



1st National Industrial Innovation Award

2011 winners introduction

Sponsor : Ministry of Economic Affairs, R.O.C

Organizer : 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".



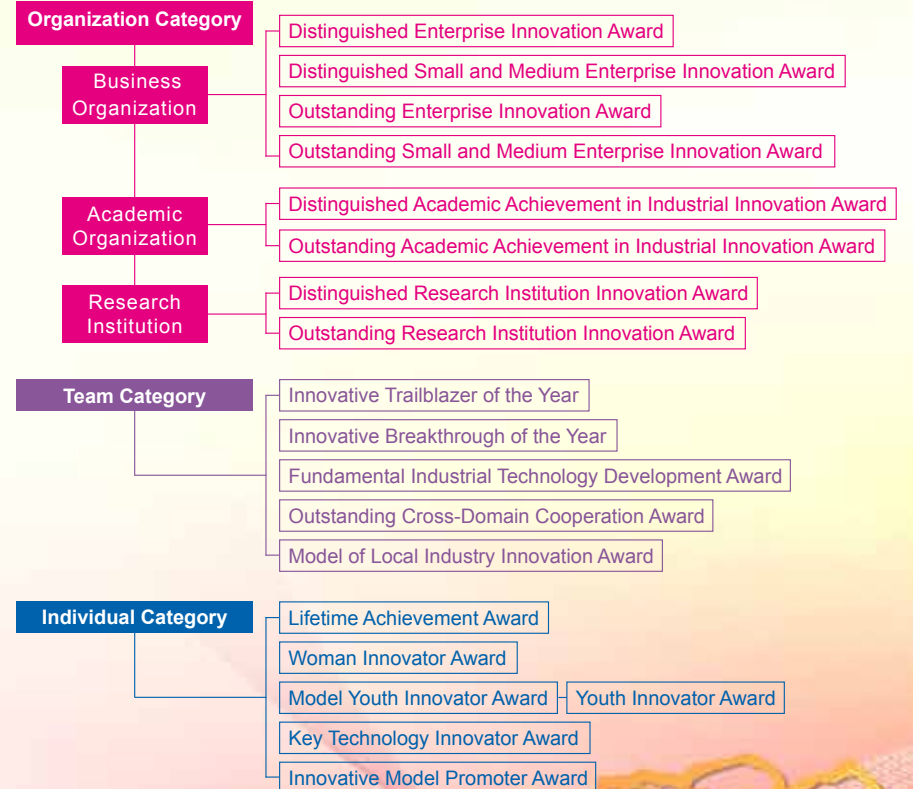


About National Industrial Innovation Award

Nomination Category

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.

1st National Industrial Innovation Award





■ Organization Category

Distinguished Enterprise Innovation Award

- 08 Hiwin Technologies Corp.
- 10 Taiwan Semiconductor Manufacturing Company, Ltd.
- 12 Franz Collection Inc.

Distinguished Small and Medium Enterprise Innovation Award

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Distinguished Academic Achievement in Industrial Innovation Award

- 16 Microelectronics and Information Systems Research Center,
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Outstanding Enterprise Innovation Award

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Outstanding Small and Medium Enterprise Innovation Award

- 30 FUKUTA Elec. & Mach. Co., Ltd.
- 32 Groundhog Technologies Inc.
- 34 Grape King Inc.
- 36 JG Environmental Technology Co., Ltd.
- 38 Bright Ideas Design Co., Ltd.
- 40 Grimm Press Co., Ltd.

Outstanding Academic Achievement in Industrial Innovation Award

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University

Outstanding Research Institution Innovation Award

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Reason for Winning

With its self-owned HIWIN brand, Hiwin Technologies has kept its roots in Taiwan while marketing worldwide. Currently, it is among the three motion control and systems technologies brands in the world. With a firm grasp on core technologies, Hiwin has been ranked among "Taiwan's Top 100 R&D Patent Producers" for many years. Its main precision linear motion products such as ball screws, linear guideway, and industrial robots, are widely used in domestic and international industries such as the biomedical industry, the optoelectronic semiconductor industry, the intelligent automation industry, the environment protection and energy conservation industry, the precision tools and machinery industry, and the transportation industry.



With Taiwan as its knowledge center, Hiwin Technologies has established R&D centers all over the world, integrating the world's resources; it also actively participates in domestic industry academia cooperative research projects and periodically hosting thesis award competitions, thereby supporting and encouraging the young and talented R&D engineers in the mechanics industry. Hiwin also funds and promotes automation engineer certification, fulfilling its corporate social responsibilities, and laying the cornerstone for the sustainable development of the mechanics industry. Hiwin contributes significantly to the development and innovation of Taiwan's mechanics industry and is a model for other enterprises.

Business Philosophy

Manufacturing is not our ultimate goal. Our ultimate goal is to satisfy the needs of humanity. Manufacturing is a type of service. The desire to provide quality service is the source of innovation.

— Chairman Eric Y. T. Chuo

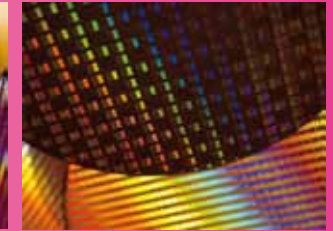
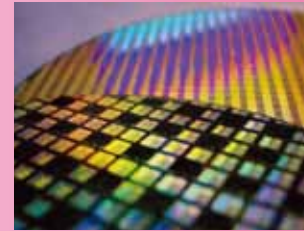


Company Profile

Founded	1989.10
Core Business	R&D and manufacture of motion control & system technology
Chairman of the board	Eric. Y. T. Chuo
President	Enid. H. C. Tsai
R&D Manager	Jerry. Y. L. Chiu (AVP)

Business Contact

Head Office	No. 46, 37th road, Taichung Industrial Park, Taichung, Taiwan, R.O.C.
TEL	+886-4-23504510
FAX	+886-4-23594420



Reason for Winning

TSMC is the world's largest dedicated integrated circuit manufacturing service company. It has received many domestic and international awards in recognition of its accomplishments in wafer process technologies and its services and operations.



In terms of technological innovation, TSMC actively develops green manufacturing processes, and not only was the first to mass produce the advanced 65 nanometer and 40 nanometer processes, but also announced that it will provide customers with an even more complete and comprehensive 28 nanometer process technology, demonstrating its world-leading R&D capabilities. TSMC also established the "Open Innovation Platform" several years ago, a pioneering cloud-based service that enables three-way interaction between customers, vendors, and TSMC, and established its highest award – the "TSMC Medal of Honor." It also engages in JDPs (Joint Development Programs) with various universities, further strengthening cultivation of talent and development of industry. Each summer, TSMC provides 200 internship positions, providing a large number of opportunities for collaboration between industry and academia.

TSMC is a leader in technology and manufacturing, and a service-oriented provider, actively integrating domestic fabless design companies and component manufacturer customer groups to form a strong and competitive team in the semiconductor industry, thereby promoting industrial development.

Business Philosophy

Innovation is our source for growth. The innovation that we seek is all-round, including innovation in strategy, marketing, management, technology, and manufacturing. Innovation is not just coming up with new ideas; you also need the ability to execute and realize those changes. Otherwise, your idea would just be another fantasy without any real benefits.

– Chairman Morris Chang



Company Profile

Founded	1987.02
Core Business	Dedicate IC Foundry Service
Chairman of the board	Morris Chang
R&D Manager	Shang-Yi Chiang (Senior Vice President of R&D)

Business Contact

Head Office	8, Li-Hsin Rd. 6, Hsinchu Science Park, Hsinchu, Taiwan 300-78, R.O.C.
TEL	+886-3-5636688
FAX	+886-3-5670121



Reason for Winning

Franz Collection began with "porcelain", combining the "hard power" of technology and the "soft power" of culture. It has changed traditions with creativity and innovation. With creativity as the core, culture and art as the appeal, the market-oriented company has established an excellent value chain in the cultural creative industry to combine production, marketing and services. With many efforts in innovating the "form, color and texture", the brand has skillfully integrated oriental ink painting techniques and Western style, creating eternal cultural values through its artwork and arousing sympathy and consensus.



A new life has been given to the old porcelain culture. The brand has brought art into life and built a successful model for the cultural creative industry "rooted in culture, formed in products and used in life". Starting from its establishment in 2001, the company has sold to 6000 points of sales in 56 countries in 10 years. It has been certified as one of the Top 100 Taiwan Brands. With its products to promote the culture that shapes the industry, the company has delivered values through porcelain and successfully used high quality products with cultural creativity to make the cultural influence go far and wide. As a role model, the brand has taken an important position on the international stage for Taiwan's cultural creative industry.

Business Philosophy

The porcelain products of Franz Collection have blended Oriental culture and the essence of Western aesthetics by creative interpretation of truth, goodness and beauty among heaven, the world, and people worldwide. Its mission is to preserve human values through the careful combination of nature, handicraft and porcelain.

— Chairman Franz Chen



Company Profile

Founded	1997.10
Core Business	Arts/Porcelain Retail, Art Exhibitions, International Trade
Chairman of the board	Franz Chen
R&D Manager	Alan Yen

Business Contact

Head Office	13F, No. 167, Sec.5, Ming Sheng E. Road, Taipei, Taiwan, R.O.C.
TEL	+886-2-27670116
FAX	+886-2-27654174



Reason for Winning

Gudeng Precision was originally a traditional SME that manufactured CNC plastic molds.

In 1999, Gudeng started making components for semiconductor process equipment. In 2003, through its precision model production technology and high degree of understanding and control over various types of materials, Gudeng Precision successfully developed optical lithography mask boxes for 6-inch wafer technologies and became an important link in the semiconductor value chain.



Afterwards, Gudeng also successfully lead competitors in developing 6" reticle carrier, and 8" and 12" wafer carriers, and its services also expanded to optical mask cleaning and the protection and shipping of other high-value materials. Gudeng's service innovations include its unique operation model, taking advantage of its flexible advantages as an SME, and combining the R&D efforts of both vendors and its customers. Gudeng utilizes its core technological capabilities to integrate its solutions with its service interfaces and shipping products, providing a highly differentiated quality service and creating a very high standard of service.

Gudeng also establishes long-term partnerships with established international vendors, providing yet another valuable example of success for Taiwan's SME innovation and development.

Business Philosophy

"Anything that the human mind can imagine and believe will one day be realizable." The most important thing is not to be afraid to imagine and to believe that your team can accomplish it.

— Chairman Bill Chiu

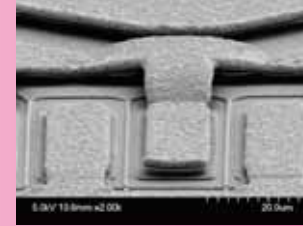


Company Profile

Founded	1998.03
Core Business	Reticle Handling Solutions, Wafer Handling Solutions, Equipments, Others
Chairman of the board	Bill Chiu
President	Arron Lin
R&D Manager	Aloong Chiu

Business Contact

Head Office	9F., No.2, Sec. 4, Zhongyang Rd., Tucheng Dist., New Taipei City 236, Taiwan, R.O.C.
TEL	+886-2-22689141
FAX	+886-2-22683443



Reason for Winning

The NCTU Microelectronics and Information Systems Research Center (MIRC) was established in 1984 to help in the coordination and realization of Taiwan's Technology Rooting Policy, implement technological development programs, meet the needs of current and future economic and national defense requirements, facilitate advanced R&D in microelectronics and information technologies, establish a bridge between academia and industry, execute advanced technological research, train and develop high-tech talent, and establish a technological foundation for Taiwan's economy and national defense.



The NCTU MIRC is composed of 14 research centers, 15 laboratories, and 2 research groups. Besides undertaking a 5-year/50 billion dollar integrated project from the Ministry of Education and the National Science Council, the NCTU MIRC is also currently executing a green energy high-power electronic component R&D project for the Ministry of Economic Affairs and a Wireless Body Area Network (WBAN) key technology R&D project for the Technology Development Program.

In addition, the NCTU MIRC also engages in the three-way collaboration between industry, academia, and research organizations, forming a joint R&D center for the development of advanced technologies with the ITRI, the Institute for Information Industry, MediaTek, CHT, Zyxel, D-Link, and Promise. Relative innovative R&D results are applied to assist Taiwan's industry develop high-level technologies, thereby promoting Taiwan's technological development in advanced microelectronics and advanced information technologies.

Business Philosophy

All innovation comes from solid foundations. The only way to realize a new idea is to work hard and take a realistic, step-by-step approach.

—Chief Director Bao-Shuh Paul Lin
— Chief Technology Officer Edward-Yi Chang



Company Profile

Founded	NCTU(1958) MIRC(1984)
Core Business	1.OLED 2.ECAD 3.Intelligent Wireless Communications Technology and Systems 4.Testing 5.Electromagnetic Application Research 6.Advanced Coplanar Strips System IC Design 7.High Speed Electronic 8.Optical Storage Research 9.Photonic Science and Technology for the Tera-Era 10.Next Generation Internet Technologies and Applications 11.Intelligent Transportation System
President	Yan-Hwa Wu
Chief Director	Bao-Shuh Paul Lin
Chief Technology Officer	Edward-Yi Chang

Business Contact

Head Office	1001 Ta Hsueh Road, Hsinchu, Taiwan, R.O.C.
TEL	+886-3-5714564
FAX	+886-3-5719730



Reason for Winning

The ITRI Material and Chemical Research Laboratories are devoted to the R&D of new materials and new process technologies, assisting Taiwan in having its own autonomous core technologies and driving Taiwan's relative industries to continue to upgrade.

In recent years, in the area of green energy-related materials and component technologies, the ITRI Material and Chemical Research Labs have successfully improved the effectiveness of various energy conservation and carbon reduction techniques; in other areas, such as electronic materials and high-value chemicals, they also lead the international R&D community in successfully developing many technologies, strengthening Taiwan's international competitiveness in the battery industry and the materials and chemicals industries.

Between 2008 and 2010, the ITRI Material and Chemical Research Laboratories successfully obtained a combined total of 487 patents, as well as many domestic and international awards, including the prestigious R&D 100 Award.

Many of the ITRI Material and Chemical Research Laboratories' successful R&D results have already been incorporated into industrial mass production, producing significant economic benefits; the value of the ITRI Material and Chemical Research Laboratories' technology transfer cases average about 1 million NT dollars per case, assisting domestic industries in their efforts to upgrade their technological sophistication level and increasing the added value of their products and services, thereby fulfilling the key role and duty of the research institution, which is to support the innovation and development of the industry.



Business Philosophy

Use new and innovative materials and technologies to create differentiated competitive advantages.
Combine culture, arts, and humanities to guide technology to be closer to people's daily lives.

— Vice President and General Director
Tsung-Tsan Su



Company Profile

Founded	2006.01
Core Business	Material and Chemical Research
Chairman of the board	Ching-Yen Tsai
President	Jyuo-Min Shyu
R&D Manager	Tsung-Tsan Su (Vice President and General Director)

Business Contact

Head Office	195, Chung Hsing Rd., Sec.4, Chutung, Hsinchu, Taiwan, R.O.C.
TEL	+886-3-5917787
FAX	+886-3-5820247



Reason for Winning

O-TA Precision is a manufacturer of high-quality golf club heads in the world. By continually improving its materials and technology, and further incorporating artistic, cultural, and aesthetic aspects into its product designs, O-TA has created its own brand-name style and unique competitiveness. O-TA was selected by Business Week in 2006 as number 24 in Asia's top 100 growth companies. In 2009, O-TA started developing high-class bicycles and established the self-created VOLANDO brand. O-TA is a successful model for value chain upgrades and industrial transformation.



Company Profile

Founded	1988.07
Core Business	GOLF--Golf heads, graphite shaft production, and golf clubs assembly Bicycle--VOLANDO
Chairman of the board	Kung-Wen Lee
President	Bill Lin
R&D Manager	Che-Wei Tai (Director of R&D)

Business Contact

Head Office	No 8, Chien-Fu Road, Nei-Pu Industrial Zone, Ping-Tung Hsien, Taiwan, R.O.C.
TEL	+886-8-7783855
FAX	+886-8-7786929

Key Products – Product features

▼ Drivers (Golf)



The heads of the drivers are made from the same titanium material used in aerospace applications combined with carbon fiber. The graphite composite head is formed by bladder molding technique. The shafts of the driver clubs are made of lightweight carbon fiber.

