase in sales of PV backsheets, which was a new business area for MADICO, INC., the company acquired a window film manufacturer in Florida in September 2010. This allowed the Massachusetts production base to concentrate on the manufacture of PV backsheets. MADICO, INC., established a product supply system based on these two plants. However, in the year following this acquisition, prices fell and orders decreased for PV backsheets due to the rapid commoditization of solar panels. As a result, MADICO, INC., has been recording operating losses since 2012.



MADICO, INC.

At present, we are radically rationalizing management. In addition to withdrawing fully from the PV backsheets business last year, we have acquired new land and buildings in Florida. Plans call for establishing a new production base at the site and consolidating manufacturing facilities there. Moreover, MADICO, INC., is strengthening collaboration with functional films manufacturer VDI, LLC, acquired in 2016, to step up the development and marketing of new products. In the current fiscal year, MADICO, INC., aims to move into the black for the first time in seven fiscal years.

# Electronic and Optical Products

## Main Products

### Advanced Materials Operations

- Semiconductor-related adhesive tapes and equipment
- Multilayer ceramic capacitor-related tapes

### Optical Products Operations

- Polarizing films and retardation films (adhesive processing)
- Polarizing films (surface improvement processing)

## Advanced Materials Operations



**Takeshi Kaiya**

Executive Officer  
Executive General  
Manager, Advanced  
Materials Operations,  
Business  
Administration Div.

The fiscal year ended March 31, 2018, saw brisk demand for tapes and devices for the manufacturing processes of semiconductors and electronic components. This is attributable in part to significant growth in the markets for semiconductors and electronic components. However, we take pride in the fact that our current performance is also the result of uncompromising efforts to identify the needs of customers and markets based on our “always be No. 1” policy as well as the timely development and marketing of products.

With respect to semiconductor-related adhesive tapes and multilayer ceramic capacitor-related tapes, given that we have been operating at full capacity in recent years due to strong demand for our products, centered on those for high-end products, we are reforming our production system and ramping up production capacity. The challenge going forward will be to strengthen supply chain management even further with the aim of procuring stable supplies of base films—the raw material of our products—and ensuring reliable quality. To these ends, we are actively disclosing information to suppliers and seeking their cooperation.

## Optical Products Operations

In the fiscal year under review, although adhesive processing operations for films used in LCDs grew sales volume, selling prices and net sales decreased, partly reflecting the market entry of LCD panel manufacturers from China. We must build a structure that generates earnings consistently by reducing variable costs and fixed costs and by strengthening global operations among our manufacturing bases in Japan, South Korea, Taiwan, and the polarizing film manufacturer with which they collaborate.

Regarding products for organic light-emitting diode (OLED) displays, due to their structure these displays use fewer layers of polarizing film than LCDs use. Although the market is still small, orders have been increasing steadily. In preparation for the further spread and penetration of OLED displays, we will deepen partnerships with the aforementioned polarizing film manufacturer and explore the development of operations for new optically functional films.

**Shinji Ito**

Executive General  
Manager, Optical  
Products Operations,  
Business  
Administration Div.

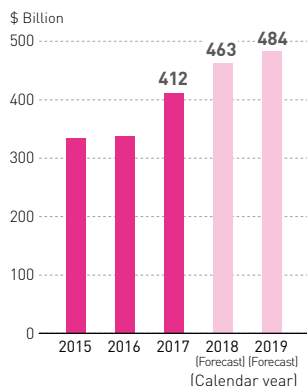


## SWOT Analysis

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Ability to provide comprehensive solutions that combine tapes and equipment used in semiconductor manufacturing and mounting processes</li> <li>• Long record of supplying numerous semiconductor and electronic component manufacturers worldwide and unique technological capabilities</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• Insufficient resources to cater to expanding electronics-related market and lengthening of delivery lead times for certain equipment</li> <li>• Sluggish growth in new businesses following on from businesses related to semiconductors, electronic components, and LCDs</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Expansion of electronics-related market due to such factors as spread of IoT and increasing use of electronics in automobiles</li> <li>• Technological innovation in relation to semiconductor packages, electronic components, and optical displays</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Lower product prices due to commoditization of electronic devices</li> <li>• Rapid deterioration of conditions in electronics-related market and exchange rate fluctuations</li> </ul>

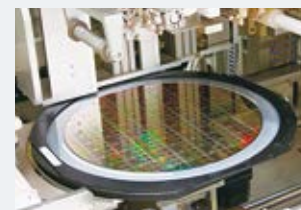
## TOPICS

### Trend Forecast for the Semiconductor Market



### Semiconductor-Related Tapes Continuing to Sell Briskly in a Booming Market

The future of the semiconductor market is very bright. It has broken a four-year “silicon cycle” of booms and busts to enter a “super cycle” thanks to the spread of the Internet of Things (IoT), which connects an array of things to the Internet; the introduction of next-generation, high-speed “5G” communications; and the increasing incorporation of electronic components in automobiles. The sales growth of Advanced Materials Operations in recent years was not only the result of the tailwind that the semiconductor market provided. A major driver of our performance was the continuous development and offering of wafer surface protective tapes that matched customers’ needs, enabling us to stake out a larger market share.



