

光寶創新獎 2017 LITE-ON AWARD

‘17 創新

‘17 創新

**LITE-ON  
AWARD**

一起創新！

入圍作品集 ENTRY COLLECTIONS



主辦單位 Host



指導單位 Advisor



教育部  
MINISTRY OF EDUCATION



經濟部工業局  
Industrial Development Bureau  
Ministry of Economic Affairs

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# 2017 光寶創新獎前言

## INTRODUCTION

### OF 2017 LITE-ON AWARD

全球華人最大創新設計競賽盛會「光寶創新獎」今年邁入第 17 屆，競賽繼續榮幸邀請到世界頂尖企業默克 (Merck) 一同設立特別獎，鼓勵結合創新性與市場性的作品。而今年的創新獎也與科技部「創新創業激勵計畫」(FITI) 合作，一同協助創新作品與市場接軌。

光寶創新獎今年特別加碼獎金，鼓勵青年創新者以市場價值、作品可行性為重要評估要件，發展結合「光、電、節能」與「智慧科技」領域的科技產品或技術。今年有來自全球近 1,200 組作品角逐設計獎，入圍決賽的作品較往年更多聚焦長期照顧醫療、汽車電子應用領域以及環境永續發展。「新型多孔二氧化鈦複合微球」與「無臂人士的未來牙刷」分別勇奪技術組與設計組金賞，獎金各為新台幣 40 萬元。

2017 年技術組金賞與銀賞作品由國立台北科技大學囊括，金賞作品為「新型多孔二氧化鈦複合微球」，該設計突破以往多孔材料的繁瑣步驟，以應用創新材料為綠能、環保提出新穎的解決之道；銀賞作品「基於光體積變化描記圖之肢體血氧飽和濃度反射式檢測法」，運用穿戴式設備簡化長期生理監測模式並降低抽血次數，可及早發現糖尿病患血管栓塞病變；技術組銅賞則由國立交通大學「腦波數位戰士」獲得，結合 VR 智慧並發明獨家技術，利用腦波裝置落實人工智慧，在無人機操作、智慧家庭及活絡的電競市場搶得先機。

今年的設計組金賞由來自山東工藝美術學院的「無臂人士的未來牙刷」榮獲，以細膩的同理心做為設計起點，提升口腔清潔程序的效率與便利；銀賞作品為銘傳大學「行動電源租借站」，便利的租借系統，不但讓手機充電服務也能隨租隨還，更能解決手機斷電的燃眉之急；銅賞得主則為福州大學「UV 環保龍頭」，為缺水地區提供節能高效殺菌消毒、免用水的洗潔解決方案。

為推動獲獎作品可以落實商品化並與產業接軌之願景，本屆光寶創新獎再度與科技部「FITI 創新創業激勵計畫」攜手合作，技術組優勝前三名團隊可銜接進入科技部「創新創業激勵計畫」，參與該計畫相關創業課程與輔導活動，協助光寶創新獎優勝隊伍完備其產品或服務之原型驗證及新創商業規劃。如通過該計畫各階段評估，將有機會角逐該計畫之百萬創業基金。

光寶創新獎每屆均邀請來自世界各地優秀的設計大師擔任評審以及國際論壇講師，今年邀請到兼具設計及管理的跨領域專家—2018 臺中世界花博設計總監吳漢中、擅長以人本及極簡純粹設計建構使用者經驗的 Facebook 產品設計總監 Ana Arriola 與長年專注以使用者為核心及同感設計的伊利諾大學厄巴納 - 香檳分校工業設計系教授 Deana McDonagh 博士，以「心創好設計」為題，拆解設計思維的箇中奧秘。

邁入第 17 年的光寶創新獎秉持著多年奉行的宗旨，為了培育科技創新人才及提升華人國際競爭力，透過設立創新獎給青年學子寬廣的舞台，以展現技術創新作品與團隊精神成果，鼓勵設計創新向技術領域扎根，進而朝向創業發展與市場接軌，期盼未來這些優秀創新的產品甚至能邁向國際舞台，改善人類的生活，透由實踐創新的構想，為人類社會進程的下一步拓展光明嶄新的前景。

The LITE-ON Award – the world's largest and most prestigious Ethnic Chinese innovation and design competition – celebrate its 17th anniversary this year. Leading global corporation Merck this year continued to support the Award providing Special Award to encourage entries that combine innovation with strong market potential. In addition, the LITE-ON Award is again collaborating with the Ministry of Science and Technology's "From Invention to Innovation (FITI)" project, working together to promote business start-up oriented innovation.

The LITE-ON Award raises the prize to encourage young innovators to develop technology-based ideas within the fields of "opto-electronic, eco-friendly and intelligent technologies," while making potential market value and the potential for new business start-up. This year, the LITE-ON Award received more than 1,200 entries from all over the world. The entries that made it through to the finals were innovations in long-term care, automotive electronics and environment sustainability. The winning entries in the Technology Category and the Design Category were the "Novel Porous TiO2 Composite" and "Future Toothbrush for Armless People" respectively; each of the champion teams received NT\$400,000 in prize of cash.

The teams from National Taipei University of Technology of Taiwan won the first and the second prize in the Technology Category. The Gold Award entry, "Novel Porous TiO2 Composite" provides an innovative solution for environmental protection and energy conservation with a one-step procedure which enables the pore size and the embedded functional objects to be more easily controlled by changing the raw materials. "Reflective Detection of Limbs' Blood Oxygen Saturation Based on Photoplethysmography" won the Silver Award. This wearable device simplifies long-term physiologic parameter monitoring and reduce the frequency of drawing blood, which helps doctors to discern tissue hypoxia for the patients with diabetes. The Bronze Award goes to "BCI-Teaming Solider," designed by the team from National Chiao Tung University. The device combine Virtual Reality with its unique technology of brain-computer interface which can be applied ahead in UAV, smart home and gaming market.

The Gold Award of Design Category went to "Future Toothbrush for Armless People" from Shandong University of Art & Design.

It increases convince and efficiency for oral cavity cleaning for disadvantaged people with empathy and careful thoughts. "Power Go" from Ming Chuan University won the Silver Award. It is a power bank rental system which solves the urgent needs for people who looks for charging devices. The team from Fuzhou University won the Bronze Award with their work "UV Waterless Faucet." It provides an efficient way for sterilization in drought area without wasting water resources.

To promote the commercialization of the prize-winning entries and foster new business start-up, the LITE-ON Award again partnered with the Ministry of Science and Technology's From Invention to Innovation (FITI) project. The three prize-winning teams in the Technology Category had the opportunity to participate in the FITI project, benefiting from the entrepreneurship classes and guidance activities provided through the project. This collaboration with the FITI project can help the prize-winning teams from the LITE-ON Award to complete prototype verification and formulate start-up plans with respect to the new products and services that they have developed. Those start-up teams that pass FITI evaluation will have the opportunity to compete for the NT\$1 million in seed capital available under the FITI program.

The organizer makes effort to invite prestigious international design masters to the LITE-ON Award for giving speech at the forum and being the jury members of the competition every year. This year, LITE-ON invited Han Wu, Design Director of 2018 Taichung World Flora Expo, Ana Arriola, Director of Facebook Product Design and Dr. Deana McDonagh, Professor of Industrial Design in the School of Art + Design at the University of Illinois (Urbana-Champaign) to share their views on Empathy Design. The audience and the contestants benefit a lot from their precise and diversified perspective.





光寶集團董事長期許

# WORDS FROM THE CHAIRMAN OF LITE-ON GROUP



光寶集團董事長  
宋恭源

宋恭源

光寶以培育創意人才為核心實踐社會共融而設立的光寶創新獎，至今已邁入第十七個年頭，光寶創新獎一路走來盡已所能地支持、補充社會環境之需培植創新設計力。競賽除了提供青創設計者一個能恣意發揮才華的平台，同時透過企業的視角和格局輔佐華人青年創新者實踐他們的理想。另外，光寶也邀請全球具有權威性的新創、設計界專家擔任評審，讓青年創新團隊在台灣，就能直接與國際頂尖的專家接軌。透過舉辦國際論壇，也把專家們在國外最新的經驗，第一手開放分享給在台灣對創新、設計有興趣的人。

今年光寶很榮幸繼續和科技部創新創業計劃 (FITI) 合作，提供技術組的優勝隊伍接受國內最好的創新創業培訓，打開青年科技創新之路。去年獲獎的團隊中，就已經有一隊完成這樣的培訓。同時也非常感謝合作夥伴－台灣默克集團，今年已是持續第四度合作，不論在獎項設計、評選或是全台灣的校園巡迴講座，都給予光寶創新獎最大的支持。

今年許多獲獎作品為針對全球環境的需求所設計，像是長期照顧醫療、汽車電子領域，或是挑戰以腦波控制無人機這樣新穎的技術。甚至有幾件作品商品化的程度相當高。我期許每一年的獲獎，不僅是一個受到肯定的開始，每一位參賽者都可以繼續慢慢學習成就更偉大的夢想與事業。

創新，從來都不是簡單和容易的事情，卻是許多成功的起點。光寶很希望更多華人年輕的一代，能夠繼續投入科技應用的創新，未來有機會發展成傑出的商品、甚至成立品牌、公司，成為改善生活、環境的正面影響力。

LITE-ON Technology believes that innovation is the motive power behind technology evolution. With this belief, LITE-ON Award was set up with an aim to nurture young talents to be the innovative power of IT industry 17 years ago. LITE-ON, who makes efforts to fulfill its vision on Corporate Social Responsibility, commits itself to encouraging young innovators to bring their creativity into full play through LITE-ON Award, providing them with opportunities and support for developing their future. In addition to organizing the competition and giving awards, LITE-ON invites leading international experts from various fields to serve on the Award jury, where participants are able to interact with them here in Taiwan. Meanwhile, these international professionals also bring their brilliant insight and the latest trends to public via LITE-ON Award Forum.

