

# 2nd

## National Industrial Innovation Award

# 2nd NATIONAL INDUSTRIAL INNOVATION AWARD



2012 winners introduction

Organized by : Ministry of Economic Affairs, R.O.C

Implemented by : Chinese Association For Industrial Technology Advancement



# ORIGIN

Over the past decades, Taiwan has developed a solid foundation in advanced technologies. However, along with the changes in the industrial environment and rapid rise of the knowledge economy, “technology innovation” is no longer sufficient to support the Nation’s economic development. What we need today is the power to drive forward industrial development, and, to build this power, creativity, innovativeness, and the ability to create value will be essential. Therefore, to accelerate development of a creative culture in Taiwan, the Act for Industrial Innovation was passed in 2010. And to build up advantages in the global economic and investment strategies, as well as expand the opportunities for the development of the domestic economy, we have entered the Cross-Strait Economic Cooperation Framework Agreement (ECFA) and launched a series of strategic programs. With all strategies in place, we will be able to grasp the opportunity for a breakthrough in the economic development of Nation.

To further promote industrial innovation, the Ministry of Economic Affairs (MOEA) has instituted the National Industrial Innovation Awards (NIIA). With “innovation” as its main axis, NIIA encourages Taiwan’s industries to take full advantage of the existing competitiveness to consolidate the industrial innovation and contributions generated from the technologies, services, and diverse cultures. Nomination of this award is focused on the added-values created to better the human life through innovative design and information technology, and encourages a change of mindset to create high added values instead of high production quantity. This program aims to identify and reward businesses, academic organizations, and research institutions which have made substantial contributions to the industry and for the better good of the Nation.

The National Industrial Innovation Awards Program (NIIA) is currently the only government-sponsored program targeting on industrial innovation. Nominations for the awards include innovators from the industry, academic institutions, and research organizations. In addition to the goals of inspiring leadership in the industry and commending the teams and individuals in the supporting roles of industrial innovation- the researchers, this program has also an “organization” category to encourage innovation as an organizational effort, as well as “team” and “individual” categories to encourage cross-field co-operation..

Through this program, we expect to provide the industries and research institutions a credible platform for evaluation of the innovative competitiveness and act as a driving force to push forward industrial innovation in Taiwan. This platform will not only promote rational dialogue and exchange among all participating businesses, scholars, organizations, and experts, but more importantly encourage the researchers in the industry, academic institutions, and research organizations to break away from the traditional technology-based thinking and move forward to develop service innovation. Through service innovation, we will upgrade the value of manufacture to the added-value of service, and the consolidated creativity will bring the industries in Taiwan into the age of blue sea.

The economy in Taiwan is going through a critical time, as we are working to upgrade our industries. The Ministry of Economic Affairs sincerely invites all domestic businesses, schools, organization-sponsored research institutions, and individuals to actively participate in the nomination process of NIIA. This is an opportunity to evaluate the innovative competitiveness through collaborated efforts and share the experiences with other innovators. We also expect that the outstanding innovators in the Nation will take a further step to turn the award-winning innovations into a force that drives the industries forward. Together, we will transform Taiwan from a “nation of manufacture into a nation of innovation and open a new page to a “golden decade”.

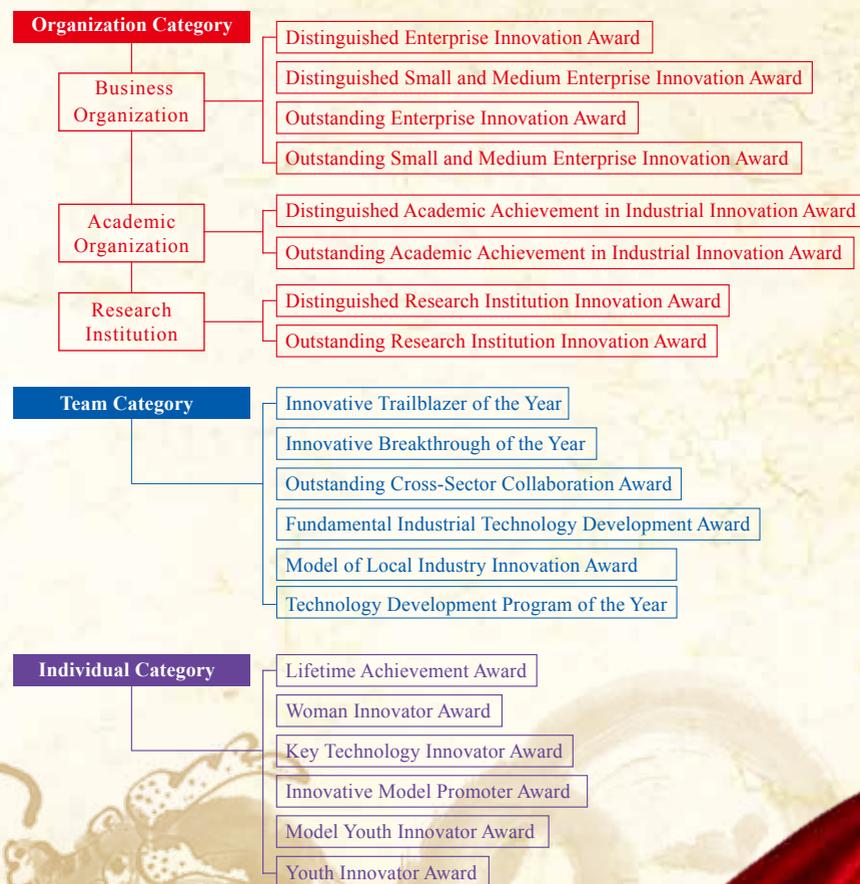


# ABOUT NATIONAL INDUSTRIAL INNOVATION AWARD

## Nomination Categories

| Group                              | Industries  |
|------------------------------------|---|
| Precision Manufacture              | This category includes the metal, electrical and mechanical, transportation vehicles, automotive electrical components, automatic control, and precision instruments industries.  |
| Intelligent Technology             | This category includes the semiconductor, IC design, display panel, computer and peripherals, communications and networking, mobile phone and telecommunication equipments, electronic components, and software industries.   |
| Living and Healthcare Technology   | This category includes the medical and biotechnology, healthcare, materials, chemical, food, textile and fiber, glass and ceramics industries.  |
| Green Energy Technology            | This category includes the solar power, wind power, optoelectronics and optics, oil and natural gas, environmental engineering, green energy building materials and construction, and other energy-based industries.  |
| Innovative Services                | This category includes the cloud computing services, information services, testing services, logistics and storage, transportation services, technology services, human resources, trade and retail, engineering consulting services, and financial insurance industries. |
| Cultural Innovative and Recreation | This category includes the cultural and creative, digital content and publishing, restaurant and tourism industry, intellectual properties management, and education industries.  |

## 2<sup>ND</sup> NATIONAL INDUSTRIAL INNOVATION AWARD



# ORGANIZATION CATEGORY

|  |    |
|--|----|
|  <b>Distinguished Enterprise Innovation Award</b>                         |    |
| Delta Electronics Inc.   | 8  |
| PChome Online Inc.   | 10 |
|  <b>Distinguished Research Institution Innovation Award</b>               |    |
| Display Technology Center, Industrial Technology Research Institute  | 12 |
|  <b>Outstanding Enterprise Innovation Award</b>                           |    |
| Ta Liang Technology Co., Ltd.  | 14 |
| D-Link Corporation   | 16 |
| CyberLink Corp.  | 18 |
| Kenda Rubber Industrial Co., Ltd.  | 20 |
| Porite Taiwan Co., Ltd.  | 22 |
| HCT LOGISTICS CO., LTD.  | 24 |
| Evergreen International Corp.  | 26 |
|  <b>Outstanding Small and Medium Enterprise Innovation Award</b>        |    |
| SOCO Machinery Co., Ltd.   | 28 |
| SciVision Biotech Inc.   | 30 |
| OTO Photonics Inc.   | 32 |
| Taiwan Orchid Professionals Co., Ltd.  | 34 |
| Digimax, Inc.  | 36 |
|  <b>Outstanding Academic Achievement in Industrial Innovation Award</b> |    |
| Research & Development Center for Mold and Molding Technology, Chung Yuan Christian University   | 38 |
| Research and Services Headquarters, National Cheng Kung University   | 40 |
| College of Design, Chaoyang University of Technology   | 42 |
|  <b>Outstanding Research Institution Innovation Award</b>               |    |
| Mechanical & Systems Research Laboratories, Industrial Technology Research Institute   | 44 |
| Taiwan Textile Research Institute  | 46 |



### Reason for Winning



Delta Electronics is a leading provider of power supply and cooling solutions. Delta is now one of the world's leading providers of energy-efficiency systems for PV, electric vehicle, LED and intelligent green building applications. In the past three years, Delta has embraced green energy system integration solutions as its corporate strategy and culture.

Starting with core power control technology, Delta applied innovative concepts in green energy to develop new energy and energy-saving products. These have now been integrated with core components from Taiwan's well-developed green energy equipment manufacturing industry to open new markets for the domestic green energy industry. At the same time, Delta has also stimulated the development of the domestic smart green building industry supply chain to make it internationally competitive. To realize its commitment to environmental protection, all new Delta office buildings and factories since 2004 have been designed and built using green building techniques. It has been estimated as of 2011 that related products have reduced global power consumption by 3.3 Billion KWH and CO2 emissions by 2.02 million tons. The outstanding achievements make Delta Electronics a model of innovation for Taiwanese industries.

### Business Philosophy

A company with a vision will undoubtedly exploit its advantages in environmental protection and energy conservation to create value for the company and its products. These attributes will also drive continued growth and innovation.

— Chairman Yancey Hai



### Company Profile

|                              |  |
|------------------------------|--|
| <b>Founded</b>               | 1971   |
| <b>Core Business</b>         | As an energy-saving solutions provider, Delta's businesses encompass power electronics, energy management, and smart green life. To provide innovative, clean and energy-efficient solutions |
| <b>Chairman of the board</b> | Yancey Hai   |



### Business Contact

|                    |   |
|--------------------|---|
| <b>Head Office</b> | No. 186 Ruey Kuang Rd., Neihu, Taipei, R.O.C. |
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### Reason for Winning



"Innovation and Value" defines the core spirit of PChome Online. The company's network technology and innovative applications have created Taiwan's first successful example of the "speed economy" by streamlining and restructuring the supply chain and workflow. Such logistics service process innovation is unique within Taiwan.

At the same time, PChome is building a global shopping service in partnership with international payment services such as Alipay and PayPal to help businesses enter 105 overseas markets. By helping Taiwanese manufacturers market MIT products through e-commerce, PChome has been successful in stimulating the clustering of the domestic e-commerce industry.

Since its founding in 1996, PChome Online has continued to integrate logistics, cashflow and information flow to shorten the supply and demand cycle for individuals. PChome Online has also led the industry in transforming into an innovative logistics & technology services company while also creating a value network that balances retail and service. All of these have made an important contribution and impact on the innovative development of Taiwan's retail and service industries.

### Business Philosophy

The courage to believe is essential for innovation. Sometimes, it is the world that has it wrong.



### Company Profile

|                       |                    |
|-----------------------|--------------------|
| Founded               | 1998.07            |
| Core Business         | E-commerce, Portal |
| Chairman of the board | Hung-Tze Jan       |
| President             | Authur Lee         |



### Business Contact

|             |   |
|-------------|---|
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### Reason for Winning



Display Technology Center leverages ITRI's in-house expertise in electronics, optoelectronics, chemical and material sciences, to focus on pioneering future generation, flexible display technology. It has helped the industry transform to high value-added products through its technical innovations, and had received global recognition by winning multiple international awards. Previously, in 2011, it won the "Innovative Breakthrough of the Year" award in the team category of 1st National Industrial Innovation Awards. This year's honor, again, exemplifies its sustained contribution and outstanding achievements. ITRI's Display Technology Center instrumented the establishment of "Taiwan Display Union Association" (TDUA) by partnership with three display industry associations which include Taiwan Display Material & Device Association, Taiwan Electronic Equipment Industry Association, and Taiwan TFT-LCD Association. The close alliance with the display industry and associations helps to encourage domestic investment in flexible displays and further accentuates the economic benefits of Taiwan's display industry and technology, thus providing a favorable advantage in the competitive global market.

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### Business Philosophy

Innovation is one of the most important yardsticks that the Display Technology Center uses to continuously measure and challenge itself. It is the keystone to the organization's pursuit of excellence and differentiation.

— Dr. Janglin Chen, Vice President of ITRI and General Director of ITRI's Display Technology Center



### Company Profile

|               |                                   |
|---------------|-----------------------------------|
| Founded       | 1973                              |
| Core Business | Technology Research & Development |
| President     | Jyuo-Min Shyu                     |



### Business Contact

|             |   |
|-------------|---|
| Head Office | Bldg.15, No.195, Sec.4, Chung Hsing Rd., Chutung, Hsinchu, Taiwan, R.O.C. |
| TEL         | +886-3-5913384  |
| FAX         | +886-3-5910470  |
| Website     | www.itri.org.tw   |



### Reason for Winning



Ta Liang Technology developed its own controller R&D technology and from there expanded into the CNC machinery industry. Ta Liang was the first to collaborate with domestic vendors and introduce their key components for CNC equipment. This encouraged other competitors to follow suit and stimulate the development of domestic component suppliers. The "Ta Liang" brand is now exported throughout the world.

From 2009 to 2011, the revenues grew by more than 150% annually awarded Ta Liang products have a market share of 38%. And won the prize of National Outstanding SME Award and other government honors in the recent years is the proof that the innovative R&D and business performance of Ta Liang make it a worthy industry role model.



### Company Profile

|                          |  |
|--------------------------|--|
| Founded                  | 1980.12  |
| Core Business            | CNC precision machines manufacturing and sales |
| Chairman of the board    | Laurie Wang                                    |
| President                | Jerry Chen                                     |
| Executive Vice President | Jackie Chien                                   |



### Business Contact

|             |   |
|-------------|---|
| Head Office | No.49, Youlian St., Bade City, Taoyuan County 334, Taiwan, R.O.C. |
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| FAX         | +886-3-3685811  |

### Key Products – Product features



**TL-RU6E**

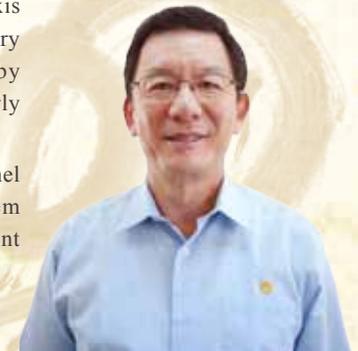
Ta Liang is a manufacturer of PCB drilling and routing m/c. In recent years, also began producing glass panel processing m/c in touch panel market.

