



# Industrial Builder and the Giant Wheel, the STSP

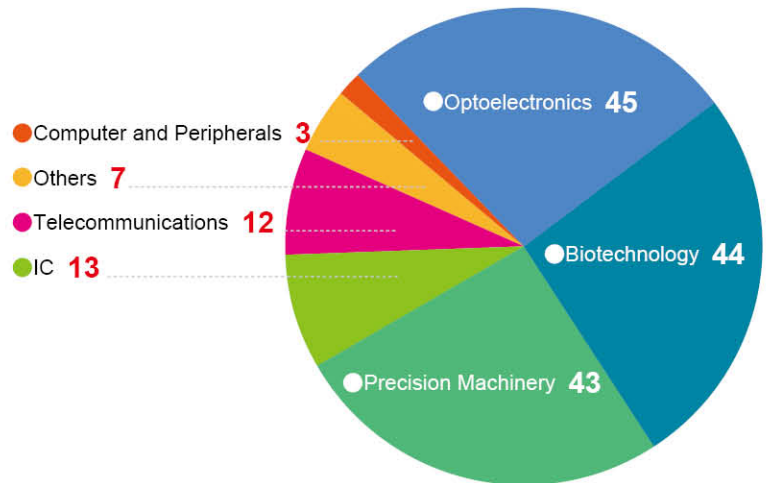
- ▶ Industrial Trend
- ▶ Innovative R&D
- ▶ Manpower Training



## Industrial Trend

### Industrial Investment

As the world's economy recovered, the STSP continued its efforts of the previous years. This year, great achievements have been accomplished. In 2010, the investment of an additional 25 Park enterprises in the STSP was successfully approved, including 14 from biotechnology, 7 from optoelectronics, 2 from IC, and 1 from precision machinery, and 1 from the telecommunications industry while 17 presented themselves at the Kaohsiung Science Park and 8 at Tainan Science Park with an approximate approved investment amount of NTS10.41 billion. The accumulated number of Park enterprises has reached 167. In 2010, in total of 14 Park enterprises increased the capital amount of 17.7 billion and these include the investment of STSP Touch Panel Factory of Chimei Innolux as well as silicon wafer (chip) for solar cell by Green Energy Technology Inc. (GET).



Total Effective Number of Approved Enterprises by Industry by the End of 2010

Total Effective Number of Approved Park Enterprises by Year

	1998 Before	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Number of Enterprises	20	29	47	65	91	114	132	138	144	155	158	156	167

## Industrial Clusters

### Optoelectronics Industry

By the end of 2010, the number of the existing approved optoelectronics enterprises in the STSP totaled 45 with the presence of 7 additional new ones in 2010.

The STSP plays an important role in terms of TFL-LCD industry. Led by Chi Mei Group and HannStar Display Corp. (HannStar), integrated optoelectronics industrial cluster has formed here. Chi Mei Group now has seven fabs and established Chi Mei EI Corp. (CMEL) which specialized in R&D of OLED; in order to expand its capacities, Generation 8.5 Fab was built at Kaohsiung Science Park. HannStar has two fabs at the Park. In the future, along with the surging demands for smart phones and computers, touch panel will be the next star product. At present, Sintek Photron Corp. (HannsTouch) and Chimei Innolux's (CMI's) touch panel as well as peripheral components and material supported by relevant suppliers, optoelectronics industry has grown more rapidly.

Green energy industry includes those engaged in solar energy, LED, and lithium batteries for electric hybrid cars. By the end of 2010, 9 Park enterprises were engaged in the solar cell industry range from upstream material, middle stream cell producers to downstream modules and system products; such as Motech Technology Inc. (Motech) and Kenmos Photovoltaic Co. (Kenmos PV), which has made the supply chain more complete. 6 LED manufacturers, including Epistar Corp. (Epistar) and Genesis Photonics Inc. (GPI) were recruited to attract other upstream material and downstream

packaging and system providers. E-One Moli Energy Corp. (Molice) is now the world's fifth largest manufacturer of lithium batteries for hybrid electric cars.

In order to strengthen solar energy certification and accreditation capabilities, the STSP Administration not only actively assists the presence of relevant enterprises at the Park, but also introduces HCPV Qualification & Development Center of Institute of Nuclear Energy Research (INER) at Kaohsiung Science Park for the provision of epitaxy, manufacturing, and measuring technologies of solar cell. In addition, testing and measurement standards are established to meet the requirement of international accreditation system. Telecom Technology Center also set up its Green Communication Lab at Kaohsiung Science Park to shorten accreditation time of quality and safety and to enhance the international competitiveness of domestic industries.