Business Philosophy

Create an irreplaceable place in the market for yourself by continuously innovating and creating additional added value for your products!

— Chairman Kung-Wen Lee





Reason for Winning

Realtek Semiconductor is one of the few vendors in the industry that has control of short-range, medium-range, and long-range communications technologies. Besides continually developing low power consumption products, Realtek also actively participates in IEEE standards development, which is why Realtek's R&D capabilities are well recognized throughout the international community.



Company Profile

Founded	1987.10
Core Business	Design, Test, and Distribute ICs; ASIC Service
Chairman of the board	Nan-Horng Yeh
President	Alex Chiu
R&D Manager	Ying-Hsi Lin (Vice President)

Business Contact

Head Office	No. 2, Innovation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan, R.O.C.
TEL	+886-3-5780211
FAX	+886-3-5780210

Key Products – Product features

▼ Energy-Saving IEEE 802.11n 150Mbps Wireless LAN Router (RTL8196C + RTL8188RE)



RTL8196C + RTL8188RE are 5-port Ethernet AP/Routers that support 802.11n 1x1 150Mbps. Through Realtek's newly developed Active-ECO automatic standby energy-conservation technology, these router models have some of the lowest long-duration standby power consumption rates in the industry. In addition, due to the low power

consumption characteristics, the devices can be powered directly with USB power and do not need to be connected to an external power source.

Characteristics:

- Operates on USB Bus or external power
- Supports IEEE 802.3az power-down when there is no network traffic, and also supports Realtek's 'Green Ethernet' (reduces power to suit cable length for maximum performance with minimum power use)

Business Philosophy

Look for procedural flows in your commonalities; look for creativity in your differences.

— Chairman Nan Horng Yeh





Reason for Winning

BIONIME Corporation manufactures blood glucose meters and has its own brand and its own unique technology platform. BIONIME's core technology is its embedded precious metal electrode biomedical sensing test strip technology and its intelligent calibration IC system. Through high-quality product design, BIONIME meets the needs of the aging population, and by establishing a highly differentiated competitive advantage based on the anticipation of an aging future society and cloud-based medical services, it serves as a successful model for the medical industry and industries related to people's everyday lives.



Company Profile

Founded	2003.04
Core Business	Design, manufacture and distribute biosensors.
Chairman of the board	Roy Huang
President	Roy Huang
R&D Manager	Brown Hsu (Vice President)

Business Contact

Head Office	No. 694 Renhua Rd. Dali Dist. Taichung City 412, Taiwan, R.O.C.
TEL	+886-4-24951268
FAX	+886-4-24952568

Key Products – Product features

▼ The Rightest Blood Glucose Monitoring Systems



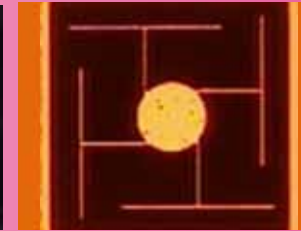
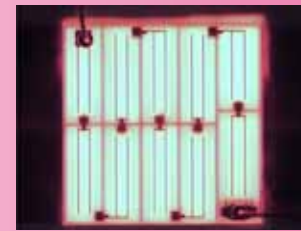
BIONIME integrates the top-tier expertise in medical science, chemistry, electronics and precision mechanism to commercialize the patented technology of unique test strip structure. Our unique technology increases the accuracy and precision for the blood glucose testing result. Based on this global patented strip, we develop the professional blood glucose monitoring system for users successfully. We sell the products to over 70 different countries with our own brand, BIONIME, since our products have been highly recognized by outstanding clinical tests and well-known journals internationally. Today, BIONIME employs more than 700 employees and operates 4 subsidiaries in Europe, America, Asia and Australia.

Business Philosophy

Be good, be better, be the best! Forever pursue excellence by innovating again and again!

— Chairman Roy Huang





Reason for Winning

EPISTAR Corporation is committed to the R&D of LED epitaxial wafers and chips, and III-V concentrated solar cells. EPISTAR continuously makes efforts to strengthen its core technologies and actively deploys its patent strategies.

Currently, it is the largest AlGaInP LED provider in the world and owns three world-class core LED technologies. EPISTAR has used mergers, joint ventures, and cross-licensing to get around patent restrictions from large global LED vendors, and has successfully established a new operations model, which is why it is a successful role model for technological innovation as well as novel industrial operation models.



Company Profile

Founded	1996.09
Core Business	1. AlGaInP based light emitting diode epitaxy wafers and chips (red, orange and yellow light) 2. AlGaAs based light emitting diode epitaxy wafers and chips (red and infrared light) 3. InGaN based light emitting diode epitaxy wafers and chips (ultraviolet, blue and green light)
Chairman of the board	Biing-Jye Lee
President	Ming-Jiunn Jou
R&D Manager	Min-Hsun Hsieh (Vice President)

Business Contact

Head Office	5, Li-Hsin 5th Rd., Hsinchu Science Park, Hsinchu 300, Taiwan, R.O.C.
TEL	+886-3-5678000
FAX	+886-3-5783081

Key Products – Product features

▼ High-Voltage Warm White LEDs



1. Luminous efficiency > 105 lm/W@ 5.4W, 3000K
2. CRI > 90
3. No warm-white gap caused efficiency droop

Business Philosophy

Epistar's mission is continuing to "explore and realize the possibilities with LEDs", and to pursue the globally widespread adoption of LED lighting.

— Chairman Biing-Jye Lee





Reason for Winning

In an industrial environment filled with distrust, Sinyi Realty defines its differentiation strategy by establishing "Relationship of trust with customers and partners." Sinyi also places this concept at the core of its corporate culture, establishing the foundation of its corporate development by placing the best interests of its stakeholders first.



Throughout its 30-year history, Sinyi has continuously innovated on its customer side, employee side, shareholder side, and industrial environment side to improve the service quality and sales practices of the real estate industry, thereby expanding the coverage of the industry's services and leading the industry toward continuous improvement and upgrade, which is why Sinyi is an exemplary model for industrial innovation.

Company Profile

Founded	1987.01
Core Business	1.To provide property leasing and selling brokerage services. 2.To market and sell new-build and off-plan properties. 3.To provide commercial properties leasing and selling brokerage services, as well as real estate and land investment consulting services.
Chairman of the board	Chun-Chi Chou
President	Chien-Ping Hsueh
R&D Manager	Howard Chou (Chief Strategy Officer)

Business Contact

Head Office	No.100, Sec. 5, Xinyi Rd., Xinyi Dist., Taipei City 110, Taiwan, R.O.C.
TEL	+886-2-27557666
FAX	+886-2-27228169

Key Products – Product features

▼ real estate businesses



The evolution of Taiwan's real estate industry is closely tied to the development of Sinyi Realty Inc. Since established in 1981, Sinyi has provided innovated services including "Deal after Property Right Investigations," "Fixed Ratio of Services," "Sectional Charge," "Property Right Investigation Report," "Wholly Secured system of House

Purchase," and "Guarantee of House Dealing Contract." Furthermore, Sinyi launched world's first background check program for ill-fated houses in 2011. Despite significant initial hardship Sinyi eventually earned the trust of its customers by valuing and protecting their rights. Today, Sinyi is the leader in Taiwan's real estate industry and its services have become adopted for National Standards.

Business Philosophy

Sinyi's mission is to continue to innovate and insist on providing the highest quality services, thereby changing the real estate business and continually leading the industry in providing innovative services. We aim to become a model for the industry and further advance our world-class services!

— Chairman Chun-chi Chou





Reason for Winning

FUKUTA is a professional motor development of dedicated wind turbine and electric vehicle motor. FUKUTA was the first vendor in Taiwan to come up with the strategy of using relative components with international auto vendors. This strategy has long-term development potential. FUKUTA also actively participates in industry-academia collaboration, accumulating core advantages for developing high-efficiency motor, contributing significantly to the future development of the motor industry.



Company Profile

Founded	1988.04
Core Business	electric power supply, electric transmission & power distribution machinery manufacturing, machinery & equipment manufacturing, electrical machinery & supplies manufacturing, automobiles & parts manufacturing, motor vehicle and parts manufacturing, retail sales of motor vehicle parts & supplies, international trading. All business items that are not prohibited or restricted by law, except those are subject to special approval.
Chairman of the board	Gordon Chang
President	Gordon Chang
R&D Manager	Ji-Long Chang (Vice General Manager)

Business Contact

Head Office	NO.2-1, Lane 301, Feng Chou Rd. Shen Kang District, Taichung City, Taiwan, R.O.C.
TEL	+886-4-25288833
FAX	+886-4-25283979

Key Products – Product features

▼ Electric Vehicle Motors

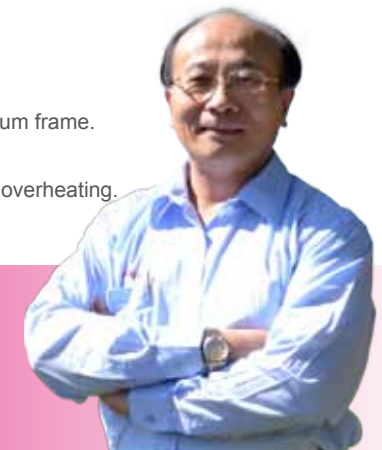


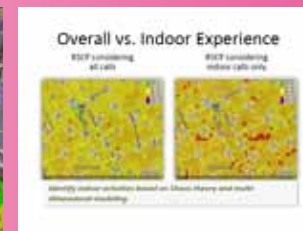
1. Thin and high-grade silicon steel for electric car motors.
2. High conductivity die-casting copper rotor, low loss, high energy density.
3. Design of high torque and high output.
4. VPI process for excellent insulation and cooling.
5. High efficiency and low energy consumption.
6. High regenerative energy.
7. High CPSR for high and low speed operation.
8. New style design with small lightweight aluminum frame.
9. Durable, low thermal shock effect.
10. Temperature protection to effectively prevent overheating.

Business Philosophy

Actively innovate to achieve customer satisfaction and sustainable prosperity for the company.

— Chairman Gordon Chang





Reason for Winning

Groundhog Technologies has successfully developed many technological modules, resulting in the production of network planning software and services that are commercially applicable. Its software can be used for telecommunications services providers' critical network planning and management, and is already being used by large foreign telecommunications companies such as AT&T, NTT, and Vodafone. Its software is also used by Chunghwa Telecom, KDDI, and China Mobile, which shows that Groundhog's technology is indeed advanced and forward-looking, and that it does indeed have superior innovative abilities.



Company Profile

Founded	2001.12
Core Business	Enabling technology for mobile network optimization, geolocation, and capacity planning
Chairman of the board	David Chiou
President	David Chiou
R&D Manager	Philip Young (Technical Director)

Business Contact

Head Office	19th Floor, NO.100, Sec. 2, Roosevelt Rd, Taipei City, Taiwan, R.O.C.
TEL	+886-2-83691018
FAX	+886-2-83692368

Key Products – Product features

▼ CovMo



1. Revolutionary technology utilizing Chaos Theory and multi-dimensional analysis to achieve unprecedented geolocation resolution and accuracy.
2. Simultaneously identification of network issues for entire network and for all times (not just during drive tests), which is important for discovering issues due to cell breathing.
3. Linking network issues with Subscriber-Based Intelligence to understand the perspectives from the subscribers, not just from the network.
4. Enabling platform with extension modules for revealing user-perceived data throughput, spatial and temporal KPI analysis, additional capacity investment analysis, proactive churn analysis, persuasive call center, and Femtocell strategy.
5. Utilizing data that are already on the network, such as measurement events from RNC or probe in order to perform multi-dimensional analysis.

Business Philosophy

Keep our hearts and minds open to new changes and developments to achieve technological breakthroughs; use newly created technologies to enter international markets; use execution abilities to transform technical advantages into business advantages.

— Chairman David Chiou





Reason for Winning

Grape King Biotechnology's key technology is fermentation. It is the first enterprise in Taiwan to produce *Ganoderma lucidum* mycelium through fermentation, and is now the largest vendor in Taiwan in terms of fermentation quantity.

In 1991, Grape King established the Bio-engineering Center, which focuses on R&D, production, public announcements, and the application of health food licenses.

The Bio-engineering Center contributes effectively in product development, and also indirectly results in the technological capabilities of collaborative equipment vendors being boosted as well.



Company Profile

Founded	1969.07
Core Business	Health food, beverages, pharmaceuticals, cosmetics
Chairman of the board	Shui-Chao Tseng
President	Shui-Chao Tseng
R&D Manager	Chin-Chu Chen (Vice General Manager)

Business Contact

Head Office	60, Sec.3, Lung-Kang Rd., Chung-Li City, Taoyuan Country, Taiwan, R.O.C.
TEL	+886-3-4572121
FAX	+886-3-4287807

Key Products – Product features

▼ Antrodia King



Antrodia cinnamomea is a mushroom unique to the Taiwanese terrain. The wild fruiting body normally takes over 1 year to mature and takes 60 days for artificial culturing. Grape King is able to produce pure Antrodia mycelium by submerged fermentation in 14 days. This is also presently the fastest method for Antrodia mycelium production without substrate residue following purity concerns. Minimized exposure to pollution is achieved with a shortened fermentation course. Each batch production is completed after a safety assessment of acute toxicity with examination of clinical observations, serum biochemistry (ALT, AST, BUN) and histopathology. Grape King's Antrodia mycelium has a complete safety profile (genotoxicity, mutagenicity, cell toxicity, micronucleus test, chromosome aberration assay, 14-day acute toxicity test, 28-day subacute toxicity test, 90-day subchronic test, teratogenicity) and is licensed as health food in Taiwan. The product Antrodia King has hepatoprotective effects in vivo.



Business Philosophy

The only way to accumulate enough energy to innovate effectively and create a new "Blue Ocean Market" is to continually learn and improve.

— Vice General Manager Chin-Chu Chen



Reason for Winning

JG Environmental Technology's core technology is the world's first air pollution processing service (Total Air Solution). Recently, it also successfully developed solvent recovery equipment and synthetic PU leather recovery equipment, effectively assisting the industry solve its environmental pollution problem, also creating an annual revenue of more than 100 million NT dollars.



JG Environmental Technology is a successful example of the value chain integration between technological innovation, equipment commercialization, market verification, and environmental protection.

Company Profile

Founded	2006.04
Core Business	Air pollution control equipment, ESCO
Chairman of the board	Feng-tang Chang
President	Feng-tang Chang
R&D Manager	Hung-Min Chein (Chief Technology Officer)

Business Contact

Head Office	No.8, Gaoping Sec., Zhongfeng Rd., Longtan Township, Taoyuan County 325, Taiwan R.O.C.
TEL	+886-911-340131
Website	http://www.jgok.net

Key Products – Product features

▼ A. High Efficiency VOCs Solvent Recovery Equipment

B. Regenerative Yellow Smoke and Acid Gas Treatment Equipment



A: A condensing absorber is first applied to remove water soluble DMF based on JG patent design. Then, a fluidized bed employs spherical activated carbon ball in a floating way to adsorb and recycle high heat-releasing MEK, toluene and ethyl acetate organic solvents. It has dramatically reduced the oxidation of mixed solvent, and substantially increases the quality and value.

B: Acid gas (HF, HCl, CH₃COOH, etc) and NO₂ are adsorbed on a porous metal oxide and active carbon modified with base agent. The adsorbents are regenerated and recovered with city water and base solution subsequently after reach its saturation capacity. This patented technology has simple operation characteristic and economic feasibility, so it has been successfully applied in solar cell and TFT-LCD manufacturing industry.

Business Philosophy

The best path for JG toward a new "blue ocean" market and sustainable operation is through product innovation and technological R&D.

— Chairman Feng-tang Chang





Reason for Winning

Bright Ideas design redefines its cultural contents and experiences through multimedia and animations, games, and other entertaining technologies. It aims to transform intangible oriental cultural heritage into popular fashion and design, allowing traditional arts to be more involved in daily lives and creates impulsive forces to our culture.