Ta Liang has mastered and invested the critical core technologies for CNC controllers software development. Ta Liang is able to refine its

controller design in response to customer requirements in a timely manner.

Ta Liang has continued to improve its machinery in order to meet customer requirements. Except the 5-axis large stage routing m/c and 6-axis large stage drilling m/c, Ta Liang also completed the "6-axis CCD depth control routing m/c". Ta Liang is very popular in Asian market and also qualified by leading makers in Japan and Korea. Particularly for the production of Any Layer HDI boards.

Furthermore, Ta Liang has equipped its glass panel processing m/c with a CCD recognition system for accurate positioning, enabling highly efficient slotting and trimming of glass panels.



### Business Philosophy

Continuous growth is driven by continuous innovation.

— Chairman Laurie Wang





## Reason for Winning



In 2011 D-Link launched its innovative "D-Link Cloud" products that combined its existing advantages in hardware technology and R&D with innovative cloud software and service applications. This move not only demonstrated D-Link's technological R&D capability but also shattered the chains holding back network communications hardware development

in Taiwan. The re-orientation of application development round user requirements (e.g., portability and mobility) represented a major breakthrough for the network communications and surveillance industries. In 2007 D-Link was named one of the top 99 IT companies in the world and it is now a high-value global brand.



## Company Profile

|                              |  |
|------------------------------|--|
| <b>Founded</b>               | 1987.06  |
| <b>Core Business</b>         | D-Link is the global leader in connectivity for home, small business, mid-sized enterprise environments, and service providers. D-Link develops and supports network solutions that integrate capabilities in switching, wireless, broadband, storage, IP Surveillance, and cloud solutions. |
| <b>Chairman of the board</b> | Roger Kao  |
| <b>President</b>             | AP Chen  |
| <b>CTO</b>                   | Ping Chen  |



## Business Contact

|                    |  |
|--------------------|--|
| <b>Head Office</b> | No.289, Sinhu 3rd Rd., Neihu District, Taipei City 114, Taiwan, R.O.C. |
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| <b>FAX</b>         | +886-2-6600-9898   |

## Key Products – Product features



**D-Link pocket cloud router powers personal wireless networks to share data, connections on the go**

D-Link Pocket Cloud Router - DIR-506L is small enough to fit in a pocket, and powered by a rechargeable battery for maximum mobility, this full-featured wireless router is designed for sharing on the go. With support for SharePort™ Mobile, the Pocket Cloud Router makes it easy to share movies, music, and other files among different mobile devices. It also enables convenient sharing of an Internet connection. Consumers today are looking for easy access to their data across all their personal devices, and a way to share files

with other people. With the Pocket Cloud Router and SharePort Mobile, it's as simple as plugging in a USB storage device and tapping a few buttons. Files can be streamed or copied to another device using the SharePort Mobile app for mobile devices, or a compatible web browser. What's more, sharing works even if there's no Internet connection, so users can enjoy their media or transfer their files whenever and wherever they like.

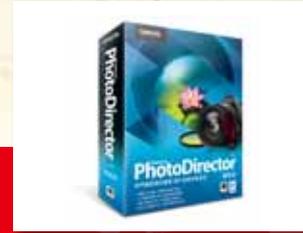


## Business Philosophy



The D-Link brand is known worldwide for commitment to development, design, and technological innovation in networking products. With the launch of our industry-leading "Cloud Routers, Cloud Cameras, Cloud Storage" concept, D-Link is breaking down the barriers to network communication and helping customers connect to more. D-Link pocket cloud routers power personal wireless networks to share data and connections on the go.

— Chairman Roger Kao



### Reason for Winning



CyberLink specializes in the development of digital multimedia software and streaming application solutions. CyberLink was able to master the critical technologies by using PowerDVD as the basis for developing related multimedia software while also investing in the development of Blu-ray, 3D solutions, audio-video enhancement technology, multimedia

performance optimization and cloud connection technologies. With more than 60 approved patents in the past 3 years and numerous domestic/international awards, CyberLink has become one of the leading world-class software developers in Taiwan through outstanding innovation.



### Company Profile

|                       |                     |
|-----------------------|---------------------|
| Founded               | 1990.08             |
| Core Business         | Multimedia software |
| Chairman of the board | Jau Huang           |
| CEO                   | Alice H. Chang      |
| Senior Vice President | Johnny Tseng        |



### Business Contact

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|-------------|---|
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### Key Products – Product features



#### PowerDVD / PowerDirector

CyberLink's broad portfolio of multimedia applications provides users with a range of entertainment and creativity software:

- Media Entertainment (PowerDVD) – CyberLink flagship product, PowerDVD, is the world's leading Blu-Ray and Media Player. With more than 500 million copies of global sales,

PowerDVD has over 70% market share in media player software market.

- Media Creation (PowerDirector) –CyberLink PowerDirector is the the world's fastest consumer video editing software and create with a wide range of easy-to-use applications, generate enticing videos & photos, author Blu-ray & DVD discs and more. CyberLink features its Creative Director Family – a software suite designed to create digital media content from the consumer to professional level, including PowerDirector and PhotoDirector for the best in video & photo editing.



### Business Philosophy



**Sustainable research, development and innovation committed to continuously enhancing the multimedia entertainment experience for users!**

– Chairman Jau Huang



## Reason for Winning



Kenda Rubber Industrial Co., Ltd. is a well-known brand in the tire industry. The company's emphasis on technology R&D and innovation has been effectively applied to the development of new products and the improvement of existing product quality such as low-resistance tires and low-noise tires. Kenda has also created its own brand for global marketing supported

by the company's own organizational innovation and highly-efficiency management system. By cultivating R&D expertise in accordance with the company's philosophy of "Setting sights on the world while remaining rooted in Taiwan", Kenda has made an important contribution to the development of the domestic rubber chemical engineering industry.



### Company Profile

|                       |   |
|-----------------------|---|
| Founded               | 1962.03.31  |
| Core Business         | Bicycle, Motorcycle, ATV, Industrial, Trailer and Automotive tires. |
| Chairman of the board | Ying-Ming Yang  |
| President             | Hongder Chang   |
| R&D Division Director | Lorder Chen   |



### Business Contact

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|-------------|---|
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| FAX         | +886-4-8361276  |

## Key Products – Product features



**Kenda SCT**

KENDA Sealant Casing Technology tire (Kenda SCT) can be considered a cross between tube type and UST type tires. When used with a liquid sealant, Kenda SCT tires form an air tight seal, similar to the UST tire, but can be used on almost all bicycle rims. Kenda SCT tires have an additional layer of material built into the casing of the tire that allows it to be compatible with the various chemicals in liquid sealants. However, this materials thinner and lighter than its UST counterpart.

The benefits of SCT tires, when used with sealant, include allowing the rider to use lower air pressure as well as to take full advantage of the liquid sealant to seal up most punctures or cuts.

## Business Philosophy



**Kenda will continue to strengthen our brand and products using innovative techniques that match international trends in the future. Our goal is to create even more value for our customers.**

— Chairman Ying-Ming Yang



### Reason for Winning



Porite Taiwan was originally the Taiwanese subsidiary of a Japanese company dedicated to making micro bearings and machine parts. In recent years, Porite Taiwan has applied its core technology in powder metallurgy to manufacture solid oxide fuel cell connector plates. Porite Taiwan is one of the few manufacturers in the world capable of mass-producing

critical fuel cell components and now plays an important international role. The commitment to "continuous innovation" is what drives Porite Taiwan and the company's construction of a complete R&D, quality control, manufacturing and delivery system offers an important transformation and innovation business model for Taiwan's green energy industry.



### Company Profile

|                       |                         |
|-----------------------|-------------------------|
| Founded               | 1968.03                 |
| Core Business         | Powder Metallurgy Parts |
| Chairman of the board | Isamu Kikuchi           |
| General Manager       | Chiu-Lung Chu           |
| Engineering Manager   | Huei-Long Lee           |



### Business Contact

|             |   |
|-------------|---|
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| FAX         | +886-37-581-128   |

### Key Products – Product features



**Solid Oxide Fuel Cell  
Inter-Connector Stack**

The inter-connector plate inside fuel cells (Solid Oxide Fuel Cell, or SOFC) must be airtight. Conventional mechanical machining can guarantee an gas tight construction but is not economic for mass production. The only competitive mass production method is powder metallurgy.

Apart from working with the material supplier to optimize the most suitable chromium-based alloy powder, Porite Taiwan also refined the production

process. While foreign powder metallurgy manufacturers all used the "Press Twice, Sinter Twice" technique (Press Twice: compacting and forming; Sinter Twice: Sinter once each at low and high temperatures), Taiwan Porite developed the "Press Once, Sinter Once" technique (forming and high-temperature sintering) that delivers the required quality.



### Business Philosophy



**Continuing to challenge and develop critical components needed by industries around the world that are worth commercial mass production.**

— General Manager Chiu-Lung Chu



### Reason for Winning



HCT Logistics' integration of logistics, information flow, commerce and cash flow makes it the first logistics operator in Taiwan to provide customers with a total solution. The launching of the BPR (Business Process Reengineering) effort in 2000 was also the first time that a Taiwanese logistics company has transformed itself into a service company.

At the same time, HCT encouraged local industries, especially farmers in remote rural regions, to market and ship their products to other areas. By using online sales and integration service to improve shipping efficiency as well as insisting on "Order Today, Pick Tomorrow, Arrive Day After", HCT helped farmers generate millions of dollars in revenues. The commitment to corporate social responsibility makes HCT a model for domestic logistics companies.



### Company Profile

|                       |   |
|-----------------------|---|
| Founded               | 1938.10   |
| Core Business         | Transportation, Warehouse, Wholesale, International Trading |
| Chairman of the board | Emmet Hsu   |
| President             | Rong Chuan Chen   |
| Vice President        | Pablo Lee   |



### Business Contact

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|-------------|---|
| Head Office | 9F No.90, Sec.6, Zhongshan N. Rd., Shilin Dist., Taipei, Taiwan, R.O.C. |
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| FAX         | +886-2-2833-3133  |

### Key Products – Product features



1. 4PL logistics solution provider
2. Fulfillment & Distribution service
3. Store deliveries & Home deliveries
4. Marketing channel service
5. Cross-strait logistics



### Business Philosophy



HCT Logistics delivers the hopes and aspirations of 70,000 companies while also providing a new solution for innovative product logistics.

— Chairman Emmet Hsu



### Reason for Winning



With the new Room Shopping service, Evergreen International Corp. has been bring the concept of in-flight shopping to 29 international hotels. The service is a platform delivering cultural and creative products filled with Taiwanese charm to the international consumer market. The company's innovative approach enhances Taiwan's national image while leveraging

corporate resources to create a fresh business model for a traditional industry, lending the creative and recreational industries boundless potential.

### Key Products – Product features



hotelshop

Evergreen International Corp. vertically integrates creative cultural enterprises, hotel channels and hotel guests, while horizontally consolidating international hotel channel marketing platforms. The **hotelshop** magazine is an effective medium for developing in-room shopping opportunities and enabling hotel guests to enjoy shopping from the comfort of their own room.



### Company Profile

|                              |   |
|------------------------------|---|
| <b>Founded</b>               | 1984.07   |
| <b>Core Business</b>         | International Tourist Hotel Business, Agent Shipping Service, Management Service, Integrated marketing services for magazines (periodicals), publishing, advertising, design, photography, etc. |
| <b>Chairman of the board</b> | Ming-che Chang (Morgan Chang)   |
| <b>President</b>             | Ping-kun Hung (Steve Hung)  |
| <b>Junior Vice President</b> | Pai-ti Chen (Petty Chen)  |



### Business Contact

|                    |   |
|--------------------|---|
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### Business Philosophy



Vertical integration of industry supply and demand together with horizontal integration of hotel platforms to provide an all new consumer experience and create win-win business opportunities!

– Chairman Ming-che Chang



### Reason for Winning



SOCO Machinery is a developer and manufacturer of CNC pipe benders, Metal Circular Saws Machines and Automation Cells. The company's products are sold worldwide under the "SOCO" brand. Due to the importance attached to innovative R&D by the SOCO, the company set up the "Global Operations Headquarters" and "Innovative Research Center". In recent years, the company has focused on green energy and carbon reduction even while producing excellent results in terms of new products and patents. A frequent winner of the National Award for Outstanding SMEs and other domestic awards, SOCO's innovation performance has been a wonder to behold.

### Key Products – Product features



The Laser Cutting System  
"SLT-150".

SOCO's introduces its newest generation in tubes and profiles processing technology – the Laser Cutting System "SLT-150". With over 30 years of experience in design and manufacturing experience in tube cutting technology, SOCO is specialized in solutions for the Tube and Pipe industries, and the new Laser Cutting Line is the ultimate solution for joining multiple machining processes in one system for maximum flexibility, automation and performance.



### Company Profile

|                       |                                |
|-----------------------|--------------------------------|
| Founded               | 1979.08                        |
| Core Business         | Machinery Industry             |
| Chairman of the board | Frank Lin                      |
| President             | Frank Lin                      |
| R&D Manager           | Charlie Huang (Assistant V.P.) |



### Business Contact

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|-------------|--|
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### Business Philosophy



Innovation is the fountain of youth for business enterprises.

– Chairman Frank Lin



### Reason for Winning



SciVision's core technology is the production and application of hyaluronic acid. From the production of the raw materials to the creation of high value-added products, SciVision is the only company in Taiwan capable of injection manufacturing process. A breakthrough has also been achieved in the production process through the "Crosslinked

Hyaluronic Acid Products Platform" (CHAP). SciVision's innovative use of local online marketing and local languages allow international customers to fully understand the product. The proactive approach to innovation by SciVision is a model for domestic small and medium enterprises.

### Key Products – Product features



#### Hyaluronic acid based dermal fillers

The strengths of HyaDermis dermal filler produced using the Crosslinked Hyaluronic Acid Products Platform (CHAP) developed by our company include excellent rheology, plasticity, operability as well as a natural texture and flexibility. When compared to other hyaluronic acid based dermal filler products, HyaDermis offers improved plasticity and longer duration for Oriental cosmetic needs. It provides convenience, safety, and effectiveness for aesthetic specialty. The product has now been launched in Taiwan, Italy, Japan, Korea, Columbia and India.



