

## FINE CHEMICALS AND OTHER PRODUCTS BUSINESS



### Steady Development of Advanced Materials

The rate of growth in worldwide silicon wafer shipment area during the past three years was minus 1%, and the business environment in the semiconductor market is expected to remain uncertain for some time.

Nevertheless, JSR continues to hold a high market share of materials for the 20nm–16nm generation. Although the semiconductor market is weak, net sales of ArF immersion photoresists are increasing by 50% year on year, and sales of JSR advanced lithography materials are likely to continue to increase.

JSR is steadily increasing sales of lithography materials, including ArF photoresists, and TCX topcoat materials for immersion exposure, as well as spin-on glass (SOG), an intermediate material. To this end, we are pursuing increased quality control and enhanced manufacturing technologies. In order to manufacture and supply photoresists for the 20nm and sub-20nm generations, we put our effort into total defect control from the raw material stage through to the finished product stage. Therefore, we are selectively investing in R&D and manufacturing facilities at our Yokkaichi Plant.

### Performance Overview

Net Sales **¥133.1 billion** (+7.4%)      Operating Income **¥14.8 billion** (+3.4%)

- Operating income increased year on year despite upfront investment in areas such as development of next-generation leading-edge technologies.
- Sales of FPD materials were strong, and the weak yen contributed to a year-on-year sales increase.
- Full-scale sales of LIC began, and a JSR subsidiary decided to build a high-volume production plant.

### Semiconductor Materials

Performance Overview      Net Sales **¥50.7 billion** (+7.0%)

- Demand in the semiconductor market was weak.
- Immersion photoresists drove sales of ArF photoresists, while sales of multilayer materials rose only slightly.
- Net sales increased in the weak yen environment.

### Flat Panel Display (FPD) Materials

Performance Overview      Net Sales **¥62.1 billion** (+14.0%)

- Plant operating rates at LCD panel manufacturers increased by 2% to 3% year on year.
- We recovered market share, mainly color pigmented resists, through further reinforcement of R&D function in South Korea and Taiwan.

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### Growth Drivers

Steady growth is expected to continue in the FPD market. On a panel area basis, shipments have increased at an annual rate of 8% for the past three years, with materials for large panels rising by 7% and materials for small-to-medium size panels rising by 16%. Commoditization of large panels is accelerating, and in the small-to-medium size panel sector it is necessary to support advanced technologies. Shipment of small-to-medium size panels, 20% of the market on a value basis in fiscal 2014, are still growing. We will continue efforts to increase adoptions of products such as materials for mobile products.

### Strategy for FPD Materials

Today, there is increasing proliferation and commoditization of large panel displays, mainly for televisions, with demand centered on manufacturers in South Korea and Taiwan. Consequently, we are shifting our operations, from product development to manufacturing, to those regions and aggressively pursuing cost efficiencies.

Smartphones, tablet PCs, and similar devices that use small-to-medium size panels are becoming increasingly sophisticated. At the same time, the materials used for these panels, such as LCD materials, thin retardation ARTON film, and indium tin oxide (ITO) film for touch panels, need to be high-performance, resulting in high value. We are promoting a "vertical integration strategy" in order to expand our product portfolio in line with the need for enhanced performance and higher added value. JSR's diverse product portfolio covers the different kinds of materials required by high-performance panels.

### Expansion into the Sensors Market

In the past, information technology has connected us to the Internet and networks using mainly computers, smartphones, and tablet PCs. But future technical advances are expected to create an Internet of Things (IOT), in which televisions, cameras, audio devices, and other objects become interconnected. Here at JSR, we believe that the IOT will serve as

a driver for future growth in the digital market. As IOT continues to spread, we think that technologies in five areas will be particularly important to the digital industry: interface, connectivity, power, process, and sensors. We think that sensors above all will increase in importance in the future. We plan to open up and develop the sensor market, starting with CMOS image sensor materials, and expand and upgrade our existing product lines in other market sectors.

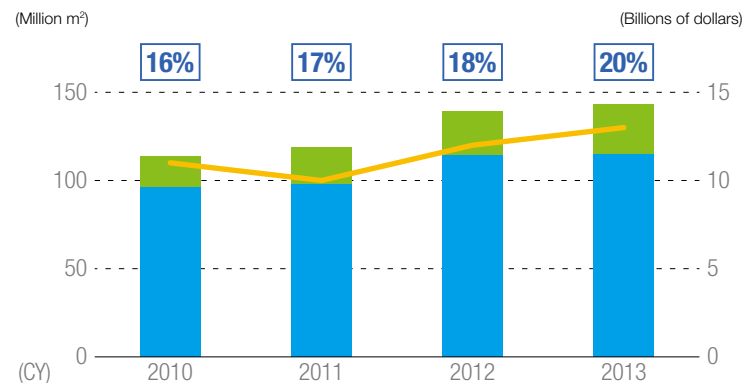
### FPD Industry Trends by Panel Area and Amounts

Change in shipments from 2010 to 2013

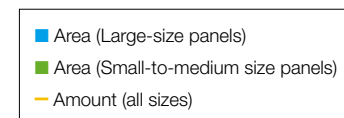
+8% CAGR (area)

(Breakdown of area: large-sized panels +7%; small-to-medium sized panels +16%)

### Ratio of Small-to-Medium Size Panel Shipments to Total Shipments



Source: NPD DisplaySearch



## FINE CHEMICALS AND OTHER PRODUCTS BUSINESS

### Strategic Businesses

#### Performance Overview

Net Sales

¥20.3 billion  
(-9.0%)

- In the results for Strategic businesses and Other business, sales performance of optical fiber coating materials and ARTON film was lackluster.
- Steady results were achieved in the Lithium Ion Capacitor business.
- Sales of life science materials steadily increased.

### Aggressive Business Development in Preparation for Scale Expansion

We intend to accelerate the growth of our Strategic businesses, centering on life sciences and lithium ion capacitors. In order to achieve growth, we also recognize the importance of adopting an expansion strategy that considers M&A activities and capital alliances as ways to introduce outside technologies.

### Life Sciences

Over many years, the JSR Group has established a solid track record in the diagnostic reagents and medical polymers business. J and W Beijing Biotech Co., Ltd., a joint venture company located in China, engages in the research, manufacturing, and sale of in-vitro diagnostic agents in China and Southeast Asia, where diagnostic reagents for HIV, hepatitis, and other infectious diseases are attracting attention. The Company is growing steadily. In addition, in collaboration with capital alliance partner MEDICAL & BIOLOGICAL LABORATORIES CO., LTD. (MBL), we are expanding our business operations into the diagnostic reagents and biologics drug discovery process markets. We plan to double the size of the business over the next three years from sales of about ¥10 billion in fiscal 2014. JSR is affiliated in the bioprocess materials field concerning refinement technologies of antibody drug production, and is exploring new technology seeds and business fields with the aim of efficiently linking promising technologies and products to growth from the Life Sciences business.

### Track Record



Automatic Guided Vehicles (AGV)



Hybrid Excavators



Hybrid Buses



Radiographic Cassettes

### Lithium Ion Capacitors

JSR believes that customer trust and quality assurance are important in the storage device business, and we have established a track record of adoptions by about ten companies. Net sales in fiscal 2014 increased threefold year on year, and JSR subsidiary JM Energy Corporation decided to build a high-volume production plant for LICs in preparation for full-scale business operation. The new plant, which will have production capacity of three million cells per year, is expected to start commercial production in 2015. Future plans call for expansion of the Lithium Ion Capacitor business to a variety of applications, starting with large vehicles and hybrid cars.