

## Fiscal 2009 Achievements and Future Prospects

Both the optical and electronics businesses are strong. With the development of future new products, transdermal drug delivery patches will be produced for the global market.

### Optical Business

Throughout fiscal 2009 our optical business ran smoothly as demand for LCD televisions rebounded greatly as a result of the economic stimulus measures initiated by many countries. Such initiatives included the eco point system in Japan and the introduction of a policy in China which promoted the common place use of household electrical appliances in rural villages. Continuous cost reduction and productivity improvement activities also contributed to our business results.

We were able to respond promptly to the demand for big screen televisions in Japan, Europe and USA and the replacement demands of CRT-based televisions in developing countries. Furthermore, new LCD televisions which load LED (semiconductors called light-emitting diode) backlights were introduced onto the market. These devices have enjoyed popularity due to their slim lines, being lightweight, having a vivid image and low power consumption. Our optical films have and continue to play a part in the popularity of the new LCD's.



Optical films for LCD

Throughout fiscal 2010, we will continue to contribute to innovative 3 dimensional LCD demand through fully utilizing our technological capabilities in the production of optical films.



Transparent conductive film ELECRYSTA™

Throughout fiscal 2009, as demand for mobile devices such as multifunctional smart phones with touch-sensitive panels increased, as did the demand for transparent conductive film ELECRYSTA™ as well as our optical films.

If the LCD market reaches its maturity in the not so distant future, we will pour our energy into further improvements and innovative product development aiming to be a business which produces stable and continued profits.

## Electronics Business

Our printed circuit materials, flexible printed circuit "NITOFLEX®" and thin-film metal base board with high resolution circuit "CISFLEX®" performed well with the increase in demand for hard disc drives (HDD) used in personal computers. To date HDD have been loaded onto personal computers, but with the appearance of netbook computers, the external



Thin-film metal base board with high resolution circuit "CISFLEX®"

HDD model types have increased in popularity. They have begun to be commonly used for storing a range of visual and media content as a result of the expanding applications for printed circuit materials.

In relation to semiconductor encapsulating materials, the markets throughout fiscal 2009 did not fully recover. Despite this our environment-responsive resin made a mild recovery.

Electronic processing materials ended on a down note, as the materials for semiconductors were affected by customer business investment restraint and the entry of other rival general-purpose products. On the other hand, demand increased for materials used for electronic components on the back of an increase in consumer demand for flat-screen televisions, personal computers, mobile phones and so on. This in turn resulted in the production of our electronic processing materials rebounding.

Toward the future, we will focus our efforts on increasing profits through further the rationalization of existing products and the development of new products in growth fields.

### Nitto Denko Receives the Electric & Electronic Component Award of 'CHO' MONODZUKURI Innovative Parts and Components Award 2009

"CISFLEX®" received the "Electric & Electronic Component Award of 'CHO' MONODZUKURI Innovative Parts and Components Award 2009", which was presented at the Conference for the Promotion of MONODZUKURI and Nikkan Kogyo Shimbun Ltd. These awards began as a way of promoting and recognizing business efforts that have and continue to make a contribution to the restoration of Japan's manufacturing power and the development of Japan's industry and society as a whole. The awards focus on recognizing products and materials which are integral "backseat players".

The characteristics of "CISFLEX®" are unique with "photosensitive polyimide" and micro wiring which takes advantage of a "semi-additive process" resulting in wiring with plating.

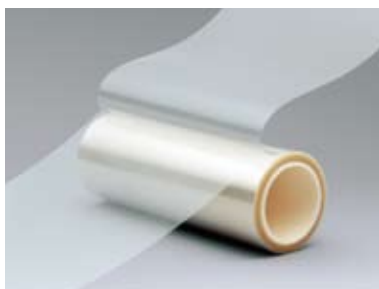


At the award ceremony, the third person from the left is a Nitto Denko employee

## Tape Business

Due to the increase in demand for flat-screen televisions, personal computers, HDD and so on in developing countries including China, the sale of surface protective products for optical elements and sealing materials was strong.