### Company Profile

- Founded 2001.11
- Core Business
  1. Hyaluronic acid based viscosupplement
  2. Hyaluronic acid based dermal filler
- Chairman of the board Kai-Cheng Han
- President Tony Han
- R&D Leader Chun-Chang Chen



### Business Contact

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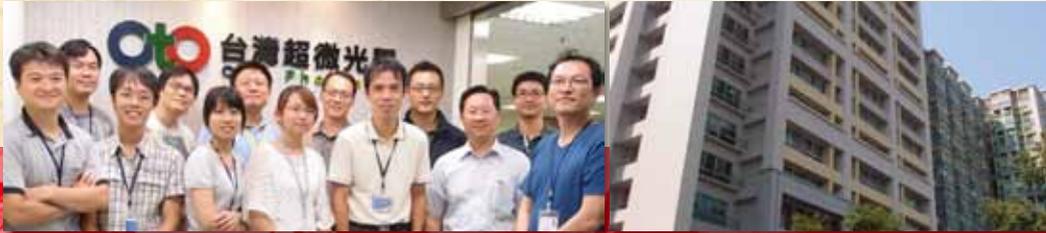


### Business Philosophy



Embrace "vision of health and happiness for all mankind based on modern science" while expanding internationally to pave the way for Taiwan's biotechnology industry.

— Chairman Kai-Cheng Han



### Reason for Winning



OTO Photonics made full use of "optical theory" to develop its own technology for manufacture the smallest and fully featured micro-spectrometer in the world. OTO Photonics can also customize spectrometers to customer requirements and the needs of different industries. The company's innovation accomplishment surpasses that of major optical manufacturers in the US, Japan and Germany. As one of the few Taiwanese companies to lead the world in its field, OTO Photonics is an example of innovation for domestic industrial development.

As one of the few Taiwanese companies to lead the world in its field, OTO Photonics is an example of innovation for domestic industrial development.

### Key Products – Product features



**Ultra Micro Spectrometer**

As a smallest spectrometer in the world, and 1/10 capacity to compare with the other micro spectrometer in the market nowadays. Although, the leading companies which are from United State, Japan and German are also hammer at developing in the field of ultra micro spectrometer; however, using traditional methods still have huge defect and hard to solve. UM1000 is a product based on the theory of "A

Diffraction Grating with A Curved Surface" which is the unique and only one in the world; meanwhile, our innovation also complete the advantages in high-resolution, high-sensitivity, low-cost and smallest portable spectrometer in the world. Definitely, it is the great honor and shall be proud of Taiwan in the optical field that beyond the other leading companies from advanced country.



### Business Philosophy

**Only copying and plagiarism may guarantee you make no mistakes. To be innovate, you need to suffer errors, criticisms, misunderstanding and solitudes.**

— Chairman Ivan Wu



### Company Profile

|                       |                                      |
|-----------------------|--------------------------------------|
| Founded               | 2006.11                              |
| Core Business         | Spectrometer                         |
| Chairman of the board | Ivan Wu                              |
| President             | Brian Kang                           |
| R&D Manager           | Jack Chan (Associate Director, TPCC) |



### Business Contact

|             |   |
|-------------|---|
| Head Office | 9F-2, No. 27, GuanXin Rd., HsinChu City 300, Taiwan, R.O.C. |
| TEL         | +886-3-567-9955   |
| FAX         | +886-3-563-7979   |
| E-Mail      | sales@otophotonics.com                                      |



### Reason for Winning



Taiwan Orchid Professionals used the "Taiwan Orchid Plantation" as the foundation and transformed orchids from an ornamental crop into every part of food, clothing, accommodation and travel. This has now established a multi-purpose business model for developing boutique agriculture. Key technologies were also developed for the orchid industry supply chain to revitalize the local economy. Using the orchids from Houbi in Tainan, the company has continued to boost the status of local industries and create overall value for the enterprise. This business model combining economic agriculture, tourism & leisure, exhibition and promotion of creative culture proved to be innovative.



### Company Profile

|                       |  |
|-----------------------|--|
| Founded               | 2009.05  |
| Core Business         | Quality Agriculture, Biotech, Cultural Creativity, Tourism Leisure |
| Chairman of the board | Nadison Hsu  |
| President             | Nadison Hsu  |
| R&D Manager           | Bo Hong Wu (Deputy Chief Executive)                                |



### Business Contact

|             |   |
|-------------|---|
| Head Office | 17F.-5, No.16, Jian 8th Rd., Zhonghe Dist., New Taipei City 235, Taiwan, R.O.C. |
| TEL         | +886-2-82265388   |
| FAX         | +886-2-82265488   |

### Key Products – Product features



Orchid biotechnology cosmetics

The most representative orchid enterprise of Taiwan were from Taiwan Orchid Professionals Co., Ltd. The company took over the management of the Taiwan Orchid Plantation in 2009, the plantation has become the only world-class park to combine four flagship industries of: "boutique agriculture, biotechnology,

culture & creativity, tourism & leisure". In 2010, Taiwan Orchid Professionals was formally offered the public and became the first agribusiness concept stock in Taiwan (8419TW). In the same year, the company received the Golden Peak Award at the 10th Outstanding Enterprises Awards. Taiwan's orchid industry is now marketed worldwide with plantations, turn-key solutions, technical collaboration, overseas offices or retail channels in China, Japan, Korea, North America, Canada, North Africa, Malaysia and Middle-East. Once the global orchid logistics center takes shape, we will show the world the beauty of Taiwan!



### Business Philosophy



Bloom across the world while remaining rooted in Taiwan.

— President Nadison Hsu



### Reason for Winning



Digimax's development of 3D and interactive technologies go beyond the conventional contract manufacturing model. Instead, Digimax plays the role of the integrator and uses "International Co-production" to develop 3D computer animated movies such as "Nature's Treasure on the Move" and "Secrets of Saturn". The development of proprietary

technology, creation of original animation, production, marketing and brand building are all used with well-known local companies. Digimax is therefore the representative for the digital content industry development.



### Company Profile

|                              |  |
|------------------------------|--|
| <b>Founded</b>               | 1990.03.15   |
| <b>Core Business</b>         | Original Computer Animated Film and TV, Digital Art and Entertainment, Production Services |
| <b>Chairman of the board</b> | Helen Huang  |
| <b>CEO</b>                   | Helen Huang  |
| <b>Vice President</b>        | Chris Wu, Jeff Yang  |



### Business Contact

|                    |   |
|--------------------|---|
| <b>Head Office</b> | No.24, Lane 50, Nan Kang Road, Sec.3, Taipei, 115, Taiwan, R.O.C. |
| <b>TEL</b>         | +886-2-2785-9050  |
| <b>FAX</b>         | +886-2-2785-2471  |

### Key Products – Product features



**Computer animation & Digital art and entertainment projects & Production services**

- Original Computer Animated Film and TV
- 1. Co-development and co-production of computer animated film and TV for global market.
- 2. Licensing of animation characters and contents.
- 3. "Micro Film" development and production.
- Digital Art and Entertainment
- 1. Interactive content production, art/dance performance and software/hardware integration

for museums, exhibitions and theme parks.  
2. Distribution and exhibition of digital art masterpieces.

- Production service

Digital effects and audio/visual post-production services for feature films and TV commercials.

### Business Philosophy



The road to success is winding.

— CEO Helen Huang



### Reason for Winning



The Research & Development Center for Mold and Molding Technology at Chung Yuan Christian University brought together fields such as precision molding, nano materials and biomedical materials to set up an inter-disciplinary, inter-university team for helping local and foreign vendors with mold and molding problems. The Center has developed into an Asian academic hub on molding while also making many important contributions in terms of inventions and new type patents. Domestic awards included the "University Industrial Economy Contribution Award".



### Company Profile

|                      |  |
|----------------------|--|
| <b>Founded</b>       | 2003.01  |
| <b>Core Business</b> | CAE software for injection Molding, Innovative Injection Molding Laboratories, Major Operation of Society of Advanced Molding of Technology (SAMT) |
| <b>President</b>     | Samuel K.C. Chang  |
| <b>Director</b>      | Shia-Chung Chen  |



### Business Contact

|                    |   |
|--------------------|---|
| <b>Head Office</b> | No. 200, Chung Pei Rd., Chung Li, 32023, Taiwan, R.O.C. |
| <b>TEL</b>         | +886-3-265-4349   |
| <b>FAX</b>         | +886-3-265-4388   |

### Key Products – Product features

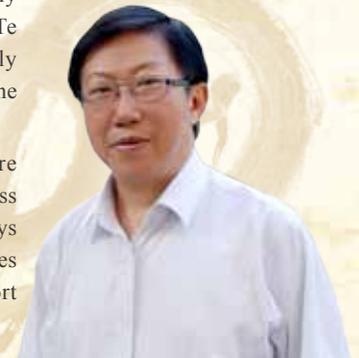


#### Fast Heating & Cooling Injection Molding - Dynamic Mold Temperature Control Technology

Dynamic Mold Temperature Control (DMTC) is a new type of injection mold temperature control technology, a rapid heat cycle of mold surface temperature assisted by induction heating. The average heating speed is about 15~25°C/s. DMTC technology consists of the mold design technology, various temperature control technologies and the total integration know-how. Unlike conventional mold temperature control that keeps the temperature just below

ejection temperature ( $T_e$ ), DMTC is able to quickly and dynamically vary the temperature between  $T_e$  and Glass Transition Temperature ( $T_g$ ) then quickly cool the high-temperature mold surface to retrieve the molded product when injection-molding is complete.

Face to the requirement of high mold temperature molding, such as micro injection molding, high gloss and surface quality molding. DMTC technology plays an important role to achieve rapid temperature changes in the mold with low power consumption and short cycles.



#### Business Philosophy



**Boosting industry innovation through green molding technology and smart/networked knowledge service platform in order to fulfill the responsibility to sustainable environmental development.**

— Director Shia-Chung Chen



### Reason for Winning



The Research and Services Headquarters of National Cheng Kung University adapts to an innovative organizational design and a unique business model to overcome the constraints of conventional university R&D management framework. The new organization has also played an important role in helping its 75 subordinate research centers promote their R&D results. By using computer animations in creating

business scenarios and virtual reality, the Headquarters enhanced the value of R&D results as well as their exposure and acceptance. In addition, the Headquarters also boasted the first ever technology transfer project, in which the actual royalties exceeded NT\$100 Million. Such accomplishments demonstrated the effectiveness of the innovative service & promotional model as well as its ability to assist industries with technology upgrades.



#### Company Profile

|                      |  |
|----------------------|--|
| <b>Founded</b>       | 1996.07  |
| <b>Core Business</b> | Providing the innovative services on human resources, procurements, Intellectual patents and properties, ect., for its affiliated research centers and for the colleges in NCKU. |
| <b>President</b>     | Hwung-Hweng Hwung  |
| <b>Director</b>      | Mi-Ching Tsai  |



#### Business Contact

|                    |   |
|--------------------|---|
| <b>Head Office</b> | No.1 University Road, Tainan, 701, Taiwan, R.O.C. |
| <b>TEL</b>         | +886-6-2757575#31300                              |
| <b>FAX</b>         | +886-6-2096834                                    |

### Key Products – Product features



The NCKU Research and Services Headquarters acts as a large department store, and is responsible for brand marketing and supporting its subordinate counters (individual centers). The counters then in turn satisfy customer requirements through professional services. In the future, the Headquarters will setup "Super Technology Transfer and Business Incubation Center" ('S' TTIBC) which combines the industry-academia resources of both the TTIBC and the

Success Club. This will promote R&D and industry-academia collaboration among southern universities and fulfill NCKU's regional social responsibility.



#### Business Philosophy



The Research and Services Headquarters provided an integrated innovative service that fulfills the social responsibility to national industry by helping affiliated centers become self-supporting.

— Director Mi-Ching Tsai



### Reason for Winning



The College of Design at Chaoyang University of Technology brought together student, teacher and industry resources to help local industries with designing and developing local cultural goods and professional design. Regional specializations are used to help local industries develop their own specialty merchandise and innovative traditional craftsmanship. Due to the nature of Nantou as well as long-term involvement in product design and commercialization, it established an operating mode that highlights the contributions of the academic sector. At the same time, the establishment of industry-government-university platforms such as the "Creative Design Center" for promoting culture & creativity products and digital services was successful in boosting the college's collaborative capacity and the competitiveness of small and medium enterprises.



#### Company Profile

|                              |   |
|------------------------------|---|
| <b>Founded</b>               | 1997.08                                   |
| <b>Core Business</b>         | Innovative integration of design services |
| <b>Chairman of the board</b> | Yang, Tien-Sheng                          |
| <b>President</b>             | Chung-Jen, Chin                           |
| <b>Dean</b>                  | Huang, Tai-Shen                           |



#### Business Contact

|                    |   |
|--------------------|---|
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| <b>TEL</b>         | +886-4-2374-2373#7601   |
| <b>FAX</b>         | +886-4-2374-2373  |

### Key Products – Product features



#### Innovative integration of design services

The College of Design at the Chaoyang University of Technology is a key supporter of the cultural, creative and design industry in central Taiwan. In recent years the College has supported and executed a number of cultural & creative projects while also actively leveraging the R&D capabilities of with the cultural & creative industry, government and universities to spearhead the transformation and upgrade of the industry. This innovative approach has also helped to boost the value of cultural & creative merchandise and serves as a role model to other academic organizations.

The innovation philosophy of the College is based on the a total solution for technology, innovation, merchandise and marketing. By consolidating the professional design and development capabilities of the "Creativity Education Center", "Invention Creativity Center", "Creative Design Center", and "Technology Develop Center of Design and Product Innovation", the College worked to narrow the gap between the universities and the industry, boost the soft power of crossover design and cultivate interdisciplinary professionals capable of total designs.

#### Business Philosophy



To become an outstanding research organization for "green, smart and miniaturized" advanced machinery committed to creating more competitive industries for Taiwan through innovative and pioneering technology.

- Dean Huang, Tai-Shen





### Reason for Winning



In accordance with a R&D mindset of creating industry value, the Mechanical and Systems Research Laboratories of the Industrial Technology Research Institute focuses on using core technology differentiation to create high value. Research focus is on developing and promoting advanced mechanical technology in order to blaze a trail for innovative industry R&D. Through investing in high-end tooling machine and controller R&D, promoting the development of the smart electric vehicle industry in Taiwan as well as encouraging the formation of robots and automated industries. The laboratory has been outstanding in helping the industry with building up its industrial base, promoting crossover innovation and local industrial innovation.



### Company Profile

|                              |   |
|------------------------------|---|
| <b>Founded</b>               | 1973.09.07  |
| <b>Core Business</b>         | Conduct technology development and provide services to domestic mechanical industries, and assist the government to speed up mechanical innovation and industrialization. |
| <b>Chairman of the board</b> | Ching-Yen Tsay  |
| <b>President</b>             | Jyuo-Min Shyu   |
| <b>General Director</b>      | Shuo-Hung Chang   |



### Business Contact

|                    |  |
|--------------------|--|
| <b>Head Office</b> | Bldg.22, No.195, Sec.4, Chung Hsing Rd., Chutung, Hsinchu, 31040, Taiwan, R.O.C. |
| <b>TEL</b>         | +886-3-5915918   |
| <b>FAX</b>         | +886-3-5820002   |

### Key Products – Product features



1. To develop A+ sub-micron machine tool and high end controller for enhancing industrial competitive edge.
2. To develop component, key system & technology for intelligent electric vehicle.
3. To develop hand-eye-force coordination technology for next generation automation.
4. To develop green energy technology, such as key equipments for high power LED production system, and thin film deposition process for touch panel.