The designs of semiconductor chips and packages are evolving at a high pace. LINTEC’s mission is to offer new tape processes and thereby keep up with these advances. Through ongoing patent strategies and other initiatives, LINTEC will continue to expand its presence in the semiconductor-related tape market.



Polarizing films

### Enhancing Productivity and Commercializing New Materials

In April 2018, we reorganized the Optical Products Operations into two departments: the Global Management Dept. and the Functional Materials Dept. The role of the Global Management Dept. is to further heighten productivity and quality through global operations centered on manufacturing bases in Japan, South Korea, and Taiwan. Meanwhile, the Functional Materials Dept. will develop and market not only polarizing films but also functional materials that are compatible with new display structures.

Going forward, as well as enhancing productivity through the strengthening of partnerships with polarizing film manufacturers, we have to focus efforts on expanding businesses for optical-related components other than polarizing films. These include light diffusion films that heighten the visibility of displays and high-barrier films that provide an alternative to glass. For such films, we have already established materials with sufficient properties. Therefore, we will proceed steadily toward commercialization through such steps as the establishment of mass production processes.



Reflective LCD using LINTEC’s light diffusion film (right)



# Paper and Converted Products

## Main Products

### Fine & Specialty Paper Products Operations

- Color papers for envelopes
- Colored construction papers
- Special function papers
- High-grade printing papers
- High-grade papers for paper products

### Converted Products Operations

- Release papers for adhesive products
- Release films for optical-related products
- Casting papers for synthetic leather
- Casting papers for carbon fiber composite materials

## Fine & Specialty Paper Products Operations



**Toshimi Sugaya**

Executive Officer  
Executive General  
Manager, Fine &  
Specialty Paper  
Products Operations,  
Business  
Administration Div.

Fine & Specialty Paper Products Operations are facing extremely tough business conditions due to raw material price hikes and the recent decline in use of paper, which is shrinking the market. In response, in the fiscal year under review we grew sales of special function papers, such as oil and water resistant papers, dust-free papers, and base papers for total heat exchangers. This growth compensated for lackluster sales of mainstay color papers for envelopes, which account for approximately half of net sales.

At present, more than 90% of these operations' sales are in the domestic market. While we further grow domestic market share, in expanding operations our main challenge will be to develop markets overseas. Confident that demand for paper for food packaging will heighten as living standards rise in Southeast Asia, we will focus on increasing sales, including dust-free papers. Also, we will cater to the world's growing environmental awareness by increasing the use of forest-certified pulp, which contributes to appropriate forestry management. In addition, we will develop blended papers that use non-wood raw materials that used to be discarded as well as develop specialty papers that align with current initiatives toward eliminating the use of plastic.

## Converted Products Operations

In the fiscal year under review, we posted robust sales of release papers for electronic materials for smartphones, release films for optical-related products, and casting papers for synthetic leather. Although unit shipments of smartphones themselves are softening, the number of electronic components that they incorporate is rising as smartphone performances advance. Consequently, we expect continuing growth in demand for release papers and release films for high-end products. With respect to casting papers for synthetic leather, targeting particularly strong demand for automobile applications, we are working to grow sales worldwide by bolstering collaboration with distributors.

As for casting papers for carbon fiber composite materials, we have been facing difficult business conditions because demand for fuel-efficient aircraft has been decreasing due to low crude oil prices. Going forward, however, with production of such aircraft likely to rise, we are looking forward to a pickup in demand for the carbon fiber composite materials that are used in aircraft bodies. While continually reducing costs, in line with our basic strategy of differentiating quality and services to avoid the pitfall of pure price competition, we will continue to ensure sustained earnings by catering effectively to the needs of business clients.

**Yutaka Iwasaki**

Executive Officer  
Executive General  
Manager, Converted  
Products Operations,  
Business  
Administration Div.