Owing to the increase in smart phones with touch panels, the production demand for transparent double-coated adhesive tapes has expanded rapidly. Touch panels are constructed from a laminated body made from several materials, one of which is transparent conductive film. In order to glue together the various elements needed to make a touch screen, transparent double-coated adhesive tapes are used. These films not only fill gaps on the



Transparent double-coated adhesive tapes "LUCIACS®"



Electrical insulating materials for hybrid cars

inside of touch panels but also adjust the refractive index of light. Furthermore they contribute towards projecting a more vivid image. In order to respond to the diversifying demands associated with the spread of touch panels, we will aim to strengthen our future product lineup.

With regards to materials produced for the automobile industry, we were able to record strong sales of electrical insulating materials owing to an increase of production of hybrid cars from tax cuts for eco-friendly cars. This occurred despite the decrease in production that took place in the first half of the fiscal year.

As part of our efforts to expand domestic-demand in markets of growing developing countries, we settled on an overseas affiliated company in India in November 2009 and started to construct business models centering on further expanding our tape business. We will look to positively expand our tape business into other developing countries where high growth looks promising. Furthermore, we will continue to promote earth-conscious "manufacturing" as we pour energy into new-product development.

### Establishment of the First Overseas Affiliated Company in India

In India high economic growth centering around the automobile, mobile phone and home electric appliance industries shows promise. With the easing of regulations concerning direct investment from foreign companies, the amount of foreign investment is increasing yearly. The Indian economy is domestic-demand-led with huge amounts of money being invested in infrastructure. India's gross domestic product continues to significantly grow and like a number of developing countries, so too does the market potential. Given these circumstances, for us to push ahead with further expansion of our business in India, we have established an overseas subsidiary company in India for the first time.

#### <General Appearance of a New Company>

Company's Name: Nitto Denko India Private Limited

Description of Business: Marketing, sales and processing of adhesive tapes and related business

Date of Foundation: November, 2009

Location: Manesar, Haryana (approximately 50km southwest of New Delhi)

Capital: 300,000,000 Yen

Gross Area: 3,300 m<sup>2</sup>

Number of Employees: Approximately 20 (Start-up)



Nitto Denko India, established in November, 2009

## Medical Business

Throughout fiscal 2009, many people were frugal with their usage of drugs and medicines. The Nitto Denko Group's transdermal clonidine drug delivery patches (for hypertension) received USA authorization and were launched onto the market and have achieved healthy sales results. Currently, there are eight items using transdermal drug delivery patch technology on sale throughout Japan and USA. We aim to increase the range of transdermal drug delivery patch products whilst at the same time driving expanded global sales of transdermal drug delivery patch products and further enhancing product development in developing countries including China.

In China, our tulobuterol patch (drug for asthma) is being sold after gaining import approval. Further efforts will be targeted toward strategies aimed at increasing sales.

Our medical business is closely linked to "Fine" which is one of our three key values in developing new business areas. The three values are; "Green (contribution to global environment), Clean (support for new energy) and Fine (life science)". In order for us to further expand our business in the medical arena beyond the production of transdermal drug



delivery patches, we aim to make steady progress in the biomedical field using our core polymer synthesis and processing technology. An example of the way we have applied biomedical technology relates to the field of nucleic-acid drugs. These drugs will hopefully prove to become the cure for many diseases. Our USA subsidiaries, Nitto Denko Technical Corporation and Kinovate Life Sciences Inc. have developed a solid polymer support "NittoPhase®HL" for oligonucleotide synthesis and have launched its sale. Continued research on biodegradable polymers useful in molecular-targeted therapy will be conducted. Molecular-targeted therapy is a treatment which delivers drugs to targeted parts of the body.

We hope to minimize patient discomfort and in doing so the discomfort experienced by families through our products which have been developed through utilizing technologies accumulated through transdermal drug delivery patches and our advanced polymer synthesis and processing technologies.