### Business Philosophy



To become an outstanding research organization on advanced manufacturing with "green, intelligence and miniaturization", committed to create top rated competitive industries for Taiwan through innovative and pioneering technology.

— General Director Shuo-Hung Chang



### Reason for Winning



The Textile Research Institute took part in many basic technology and local industry innovations to boost technical sophistication and competitiveness. The innovation results were used to help with the upgrading of the traditional industries and created hundreds of new jobs. Industry output grew to more than \$10 Billion and made many contributions to national industrial innovation. The number of patent approvals and applications has continued to grow in recent years while the excellent performance has been recognized by domestic and foreign awards. The Institute has therefore made an important contribution to raising the international visibility of Taiwan's textile industry.



### Company Profile

|                       |   |
|-----------------------|---|
| Founded               | 1959.12   |
| Core Business         | R&D, evaluation, and certification for textiles |
| Chairman of the board | Yea-Kung Wnag                                   |
| President             | Chi-Chung Bai                                   |
| Vice President        | Hung-En Chen                                    |



### Business Contact

|             |   |
|-------------|---|
| Head Office | NO.6 Chengtian Rd., Tucheng Dist., New Taipei City 23674,<br>Taiwan, R.O.C. |
| TEL         | +886-2-2267-0321  |
| FAX         | +886-2-2268-9834  |

### Key Products – Product features



Scenario of textile application

The Taiwan Textile Research Institute was established more than 50 years ago and provided inspection services for textile exports in the early years. Today, the TTRI as evolved into a general textile research and service organization that is aggressively

expanding the scope of innovative R&D. Developments include material refining and quality improvement as well as multi-function clothing and home ware textiles. By building a total solution for R&D and service, the TTRI is gradually moving away from a technology-oriented approach to a value or demand-oriented R&D approach. By helping businesses acquire international certification more quickly and encouraging businesses to accelerate their pace of upgrades and transformation, the TTRI hopes to stimulate industrial development in Taiwan.

### Business Philosophy



The Taiwan Textile Research Institute has played an important role in promoting technology R&D and innovation for the Taiwanese textile industry. We hope to build on the existing foundations and revitalize the textile industry through technology commercialization and industrialization.

— Chairman Yea-Kung Wang

# TEAM CATEGORY



## Innovative Trailblazer of the Year

- CoWoS System Integration and Miniaturization Platform 50  
Integrated Interconnect & Packaging Division, Research & Development, Taiwan Semiconductor Manufacturing Company, Ltd.
- 「Vsensor」 & 「Pediatric Virus Tricorder」 52  
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## Innovative Breakthrough of the Year

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Ru Development and Integration Team, Solar Applied Materials Technology Corp.
- 20nm System on Chip Technology Development 58  
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- The overall planning of the 2012 Taiwan Lantern Festival 60  
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## Outstanding Cross-Sector Collaboration Award

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## Model of Local Industry Innovation Award

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Food Industry Research and Development Institute
- Nurturing regional innovation and creating a new value-added business model in local industries 74  
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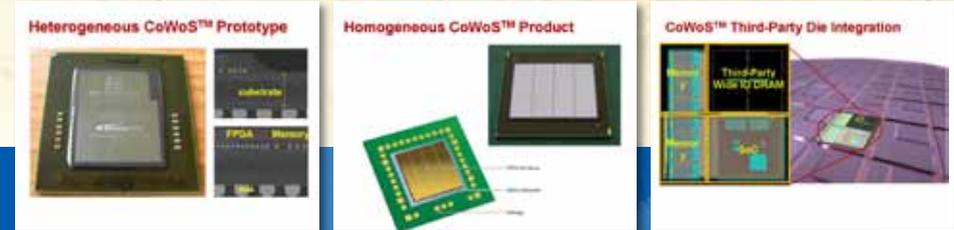
## Technology Development Programs of the Year

- The Four-Year-Program of the whole Car Model Self-System Development and Establishment of Innovated Technology Integration Platform 76  
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## CoWoS System Integration and Miniaturization Platform

Integrated Interconnect &  
Packaging Division,  
Research & Development



## Business Philosophy

Build upwards from chips to create new space: 3D\_CoWoS

— Doug Yu

## Reason for Winning



The industry-leading CoWoS system integration platform developed by the TSMC IIPD team includes a complete technology solution and commercial marketing platform as well as the only 3D IC/interposer production technology and process in the semiconductor industry. Its use helps the design company reduce product development costs and increase production efficiency. For TSMC's CoWoS technology to be the first in a new field represents a major breakthrough for the semiconductor industry in Taiwan and worldwide. The team's outstanding innovation perform includes significant output in terms of patents and intellectual property.

## Organization

Integrated Interconnect & Packaging Division, Research & Development, Taiwan Semiconductor Manufacturing Company, Ltd.

## Director

Doug Yu



## Business Contact

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FAX +886-3-668-7827

## Winner Project Description



CoWoS Module

CoWoS is a new 3D IC stacking and system integration technology that will revolutionize the micro-electronics supply chain and ecosystem through its turnkey business model. 3D IC stacking is where multiple ICs are vertically integrated in three-dimensional space to maximize the performance for a given volume. Unlike existing 2D IC integration technology, the

vertically inter-connected architecture in 3D IC stacking significantly reduces the path length and latencies compared to conventional 2D circuits. IC performance is also increased, while power consumption is reduced.

The TSMC Chip-on-Wafer-on-Substrate (CoWoS) integration technology provides a turnkey solution for semiconductor companies developing 3D IC that includes front-end wafer fabrication through to back-end packaging and testing. In CoWoS, the IC is first bonded to the wafer using Chip on Wafer (CoW) packaging process and then the CoW chip is bonded to the substrate to make CoW-on-Substrate. Bonding the semiconductor to a relatively thick wafer avoids warpage during the production process.

Such an innovative technique will help the semiconductor industry overcome Moore's Law. CoWoS helps semiconductor design companies without their own foundry stay competitive with Integrated Device Manufacturers (IDM) such as Intel and Samsung. It also helps Taiwan's micro-electronics ecosystem stay highly competitive in the global market.



**Vsensor & Pediatric Virus  
Tricorder**

**Medical-device Team**



**Business Philosophy**

Our aim is to create clinical testing and medical devices with our R&D capability, under our enduring philosophy of "national health" and "pioneering medicine". We also actively develop original medical devices for the benefit of the Taiwanese people and all mankind.

— Dr. Kuei-Pin Chung

**Reason for Winning**



The National Taiwan University Hospital team makes "National Health" and "Pioneering Industry" the starting point of an integration process across different scientific fields, involving doctors, biotechnology and engineering professors. The development of the Vsensor chip system for rapid detection of human papilloma virus and enterovirus, and "Pediatric Virus Tricorder" represents two advanced fixed-location medical diagnostic devices. The innovative R&D incorporating optoelectronics, information technology and biomedicine helps the

biomedical device industry to take root and grow. The upstream and downstream industries in Taiwan are linked together, boosting local industrial power in many areas and providing the driving force for the industrial revolution for developing high-tech and high value-added medical devices.

**Organization  
R&D Manager**

National Taiwan University Medical School Medical-device Team  
Dr. Kuei-Pin Chung



**Business Contact**

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**TEL** +886-2-2394-9125  
**FAX** +886-2-2351-6258

**Winner Project Description**



**Vsensor & Pediatric Virus Tricorder**

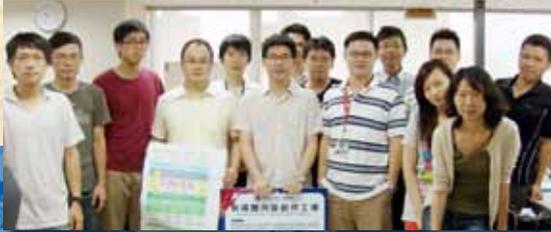
semiconductor and smart phone industries in Taiwan.

The team completed the (1) "Vsensor" electronic medical sensing product and (2) "Pediatric Virus Tricorder" optical medical sensing product in the last two to three years. These world-leading original products were our attempts at making a more tangible contribution to medical, optical, electronics, protein, machinery,

The novel "Vsensor" and Pediatric Virus Tricorder" sensor chip technology applies specific sensing and photo-sensing signal to detect virus in saliva, pharyngeal secretion (enterovirus, adenovirus/flu virus), nasal secretion (flu virus) cervical secretion (human papillomavirus).

This technology could also be used in detection of glycoproteins and cancer-specific markers in other forms of biofluid.

The portability of this smart technology provides a platform for fixed-location testing, and disease prevention policies can thus be executed at different institutional levels (schools and hospitals). Self-diagnosis can also be performed at home before contacting the assigned physician for a long-distance telephone or video consultation. In the future, it may be possible to use the technology independently for personalized and home smart/telemedicine. This will advance the development of fixed-site diagnosis as well as the establishment of smart medicine/telemedicine databases, leading to a whole new personalized home care industry.



### Content Roaming Service Solution

C.Ro.S.S. Team, IDEAS



### Business Philosophy

Synergy of technology and education, innovation and liberalization;  
Added-value applications and industrial upgrade

— Shih-Chun Chou

### Reason for Winning



The team used inter-device content roaming technology and reading scenarios (e.g., university electronic books, amateur micro-publishing) to help Taiwanese companies develop digital reading services and spur the development of a new business model. The research results not only helped businesses develop B2B content production service while also effectively integrating the "hardware vendor", "software and publishing industry" and "telecom operator". Long-term collaboration with domestic publishers helped business respond to the trend towards digital content and mobile service in media publishing. The development of multimedia content roaming technology applications that boost the international technical competitiveness of the vendors represents an important milestone for the publishing industry.

### Winner Project Description



Content Roaming Service Solution (C.Ro.S.S.) is a digital reading solution that overcomes the limitations of devices, books, articles, organizations and formats to provide the digital reading industry with an environmental infrastructure solution. Using the EPUB open standard as the basis, C.Ro.S.S. bridges the gap in digital content production service and

draws upon Taiwan's advantage in hardware manufacturing to develop an interactive and multimedia cross-device content presentation engine and collaborative digital publishing platform that conforms to international content standards. C.Ro.S.S. is now helping the domestic e-book hardware manufacturing industry in taking control of core software components.

**Organization** C.Ro.S.S. Team, IDEAS, Institute for Information Industry

**Division Director** Shih-Chun Chou



### Business Contact

**Head Office** 8F., No.133, Sec.4, Minsheng E. Rd., Taipei City 105, Taiwan, R.O.C.  
**TEL** +886-2-66072291  
**FAX** +886-2-27176513



Ru targets development,  
integration and refinement project

Ru Development and  
Integration Team



### Business Philosophy

Total innovation in R&D, manufacturing, analysis, testing, recycling, service, transaction and business model.

— T. B. Shih

### Reason for Winning



The Ru development team at Solar Applied Materials Technology Corp. was responsible for the "Ru Targets Development, Integration and Refinement Project". Through constant research and innovation, the team was able to provide customers with a recovery, refining and re-building process for precious metal Ru targets. The process not only reduced manufacturing costs but is also a technological breakthrough for the optoelectronics, semiconductor and other precious metal recovery industries. The team's innovative Ru target technology is the only one of its kind in Taiwan and is far superior to similar technologies in Germany and Japan. By continuing to strengthen and refine the technology and capabilities used for designing and manufacturing alloy materials, the team will be able to make even more contributions to the IT and disc manufacturing industries in the future.

### Winner Project Description



Ru Target

During the sputtering process, targets are blasted with plasma to release ions that are then deposited on the target component. Ruthenium (Ru) is a noble metal in the Platinum (Pt) family that has many essential industrial applications such as passive components, catalysts and computer HDDs. The greatest demand for Ru in fact comes from HDD production.

The media within the hard disk is made by depositing multiple layers of thin films by bombarding targets with different compositions during the sputtering process. Ru targets are used for depositing the intermediate layer during HDD manufacture.

This project was launched due to the demand for HDD Ru targets and hoped to create even more value for the customer through R&D and innovation. The goal is to establish a closed-loop model through the recovery, refining and reforming of Ru targets for Solar Applied Materials Technology Corp.

**Organization** Ru Development and Integration Team

**Vice Director** T. B. Shih



### Business Contact

**Head Office** No. 1, Gongye 3rd Rd., Annan Dis., Tainan City 70955, Taiwan, R.O.C.  
**TEL** +886-6-511-0123  
**FAX** +886-6-600-1201



### 20nm System on Chip Technology Development

R&D, Platform II Division



### Business Philosophy

Technology development, perseverance against all odds and willingness to take responsibility. Grow together with TSMC and continue to set new milestones in semiconductor technology research!

— Min Cao

### Reason for Winning



The 20nm SOC developed by TSMC Platform 2 Division combines the advantages of low current leakage and high performance. It is also suitable for use with different product specifications and can be developed into different IC products to suit customer requirements so represents a significant breakthrough in wafer fabrication technology. Thanks to the technology, TSMC will continue to be the global leader in semiconductor technology. The team has now acquired 110 patents and generated 6000 jobs so it has made a significant contribution to domestic industrial development.

### Winner Project Description



The TSMC 20nm System-on-Chip (SoC) program is the first advanced technology combining high performance benefit with low leakage feature, independently developed by a professional R&D team. This team, consisting of 1320 people, is led by Director Min Cao. With the technical innovation and resource/schedule management, the team successfully produced 112M SRAM

memory and Logic standard cells and IPs, which have been certified the function/reliability and have met the yield target. By using the advanced high-k and metal gate materials, adopting more Si strain and novel transistor structure, this program delivered a manufacturable technology.

The SoC product line offered a complete coverage for wide range circuit applications. TSMC has achieved the technology leadership over the semiconductor industry, and provided the total solution to customers' product design and manufacturing. The 20nm SoC technology is expected to contribute 10% of company revenue in the coming three years.

### Organization

R&D, Platform II Division,  
Taiwan Semiconductor Manufacturing Company, Ltd.

### Director

Min Cao



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The overall planning of  
the 2012 Taiwan Lantern Festival

Open Union Cultural & creative  
Co.,Ltd.



### Business Philosophy

We hope to work as a team to create contemporary artworks that resonate with the international community from everyday life in Taiwan. We welcome participation of people from all levels of urban society as well as their acquisition. In the future, we will continue to engage in more crossover innovation in furniture, interior, architecture and cluster renaissance.