LITE-ON is honored to partner with the Ministry of Science and Technology to engage in the "From Invention to Innovation (FITI)" project for the third year. The winning teams of Technology Category of LITE-ON Award have the opportunity to participate in start-up incubation to pave the way for creating their own business. Last year, one of the winning team completed the training program successfully. Meanwhile, it is the fourth time that LITE-ON and Merck join hands together to endeavor to ignite innovation momentum from young talents. Merck gives its full support in every aspects of the competition. I would like to take this opportunity to express my sincere appreciation to Merck.

Furthermore, I am very pleased to see that many of the winning entries of this year focus on fulfilling the needs for global issues such as long-term care and one team demonstrates their creativity of deploying BCI (brain computer interface) technology to control UAV. Some of the works even have high potential for commercialization. I would like to encourage each participant that winning the awards is not only the beginning of recognition but it is also an inspiration of moving forward to fulfill bigger dreams and greater achievements to all participants.

Innovation is never easy but it is the beginning of many successful stories. LITE-ON hopes that Chinese descendant of young generation will continue to devote themselves to technology innovation and even to start their own business, develop innovative products or their own brand to bring positive influence to human life and the environment.



**陳炳輝 | Ping-Hei Chen**

台大機械系終身特聘教授 | Distinguished Professor of Mechanical Engineering at National Taiwan University

陳炳輝現為台大機械系終身特聘教授。台大機械系畢業後，於明尼蘇達大學取得機械工程碩士與博士學位，1988 年回國後至台大機械系擔任助理教授，曾擔任經濟部技術處「小型企業創新研發計畫 (SBIR)」技審會召集委員、台大工學院嚴慶齡工業中心主任；研究領域為微機電系統、生物晶片技術、奈米技術、微機電熱傳導流體技術和光電裝置和積體電路包裝。專長領域橫跨機械工程和創投，多次出任經濟部工業局計畫審查委員，積極協助國內新創團隊取得公部門或創業投資資源，幫助新創事業健全發展。研究著作見於超過 60 篇學術報導，90 篇期刊論文，著有 3 本專書論文，擁有超過 10 項發明專利權。

Ping-Hei Chen is Distinguished Professor of Mechanical Engineering at National Taiwan University. He also received the B. Sc. Degree in the same department from National Taiwan University. He then received the M. S. and Ph. D. degree from the University of Minnesota in 1984 and 1988, respectively. Since 1988, he had been an Associate Professor in the Department of Mechanical Engineering at National Taiwan University. He is also the member of Technology Examination Committee of Small Business Innovation Research. His current research interests are MEMS, Biochips, Diamond film wafer, Nanotechnology, Thermal and Fluid Control in MEMS, and Packaging for optical devices and IC. Besides engineering profession, he also assists start-up companies and teams to acquire resource from public departments or venture capitals. Prof. Chen has published more than 60 academic journal papers, 90 conference papers, and ten patents, and three textbook.



**楊秉純 | Dr. Bing-Chwen Yang**

工業技術研究院綠能與環境研究所 副所長 | Deputy Director, Green Energy and Environment Research Laboratories of Industrial Technology Research Institute (ITRI)

楊秉純於 1992 年 9 月從美國賓州州立大學取得機械博士學位後即加入工業技術研究院能源與資源研究所擔任研究員從事能源技術相關研究工作；先後擔任應用熱傳研究室主任、熱流組副組長、住商節能組組長等職；並於 2011 年 4 月代表台灣派駐位於日本東京的 APERC (Asia-Pacific Energy Research Centre) 擔任主任研究員，協同亞太地區其餘國家代表從事能源政策及供需之統計分析工作；並在 2012 年 12 月回國先後擔任工業技術研究院綠能與環境研究所企劃組及產業發展推動組長，隨後於 2015 年 2 月起擔任工業技術研究院綠能與環境研究所副所長。

Dr. Bing-Chwen Yang entered Energy and Resource Research Laboratories of ITRI working as a researcher conducting research on energy technology after obtaining PhD of Engineering Science and Mechanics from Pennsylvania State University of the United States in 1992. He subsequently served as the supervisor of Applied Heat Transfer Research Laboratories, Deputy Director of Heat Flow Section, and Section Director of Energy Saving Technology. In April of 2011, Dr. Yang represented Taiwan as the team leader at APERC (Asia-Pacific Energy Research Centre) in Japan. During that time, he cooperated with representatives of the other Asia-Pacific countries on energy policies and the statistical analysis of the demand and supply. After coming back to Taiwan in December of 2012, Dr. Yang worked as the Section Director of Planning and Industry Development Promotion of Green Energy and Environment Research Laboratories of ITRI. Afterwards, Dr. Yang became Deputy Director of Green Energy and Environment Research Laboratories of ITRI from 2015.



**杜彥宏 | Anderssen Tu**

雙魚創投合夥人暨副總經理 | Partner and Deputy General Manager of Pisces Capital Ventures

國立交通大學控制工程系畢業，國立中山大學電機研究所碩士。曾任德欣創業投資顧問股份有限公司協理、美商思科系統 (Cisco Systems) 產品技術經理、精業電腦股份有限公司系統工程師。現任雙魚創投副總經理、交天使投資俱樂部執行委員、麗智科技股份有限公司執行副總暨共同創辦人。專長領域為創業投資、經營實務、募資策略。任職於精泉科技公司時協助內部流程改進，後續負責促成精泉科技與位速科技的整合。

Anderssen Tu is currently Partner and Deputy General Manager of Pisces Capital Ventures. He received the master degree of Electrical Engineering at NSYSU. He has the extensive experience in the venture capital and technology enterprise mergers and acquisitions, having served as Vice President and co-founder of Rich Media Technology, Assistant Vice President of TSC Ventures, and System Engineer and product manager of Cisco Systems. Taking charge of corporate management, start-up investment and fund raising strategy. He was CEO and now the executive committee of NCTU Angel Club, helping evaluating and activating the young entrepreneur to develop business. During serving in the Mega Technology, Tu helped to improve the internal progress, and was in charge of the consolidation between Mega Technology and Ways Group.



**陳子淦 | TK Chen**

光寶科技影像與視訊方案事業部總監 | Director, LITE-ON Technology IVS SBU

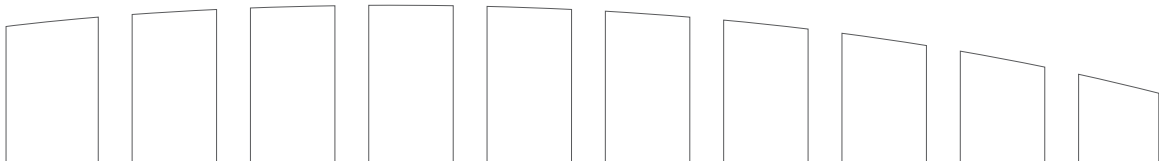
陳子淦總監目前為光寶科技影像與視訊方案事業部協理，負責前瞻影像與視訊產品新事業的研究與發展。陳總監於 2004 年加入光寶，長期負責 portable image device 相關影像產品的研發，策略及全球研發合作工作。2010 年升任手機相機模組產品線總監，負責與歐美、日、韓、台及中國等地的手機及 NB 主要領導品廠商合作產品差異化工作，協助光寶數度榮獲品牌客戶最佳策略供應商及技術合作創新獎的肯定。於 2016 年擔任移動影像事業群技術長期間，協助擴大雙鏡頭及人臉辨識等相機模組在手機及 NB 產品的應用。2016 年底陳總監轉任影像與視訊方案事業部總監後，目前主要的工作為致力於擴大影像相關產品在無人機、機器人、VR/AR/MR、運動及 IOT 相機等領域的應用與服務。

TK Chen is the Director of LITE-ON Technology IVS SBU, responsible for the research and development of the new business of advanced image and video products. Chen joined LITE-ON Technology in 2004, managing strategy and global R&D cooperation for portable image devices for a long time. In 2010, Chen served as the director of camera module product line, dedicating to collaborating with leading smartphone and laptop manufacturers among Europe, North America, Korea, Taiwan, and China in product differentiation. He also helped LITE-ON receive several honorable awards from leading-brand clients such as the Best Strategic Supplier and Innovative Technology Collaboration. During his role as the CTO of Mobile Image BU, Chen help the company to expand camera module applications in duo camera, face detection, and other advanced development in smartphones and laptops. After being appointed as the director of IVS SBU at the end of 2016, Chen is devoting himself to enlarging the application and services of image products in drones, robots, VR/AR/MR, sports, IOT, and other fields.