Company Profile

Founded	1999.01
Core Business	Museum Services, Original Content Development, Cultural Creative & Integrated Design
Chairman of the board	Fang-Yin Lin
President	Fang-Yin Lin
R&D Manager	Kuo-Pin Huang (Director)

Business Contact

Head Office	Room 351, 3F., Bldg. E, No.19-13, Sanchong Rd., Nankang Taipei 115, Taiwan, R.O.C.
TEL	+886-2-2655-0755
FAX	+886-2-2655-0700

Key Products – Product features

▼ KatzFun



Katz Fun animated television series is a successful creation of Bright Ideas Design. The inspiration of our creation team comes from a group of children from a classic Chinese painting, Song Children at Play. They have created an impressive entertaining series that is full of fantastic adventures, humorous stories with optimistic values and learning opportunities.

As a consequence, the series has won the worldwide recognition at many international licensing exhibitions and TV program exhibitions. Katz Fun now has been offered an opportunity to broadcast this in the United States.

Katz Fun has been nominated for Best Animated Series at the 46th annual Golden Bell Awards. In April, 2011, Katz Fun has been one of the hottest new shows broadcast on Taiwan's Cartoon Network. Our industry is expanding and encompasses current partners include China Airlines, Eva Air, Telecom MOD, Qatar Airways, Kang Hsuan Educational Publishing Group, Vietnam Television, and others. These partnerships enable us to promote Katz Fun animated series and attract more audience world-wide.

Business Philosophy

The cultural creativity industry is an economy of emotions. The essence of success in such an economy is not to "win first place," but to create a product which nothing else can be replaced.

— President Fang-Yin Lin





Reason for Winning

Grimm Press's "Children's Picture Book" is its core competency and asset. In recent years, Grimm has engaged in the production of dynamic picture books, conveying the portion of the books that need to be read through digital technologies, increasing the amount of fun parents and their children can have while reading together, creating a whole new ocean of international market opportunities for the traditional publishing industry. Grimm Press has also successfully developed the "Children's Dynamic Picture Book Reader," and the "Portable MP3 Children's Story Book Player," established a story house and combined children's plays to increase book sales, effectively creating new market value using new and innovative operation models.



Company Profile

Founded	1993.03
Core Business	Traditional Publishing, Digital Publishing, Copyright Authorization
Chairman of the board	Kuang-Tsai Hao
R&D Manager	Megan Huang (Assistant Vice President)

Business Contact

Head Office	3F, No. 2, Sec. 2 Hsin-Sheng S. Road, Taipei 10650, Taiwan, R.O.C.
TEL	+886-2-23517251
FAX	+886-2-23279380

Key Products – Product features

▼ TellyBear e-Picture Book Reader



Kids feel your love no matter where you are
Product Features

1. 8" TFT LCD display screen
2. Specially designed curved shell protects screen and adjusts brightness for healthy eyes
3. Concave handles make TellyBear comfortable to hold
4. Controls are simple and easy for kids to use
5. Use memory cards to expand TellyBear's storage capacity

Business Philosophy

With professional foresight to produce high-quality picture books; with innovative technology to improve the quality of digital reading. With unchanging beliefs, we persist in realizing and following those beliefs to ensure the happiness and growth of our children!

— Chairman Kuang-Tsai, Hao





Reason for Winning

Formed in 2009, the Center's team has achieved many significant medical equipment design accomplishments in recent years. The team's achievements include 7 major innovative application technologies, including medical equipment surface processing technology, and have become a corner stone in the innovative R&D of the medical equipment industry. Currently, the team has already successfully developed medical equipment mainly focused around the roots of teeth, and have created Taiwan's first one-stage artificial implantation, which has currently obtained 11 patents and has resulted in 12 technologies being transferred to the industry, creating a technological transfer worth more than 100 million NT dollars.



Company Profile

Founded	2009.08
Core Business	Biomedical Testing, Development of Materials, Biomedical Materials Surface Modification and Design and Development of Medical Equipment
President	Wen-Ta Chiu
Director	Keng-Liang Ou
R&D Manager	How Tseng (Deputy Director)

Business Contact

Head Office	No, 250, Wu-Hsing Street, Taipei, Taiwan, R.O.C.
TEL	+886-2-27361661
FAX	+886-2-27395524

Key Products – Product features



The Taipei Medical University Research Center for Biomedical Devices was established in August of 2009. Located on the fifth floor of the Rear General Medical building, Taipei Medical University's Research Center for Biomedical Devices combines the energy from both its Biomedical Materials Research Center and its Microsurgery Research Center, providing an ideal industrial research and development

platform that integrates the resources and man power from industry, government, academia, research establishments, and medical organizations. Operating in coordination with the government's "Biotech Medical Industry" national development focus, Taipei Medical University's Research Center for Biomedical Devices contributes to the development of Taiwan's medical equipment mechanical industry, helping to promote integrated cross-domain research efforts across industry, academia, and various research organizations, and contributing to the production of high-level medical device and equipment R&D talent in Taiwan. The Taipei Medical University Research Center for Biomedical Devices also integrates resources from its internal/external foundations and its clinical research efforts to promote cross-domain research and development for medical devices and equipment in Taiwan in an effort to create Taiwan's next trillion-dollar industry.

Business Philosophy

Behind the recognition delivered through this award is an even stronger sense of responsibility – to continue to work hard toward producing even better and even more talented medical scientists.

– Director Keng-Liang Ou





Reason for Winning

The Center was established in 2001 to engage in fundamental research, technological development, application promotion, and other types of thin film technology promotion at various levels. After 10 years of development and hard work, it has established a name for itself for innovative applications in the industry. The Center's technological team has engaged in long-term inter-campus collaborations, and has successfully carried out several large-scale national projects in the fundamental research and applications development of thin film separation technologies. A complete industrial technology applications platform has already been successfully established, laying an important foundation for innovative R&D in Taiwan's thin film industry, and contributing significantly to the advancement of the industry as well.



Company Profile

Founded	2001.02
Core Business	To conduct membrane-related fundamental research and pioneering studies
President	Wan-Lee Cheng
Founder	Juin-Yih Lai
Director	Kuo-Lun Tung

Business Contact

Head Office	493, Sin Chung Pei Rd., Chung Li, Taiwan 32083, R.O.C.
TEL	+886-3-2654190
FAX	+886-3-2654198

Key Products – Product features

▼ Solvent Recovery Pervaporation System



The "Pervaporation (PV) System" developed by Chung Yuan Univ's R&D Center for Membrane Technology (CMT) integrates three unit operations of filtration, pervaporation and membrane distillation to recovery solvent. In the current PV system technology market, a small number of companies virtually control the entire international market. Through integrated cross-domain research efforts, CMT was able to successfully break through the various patent restrictions and develop a PV system that is superior to the currently available commercial products. In the future, this technology will be extended to domestic and international industries to help in recovering solvent resources and to advance towards the goal of a sustainable and green industry.

Business Philosophy

Greening the planet with membrane technology.

— Founder Juin-Yih Lai





Reason for Winning

ARTC was established in 1990 to integrate industry, academia, and research institutions through a complete laboratory group and automotive testing site, and to support vendors develop competitive advantages and advanced products through key components, innovative research of subsystems, testing technologies, and application of analytical data and experience. Recently, ARTC not only devote to innovate also seek out every market opportunity and establish global verification channels, to assist vendors expanded the export markets. Furthermore, ARTC continues supporting enterprises to develop in the Whole Vehicle and driving the automotive industry towards further transformation.



Company Profile

Founded	1990.10
Core Business	Pioneer of Technical Innovation & Knowledge Service for Vehicle
Chairman of the board	Hsin-Tai Liu
President	Lung-Chou Huang
R&D Manager	Ching-Chiu Liao (Vice President)

Business Contact

Head Office	No.6 Lugong S.7th Rd., Lukang, Changhua County, Taiwan, R.O.C.
TEL	+886-4-7811222
FAX	+886-4-7811333

Key Products – Product features



The Automotive Research & Testing Center is focused on five areas to exploit system of innovation to meet the requirement of industry.

Intelligence: Integrating the technologies of intelligent telematics to make driving more comfortable, convenient and efficient.

Safety: Making effective use of image recognition technology to improve vehicle safety.

Chassis: Using electrical control technology to create advanced chassis subsystem.

Green energy: Actively participating in the green energy field and integrating key technologies of electric vehicle to help automotive industry meet the challenges posed by low-carbon society.

Optic: Developing advanced optical lighting technologies that is safe, energy-saving, and reduces carbon dioxide emissions.

Business Philosophy

Always try new ways to innovate, not afraid to dream big and bravely accept every challenge. Someday chance will come, and then we can make our own rules.

— President Lung-Chou Huang





Reason for Winning

The Smart Network System Institute has strong technological capabilities in the areas of embedded multimedia, broadband networks, wireless sensor networks, energy information and communications technologies, and in-vehicle infotainment.

Recently, the Institute has driven the cross-platform cross-industry integration of the Smart Living Industry Alliance, and has to this date facilitated investments of more than 200 million NT dollars from vendors.



The Institute has further driven the creation of a sensor network industry chain, which further resulted in 1.1 billion NT dollars of investments from vendors, as well as a production value of more than 2 billion NT dollars, gradually establishing Taiwan's own sensor applications industry chain.

Company Profile

Founded	2004.07
Core Business	1.Embedded Multimedia 2.Broadband Internet 3.Sensor Network and Energy ICT 4.Telematics 5.Information Security
Chairman of the board	Chin-Tay Shih
Executive	Chih-Kung Lee
R&D Manager	Ming-Whei Feng (Vice President and General Director)

Business Contact

Head Office	11F., No.106, Sec. 2, Heping E. Rd., Da'an Dist., Taipei City 106, Taiwan, R.O.C.
TEL	+886-2-66318610
FAX	+886-2-66073501

Key Products – Product features

▼ The In-Snergy Intelligent Green Energy Sensing and Recognition System



The "In-Snergy (Internet Smart Energy)" is a cloud-based Intelligent Energy Management Technology, providing both the electronic and remote-server tools that give users a standardized digital interface that tracks energy use. The key product characteristics enable those include intelligent sensing and, high reliable server side management. It is applicable to residential, business and industrial areas. Via immediate electricity information collection, analysis, and forecasts, it enables the effective management, to enhance power efficiency. In-Snergy has been implemented in real applications of various realms. For example, 7-Eleven convenience chain stores, high-technology company AUO, Hualien Naluwan Hotel, Farglory Construction Co., Ltd., etc.

Business Philosophy

Don't be afraid to admit your weaknesses. Bravely confront the cruelties of reality. Continue to learn and innovate, even in the most difficult environments. Engage in cross-organization and cross-domain cooperation, and accumulate value from small, inch-by-inch improvements.

— Vice President and General Director Ming-Whei Feng





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- 68 **Antenna and RF IC technologies in wireless front end**
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- 70 **A Development Project of Advanced Clean and Energy-saving Vehicle Engine Systems**
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- 72 **Intelligent Electric Vehicle Key Component Development & Industry Promotion**
Mechanical and Systems Research Laboratories,
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- 74 **Innovative Biotechnology Clinical Research and Development**
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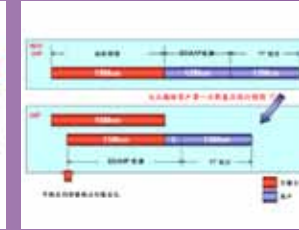
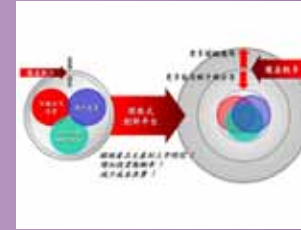
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- 76 **The researchful alliance plan of the kintting technology which can make antibacterial Compression Stockings**
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OIP- Open Innovation Platform
TSMC Design and Technology Platform Team



Business Philosophy

We would like to thank the judges for their recognition and encouragement. We firmly believe that the OIP platform will help the semiconductor design ecosystem reach its highest level of efficiency. We would also like to thank our superiors at TSMC for their trust and support, which has allowed the team to reach its full potential!

— Lie-Szu Juang

Reason for Winning

The Open Innovation Platform combines the innovative components of the semiconductor industry, providing an Active Accuracy Assurance (AAA) mechanism for the development of necessary components and interface for the design ecosystem to assure the quality of the platform.



This platform is provided for the use of all TSMC partners and customers. Through this platform, even more technological capabilities and key applications can be shared, meeting the global trend of cloud computing, decreasing product time-to-market, and boosting return on investment. This platform is an excellent exemplary model of a highly innovative, value-creating work of leadership insight.

Organization TSMC Design and Technology Platform Team

R&D Manager Lie-Szu Juang

Business Contact

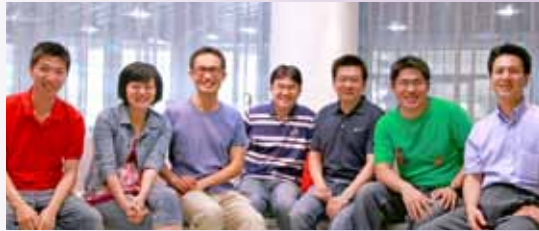
Head Office	8, Li-Hsin Rd. 6, Hsinchu Science Park, Hsinchu, Taiwan 300-78, R.O.C.
TEL	+886-3-5636688
FAX	+886-3-5670121

Winning Project Description

▼ OIP- Open Innovation Platform



Through TSMC's Open Innovation Platform, the most advanced, robust, and high-quality design infrastructure can be realized. This platform can help the entire semiconductor design ecosystem in achieving the maximum degree of reuse and in decreasing the amount of duplication and waste in R&D resources. TSMC exhibited outstanding innovation by introducing the Electronic Design Automation Project along with the Interoperability Format, and by quickly inducing its electronic design automation partners to provide precise and complete solutions to aid early-stage IC design for advanced processes in the semiconductor industry. TSMC has also innovatively initiated the Silicon IP Project to accelerate the semiconductor industry's pace in entering advanced process IC design projects, and has assisted silicon IP partners develop high-quality silicon IP to provide to semiconductor IC design companies.



Pavilion of Dreams

Project Organizer-ITRI Creativity Laboratory



Business Philosophy

The goal is to create new possibilities for the benefit of the industries through innovative cross-disciplinary Integration of technology, humanity, and the arts. The journey of realization has just begun!

— Dr. Wen-Jean Hsueh

Reason for Winning

The Pavilion of Dreams created a new interactive display and exhibition operation model, boosting Taiwan's soft power for integrating innovative technologies with the arts and humanities on the international stage. An innovative virtual-spatial narrative technique was used to create a dream-like experience and bring visitors an emotionally and unique personal moving journey. The Pavilion of Dreams opened up the imagination of Taiwan's technological innovation, and even had further more opportunities of creative applications in the future.



Organization

ITRI Creativity Laboratory

R&D Manager

Wen-Jean Hsueh

Business Contact

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Hsinchu County 310, Taiwan, R.O.C.

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FAX +886-3-5827538

Winning Project Description

▼ Integration of Technology and the Arts-Pavilion of Dreams, 2010 Taipei International Flora Exposition



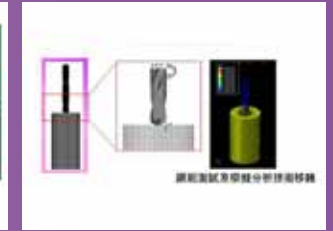
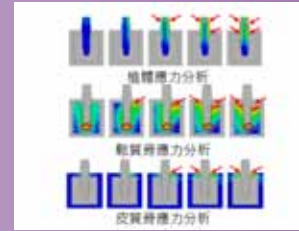
The Pavilion of Dreams narrated a story based on the theme of harmonious coexistence between nature and humankind as well as the integration of arts and technologies. The Pavilion was the only interactive digital exhibition hall in the 2010 Taipei International Flora Exposition. This was a cooperative effort that Taipei commissioned

to the ITRI for planning and the Creativity Laboratory for production and execution. Moreover, it combined the efforts of ITRI's MSRL, EOL, SSTC, MCL, and CMS, along with 9 of Taiwan's well-known artists and 4 interactive media organizations. The 18 exhibits integrated 5 technological achievements including Flexpeaker, Ultra High Frequency FRID Technology, Multi-View Naked-Eye Stereoscopic Display, Large-Curved-Area Smart Controllable Liquid Crystal Glass, and Non-Contact UWB Physiological Sensing Technology from the Projects of Ministry of Economic Affairs Technology. They were demonstrated harmony in technologies, arts and humanities, and showed mutual existence between nature and humanity. The Pavilion of Dreams attracted 60 thousand visitors from Nov. 6, 2010 to Apr. 25, 2011 in 2010 Taipei Flora Expo. The Pavilion of Dreams, which was 100% produced through domestic talents, had displayed Taiwan's ability to combine technological R&D with arts and humanities, inspiring confidence and hope for Taiwanese society. 95% of survey respondents evaluated the Pavilion of Dreams as Taiwan's pride. The Pavilion of Dreams is not merely just an exhibition venue; it is a testimony to the great collective spirit of specialists from the field of technology and art in Taiwan collaborating to overcome an extraordinary challenge.



