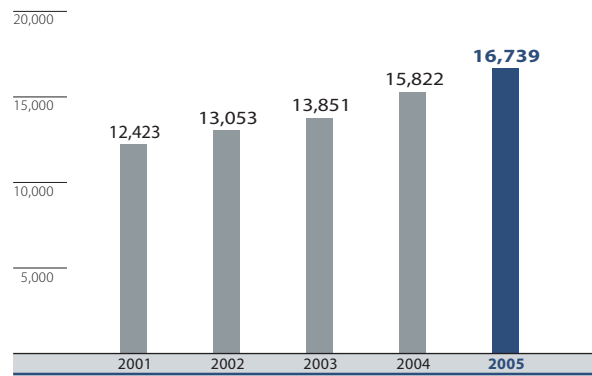


## Global Operations and Global R&D



Nitto Denko Group's R&D is closely connected with market needs, and stems directly from managerial decisions. We believe management of technology (MOT) is an essential strategy for growth, and "techno-marketing" is one of the strengths of Nitto Denko's MOT. As well, the entire group must function like a single unit capable of making consistent business judgments anywhere. Our R&D also needs a global perspective to be part of a truly unified Nitto Denko Group.

**R&D Expenses** (Millions of yen)



### Integrated Technology Strategy Meeting

Each month Nitto Denko holds an Integrated Technology Strategy Meeting that is hosted by our Chief Technology Officer (CTO).

This meeting is an important vehicle for information exchange among our many R&D operational divisions and R&D teams. At meetings, participants discuss company-wide R&D projects, allocate R&D resources toward maximizing the success of our combined R&D efforts, and present reports on important technology and manufacturing developments.

Designed to transcend the traditional framework of our business units, this integrated R&D approach emphasizes

strategic priorities and urgencies, particularly for company-wide R&D projects. Already a large number of new blockbuster products have been born through this approach. As of April 2005, company-wide R&D projects were being carried out in nine different research areas.

The globalization of our R&D efforts continues to accelerate. We are already enjoying steady achievements at nine R&D bases overseas, including our U.S. research site (Nitro Denko Technical Corporation), which was established to pursue R&D on next-generation products and technologies. We are also investigating the option of opening new research facilities in Europe and Southeast Asia.

### **First Joint Global Meeting of the Four Technology Divisions**

The first-ever joint meeting among the R&D, Quality Assurance, Environmental Safety and Procurement Divisions was held in Osaka in November 2004.

While each division had been holding its own global gatherings in the past few years, this was the first time that all four divisions participated in a single joint meeting. At

#### **Establishing New In-House Ventures**

Since its formation, Nitro Denko has created so many new businesses that it is sometimes referred to as “a venture business collective.” This spirit still exists in our In-House Ventures System (introduced in 2003). In addition to growing the core technologies of Nitro Denko, this in-house system is designed to support motivated employees who are eager to take on the challenges of establishing new and non-traditional businesses.

The system’s first offspring are Kinovate Life Sciences Inc. of the U.S., inaugurated in January 2004, and Optmate Corp., the first venture company in Japan, established in April 2005. Optmate in particular is already gaining attention from industry players as a promising venture devoted to developing, manufacturing and selling new optical materials.

this new forum for information exchange, the four divisions mutually introduced their technology, and identified the common issues confronting them, motivated by Nitro Denko Group’s common goal of becoming a Global Excellent Company. Of particular significance was the announcement of the contenders for the “Global Niche Top Product” title under the company’s Global Niche Top strategy. All in all, the joint global meeting was a very meaningful event.

A second joint global meeting of the four divisions is being scheduled for autumn 2005.



#### **Joint Projects with Industry, Government and Academia**

Nitro Denko Group is actively engaged in joint projects with industry, government and academic groups. As part of such initiatives, in 2001 we started a joint project with the Japan Atomic Energy Research Institute (JAERI) to develop an ion exchange membrane of a highly conductive fluoropolymer.