— Kuo-Chang Liu

### Reason for Winning



The idea of "Lighting Up Lugang" became the inspiration for Open Union Cultural & creative Co.,Ltd. "Overall planning of the 2012 Taiwan Lantern Festival". Using space cluster events and 3D lantern appreciation, the plan connected the different exhibition areas across the town to give a traditional activity an innovative and high-tech touch. Landscape art and alley culture were also used to revitalize the historic town in an innovative and original manner. The successful integration of public and private organizations as well as professional

expertise meant the "Taiwan Lantern Festival" will no longer be limited to a single exhibition area. The historic buildings, old streets and culture of Changhua have now been lit up and will have the opportunity to express its urban beauty on the international stage.

### Organization

Open Union Cultural & creative Co.,Ltd.

### R&D Manager

Kuo-Chang Liu



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### Winner Project Description



For the 2012 Taiwan Lantern Festival, Open Union Cultural & creative Co.,Ltd. proposed the "Lugang as a Lantern District" concept and used the modern "urban revitalization" approach to overcome the traditional restrictions of having only a single exhibition area. At Lugang in Changhua, the team turned the whole city into a stage and organized a themed lantern festival that presented Taiwan's urban identity, cultural

heritage and traditional festivals to the world as a unique aesthetic experience.

The organization of the annual lantern festival depends greatly on the cooperation of central and local government agencies. The two parties also vary in their strategic thinking and role. This year, our team played the role of both sides' master planner for the first time. Apart from helping the two parties with their internal administrative processes, we also proposed the concept of "integrated cultural & creative marketing" on the strategic level. In our role as the "Lantern Festival Art Director", we helped the organizers present a visual extravaganza that embodied cultural fusion and modern lantern art.

Our team has participated in the overall planning and execution of the "Taiwan Lantern Festival" on several occasions since 2006. The efforts of all those involved have led to many breakthroughs over the years as well. In 2006, a fantasyland was created in Tainan's Anping Harbor using the foreshore and local sights. 2008 saw the construction of large lantern landscapes such as the "Taiwan Peace Wall" and "Lake of Lights". In 2010, we proposed the "Lantern as an Art Form" concept to present the "Mountains of Zulu" of Chiya. In 2011, the "Taiwan Lantern Festival" was named "One of the best festivals in the world" by the US Discovery Channel. This marked the official elevation of the "Taiwan Lantern Festival" brand to a world-class festival. Planning for the festival has continued to evolve ever since as well.



Internet Smart Energy (In-Snergy)

Smart Network System Institute



Business Philosophy

Innovative technology shows the way to unlimited green energy services. Smart management maximizes the potential of limited energy resources.

— Ming-Whei Feng

Reason for Winning



Internet Smart Energy (In-Snergy) developed by the Smart Network System Institute of the Institute for Information Industry is the first green energy management service platform that uses high-performance cloud computing for network discovery. Designed for energy management of homes or buildings, In-Snergy is an innovative breakthrough for the energy-saving industry and transformation of the domestic green energy industry. The technology has potential business opportunities valued at NT\$290 Million and has also

received the R&D100 award (the first software and green energy technology from Taiwan to win this award). The technology has made major contributions to industrial value and current applications include large enterprises such as Uni-President Chain Store and AUO.

**Organization** Smart Network System Institute, Institute for Information Industry

**Vice President & General Director** Ming-Whei Feng



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Winner Project Description



In - Snergy

The first cloud energy information management system helped stimulate different types of industrial/commercial application models and prompted vendors to develop more than 12 energy products. The technology has now been transferred to companies such as Powertech, Joseph Technology, WeiPower Green Energy and Swat Energy Technology to boost the profit

margins of cloud power products. Critical technologies of the In-Snergy cloud smart green energy management platform include circuit identification, communications technology and a highly reliable back-end management platform.

While Taiwan has always been famed for high-tech hardware in the past, hardware vendors are still bound by the strictures of the software industry. In keeping with the trends in international industrial development, the Institute for Information Industry has aggressively pushed for industry upgrade and transformation in order to boost the product value of domestic hardware manufacturers. By strengthening the link between software and hardware, the III hoped to create a new industry through the cloud platform and build an "emerging smart energy management" industry chain. This will help attract the interest of renewable energy, retail and lighting equipment companies while also helping small and medium enterprises quickly transform themselves so they can find brand new opportunities and compete in the global energy market.



High purity hydrogen and LoCO reformate hydrogen generator

Project Organization- Green Hydrotec, Inc.



### Business Philosophy

One small step in hydrogen technology innovation, one giant step forward for the commercialization of low-carbon energy!

— Min-Hon Rei

### Reason for Winning



The R&D team made up of personnel from Green Hydrotec and NTU Department of Chemical Engineering has been working for a long time in the field of catalytic hydrogen generation. The solid industry-university collaboration has led to the development of a light, thin and compact hydrogen generator. The performance of the reformer developed by the team surpasses other international products and offers tremendous value in terms of inter-industry collaboration and industrial innovation. The technology has produced many domestic and foreign patents while giving Taiwan's hydrogen fuel cell industry the opportunity to compete against the rest of the world.

### Organization R&D Manager

Green Hydrotec, inc. Chemical engineering, National Taiwan University  
YuLing Kao



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### Winner Project Description



High purity hydrogen and LoCO reformate hydrogen generator

On-site hydrogen generators can effectively solve the problem of hydrogen supply and reduce production costs, achieve grid parity and cost only 1/8 ~ 1/3 of conventional high-pressure hydrogen gas. Such technology will make Taiwan's hydrogen energy/fuel cell power systems most competitive in the world due to their competitive pricing.

The low-cost hydrogen fuel from low-carbon hydrogen generator means that fuel cells no longer have to rely on bulky and expensive high-pressure pure hydrogen. It also means that Taiwan-made fuel cell power systems are superior to international competitors in terms of weight and pricing. At the same time, hydrogen energy and fuel cell power systems are no longer hobbled by a centralized hydrogen supply framework and a huge investment is no longer needed to build the required hydrogen supply infrastructure.

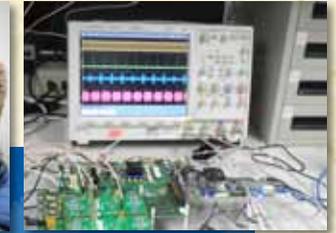
As fuel cells' power cost can be lower than diesel, diesel generator users on offshore islands and in remote areas can now be supplied with new green energy without noise and soot. Apart from Taiwan's offshore islands, an immense potential market also exists in central and western China as well as Southeast Asia.

The hydrogen generator can supply hydrogen onsite not only for power generation by fuel cell but also for enhancing the combustion in boilers, internal combustion engines and industrial gas users to realize energy-savings and the reduction of carbon emission. The on-site hydrogen generator will spur the a new horizon for its taking off in various applications. It is hoped that the government will help cultivate Taiwan's future vanguard in new energy.



### 4G Intellectual Property and Industrial Ecosystem Planning and Innovation

Information and Communications Research Laboratories



### Business Philosophy

The Information and Communications Research Laboratories is dedicated to the development of innovative and pioneering ICT and semiconductor technologies that support industrial development and the needs of society. The accumulation of high-value intellectual property is aimed at creating economic value and promoting social welfare.

— Cheng-Wen Wu

### Reason for Winning



The team harnessed domestic industry, government, university and research resources for 4G standards definition and developed LTE communications technology that allow domestic companies to master the antenna, baseband chip, communications software and systems. Critical Femtocell technology R&D at companies such as Askey, Ablaze and Chunghwa Telecom were also consolidated to effectively develop the Femtocell industry chain. On the crossover integration front, the team successfully developed

WinMax./WiFi while also introducing technology development project results and VeeTIME's cloud application service that will allow the people of Taiwan to use wireless broadband on the High Speed Rail. Income from technology transfer payments have reached NT\$230 Million in the past 3 years and represents a role model in trans-industry collaboration.

### Organization

Information and Communications Research Laboratories  
Industrial Technology Research Institute

### R&D Manager

Cheng-Wen Wu



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### Winner Project Description



### 4G Intellectual Property and Industrial Ecosystem Planning and Innovation

The Taiwanese communications industry has been faced with the challenges of "Micro-profits from contract manufacturing", "industry exodus" and "excessive licensing costs". The root causes of these problems are the lack of critical intellectual property and an incomplete communications industry supply chain.

To overcome these problems and help Taiwan construct a high-value industry model, our team proposed a three-stage innovation promotion model. The first is to integrate domestic and foreign resources to develop proprietary solutions that are then tested locally and a successful demonstration project built. Once an ecosystem takes shape, work to effectively expand the emerging application and usher in a new era for Taiwanese industry.

At the same time, R&D by Taiwan's communications industry should shift away from the traditional approach of following international standards and mass producing standardized products to focusing on technology innovation, standards definition, R&D manufacture and patent rights. The emphasis in the new industry model will be on boosting the added value of products. At the same time, by participating in international standards setting processes, Taiwan connect to international technology developments, master critical intellectual property and realize the goals of boosting Taiwan's domestic technological independence and increasing products' added value.



Modeling key technologies for the precise machine

Precision Machine Center



### Business Philosophy

The center develops basic technologies for the modularization of critical precision machinery in Taiwan and cultivates key personnel for supporting upgrades to Taiwan's advanced machine tool and nano structure processing industries.

— Wen-Yuh Jywe

### Reason for Winning



The research team headed by the Precision Machine Center at National Formosa University focused on precision positioning, measurement and opto-electronic integration technology that can be used in tooling machines, precision mechanical equipment and other industrial technologies. This world-class technology now spearheads the tooling machine industry's challenge of high-end tooling machine markets dominated by European, American and Japanese firms to create even more returns. The collaborative network built over time

with a certain company in the Taiwanese tooling machine industry is now used to help the company with problem solving, create industry value and boost competitiveness.

### Organization

Precision Machine Center, National Formosa University

### R&D Manager

Wen-Yuh Jywe



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### Winner Project Description



Modeling key technologies for the precise machine

Precision machinery is now developing towards high-precision, long-travel, multi-axis motion and accelerated machining. Taiwanese precision machinery firms are however all faced with the same problem - how to upgrade their machines from B+ (micron level) to the level A+ (sub-micron) and ultimately, upgrade their machining technology to level A++ (nano level). For Taiwanese manufacturers, this progression is essential if they are to shake off the pressure from Chinese manufacturers and achieve parity with Japan and Germany.

The "Industrial Fundamental Technology Policies" published by the Department of Industrial Technology also listed the developing of tooling machines as a key policy. A consensus has been reached among Taiwanese firms to focus on A+ high precision, high feed, multi-axis composite engineering and large-travel machining as these four directions of development are the most feasible. "Modeling key technologies for the precise machine" was therefore proposed by the Center to develop technologies that are urgently needed by the industry including multi-axis machine calibration module technology, angular nano-positioning module technology, automated scarping module technology, large machine calibration module technology and nano-structure machining module technology. These five critical technologies are being developed for the use of Taiwan's advanced tooling machine industry and nano-structure machining equipment industry.



Catalyst Research and Industry application

Material and Chemical Research Laboratories



Business Philosophy

While all technology R&D have their challenges, they are not as difficult as one may imagine. As long as you continue to persevere and experiment, you will eventually produce unexpected results.

— Chiou-Hwang Lee

Reason for Winning



The research team headed by the Material and Chemical Research Laboratories of the ITRI has been working on catalyst research for a long period of time from environmentally friendly catalysts to local catalyst production. Core abilities included industrial catalyst design and fabrication. The trend towards higher industry value and rise of emerging industries has led to a jump in demand. The R&D capability (people, experience and know-how) accumulated by the team over many years is now gradually proving its importance and creating economic benefits. This has translated into significant contributions to the development of the domestic semiconductor industry.

Organization

Material and Chemical Research Laboratories,  
Industrial Technology Research Institute

R&D Manager

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Winner Project Description



Catalyst Research and Industry application

Catalysts are extensively used in the petrochemical/chemical, environmental protection and energy industries. It is considered a critical core technology in petrochemical/chemical process industries. In the past, Taiwan's unusual petrochemical industrial structure meant production was centered on bulk chemicals. Most processes were licensed foreign production technology and had to rely on the import process catalysts. The petrochemical industry has changed in recent years and domestic firms are now placing increasing emphasis on the development proprietary technologies.

The petrochemical industry has changed in recent years and domestic firms are now placing increasing emphasis on the development proprietary technologies.

The catalysts team at ITRI took advantage of this development opportunity to collaborate with the domestic petrochemical and environmental protection industries on developing related process catalysts. After many years of effort, laboratory technologies are now being gradually introduced into pilot production for validation and factory operation. This has allowed homegrown catalysts to finally gain acceptance by the domestic petrochemical process and led to the adoption of many catalytic technologies by the industry including catalyst for bisphenol-A condensation process; catalyst for isopropyl ether cracking process; recycling of ketone-containing mixed solvents; the application of low threshold noxious gases treatment technology used in high-tech industry with white smoke/ yellow smoke emissions; and catalyst for the treatment of perfluorocarbons (PFCs) gases.

Homegrown catalysts are now being used in domestic industrial processes and production lines. They have generated more than NT \$ 2 billion in industrial output, and nearly NT\$ 100 million in R&D income for the ITRI. The success has strengthened the ITRI's R&D capabilities and confidence in catalyst research.



Food Industry Innovation Consulting Group for Kinmen, Penghu, and Matsu

Food Industry Research and Development Institute



### Business Philosophy

Though micro-enterprises make up the bulk of businesses in Kinmen, Penghu and Matsu, the Institute collaborates with local government, industry and universities on building LOHAS industries as part of the Ministry of Economic Affairs' policy of supporting local industry.

— Shu-Kong Chen

### Reason for Winning



The "Food Industry Innovation Consulting Group for Kinmen, Penghu and Matsu" used restructuring and revitalization of the local specialty industry where leading vendors spearheaded the creation of related business alliances. By introducing manufacturing and quality control technology to local industry as well as helping businesses combine tourism and experience-based consumption, innovation energy was able to flow through the industry chain to create new jobs and revitalize local economies. The success of the team provides a role model in innovation for R&D organizations that consult on domestic industrial technology as well as the transformation of food manufacturing as a service.

### Winner Project Description



Food Industry Innovation Consulting Group for Kinmen, Penghu, and Matsu

As part of the MOEA "Local Industry Innovation Engine Kickstart Plan", the Food Industry Research and Development Institute organized over 30 experienced researchers into the "Food Industry Innovation Consulting Group for Kinmen, Penghu and Matsu" in 2008. Quality control and scientific testing techniques were used to give local specialty products a healthy image and developed over 45 innovative specialty products such as Kinmen's Kaoliang Beef products, Matsu's Red

vinasse products and Penghu's Cactus products. These products are now worth more than NT\$40 Million a year. The Hongli Vinegar Plant on Matsu's Red Yeast Rice Fish and XO Spicy Bagie Sauce in particular was named one of Taiwan's top 100 tourist specialty products for 2010. Penghu's Fusheng and Dianjianjia delicacy products were also named Penghu's Top 10 Specialty Products for 2010.

