Digital Solutions Business

Semiconductor Materials Business



Contribution to Solving Social Issues

As society becomes increasingly dependent on information, semiconductor chips must evolve to offer faster processing, lower energy consumption, and higher capacity. JSR will further develop its already powerful nanotechnology and develop leading-edge semiconductor materials offering greater performance at smaller sizes while using less energy. In this way, we will help to realize a smart society that runs on technologies like IoT and AI.

Overview of FY2021

In the semiconductor market, demand continued to grow for 5G mobile communications systems (5G), computers, and data centers, and materials for memory and logic semiconductors also performed well. To strengthen our position as a leader in the advanced lithography field, we made Inpria Corporation, a world leader in EUV lithography metal oxide photoresist design, development and manufacturing, a wholly owned subsidiary. We also established affiliates in Singapore and Taiwan to bolster our marketing and customer response. We also started building a new advanced lithography materials factory at our core Yokkaichi Plant and added metal oxide photoresists, a technology for the future, to our EUV photoresist product portfolio. Sales are also strong especially for advanced photoresists, in part because major customers are launching advanced devices. Packaging materials for major customers are also launching smoothly. We aim to monetize cleaning solutions quickly by adopting their use as next-generation products at our U.S.-based facility and expanding our market share Overall revenue and core operating profit were higher than in the previous fiscal year.

Management Policies

- Aim to grow sales by double the amount of market growth and maintain high share in ArF and multilayer materials.
- Capture demand from full-scale launch of products using EUV photoresists.
- Work to grow sales of CMP materials (for chemical and mechanical planarization), cleaning solutions, and packaging materials.

Going Forward

The semiconductor market, supported by demand for digital infrastructure, is growing powerfully as an essential business that society cannot live without. Our aim is to grow sales by twice the amount of growth in this market, and we will continue to focus on materials for advanced processes. In particular, we will emphasize EUV photoresists for semiconductors of the 3nm and beyond generation and for memory and work to maintain and expand our share in the global market for lithography materials. We will also expand peripheral materials like CMP materials, cleaning solutions, and packaging materials and grow sales to ensure we capture the growth in demand for semiconductor chips. Although a delay in the launch of our U.S. cleaning solutions plant, which began operating in FY2020, resulted in an impairment, it is now operating well. We will work to expand local production and optimize costs to stabilize earnings as soon as possible. The aim going forward is to use the U.S. plant to expand the cleaning solutions business in the global market.

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Received the "Excellent Performance Award"

Taiwan Semiconductor Manufacturing, the world's largest dedicated semiconductor foundry, honored JSR Group with an Excellent Performance Award in December 2021. The company hands out the award to suppliers providing outstanding service, production equipment, and materials. The award given to JSR especially recognized our contribution in materials development, technical support, and the stable supply of high-quality products.



Digital Solutions Business

Display Materials Business



Contribution to Solving Social Issues

The spread of 8K broadcasting and 5G devices, two new technologies, is fueling demand for LCDs with high resolution and brightness and low power consumption. In the LCD panel market, which we expect will continue expanding, we will keep offering customers solutions that fully capitalize on our new development methods incorporating digitalization technology.

Overview of FY2021

In the Chinese market, which we expect to continue growing, we expanded sales focusing on competitive products. Of those, sales of Alignment Layer and Passivation Coat for LCD panels for large TV, which we are particularly focusing our efforts, expanded in China.

At the same time, as production of LCDs shifts from South Korea and Taiwan to China, we have been closing or downsizing local production bases in Taiwan and South Korea as part of a JSR Group realignment. Owing to the rising costs associated with the realignment, revenue and core operating profit were lower than in the previous fiscal year.

Management Policies

- Maximize cash flow in the LCD panel materials business through strategically focused business realignment.
- Capture growth in markets for new types of displays.