Kaohsiung Park of Southern Taiwan Science Park - Project of Research and Development for Dental Medical Devices

MIRDC-R&D Team



Business Philosophy

This project resulted in the establishment of the Taiwan Implant Technology Co., Ltd., in November 2010 and successfully transferred its full-process dental implant system technology, establishing southern Taiwan as a key location in Asia's oral health care industry.

— Chih-Lung Lin

Reason for Winning

The MIRDC-R&D Team has used its strong technological capabilities to promote the Dental Implant System Industry Alliance. Related to its full-process dental implant system technology, there are 30 patents and 88 published domestic and international theses and research papers. This research has also resulted in the forming of Taiwan Implant Technology Co., Ltd. (TITC), and a combined innovation results transfer income of 50 million NT dollars for the years of 2010~2011. This project has also attracted 20 dental medical materials vendors to invest 800 million NT dollars and move into the STSP to form a medical material cluster, thereby creating a new industrial chain, and establishing southern Taiwan as a key link in Asia's medical industry.



Winning Project Description

▼ The STSP Kaohsiung Park Three-Year Dental Medical Equipment Research and Development Program



This plan brings together elites of the industrial, public, academic, research, and medical sectors to develop a special artificial dental root and dental implant system and has assisted the associated companies in forming an industrial cluster at the Kaohsiung Branch of Southern Taiwan Science Park. Substantial results have been achieved. On November 30th, 2000, the Taiwan Implant Technology Co., Ltd., was officially founded. It was authorized to develop the key technologies of the full artificial dental root manufacture process outlined by this plan. The total amount of technology transfer is NT\$ 35 million, and the technology brought in an investment of NT\$ 225 million as capital for the Taiwan Implant Technology Co., Ltd. This technology transfer expedited the internationalization of the artificial dental root products made in Taiwan. This plan has also helped several companies in the traditional manufacturing industry to redevelop into manufacturers of high value-added dental materials and equipments and assisted them in attaining GMP, ISO13485 and other product certifications. This plan effectively pushed Taiwan's medical equipment industry up to the international standards. The medical equipment district at the Southern Taiwan Science Park attracted 20 dentistry medical equipment manufacturers to invest over NT\$ 800 million, forming an industrial cluster. Companies in this cluster have also come together to establish the Dental Implant System Industrial Alliance, building the southern Taiwan city into a center for dental medicine.

Organization MIRDC-R&D Team for the Entire Process of the Dental Implant System

R&D Manager Chih-Lung Lin

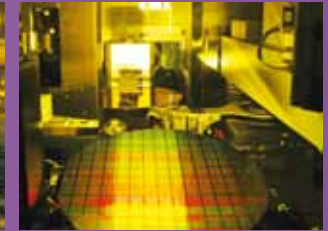
Business Contact

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28nm HKMG (High-K/Metal Gate) Program

TSMC 28 nm R&D Team



Business Philosophy

TSMC's High-K/Metal Gate program upholds TSMC's core values of honesty, integrity, commitment, innovation, and customer partnership relationships, not only providing the most advanced technologies, but also providing customers with diverse options with even lower costs, which is why it is such a successful program.

— Meikei leong

Reason for Winning

This team independently developed 28nm high-k dielectrics/metal gate technologies and successfully put them into mass production, achieving a major breakthrough for the semiconductor industry and further widening the competitive gap between TSMC and other foundry competitors. TSMC has invested more than NT\$20 billion in this project, resulting in more than 150 granted or pending patents.



This project covers an extremely wide range of technologies, including components engineering, process engineering, and process integration, driving upstream and downstream vendors to upgrade together. It is projected that in the next two years, the results of this project will drive Taiwan's semiconductor industry to a production value of over 100 billion dollars.

Organization

TSMC 28 nm R&D Team

R&D Manager

Meikei leong

Business Contact

Head Office	168, Park Ave.2, Hsinchu Science Park Hsinchu County, Taiwan 308-44, R.O.C
TEL	+886-3-5636688
FAX	+886-3-5782874

Winning Project Description

▼ 28 nm high-k dielectrics/metal gate technology



TSMC's 28nm high-k dielectric materials / metal gates project has successfully produced 64M static RAM, and successfully passed functional testing and reached its yield goals.

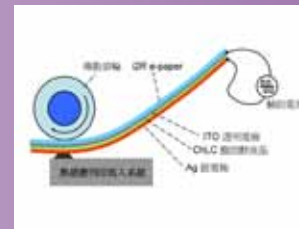
This project's innovative strategy and goals include:

- 1.The development of high-k dielectric materials/metal gates to produce transistors with high speed and low leakage, and to replace traditional SiON materials, thereby extending Moore's Law.
- 2.Provide optimized design rules with the most innovative yellow-light dual-lithographical dual-etch technology, allowing gate densities to reach twice the densities of the previous generation.
- 3.Provide different product lines, including high performance, high performance with extremely low leakage, and high performance for mobile applications to meet customer's diverse product application needs.
- 4.Allow TSMC's technological abilities to lead international competitors by a significant margin, increasing TSMC's competitiveness and satisfying customers' ever-increasing precision product design requirements. It is forecasted that the results of this project will contribute 10% of TSMC's revenue over the next three years.



i2R re-writable and re-usable electronic paper technology

ITRI Display Technologies Center



Business Philosophy

Work towards your goals with strict discipline; pursue innovation with passionate enthusiasm; create value through mutual cooperation.

— Jang-Lin Chen

Reason for Winning

This team is led by the ITRI Imaging and Display Technologies Center and combines the efforts of professionals from the materials, equipment, process, and product design and applications fields to develop new electronic paper technologies and devices (i2R e-paper) and create a completely new applications domain. The goal of this project was to develop autonomic technological capabilities, and to use its comprehensive patent strategy to establish opportunities for an autonomic industry. By linking upstream and downstream requirements and technologies, and by combining the collaborative efforts of 10 different vendors, Taiwan's new and complete soft electronic paper industry chain has been formed.



Organization

ITRI Imaging and Display Technologies Center

R&D Manager

Jang-Lin Chen

Business Contact

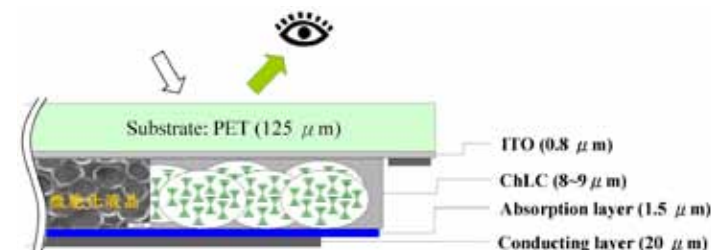
Head Office No 195, Sec.4, Chung Hsing Rd., Chutung, Hsinchu, Taiwan, R.O.C.

TEL +886-3-5917460

FAX +886-3-5820046

Winning Project Description

▼ i2R Rewritable and Reusable Electronic Paper Technology



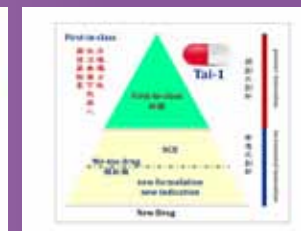
The electronic papers, i2R, provide rewritable, reusable and environmentally friendly recyclable functions. i2R e-Paper can be thermally written by a printer-like machine; anyone can produce a hardcopy of whatever information on the computer screen and work with it like a regular laser or inkjet printout. Reusable printable sheets can replace papers, of which printed contents are for short-term use and can be discarded subsequently. There is truly environment friendliness with highly recyclable material for the fabrication of i2R e-Paper, as well as low electrical power consumption in thermal writing.

i2R e-Paper has a simple layered structure. A micro-sized structural layer containing the cholesteric liquid crystal molecules is sandwiched between a transparent electrode layer and a silver electrode. i2R e-Paper can be cost-effective mass produced using roll-to-roll production lines. The i2R e-Paper production cost is low due to the use of high-throughput roll-to-roll manufacturing technology and is comparable in cost to other e-paper. i2R uses a thermal writing scheme virtually the same as that used for conventional thermal paper machines, the i2R e-Paper displays its gray-scale monochrome contents at a resolution of at least 300 dpi. So i2R e-Paper and its writing machine are reasonably inexpensive for the mainstream user. i2R e-paper also conceives similar use in other than the exciting main application of office printing aimed at the saving of trees.



Nek2/Hec1 Inhibitor as First-in-Class Anti-cancer Drug

Project Organizer-
Development Center for Biotechnolog



Business Philosophy

The Development Center for Biotechnology plays the role of the second runner in a relay race in new drug development. Combining efforts from academia and industry to develop new drugs that have international market advantages is the goal for our innovative R&D efforts.

— Chia-Lin J. Wang

Reason for Winning

This project was a collaborative effort between the Development Center for Biotechnology and Taivex Therapeutics. Nek2/Hec1 is a new drug target that has not been investigated by any of the large global pharmaceutical companies and there is no drug on the market working on the Nek2/Hec1 target, which is why the drugs developed with this target are referred to as "first-in-class" drug. The effect of Nek2/Hec1 is protein-protein interaction, and inhibiting this effect is one of the most difficult areas in new drug discovery and development. This project was completely carried out by Taiwan's domestic industry, academic, and research institutes, from target identification, drug lead optimization, preclinical study, to the clinical trial that is about to start, which demonstrates to the international community Taiwan's new drug R&D capabilities.



Organization

Development Center for Biotechnolog

R&D Manager

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Winning Project Description

▼ The Nek2/Hec1 Inhibitor "First-in-Class" Anti-Cancer Drug

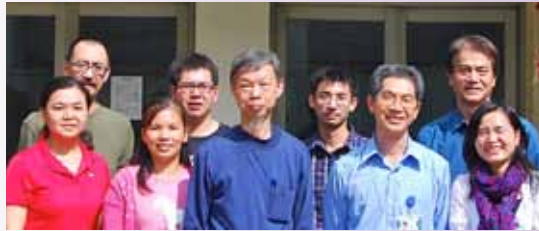
Hec1-Nek2 Interaction

Hec1 – Highly Expressed in Cancer

- Discovered in Wenhwa Lee's Lab
- Hec-1 – a key mitotic regulator
- Highly expressed in Breast cancer and other cancers
- Expression increase from G1 to S1 and peaks at G2/M
- Phosphorylation of Hec1 by Nek2 critical for mitotic progression and chromosome segregation

Hec1 is the new drug target discovered by Academician Wen-Hwa Lee of Academia Sinica. Inhibition its interaction with the upstream Nek2 has the potential to treat cancers, including breast, blood, and cervical cancer. To discover and develop new anti-cancer drugs targeting Nek2/Hec1, Development Center for Biotechnology cooperated with Taivex Therapeutics and identified Tai-1 as the drug candidate in June 2011. The phase I clinical trial will start by the end of 2012.





Roots of Interdisciplinary Biomass Composite Materials Technology Development

Tai-Yuen Textile Research center



Business Philosophy

Taiwan's High-Tech R&D Abilities Result in Significant Accomplishments. New fibers open up unlimited possibilities. Spinning a prosperous future. Knitting a happy life.

— Andrew Lai

Reason for Winning

In 2009, Tai Yuen Textile established the Tai Yuen Fiber Technology Innovative R&D Center to drive Tai Yuen towards becoming a technology-oriented textile company. Through a phased program for advancing fundamental industrial textile technologies, Tai Yuen was able to develop its weaving technologies, and further developed its "cotton fiber lamination technology," not only increasing technological barriers for competitors, but also establishing Tai Yuan's proprietary lamination and coating equipment and technology, thereby achieving breakthrough developments in the areas of jeans cloth product lightening and dyeing techniques. Tai Yuan has already received orders from large brand names from domestic and abroad, and is a model for creating new opportunities for traditional textile industries through alliances between industry, government, and academia.



Organization

Tai-Yuen Textile Research Center

R&D Manager

Andrew Lai

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Winning Project Description

▼ Cross-Domain Biomass Materials Root Technology Development



Lightweight, warmth, wind and waterproof
breathable fabric

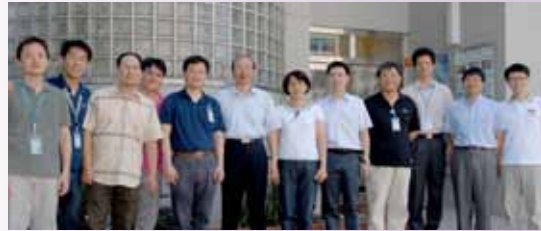
Tai Yuen Textile, since founded in 1951, dedicated themselves to an integrated and full services oriented manufacturer, with the full business scopes covering weaving, dyeing and ready-to-wear garment.

In 2009, the "Tai Yuen Fiber Technology Innovative R&D Center" was established, transforming the company from a traditional textile-based business to a technologically innovative textile enterprise.

In recent years, building upon its foundation, and further growing from the benefits obtained from the various mechanisms developed out of the R&D center and acquired high-level R&D talent, Tai Yuen obtained various innovative technological patents and created many high-quality products.

Tai Yuen's "cotton lamination processing technology" has the ability of add various functions to cotton products, such as "warming," "wind resistance," "rain resistance," and "ventilation." Because these products still retain the style and texture of cotton, with the added value of the new additional functionalities, these products have been a hit ever since they were introduced to the market. One example is the "warming, water-resistant, self-ventilating jeans." Because of the diverse variety of the laminated fabric, its products are very popular among domestic and international brand-oriented consumers.

Tai Yuen is channeling participation from industry, academia, research organizations, and other cross-domain partnerships and R&D efforts to lay the foundation for development of biomass fiber composite materials for the automobile industry and the market for comfortable automobile cooling textiles.



Smart and high-performance five-axis machine tool technology

ITRI Mechanical and Systems Research Laboratories



Business Philosophy

Value comes from continuous strengthening and deepening. I would like to thank the Ministry of Economic Affairs' Technology Development Program for its unreserved support, as well as the passionate and hard-working ITRI R&D team for completing this project together!

— Hsin-Chuan Su

Reason for Winning

This team is composed of an R&D community of 6 vendors, including Tongtai Machine & Tool Co., Ltd., led by the ITRI Mechanical and System Research Laboratories, with the goals of strengthening fundamental mechanical accuracy technologies, retaining key talent, increasing the precision of Taiwan's machinery processing, boost Taiwan's precision motion control technology, and develop reliability techniques. From a vertical integration standpoint, we aim to improve the industrial chain's technological capabilities, increase systems compatibility, and engage in technological integration; from a horizontal integration standpoint, we aim to establish differentiated product features. Our goal is to simultaneously achieve technological advancement and product and service evolution, creating new industrial value and increasing our competitiveness.