技術組評審介紹

# JURY'S PROFILE

# TECHNOLOGY CATEGORY





## 設計組初選評審簡歷

## JURY'S PROFILE

## DESIGN CATEGORY

## PRELIMINARY SELECTION



### 約翰蓋格 | Johann Geiger

大葉大學工設系教授 | Professor, Industrial Design department of Dayeh University

約翰蓋格為現任大葉大學工設系教授，曾於德國慕尼黑技術學院工業設計系，取得運輸工具設計專科文憑 (Diploma) 學位。曾任德國 Target Design 公司設計總監，擁有二十多年設計實務經驗，專精於運輸工具設計、工業產品設計，服務對象包括 BMW, HONDA 等知名大廠，也曾主持過保時捷、AUDI 等運輸設計專案，曾參與日本夢幻重機 KATANA 設計團隊，現在以教職延續設計領域上的經驗，也曾擔任過 2010 年度 Computex 評審。

Johann Geiger is Professor of Industrial Design department at Dayeh University. He studied for the diploma of transportation design at Technical University of Munich. He was chief designer at Target Design in Germany, running the studio together with the owner and automotive engineer H.-G. Kasten. He created and supervised of most projects at Target, including the design projects of HONDA, BMW, AUDI and PORSCHE. He also participated the design project of famous sport motorcycle Suzuki Katana as well. He dedicates currently in the teaching program to deliver his extensive experience to young talents. He was invited to be the judge of Computex 2010.



### Matthieu Goddet

神通資訊科技產品設計經理 | Design Project Manager, Mitac International Taiwan

Matthieu Goddet 為現任神通資訊科技產品設計經理，進入神通服務之前，曾任 Era Design 資深工業設計師。2002 獲得法國賽夫爾 Strate 設計學院碩士學位，在工業設計領域深耕超過 15 年，長期在亞洲地區發展，在台灣有 9 年以上的設計經驗，設計融會東西方精神，專長為穿戴裝置設計及行動電子配件。在神通資訊負責協助開發策略、品牌產品線、也曾帶領團隊獲得無數國際設計獎項肯定，如 iF、CES 以及 Best Outdoor Retailer 等產品設計獎項。

Matthieu Goddet currently serves as Team Leader and Design Project Manager of MITAC INTERNATIONAL Taipei, Taiwan. Before entering MITAC, He was senior designer at ERA design. He received the master degree of Industrial and Product Design at Strate School of design in France. He had over 15 year experience in industrial designer in consumer and professional electronic products, spending over 9 years in Asia, especially in Taiwan. He specializes in Mobile & Wearable electronic products, leading MITAC to develop strategic branding business product lines, and receiving numerous international design awards for each product lines, such as iF, CES, and Best Outdoor Retailer.



### 林宗正 | Jabez Lin

和碩設計台北設計中心總監 | Director, PEGA D&E Taipei Design Center

林宗正為現任和碩設計台北設計中心總監，畢業於成大建築系，跨足工業設計逾 13 年，具豐厚的創新產品開發經驗。多次帶領團隊參與意大利米蘭家具展，擅長以交互設計結合家具的創新概念，為和碩拿下設計界魔術師之稱號；熟悉物聯網及軟硬件整合開發之產品設計趨勢。並多次受邀至學術機關分享產業經驗、參與國際論壇、主持設計工作營等。並曾帶領團隊拿下 iF 產品設計獎、日本 Good Design、中國紅星獎等。最新團隊得獎紀錄為 2016 法蘭克福消費品展，獲大會趨勢導覽團評選參展作品冠軍。

Jabez Lin has been the director of PEGA D&E Taipei Design Center since 2002. He was graduated from Department of Architecture at National Cheng Kung University. Except for the professional training of architecture design, he also extends his design experience in industrial design field for over 13 years. Devoted in the innovative concept of interaction between design and house products, Lin led his design team to participate Fuorisalone Milan for several times, and earn the title "The Magicien of Design" for PEGA D&E Taipei. Lin and his team have received awards from iF, Good Design, China Red Star. The latest honor is the Champion of ILS in Ambiente Frankfurt 2017 for the lighting fixtures.



### 李建國 | Sean C.K. Lee

iF 國際論壇設計有限公司亞洲子公司總經理 | Managing Director, the iF Design Asia Ltd

李建國現任 iF 國際論壇設計有限公司亞洲子公司總經理，為 iF 海外分公司負責人，擔任華人與歐洲之間文化與經濟交流之橋樑，常受邀擔任創意設計大賽之評審委員。曾任職於中華民國對外貿易發展協會設計推廣中心 (TDC 前身)，期間曾擔任設計雜誌主編、負責「國家產品形象獎」及「臺灣精品」之評審作業；管控 ICSID '95 TAIPEI 世界設計大會文宣品設計，輔導企業改善商業設計、建立企業識別體系有多年之經驗。並曾擔任 Hannspree 之設計部門主管。李總經理畢業於大同工學院工業設計系，並於台灣科技大學設計研究所取得碩士學位，曾赴德在職研修工業設計。

Sean C.K. Lee, Managing Director, the iF Design Asia Ltd., works as a design service provider and manages the iF subsidiary to be a platform to promote cultural and economic networking between Greater China and Europe. Lee worked most of the time in the Design Promotion Center (predecessor of TDC) of Taiwan External Trade Development Council (TAITRA). During the time, he has been the Chief Editor of quarterly magazine "Products and Packaging Design" and was involved in organizing the international design congress ICSID '95 Taipei. In addition, he was responsible for intensifying business relations between Germany and Taiwan on behalf of CETRA in Taiwan Trade Center, Düsseldorf, Germany. Lee also worked for IT industries in the field of sales and marketing, and was once in charge of the design team of Hannspree Inc. Lee holds a bachelor degree in ID of Tatung Institute of Technology and a master degree of National Taiwan University of Science and Technology. He was also sent to Germany for an extending study in ID in 1993-1994.



### 莊育昇 | Yu-Sheng Chuang

薩巴卡瑪國際有限公司設計經理 | Design Manager, Subkarma

莊育昇現職薩巴卡瑪國際有限公司設計經理，同時兼任東海大學工業設計系講師。作品曾多次入圍多項設計大獎，包括金點設計獎、全國 LED 照明應用大賽、G-Design 創新科技組銀賞。莊曾於 2014-2016 台中光影藝術節，負責光影互動裝置藝術專案執行，擅長領域為工業設計、產品識別設計、展覽空間規劃設計。

Yu-Sheng Chuang is the Design Manager at SUBKARMA, also the part-time lecture in Tunghai University Industrial Design Department. His works have been nominated for several design contests, including Golden Pin design award, National LED Light contest, and was selected silver award in G-Design Innovation Technology section. He executed the project of Taichung Light Festival during 2014-2016. Chuang's expertise includes the industrial design, product recognition design and exhibition space design.



## 設計組決選評審介紹

# JURY'S PROFILE

## DESIGN CATEGORY FINAL SELECTION



### Ana Arriola

Facebook 產品設計總監 | Director of Product Design, Facebook

Ana Arriola 現為 Facebook 產品設計總監。2013 年於加州創辦品牌設計顧問公司 Minimalisms，擔任執行長與創辦人角色，擅長從人本、極簡和純粹的設計觀點，為企業品牌提供設計諮詢服務。Ana 曾任三星 UX 視覺和數位家電設計全球副總裁，帶領三星團隊設計多項創新產品。設計作品橫跨歐美亞各地，從全球經驗汲取極具世界觀的設計經驗，與各國的設計師都有緊密的交流。其創辦的 Monohm 工作室，發明全球第一台 Runcible 電子設備，具通話、上網等功能，以不干擾使用者為目的，企圖擺脫智慧手機的制約，追求最原始的通訊需求。Ana 與眾多科技品牌皆有合作經驗，曾在 Sony 東京創意研發中心，擔任資深 UX 及藝術指導總監，期間負責開發及建立使用者經驗的運作，運用於各項 Sony 的產品線，如 Bravia 4K、Xperia、Vita 和 PlayStation 等。Ana 也曾於 Apple 和 Adobe 等公司擔任資深產品經理，協助開發 Mac OS 的互動設計，Ana 也是 2016 國際設計大獎 IDSA 的評審委員。

Ana Arriola is the Director of Product Design at Facebook. She also runs a bespoke discreet product design consultancy working on advanced concept development, research, and planning – Minimalisms since 2013. She celebrates the renegade spirit of California by designing products and experiences that are – Human, Simple and Authentic. Previously, she was the Global VP of UX & Design at Samsung for Visual Display and Digital Appliances. Ana Arriola works with craftspeople around the world, having designed iconic objects and experiences such as the world's first heirloom electronic – Runcible, designed by her own studio, Monohm. This innovative device aims to help users getting rid of the control by smartphone, and offering the pure and basic function for human communication. Previously, she has led multidisciplinary teams of industrial design & CMF, visual & interactive design, and product management focused on product design at Apple, PlayStation, Sony, Theranos, Adobe. During her tenure with Sony, Arriola was Senior Director and UX& Chief Art Director of Creative Center in Tokyo, directly responsible for establishing, defining, and driving Sony's common UX across all 5-screens known as "genome" from Bravia 4K, Xperia, to Vita, ending with the PlayStation 4 console and connected experiences.



