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# **Progression** 2008 Industrial Investment

The enterprises' willingness to invest was indeed affected by the global financial crisis, yet 20 enterprises were still approved to set up in the park in 2008 including 9 optoelectronics, 6 precision machinery, 4 biotechnology, and 1 telecommunications industries for a total investment value of US\$0.4 billion. As of the end of 2008, a total of 158 enterprises have been approved to set up in the STSP.

### STSP's Four Industry Clusters

### IC Industry

There were 13 approved enterprises by the end of 2008 with a total amount of US\$40 billion in investment. These Park enterprises are aiming to expand the 12" wafer manufacturing plants. Currently, there are four wafer plants in production, one 8" and three 12." Moreover, one wafer plant is currently under construction and another pending installation.

### **Optoelectronics Industry**

There were 48 approved enterprises by the end of 2008. Main product lines include flat display, optoelectronics, solar cells and other related components. Within these 48 companies, 9 were approved in 2008.

In terms of flat display, Taiwan's most comprehensive vertically integrated flat display industry cluster is housed within the STSP. Chi Hsin Electronics, TOPPAN CFI, Chisso Panel, and Wintek were approved for operation in 2008. By the end of 2008, there were 2 Gen-3.5~4 plants, 4 Gen-5~5.5 plants, 1 Gen-6 plant, and 1 Gen-7.5 plant in production while 1 Gen-8.5 plant was being constructed.

Solar-cell industries are well developed. Motech, Gloria Solar, Chi Mei Energy, Kenmos-PV, Auria Solar, Axun Tek Solar, Everphoton Energy, King Enertech, Delta, and Ag Pro operate within the STSP with a comprehensive solar optoelectronics supply chain developed including up-stream material, mid-stream cell, and down-stream module and system products.

### Total Effective Number of Approved Enterprises by Year



Optoelectronics Enterprises	
Chi Hsin Electronics Corp., STSP	The enterprise's approved capital amounted to US\$3.1 million for developing small and medium LED modules and touch panels; it also trade its products internationally.
King Enertech System Corp., STSP	The enterprise's approved capital amounted to US\$3.1 million for developing solar energy- saving illuminating products, solar-energy parallel system kits, solar-energy independent system kits, and solar-energy wind power compound system kits.
TOPPAN CFI (Kaohsiung, Taiwan) Co., Ltd.	The enterprise's approved capital amounted to US\$0.1 billion for developing color filters and trading its products internationally.
Chisso Panel Technology Co., Ltd.	The enterprise's approved capital amounted to US\$0.1 million for developing the coordination tests and analyses between liquid crystals and display panels, as well as the coordination tests and analyses between alignment film materials and display panels.
Wintek Corporation Kaohsiung Branch	The enterprise's approved capital amounted to US\$153.8 million for developing TFT-LCD and modules.
Chi Mei Energy Corporation	The enterprise's approved capital amounted to US\$60.9 million for developing a-Si/mc-Si solar cells and modules, related technical services, and international trade of the aforementioned products.
Ag Pro Technology Corporation Tainan Science Park Branch	The enterprise's approved capital amounted to US\$2.1 million for developing microelectronic metallic conductor paste.
Everphoton Energy Corp.,Southern Science Park Branch	The enterprise's approved capital amounted to US\$3.1 million for developing concentrator photovoltaic power system module and components.
Advanced Crystal Application Technology Inc.	The enterprise's approved capital amounted to US\$6.2 million for developing sapphire substrates.
Biotechnology Enterprises	
I Chuan Bio-Tech Corp.	The enterprise's approved capital amounted to US\$1.0 million for developing mushroom, fungi, edible microbe-fermented products, herbal plant, animal, water fowl extract products, and microbe-fermented cosmetic ingredients. It also provides technical service related to the aforementioned products, and their international trade.
SynbioTech Corp.	The enterprise's approved capital amounted to US\$0.9 million for developing functional lactic acid bacterial powder and yogurt DVS lactic acid bacterial powder. It also engages in the international trade of the aforementioned products.
Lightmed Corporation Kaohsiung Science-Based Industrial Park Branch	The enterprise's approved capital amounted to US\$3.1 million for developing laser for eye surgery.
Codent Technical Industry Co., Ltd.	The enterprise's approved capital amounted to US\$9.2 million for developing pneumatic high- speed dental handpiece and its components, pneumatic low-speed dental handpiece and its components, and laser dental handpiece and its components.
<b>Precision Machinery Enterpris</b>	es
Ulvac Taiwan, Inc. Tainan Science Industrial Park Branch	The enterprise's approved capital amounted to US\$13.5 million for developing optoelectronics and semiconductor processing equipment, key components and materials, and the international trade of the aforementioned products.
Advanced Ion Beam Technology, Inc. STSP Branch	The enterprise's approved capital amounted to US\$3.1 million for developing ion implanter.
All Real Technology Co., Ltd.	The enterprise's approved capital amounted to US\$0.8 million for developing solar simulator and related equipment and components.
Castec International Corp.	The enterprise's approved capital amounted to US\$3.1 million for developing optoelectronics process test equipment and components.
Hermes Epitek Corp. STSP Branch	The enterprise's approved capital amounted to US\$9.2 million for developing semiconductor chemical cleaning station, semiconductor process equipment and facilities improvement and upgrade engineering consulting and construction, advanced semiconductor process development service, chemicals management and process system, secondary system and related components, chips test system and secondary system and related components, and ion implanting system and secondary system and components. It also imports and exports these products.
u Tech Automatic Corp.	The enterprise's approved capital amounted to US\$0.8 million for developing optoelectronics, semiconductor process equipment, and components.
<b>Telecommunications Enterpris</b>	es
Siward Crystal Technology Co., Ltd. STSP Branch	The enterprise's approved capital amounted to US\$7.7 million for developing optical quartz ingot, piezoelectric quartz ingot, and clear quartz.