Organization

ITRI Mechanical and Systems Research Laboratories

R&D Manager

Hsin-Chuan Su

Business Contact

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Winning Project Description

▼ Intelligent Five-Axis High-Performance Tool Machinery Technology



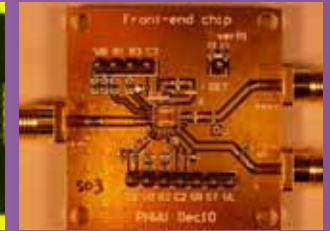
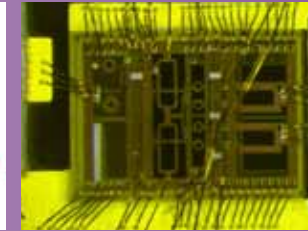
Taiwan's machine-tool exports rank 4th in the world, yet the average price of machine tools is about 1/2 of that of Germany's and 3/5 of that of Japan's. This team conducted a group of six leading Taiwan vendors, including Tongtai Machine & Tool Co., Ltd., to form a R&D community, and cooperated with R & P Ingenieur gmbh in Germany, to establish advanced machine tool development tools, key components technologies, and precision assembly know-how. It plowed deeply high-precision, high-reliability,

and high-stability fundamental technologies, and, kept 100 to 200 key technical workers. It also drove the leading ten machine tool vendors to form the Five Key Technologies R&D Alliance, and engaged in upstream and downstream integration as well as differentiated horizontal integration. All of these promote Taiwan's machine tool industry to the same A+ level as Germany and Japan, and boost the value of products by three to five folds. Domestic machine tool vendors, consisting of Victor Taichung Machinery Works Co., Ltd., Fair Friend Enterprise Group, Yeong Chin Machinery industries Co., Ltd., Dahlih Machinery Industry Co., Ltd., and other twenty vendors, with more than 40 newly developed machine tool types, reached total revenue of more than 20 billion dollars. By increasing the precision from micron to submicron through engaging common fundamental mechanical precision technologies, this team has promoted machine tool level from mid-value to high-value, and has thereby assumed the role pushing the machine tool industry toward A+ rating.



Antenna and RF IC technologies in wireless front end

ITRI Information and
Communications Research Laboratories



Business Philosophy

Work harder, work honestly, and work smarter; to be successful in the radio frequency field, you should know software as well as hardware.

— Cheng-Wen Wu

Reason for Winning

This team's expertise covers the entire front-end of the wireless antenna and radio frequency IC domains. Wireless communications are an important trend in future medical technology and everyday living, it has high commonality, its technology is quite challenging, and it has a large potential future market value. This team not only has a wealth of advanced R&D capabilities and hands-on vendor technology transfer experience, it also owns more than 50 certified patents, and has a well-planned and well-distributed patent portfolio. The team owns a complete and well-structured patent portfolio focused on key next-generation mobile communications antenna technologies, which has significantly contributed to the industry.



Organization

ITRI Information and Communications Research Laboratories

R&D Manager

Cheng-Wen Wu (Vice President and General Director)

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Winning Project Description

▼ Cutting-Edge Wireless Antenna and Radio Frequency IC Fundamental Technologies



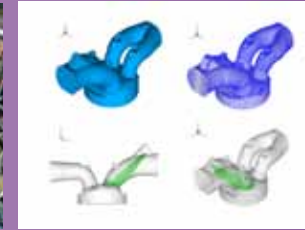
The ITRI Information and Communications Research Laboratories Team is dedicated to the development of antenna and radio frequency integrated circuit technologies, and with its many years of efforts, has produced many noteworthy products and results. The team is composed of 13 PhD and 20 Master's staff, and has professional abilities to engage in advanced R&D and a wealth of real-world experience

from technology transfer vendors. They are the most complete technical team in the radio frequency field in Taiwan. This team has a strict and directed focus on the R&D of key technologies executed through the Ministry of Economic Affairs' Technology Development Program. The team's research focuses includes electromagnetic theory-based antenna technologies, process-integrated radio frequency single-chip ICs, multi-band multi-mode RF front-end modules, and cross-domain biomedical and green energy applications. Their fruitful R&D accomplishments include more than 50 patents and a total licensing revenue of more than 110 million dollars over the past three years, which shows that their overall research and development abilities have not only reached leading international standards, but have significantly contributed to providing technical assistance and technological upgrades to the upstream and downstream vendors of Taiwan's RF industry. They have also played critical roles in international antenna patent litigation, the development and verification of advanced processes, and the technological transfer of key chip modules, etc.



A Development Project of Advanced Clean and Energy- saving Vehicle Engine Systems

Advanced Engine Research Center
Project Organizer- of Kao Yuan University



Business Philosophy

Develop the fundamental industrial technology of "burning application science;" contribute to Taiwan's "environmental protection and energy conservation."

— Shyue-Bin Chang

Reason for Winning

This team is led by Kao Yuan University, and is composed of a research team from different countries, different schools, and different domains. Its goal is to establish fundamental industrial technologies for the application and product development related to the science of burning, to develop basic testing capabilities for clean energy-conserving engines, and to aid in the development and improvement of Taiwan's vehicles and various types of motors. The accumulated nozzle experiment and its design is a widely used fundamental technology, and have contributed significantly to increasing the value-added of Taiwan's industrial products and to improving Taiwan's fundamental industrial technology capabilities.



Organization

Advanced Engine Research Center of Kao Yuan University

R&D Manager

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Winning Project Description

▼ Advanced Clean Energy / Energy Saving Automobile Engine Power System Technology



Our team, Advanced Engine Research Center (AERC), is a collaborative research facility recognized and supported by Department of Economics Affairs. The AERC is home to about 8 professors, 8 engineers, and graduated students who conduct basic and applied research mainly aimed at improving our ability to use and develop advanced internal combustion engines (ICE). The need for a thorough and basic understanding of combustion and ICE-related technologies lies at the heart of AERC research.

AERC research ranges from studying fundamental combustion physics to developing a practical domestic GDI/Atkinson engine. Most of the AERC's work is done in collaboration with scientists and engineers from industry and universities. The research tasks are conducted in three distinct areas: (1) Experimental measurements using advanced laser diagnostics; (2) Numerical modeling of engines; (3) Test and engine control. Researchers of AERC have overcome several technical barriers before GDI/Atkinson engine can be produced in our country. The AERC supports this industrial effort by providing the science based understanding of the fundamentals of GDI/Atkinson required to develop these engines.



Intelligent Electric Vehicle Key Component Development & Industry Promotion

Project Organizer- ITRI Mechanical and Systems Research Laboratories



Business Philosophy

I would like to express my gratitude to all the professional and passionate people who participated in this cross-domain, cross-organization effort. Let us continue to create a bright future for Taiwan's newly established intelligent electric vehicle industry.

— James Wang

Reason for Winning

This team is led by the ITRI Mechanical and Systems Research Laboratories and has successfully integrated the efforts and expertise of 19 vendors and 6 R&D establishments from industries that include the materials industry, the automotive industry, the electrical engineering industry, the electric control industry, the chemical engineering industry, the service industry, and the systems industry. The team has engaged in the active development of key components and relative technologies for intelligent electric vehicles, which has resulted in the application for 121 patents, with a technology transfer value reaching 127 million NT dollars. The team has also facilitated the formation of 11 alliance groups, effectively integrating technologies from industry, academia, and research institutions, and, establishing common standards and regulations. The team has made significant contributions to the establishment of Taiwan's intelligent electric vehicle industry chain and to the development of this newly-developed industry.



Organization

ITRI Mechanical and Systems Research Laboratories

R&D Manager

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Winning Project Description

▼ Intelligent Electric Vehicle Key Component Development and Industry Motivation Initiative



Under the low carbon environmental requirements, EV with alternative energy could reduce the dependence on fossil fuel that EV would replace gasoline engine car very optimistic. Currently, OEM and component suppliers launch the RD almost at the same time. With the supplier chain relationship in developing, there are opportunities for Taiwan automotive industry to reform to be the suppliers of global OEM. Therefore, our team combines with Taiwan automotive R&D organizations to develop key component technology and pilot operation service model that comply with industrial trends.

This iEV key component and industry promotion team integrates the RD capability in automotive, battery material, and service from ITRI MSL, ITRI MCL, ITRI SSTC, ARTC, and CSIST. The key components of EV chassis, battery system, charging system, propulsion system, and auxiliary system are developed in high occupancy EV fleet. The international collaboration, industrial cluster platform founding, alliance and new business promoting, international forum and exhibition, and EV pilot run are executing to promote global business and supply Taiwan ODM module to international OEM. It's our goal to support Taiwan automotive and component industry to enter international supply chain.



Innovative Biotechnology Clinical Research and Development

National Taiwan University Hospital



Business Philosophy

Always be people-oriented, always pursue innovation. Create a national-level, cross-domain biomedical platform.

— Ming-Fong Chen

Reason for Winning

This team is composed of experienced clinical trial doctors and researchers from the NTU Hospital. They perform 400 international and local new drug clinical trials every year for major pharmaceutical companies, including 20 Phase I clinical trials. The team has earned top recognition as a center of excellence for Clinical Trial in Asia Pacific. The team has established new drug clinical trial platform and capabilities which Taiwan previously lacked, and making important contributions to the development of Taiwan's biomedical and drug production industries.



Organization

National Taiwan University Hospital

R&D Manager

Ming-Fong Chen

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Winning Project Description

▼ Innovative Clinical R&D and Cross-Domain Cooperation in Biotechnology and Medical Treatment



In accordance with the Executive Yuan's "Diamond Action Project for Taiwan's Biotech Industry Takeoff" to assist Taiwan Biotech companies to develop new drugs, NTUH has established the "National Center of Excellence for Clinical Trials and Research" in Taiwan and a center of excellence for new drug clinical trial in Asia Pacific.

Clinical trials are the most expensive and time consuming procedures in new drug development.

Our innovative strategy and world-class clinical research accomplishments have attracted major international pharmaceutical companies, including Pfizer, MSD, Novartis, and GSK to establish their clinical R&D centers in NTUH.

We perform 400 new drug clinical trials from major pharmaceutical companies each year, including 20 Phase I new drug clinical trials.

We lead international clinical trials as the chairman or members of Steering Committee in more than 20 international clinical trials each year.

The NTUH National Center of Excellence for Clinical Trials and Research is a center of excellence for new drug clinical trial in Asia Pacific.

Furthermore, we also assist Taiwan biotech industries with clinical trials in their new drug development programs.



The researchful alliance plan of the knitting technology which can make antibacterial Compression Stockings

Project Organizer- Fu Chu Knitting Co. Ltd.



Business Philosophy

This team upholds a creative R&D spirit of perseverance and never giving up and a team spirit of making collaborative efforts and working seamlessly together to realize our goals.

— Charles Wei

Reason for Winning

This team is led by Changhua County's local stocking manufacturer Fu Chu Knitting. Through the execution of the SBIR Technology Development Program project, it aim was to establish healthy socks as the local industrial cluster of Changhua County Shetou Township. In total, it facilitated investments of over 60 million NT dollars, and has formed cooperative partnerships with manufacturers of other relative products or peripheral services in anticipation that this will drive the local industry toward further upgrade and increase investment willingness. The team has driven the Changhua area's clustered sock industry to produce socks that conform to British standards as well as flexible medical socks, successfully achieving technological innovation, upgrading, and transformation and creating additional employment opportunities.



Organization

Fu Chu Knitting Co. Ltd.

R&D Manager

Charles Wei

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Winning Project Description

▼ Changhua County – Health-Based Varicose Vein Prevention and Anti-Bacterial Odor-Inhibiting Functional Socks Technologies R&D Alliance Program



This team takes advantage of the complementary advantages of alliances between companies from different industries, combining professional technical R&D capabilities with a mutual sense of cooperative hard work and positive chemistry, mainly focuses on the R&D of pressure socks production techniques. It combines special dyeing processes, introduces high biochemical additives that are environmentally degradable and process technologies, and, partners with inspection technology companies to assist in the inspection and testing tasks required in the overall process development process. Their high value-added functional pressure socks products meet international standards for quality and

comply with international health and medical requirements. The team has integrated the complementary R&D efforts and energies from local resources and time-efficient R&D alliances, achieving the goal of strengthening the R&D abilities of traditional industries and driving the upgrading and transformation of local industries, resulting in high investment willingness. It has also partnered with downstream brands and international marketing and channel vendors, taking advantage of the government's FTA agreements with various countries, breaking down various international trade barriers and creating even more advantageous external trade opportunities and an even wider export market, thereby increasing the industrial competitiveness of the industry and further advancing the goal of sustainable and perpetual management and operation.



Value-added services for Taiwan native manufacturers -factory tour

ITRI Mechanical and
Systems Research Laboratories



Business Philosophy

Show to the world the true abilities of Taiwan's local manufacturing industry and let Taiwan's economic miracle continue to develop sustainably.

— Chang-Hsiung Chen

Reason for Winning

This team's goal is to transform conventional factories into service-oriented manufacturers. Integrating the cross-platform efforts of people with industry, government, academia, and the research community, the team that has established "tourism oriented" factory through cultural content extraction technology," and "visitor experience and tour services technology" platforms has successfully provided professional assistances to the saxophone industry of Houli, the kitchen and bathroom hardware industry of Lukang and the "tourism factory" industry. The team's accomplishments have driven local industrial cultures to combine with tourism and factory to transform towards "tourism factory", including facilitate the development of local industrial clusters, and allow industries to stay in Taiwan, keep their roots in Taiwan, and sustainably operate their businesses in Taiwan.



Organization

ITRI Mechanical and Systems Research Laboratories

R&D Manager

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Winning Project Description

▼ Taiwan Local Manufacturing Industry Value-Added Services – Tourism Factory



Under intense global competition, Taiwan's local industries are seeking an opportunity for sustainable development due to facing various types of industrial cultures and multi-faceted industry needs by changing into "service-oriented" manufacturers as tourism factories. Many domestic companies have also caught

on to this high-potential business opportunity and get started rearranging their factories to become "tourism-oriented" factories.

Since 2003, the Ministry of Economic Affairs has actively assisted and guided domestic conventional factories to be tourism industries. In 2011, the "tourism factory" numbers reached 100 companies, and have accumulated to 122 companies in the past 9 years. More than 60 companies successfully open up and have incomes. At present more than 5 million tourists visit the tourism factories around Taiwan annually. The tourists are continuously increasing by 1 million tourists each year.

"Tourism factory" counseling project is getting a sound way that not only provides different degrees of assistance depending on real condition, but also creates an evaluation mechanism that meets the requirements of the industry to help factories transform into tourism factories and be able to meet the needs of visiting tourists. The original level-2 industry has been expanded into a level-2.5 ~ level-3 industry and creating win-win effects in both "production" and "services."



ICT Enabled and Empowered Regional Theme Based Clusters

Industry Value Added Center



Business Philosophy

Personally go to rural areas to create digital opportunities and discover touching local stories. Build "bright spots" in the local economy and give rural areas a shiny, brand-new future that contains both technology and culture!

— Meili Hsiao

Reason for Winning

This team links the Institute for Information Industry's research results to local industries, and then provides innovative ICT-enabled services according to local requirements. In this manner, the team has created unique themes and characteristics for each locality, thereby decreasing the risk associated with local enterprise innovation. In the past 3 years, the team has consulted and guided 24 areas, including 5 theme based service industry clusters, 1 so-called LOHAS, stands for Life Style Of Health And Sustainability, economic zone, 3 intelligent business districts, and 14 Digital Opportunity Centers. In Nantao and Tainan County, the team also established 3 second-hand computer assembly production lines and trained 40 seed teachers, forming a digitized grass-roots team.



Organization

Industry Value Added Center, Industry Support Division,
Institute for Information Industry

R&D Manager

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Winning Project Description

▼ Creating Additional Value-Added for Innovative, Locational, Characteristic Theme Areas With ICT (Information and Communications Technology)



1. Our goal is to link the R&D accomplishments of the Institute for Information Industry to local industries, and creating local themes according to local conditions.

2. Benefits

- Deeply rooting digital technology capabilities into 14 of Taiwan's rural areas, training 40 digital seed instructors, increasing revenue and reducing cost. We helped increase the visitor rate by 5%, and assisted

in applications for 28 government projects, successfully obtaining 12,430 thousand dollars of government subsidiaries, with the industry self-investing 93,680 thousand dollars, thereby increasing revenue and increasing the employment rate.

- Reduce the risk of innovation, allowing innovative services to have a set of methods to follow and expand on, thereby leading the ICT applications in 141 shopping districts across the nation, and allowing innovative talent to stay in the locals.

3. Innovative Features

- Provide ICT-enabled innovative services and drive industrial transformation through knowledge-based value-added.

- Four "number one's" core theme models that are capable of exhibiting the capabilities of Taiwan's local industries, including low carbon, green energy, health, sustainable development, and re-vitalization, thereby creating a strong sense of technology and modernism in their style.



