

**We are aiming at being the “number one and only one” in global niche markets through a fusion of technologies inside and beyond the company and the rapid introduction of new products, primarily in the information/communications field.**



**Keizo Shimomiya**

Member of the Board  
Managing Director  
Director of Functional Chemicals Group

### **Further expanding our business through new products and new businesses**

During the fiscal year ended May 31, 2006, the electronic materials business delivered strong performance, buoyed by growing demand for such items as liquid crystal televisions and plasma televisions, and other digital home electronic appliances, as well as for cellular telephones. However, severe business measures were required to secure profits, as material costs have risen due largely to the soaring price of oil. Consequently, we have focused efforts on correcting product prices, primarily in the functional materials business, and have engaged in company-wide cost-cutting efforts.

While a short-term corrective phase is anticipated, we have determined that the present growth trend will continue in the mid- to long-term. Nippon Kayaku will continue to position the information/communications field as a growth area for concentrating business resources. We will work to maintain a constant supply of new products to our customers, and are aiming to expand our business by identifying and developing new business areas that are consistent with technological and market trends.

### **Growing sales of environmentally friendly products in the functional materials business**

Nippon Kayaku holds the global top market share for the epoxy resins used for the encapsulation of semiconductors. Our environmentally friendly epoxy resin called NC-3000, developed as a replacement for our earlier core product EOCN, has been recognized in fields extending beyond encapsulation materials, and sales are quickly growing in the printed wiring board (PWB) and other fields. For this reason, we carried out improvements to our supply system for this product.

For the resist ink resins, which are formed with RC resins as a base, we have shifted our research and development towards resins for flexible printed circuit (FPC), where a future large increase in demand is expected, and have introduced environmentally friendly products such as our epoxy resins into the market. Meanwhile, we have also worked to expand our group of resist monomers into the liquid crystal television and other flat panel display (FPD) areas. We are working to expand our business while developing new applications for RC resins.

We are also planning to expand our efforts aimed at the development of new applications, farther downstream in the process, for polyimide, polyamide, and other new resins. The focus is primarily on applications related to FPC.

In addition to its business of resist ink resins for PWBs, Kayaku Chemical (Wuxi) Co., Ltd. (KCW) in Wuxi, China has successfully begun production and sales of a range of coating resins for the rapidly expanding domestic market in China, and is delivering steadily improving performance. In the future, this company will work for greater business growth in the continually expanding Chinese market.

### **Strong performance by the electronic materials business, boosted by growth in the information/communications industries**

We achieved a large-scale increase in sales of our colors for inkjet printers, thanks to an extremely well-conducted new-product development and marketing process. Aiming for further business expansion, we will also continue to develop a range of commercial and industrial inkjet inks in cooperation with printer and print head manufacturers.

Our range of films for flat panel display (FPD) has also shown a significant boost in sales. Our primary product, the front films for plasma televisions, is based on a fusion of two Nippon Kayaku fundamental technologies – dye technology and resin technology – and was developed and marketed in close connection with our customers. With the completion in August of a prototype and production line for our coating technology, we will accelerate the development of new products and work to expand our film business.

Despite difficult conditions in the market, other new products have been released successfully, including liquid crystal display (LCD) products, optics, and data storage products. DVD-related materials have been subject to fierce price competition as the market has expanded. However, extensive cost cutting and measures aimed at differentiating our products from the competition have allowed us to retain our top share of the market for recordable DVD-related materials.

Development is proceeding in two different systems (HD DVD and BR DVD) for next-generation DVDs. We are continuing to extend cooperation with the customers, and have begun marketing products that are compatible for both systems, respectively.

LCD sealants have also shown a strong increase in sales. In particular, as a result of the ever-increasing performance demands for the heat-curable sealants used in small- and mid-size panels, Nippon Kayaku has gained recognition for the superiority of our technology, allowing us to boost our market share. The adoption of our UV-curable resins by customers has been confirmed, and we expect full-scale growth in sales to begin in the near future.

Our consolidated subsidiary company Polatechno Co, Ltd., which primarily produces small- and mid-size polarizing films and optical materials for LCD projectors, is continuing to deliver strong performance. In particular, the inorganic polarizing film ProFlux™, produced by the U.S. company Moxtek Inc., has been adopted for use in high-definition rear projection televisions, with growing future sales expected.