### IC Industry

By the end of 2010, 13 IC manufacturers were approved at the STSP and among them, 2 were approved in 2010. In addition to Fab 6 (8-inch wafer fab) and Phase 1, 2, and 3 of Fab 14 (12-inch wafer fab) of Taiwan Semiconductor Manufacturing Co. (TSMC) are now under mass production. TSMC is constructing its Phase 4 of Fab 14 as well as advanced wafer packaging fab. Phase 1, 2, 3, and 4 of Fab 12A of United Microelectronics Corp. (UMC) at the STSP are in mass production stage and UMC has also set up its R&D Center at the STSP. STSP had become one of the most important 12-inch wafer fab clusters in Taiwan.





Joint Commencement Ceremony of Park Enterprises of Biomedical Device at Kaohsiung Science Park and Project Result Demonstration of the Southern Taiwan Biomedical Device Project (February 14, 2011)

### Precision Machinery Industry

Precision machinery industry is the foundation of high-tech industry. Along with the development of IC industry, optoelectronics industry, and green energy industry, the formation of industrial cluster of precision machinery at the STSP has been facilitated. At present, precision machinery industry at the STSP includes production equipment making for optoelectronics industry, IC industry, and green energy industry (mainly solar energy and LED). By the end of 2010, the investment of 43 Park enterprises were approved with 1 approved in 2010.

### Biotechnology Industry

Biotechnology industry has been one of the core industries developed at the STSP. The existing approved Park enterprises in this industry reached 44 with the presence of 14 ones by the end of 2010 including those specialized in vaccine development and pharmaceuticals, agent kit, and medical device manufacturing. The majority of Park enterprises of biotechnology industry are engaged in vaccine development and pharmaceuticals; the leading ones include Taiwan's No.1 producer of pharmaceutical ingredients, ScinoPharm Taiwan Ltd. (ScinoPharm), GenMont Biotech Inc. (GenMont), G&E Herbal Biotechnology Co. (G&E), Savior Lifetec Corp. (Savior Lifetec), and GeneFerm Biotechnology Co. (GeneFerm).

In order to promote the "Southern Taiwan Biomedical Device Industrial Cluster Development Plan," the STSP Administration invested

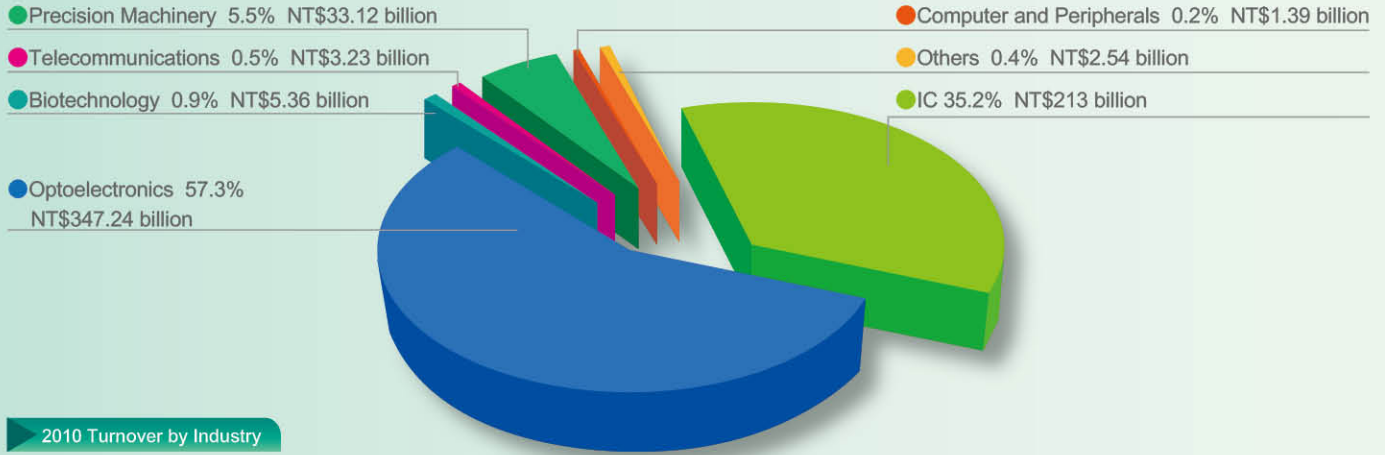
NT\$1.7 billion since 2009 to combine expertise and experiences of academia, the medical, the industry, and the R&D institutes to co-develop high-end medical products and technologies for clinical practices, to build "made in Taiwan" medical brands, to improve Taiwan's medical material technology and international images, and to demonstrate the determination of building Kaohsiung Science Park into the headquarters of world-class medical device making.

