

GLOBAL R&D, PRODUCTION, AND MARKETING OPERATIONS



Number of Patents

The number of patents held by JSR is steadily increasing in Japan and overseas, mainly in the Fine Chemicals and Other Products Business.

As of March 31		2008	2009	2010	2011	2012	2013	2014
Japan	Petrochemical Products	428	428	374	377	387	358	334
	Fine Chemicals and Other Products	1,103	1,269	1,465	1,685	1,972	2,331	2,633
	Others	67	73	75	67	79	89	104
	Subtotal	1,598	1,770	1,914	2,129	2,438	2,778	3,071
Overseas	Petrochemical Products	493	512	492	489	507	523	516
	Fine Chemicals and Other Products	1,721	1,955	2,164	2,365	2,516	2,741	2,957
	Others	36	34	39	36	33	34	33
	Subtotal	2,250	2,501	2,695	2,890	3,056	3,298	3,506
Total	3,848	4,271	4,609	5,019	5,494	6,076	6,577	

Global R&D Strategy

Opening Up New Technology Fields Globally as a Technology-Oriented Company

JSR got its start in the petrochemicals field, making synthetic rubbers as its core business, and then expanded into the field of information and electronics materials. We subsequently expanded into precision materials and processing, life sciences, and the environment and energy fields and have provided the world with numerous high-performance materials made possible by unique technologies. JSR's comprehensive research and development capabilities support this business development.

JSR currently engages in R&D at four sites in Japan: the Yokkaichi Research Center, the Precision Processing Technology Group, Tsukuba Research Laboratories, and the JSR Functional Materials Research Center.

Furthermore, in recent years we have established research bases at Group companies in South Korea and Taiwan and we are now developing a global research structure for display materials.

JSR's R&D centers and laboratories are responsible for supporting the creation of new businesses as well as supporting existing businesses. To achieve this goal, the centers and laboratories work closely with involved business divisions to set research themes that anticipate the needs of the market and maintain and strengthen a flexible research organization that responds quickly to the circumstances of users. JSR also conducts consignment research, joint research, and consortium projects, working with clients, universities, research institutions, and other parties in Japan and overseas, with the goal of identifying the latest technologies and knowledge, incorporating them in the Company's R&D at the first opportunity, and utilizing them on a trial basis.

Guided by the belief that successful research and development activities shape the future of JSR, we will further cultivate our core polymer technologies and aggressively expand into new fields by fusing polymer technologies with photochemistry, inorganic chemistry, precision processing, and biotechnologies.

GLOBAL R&D, PRODUCTION, AND MARKETING OPERATIONS

Global Operations—Petrochemical Products Business

Strengthening the Global Supply System with a Focus on Asia and Europe

For some years, the Petrochemical Products Business, which engages mainly in synthetic rubbers and plastic products, has been building a global manufacturing and sales network. The Group has sales operations in major centers in China and Southeast Asia to closely monitor the needs of local customers in the automobile and electronics industries.

We are also upgrading operations that manufacture synthetic rubber used in automobile parts and fuel-efficient tires, which have enjoyed growing demand in recent years. In addition to producing synthetic rubber for fuel-efficient tires at the Yokkaichi Plant in Japan, we established JSR BST Elastomer Co., Ltd. in collaboration with Bangkok Synthetics Co., Ltd., a local business partner in Thailand. The Company is the Thailand's first Solution polymerization Styrene-Butadiene Rubber (S-SBR) manufacturing plant that started operations in 2013. We have also decided to manufacture and sell S-SBR at a plant in Hungary, which will act as a supply base for Europe.

Global Operations—Fine Chemicals and Other Products Business

Development of a Global System to Meet Market Needs

Fine Chemicals: Semiconductor Materials

In the semiconductor materials business, Silicon Valley based JSR Micro, Inc. and JSR Micro N.V. in Belgium manufacture, provide technical support and sell cutting-edge lithography materials. It has also introduced exposure equipment comparable with that of client companies in order to support R&D on leading-edge products. We are currently boosting competitiveness by concentrating R&D investment in advanced fields on activities at the Yokkaichi Research Center.

Fine Chemicals: FPD Materials

In South Korea and Taiwan, which have the largest world markets for FPDs, JSR Micro Korea Co., Ltd. and JSR Micro Taiwan Co., Ltd. hold important positions. Both companies have expanded the scale of production and the items they handle in order to meet demand from the rapidly expanding FPD market. To enhance and accelerate their future responses

to customers, they are building new research laboratories.

Meanwhile, many LCD panel manufacturers are planning to build new production facilities in China. They include local companies, as well as major corporations from Japan, South Korea, and Taiwan. To address the needs of those customers, the JSR Group is working to provide technical services and build a product development system in China.

Strategic Businesses: Life Sciences

In the life sciences sector, JSR Life Sciences Corporation was split off as a separate company that offers advanced diagnostic reagents and bioprocess materials developed in-house along with medical polymers, elastomer materials for medical applications previously commercialized as part of the Petrochemical Products Business. In 2012, JSR established J and W Beijing Biotech Co., Ltd., a joint venture company with Beijing Wantai Biological Pharmacy Enterprise Co., Ltd., a diagnostic reagents manufacturer located in Beijing. J and W Beijing Biotech develops, manufactures, and sells latex reagents and chemiluminescent reagent intermediates. In addition, JSR has entered into a capital alliance with Medical & Biological Laboratories Co., Ltd. (MBL), the diagnostic reagents market leader in Japan.

JSR has also invested in and entered into operating alliances with Austria-based BIA Separations and Switzerland-based ChromaCon, and Canada-based Matrix, leaders in purification and separation process technologies in the field of biologics manufacturing. We plan to bring products to market more quickly by utilizing the technologies of these companies.

Strategic Businesses: Lithium Ion Capacitors

JSR subsidiary JM Energy Corporation plays a central role in developing the Lithium Ion Capacitor business in collaboration with Group operations in Europe and the North America. JM Energy Corporation, which operates the world's first facilities for the mass production of large-capacity LICs, has decided to build a large high-volume production plant on the grounds of its current plant to reinforce the supply structure. JSR Micro, a JSR subsidiary with operations in Europe and North America, covers these geographical areas. These business operations in Japan and overseas will accelerate global development of the Lithium Ion Capacitor business.