Kayaku MicroChem Corporation, which is engaged in development and sales of resists for micro electro-mechanical systems (MEMS), has introduced new products and achieved strong sales. In addition, resist-coated wafers, which are silicon wafers with MEMS resist resin already applied, have been very well received by the customers.

### **Future growth expected in the catalyst business**

We are engaged in the manufacture and sales of catalysts for the production of acrylic acid, which is used in the propylene direct-oxidation technology that was developed independently by our company. We are also engaged in the manufacture and sales of catalysts for the production of methacrylic acid, which is used in isobutylene direct-oxidation technology. The performance of our catalysts has been highly rated by customers throughout the world, and they are in use in a large number of plants that produce acrylic acid and methacrylic acid.

The market for super absorbent polymers (SAP), which are made of acrylic acids and used in disposable diapers and feminine hygiene products, is growing rapidly worldwide. As a result, a large number of new and expanded plants for the production of acrylic acids are planned in China and many other countries around the world. We are actively negotiating with these plants so that they will make use of catalysts from Nippon Kayaku.

Methacrylic acid is used as a raw material for acrylic plastic, and because of its superior transparency it has a great many uses, including in a range of displays, automobile tail lamps, large tanks at aquariums, and more recently as optical material in LCD televisions and projection televisions. There are growing opportunities for expansion of plants producing methacrylic acid.

### **Promoting a fusion of technologies inside and outside the company, and challenging ourselves to develop new technologies and businesses**

Research themes at Nippon Kayaku are divided into the two categories of short- and mid-term themes, and long-term themes. Within each category, research is categorized as research directly related to business or else as research for the establishment of a technology base. After the system of responsibility has been made clear, we create a fusion of the technologies in our possession, and work for the creation of new products. We are also actively proceeding with joint research together with universities and other public research institutions, primarily for our long-term themes.

Nippon Kayaku always maintains a focus on the market when creating technology roadmaps and carrying out comprehensive R&D. We are actively engaged in joint development together with our customers because we believe that a cohesive exchange of information with customers is essential for research that is directly related to their business. Nippon Kayaku does not simply follow in the footsteps of existing technologies and business areas. Instead, we continuously challenge ourselves to develop new technologies and business areas. These efforts are not limited to our own company's technology, and we are actively involved in alliances and business ventures with other companies.

**We are strengthening the production system for catalysts used in the manufacture of acrylic acid and methacrylic acid, in order to meet growing demand in Europe, America, and China**

Sales for the Nippon Kayaku catalyst business in the year ended May 31, 2006 were 2.7 billion yen, an increase of 12% over the previous fiscal year. Overseas sales accounted for 2.1 billion yen of this amount. Due to factors such as the continuing double-digit growth in demand for acrylic acid and methacrylic acid in the China market, the worldwide supply situation is becoming tighter. In particular, growing demand for the super absorbent polymers (SAP) used in disposable diapers, as well as for acrylic ester, which is used in paints, adhesives, and other products, is putting a strain on supplies of acrylic acid. While our overseas sales are now centered on customers in Europe and America, we have also succeeded in obtaining orders in China. Using this as a foothold, we are planning to also expand sales in China, as well as in other markets such as India and Brazil.

Currently at the Nippon Kayaku Asa Plant, there are two lines of catalyst production equipment, with a total annual production capacity of 700 to 800 tons. This plant produces four types of catalysts, two each for the manufacturing process used for acrylic acid and methacrylic acid. With the growth in demand, this equipment is operating at near full capacity. For this reason, we are adding a production line with an annual production capacity of 500 tons, which is scheduled to begin operating at the start of 2007. With three production lines available, we will be able to reduce the loss that results from having to switch production among different types of catalysts. This will allow us to construct an optimized production system and maximize production efficiency. In addition, we are also considering expanding our business to catalysts other than those used for acrylic acid and methacrylic acid, by creating a fusion of our fundamental technologies with other technologies.

**With large growth expected for sales of LCD panel materials, our consolidated subsidiary Polatechno has been listed on the JASDAQ Securities Exchange**

On March 3, 2006, the Group company Polatechno Co., Ltd. was listed on the JASDAQ Securities Exchange in Japan. Polatechno was founded in 1991 as a joint venture established by Nippon Kayaku and Arisawa Manufacturing Co., Ltd. As one of the top dye manufacturers worldwide, Nippon Kayaku supplies a portion of the necessary materials to Polatechno, which in turn contracts testing and research to Nippon Kayaku.