JAERI has developed numerous technologies related to radiation cross-linking of fluoropolymers, in addition to pursuing research into polymer electrolyte films using radiation. Building upon JAERI’s membrane-preparation technology, Nitro Denko has successfully produced film-like membrane rolls by utilizing its own radiation-processing technologies for button-cell polymer separators.

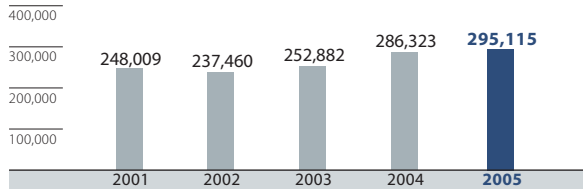
The new technology developed in this joint project is expected to find application in the production of electrolyte membranes for fuel cells, which are gaining attention as a next-generation energy source. In the future, Nitro Denko plans to commercialize the technology in laptop computers, cellular phones and other mobile devices.

# Global Operations and Global R&D (continued)



## Japan

**Net Sales** (Millions of yen)



Japan is Nitto Denko's largest market. Our operations here improved steadily during fiscal 2005, including LCD-related products used by the FPD industry, as well as industrial and circuit materials for automotive and office equipment manufacturers. As a result, sales increased to ¥295,115 million (up 3.1%) and operating income climbed exceptionally to ¥65,918 million (up 28.9%).

In fiscal 2006, we will continue to work hard to improve business results by concentrating our resources on growth areas such as LCD-related products for the FPD industry, circuit materials for the HDD industry, and industrial materials for the automotive industry.

enjoyed greater sales thanks to our "selection and focus" on growing markets such as liquid crystals and cellular phone devices, personal computers and office equipment.

In South Asia, each country showed broad economic growth despite temporary slowdowns caused in the previous year by SARS and bird flu. Nitto Denko enjoyed good overall performances and improved its sales of semiconductor materials and industrial materials.

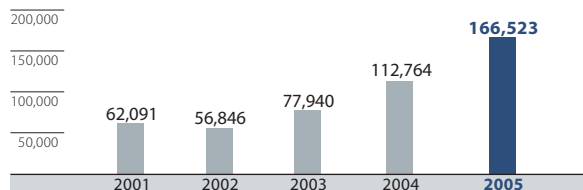
As a result, sales in Asia and Oceania in fiscal 2005 climbed 47.7% to ¥166,523 million. Operating income, however, fell 9.3% to ¥5,937 million due to slumping sales prices, exchange-rate fluctuations and other unfavorable factors in the second half.

In fiscal 2006, in response to vigorous market demand, we aim to generate further growth by building new factories for LCD-related optical products in Taiwan and China (Shanghai, Pudong and Suzhou), and by promoting further expansion and development in Korea. We also intend to boost sales of our circuits business by expanding production and upgrading equipment at our Chinese plant in Suzhou, and by fully utilizing our newly built MRH plant in Shenzhen, China. In addition, we hope to boost our market share for water-treatment membranes by investing in capacity expansion at our existing plant in Shanghai. In automotive



## Asia & Oceania

**Net Sales** (Millions of yen)



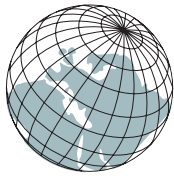
We achieved excellent growth in East Asia (Taiwan, Korea and China, including Hong Kong) in fiscal 2005 thanks to favorable sales of LCD products. In other product areas, we

### Rapidly Developing Asian R&D Centers in Malaysia

As with production, Nitto Denko Group is pursuing both globalization and localization of its R&D activities. This is especially true in Malaysia, where Nitto Denko Electronics Malaysia (NIDEM) is handling R&D for semiconductor encapsulation materials, and Nitto Denko Materials Malaysia (NMM) is pursuing research in carrier tapes. Each company is functioning as an "Asian R&D Center" in its own right. NIDEM has already spearheaded the launching of a large number of new semiconductor encapsulation materials, while NMM released its first new product, the automated chip component carrier tape, in March 2005. Both have helped us take significant steps toward the true globalization of Nitto Denko Group.