Modern ideas and automation equipment were used to improve the output and quality of local specialty products. Examples include meat processing on Kinmen, red mold rice culture on Matsu, automated machine for ball popcorn forming on Penghu. Kinmen's Liangjing company invested NT\$100 Million to build the first meat processing plant on Kinmen and introduced the food traceability system. Matsu's Honglin Vinegar Factory invested tens of millions to set up the Lin Yihe Factory and expanded Matsu's Red vinasse into the cosmetics & skincare market. Penghu's Dianjiangjia company invested millions of dollars to set up the Penghu Red Fruit Biotechnology Company to develop cactus-based healthcare products. Some products are now sold in Taiwan, China and Japan, not only increasing product marketing opportunities but also revitalizing the local industry as a whole.

**Organization** Food Industry Research and Development Institute

**Director General** Shu-Kong Chen



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Nurturing regional innovation and creating a new value-added business model in local industries.

Department of Life Innovative Relations



## Business Philosophy

The Corporate Synergy Development Center (CSD) has progressively built up new six degree industries that promote happiness, define local identities as well as energize local cultural industries and economies throughout Taiwan.

— Chin-Ho Su

## Reason for Winning



The Department of Life Innovative Relations from CSD is dedicated to the promotion of OTOP (One Town One Product) and acts as a knowledge base and advisor for local cultural industrial development. "Discover the touching heart points of local cultural industry and create new industrial cultural value" is used to harness local resources while also leveraging unique local history and culture for manufacturing and service delivery. By living up to the spirit of "Authentic Taiwan, local culture experience, promoting lifestyle, production, ecology and life", the department has reshaped Taiwan's local cultural industries and made a significant contribution to revitalizing local economies.

### Organization

Department of Life Innovative Relations, Corporate Synergy Development Center

### President

Chin-Ho Su



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## Winner Project Description



Nurturing regional innovation and creating a new value-added business model in local industries.

Although Taiwan OTOP Program has been running for 20 years, it is getting to bear fruit and enters the maturity stage of the associated consulting modules, promotion techniques and operating mechanisms in the past decade. CSD contributes to OTOP program, including innovative and practical modifications to the consulting modules, promotional techniques and operating mechanisms. In addition, through managing Local Industries Development Fund, CSD coordinates

with the regional development teams and helps them to boost their capabilities for the development of local cultural industry.

According to the results of promoting local cultural industries over the past three years, it showed that program investments and eventual outcome have a leverage ratio of up to 300%, more than 100 companies have received consultation assistance, and the revenues of local enterprises have on average increased by over 5%. Preliminary estimates indicate that an investment of NT\$200,000 in the local cultural industry is sufficient to increase a job opportunity to encourage educated youths to return to their hometown and help stabilize the local economy. It is expected to raise economic returns and effectively stabilize the local society if the program also keeps making efforts on promoting and expanding to international markets. This is an excellent example of how even small local cultural industries can make a big difference.



The Four-Year-Program of the whole Car Model Self-System Development and Establishment of Innovated Technology Integration Platform

Project Organizer - Hua-Chuang Automobile Information Center Co., Ltd.



### Business Philosophy

The innovative technologies at Hua-chang reflect Chinese wisdom. Hua-chang Automobile Information Technical Center is on the go!

— Hua-Chuang's President Yi-Cheng Liu

### Reason for Winning



The business scopes of Hua-Chuang Automobile Information Technical Center Co., Ltd are: Product development of indigenous branded vehicles; Engineering service for worldwide automotive companies; R & D of Intelligent Automobile (IA) and its components. Hua-Chuang is a full-service automotive engineering center. This project was leading by Hua-Chuang and it included 17 domestic auto and automobile component companies. Starting in December 2006, the project endured the financial crisis, global recession

and a shrinking auto market while continuing to hire R&D personnel and, carrying out the plan. The Luxgen brand was created in 2011 and successfully launched its own range, of self-branded MPV, SUV and SED vehicles. Through the integration of vehicle platforms and technology industrial alliance of IA, we have involved 195 component companies, generated directly employment amounting to 4,700 people and created industry output value NT\$58.93 billion. The project was not only a grand issue, but also a successful sample for industrial alliances.



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### Winner Project Description



The Four-Year-Program of the whole Car Model Self-System Development and Establishment of Innovated Technology Integration Platform

The vehicle project not only successfully developed three models (MPV, SUV, SED) but also founded a self-owned brand named Luxgen .It established a cross-disciplinary platform for Taiwan's automotive industries and conglomerates Taiwan's IT expertise and global industry leadership to develop intelligent onboard modules for automobiles. The platform help the auto industry with its transformation and boosted Taiwan's R&D and innovation capability and also linked academia innovative and

research energy. The IA advantage from the alliance of Taiwanese automakers and IT industry successfully developed Luxgen intelligent cars that are tailored to the national market and incorporate a high level of IA DNA within a very short period of time. This success serves as a role model for cross-industry partnerships. It is also the first Taiwanese automotive brand to set foothold outside Taiwan.

To face competitive markets, we have to integrate our R&D resources and build up our core competencies. In the future, the program will lead and assist to the Taiwan's auto industry and upgrade the competitive advantage, such as build up a national whole car laboratories and power development center.



### Organization

Hua-chuang Automobile Information Technical Center Co., Ltd., ROC-Spicer Ltd., Samwell Testing Inc., COC Tooling & Stamping Co., Ltd., Uni-Auto Parts Manufacture Co.,Ltd., Axis 3D Technology, Inc., San Long Industrial Co., Ltd., Lee Na Enterprise Co., Ltd., Mao Hsiung Metal Co., Ltd., Hsin Chong Group & Hsin Chong Machinery Works Co., Ltd., Yue Ki Industrial Co., Ltd., Y-Teks Co., Ltd., Yulon Motor Co., Ltd., Taiwan Calsonic Co., Ltd., China Motor Corporation, Ta Yih Industrial Co., Ltd., Aerospace Industrial Development Corporation



### Digital Health Care and Operation System For The Community Elder

Chu Shang Show Chwan Hospital



### Business Philosophy

Telecare provides a solution for aging remote rural communities. It not only serves as bridge between doctors and patients but also builds community cohesion. Show Chwan team at Chu Shang fully supports good policies that promote care and compassion.

— Hui-Lung Hsieh

### Reason for Winning



The Chu Shang Show Chwan Hospital developed a community health care system tailored to the care requirements of rural farming communities in central and southern Taiwan. An innovative operating model effectively engaged local private-sector resources to provide telecare services, allowing care services to be delivered to disadvantaged seniors at rural villages in central and southern Taiwan. The service model and use of ICT to care for the disadvantaged helps to overcome the imbalance in medical resources between the city and the countryside. The spread and duplication of the medical industry itself offers an excellent example of innovation in industry operations.

### Winner Project Description



Digital Health Care and Operation System For The Community Elder

Unlike other telecare units in Taiwan, the service location for this program emphasized remote communities with an aging population, inconvenient transportation and lack of information parity. A walk-about service was used to build community relations, set up telecare for community residents while also promoting self-health management and preventive medicine. So far, the number of care cases have reached 2,328 people and it has helped elderly people live more healthily, happily and with respect.

Another feature of this program is the B2B2C (Business to Business to Customer) model of the telecare service. The hospital has partnered with the industry, government agencies and community charity organizations to integrate resources and provide free medical care to the public. In the future, we hope to set up a B2B model in conjunction with community residents, groups and government agencies to set up a paid sustainable telecare service. We also hope to expand the service to cover all areas and replicate the model in other regions and countries in order to help more elderly people in remote areas, so they fulfill their dream of aging in place or at home.

**Organization** Chu Shang Show Chwan Hospital

**Superintendent** Hui-Lung Hsieh



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### Panel Handling Station Research and Development Plan

GThink Technology Integration, Inc.



### Business Philosophy

As a member of GThink, one must embrace a culture based on fidelity, acceptance of change and integration technology.

— Wen-Hsin Lee

### Reason for Winning



GThink Technology Integration, Inc. developed three patents of great value through the SBIR program: Tablet Transportation Positioning Device, Tablet Transportation Positioning Device Controller and Panel Transportation Mechanism for Conveyors. Applications include the flat panel display and solar power industries. These technologies not only help stimulate the development of related local industries but are also the only ones of their kind in the world so enjoy a significant competitive advantage. Orders and actual revenues in 2011 exceeded \$100 Million, so this innovation offers tremendous potential.

### Winner Project Description



The glass panel handling and management equipment was based on three patents developed and designed in-house by GThink: tablet transportation and positioning device, tablet transportation and positioning mechanism controller, and panel transportation mechanism for conveyor rollers. These technology patents form the core of the machine. By replacing the robot used in optoelectronics plants for handling panels,

Touch panel and the solar power industry is not longer limited to using robots. Our company is currently the only manufacturer of this product in Taiwan and offers vendors a low-cost and high-efficiency alternative to the Robot Station.

### Organization President

GThink Technology Integration, Inc.

Wen-Hsin Lee



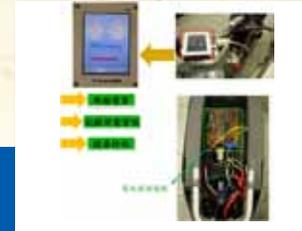
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Development of Core Technology for Next Generation Energy Saving Traction Motors

Electric Motor Technology Research Center



Business Philosophy

When the going gets tough, the tough get going!

Down to earth and always be prepared because opportunities favor the prepared mind!

—Ming-Yang Cheng

Reason for Winning



The research project conducted at the Electric Motor Technology Research Center of National Cheng Kung University focuses on developing high-efficiency and lightweight traction motors/drives. Domestic companies such as Delta Electronics, Len Mung Electric, Jung Shing Wire, Lutron Industry, etc., are invited to participate in the project. The research results generated NT\$4.2 Million in technology transfer fees. During the process of executing the research project, not only the skilled and experienced manpower is cultivated, but also domestic technologies are solidified. In addition, total of 15 patent applications have been filed and these innovative research results show strong potential in the future development of energy-saving electric motors.

Winner Project Description



Development of Core Technology for Next Generation Energy Saving Traction Motors

The key technologies for energy-saving traction motor developed in this project focus on lightweight electric vehicle. The goal of the project is to help local manufacturers developing key technologies such as "energy-saving lightweight traction motor" and "intelligent high-efficiency motor drive " to meet the current trend in energy saving and environmental protection. The key components/techniques including 0.65kW/0.8kW hub motors/drives, a novel electronic transmission architecture, and a non-contact lithium battery charging/discharging technology have been successfully developed in this research project. These research results will help local electric transportation manufacturers transforming and upgrading their business, allowing them to enter the high added-value green industry and realizing the goals of boosting product value and industrial competitiveness.

Organization

Electric Motor Technology Research Center,  
National Cheng Kung University

Professor

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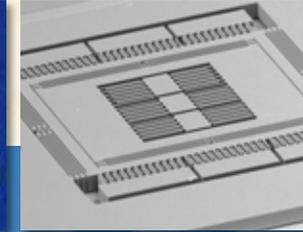
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Southern Industrial Key  
Technology Project

Industrial Technology Research  
Institute South Campus



### Business Philosophy

With southern Taiwan as our foundation, we shall set our sights on Taiwan and from there, the world.

— Chun-Hsun Chu

### Reason for Winning



The project encompasses the development of digital home networks, ICT-enabled healthcare, smart sensing micro-systems and nano material applications. Its close proximity means it can offer significant support for the development of innovative emerging industries in Taiwan's south. The R&D output is now been actively transferred to the industry, resulting in 81 technology transfer cases that directly and indirectly encouraged businesses to invest up to NT\$5.5 Billion. The R&D and promotion performance has also won many domestic

and foreign awards including the Executive Yuan Award for Outstanding Contributions to Technology.

**Organization** Industrial Technology Research Institute South Campus

**Vice-Executive** Chun-Hsun Chu



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### Winner Project Description



Southern Industrial Key  
Technology Project

The primary mission of Industrial Technology Research Institute South Campus is to serve as the integrator of southern industry, university and research resources, promoter of innovative applications, creator of emerging industries and incubator of new enterprises. This project focuses on the interdisciplinary integration of technologies such as smart sensing micro-systems, digital home networks, ICT-enabled healthcare and nano materials. Significant progress has been made in terms of technology adoption by the industry and encouraging business investment in innovation. The project also indirectly stimulated industrial R&D and innovation in southern Taiwan.

During the project, more than 50 key technologies and innovative products were developed. Up to 411 domestic and overseas patent applications were filed with 221 approved and 383 instances of commercial use. A total of 81 technology transfers were completed producing revenues of NT\$270 Million. 72 vendors including 30 new startups were also recruited for the Southern Taiwan Innovation & Research Park to take part in joint R&D, creating an industry cluster for ICT, micro-systems and materials.

Active assistance was provided to industry R&D with 12 industrial technology development programs and 44 SBIR programs approved. More than 100 small and medium enterprises also received 113 immediate assistance programs. The innovative R&D and industry promotion accomplishments of the project were recognized through many national awards for technology development projects including the Executive Yuan's Outstanding Contribution Technology Award as well as the Ministry of Economic Affairs' Value Leader Award , Technical Achievement Award, Traditional Industry Value-added Award and National Invention and Creation Award.

# INDIVIDUALS CATEGORY



## Woman Innovator Award

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## Model Youth Innovator Award

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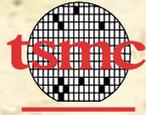
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Department of Photonics, National Chiao-Tung University



There is no shortcut to success. If you want change, you must first learn tolerance.

S. Y. Shen



### Reason for Winning

Shen is responsible for the production management and technology development at TSMC. The industry-leading high-efficiency, low-cost automatic conveyor system she developed for foundry use helped to boost the output and efficiency of foundry manufacturing equipment. At the same time, she also drew up and implemented the 18" wafer manufacturing principles that took industry localization into account. Shen's flexible yet demanding management style as well as her unique talent in process improvement led to her becoming the only female department manager at TSMC today. The example set by Shen will inspire more female colleagues to enter the field.



### Biography

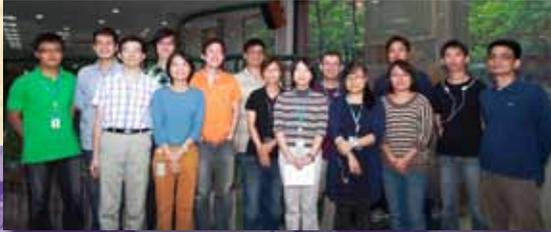
- Education** B.S. Chung Yuan Christian University (1987-1991)
- Experience** Department Manager, tsmc (2003-present)  
Manager, tsmc (1997-2003)  
Principle Engineer, tsmc (1994-1997)  
Process Engineer, TI-Acer (1991-1994)

### Award Winner's Perspective

Innovation does not appear out of the blue. Apart from continuing to learn new knowledge and search for inspirations, you must also accumulate experience and focus your attention over a long period of time. The only way to build up the energy for innovation is by thinking constantly about new breakthroughs and advances. Even more importantly, you must think about how to put ideas into practice in a way that boost competitiveness and maximizes profits for the organization.