### 吳漢中 | Han Wu

2018 台中世界花博設計總監 | Design Director, 2018 Taichung World Flora Exposition

吳漢中為 2018 台中世界花博設計總監、2016 世界設計之都執行長、「Career for Change」翻轉工作發起人、我們創造事務所共同創辦人。同時也是台灣大學建築與城鄉研究所碩士、美國杜克大學企管碩士 (MBA, Duke University)，嘗試用對美學和管理兩個領域的專業，實踐社會創新。曾任職於亞洲開發銀行、世界文化遺產基金會與社會企業若水國際等顧問諮詢，服務客戶包括春水堂、薰衣草森林、味丹與國家文化藝術基金會等，提供包含文化、社會與商業三重影響力的創新顧問服務。曾受邀於 TEDxTaipei 年會等專業論壇演講。專書著作《美學 CEO》，內容被納入杜克大學商學院行銷策略課程、台政大商管學院及設計藝術學院相關課程指定參考書。

Han Wu is the Design Director of 2018 Taichung World Flora Exposition, the CEO of 2016 World Design Capital, and also well known as the founder of project “Career for Change,” the co-founder of WeCreateLab. He received the master degree of Graduate Institute of Building and Planning at National Taiwan University, and has MBA degree at Duke University. He has professional knowledge both in aesthetic and management, devoted to search the social innovation evolution and practices of management. Han Wu used to serve as consultant for Asian Development Bank and World Monuments Fund, assisting the private and public enterprise, such as Chun Shui Tang, National Culture and Art Fund, to build brand image and to provide the consultant service from cultural, social and commercial perspectives. He was invited to give lecture by TEDxTaipei for annual TED conference. His writing Aesthetic CEO is chosen as reserved book by the marketing strategy program in Duke University and National Taiwan University.



### Deana McDonagh

伊利諾大學厄巴納 - 香檳分校工業設計系教授 | Professor, Industrial Design in the School of Art + Design at the University of Illinois (Urbana-Champaign)

Deana McDonagh 為伊利諾大學厄巴納 - 香檳分校工業設計系教授，同時也在貝克曼高等理工學院的設計課程任教。任教於伊利諾大學之前，McDonagh 曾在英國考文垂大學擔任研究人員，研究領域專注在使用者中心設計和情感設計，重視設計師在作品的情感投射，與使用者的經驗連結。Deana McDonagh 在世界各地皆有受邀參與論壇與演講的紀錄，分享自身的研究成果，並鼓勵設計師將生命經驗融入產品設計和創新當中，以發覺使用者最真實的需求。2013 年開始兼任設計顧問機構 Herbst Produkt 的設計顧問總監，將專業建議延伸到醫療、電子輔具和一般消費產品。另外，Deana McDonagh 從 2014 年起，固定出任艾迪生創新發明獎的評審委員。

Dr. Deana McDonagh is a Professor of Industrial Design in the School of Art + Design at the University of Illinois (Urbana-Champaign) and faculty at the Beckman Institute of Advanced Science and Technology. Prior to joining the University of Illinois she was a Reader in User-Centred Design at Loughborough University in the UK. She is an Empathic Design Research Strategist who focuses on enhancing quality of life for all through more intuitive and meaningful products, leading to emotional sustainability. Her research concentrates on emotional user-product relationships and how empathy can bring the designer closer to users’ authentic needs. Deana McDonagh regularly gives presentations worldwide (from China to Champaign!) on Empathic Design approaches to product development and innovation. She is also Director of research at Herbst Produkt, employing 'empathic design research strategies' to elicit unmet user needs in the area of medical products, assistive technology and mainstream consumer products. She is also one of the jury members of Edison Awards nominations review committee since 2014.

# ENTRY COLLECTIONS OF 2017 LITE-ON AWARD

得獎作品介紹





# 新型多孔二氧化鈦複合微球

Novel Porous TiO2 Composite

突破以往多孔材料的繁瑣步驟，只需單一製程即可將有機及無機材料結合形成多孔微球，並能因應各式需求改變孔洞大小及鑲嵌的功能性粉末。在添加磁性功能粉末的二氧化鈦多孔複合微球應用上，由於其大孔結構及高表面積，做為光觸媒及染料敏化型太陽能電池的材料時，效率將大幅提升。在綠色能源及環保上都能有極大的貢獻。

Unlike the traditional procedure, the Porous TiO2 Composites with carbon coating on the surface can be produced by a one-step process. The simple process can easily control the pore size and the embedded functional objects by changing the raw materials. In practical application, the porous TiO2 and ferrite composites with high specific area and porosity can largely enhance the conversion efficiency of dye sensitized solar cell and photocatalytic activities of TiO2.

|            |  |
|------------|--|
| 設計者        | 張家豪                                      |
| 指導老師       | 李嘉甄                                      |
| 學校         | 台北科技大學                                   |
| 地區         | 台灣                                       |
| Designer   | Jia-Hao Jhang                            |
| Instructor | Chia-Chen Li                             |
| School     | National Taipei University of Technology |
| Area       | Taiwan                                   |



 GOLD  
AWARD



## 基於光體積變化描記圖之肢體 血氧飽和濃度反射式檢測法

Reflective Detection of Limbs'  
Blood Oxygen Saturation Based On  
Photoplethysmography

一般難以用肉眼判斷人體局部組織是否處於缺氧狀態，因而可能造成手術成效不佳或耗費更多醫療資源。傳統抽血量測雖然可精準得知當下血液中氧氣含量與血氧飽和度等生理資訊，但人體無法承受過於頻繁的抽血，故無法進行連續性監測。然而血液對不同波長光線產生偏折與吸收，本研究利用多光源反射式光感測器，應用嵌入式微控制器接收光源變化訊號，計算出人體受測組織之 SpO2 數值，並透過 USB On-The-Go 技術，將接收數值傳輸至智慧裝置，實作出一項可偵測人體四肢表面部位之 SpO2 感測系統。開發成為穿戴式設備後，將可達成醫療生理資訊之長期監控。

It is difficult to discern tissue hypoxia with naked eyes, which might contribute to ineffective surgery or waste of medical resources. Although the traditional way of blood drawing can accurately measure the blood oxygen content, saturation and other physiological parameters in the vein, human's body can't tolerate too frequent blood drawing. Therefore, continuous detection is impossible. Since the blood refracts and absorbs the light with different wavelengths, this study employs the multiple-light-sources reflective light sensor and the embedded micro controller receiving the changes of light signal to calculate the SpO2 in the detected tissue. Through USB On-The-Go technology, the figures will be transmitted to smart devices. This system can be used to check SpO2 on the surfaces of four limbs. After being developed into wearables, it can monitor the physiological parameters over a long period.

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| 設計者        | 林韋廷                                      |
| 指導老師       | 段裘慶                                      |
| 學校         | 台北科技大學                                   |
| 地區         | 台灣                                       |
| Designer   | Wei-Ting Lin                             |
| Instructor | Chiu-Ching Tuan                          |
| School     | National Taipei University of Technology |
| Area       | Taiwan                                   |



 SILVER  
AWARD



# 腦波數位戰士

BCI-Teaming Solider

本作品的概念是未來數位戰士，本團隊開發之新式腦機介面系統，透過物聯網傳輸連結，可直接操控無人機 (UAV) 監視戰場與遠端武器射擊。腦機介面系統採用乾式電極方便穿戴，無線即時傳輸分析與精準的腦波訊號判讀演算法。未來腦波數位戰士可隨心所欲地透過腦波控制無人機飛行方向來偵查敵人及武器發射。

The concept of this project is the future EEG-teaming solider. We have developed a brand new Brain Computer Interface (BCI) system which can directly control the UAV and trigger the weapon through the internet of things (IoT). The novel features of the proposed BCI system are 1) easily donned and doffed by using dry electrode, 2) real-time wireless transmission and analysis in the real environment, and 3) the high accuracy of the EEG signal processing algorithm. In the future, the EEG-teaming solider can easily and remotely control UAV and weapons for monitoring and shooting in the battlefield. This design can directly control drones in the simulated environment by our brainwave. We also have developed brand new algorithm and take dry-electrode brainwave-detect helmet that can simply put on and go. It is very convenient to use in the general environment. The only thing you need to do is put on the brainwave-detect helmet and stare at the flash screen through which you can detect the environment ahead of you.