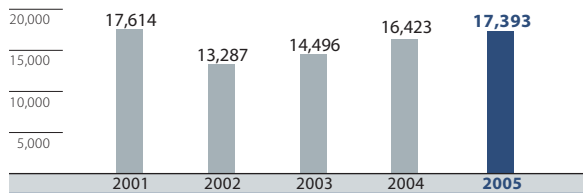
materials, too, we plan to enlarge our share of the wire-harness market for automobiles by starting production and sales at our facility in Tianjin, China, and by upping the capacity of our Kaohsiung Plant in Taiwan.

We are likewise improving our ability to meet market needs in South Asia. In Vietnam, we are launching integrated FPC production at our local factory. In Thailand, we established our No. 2 MRH plant and look set to become the world's largest MRH manufacturer for HDDs. We are also starting production of automotive materials in Thailand. We expect to achieve strong growth in South Asia in fiscal 2006 thanks to these activities.



## Europe

**Net Sales (Millions of yen)**



During the first half of fiscal 2005, the economies of Europe performed well despite a second-half slowdown sparked by uncertainty over the U.S. economic growth and by a slackening in exports caused by higher oil prices.

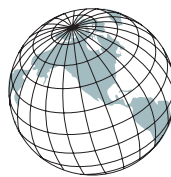
Nonetheless, performance gaps appeared, with France, Spain and Belgium enjoying strong domestic demand while Germany, Italy and the Netherlands suffered from sluggish demand.

Against this European backdrop, we focused its expansion efforts on two main areas—automotive and electronics. In the automotive market, we started sales of locally produced reinforcement and dampening materials, in addition to traditional sealing materials, to Japanese automotive manufacturers.

In addition, we started construction of Automotive Technical Center (ATC) to improve our capabilities as a solution provider. In the electronics sector, we also concentrated on the cellular phone market. As a result, our industrial materials business, which is concentrated mostly around the automotive industry, performed favorably. Progress was also made with circuit materials, bonding and joining materials and surface protection products in the second half.

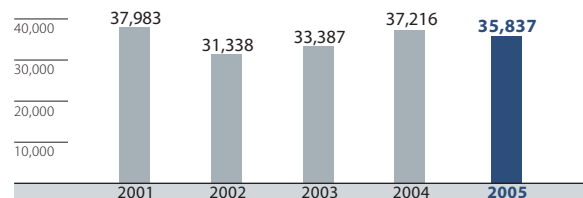
Sales in fiscal 2005 reached ¥17,393 million, up 5.9%. However, operating income fell 51.6% to ¥247 million, reflecting the higher costs associated with steep price rises in toluene and other raw materials, as well as other factors. Profit also suffered from the negative impact of debt recovery and other management problems.

In fiscal 2006, we will continue to pursue further expansion of sales to the automotive industry in the wake of capacity expansion by Japanese automotive manufacturers in Europe. At the same time, we will aggressively pursue business expansion in Central and Eastern Europe by enhancing our sales functions there in response to accelerating shifts into those regions by industry players.



## North America

**Net Sales (Millions of yen)**



Fiscal 2005 saw the completion of our U.S. group's historic and dramatic three-year restructuring plans to "Create Our New Future" and "Selectively Discard Our Past" in the important U.S. market. Some of the bold actions undertaken

## Global Operations and Global R&D (continued)

this year included selling our Graphic Technologies unit (which produced bar-code labels for the retail market), closing our 75-year-old Permacel tape manufacturing plant in North Brunswick, New Jersey, and doubling production volume at our new specialty tape plant in Pleasant Prairie, Wisconsin.

Aveva Drug Delivery Systems, our U.S. pharmaceuticals company, continued its aggressive business development activities in order to become the partner of choice for major U.S. pharmaceutical producers.