Head office and plant of Polatechno

Polatechno manufactures and sells polarizing films, which are an essential component of LCD displays. Dye-type polarizing films are used on automobile instrument panels and many other fields, which require a high level of durability. Polatechno makes full use of its strengths in this field, and also manufactures the iodine-type polarizing films that are used in popular devices such as electronic dictionaries. This company has been successful by focusing on the niche market of small- and mid-size films, rather than on the market for large-size films used in LCD televisions, PCs, and other products, a market where major manufacturers are active. It also assembles polarizing films together with the surrounding materials to create and sell as projector components, and has achieved a strong market share in this area.

One field in which future growth is expected is the field of LCOS inorganic polarizing plate. LCOS is an LCD display that is expected to become the mainstream for LCD rear-projection televisions in the future. Polatechno manufactures and sells the ultra-high heat resistant inorganic polarizing plate used in these products. It is marketed under the brand name ProFlux™, and dominates the market.

**Our Chinese consolidated subsidiary WPLC acquires ISO14001 international certification for environmental management systems**

On April 25, 2006, Wuxi Polatechno Optics Co., Ltd. (WPLC) officially acquired ISO14001 international certification for environmental management systems. WPLC kicked off its efforts to gain this certification on July 21, 2005, and thanks to the combined efforts of all its staff, succeeded in acquiring the certification in just nine months.

The city of Wuxi, where WPLC is located, is located in the center of the Yangtze River delta in the southern part of Jiangsu Province, approximately 130 km from Shanghai, a region highly regarded for advanced commerce and industry. WPLC was established as a subsidiary of Polatechno Co., Ltd., for the assembly of projector materials. Polatechno Co., Ltd. is a Nippon Kayaku group company that maintains the No. 1 global market share for dye-type polarizing films used in LCD projectors and automobile LCD displays. While WPLC is an assembly company that produces a relatively small environmental burden, the fact that it has begun a PDCA (Plan-Do-Check-Action) cycle for continual improvements aimed at environmental protection is especially significant. Environmental protection activities such as saving energy and reducing waste materials are intended not only to reduce costs and strengthen the company structure, but also to heighten the company's value to society.



Plant of WPLC in Wuxi

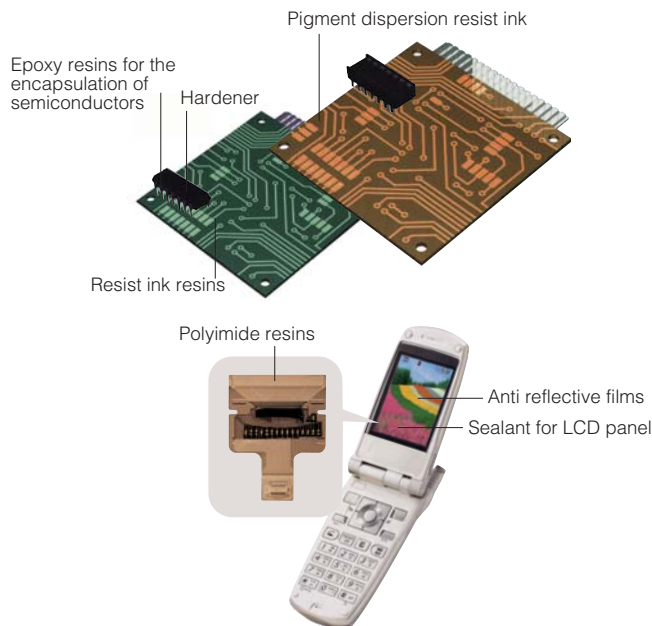
## Business Areas

### • Functional Products

We develop, manufacture and sell epoxy resins, UV-curing resins, and acrylic polymers.

Major products

- Epoxy resins (EOCN-1020, EPPN-500, NC-3000, BREN)
- Hardeners for epoxy resins (KAYAHARD)
- UV-curable resins (KAYARAD, KAYAMER, KAYACURE)
- Polyimide/Polyamide resins



### • Electronics Materials

We develop, manufacture, and sell a broad range of electronics materials, optical functional films, optical disc materials, optical materials, and colors for inkjet printers.

Our consolidated subsidiary Polatechno Co., Ltd. manufactures and sells polarizing films and LCD projector components. Kayaku MicroChem Corporation imports and exports photo resists for micro-machines, etc.



### • Catalysts

We are engaged in the development, manufacture, sales, and plant licensing business for acrylic acids, methacrylic acids and other catalysts used in manufacturing.