|            |                                |
|------------|--------------------------------|
| 設計者        | 張惟喬、鄒恆安                        |
| 指導老師       | 柯立偉                            |
| 學校         | 交通大學                           |
| 地區         | 台灣                             |
| Designer   | Wei-Chiao Chang, Heng-An Tzou  |
| Instructor | Li-Wei Ko                      |
| School     | National Chiao Tung University |
| Area       | Taiwan                         |



 GOLD  
AWARD



## 無臂人士的未來牙刷

### Future Toothbrush for Armless People

此未來牙刷能幫助無臂人士以高效、便捷且安全的方式刷牙，改善刷牙時的不便。牙刷包含三個部分，分別是脈沖水牙套（清洗上下兩排牙齒）、壁掛清洗盒（存放和清洗牙套）、無線充電插頭（為前兩者充電）。運用的技術包含：水流脈沖、壓力傳感、體感檢測、無線充電和水循環技術。

This future toothbrush can help armless people brush their teeth in an efficient, convenient, and safe way, eliminating the inconvenience as they brush the teeth. The toothbrush contains three parts, which are a water pulse tooth sheath (to clean teeth), a cleaning box that can be hung on the wall (to keep and clean the sheath), and a wireless charging plug (for charge the sheath and the box). The technologies involved are water flow pulse, pressure sensing, somatosensory detection, wireless charging, and water cycle.

|            |                                     |
|------------|-------------------------------------|
| 設計者        | 劉成傑、劉謀遠                             |
| 指導老師       | 林宇峰、劉志剛、付志偉                         |
| 學校         | 山東工藝美術學院                            |
| 地區         | 中國                                  |
| Designer   | Chengjie Liu, Mouyuan Liu           |
| Instructor | Yufeng Lin, Zhigang Liu, Zhiwei Fu  |
| School     | Shandong University Of Art & Design |
| Area       | China                               |





# 行動電源租借站

Power Go

行動電源租借站能解決手機突然沒電、無時間等待充電的問題。租借站設置於捷運站，使用者只需事先登記註冊，將悠遊卡放置扣款感應處，即可拿取有燈示的行動電源。行動電源本身附有通用各種型號的手機充電線，且能將手機充電至少 80% 的電量。該行動電源的磁充系統經過特別設計，因此不必擔心有心人士拿取。使用完畢後，以悠遊卡歸還於有設置租借站之捷運站。待行動電源充電後，即可供下一位使用者使用。

Power Go is a concept of power bank rental system which aims to solve the problem that when smartphones are out of battery and there are no chargers at hand, or there is no much time for charging it. Power bank rental centers will be installed at MRT stations. After registration, users can take portable chargers with light signals by placing their Easycard cards on the sensor areas. Each charger is equipped with charging cables that are applicable to all mobile brands. The charging capacity can supply a phone with at least 80% of electricity. Furthermore, since the magnetic charging system has been exclusively designed, the probability of theft is eliminated. After using the chargers, users can return them at any MRT stations which have installed Power Go. The chargers can be used by others again after being charged.

設計者 曾子芸、王郁雯  
指導老師 洪珮芬  
學校 銘傳大學  
地區 台灣  
Designer Tzu-Yun Tseng, Yu-Wen Wang  
Instructor Pei-Fen Hong  
School Ming Chuan University  
Area Taiwan



BRONZE  
AWARD



## UV 環保水龍頭

### UV Waterless Faucet

此產品透過 UV 的消毒技術，能有效的避免水資源的浪費，解決缺水地區的衛生問題，故適用於乾旱地區及醫療場所。

This design incorporates UV disinfection technology to efficiently avoid wasting water and improve the hygienic conditions in places lacking water resources. Therefore, it can be applied to arid regions and hospitals.

設計者 汪少烽、王少宏  
指導老師 林偉  
學校 福州大學  
地區 中國

Designer Shaofeng Wang, Shaohong Wang  
Instructor Wei Lin  
School Fuzhou University  
Area China







## 綠色節能、低污染、 永續環保己二酸化工製程

### Sustainable Adipic Acid Production Chemical Process

此設計為一項綠色、節能、永續環保的己二酸化工製程，其不需在特定條件的環境下進行（如，高溫、高壓、溶劑、高腐蝕性硝酸）；相反的，在室溫和 1 個大氣壓的壓力下，加上臭氧及照射紫外光即可將環己烷，環己醇，環己酮轉變成己二酸，它也同時解決了傳統工業製造己二酸，硝酸氧化過程中產生破壞臭氧層之溫室氣體 N<sub>2</sub>O 與廢水的問題，此外，該製程的產物選擇性高，原物料之利用率亦高。

This team develops a green, energy-saving, sustainable adipic acid manufacturing chemical process. It can be carried out without specific strict requirements of condition, including the high temperature, high pressure, corrosive solvents, and metal catalysts. It also solves the problems that as traditional industry produces adipic acid, the nitric acid oxidation process will generate wastewater and N<sub>2</sub>O gas, which will damage the ozone layer. Furthermore, the choices of the products are more and the utilization rate of raw materials is high.

|            |   |
|------------|---|
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| 指導老師       | 黃國柱   |
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| Designer   | Kuo Chu Hwang, Arunachalam Sagadevan                      |
| Instructor | Kuo Chu Hwang   |
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## 具有多點壓力感測之 新型止血帶

### A Novel Tourniquet with Multi-Pressure Sensor Functions

本裝置整合壓力感測器，並以體表的感測方式，監測洗腎病患瘻管的壓力狀況。加上都卜勒技術，在量測瘻管的同時，可將血流變化進行即時感測，改善臨床反覆調整綁帶，並使用聽診器觀察血流速的繁瑣流程。此外，本設計也具有加壓時間警示與 Wi-Fi 傳輸模組，提供病患移除綁帶的參考，並將壓力與超音波信號傳送到智慧型手機，達到即時監控。

This device combines with pressure sensors to monitor the pressure of fistulas of patients undergoing dialysis in a non-invasive way. With Doppler technique, the constant changes of the blood flow can be detected instantly, which eliminates the troublesome process in which medical staff has to use a stethoscope to observe the speed of the blood flow and repeatedly adjust the strap. The function of informing the pressurized time provides reference to remove straps, while the Wi-Fi transfer module helps send the results to mobiles to monitor patients' conditions in real time.

|            |   |
|------------|---|
| 設計者        | 李齊、王梓議、王正元、陳聖泓、蔡志茂、陳競一  |
| 指導老師       | 杜翌群   |
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| 地區         | 台灣  |
| Designer   | Chi Li, Zi-Yi Wang, Zheng-Yuan Wang, Sheng-Hong Chen, Chih-Mao Tsai, Jing-Yi Chen |
| Instructor | Yi-Chun Du  |
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## 紫外光殺菌洗衣球

### UVNICE UV Laundry Ball

衣物洗滌後在室內風乾，不僅可能產生令人不適的霉味，在陰暗潮濕的室內空間更易滋生霉菌及細菌。UVNICE 優必耐團隊據此設計出「紫外光殺菌洗衣球」，以極簡便的方式完美解決衣物殺菌與曝曬不足的問題。洗衣的同時置入洗衣球，其會根據環境光線及晃動自動啟用，將衣物、水及洗衣槽細菌抹除，帶給衣物舒爽潔淨的清新氣息。洗滌完畢後將其取出，並放置無線充電座上，下次即可再次使用。

Clothes may give off an unpleasant, musty smell if dried by being hung indoors. They might even become the breeding grounds for molds and germs especially when indoor environment is quite damp. UVNICE designs UV Laundry Ball to solve this problem. The laundry ball will be activated by the vibrations and the changes of lights in the washing machine. Then, it will sterilize clothes and the interior of the machine altogether. After being recharged with the wireless charger, the ball can be reused again.