New Enterprises Approved in 2008

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### Biotechnology (Medical Device) Industry

There were 23 approved enterprises by the end of 2008. 4 enterprises including I Chuan, SynbioTech, Codent, and Lightmed were approved in 2008. Medical device is the emerging industry within the government's 2015 economic development vision; therefore, concept of creating the Medical Device Special Zone in the STSP is well supported by the government. Moreover, for the next four years, starting from 2009, the medical device industry in the STSP will conduct local R&D through the "Southern Taiwan Biomedical Device Industry Cluster Development Project" to strengthen the growth of the overall industry.

### **Precision Machinery Industry**

There were 48 approved enterprises by the end of 2008. 6 precision machinery enterprises were recruited in 2008, raising the Park's stake in the production of ion implanters, solar simulators, optoelectronics process testers, semiconductor equipment chemical cleaning stations, laser cutters and other related components. These enterprises provide the STSP's own semiconductor and optoelectronics industries with Just-In-Time service, which in turn lend to lowered costs and heightened competitiveness.

## Harvest Time Industry Performed Aggressively in 2008

The STSP turnover reached US\$16.8 billion in 2008, a 2% decline from the year of 2007. The turnover was predominately from optoelectronics (64.5%) and IC (29.8%); together comprising 94.3% of the total turnover. The turnover of optoelectronics was affected by the impact of global financial crisis in 2008 Q4; however, other industries in the Park performed aggressively and grew consistently.



Turnover by Industry in 2008

# Southern Taiwan Science Park

IC US\$ 1,781.8 million (17.1%)

US\$ 3,015.1 million

(58.4%)

Biotechnology



The total import/export amount, excluding domestic sales and transfer sales in bonded area, is US\$15.6 billion in 2008; in which, exporting amount was US\$10.4 billion and importing amount was US\$5.2 billion representing a trade surplus of US\$5.2 billion. Among the 6 industries in the Park, the export amount of optoelectronics industry was the highest at US\$8.2 billion and the IC industry came in second at US\$1.8 billion. At US\$3.0 billion, the import amount of optoelectronics was the highest; IC came in second at US\$1.9 billion.

# **Rooted in the STSP**

Staff and Land Utilization

### **Create Local Job Opportunities**



Others US\$ 1.8 million (0.0%)

### US\$ 93.8 million (0.9%) Precision machinery US\$ 248.9 million (2.4%) **Optoelectronics Telecommunications** US\$ 0.9 million (0.0%) US\$ 8.248.9 million Computer & peripherals (79.3%)US\$ 14.2 million (0.1%) Others US\$ 16.0 million (0.2%) Export Amount by Industry in 2008 Biotechnology IC US\$ 30.2 million (0.6%) US\$ 1,906.1 million Precision machinery US\$ 198.8 million (3.8%) (36.9%) Telecommunications US\$ 6.2 million (0.1%) Computer & peripherals **Optoelectronics** US\$ 8.0 million (0.2%)

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### Land Lease Status by the End of 2008

	Total Area	Rentable Area	Assigned Area	Land Assignment Rate (%)	Rentab <b>l</b> e Unoccupied Area
TSP	1,038	517	395	76.4	122
KSP	570	194	144	74.3	50
Total	1,608	711	539	75.8	172

(Unit: hectare)

### Land Occupancy Rate Increases

The land assignment rate of Phase I and II of TSP is growing steadily. By the end of 2008, Phase I Site recorded an assignment rate of 94.8% and Phase II Site with 56.4%. Combined assignment rate for TSP is at 76.4%. Land assignment rate at the KSP is 74.3% and still growing.

## **R&D Upgrade** Research Energy Rising and Growing Introduction of Major Research Institutes

In order to aid and fortify Southern Taiwan's research and development and to bridge the different industries and functions, the STSP Administration has recruited several research institutes including the SME Incubator at TSP, the Industrial Technology Research Institute STSP Branch, the National Nano Device Laboratories(NDL), the National Center for High-Performance Computing(NCHC), the National Cheng-Kung University(NCKU) Business Incubation Center, the National Chung-Cheng University STSP Branch

# Standard Factory For Biotechnology Rent Decreased, Right Time to Move in

To promote the development of biotechnology, the STSP Administration has constructed a standard factory for biotechnology in TSP in compliance with the biotechnology pharmaceutical production standards. Adjacent to the National Laboratory Animals Center STSP Branch, the standard factory is available for the biotechnology enterprises of the STSP. It is customized to accommodate biotechnology equipments that other standard factories cannot.