Individual Category

Woman Innovator Award

- 84 **Ming-Whei Feng** — Vice President and General Director
Smart Network System Institute, Institute For Information Industry

Key Technology Innovator Award

- 86 **Hsi-Tseng Chou** — Professor
Department of Communications Engineering, Yuan Ze University
- 88 **Shou-Gwo Wu** — Director
Embedded Technology Division,
Taiwan Semiconductor Manufacturing Company, Ltd.
- 90 **Chuh-Yung Chen** — Distinguished Professor
Department of Chemical Engineering, National Cheng Kung University
- 92 **Pao-Chung Ho** — Executive Vice President
Institute for Information Industry
- 94 **Chun-Jen Liao** — Deputy Division Director
Biomedical Technology and Device Research Laboratories,
Industrial Technology Research Institute

Innovative Model Promoter Award

- 96 **Benjamin Wang** — General Director
Technology Transfer Center, Industrial Technology Research Institute
- 98 **Shin-Horng Chen** — Director
The Second Research Division, Chung-Hua Institution for Economic Research
- 100 **Y.L. Wang** — Director
Tainan Science Park, Fab14, Taiwan Semiconductor Manufacturing
Company, Ltd.

Model Youth Innovator Award

- 102 **Yu-Fan Lin** — Director
Innovative DigiTech-Enabled Applications & Services Institute,
Institute for Information Industry

Youth Innovator Award

- 104 **Jen-Yu Yu** — Deputy Division Director
Information and Communications Research Laboratories,
Industrial Technology Research Institute
- 106 **Shuo-Yen Chou** — Manager
Resolution Enhancement Technology Section,
Taiwan Semiconductor Manufacturing Company, Ltd.





No matter how the world changes, I firmly believe that with hope and hard work, people can always live happy and fulfilling lives.

— Ming-Whei Feng



Reason for Winning

Director Feng has led the Institute for Information Industry's Smart Network System Institute to becoming Asia's first and the world's fifth organization to pass the ZigBee international standard certification and has provided more than 600 sets of AT commands and 50 sets of SDK development platforms for domestic entities to develop wireless sensor network solutions. She has facilitated more than 47 technology transfer cases that brought in revenues of more than 66 million NT dollars, and has driven an extended derivative production value of more than 2 billion dollars, thereby developing Taiwan's autonomous sensor application industrial chain. and road map that has seen the company evolve from supplying core components to core modules and system-level engineering. HIWIN also actively participates in social welfare and embraces its social responsibility.



Biography

Education Ph.D. Northeastern University, USA (1986-1989)
M.S. Northeastern University, USA (1984-1986)

Experience (A) Institute for Information Industry
Vice President & General Director, Smart Network System Institute of III (2011-present)
General Director, Networks and Multimedia Institute of III (2007-2010)
Director, Networks and Multimedia Institute of III (2003-2006)
Deputy Director, Planning & Evaluation office of III (2000-2003)
Advisory Engineer, Networks and Communication Lab. of III (1998-1999)
(B) Leader and Project Engineer, Communication Products in Multimedia, 3Com/ U.S. Robotics, USA (1996-1997)
(C) Principle member of technical staff / Senior member of technical staff, Automation of Video and Voice Services, GTE Laboratories, USA (1990-1996)
(D) Adjunct assistant professor, University of Missouri, USA (1989-1990)

Award Winner's Perspective

I would like to thank my superiors at the Institute for Information Industry for their support. Also thanks to the guidance from the Ministry of Economic Affairs for their support to my team. In addition, to my team, their efforts have all been irreplaceable drivers of winning this award. Being a woman and given the opportunity to play such an important role, I can only be grateful for having the chance to learn and grow from this experience. Given the privilege of serving as the main planner, promoter, and host of projects from other organizations, I have sought to promote cross-organizational team cooperation, actively leading Taiwan into the sensor network and intelligent living applications industrial chain.

This year we won R&D 100 Award in the US for "In-Snergy Intelligent Green Energy Cloud Management System". We are proud of our accomplishments: (1) Successful cross-organization cooperation model (Institute for Information Industry, ITRI, and Chung-Shan Institute of Science and Technology) (2) Technological breakthroughs and a comprehensive IPR strategy (3) The first successful application of many cross-domain applications

Looking into the future: (1) As a team leader, to insightfully analyze market trends, to utilize professional expertise from team, and to energize the spirit of research and development. (2) I will continue to break through the various limitations traditional society places on women by retaining a positive attitude and a positive perspective-transforming criticism into constructive suggestions and advancing in a positive direction (3) Work hard to define the priorities of various tasks, best use limited budgets resources to maximize results. Finally, I would like to thank my family for standing behind me throughout my quest for innovation through research and development, and for continually providing me with the most honest advice.



In the life career, there exists no goal unachievable, only the paths people have not fully gone down. Keep walking down on the path with a humble and down-to-earth attitude, and once you reached the end of that road, you will have unknowingly reached your goals.

— Hsi-Tseng Chou



Reason for Winning

Prof. Chou was one of the very first in the world to use the asymptotic high-frequency techniques to develop the analytical solutions for the mathematical modeling of electromagnetic scattering mechanism over a two dimensional conducting surfaces resulted from the illumination of Gaussian beams that expand the radiation of antenna. He has successfully developed important antenna design softwares for the communication applications in the outer space and international space stations. His efforts has resulted in numerous achievements, which has earned him many honors and recognitions from both national and international organizations such as the Young Scholars Award from the Academia Sinica and elevation of Fellows from IEEE and IET. Prof. Chou has assisted the industry in developing core technologies to increase its production value, and has also collaborated with the Chung-Shan Institute of Science and Technology to develop key antenna related technologies, whose results have been successfully incorporated into the nation's defense applications, thereby contributing significantly to the industry.



Biography

- Education** Ph.D. in Electrical Engineering, The Ohio State University, USA (1993-1996)
M.S., The Ohio State University, USA (1991-1993)
B.S. National Taiwan University (1984-1988)
- Experience** Associate Editor, International Journal of Computer Application in Engineering Education (Now)
Co-Chair of Technical Program Committee in 2012 IEEE International Conference on Wireless Information Technology and System, Hawaii, USA (Now)
Chapter Chair, IEEE Antenna and Propagation Society Taipei Chapter (2011-present)
Executive Board Member, Microwave Association of ROC (2010-present)
Technical Consultant, Skywork (2010-present)
Associate Dean, College of Electrical and Communication Eng., Yuan Ze Univ. (2008- present)

Award Winner's Perspective

It has been more than thirteen years since I returned to Taiwan and engaged in the academic research. For a career development, it is nature to evaluate one's achievements at different distinguishable stages in his life once every decade at a time. I appear to be moving into my second stage. In the first ten years I had devoted my efforts to build up the foundation of researches with silent but hard works aiming to cultivate the potentials for a growing development in my career. The second ten years is anticipated to be a period of exploring the research energy, with an ambition to earn the opportunities of engaging in advanced researches. However, I am in a need of more encouragement and support because I will be in mid-age in both my life and career development. This is really a very awkward time in my life. This award, named the "Elite Award for Key Technology," has come just in time to excite important energy into my life. As well understood, the academics researchers pursue key technologies as a life goal; thus, being called "an elite" is truly a highest honor and exhibits a decent encouragement. It sincerely recognizes my efforts in the past ten years, and dives me to pursue the next goal for the next ten years, where my career expectation will surely continue to grow, improve, and create another success such as this.

In the past 13 years, we have been working very hard under the support of my research team, in hopes that Taiwan will become even better. We attempted our best to make whatever contributions we can to this effort. Thanks to God, in the every step of our efforts, there appeared many senior and experienced people who had provided endless helps including Prof. Hsing-Yi Chen and S-T Peng of Yuan Ze University, Prof. Chun-Hsiung Chen, Powen Hsu, and JingXiong Wu of National Taiwan University. Their trust and encouragement have assisted us to obtain numerous research projects – we thank them with our hearts for helping us to grow. We especially thank the Ministry of Economic Affairs for the financial support, with this we were able to accomplish with the joy and satisfaction in the key technology development. In the next ten years, we are eager to work even harder and make an even bigger effort to achieve accomplishments that are of great significance, in hopes that all of society will be moved by our efforts and accomplishments, and will also recognize us even more.



Keep a humble and tolerant mind, preserve a long-lasting and persistent sense of work ethic, enjoy life's surprises – this will allow your creative ideas to continually flow.

– Shou-Gwo Wu



Reason for Winning

Director Wu devoted himself to the development of next-generation BSI technology and successfully developed TSMC's 0.11um BSI CMOS Image Sensor 8-inch wafer process for use in the production of camera ICs for smartphones such as the iPhone 4. By taking advantage of the complete structure of Taiwan's semiconductor industrial chain as well as the division of labor, integration, and support from upstream and downstream vendors, Director Wu was able to partner with IC design, testing, packaging, and optical lens vendors to create strong competitive advantages.



Biography

- Education** Dr-Ing. Institute of Microelectronics, Technical University of Hamburg-Harburg, Germany (1992)
Master, Institute of Material Science, National Tsing Hua University (1983)
Bachelor, Department of Material Science, National Tsing Hua University (1981)
- Experience** Teacher, Department of Electrical Engineering, Far East University (1985~1986)
Integration Engineer, SRAM Program, RD, TSMC (1992~1994)
Program Manager, SRAM Program, RD, TSMC (1994~1999)
IEDM Subcommittee Member in session "Display, Sensors and MEMS" (2002~2003)
Program Manager, Embedded DRAM Program, RD, TSMC (2002~2004)
IEDM Subcommittee Chair in session "Display, Sensors and MEMS"(2004)
Technical Program Committee in "International Image Sensor Workshop" (2003~2011).
Program Manager, CMOS Imager Sensor Program, RD, TSMC (1999~2010)
Director, Embedded Technology Division, RD, TSMC (2010~Now)

Award Winner's Perspective

Backside Illumination(BSI)CMOS image sensor technology has been a major breakthrough in the international image sensor technology field in recent years. This disruptive innovative technology has altered traditional FSI(Font-Side Illumination) process technologies and has dramatically increased the quality of image products, creating win-win situations with customers, and contributing additional profit for TSMC. At the same time, this technology has also upgraded Taiwan's related industries, allowing Taiwan's imaging products to play an even more important role in the international supply chain.

This is an excellent example of a More than Moore's accomplishment. BSI's success has proved the innovative technological capabilities of TSMC's R&D organization. Furthermore, how to transfer the successful BSI experience onto other derivative technologies will be the next severe challenge for the Embedded Technologies Group. My expectations for embedded technologies is to "find the next profitable disruptive innovative process and strengthen advanced technologies," to create even greater profits for TSMC.

Receiving this award is the most glorious moment of my life is a major milestone for my past twenty years in this industry. I would first like to thank my parents and my wife, for giving me relentless support over the years. I would also like to thank my superiors at TSMC for giving guidance and encouragement during my darkest hours. Finally, I would like to dedicate this honor to the BSI technology team. You are a very talented team, and only because of all of your efforts and hard work were we able to reach a new milestone in image products. Working with all of you is my greatest honor and privilege.



Make good use of your time, seize your opportunities, create more opportunities, and take advantage of the power and talents of others.

— Chuh-Yung Chen



Reason for Winning

Professor Chen devotes himself to the development of novel polymer synthesis technologies and new functional nanomaterials. In recent years, he has engaged in the development and application of carbon nanotubes, hollow polymer microspheres, magnetic hollow fiber, electrospun nano materials, as well as the R&D of green energy related technologies. Professor Chen designed the world's first electrospinning machine using centrifugal force and capable of mass production that could contribute to the industrial purposes.



Biography

- Education**
- PhD in Chemical Engineering, National Cheng Kung University (NCKU), (1977-1981)
 - MS in Chemical Engineering, NCKU, (1975-1977)
 - BS in Chemical Engineering, NCKU, (1971-1975)
- Experience**
- Director, Center for Environment Protection and Occupation Safety and Health of NCKU (2009-present)
 - Distinguished Professor, Department of Chemical Engineering, NCKU Taiwan (2004-present)
 - Vice director, Yen Tjing-Ling Industrial Technology Research and Development Center, NCKU (2005-present)
 - Professor, Department of Chemical Engineering, NCKU (1987-present)
 - Independent Member, Board of Directors, Shine More Technology Corp. (2004-2011)
 - Member, Trustee Board, The Polymer Society, Taiwan (2004-2011)
 - Chairman, Department of Chemical Engineering, NCKU (2002-2005)
 - Independent Member, Board of Directors, Chi Mei Optoelectronic Corp. (2001-2010)
 - Member, Trustee Board, CTCI Foundation, Taiwan (Nonprofitable) (2001-2008)
 - Member, Trustee Board, Plastics Industry Development Center, Taiwan (Nonprofitable) (2000-2009)

Award Winner's Perspective

After the retrocession of Taiwan, the domestic economy went through the "exit from poverty" phase in the 50's, the "expansion into foreign trade" phase in the 60's, the "introduction of science and technology" phase in 70's, the "innovation and transformation" phase in the 80's, and the "rise of the information economy" phase in the 90's, resulting in the arrival of the era of innovation economy. During each phase, different breeds of trained professionals are required. In the 100th year anniversary of the Republic of China, the Ministry of Economic Affairs held the first annual National Industrial Innovation Awards which allowed the people of Taiwan to witness and understand the technological research and development capabilities that Taiwan now possesses, increasing the confidence of the Taiwanese in our economy, and also showing domestic enterprises the amount of high-quality industrial R&D talent available in the local domestic market. This is undoubtedly an important "Keep your roots in Taiwan" message for domestic SMEs with low R&D capabilities. By receiving the award, I feel deeply honored. I also hope to have more opportunities to participate in national economic plans in the future. For my school, I will continue to do my best to train more outstandingly talented people to meet the challenges of a future accompanied with tonnes of difficulties and hardships, to create a brighter and better tomorrow. As for the industry, I hope to contribute my efforts to develop new technologies and products to meet the globalized challenges of the future.



Do your best with each task that comes to you; cherish the challenges in each phase of your life; under the burdens of life, enjoy growth and accomplishment. "One of the most beautiful rewards in life is that, when one truly sets out to help others, he also helps himself."—Emerson—
— Pao-Chung Ho



Reason for Winning

Executive Vice President Ho devotes himself to the research and development of a pure-software high-performance Java virtual machine. The virtual machine that he developed passed international certifications and was later licensed to companies such as Inventec, saving more than 1.5 billion of overseas royalties per year; the MTube-II "heterogeneous dual operating system (Android and Windows) that allows separation of the display with the base as well as combined operation" technology that Executive Vice President Ho co-developed with academician Shiang-Zhong Kung as well as the combined dual processor (ARM + X86) structures concept have contributed significantly to the industry.



Biography

- Education**
- Ph.D., Computer Science and Information Engineering, National Chiao-Tung University, Taiwan, R.O.C. (1985-1990)
 - M.S., Computer Science and Information Engineering, National Chiao-Tung University, Taiwan, R.O.C. (1978-1980)
 - B.S., Computer Science, National Chiao-Tung University, Taiwan, R.O.C. (1974-1978)
- Experience**
- Executive Vice President, Institute for Information Industry (2010-present)
 - Vice President & Director General, Networks and Multimedia Institute of III (2006-2010)
 - Project Director, "Advanced Mobile Context Aware Application & Service Technology Development Project" (2005-2008)
 - Director General, Networks and Multimedia Institute of III (2003-2006)
 - Director General, Integrated Dual Network Office of National Information and Communications Initiative Committee (2003-2005)
 - Project Director, "Handheld Device Embedded System Software Technology Development Project" (2003-2004)

Award Winner's Perspective

First and foremost, I must thank the Ministry of Economic Affairs, as well as all of my superiors who have supported me throughout this process, and all of my colleagues at the Institute for Information Industry who have worked just as hard as I have.

The main reason why I am so thankful is not because I am the one who has received this award, but because through this selection process, all enterprises, schools, research organizations, groups, and individuals can benefit from Taiwan's existing advantages. With "innovation" as their core value, integrating the accomplishments and contributions produced from technology, services, and diverse cultures. By accepting innovative ideas and contributions from diverse groups and across many different domains, it can resonate and stimulate more creativity and more innovation, finally creating a deep blue industrial sea with unlimited possibilities and opportunities!