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Company UVNICE  
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## 可回收式光觸媒

### Recyclable Photocatalyst

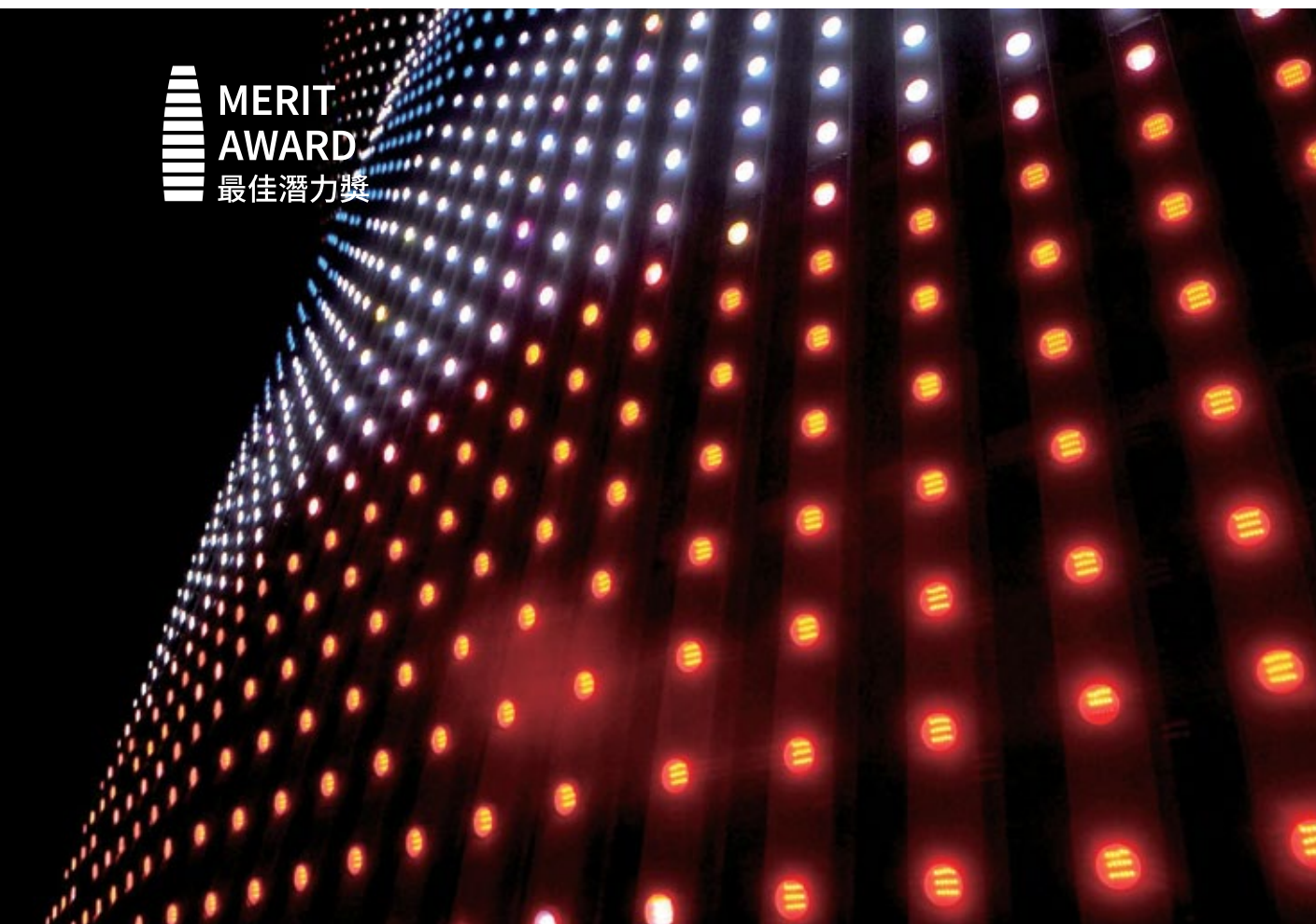
此作品發想於光觸媒應用於有機廢水處理上所遭遇的問題—光觸媒不易從放流液中分離與回收。概念在於利用電鍍廢液與鋼板酸洗液做為磁性光觸媒的起始原料，將廢液適當處理後，製作出具有磁性的光觸媒核心材料，再將具有催化特性的 TiO<sub>2</sub> 塗佈於核心材料的表面形成殼層材料。為提升光觸媒催化性質，在核心與殼層材料之間塗佈 SiO<sub>2</sub> 阻障層，並將具奈米銀粒子散佈於殼層。回收的光觸媒進行後續的熱處理後，可再次有效地處理有機廢水，因此，這些磁性光觸媒將可被應用於有機污水處理廠內甚至是河川之淨化作業，達到資源循環利用與永續發展的目標。

This work is designed to solve the problem that photocatalysts are difficult to be separated and recycled from the effluent in the treatment of organic wastewater. The concept is to use electroplating effluent and steel pickling liquor as the main materials. After those liquids have been properly treated, they are turned into magnetic core materials of photocatalysts. Then, TiO<sub>2</sub> with catalytic characteristic is coated on the surface of the core as the shell material. To enhance the catalytic capacity of photocatalysts, SiO<sub>2</sub> barrier-layer is set between the core and shell materials and the nano-sized silver particles are dispersed on the TiO<sub>2</sub> shell. The recycled photocatalysts can still efficiently treat organic wastewater after heat treatment. Therefore, they can be applied to the purification of organic wastewater in industrial plants and rivers in a sustainable manner.

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(示意圖)

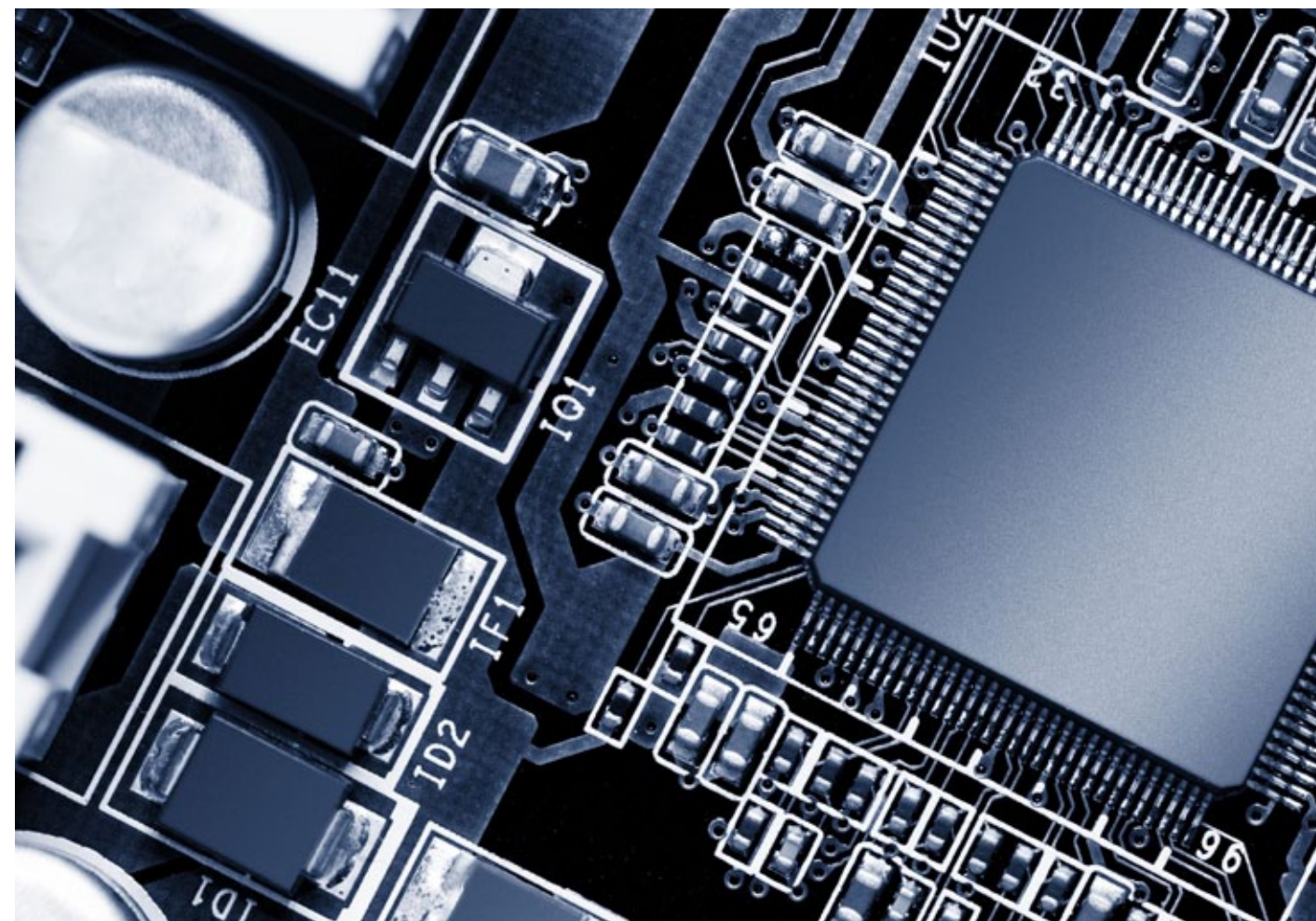
## 類太陽光有機發光二極體

### Sunlight-style Organic Light-Emitting Diodes

太陽光隨日夜有不同的光色變化，滿足我們日夜作息不同的需求。但市場上現有的人造光源，色溫較高且可變範圍狹窄，僅適合用於白天工作的照明。為仿效如同日光般照明，此設計使用 OLED 技術研製出類太陽光 OLED，採用紅、藍、綠三種太陽光互補色發光體，並在元件結構中間加入一薄載子調制層，使其有大範圍色溫變化。對於冬天或長期無陽光照射的地區，如高緯度國家，將有重大幫助。