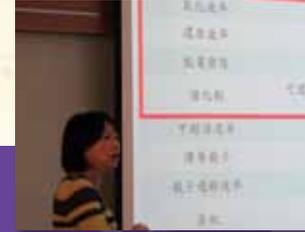
In winning this award, the lion's share of the honors must go to my team. This success was not a solo endeavor, but came with intelligence and hard work by the team over the years. I am very grateful to TSMC for giving me the opportunities to expand my horizons. My experience from working at different factories in Taiwan, managing overseas subsidiaries and taking part in international collaboration all helped me plan my future direction from a higher perspective. At the same time, the wholehearted support of my family also allowed me to balance my work with my family life.

I thank the judges for recognizing my contribution. Taiwanese industries always need innovation to develop new business and management models. Only then can the industry grow as a whole and give talented people in Taiwan more room to realize their potential.



"A rolling stone gathers no moss" - you must remain passionate about learning and sharing in order to continue innovating.

Li-Duan Tsai



### Reason for Winning

Deputy Division Director Tsai has long been involved in the development of new energy materials, polymer materials, electrochemical engineering and energy storage device technologies. With over 20 years of experience in capacitor-related fields, Tsai has developed advanced capacitor technologies such as low-resistance capacitor, conductive polymer solid-state capacitor, high CV chip capacitor, high energy ultracapacitors and broad band decoupling device. Tsai's R&D accomplishments have won many domestic awards and Tsai was instrumental in helping Taiwan become home to the world's 2nd largest conductive polymer solid-state capacitor industry.



### Award Winner's Perspective

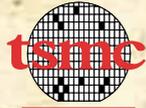
I thank the judges for their recognition and affirmation. I must also thank officials at the Department of Industrial Technology as well as my past superiors at the ITRI Division of Energy Storage Materials & Technology. Their trust and support gave me the energy and space for innovation. Thanks must go to my industry partners for their long-term support and commercialization of our team's technology R&D results. I am particularly grateful to the wonderful research team that worked with me over the years to achieve innovative breakthroughs to technological barriers. Without your support, technology R&D and industry innovation would have been a long and lonely road.

Having spent 22 years in R&D, I started with the electrolytic capacitor helping the conventional capacitor industry upgrade its technology. Starting from scratch, we built up Taiwan's solid-state capacitor supply chain and mastered the key technologies, materials and equipment. From there, Taiwan began the world's second largest solid-state capacitor industry after Japan. Nevertheless, our dream of establishing a world-class international brand and surpassing Japan remains unfulfilled so far however. In addition to the capacitor industry I also oversaw the Direct Methanol Fuel Cell team's development of pioneering portable power sources over the past 10 years. Even though we now lead the world in terms of technology we must still work to aggressively combine the results of innovative DMFC research with the domestic 3C electronics industry. Our goal is to accelerate the commercialization of DMFC and popularize the technology in the international energy market. For this reason, the prize does not mark the end of one technological innovation. Instead it marks the start of new commercialization challenge. The honor and halo of the award will be converted into the energy to face future challenges. I therefore hope that the research team and I can all consider the creation of a new portable energy industry in Taiwan to be our mission. We must do everything we can to bring about a spring for portable energy and never give up!



### Biography

- Education** Ph.D Candidate, Chiao Tung University, (2006-present )  
M.S. National Tsing Hua University (1988-1990)  
B.S. Changhua University of Education (1982-1986)
- Experience** Deputy Division Director, ITRI(2005.10-present )  
Manager, ITRI(1999.01-2005.09)  
Principal Researcher, ITRI(2002.07-present)  
Researcher, ITRI(1995.01-2002.06)  
Associate Researcher, ITRI(1990.10-1994.12)  
Engineer, PRINCO Corp. (1990.07-1990.09)



"I challenge, I practice, I achieve."

Lie-Szu Juang



### Reason for Winning

After earning a batchelors' degree in Electrical Engineering from National Taiwan University, Director Juang traveled to the US and received a Master's in Electrical Engineering from the University of Pennsylvania. Juang's past experience includes Bell Labs and other top US companies such as AT&T and Lucent. At TSMC, Juang not only focused on providing customers with the most timely and comprehensive service but also took part in many innovative projects that had a major impact on the semiconductor industry. Juang has demonstrated her tremendous ability and potential in semiconductor technology and management.



### Award Winner's Perspective

I must thank the judges for their encouragement in giving me the Woman Innovator Award on behalf of TSMC at the 2nd National Industrial Innovation Awards. This is not only a great honor for myself, but also for all women in the technology sector. This honor should in fact go to the Design Application & Support Division , the heads of each division as well as our partners. It was everyone's tireless efforts that helped advance the semiconductor industry and made my success possible.

I have been described as a "Kamikaze Woman" in how I give every endeavor in my life 100% of my effort. I think this is due to the inspiration of my personal motto: "I challenge, I practice, I achieve". Having seen the ups and downs of the technology industry as well as experiencing business management for myself, I have this advice to give to my successors: "Always set a standard higher than the highest standard for yourself!" If you can exceed your superior's expectations, meet even more rigorous targets than your peers and continue to push yourself through everything you do, nothing can possibly hold you back in your career. I also have this to add for women in the technology industry: "Forget that you are woman! But retain a woman's thoughtfulness, attention to detail and flexibility in everything you do."

In all of these years in the technology industry, I have always insisted on maintaining the attitude of "Don't be easy on yourself, believe that you can do even better". Nowadays, I not only push myself but also hope to help everyone in my team find the perfect role much like the conductor in an orchestra. If I can find them a place to put their talents to good use, I can create a first-rate technology team that generates breakthroughs and progress for customers, my company and the whole semiconductor industry. In this way, I can make my own small contribution to helping Taiwan improve its status in the global semiconductor industry as well as fulfill my dream of cultivating talented people and serving the nation.

Finally, I would like to thank my superiors at TSMC for their trust as well as my colleagues again for their support. You made it possible for me to fulfill my potential and make a contribution.



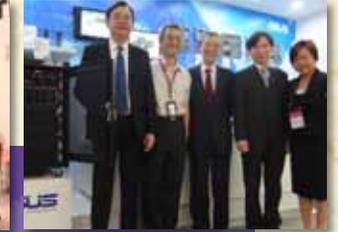
### Biography

- Education** M.S., Electrical Engineering, University of Pennsylvania, USA (1983)  
B.S., Electrical Engineering, National Taiwan University, Taiwan (1981)
- Experience** Director, Taiwan Semiconductor Manufacturing Company, Ltd, (1995-present)  
ASIC Designer, AT&T/Lucent Company, (1991-1995)  
ASIC Designer, Bell Laboratories, USA, (1985-1991)  
Designer, Drexelbrook Engineering Company, USA, (1983-1985)



"Collaborative Innovation" offers the best chance of success. Let's work with our peers, strategic partners, academia and international partners to innovate and transform, for Taiwan's tomorrow."

George Wang



### Reason for Winning

Dr. Wang led the III team to conceive the CAFÉ (Cloud Appliance for Enterprise) strategy and developed the CAFÉ platform. He worked with strategic partners to integrate CAFÉ with Cloud hardware, turning hardware ODM/OEM into higher valued Cloud systems business. The III led Taiwan CAFÉ alliance vendors were recognized as the Merit Winner of Global ICT Excellence Awards at WCIT 2012. The CAFÉ based Promise Technology product, SmartStor Cloud, won Best Choice award at Computex 2012. Dr. Wang also helped the government develop the "Cloud Computing Applications and Industry Development Plan". Dr. Wang made significant contributions in transforming the Taiwan IT industry into the Cloud Computing era.



### Award Winner's Perspective

I am very honored to receive this distinguished recognition. This honor should really go to everyone in the CAFE system software R&D team at III.

For many years I worked on system software R&D at IBM: first on IBM mainframe transformation at Watson Research Center, then establishing the IBM China Research Laboratory in China, and later founding the IBM Greater China Development Laboratory. I spent all my energy helping IBM's successful transformation, and developed lots of talents for IBM in China. I was particularly grateful to III for giving me the opportunity to come back and work in Taiwan in 2007.

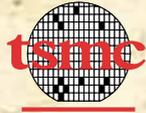
In the past few years, I worked on the transformation of R&D at III, with an emphasis on the development of pioneering technology. Then came to the rise of cloud computing. Cloud computing can be considered as a paradigm shift and a major challenge to the Taiwanese IT industry. I led the III team to conceive the CAFÉ strategy. We worked hard to develop the CAFE cloud system software platform, helping Taiwan IT industry transform, turning the cloud computing challenge into opportunities for Taiwan, leveraging our hardware strength to transform Taiwan into a world leading exporter of cloud systems and cloud service solutions.

I started out at IBM Watson Research Center to carry out system software research for IBM mainframe transformation. Then I went to China to work on IBM large system middleware development and testing, and later worked on large system performance optimizations upon returning to IBM US, finally returned to Taiwan, my beloved homeland, to work on cloud technology. It seems to me that I have been working on Cloud Computing all my life. I am really glad that I can contribute my lifetime learning back to the land I grew up on. There is still a long way to go before CAFE strategy can be really successful. Strong marketing and sales channels are critical to evolve from ODM/EOM to branding. Nevertheless, I sincerely hope that I can contribute a little to Taiwan's successful IT transformation.



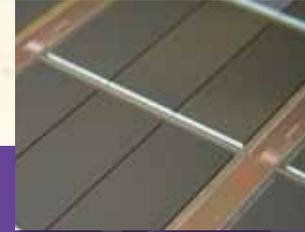
### Biography

- Education**
  - Ph.D., Experimental Physics, Columbia University, USA (1977)
  - M.S., Computer Sciences, Columbia University, USA (1978)
  - B.S., Physics, National Taiwan University, Taiwan, R.O.C. (1970)
- Experience**
  - Executive Vice President, Institute for Information Industry (2007-present)
  - Acting Vice President, Cloud System Software Institute, Institute for Information Industry (2012-present)
  - Chairman of the Technical Committee of Experts, Cloud Computing Association in Taiwan (2011-present)
  - Vice President, IBM Systems and Technology Group (2004-2007)
  - Founding Director, IBM Greater China Software Development Laboratory (1999-2004)
  - Founding Director, IBM China Research Laboratory (1995-1998)
  - Researcher & Senior Manager, IBM Thomas J. Watson Research Center (1978-1995)



Always follow the natural order of things.  
 Stay optimistic about the future and be  
 grateful for what you have.

**Shin-Puu Jeng**



### Reason for Winning

SP Jeng, a senior R&D manager renowned for his integrity and innovation, joined TSMC as a member of the R&D division in 2000. During his time with TSMC, SP has displayed expertise in technology development, sales and market development as well as internal team leadership and external customer communications. Past projects include advanced process modules and integration and the development of packaging and bumping technologies. In recent years, SP has been engaged in the development of 3D IC and silicon interposer technologies.



### Award Winner's Perspective

I am very grateful for the opportunity to be involved in a field of research with as much potential as 3DIC – I believe that the results this research will serve to benefit the entire industry, nation, and even all mankind.

I would like to take this opportunity to thank my colleagues that I have worked day and night with for their dedication and commitment. In particular, I would like to express thanks to Senior Director Cheng-hua Yu and Co-Chief Operating Officer Shuang-yi Chiang for their guidance, support, vision, and insights.

3DIC represents the next generation of critical IC technology and is important to TSMC and the Taiwanese semiconductor industry in two ways: (1) 3DIC technology is the next step in supporting the continuation of Moore's Law, particularly in terms of reducing manufacturing costs and extending performance gains. (2) 3DIC will be crucial for TSMC's transformation from a pure-play semiconductor foundry into an IC integration service provider. The impact of TSMC's CoWoS on cost, packaging, and testing, as well as the market, will provide a major boost to Taiwanese semiconductor firms developing 3DIC technology. These developments will hopefully usher in another decade of prosperity for the Taiwanese semiconductor industry.

Lastly, I would like to thank my family for their continued support over the years. In particular, I would like to thank my wife Shiaw-Ling for taking care of our home and allowing me to focus completely on my work.



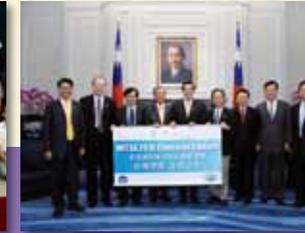
### Biography

- Education**
- PhD., Dept. of Materials Science and Engineering, University of Florida, USA. (1984-1988)
  - M.S., Dept. of Materials Science and Engineering, The State University of New York – Stony Brook, USA. (1982-1984)
  - B.S., Dept. of Materials Science and Engineering, National Tsing Hua University. (1975-1979)
- Experience**
- Director, 3DIC/IIPD Division, Taiwan Semiconductor Manufacturing Company, Ltd (2000-present)
  - Director, RD, WSMC (1998-2000)
  - Senior Manager, Applied Materials (1997-1998)
  - Researcher/Manager Texas Instruments (1991-1997)
  - Post-Doc, Yale University (1988-1991)
  - Research Assistance, Instrument Technology Center, National Science Council, Taiwan (1981-1982)



Don't explain the problem, solve it. Prove yourself, don't predict it.

Gary Gong



### Reason for Winning

To save the government budget, the 1st O-T model pioneered by Dr. Gong operated the 1st and largest Software Incubation Center in Taiwan. It became the most successful BOT model in MOEA. By introducing the internationally renowned "Service Experience Engineering" (S.E.E.) concept and establishing the "Minsheng Living Lab", the largest of its kind in Taiwan", Gong provided the R&D team and local residents with the perfect interactive testing ground for demonstrating the results of IT service applications.



### Award Winner's Perspective

In just a blink of an eye, thirty years have passed since I returned to Taiwan from the US and joined the III. Looking back now, there are just too many people for me to thank properly including my superiors for their wise guidance, my peers for their inspiration, the support of my team and the understanding of my family. The III has been a unique platform where I had the good fortune to take part in many of Taiwan's pioneering efforts. These experiences have not only spurred my continued learning and transformation but have become an unforgettable part of my life!

I am naturally delighted to be still winning awards after reaching middle-age but what I feel is truly important is my responsibility to pass on the torch. When I see Taiwan's current economic stagnation, the exodus of industries and the look of sadness in young people, it takes me back to thirty years ago when times may have been tougher but the opportunity was there if you worked hard. We were all confident that determination would be rewarded.