Further, I would like to dedicate this honor to my team members and my colleagues. As the saying goes: "Without a group, there is no way to be an individual!" It has been more than 30 years since I first joined the Institute for Information Industry, and I have had the privilege of experiencing 9 different positions, each of which has given me the opportunity to learn and grow both in the professional aspect and the personal aspect

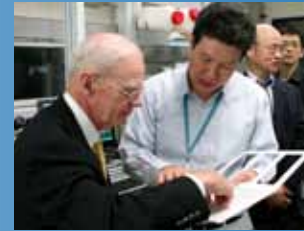
All along, my family has been my biggest supporter, and the real reason why I am able to stand here today. Without their daily help and support, I would not be able to go all out in my work; whenever I experience difficulties and setbacks, and whenever I feel weak or depressed, they always give me unlimited support and encouragement – thank you for your unconditional love and support, this honor is in every way yours as well!

Taiwan's economy is currently facing a critical moment of transition, let us all work together once again to allow innovation and research to boost the competitiveness of our industries, allowing key innovations to turn a new page in our economy; together, we can create another golden decade of brilliance and glory.



The biomedical product development process has many difficulties and obstacles - only those who never give up, persevere, and solve each problem that comes along will succeed.

— Chun-Jen Liao



Reason for Winning

Deputy Division Director Liao collaborated with the NTU Hospital Orthopedics Department to develop an osteochondral repair technique in 2004. The advantage of this technology is that the operation can be performed in a single-event surgery and can be completed in 30 minutes. More importantly, the cost of this technology is relatively cheaper than other existing surgical treatments. This technology was later transferred to a large foreign vendor for 80 million dollars and a 5% royalty, setting a record high price for Taiwan's biomedical technology transfers.



Biography

- Education**
- Ph.D. Department of Material Engineering, Tatung University (1995-1998)
 - M.S. Department of Biomedical Engineering, Chung Yuan Christian University (1991-1993)
 - B.S. Department of Biomedical Engineering, Chung Yuan Christian University (1987-1991)
- Experience**
- Senior Researcher, Biomedical Engineering Research Laboratories, Industrial Technology Research Institute (2008-Present)
 - Researcher, Biomedical Technology and Research Laboratories, Industrial Technology Research Institute (1999-2008)
 - Postdoctoral fellow, Department of Chemistry, Massachusetts Institute of Technology (2000-2001)
 - Postdoctoral fellow, Institute of Biomedical Engineering, College of Medicine, National Taiwan University (1998-1999)

Award Winner's Perspective

I would like to take this opportunity to express my sincere gratitude to Professor Ching-Chuan Jiang of National Taiwan University Hospital and his team for leading the NTUH and the team at ITRI in solving each of the problems that we ran into, step by step, one by one; placing our main focus on clinical requirements-oriented research, driving our product technologies from concept to their clinical trial phases, providing cartilage injury patients with an early-stage treatment option instead of being forced to sit by and watch their joints deteriorate even further and finally to only have artificial joint replacement as the only option. I would also like to express my gratitude toward my colleagues at ITRI who have fought beside me through this entire process; every little bit of progress this product has ever achieved only possible because of your hard work and dedication, and today's glory and recognition is a direct reflection of the sweat accumulated under your laboratory and cleanroom clothing. I am also very grateful to my wife, son, and mother for allowing me go all out with my work without having anything to worry about at home, and for always supporting me and giving me the courage to overcome all obstacles and setbacks whenever I ran into problems or difficulties.

The development of biomedical products and technologies is a long and difficult road, and in the process you will run into many difficulties and hardships; it is very easy to want to give up, and very easy to find many reasons and excuses; on the other hand, it takes a great deal of will power and courage to persevere and persist to the end. A successful medical product development, fast is slow and slow is fast; being meticulous, taking things step-by-step, always following the proper procedures for doing things, and never looking back is the one and only true "shortcut."



Your mindset and mentality determine your achievement; where there is a will there is a way.

— Benjamin Wang



Reason for Winning

General Director Wang has successfully promoted many innovative intellectual property business models, driving the ITRIs patent utilization rate to 27%, ranking it first place among Taiwan's academic and research institutions. General Director Wang has also promoted the first common IP defense mechanism in Taiwan —IP Bank (Intellectual Property Bank), assisting domestic enterprises defend against international patent law suits. General Director Wang also established Taiwan's first patent transaction platform <http://www.twtm.com.tw>, which, up to 2010, has already transacted more than a thousand patents.



Biography

Education Ph.D., Management of Technology, National Chiao Tung University, Taiwan (2007)
M.S., IPR Law, Franklin Pierce Law Center, USA (1992)
MBA, National Taiwan University, Taiwan (1981)

Experience General Director, Technology Transfer Center, ITRI(2007-Present)
Deputy General Director, Technology Transfer Center, ITRI(2007)
Director of Business Program, Computer & Communication Laboratories, ITRI(1999- 2000)
Director of Planning Division, Computer & Communication Laboratories, ITRI (1995~1999)
Director of Administration Division, Computer & Communication Laboratories, ITRI(1991~1995)

Award Winner's Perspective

Creating New Opportunities for Business IP

Driving a New Wave of IP-Based Business Transactions

I would like to thank the organizers of this award and the judges for their recognition. It is a great honor to be able to receive this award and to be recognized in such a glorious manner! This is also a great encouragement to all of the people at the ITRI Technology Transfer Center for driving domestic intellectual property usage and management in recent years.

I graduated from the NTU Graduate School of Business Administration and joined ITRI almost 30 years ago. Over the years, I have witnessed Taiwan's domestic industries transform into high-tech industries, and have also witnessed many global economic booms, busts, and fluctuations. Domestic enterprises continually upgrade and transform their roles in the global industrial supply chain, playing ever more important roles. Entering the knowledge economy of the 21st century, intellectual property has become a key factor to compete in the global market. As a cradle and incubator for domestic high-tech industries, ITRI will continue to focus on how to maximize the benefits of domestic intellectual property rights, which is also the goal and responsibility I set for myself. In my mind, winning this award only further deepens my responsibilities, from now on I will continue to lead my team and the ITRI Technology Transfer Center in creating new opportunities in the strategic planning and usage of intellectual property rights.

Winning this award means that all of our hard work over the years has earned the recognition of others. I would like to share this special honor with all of my colleagues at the ITRI Technology Transfer Center. At the same time, I must also sincerely thank ITRI President Jyuo-Min Shyu, former Vice President Yougeng Hsu, and Vice President Johnson Sher for their leadership and support. I would also like to thank my wife (Shuxian) for taking care of all of our household tasks and taking care of the education of our three children, allowing me to go all out in my professional career without any worries.



Although my essays are not good enough to reverberate through the ages, at least they can serve as an account for what has happened in my time.
Although the policies I recommend will not be able to solve all the sophisticated problems in the world, at least they can serve as a resonance of all the sorrows and hardships faced by the average citizen.

— Shin-Horng Chen



Reason for Winning

Director Chen is an important member of the think tank to the Ministry of Economic Affairs. He is one of the leading scholars in studies R&D internationalization in Taiwan. His research results often bring about well-received policy recommendations and duly serve the purpose of policy dialogue. Director Chen has been an important researcher for the formation of important innovation and technology policy in Taiwan. He and his team are deeply trusted and relied upon by a few government agencies for making policy decisions, contributing significantly to Taiwan's public policies.



Award Winner's Perspective

Although the "Innovative Model Promoter Award" is an award to an individual, winning this award for me is in fact the combined result of all of the hard work and determination from all of my research team members and the guidance, help, and support I have received from my superiors. My mentality regarding policy research matches the family motto of Tong Ren Tang in Beijing: "although nobody can see how we produce our medicine, our intentions are always clearly seen by God." Our research reports or published articles are not just for publications, but to trigger the resonance of our readers and hopefully to bring about an effective effect on policy design and formation. For most of time, policy researchers are not publicly recognized but are the behind-the-scenes planners and executors. Whether or not our policy recommendations are put into implementation by decision makers often is not decided by the insights or of a single researcher, but has much to do with the collective accumulated knowledge of many people combined with the final push of the opinion leader or decision maker; this is the way in which our policy research results can be actually transformed in to public policies.

Looking back to my journey of policy research over almost two decades, I have experienced various stages of growth, resulting from many advantageous factors. Trust and supervision from our superiors gave us the opportunity to participate in studies on important issues regarding formation of innovation and technology policies for the country. Mutual support from peers and team members allowed us to expand the depth and width of our policy research. I once wrote a set of words on behalf of a high-ranking official at the Ministry of Economic Affairs which reads: "To the main stakeholders involved (the Department of Industrial Technology Division and R&D institutes), the Technology Development Program involves 'social responsibility' and 'social expectation'. Most of the people who plan and execute the Technology Development Program can 'enjoy benefits before the national people do' because of government funding. Therefore, we must cherish the luxury with a mentality that 'be concerned about the affairs and welfare of state before others' to live up to social accountability, by playing an important role in carrying on the legacy of predecessors and opening up new opportunities for successors for the development of our society and industries". This set of words has also reflected my personal belief. We have had the opportunity to explore Taiwan's new and forward-looking innovation and technology policies, hence should shoulder the "social responsibilities" involved and continuously drive ourselves to work harder and accomplish more. This was my mindset before I won this award, and remains so even after winning the award.

Biography

- Education** Ph.D. ICT Programme, University of Newcastle upon Tyne U.K. (1990-1994)
M.A. (Economics) National Taiwan University, Taiwan (1985-1987)
B.A. (Economics) National Taiwan University, Taiwan (1979-1983)
- Experience** Director and Research Fellow, International Division, Chung-Hua Institution for Economic Research (2010-present)
Adjunct Professor, National Tsing Hua University, Hsinchu (2007-present)
Adjunct Professor, National Chaio Tung University, Hsinchu (2006-2007)
Director and Research Fellow, International Division, Chung-Hua Institution for Economic Research, Taipei (2001-2009)



Solutions are thought up by people; as long as we continually work hard to actively search for new solutions, there will always be brand new realms waiting to be uncovered.

— Y.L. Wang



Reason for Winning

Director Wang has led the technological and process innovation in TSMC's factory Fab14. This factory owns 116 advanced processes, which is 5 times the number of processes it owned three years ago, which is also the most in any single wafer manufacturing fabrication in the world. The value of its patents is over 140 billion NT dollars. Director Wang also actively implements energy conservation and environmental protection strategies, reducing carbon emissions by 30%; he also assists in the integration of industry and academic resources in southern Taiwan, driving the systematic cooperation and development between industry, government, and academia in the semiconductor industry in southern Taiwan.



Award Winner's Perspective

My name is Y. L. Wang, I have been working at TSMC for almost 20 years. From very early on I knew that in the IC industry, innovation and continuous improvement are the keys to staying competitive, which is why I have accumulated more than a hundred patents. After becoming a manager in 1997, I began developing the creative abilities of my subordinates. I have always believed that creativity is something that can be developed, and that creative abilities should be established and developed in organized, systematic, and methodological ways. In addition, I also believe in group creativity and that two heads are better than one. Therefore, my subordinates not only gradually began to be able to innovate, but also began to like to innovate. Once this happened, I found that the innovative abilities and accomplishments of 20 people by far exceeded what I could do on my own. After I became the manager of my department, I further found that the innovative power of 200 people surpassed the innovative power of 20 people by more than ten times, because the diversity in terms of background, experience, and ability is far more than that of 20. Up to this day, I have found that the group innovative ability of a thousand people is even more remarkable.

In the past few years, through collective hard work within my group, we have been able to continually innovate and introduce many new advanced processes for TSMC's customers, reaching the highest yield in the industry with the lowest cost, which has earned us much recognition from our customers. However, in recent years, due to the continued advancement of high-tech processes, we have also run into many difficulties and roadblocks with our nano-scale processes. Through these experiences, I have found that the sole innovation of TSMC is also not enough; we also need to combine the collective innovative efforts of our upstream and downstream industry partners to be able to successfully meet the difficult requirements and surpass the challenges of the IC industry. Therefore, we have also formed cooperative alliances with our upstream materials and components vendors, allowing the yield and production of our advanced IC processes to increase even more, lowering cost even further, thereby widening our competitive advantage compared to our competitors in the global marketplace. I am very grateful to my colleagues and to our upstream and downstream industry partners for their collective efforts and cooperation. In summary, after nearly 20 years of working in the semiconductor industry, I have truly seen the importance of innovation, as well as the massive power that collective group innovation can create. I have also been fortunate enough to benefit from innovation. As one of my colleagues says: Innovation is a form of incomparable enjoyment, and a fruit that bears incomparable sweetness. Finally, I would like to say that my being able to win this prize today is the direct result of the collective efforts and contributions of all the people at TSMC, and our upstream and downstream industry partners. Most importantly, I would not be here accepting this award if it is not for my being given the opportunity to work at TSMC. Therefore, this is in no way my individual achievement but in every way the achievement of all of the above-mentioned entities and people. Therefore, I would like to express my most sincere gratitude to my superiors and colleagues at TSMC, as well as to our upstream and downstream industry partners. In the future, I will work even harder and I will treasure this experience for the rest of my life.

Biography

Education Ph.D. in Electronic Engineering, National Chiao Tung, Taiwan (1992-1997)
M.S. in Material Science, National Sun Yat-Sen University (1988-1990)
B.S. in Physics, National Tsing Hua University (1984-1988)

Experience Process Engineer, Section Manager, Manager, Department Manager, Deputy Director, Technical Director, Director of Taiwan Semiconductor Manufacturing Company (1992-now)



One person with a belief is a social power equal to 99 who have only interests.

— Yu-Fan Lin



Reason for Winning

Director Lin assists Taiwan's various industries with technology-oriented service innovation, and with the help of his team, has assisted 12 vendors in establishing "service R&D centers," creating a trend of service industry vendors establishing service R&D centers, which has contributed significantly to Taiwan's Web 2.0 service innovation ecosystem development. In addition, Director Lin has also introduced Taiwan's technology-oriented service user behavior database with his team, and has established long-term collaboration mechanisms with key global institutions such as WEF, EIU, and ITU. On average, Director Lin helps secure an annual international research income of 10 million NT dollars.



Biography

- Education** Doctoral student, Institute of Management, National Taiwan University of Science and Technology (2011- present)
M.S. Institute of Management Science, Ming Chuan University (1996-1998)
- Experience** Director, Institute for Information industry. (2006-present)

Award Winner's Perspective

Over the years, I have witnessed the Internet start to from roots and grow in Taiwan. With the support of the Ministry of Economic Affairs and domestic brand names and manufacturers, the FIND center has also transformed from its original central goal of "Focus On Internet's News & Data, " to its new direction of focusing on "Foreseeing Innovative New Digi-services;" which means that FIND has transformed from the understanding of phenomenon to the analysis and forecasting of various new ICT services.

The FIND Center, under my personal leadership, currently has 70 highly-skilled workers from the fields of information management, social science, business, statistics, and industrial engineering, all of which have dived head-in to the research of innovative trends of services combined with ICT technology. In the past 10 years, we have been determined in the research of the Internet and innovative services users, and have gradually created the ability to compete with international research organizations in bidding for international research cases, and have accumulated Taiwan's informational national power index database, establishing technology-based service lifestyle research of the future through forecasting and outlining. I believe that in the next 10 years, with the support of this organization and the Technology Development Division, and the ever higher expectations of the industry, that we will "rock the world with S.E.E service design!" and shine even brighter.

I would like to thank Director Wu of the Ministry of Economic Affairs, Institute for Information Industry CEO Doctor Li, and program host – Ren-Da Yang for their encouragement and support throughout the years. Also, I would like to thank the FIND team for their hard work and contributions.

Finally, I would like to thank my family for their big supports. I would like to share this award with everybody. Thank you again.



Innovation is a long-term, continuous, and cumulative process; only through unrelenting enthusiasm supported by a seamlessly collaborative team can future opportunities be created.

— Jen-Yu Yu



Reason for Winning

The innovative mobile video service "Pocket Channel," whose R&D efforts were led by Deputy Division Director Yu, is the world's first product of its type, and is leading the surveillance industry towards a whole new milestone. The world-class H.264/AVC video encoder and platform solution that Deputy Division Director created replaced technologies from other large international vendors and has been successfully transferred to the four major global video WebCam IC design companies, giving Taiwan's vendors a leading position in the global WebCam market.