## SWOT Analysis

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Large shares of domestic markets for color papers for envelopes and special function papers as well as capabilities for manufacture of variety of products in small lots</li> <li>• Outstanding release agent processing technologies and coating technologies</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• Sales networks, delivery capabilities, brand power, and price competitiveness in overseas markets for specialty papers</li> <li>• Sluggish growth in new products following on from color papers for envelopes, special function papers, and casting papers</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Increasing demand for high-value-added products in China and Southeast Asia</li> <li>• Growing environmental awareness in Japan and overseas</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Reduced demand for paper due to decline in use of paper</li> <li>• Soaring prices for key raw materials, including imported pulp</li> </ul>

### TOPICS



Oil and water resistant papers



Dust-free papers

### The Potential of Special Function Papers for Further Growth

LINTEC produces oil and water resistant papers by impregnating wood pulp with a special resin. This creates papers that curb seepages of oil or water while realizing high water-vapor permeability. Fast-food chains and convenience stores are increasingly using these products as wrapping paper for hot snacks. Further, we use a special resin that increases adhesion among pulp fibers to manufacture dust-free papers. Even when ripped, these special function papers produce very little dust. As the electronics industry grows, demand for dust-free papers is increasing for such applications as work instructions and process control sheets used at sites that manufacture semiconductors and precision machines.

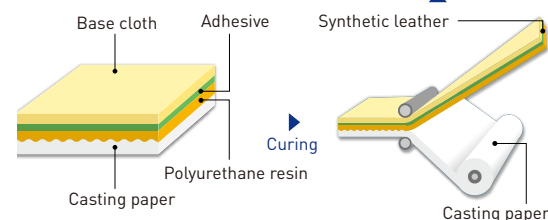
As well as the aforementioned products, which are the mainstays of our special function papers area, sales of base paper for total heat exchangers have been growing recently. China and other countries are seeing the increased introduction to homes and office buildings of total heat exchangers, which simultaneously ensure the cleanness of indoor air and save energy. Given that their outstanding moisture absorbency and flame retardancy have earned LINTEC's products a strong reputation for use as filters in these exchangers, we will continue proactively offering solutions to manufacturers of air conditioners. We believe that further development of markets in such special function papers areas will become a major driver of Fine & Specialty Paper Products Operations.

### Casting Papers for Synthetic Leather—A Pillar of Converted Products Operations

In addition to existing applications for bags and footwear, the use of synthetic leather for automobile interiors is growing. At LINTEC, we are selecting designs best suited to automobiles and concentrating on sales promotion. At the same time, our manufacturing subsidiary in Suzhou, China, is establishing a new embossing method with a view to creating a wider variety of designs. Meanwhile, in China—the world's largest market for casting papers for synthetic leather—the competitive environment is changing as the number of synthetic leather manufacturers decreases while the number of casting paper manufacturers who compete with LINTEC increases. By stepping up collaboration with distributors, we will firmly secure and expand our market share.

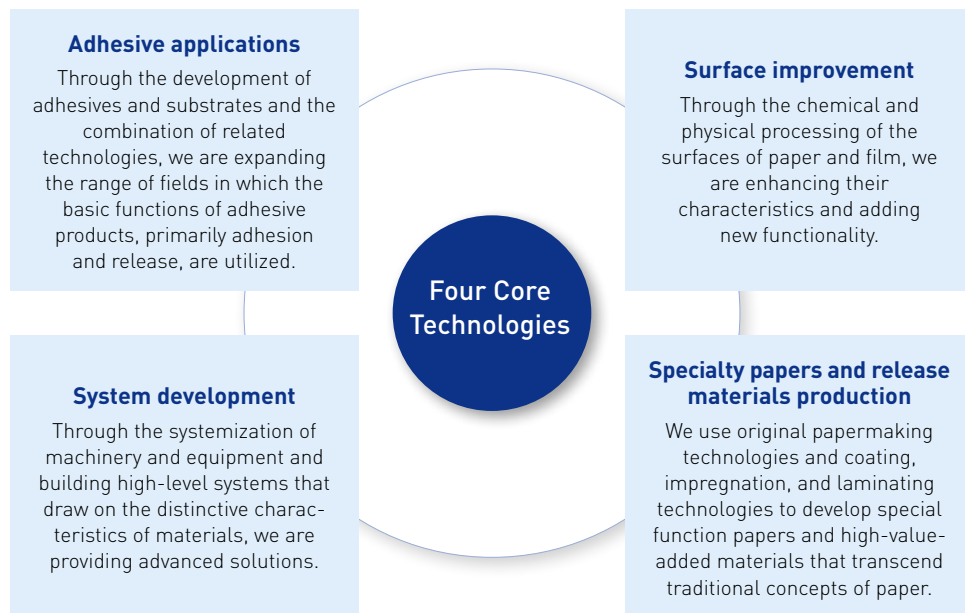
#### Use of Casting Papers for Synthetic Leather Production

Casting papers coated with resins are affixed to a base cloth, and then dried and removed to imprint synthetic leather with patterns.