Going Forward

We have a high market share in the Display Materials Business. Here, our strength is in Alignment Layer and Passivation Coat, which help determine the performance of LCD panels. We particularly expect strong growth in the LCD panel market in China thanks to the growing number of 4K and 8K TVs sold. Therefore, we will especially promote sales of competitive Alignment Layer and Passivation Coat for large LCD panels.

As part of this, we will leverage the business management functions transferred from Japan to China to practice efficient information gathering and quick decision-making at the frontline of that market. We will also reinforce our sales and technical service structure at sales bases located around China. Additionally, part of the production of Over Coat, Passivation Coat, and other products from closed and downsized plants in Taiwan and South Korea was transferred at the end of March 2022 to JSR Micro (Changshu) Co., Ltd., which has expanded its own production of display materials. In March 2022, the Shanghai Technical Center (STC), our base for providing technical services for display materials in China, relocated to a different part of the city and expanded. Using the basic technology and experience we have acquired with LCD panel materials, we will also strengthen technical services in the field of OLED panel

materials. In addition, as part of our global realignment, we moved the laboratory functions of JSR Micro Taiwan to STC and consolidated our technical service functions.

We will continue to carry out structural reforms in line with changes in our customers' industries and strategically realign the product portfolio and focus markets. We will work for stable, long-term cash generation through cost optimization and aim for steady profit growth.

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Expansion of Technical Service Center

In March of 2022, JSR's technical center in Shanghai moved to a different district of the city, expanding in the process. The center provides technical services on display materials in China. It was already offering various technical services backed by the fast, one-stop customer responsiveness of its excellent Chinese staff. Now, it can provide technical services on OLED materials with its wealth of basic technology and experience, as well as various technical services using laboratory functions transferred from Taiwan and consolidated in Shanghai. The relocated center has also put in various new evaluation equipment and small scale production equipment.



Life Sciences Business



Contribution to Solving Social Issues

We deliver materials and support services for the entire biopharmaceutical process, from drug discovery through development and manufacturing. Our advanced framework can provide pharmaceutical companies, biotechnology companies, and academic and research institutions with services and products that help increase the efficacy of biologics and boost the probability of successful development, while shortening development periods, thereby helping to bring advanced healthcare to market sooner.

Overview of FY2021

With our U.S. headquarters, JSR Life Sciences, guiding strategies for the entire business segment, the Group has worked to expand revenue primarily from biomedical drug discovery support, production process development, and contract manufacturing, in addition to business from materials developed in-house.

There was an increase in projects in the pipelines of the CRO business operated by Crown Bioscience International and the CDMO business operated by KBI Biopharma, Inc.

MEDICAL & BIOLOGICAL LABORATORIES CO., LTD. (MBL) contributed to revenue with its diagnostic reagent business growing steadily. Also, bioprocess materials began to be used in commercial production and contributed to sales revenue. However, core operating profit was lower than the previous fiscal year, in part because of rising advance costs resulting from growth investment.

Management Policies

- Achieve revenue of more than 100 billion yen and core operating profit margin of 20% or more at a growth rate greater than that of the market.
- In addition to pursuing strategies in each business, strengthen the strategic synergies across the Life Sciences group and aim for growth above and beyond targets.

Going Forward

While the CDMO market is attracting an increasing number of entrants, Group company KBI Biopharma, Inc.'s business has some unique characteristics. It has completed a new plant in North Carolina and is further building its production capacity in the U.S. with the expectation to increase commercial production. Meanwhile, KBI and Selexis SA are newly enlarging their facilities in Geneva, Switzerland as JSR Group expands our business in Europe with its large market for biologics. The CRO business similarly taps its distinctive technological capabilities as the source of competitive strength. In this business, we are working to further increase revenue and profit ratios, primarily by expanding services from Crown Bioscience. In addition, we aim to accelerate growth in Japan by strengthening the diagnostics business of Medical & Biological Laboratory (MBL) and establishing a joint venture with Crown Bioscience to provide advanced preclinical services. At the same time, research activities are proceeding at JSR Bioscience and informatics R&D center (JSR BiRD) and JSR-Keio University Medical and Chemical Innovation Center (JKiC), among others. By tapping into the synergy of the whole Group working together, we are building a powerful business that will achieve sales growth that is at least 20% greater than the market's own growth rate.

