ULVAC's Vision

Vacuum Equipment
Business (1)
FPD and PV Production Equipment

Creation of growth drivers and profit-oriented cost structure reform to achieve further growth

We have been working to create growth drivers and achieve profit-oriented cost structure reform since the previous year. By further promoting these initiatives, we will not only provide customers with superior products and technologies but also promote development and sales of new products for growth markets, thus expanding ULVAC’s share of the market for FPD, PV and high functional films.

Yasuo Shimizu
General Manager of FPD-PV Division

Maintenance high market share by receiving orders for LCD production equipment for large-screen TVs and OLED production equipment for smartphones in China. Regarding LCD for large-screen TV, device manufacturer rapidly expanded capital expenditures for G10.5 that is capable of producing multiple 65- or 75-inch panels from one substrate. Capitalizing on abundant experience in supporting the trend toward large screens in the TV market, ULVAC introduced sputtering equipment offering superior productivity ahead of competitors and engaged in continuous improvement programs, maintaining an overwhelming share of this market segment.

Furthermore, regarding equipment for OLED, a key measure of the growth strategy, we won repeated orders for evaporation equipment from smartphone panel manufacturers in China. Regarding vacuum equipment for printed OLED TV, which are promising next-generation large-screen TVs, the launch of the business proceeded well and we took an important step in the expanding OLED market. With regard to high-capacity lithium-ion batteries, whose market is expected to enjoy strong growth along with the TV market, we have advanced from the basic development phase for metal lithium vaporization technology to the phase for examination of pre-production technology with a leading manufacturer and expectations rose regarding the market launch of ULVAC’s roll coater for lithium-ion batteries.

FPD capital expenditure trends

Orders received (Billions of yen)

New products supporting the smart society in the FPD market, owing to the trend toward lower prices because panel supply capacity greatly exceeded demand, investment in LCD production equipment is expected to be soft in the near term. However, in view of the demand for flexible OLED with a high degree of design flexibility as the interface of choice in the smart society driven by 5G and IoT, companies are competing in the development of such displays. Compared with LCD, flexible OLED is characterized by light emission, wide viewing angle, and high contrast. Their application is expected to grow in various fields, such as for automotive displays indispensable in the era of “connected cars.” In line with the strengthening of environmental regulations across the world, electrification of cars will be facilitated and various preferential measures are expected to spur expansion of the lithium-ion battery market. ULVAC is aiming for the No. 1 market share by developing new next-generation sputtering equipment for OLED, organic evaporation equipment for OLED, and roll coaters for lithium-ion batteries. Moreover, although robust market growth of the production equipment for solar cells, a promising source of renewable energy, is expected to continue centering on China, price competition is fierce. Therefore, we will switch to production in China to enhance competitiveness.

Recognized Business Opportunities

1. Expansion of the medium-sized OLED market
2. Expansion of new display applications and of the lithium-ion battery market in the smart society
3. Robust growth of the solar oil production equipment market of China

Conceivable Risks

1. Delays in development of technically challenging technology for new applications and markets
2. Downward trend of the Chinese market
3. Intensifying competition and market entry of Chinese manufacturers of low-priced equipment

ULVAC positions PCRAM and the logic/foundry market share as the inter-locking pillars of revenue, and advance global business development by continuing to capitalize on investment trends in the semiconductor market. To accomplish this, we will endeavor to seize business opportunities based on our growth strategy emphasizing responsiveness to the needs and trust of customers.

Our objective is to grow the semiconductor production equipment operation as one of ULVAC’s primary pillars of revenue, and advance global business development by continuing to capitalize on investment trends in the semiconductor market. To accomplish this, we will endeavor to seize business opportunities based on our growth strategy emphasizing responsiveness to the needs and trust of customers.