The variations in color and illuminance of sunlight correspond to the circadian rhythm of human beings. However, the existing artificial light source has a relatively limited range of color temperatures and only suitable for daytime activities. To imitate the patterns of sunshine, this project develops the quasi-sunlight OLED. By using three sunlight complementary emitters and adding a carrier modulating layer in the device, OLED can possess a wide range of color temperatures. It can be a substitute for sunlight in the high-latitude countries, where people have little amount of sunlight in winter.

|            |   |
|------------|---|
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| 指導老師       | 周卓輝                                     |
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(示意圖)

## 超高密度之特高頻微型積體化功率轉換器

### Ultra-High Power Density VHF Miniaturized Integrated Power Converters

此設計實作出操作在特高頻的諧振式電源轉換器，達成超高密度之微型積體化功率轉換器。其採用 Class-Phi 諧振式架構，使用新穎的氮化鎵元件作為開關電晶體，利用 IPD 製程達到微小化的被動元件，並以覆晶方式結合 CMOS 開極驅動器達到積體化的成品。此電源轉換器的切換頻率可達 240MHz，而面積只有 51.75 mm<sup>2</sup>，體積也僅為 64.15 mm<sup>3</sup>。量測所達到最大轉換效率為 61%，其功率密度為 55(W/cm<sup>3</sup>)，為目前文獻所達到的最高值。此特高頻的諧振式電源轉換器未來可應用在如汽車電源、可攜式裝置上。

In this work, a power supply in package is proposed, fabricated, and tested. The results successfully demonstrate a SiP power supplier with a very small footprint. This design is known as the first demonstration combining CMOS, GaN, and IPD technologies for a high speed DC-DC converter. The switching frequency of this VHF power converter is around 240MHz, the measure is 51.75 mm<sup>2</sup>, and the volume is only 64.15 mm<sup>3</sup>. The maximum conversion efficiency is 61% and the power density is 55 (W / cm<sup>3</sup>). It can be applied to automotive power, and wearables in the future.

|            |                               |
|------------|-------------------------------|
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# 基於深度學習之單目車距量測系統

## Vehicle Distance Estimation Based on Deep Learning Using Monocular Camera

先進駕駛輔助系統（ADAS）已被證明可減少交通事故的發生。目前多以感測器融合技術和機器學習來達到系統功能的精確性。本次作品包含：一、基於深度學習單目視覺車距量測系統二、光學模組設計 - 雙鏡頭單一感光元件之感測系統以上實作可達到即時運算的目標。

Driver inattention and misjudgment are the major causes of car accidents. Extensive research has proved that Advanced Driver Assistance Systems(ADAS) can significantly reduce the number of these accidents. Since all perception sensors have their own weaknesses, Sensor Fusion and Machine Learning are crucial to achieve functional safety. We have built a monocular visual processing system which can estimate vehicle distance based on Deep Learning. Moreover, an optical module design ( binocular lens with a single CMOS sensor ) will greatly reduce the computational complexity of typical stereo camera system and get real-time results.

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# 機場行李辨識系統

## Luggage Passport

「Luggage Passport」透過整合機票、機上座位、行李運輸帶的方式管理行李，讓乘客從此不需要再操心自己的行李。將顏色跟無線晶片整合行李條碼，透過無線感應讓行李輸送帶上方螢幕顯示該乘客座位，讓使用者可以更清楚確認自己的行李的位置，且能降低拿錯行李的機率。另外，乘客可以掃描機票上的QR code 來登入自己的管理行李 app，隨時確認行李的位置，轉機時也可以確認行李是否有抵達目的地。

Luggage passport integrates airplane tickets, on-board seats, and luggage conveyor belts to manage luggage in airports, dispelling passengers' worries about their baggage. It assigns different colors to baggage tags and baggage claim tickets, showing the seats of passengers on the screens above conveyor belts through RFID. In this way, passengers can identify their luggage more easily which will reduce the probability of taking wrong luggage. Moreover, they can manage their luggage with App by scanning the QR codes on airplane tickets to locate their luggage anytime. Passengers can also make sure whether their luggage has arrived in destinations when connecting to another flight.

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## 淨水樞紐

### Water Purification Hub

透過結合淨水系統模組與廢舊的塑膠瓶，此設計以簡易的方式解決貧困地區水汙染的問題。此外因該產品僅保留了汙水淨化技術最核心的部分，從而大幅節省製作成本；較小的體積也節省了運輸空間與費用。

By combining the water purification system module with plastic bottles, this design can easily solve the problem of water pollution in impoverished areas. Since this product only keeps the core part of sewage purification technology, the production costs can be substantially reduced. Also, its smaller size can economize on the space and transportation costs.

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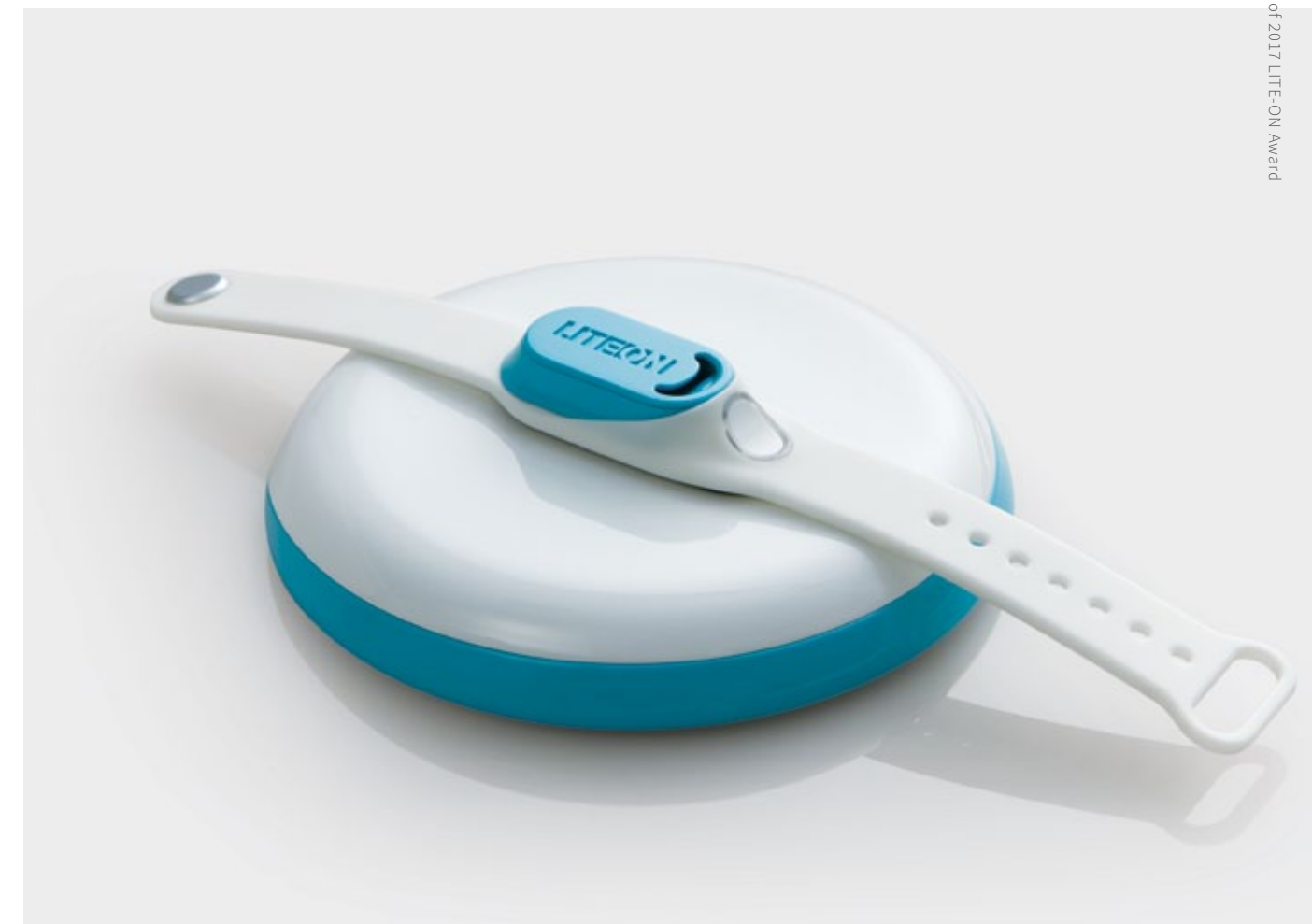
## 糖友健康手環

### Circle Life

「Circle Life 糖友健康手環」是專為糖尿病患設計的穿戴裝置，幫助糖尿病友輕鬆掌握自己的健康狀況。透過電極片檢測血糖，以及使用微針技術的胰島素貼片，讓監測與注射胰島素更加容易，不用見血挨針，就能輕鬆控制血糖。資料也會隨時上傳醫療雲端，除了讓患者可以配合行動裝置隨時做健康管理，也能讓家人即時掌握患者的健康狀況，還能協助主治醫生評估病況。

Circle Life is a wearable designed for diabetics to easily monitor their health conditions. By using a non-invasive low-current glucose sensor to check the glucose concentration and insulin patches with micro-needles to perform the insulin injection, this device simplifies the way of detecting glucose level and injects insulin without causing any pain. Furthermore, Circle Life can upload the detected information to the Internet in real time. With mobile devices, not only diabetics can conduct health management anytime, but also their families are able to understand their health conditions immediately. As for the doctors, Circle Life can help them in evaluating patients' health conditions.