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Stronger Support for Cell Culturing Business

U.S. subsidiary KBI Biopharma opened a new plant in April 2022. Located in a state-of-the-art commercial manufacturing facility in North Carolina's Research Triangle Park, the plant supports the manufacture of mammalian-based products for late-stage clinical and commercial programs. As such, it is helping to expand the mammalian cell culturing business in the U.S.



Plastics Business



Contribution to Solving Social Issues

We continue to offer products that meet customers' increasingly diverse needs and help to solve problems. Among the needs we address: high-performance ABS resin and plating materials; squeak-reducing materials that meet the demand for low in-vehicle noise in line with increasing use of electric vehicles (EVs); and unpainted materials that reproduce the advantages of paint, hold down costs, and reduce environmental impact by eliminating the need for solvents.

Overview of FY2021

We captured some of the demand that is recovering from a slump, particularly in the automobile industry. Sales volume and revenue both exceeded that of the previous fiscal year, and core operating profit surpassed that of the previous fiscal year thanks to recovery in sales volume. As a result of the above, revenue from the Plastics Business was 90,606 million yen (up 14.5% year on year) and core operating profit was 5,323 million yen (up 20.2% year on year).

Going Forward

The automobile industry, the chief market for our plastics, is undergoing profound changes thanks to technological

progress. As such, manufacturers are demanding lighter and more multifunctional vehicle bodies than ever before. For example, with the increasing use of EVs, customers want less in-vehicle noise. Moreover, with rising awareness of the need to conserve the environment and respond to stronger laws and regulations, reducing environmental impact has become a big issue for the automobile industry. At the same time, there is the need to reduce costs. Together with other issues, these mean that customer needs are increasingly diverse. We are committed to meeting these diverse needs through our Plastics Business. We will continue to offer materials that help transform the automobile industry.

One such material is HUSHLLOY[™] styrene thermoplastic. Where plastic parts are joined together, rubbing between the parts can cause unpleasant squeaking noises. The noise, caused by frictional vibration on the contact surface between plastic parts, is a major design consideration. HUSHLLOY[™] styrene thermoplastic has revolutionary properties that prevent such squeaking to maintain a quiet vehicle interior. It can not only help reduce the cost of anti-squeak materials but also help lower environmental impact, since its effects last for the lifetime of the product.

Meanwhile, VIVILLOY[™] is a highly colorable material for paint-less applications. We developed it based on proprietary polymer technology cultivated over many years of selling and supplying weather-resistant materials (in the DIALAC[™]series) and composite plastic alloys around the globe. Though no paint is used, this product features color depth and vividness closely resembling paint for components with intricate shapes. Moreover, bypassing the painting process can contribute to lower overall cost. JSR Group previously worked with a customer to implement closed-loop recycling of plastic in office equipment, and now we will use that experience to study recycling of unpainted automobile components. The Group works to expand sales of our distinctive and differentiated products, particularly in overseas markets.

TOPICS

Used in Various Applications from Automotive to Daily Goods

HUSHLLOY[™], which reduces squeaking between plastic components, is a widely varied line of products built for specific applications. For example, some products are meant to withstand heat and some to be non-glossy, while others contain glass fiber or consist of a PC alloy. Each product offers the excellent physical properties balance and formability of ABS resin while maintaining a stable molding shrinkage rate. Thanks to these advantages, the line is used in a wide range of applications, including automotive components, electronics components, and home appliances. Automotive components that use HUSHLLOY[™]



include center cluster panels, air conditioner retainers, cup holders, and meter housing. Electronics components that use it include car navigation systems, while home appliances include air conditioner components.

Center cluster panel