### Clonidine Patch

On 18 August 2009 Aveva Drug Delivery Systems Inc., our USA group company received authorization from the Food and Drug Administration for the clonidine patch, a transdermal drug delivery patch used to treat hypertension.



Clonidine patch (treatment of hypertension)

As a license holder, Aveva exclusively supplies Par Pharmaceutical Companies, Inc. (HQ: New Jersey, USA) with the clonidine patch. The transdermal drug delivery patches which are mass-produced in the USA are; the clonidine, fentanyl (cancer pain lenitive), nicotine, and granisetron (antiemetic drug) patches. We will continue to expand our medical business within the USA, which has the largest market in the world.

## Membrane Business

Reverse osmosis membrane is a part of our business that is closely linked to "Green (contribution to global environment)", another of our key values in developing new business areas. In fiscal 2009, demands from developing countries such as the Middle East and India were strong, but due to the downturn in the economy during the fiscal year, deals for industry use within Japan, Asia, Europe and the USA slowed down.

Only a few deals involving seawater desalination projects in fiscal 2009 were made with overall business slowing.

Despite the difficult business environment, we have managed to bring new products onto the market. An example of this being the creation of the world's most energy efficient seawater desalination product, boasting an effective membrane area that is 10%



"Energy-saving and low cost" reverse osmosis membrane element "SWC™6-MAX" used for seawater desalination



"Ultralow pressure and low contamination" reverse osmosis membrane element "PROC™20" for industrial water to be used in China

larger than existing products. Another is a new product which allows raw water containing saline matter and pollutants to be filtered, where the power consumption required for the process is 30% less than that required by existing products. Based on an assumption that there will be increases in future demand, a new reverse osmosis membrane manufacturing plant began operating in 2009 within the Shiga Plant in Kusatsu City in Shiga Prefecture.

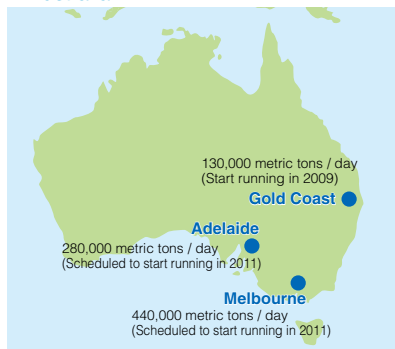
In fiscal 2010, it is expected that markets will rebound where new growth is likely to be experienced. We aim to increase the number of orders for seawater desalination and wastewater recycling projects through using our new products and through maximizing our increased production capacity.

### Accepting an Order from a Desalination Plant in Australia for our Latest Model Reverse Osmosis Membrane

The Nitto Denko Group accepted an order for a new model reverse osmosis membrane "SWC™6-MAX" from Thiess Degremont Joint Venture (AquaSure), which will be used in a desalination plant now being constructed in the State of Victoria, Australia.

In Australia, approximately 60% of land is farmland and two thirds of all water used is for the purpose of agriculture. However, Australia has low rainfall and is said to be the driest continent in the world. In particular, since 2000, Australia has suffered from many serious droughts. It is because of this that a desalination plant is now being constructed in Bass Coast near the south part of Wonthaggi in Victoria.

#### Actual Performance of Delivery and Acceptance of Orders of RO Membrane in Australia



The plant is expected to be completed by the end of December 2011. Once it begins operating it will supply 440,000 metric tons of water a day, 150,000,000 metric tons a year, for Melbourne, Geelong, the south Gippsland and west of Port Town.

The "SWC™6-MAX", which has been promoted this occasion, is a reverse osmosis membrane which boasts industry-leading rates of both permeability and elimination of salt. It can reduce the operation pressure required in the desalination of seawater which in turn contributes to energy-saving.

The Nitto Denko Group maintains a leading market share with its products being responsible for a cumulative 4,700,000 metric tons of desalinated water being produced a day throughout the world.