Our automotive businesses had mixed results. The financially healthier Japanese-affiliated automotive companies in the U.S. saw double-digit growth in sales and helped the Permacel facility in Lakewood, New Jersey achieve operating margins of more than 20%. However, Permacel Automotive suffered significant volume reductions as the U.S. automotive industry retrenched.

For our electronics business, Nitto Denko America continued specification work for leading U.S. electronics firms and is seeking new applications in this ever-changing field, notably LCDs, flexible printed circuits and semiconductors.

Permacel expanded operations at its profitable and growing Lakewood facility, sold off an old product line, and re-focused its business on the specialty markets of electrical/electronics, aircraft/aerospace, surface protection, automotive and web-processing/bonding and joining.

Such bold programs incurred high costs, including the heavy costs associated with the creation and start-up of the new plant, the closure of the old plant, the climbing expenses of maintaining our tape operation's pension and post-retirement health plans, and continued early losses on our new transdermal drug delivery operation. Total operating losses for this region thus increased during fiscal 2005.

Operating performance made a late rally at Hydranautics, our membrane/environmental unit, which specializes in high-polymer water filtration membranes. We hope to achieve greater synergy with Nitto's membrane units in Japan and China and have initiated a global project to improve operating results at Hydranautics.

Finally, our tape entity, Permacel, posted double-digit sales growth during the year despite experiencing the highest degree of restructuring of all our U.S. companies. But the company's profitability suffered as it continued to scale-up its US\$60 million Pleasant Prairie facility and push through with the closure of the North Brunswick facility.

As a result, sales in fiscal 2005 decreased by 3.7% to ¥35,837 million and operating losses increased by 3.3% to ¥2,479 million .

In the coming year, the company will emphasize growth in its focused markets, realize planned efficiencies at Pleasant Prairie, and cut discretionary costs. Thanks to the stronger strategic positioning of the U.S. Group, the North American region is now poised for growth and profitability.



# Intellectual Property Strategy

## *Developing a Solid Intellectual Property Strategy*

Governments and companies around the world are becoming more aggressive in their efforts to protect intellectual property. In March 2003, the Japanese government established the Intellectual Property Policy Headquarters. In July of the same year, it announced the Promotion Program on Creation, Protection and Exploitation of Intellectual Property. Since then, it has implemented several other measures to transform Japan into a nation dedicated to respecting and protecting intellectual property rights.

As more and more countries realize the importance of patents, we are seeing drastic changes in infrastructure for intellectual property laws and regulations in countries around the world.

More than ever, Nitto Denko Group must heighten its awareness of intellectual property issues.

We must appropriately address the changes in the social environment surrounding such issues; for example, the handling of intellectual property rights resulting from academic-industrial alliances, amendments to the laws and regulations governing employee inventions, creation of an intellectual property appellate court, and interpretation of tax laws dealing with intellectual property transfer.

With Nitto Denko's Intellectual Property Department serving as the core, we are pushing ahead with our mission: engender a Nitto Denko with a high level of intellectual property awareness, one that can maintain a sustained competitive advantage in securing and beneficially utilizing intellectual property rights. At the end of fiscal 2005, Nitto Denko had 1,255 registered Japanese patents and 1,731

overseas patents, for a total of 2,986 patents worldwide.

We intend to henceforth adopt a solid intellectual property strategy aimed at further business expansion. In practical terms, this means we will identify and develop products that are likely to become Global Niche Top products in the future. We will increase added value through intellectual property rights, strengthen and increase international competitiveness, and contribute to boosting our stock prices. All in all, this strategy will create value globally and act as an engine for Nitto Denko to attain the Global Niche Top position.

To these ends, we will step up our intellectual property activities while at the same time creating a global patent application network that protects our intellectual property rights.

In the long-term, we will establish new and practical training courses to improve intellectual property awareness among all employees of Nitto Denko Group. In unison with this, we will carry out other educational activities to increase worldwide awareness of intellectual property.