# Research and Development

As a technology-centered company, we realize that strengthening R&D capabilities is one of our most important management strategies for achieving sustainable growth. Two approaches help us to create both products that resolve our customers' diverse technological issues and products that are unprecedented, innovative, and lead the market: the developing of functional materials and related processing technologies that leverage our proprietary technological capabilities and a market-dialogue style of research that emphasizes customer needs. Going forward, we will further strengthen our R&D structure to accelerate the speed of product development and create new technologies.



## Research and Development Structure

The research center of the Research & Development Div. is the core base for the Group's R&D activities. The center has not only state-of-the-art research facilities but also a clean room with the same semiconductor-related equipment that is found in the production environment of our customers. The completion of the Advanced Technology Building near existing facilities in Saitama in 2015, with its large-scale pilot coaters that closely resemble plant mass production facilities, provided a structure for smooth flow from R&D to mass production. The center mainly comprises the Product Research Dept., which develops products directly connected to our current business, and the New Materials Research Dept., which conducts R&D with a focus on the future.

Approximately 200 research personnel are engaged in day-to-day research on these themes. In addition, the Nano-Science & Technology Center in Texas, the United States, is engaged in research in new fields outside our current technology domain.



Large-scale pilot coater

## R&D Policy

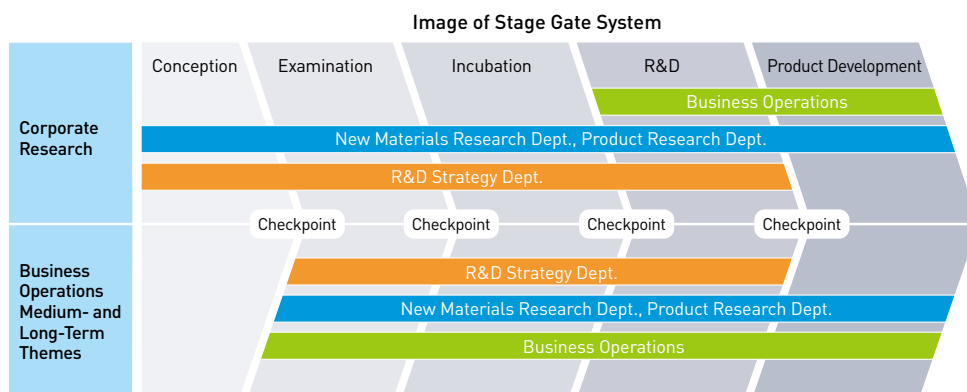
We are pursuing R&D to ensure that our focus themes make a real contribution to strengthening the competitiveness of existing businesses and creating new businesses and products. LINTEC is working to improve development efficiency based on two keywords: "front-loading design," which entails scrutinizing customer needs and development processes from the initial R&D stages, and "one-stop development," in which new materials and mass production processes are developed in parallel. In April

2017, we brought the R&D Strategy Dept., which advances the creation of new businesses and other initiatives, under the wing of the Research Center. We have established an R&D scheme, called the "Stage Gate System," which facilitates coordination among the R&D Strategy Dept., the New Materials Research Dept., the Product Research Dept., and business operations. Under this scheme, we are taking steps to speed up the creation of new products.

### The Stage Gate System

Under this system, R&D themes are divided in the five stages of conception, examination, incubation, R&D, and product development, and gates are set up as checkpoints when moving to each of the next stages. Screening is performed at each checkpoint to determine whether to advance the theme or cancel it.

The aim is to steadily and quickly give shape to each theme, preventing setbacks in development through full verification at key points. Through close coordination between the Research Center and respective business operations, we are creating new value in response to customer needs and evolving markets.



## Intellectual Property Activities

LINTEC aims to increase corporate value by developing original products that fully satisfy customer needs. We therefore position intellectual property, including patents, trademarks, and design rights acquired through these development activities as important management resources. While placing the utmost emphasis on respecting the rights of other companies, the Intellectual Property Dept. of the Research & Development Div. coordinates with respective operations and R&D departments in promoting Companywide and strategic intellectual property activities. These activities aim to increase and improve intellectual property rights, which are the lifeblood of LINTEC given that it is a technology-centered company.

By such means as building a patent portfolio for our foundation and growth business domains and securing intellectual property in step with the globalization of our business, we aim

to increase profitability based on intellectual property that has high business value.

### Number of Patents