Today, we are in a race against time to build up the scale of our soft power. Once this has been achieved, we must strengthen the industry and make it competitive internationally. There are now nearly 200 countries in the world and what many people in Taiwan do not realize is that if we divide these countries into four quarters, Taiwan will rank in the top quarter in terms of population, average income and economic strength (GDP). What this means is that Taiwan's global influence should not be underestimated! A large population means that you will always have compatriots no matter where you are in the world. High average income means we can afford what we need. A powerful economy means that we have a lot of partners in the global value chain. As an important member of the global village, we do not have the right to self-pity. The ball is in our court and we must keep going forward!



### Biography

**Education** Doctor of Business Administration, Macau University of S&T, Macau, China  
Executive Program for Growing Companies, Stanford University, USA.  
M.S., Management Science, Stevens Institute of Technology, USA.  
B.S., Statistics, National Cheng-Kung University, Taiwan, R.O.C.

**Experience** Director, Digital Content Promotional Office, MOEA  
Member of Civilian Advisor Group, NICI, Executive Yuan  
Director, Office of Information Industry Development, MOEA  
Secretary General of AFACT Secretariat(Asia Pacific Council for TF/eBusiness)  
Chairman, International Integrated System Inc.(IISI)  
VP and General Director, IDEAS, ACI, ECRC, PSD, PEO/ III  
Product Manager, International Integrated System Inc.(IISI, III & IBM/J JV)



Clinical trial excellence, integrity,  
teamwork and cooperation.

Wing-Kai Chan



### Reason for Winning

Dr. Wing-Kai Chan set up the "National Center of Excellence for Clinical Trial and Research" at the National Taiwan University Hospital. The economic benefit is over NT\$ 300 million per year. It is a Center of Excellence for Clinical Trial and Research in Asia Pacific. It attracts major international pharmaceutical companies such as Pfizer, MSD, Novartis and GSK to set up clinical research centers in Taiwan. It also helps local biomedical industry new drug clinical development.



### Award Winner's Perspective

We are grateful to the Science and Technology Advisory Group, the Board of Science and Technology, the National Science Council, the Department of Health, Executive Yuan Taiwan, for establishment of the National Center of Excellence for Clinical Trial and Research at the National Taiwan University Hospital. After years of effort, we become a Center of Excellence for Clinical Trial and Research in Asia-Pacific. We perform 400 new drug clinical trials each year and take leadership in many international clinical trials. The quality of our clinical trials is among the best in the world and a US FDA Inspection had no any findings. Major international pharmaceutical companies such as Pfizer, MSD, Novartis, GSK select NTUH as their preferred partner in international new drug clinical trials. We help Taiwan to become a center of excellence in clinical trial in Asia and to support Taiwan's biomedical industries in clinical new drug development.



### Biography

**Education** Batchelor of Medicine and Batchelor of Surgery , University Of New South Wales, Sydney, Australia (1974)  
Fellow Royal Australian College of Physicians (FRACP) 1981

**Experience** New drug clinical trials as principal investigator in university medical centers and as medical director in major international pharmaceutical companies.



If you can practice good R&D, believe in your dreams and do your best to make them come true, success will not be far way.

Wen-Yung Yeh



### Reason for Winning

Yeh works at the Electronics and Optoelectronics Research Laboratories and is currently the director of the R&D division. Yeh spearheaded development on many important LED technologies, producing not only innovative and important new LED application technologies but also promoting an atmosphere of innovative R&D in the domestic LED field. Over the past eight years, Yeh has also overseen the development and commercialization of a novel AC LED technology. Yeh's efforts have not only led to personal and industry success but also won the recognition of important local and overseas awards.



### Award Winner's Perspective

I am delighted but also overwhelmed to receive such an honor. I am certain that there are many more outstanding professionals out there working quietly behind the scenes for the future of the industry. It is just my good fortune to accept the recognition and encouragement of the nation on behalf of everyone. The development of innovative industrial technologies that make an important contribution to the industry has always been the mission and goal of the ITRI. I am very fortunate to have the opportunity to leverage my creativity and fulfill my dreams in such an environment. In more than ten years of service with the Electronics and Optoelectronics Research Laboratories, I received the support and cultivation of my superiors and organization as well as the total cooperation and commitment of my team members. These allowed the On-Chip AC LED technology that we have been promoting to become a key, self-owned product of Taiwan's LED industry and make a tangible contribution to the industry. For this I am truly grateful.

Technology R&D is a long and arduous road that is also filled with surprises. I love my work and I am also more than willing to uphold the commitment I made to this nation and society. In the future, this honor will be translated into self-encouragement and I will continue to give my best effort to this land in order to create more innovation value for the industry.



### Biography

- Education** Ph.D. in Materials Science and Engineering, National Tsing Hua University (2001.8)  
B.S. in Materials Science and Engineering, National Tsing Hua University (1996.6)
- Experience** R&D Division Director, Electronics and Optoelectronics Research Laboratories, ITRI. (2011.7- present)  
Deputy Division Director, Electronics and Optoelectronics Research Laboratories, ITRI. (2008.4- 2011.6)  
Manager, Electronics and Optoelectronics Research Laboratories, ITRI. (2007.1- 2008.3)



Do what you love, treat every setback as an opportunity and pursue excellence with all your heart.

**Chia-Chiang Chang**



### Reason for Winning

Manager Chang works at the ITRI and specializes in application of plasma technology to the optoelectronics industry. By successfully developing transparent conductive thin-film technology and equipment that makes ITO obsolete, Chang broke through an industry technological bottleneck. Chang received RD100, TIA, quality management role model, outstanding innovation, outstanding research and industry contribution awards. A number of international collaborative projects have also been started with Japan and Germany that helped accelerate industrial technology upgrades in Taiwan. Chang has produced a wealth of results in innovation with 60 patent applications filed to date.



### Biography

- Education**
  - M.S. National Tsing Hua University (1997-1999)
  - B.S. National Taipei University of Technology (1995-1997)
- Experience**
  - 2012 R&D 100, aePlasma coating technology
  - 2012 National Invention Award
  - 2012 Technology Innovation Award from the Wall Street Journal (aePlasma technology)
  - 2011 Outstanding Young Engineer Award from the Chinese Institute of Engineers
  - 2011 ITRI 2011 Award from Excellent Research (Low-E glass technology)
  - 2011 ITRI 2011 Award from Excellent Research (LED Technology)
  - 2010 ITRI 2010 Golden Award (1st) from Excellent Research (Transparent Conductive Oxide Technology)
  - 2010 MSL 2010 Excellent Research Award (AP Plasma Technology)

### Award Winner's Perspective

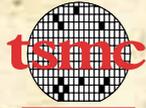
The decision by the low-temperature atmospheric-pressure plasma technology team to concentrate on metal oxide thin-film applications was a critical turning point. The best-know industrial application for metal oxides is transparent conductive materials. At the time, there were nearly 20 types of related industry technologies but only one was in mainstream use: vacuum plasma technology (Physical Vapor Deposition, or PVD). We chose to take a different path by focusing on non-vacuum Atmospheric-Pressure Plasma (AP Plasma) technology. Others have attempted to take this path in the past but none had ever succeeded. But we succeeded! The deciding factor may have been that small difference in professionalism and commitment.

"If you have never made a mistake at work then you probably didn't do any work." This is the attitude that encouraged innovation by team members. There were countless failures during the development of this award-winning technology but we enthusiastically applauded the smallest signs of progress. We often encouraged our team by saying: "Technology is the product of failure. You won't fail if you don't try but neither will you succeed."

The campus magazine published by the University of Tokyo in Japan often features the slogan: "Summit of Knowledge". This slogan was a source of great inspiration for us. It drove home to us the importance of professionalism and the pursuit of excellence! What truly embodies the soul of technology? As Masayuki Okano, the president of Okano Industries (Note) once summarized so succinctly: "It is work that is too hard for anyone to do".

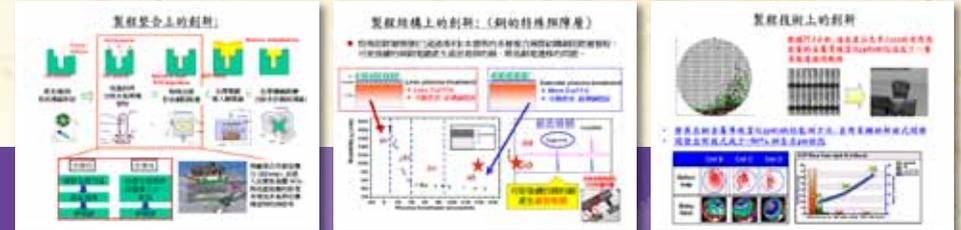
With the low-temperature AP plasma transparent conductive film process and equipment technology, we successfully challenged a technology that no one else in the industry has ever managed. I am therefore filled with gratitude for all of my superiors' patience and support as well as our industry partners for the confidence they showed in us and all the assistance they gave!

I would like to finish off with a quote from Steven Jobs, the founder of Apple Computers: "Do what you love, treat every setback as an opportunity, and pursue excellence with all your heart". Thank you!



Don't live a life full of regrets but think before you act.  
When God has a gift for you, He will wrap it inside a challenge.

Shih-Chieh Chang



### Reason for Winning

After graduating from university in 2003, Chang successfully applied to TSMC to perform his national defense service at TSMC Fab 14. For the past 8 years Chang has been focusing his efforts on transistor circuit processes and played an important role during development from 0.13 micron to 40nm copper processes. During his time at TSMC, Chang has remained passionate, committed, dedicated and professional in his attitude towards the semiconductor industry. Chang now holds many patents and has won a number of company and government awards. He now oversees development on 20nm process technology and has made a material contribution to the foundry industry.



### Award Winner's Perspective

I have always believed that I am a very lucky person. There are many people out there doing their best to survive while fortunate people like us can focus on improving our lives, treasuring what we have, putting our God-given gifts to good use and giving what we can to those people we need it. I think hope is everywhere and is always being created anew.



### Biography

- Education** Ph.D. in Material science and engineering, NCTU, Taiwan (2000-2003)  
M.S. in Material science and engineering, NCTU, Taiwan (1998-2000)  
B.S. in Applied chemistry, NCTU, Taiwan (1994-1998)
- Experience** Manager, Fab14 TFE1, TSMC. (2010-present)  
Section manager, Fab14 TFE1, TSMC. (2007-2010)  
Principle engineer, Fab14 TFE1, TSMC. (2003-2007)



Life is short. Stop complaining of something, but make something happen.

Shuen-Huei Guan



### Reason for Winning

Guan has been with Digimax Inc. for more than 7 years and is now the R&D manager. Guan has been actively involved with building in-house 3D animation production software technology and this has helped Digimax secure many international collaboration projects. At the same time, Guan has also spared no effort when it comes to combining the cultural industry with the animal industry in order to develop creative cultural enterprise and take Taiwanese creativity to the international stage.



### Biography

- Education**
  - Ph.D. National Taiwan University (2010-present)
  - M.S. National Taiwan University (2002-2004)
  - B.S. National Taiwan University (1997-2002)
- Experience**
  - R&D Manager, Digimax Inc. (2009-present)
  - R&D Vice Manager, Digimax Inc. (2008-2009)
  - R&D Engineer, Digimax Inc. (2005-2008)
  - Pioneering Programmer, InterServ International Inc.(2000-2002)
  - System Administrator, PTT BBS (1999-2002)

### Award Winner's Perspective

Digital content is an industry where content is supplemented by digital technology. Although the computer animation industry involves a high level of technology, the key to success lies in creativity and content.

Since I joined the Digimax in 2005, we established production processes based around four principles of "Efficiency", "Communications", "Collaboration" and "Creativity". In 2008, we began working on 3D stereo technology and, during this time, we expanded into new fields of knowledge, a process that had its ups and downs.

What engineers excel at is making the impossible possible, simplifying the difficult, accelerating the time-consuming and automating the labor-intensive. What technology can't do is come up with creative, beautiful and attractive content. In this industry, content must always come first. Nevertheless, the mission of the engineer is to help artists realize their imagination and construct a moving world with its own narrative.

I am grateful to Chairman Huang of Digimax for nominating me for this year's industrial innovation awards. Thanks go to supervisors Jian-rong Wu and Tai-de Yang for their guidance, as well as my colleagues for putting with my bouts of arrogance and determination to get to the root of things. I am particularly grateful to the professors at the National Taiwan University's Department of Information Engineering for their advice on life.

I must thank the members of the final judging committee of the National Industrial Innovation Awards for their show of favor. Your decision in recognizing my humble contributions make me more determined to make more contributions to the industry as a whole in the future.



Humility is what drives the desire for constant improvement. Don't complain about others not pulling their weight. Be grateful that you can do more.

Yi-Pai Huang



### Reason for Winning

Professor Huang teaches at the Department of Photonics of the National Chiao-Tung University. Professor Huang had previously been a project leader at the AUO Technology Center in 2004 so has many years of experience with LCD optics, 3D display and interactive technology and micro-optic devices. Apart from focusing on developing technologies for academic and industrial applications that have helped boost the visibility of Taiwanese display technologies internationally, Huang's contribution to the industry through his academic and technical accomplishments have won many local and overseas awards as well.



### Award Winner's Perspective

I would like to start by thanking the judges for their affirmation and personnel from the Ministry of Economic Affairs for their hard work. It is a great honor for me to receive this Youth Innovator Award. I would also like to thank my family for their support, my seniors for their continued guidance as well as my comrades on the research team.

Differentiation is now essential to success in today's worth. Innovation is an important component of differentiation and I have always agreed with the idea that if you want to overtake, you must change lanes. That's why in the past few years I have continued to remind myself to not pick simple "Me too" jobs. Instead, I strived to develop practical high-end technologies that are better and more advanced than anyone else.

Innovation and practicality are however often like two ends of a scale so you can one have but not the other. Fortunately, my training from the PhD program as well as experience in the industry allowed me to keep my research results over the years balanced to some extent. Nevertheless, there are still many shortcomings that I must work even harder to overcome.

This honor represents recognition for my past efforts but will also spur me to even greater efforts in the future. I would therefore like to thank the judges and the organizers once again.



### Biography

- Education** Ph.D. National Chiao Tung University, HsinChu, Taiwan (2000-2004)  
M.S. National Chiao Tung University, HsinChu, Taiwan (1999-2000)  
B.S. National Cheng Kung University, HsinChu, Taiwan (1996-1999)
- Experience** Associate Professor, National Chiao Tung University (2009-Present)  
Chairman, Society of information display(SID) Taipei Chapter (2012-Present)  
Visiting Associate Professor, School of ECE, Cornell University (2011- 2012)  
Vice Director, EECS Undergraduate Honors Program, NCTU (2009-2011)  
Assistant Professor, National Chiao Tung University (2006-2009)  
Project Leader/Deputy Manager, AU-Optronics Tech. Center (2004-2006)  
Visit Scholar, CREOL, University of Central Florida(UCF) (2001-2002)

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