By the end of 2010, 65 projects were submitted and 47 were granted with NT\$631 million fund. Among them, 25 were approved with their presence at the STSP at the investment amount exceeding NT\$2.5 billion. They are the industrial leaders, United Orthopedic Corp. (UOC), Taiwan's first TFDA certified manufacturer, Hung Chun Tech Co. (HC Bio-S), an equipment maker of dermatological laser treatment, Kera Harvest Inc., and a breast MRI equipment maker, Aurora Asia International Inc. (Aurora).

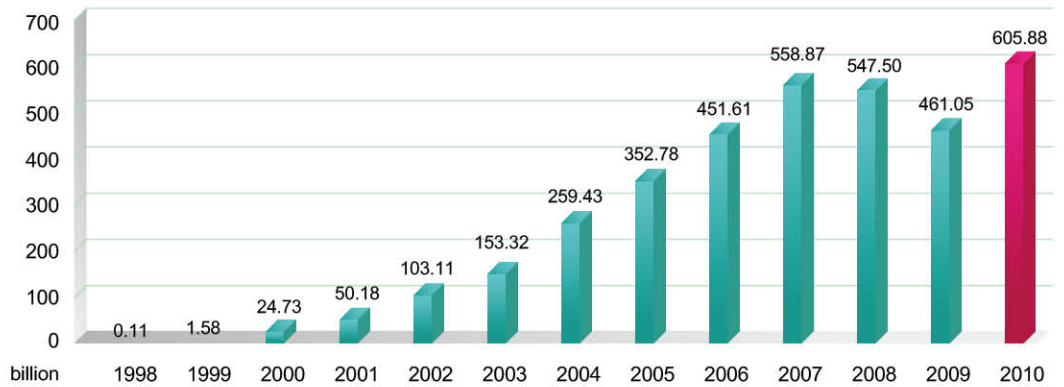
The presence of 9 cooperative research institutes at the STSP include Medical Devices and Optoelectronics Equipment Department of Metal Industries Research and Development Center (MIRDC), National Cheng Kung University, Kaohsiung Medical University, Taipei Medical University, National Taiwan University, National Yang-Ming University, Southern Taiwan University, National Sun Yat-Sen University, and National Pingtung University of Science and Technology. A complete medical device industrial cluster has been formed at Kaohsiung Science Park.

## Turnover

In 2010, the overall turnover of the STSP reached to NT\$605.88 billion, 31.4% of growth than that of 2009 with the contribution of 57.3% from optoelectronics industry and 35.2% from IC industry, totaling 92.5%.

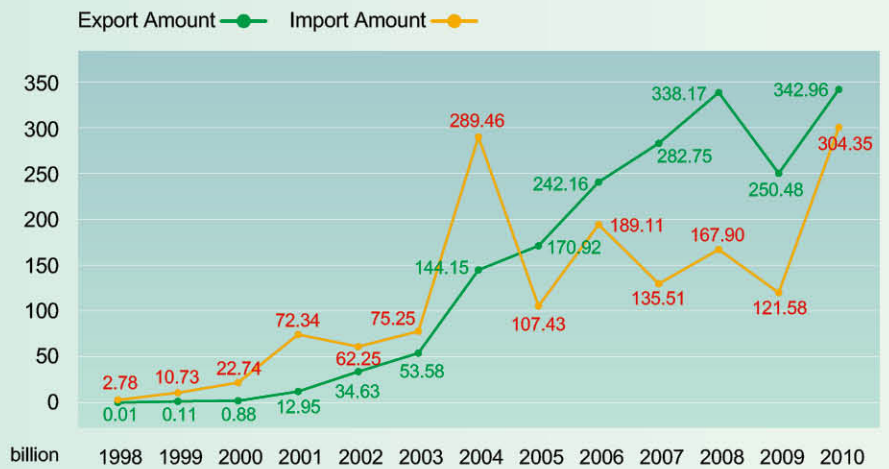


Turnover by Year



## Export and Import Trading

In 2010, total export and import trading totaled NT\$647.3 billion while export accounted for NT\$343 billion with 36.9% of growth than that of 2009. China and Hong Kong are the major export destinations. Import trading totaled NT\$304.3 billion with 150.3% of growth than that of 2009. The major import items were equipment components and critical material of IC equipments from Japan and the US indicating the expanded production pushed by demand, a sign of economic recovery.



Note: Data after 2008 (including 2008) came from the new customs clearance system; the domestic sales and transfer sales within the bonded area are excluded.