Tomoyasu Kondo
Executive Officer, General Manager of Semiconductor Equipment Division

Preparation is underway and aligned with the business strategy despite temporary postponement of investment by memory manufacturers. Whereas memory manufacturers made vigorous investments in 2017 and 2018, many of them are temporarily postponing investment due to oversupply and price declines of memory products since the end of 2018. However, investment is expected to resume moderately from 2020 onward and we are steadily preparing for that.

In the logic/foundry market, several major customers recently adopted our sputtering equipment for the process step that requires extreme ultraviolet lithography (EUV) and we were able to establish a foundation for future growth.

Regarding the sputtering process of PCRAM non-volatile memory, which has good prospects for future market growth, our equipment is being adopted not only by existing customers for their new lines but also for development and pilot lines by all other customers who are planning mass production.

To build on these gratifying accomplishments and progress, we are promoting initiatives to further reinforce the foundation for growth by strengthening sales & marketing, production, and customer support systems.

Increase market share in the semiconductor production equipment market that is continuing to grow in the smart society.

The requirements of semiconductor devices and related components are evolving to support the emergence of IoT’s big data demand and servers for edge computing. Growth opportunities are increasing not only for traditional DRAM and NAND but also for storage-class memory consisting of non-volatile memory. Miniaturization is fueling innovation in processor technology. Amid these technical innovations in semiconductors, in addition to NAND and DRAM memory, ULVAC positions PCRAM and the logic/foundry business as the axes of growth.

We will focus on growth engine keywords: “Miniaturization process requirements,” “Nonvolatile memory deposition,” “Wafer level package deposition,” and “Logic/foundry miniaturization mass production support.” Based on a business growth strategy unique to ULVAC, we will pursue business development different from other major competing equipment manufacturers.

As for mid-term strategic products, we are promoting the development of leading-edge technologies that leverage our strengths in the native oxide removing system and sputtering system.

Recognized Business Opportunities

1. Full-scale mass production of leading-edge 7-5nm logic devices
2. Innovation processes for leading-edge DRAM and 3D-NAND products and change in materials
3. Expansion of wafer level package deposition process
4. Mass production of PCRAM

Conceivable Risks

1. Intensifying of competition
2. Stagnation growth of the leading-edge device market
3. Delay in expansion of the PCRAM market

Measures for Reducing Risks and Maximizing Opportunities

1. Develop products by embracing customer requirements through meticulous marketing and acquire differentiation
2. Strengthen support for development and mass production launch by new customers
3. Strengthen support for development and mass production launch of leading-edge devices
4. Provide through support to PCRAM customers and maintain 100% market share
In Europe and North America, where many new devices are developed, we are cultivating collaborative relationships with customers through collaboration among Group companies. To play the role of a trailblazer, we aim to vigorously cultivate new customers.

In Asia where many of our customers have production bases, we will vigorously implement activities to expand sales while strengthening innovative proposal capabilities in addition to building on our delivery track record so far. Through these initiatives, we aim to expand business globally.

Recognized Business Opportunities
1. Realization of the smart society by IoT and 5G
2. Technological innovation by leading companies in Europe and North America
3. Manufacturing and mass production of electronic devices in Asia

Conceivable Risks
1. Shrinkage of the Japanese electronic device production equipment market
2. Intensifying competition due to customers’ shift of production locations
3. Longer equipment production lead times because parts production and supply cannot keep up with the short delivery lead time

Measures for Reducing Risks and Maximizing Opportunities
1. Cultivate a range of applications
2. Establish relationships with leading European and North American companies and group market trend
3. Continue development of cutting-edge technologies seizing the smart society

Relevant Technologies
- Radiators, EGR coolers, electronic parts cooling, etc.
- Ion implanter, vacuum sintering equipment
- Vacuum heat treatment equipment
- Pressure vessels, EGR coolers

Conceivable Risks
1. Expansion of demand for magnets, automotive parts, and pharmaceuticals
2. Rising awareness about food safety and sanitation and reduction of food waste and food losses