Biography

Education M.S. National Chiao Tung University(2000-2002)
B.S. National Chiao Tung University(1996-2000)

Experience Deputy Division Director, Industrial Technology Research Institute (2011-present)
Manager, Industrial Technology Research Institute (2007-present)

Award Winner's Perspective

I am honored to receive this industrial innovation award from the Ministry of Economic Affairs. This is not just my personal accomplishment, but something I need to thank all of my past teachers in school and all of my previous superiors at work for. I would also like to thank my R&D team, which has fought with me through many hardships and difficulties. Most importantly, I would like to thank my family and my wife for quietly supporting me in the background.

The evaluation committee asked me what characteristics do I have that are worthy of emulation by young people? In my opinion, the one characteristic I have that is most worthy of emulation by young people is how to start from a spark of creativity, and continue through countless challenges and failures, to insist on continuing to the end and finally achieving your goal. I believe this is a very valuable experience that I would like to share with all young people. They start out with a lot of passion, but due to lack of experience often are not able to break through professional obstacles, or, because of environmental limitation, decide to give up their dreams. During these times of trial, you need to not only rely upon hard work and determination, but you also need to establish a "team" with mutual interests. All valuable innovations were achieved through a process of continuous breakthroughs and accumulative accomplishments, and behind the final success are always stories of a very long and persistent accumulation phase.

In the face of increasingly fierce international competition, I will continue to work hard to create new innovative R&D capabilities and apply the results to places that will benefit Taiwan, thereby continuing the legacy of our predecessors and creating new opportunities for our successors, developing a new generation of technological R&D talent to boost Taiwan's industrial competitiveness.



Excellence comes from continuous hard work and practice; trust others and let others trust you; benefit others and allow others to benefit you.

— Shuo-Yen Chou



Reason for Winning

Dr. Chou developed the 40 nanometer and 28 nanometer lithographical overlay error analysis technology and control system, laying the foundation for the success of TSMC's 40 nanometer technology. In addition, Mr. Chou successfully developed TSMC's 20 nanometer process light source optical mask optimization technology and lens aberration analysis software, which won first place in TSMC's 2004 second quarter internal lithography technology R&D category thesis competition.



Award Winner's Perspective

I would like to take this opportunity to share the belief that our R&D vice president Burn J. Lin taught me with everybody: Always show mutual respect, always have mutual trust, and always engage in mutual aid. The advancement of tsmc's semiconductor mass production technology is based on the combined efforts and collective accomplishments of the talented members from each module of our R&D team. I deeply believe that engineers must have a team-oriented value and mentality for them to be able to transform their technological know-how into group R&D power, and realizing this belief has always been a priority goal for me.

Special thanks are given to all those friends, colleagues, and superiors who have ever assisted me in lithography technology research within the past. First, I would like to thank tsmc R&D vice president Burn J. Lin, and my superiors Tsai-Sheng Gau, Yao-Ching Ku, Anthony Yen, Ru-Gun Liu, Chun-Kuang Chen, Chih-Ming Ke, and Jaw-Jung Shin for their guidance and support. I would also like to thank my colleagues Li-Jui Chen, Guo-Tsai Huang, T. C. Fu, Alton Chou, and Kai-Hsiung Chen for their help in developing the 45nm-and-beyond-process lithography overlay correction and analysis system to realize our innovation ideas onto tsmc's manufacturing environment. I would like to thank all of our Resolution Enhancement Technology team members who have participated in the cooperative development of source mask optimization and inverse lithography technology. I would also like to share this honor with the tsmc R&D organization, especially all of my colleagues in the Nano Patterning Technology Division. Finally, I would like to thank my parents, brother, sister, and my wife Karen for taking care of me, which has allowed me to continually engage and improve in my R&D career without having any other worries whatsoever.

Biography

- Education**
 - Ph.D. in E.E., National Chiao Tung University, Taiwan (1996-2002)
 - B.S. in E.E. National Chiao Tung University, Taiwan, R.O.C. (1991-1995)
- Experience**
 - Manager, OPCII/NPTD, TSMC (2010-present)
 - Section manager, OPCII/NPTD, TSMC (2009-2010)
 - Technical manager, ENT/NPTD, TSMC (2007-2008)
 - Principal Engineer, EMT/MPTD, TSMC (2003-2007)
 - Research Assistant, ERSO/ITRI, Taiwan. (1997-2000)

I. Organization Category

(I) General Businesses and SMEs

1. Distinguished Enterprise Innovation Award, and Distinguished Small and Medium Enterprise Innovation Award

Judging Benchmark	weight
I. Contribution to the organization	50%
1. The organization has been continuously accumulating R&D capabilities in Taiwan and have established an innovative research organization and environment.	
2. The achievements in innovative R&D have competitive advantages in the domestic and international markets and display leadership with the ability to break through industrial and market barriers.	
3. The organization leads in establishment of new corporate operation models and brand effectiveness which revitalized the corporate values.	
4. The organization has substantial achievements and has effectively used the achievements to develop core competitiveness in Taiwan.	
5. The contribution of innovative R&D enables sustainable growth of the organization.	
II. Contribution to the organization	50%
1. The organization has the potential to become a main competitor or leader in the domestic and international markets.	
2. The organization has the potential to become a model in innovative R&D for the domestic industries.	
3. The organization has the ability to upgrade the technologies for the domestic industries, lead in industrial upgrade, and attract domestic and international investment.	
4. The organization has substantial accomplishments in social-welfare related activities (that create positive international image and benefit the society)	
5. The impact and contributions of the candidate's innovative R&D on the promotion of industrial clustering.	
Total	100%

2. Outstanding Enterprise Innovation Award, and Outstanding Small and Medium Enterprise Innovation Award

Judging Benchmark	weight
I. Technological Innovation	20%
1. Innovative resources (innovative R&D budgets and human resources) invested within the past 3 years.	
2. Output, utilization, and transfer of intellectual capital (patents/know-how) within the past three years.	
3. Contributions of the technological innovations to the development of and utilization in research.	
4. Contributions of the technological innovation to corporate upgrade, strategic deployment, and development of proprietary technologies.	

II. Product Innovation	20%
1. Uniqueness of products/services integrated with creative innovation in the past three years.	
2. Accomplishments of innovation in specifications, material/system interface or style/service model innovation.	
3. The effectiveness of the new product/system on the improvement of the product functions, major accomplishments in material interface or style innovation, and the effectiveness in expanding market share and customer satisfaction.	
4. Contributions in helping the business to enter domestic and international markets, and expand the scope of the brand and services.	
III. Process innovation	20%
1. The originality, uniqueness, and criticality of the new procedure/process.	
2. Effectiveness of process innovation in improving the supply chain or added-value of services.	
3. The contributions of process innovation which improved product and service quality for the organization.	
4. The contributions of process innovation to material/energy efficiency and improvement of service effectiveness.	
IV. Organizational Innovation	20%
1. The effectiveness of organizational innovation on establishment of an environment for innovative activities, and management system innovation.	
2. The effectiveness of organizational innovation on organizational management and global resource consolidation.	
3. The effectiveness of organizational innovation on the implementation of the organization's operational model and development of new businesses.	
4. The contributions of organizational innovation the improvement of operation effectiveness and value restructuring.	
V. Innovative Marketing	20%
1. The uniqueness and creative style of the marketing model using intelligent technology.	
2. The effectiveness and innovative marketing on expansion of markets and customer base.	
3. The effectiveness of marketing innovation on customer service interface innovation and development of new marketing channels.	
4. The effectiveness of marketing innovation on boosting brand image and domestic/international marketing capacities.	
Total	20%

(II) Academic Organization Category –Distinguished Academic Achievement in Industrial Innovation Award, and Distinguished Academic Achievement in Industrial Innovation Award

Judging Benchmark	weight
I. Quality and Quantity of Achievements	25%
1. The organization has achieved certain quantity of achievements in research and development (patents, theses, and research reports) in a certain quality over the past 3 years , whereas the derived innovative technology has high potential and has yielded significant effects to the development of the domestic industries.	
2. The design, theory, and applicability of common fundamental technologies are able to upgrade the quality of the existing industrial products and help the industries to achieve high-precision, high-stability, and high-reliability.	
II. Promoting Exchange and Integration among the Industry, Academic Organizations, and Research Institutions	35%
1. The organization has made significant contributions to the management of intellectual properties and utilization of the added-values and services.	
2. The organization's teaching and services have made significant contributions to academic-industrial cooperation, establishment of the academic-industrial innovation model, and development intangible assets.	
3. The achievements of the organization in innovation has yielded substantial effect to intellectual property management, development of added-values, utilization of services, and, which brought the domestic businesses higher international competitiveness and visibility.	
III. Contributions to Taiwan's Industrial Development	40%
1. Results of the R&D enable the Nation to participate in the development of global standards and boosting the influence of Taiwan's industries in the world.	
2. Results of the R&D help to upgrade the technology of the domestic industry, promote industrial upgrade, or facilitate major technology transfer, which attract major domestic and foreign investment interests and extended substantial contribution to the industries.	
3. The organization has made major contributions to the upgrade of product design, marketing, operation efficiency, or system integration.	
Total	100%

(III) Research Institution Category –Distinguished Research Institution Innovation Award, and Outstanding Research Institution Innovation Award

Judging Benchmark	weight
I. Quality and Quantity of Achievements	25%
1. The innovative technologies derived from the results of research in the past 3 years is forward-looking, high in applicability, and significant, and has significant contribution to Taiwan's industries.	
2. The R&D results have been implemented or applied to new product development, process improvement, or new product sales, or used to cut down the cost of production.	
II.Promoting Exchange and Integration among the Industry, Academic Organizations, and Research Institutions	35%
1. The organization has major contributions to the management, value creation, and services of intellectual properties.	
2. The results of R&D and services have made significant contributions to the development of cooperation among the industrial, academic, and research sectors, implementation of innovative models in the industries, , and development of intangible assets.	
3. The new elements, concepts, and application of the innovative technologies and innovation in analysis, utilization, research and development, production, or system integration drive forward comprehensive and healthy development of the industries.	
III. Contribution to Taiwan's Industrial Development	40%
1. The organization's innovation helps the industries to upgrade the overall competitiveness in industrial technology through development of fundamental technologies, advocacy of cross-field cooperation, and leadership in innovation.	
2. The achievements of R&D leads the Nation to participate in the development of global standards and expand the influence of Taiwan's industries.	
3. The achievements of R&D drive forward technological development in the Nation, boost production value for the related industries, enable development of new industries,create new economic opportunities, facilitate emergence of the industries as the major competitors or leaders in the global market.	
Total	100%

II. Team Category

Award	Judging Benchmark	weight
Innovative Trailblazer of the Year	I. Development of Industrial Value	50%
	1. The target market, product competitiveness, and marketing strategy for industrialization of the nominated innovation.	
	2. The execution model for industrialization of the nominated innovation.	
	3. The difficulties experienced by the nominee during the value creation process and how these difficulties were resolved.	
	II. Overall Effectiveness of Industrial Value Creation in this Year.	50%
	1. The new production value and added values created from the nominated innovation from the industrial utilization.	
	2. The results of industry chain formation or industry upgrade from the nominated innovation.	
	3. Investments or other economic values created from the nominated innovation.	
	Total	100%

Award	Judging Benchmark	weight
Innovative Breakthrough of the Year	I. Major Innovative Breakthroughs	50%
	1. Breakthroughs in technological standards, application specifications, cost, and general usability.	
	2. Differentiation and competitive advantages compared to the similar products in the domestic and international markets.	
	II. General Effectiveness in Creating Industrial Value in this year	50%
	1. The effects to industrial upgrade or technological improvement.	
	2. The added values, distribution, or derivative effects brought by the nominated innovation to the industry.	
	3. Domestic and international patents and the value created from the patents. .	
	Total	100%

Award	Judging Benchmark	weight
Fundamental Industrial Technology Development Award	I. Technology Rooting Characteristics	50%
	1. The candidate entry meets the requirements of high commonality, high technical challenge, high economic impact, and high potential in market application, and has made significant contributions to the development of Taiwan's fundamental industrial technologies.	
	2. The role of the candidate entry and the model it uses in terms of promoting the rooting of fundamental industrial technologies.	
	II. General Effectiveness in Creating New Industrial Values	50%
	1. The candidate entry has made significant contribution to the upgrade of the added values for Taiwan's industrial products and expansion of the market.	
	2. The candidate entry has made significant contribution to the development of human resources in fundamental industrial technologies.	
	3. The candidate entry has made significant contribution to the establishment of long-term cooperative networks among the industry, academic organizations, and research communities.	
	Total	100%

Award	Judging Benchmark	weight
Outstanding Cross-Domain Cooperation Award	I. Cross-Field Innovation	50%
	1. The major innovations and characteristics of the cross-field cooperation.	
	2. The role played by the candidate entry and the method of promotion in cross-field resource integration.	
	II. General Effects on Industrial Value Creation	50%
	1. The ability of the candidate entry to facilitate industrial technology integration, reduce redundancy in R&D resources, and promote healthy and comprehensive industrial development.	
	2. The effect of the candidate innovation on establishment of common industrial standards or platforms.	
	3. Actual accomplishments of the candidate entry in system integration, development of manufacture services, and service innovation, which filled the gap in the technology chain.	
	Total	100%

Award	Judging Benchmark	weight
Model of Local Industry Innovation Award	I. Local Industry Innovation	50%
	1. The major innovation and characteristics of the candidate entry in promotion of local industries.	
	2. The role played by the candidate entry in terms of triggering innovations in local industries.	
	II. General Effects of Innovative Industrial Values	50%
	1. The effects of the candidate innovation on upgrade of local industry or improvement of technology.	
	2. The influence of the candidate innovation in creating added-values or distribution for the local industry.	
	3. Achievements of the candidate innovation in boosting the local industry's competitiveness, developing the local industry, or promoting industrial clustering.	
	Total	100%

III. Individual Category

Award	Judging Benchmark	weight
Lifetime Achievement Award	1. The candidate has achieved unique achievements or has made outstanding contributions to Taiwan's society and industry.	25%
	2. The candidate has engaged in long-term promotion of industrial innovation and has had significant contribution.	25%
	3. The candidate has achieved industrial innovation or establishment of new models and has significant contribution to boosting industries competitiveness.	25%
	4. The candidate has promoted industrial growth and created derivative benefits for the industry and for Taiwan.	25%
		Total

Award	Judging Benchmark	weight
Woman Innovator Award	1. The achievement of the candidate's innovation showed strong industrial potential.	25%
	2. The achievement of the candidate's innovation provided the industry with major breakthroughs and influences.	25%
	3. The achievement of the candidate's innovation showed strong international competitiveness and industrial relevance.	25%
	4. The achievement of the candidate's innovation produced derivative effects for the industry and for the nation.	25%
		Total

Award	Judging Benchmark	weight
Key Technology Innovator Award	1. The candidate developed an advanced, influential, revolutionary, and creative innovation.	25%
	2. The innovative technology effectively upgrade industrial technology and generated major derivative effects.	25%
	3. The innovative technology has strong industry competitiveness and bears international significance.	25%
	4. The innovative technology shows strong potential for wide utilization and further development.	25%
		Total

Award	Judging Benchmark	weight
Innovative Model Promoter Award	1. The candidate has facilitated outstanding teamwork and created significant accomplishments.	25%
	2. The candidate has promoted innovation and contributed towards strategic industrial upgrade mechanisms.	25%
	3. The candidate has contributed towards the establishment of high-quality creative environments, training of talent, and integration of resources.	25%
	4. The candidate has created derivative effects which has significant influence to the industry and the Nation.	25%
	Total	100%

Award	Judging Benchmark	weight
Model Youth Innovator Award & Youth Innovator Award	1. The candidate has made significant contributions to industrial innovation or has had outstanding accomplishment.	25%
	2. The candidate's innovative achievements have major influences to the Nation.	25%
	3. The candidate's innovative achievement shows potential for future development and application.	25%
	4. The candidate's innovative achievement has generated derivative effects for the industry.	25%
	Total	100%