To boost the facility utilization, the standard factory for biotechnology rent had been scaled to US\$4.3/m<sup>2</sup> representing 26.2% reduction since May 1, 2008. The lowered rent reduces overhead costs for biotechnology firms; therefore, the present is an opportune time for biotechnology enterprises to station themselves in the Park.

of Technology Promotion Center of R&D Office, the Academia Sinica Biotechnology Experimental Center in Southern Taiwan(AS-BEST), the National Laboratory Animal Center STSP Branch, the Telecom Technology Center(TTC), and Metal Industries Research & Development Center's KSP Branch. Moreover, High Concentration Photovoltaic Qualification & Development Center of Institute of Nuclear Energy Research at KSP was approved for establishment to the Park on May 16, 2008. By the end of 2008, 11 institutes contributed their vigor to the research at the STSP.



The groundbreaking ceremony of Telecom Technology Center Laboratory Building

### Telecom Technology Center Laboratory Building A Good Help to ICT Industry

The March 11, 2008 groundbreaking ceremony of Telecom Technology Center Laboratory Building initiated the construction of EMC, safety procedures, and wireless broadband tests laboratories. The Telecom Technology Center also qualified for the WiMAX Forum Designated Certification Lab (WFDCL) in January 2008. A cooperative agreement was officially signed with Digital TV Labs UK in October 2008. Constructing digital TV base band signal test platform for the first Digital Video Broadcasting-Terrestrial (DVB-T) in Asia in KSP provides telecommunications and broadcasting equipment enterprises in southern Taiwan with testing and validation service. These services will stimulate the growth of our domestic ICT industry.

### National Laboratory Animal Center STSP Branch Provides Biotechnology Research Resources

The National Laboratory Animal Center STSP Branch broke many records with its April 18, 2008 grand opening. In addition to the largest aseptic temperaturecontrolled feeding service in Taiwan, the Center is equipped with the first animal nursery for the public and with the first "Virtual Mouse." The Center also helps hedging the risk of the National Laboratory Animal Center in Taipei, balancing the resource of laboratory rodents needed in southern Taiwan, and providing Park biotechnology enterprises with laboratory research, education, and training. Moreover, it serves as a platform for the collaboration of industry, academy, and research institute in southern Taiwan.

### High Concentration Photovoltaic Qualification & Development Center Incubates Solar Photovoltaic Talents

Institute of Nuclear Energy Research's Atomic Energy Council, Executive Yuan, established its presence at KSP on May 16, 2008 by pioneering the High Concentration Photovoltaic (HCPV) Qualification & Development Center. The Center intends to integrate local academic talents and existing solar resources to develop HCPV solar cell in KSP. It also constructed a module validation laboratory in an effort to



▲ The grand opening ceremony of the Metal Industries Research & Development Center 's KSP Branch

國家實驗研究院實驗動物中心 南部設施 圆圆螺圆圆圆窗管底



▲ Distinguished guests at the grand opening ceremony of the National Laboratory Animal Center STSP Branch

encourage, promote, and develop talents which will bring strength to the solar photovoltaic industry in the future.

### Nanying Biotechnology R&D Building Pools Agricultural Biotechnology Resources

To promote agricultural technologies and to exchange learning internationally, the Nanying Biotechnology R&D Building, funded by Tainan county government and the National Science Council, began construction on May 27, 2008. The completed R&D Building will house the Academia Sinica Biotechnology Experimental Center in Southern Taiwan(AS-BEST). Cooperating with nearby Asian Vegetation R&D Center and academic research talents, the Center will study orchids, mango, bioenergy, Chinese herbal medicine, plant preservation and anti-adversity in hope to speed up the growth of Taiwan's agricultural biotechnology substantially.

### Metal Industries Research & Development Center Shapes Medical Device Cluster

Since its grand opening on July 20, 2008, Metal Industries Research & Development Center's KSP Branch has established the medical device and optoelectronics equipment division. It intends to concentrate its R&D efforts within the KSP Biotechnology Medical Device Special Zone with the goal of placing Taiwan at the fore front of the metal medical device industry.

### Industry-Academia Collaborative Projects for Innovative R&D



▲ The 27th innovation R&D grant board review meeting

With the extension of the "Industry-Academia Collaborative Projects for Innovative R&D," 11 applications were received in 2008 to assist Park enterprises in innovating technology, integrating academic resources, and reinforcing collaboration between industry and academia. The scope of technology includes high-efficiency aluminum substrates serial process R&D project, innovative multi-layer and subwavelength anti-reflection structured high-efficiency solar cell development, heat conductive soft printing circuit board R&D, a-Si/mc-Si solar cell plasma enhanced chemical vapor deposition chamber, and other related components. Out of the 11, 8 projects were awarded with grants in total of US\$0.7 million.