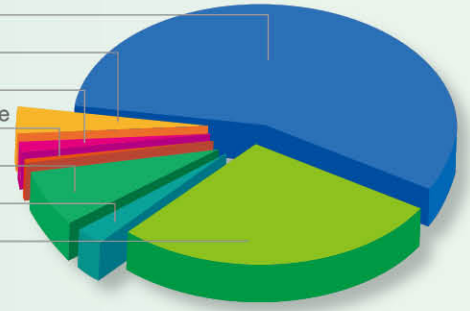
Import/Export Amount by Year



## Workforce

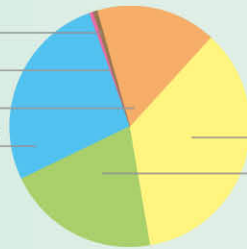
Along with the economic recovery in 2010, operation of Park enterprises became stable. By the end of 2010, in total of 56,388 people were hired by Park enterprises at the STSP, an increase of 7,762 people, creating the peak employment; among them, 9,479 are doctoral and master degree holders, accounting for 16.8%, while 31,611 are university and college graduates, accounting for 56.1%.

- Optoelectronics 56.5% 31,855 people
- Others 3.4% 1,917 people
- Telecommunications 1.6% 895 people
- Computer and Peripherals 0.5% 260 people
- Precision Machinery 7.4% 4,191 people
- Biotechnolog 2.5% 1,413 people
- IC 28.1% 15,857 people



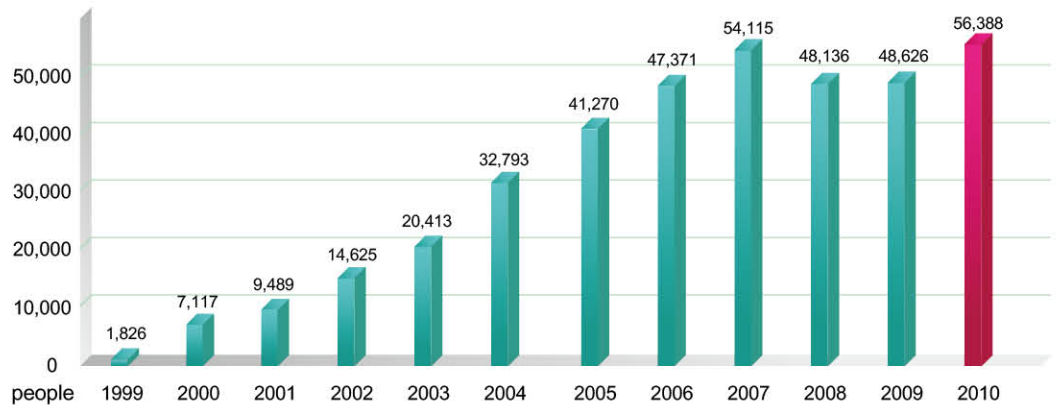
Workforce by Industry by the End of 2010

- Others 0.4% 248 people
- Doctorate 0.8% 474 people
- Master 16.0% 9,005 people
- High School Graduate 26.7% 15,050 people



- Bachelor 35.6% 20,074 people
- College Graduate 20.5% 11,537 people

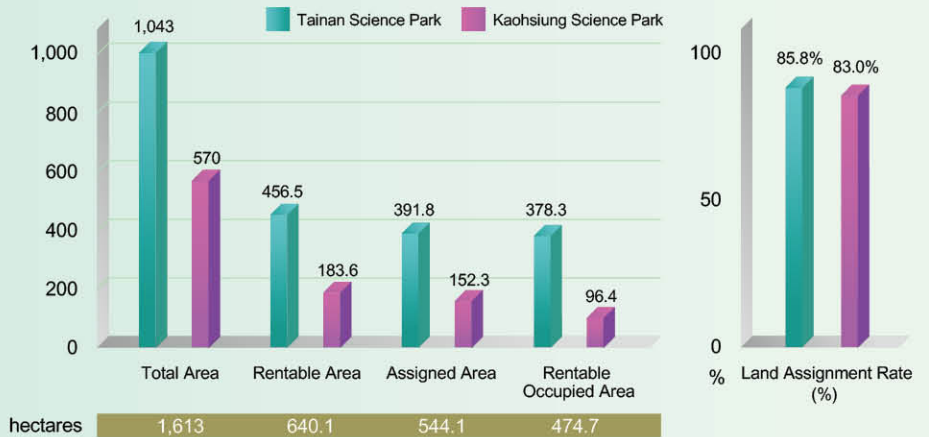
Workforce by Education Background by the End of 2010



Workforce by Year

## Land Leases

The land available for leases at the STSP totals 640.11 hectares and by the end of 2010, the land occupancy rate and land assignment rate at Tainan Science Park and Kaohsiung Science Park stood at 82.9% and 85.8% as well as 52.5% and 83.0% respectively, while total land occupancy rate and land assignment rate at the STSP stood at 74.2% and 85.0%.



Land Lease by the End of 2010