Measures for Reducing Risks and Maximizing Opportunities
1. Enhance production efficiency through integration of production bases
2. Cultivate new application fields for porous powder production
3. Develop competitive new products
4. Expand the domain for creation of added value by using the vacuum process in the food products field

Contribution to the full spectrum of industries
The industrial equipment business is contributing to the full spectrum of industries

Evaporators, Radiators, EGR coolers, electronic parts cooling, etc.
Vacuum freeze-drying equipment, vacuum distillation equipment
Pharmaceuticals and food
Vacuum sintering equipment and melting furnaces

Recognized Business Opportunities
1. Expansion of demand for magnets, automotive parts, and pharmaceuticals
2. Rising awareness about food safety and sanitation and reduction of food waste and food losses

Conceivable Risks
1. Progress of commoditization and intensifying price competition
2. Customer retention by first movers

Measures for Reducing Risks and Maximizing Opportunities
1. Enhance production efficiency through integration of production bases
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Achieve further growth through Group synergy

In fiscal 2018, despite a slowdown of investment by FPD and semiconductor manufacturers following several years of buoyant investment, OLED-related investment supported ULVAC’s business results.

The vacuum pump business is conducted by ULVAC CRYOGENICS, which is a manufacturer specializing in cryopumps and cryocoolers, and ULVAC KIKO, which handles compact vacuum pumps, as well as ULVAC, Inc. By enhancing the efficiency of production and sales through integrated management of the Group, we are establishing a system that will enable us to aim for further growth.

Regarding product development, we released low-noise, compact high-vacuum pumping equipment targeting R&D applications. We will step up development of products offering higher productivity and environmental friendliness.

Components business

Components essential for vacuum equipment. ULVAC supplies vacuum pumps, vacuum gauges, vacuum valves, vacuum leak testers, gas analysers, power generators for deposition processes, etc. to vacuum equipment manufacturers, machinery manufacturers, etc.

Recognized Business Opportunities

1. Large-scale investment in view of big data and the smart society
2. Expansion of market in emerging countries

Conceivable Risks

1. Stronger competitors expanding business through M&A
2. Intensifying price competition, market entry by low-cost manufacturers

Measures for Reducing Risks and Maximizing Opportunities

1. Expand business fields by strengthening alliances
2. Enhance efficiency of production and sales to reduce cost

Be a pioneer in offering excellent materials to the market

Steady growth in the markets that are expected to expand in the future

In fiscal 2018, sales grew steadily in the markets that are expected to expand in the future, namely, target materials for cutting-edge semiconductors, Cu and IGZO target materials for FPD, and high-performance materials. On the other hand, sales of materials mainly for OLED for smartphones were sluggish.

Materials business

The materials business centers on target materials used in sputtering, which is the mainstream method of vacuum deposition, and also includes development and manufacturing of functional materials.

Recognized Business Opportunities

1. Increases of sputtering thin-film processes due to increases in semiconductors and electronic devices in the smart society
2. Switching to new materials as device performance improves

Conceivable Risks

1. Difficulty of securing stable supply of raw materials in view of increasing demand
2. Intensifying price competition

Measures for Reducing Risks and Maximizing Opportunities

1. Promote joint development with leading manufacturers and influential private or public institutions
2. Invest and manufacture in growing markets (regions and products)
3. Further promote recycling of materials
4. Promote alliances

Semiconductor mask blanks market

We will respond effectively to increasing needs for miniaturization and higher precision in line with the expansion of the application field and the proliferation of types, reflecting the improved performance of smartphones, development of self-driving vehicles, and the ramp-up of demand related to IoT and artificial intelligence (AI).

Surface analyzer market

Whereas university and company laboratories were previously the principal users of surface analyzers, this equipment is increasingly used nowadays for routine purposes such as product inspection. Surface analyzers are being applied to more materials in more regions and markets throughout the world. ULVAC will continue offering surface analyzers with functions attuned to customer needs.