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指導老師 陳圳卿、范政揆  
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## 盲人輔助識別色彩手環

### Color-Distinguishing Bracelet

視障朋友的世界裡只有味道、形狀和聲音的概念，缺少了色彩，造成他們搭配衣服時的困難，甚至導致無法擁有自己穿衣風格的自卑感。這款手環，透過把各種顏色與不同氣味聯繫起來，協助視障朋友辨別衣物顏色，使生活更加便捷，並建立自信。傳達不同的族群應享有同樣權利的觀念。

People suffering from severe visual impairment can only feel smells, shapes, and sounds of the things around them. Without colors, it is difficult for them to match their clothes. They may even develop a sense of inferiority because unable to establish their own dressing styles. This bracelet associates different colors with different smells to help visually impaired people distinguish the colors of their clothes making their lives more convenient and boosting their confidence. It conveys the idea that different groups of people should possess equal rights.

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| 地區         | 中國                                       |
| Designer   | Mingxia He, Jiacheng Wang, Zhicheng Wang |
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| Area       | China                                    |

## 正確距離

### Right Distance

近年來，兒童與青少年近視人數急遽增加。據調查，近視的主要原因是在書寫和閱讀時，眼睛和書本間距離太近所致。「Right Distance」利用感應技術，測量人眼與書本間的距離，當距離小於 30 公分時，它會投射出警示性文字和圖案，提醒兒童應保持適當閱讀距離；當距離大於 30 公分時，警示性文字和圖案即會消失。透過此簡單的方式，能有效預防兒童近視。

Children and teenagers who become myopic have drastically increased in recent years. According to research, the main reason is that they get too close to their books while writing or reading. This design can efficiently prevent children from reading in a short distance and even becoming nearsighted eventually. With the technology of induction, Right Distance can measure the distance between the eyes and the book. If the distance is smaller than 30 cm, it will project alarming words and pictures to remind children to stay in the proper distance, and when the distance becomes larger than 30 cm, the words and pictures will automatically disappear.

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|----------|--------------------------------|
| 設計者      | 魏啟翀、姚寧燕                        |
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| Designer | Qichong Wei, Ningyan Yao       |
| School   | Guangzhou Academy of Fine Arts |
| Area     | China                          |



**MERIT  
AWARD**  
最佳潛力獎

## 人人都是舞蹈家演奏家

It's U

「It's U」是一款運用觸控板與光導纖維技術的互動裝置服飾。使用者於穿著服飾時，任意觸碰淺色布料就會發出相對應的聲音，故此服飾可以用於即興彈奏和創作。此外每一塊布料亦有相應的燈條，燈條會在觸碰時會發光，離開後即停止，這會增加彈奏時酷炫的氛圍。

"It's U" is a piece of interactive clothing that utilizes the technologies of touch board and optical fiber. It can be used to improvise and create music. When wearing this clothing, users can randomly touch the light-colored fabrics and the fabrics will emit corresponding notes. Moreover, different colors of light bars corresponding to the fabrics can enliven the atmosphere of playing the music. The light bars will glow as being touched and darken when users take their hands off the surface.

|            |   |
|------------|---|
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| 指導老師       | 洪歆慧   |
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| Instructor | Xinhui Hong   |
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| Area       | China   |

## "鱗"聚集—電動刮魚鱗機

Fish Scales Gathering Machine

刮魚鱗的時候，最大的問題就是容易沾黏的魚鱗會四處飛濺，造成廚房清潔困難。「鱗」聚集在前段設計了透明收集防護罩，收集魚鱗以防止其飛濺。此外採用簡單的旋轉設計，內部的鈍刀能在不切割魚肉的情況下去除魚鱗。

The biggest problem of scraping the scales of fishes is that the sticky scales will fly in every direction, making it hard to clean up the kitchen. This design is equipped with a transparent shield at the front to collect scales preventing them from flying. Also, with a simple swirl design, the blunt knife inside of the machine can remove scales without cutting the flesh of fish.

|            |  |
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| 設計者        | 周俊毅、曾慶玲、徐麗、王年文、李昂然   |
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| 學校         | 燕山大學   |
| 地區         | 中國   |
| Designer   | Junyi Zhou, Qingling Zeng, Li Xu,<br>Nianwen Wang, Larry Lee |
| Instructor | Nianwen Wang   |
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LITE-ON Special Award has celebrated its 10 years. LITE-ON partners with global leading company—Merck again to set Special Awards, selecting the most innovative and marketable ideas from all over the globe. Winning entries this year represent brilliant thoughts on facilitating public transportation through advanced technology, assisting earthquake rescue actions and leveraging IoT technology to benefit interaction between human and animals, providing a better future for living beings.

The theme of Merck Special Award this year is “Merck Concept Car.” The winners utilize advanced technology to solve problems of public transportation. The winning entry, “eBus,” incorporates face detection technology with facial expression analytics to monitor whether drivers are fatigued or intoxicated while driving. If any abnormality in drivers’ behaviors are detected, it will promptly send warning messages to prevent car accidents. Another Merck Special Award goes to “YOUR STATION,” which utilizes infrared scanning and face detection to measure the passenger density of each carriage. The result will be displayed on LED panels to assist passengers to discern proper carriages to get on during peak hours.

LITE-ON Special Award encourages entries that combines concepts of innovation, sustainability and marketability with technology of IoT and sensors to improve human life. The winning entry, “Hope Keeper,” aims to help find survivors on earthquake with life-detecting radar. It will send survivors’ locations to rescue workers and even offer them drinking water. This device will significantly increase rescue efficiency and reduce the number of casualty. “Pet Ball,” another award-winning design, utilizes camera modules and IoT applications, allowing pet owners to interact with their pets remotely. The other LITE-ON Special Award is given to “Intelligent Monitoring System for Large Ranch.” Through IoT technology, biomedical treatment and GPS, it simplifies the complicated management and medical treatment tasks on large ranches, improving the working quality and efficiency for the ranch owners.

The winning entries of the Special Award this year not only demonstrate high level of innovation from young talents but also illustrates their concerns of human safety and animal welfare. These entries provide infinite imagination and invigorate new potentials for future life. LITE-ON will continue to join hands with international corporations to motivate young talents to extend their full scope of creating innovative ideas for future better life via technology.

光寶特別獎設立至今已邁入第十個年頭，今年再度攜手全球領導廠商默克 (Merck) 設立企業特別獎，以業界專家的觀點，自全球參賽作品中評選出創新兼具市場性的作品。今年獲獎作品在公眾交通運輸工具的服務與改善、震災救助及物連網的應用領域上獲得評審青睞，作品結合時下先進科技，為生命安全提供更完善的保障。

今年默克以「默克概念車 Merck Concept Car」為主題，獲獎作品皆運用先進的光電科技改善常見的大眾運輸交通問題。作品「e 動巴士智能照護系統」結合臉部辨識與痛苦表情分析等技術，判斷駕駛是否有疲勞或酒後駕車的情形，即時發出警示訊息，遏止交通事故的發生。另一項特別獎作品「捷運分流互動裝置」透過紅外掃描與臉部偵測，判斷車廂內擁擠程度並顯示於 LED 板，以利民眾於尖峰時段搭乘大眾運輸。

光寶特別獎則鼓勵富有創新及永續性、市場性的構想，結合感測器及物聯網技術，進而改善人類社會的作品。獲獎作品「災難補給機器人」整合雷達生命探測儀，於震後災難現場協尋生還者，反饋其位置訊息予搜救人員並提供補給飲用水，大幅提高搜救效率以降低傷亡人數。第二項獲獎作品「寵物球」串聯相機模組與物聯網，使飼主能與寵物進行遠距離互動。另一件得獎作品「大型牧場牛隻智能監控系統」，利用物聯網、生技醫療、GPS 定位技術，簡化大型牧場裡繁複的管理及疾病治療工作，協助管理人員提升工作品質與效率。

今年特別獎獲獎作品不僅展現青年學子豐沛創新的能量，更看見青年創新者對人身及動物安全福祉的關懷，運用科技解決重要議題，為未來生活提供了新的想像與注入創意的活水。未來光寶也會持續攜手國際企業共同向前行，為華人創新能量及打造未來智慧生活貢獻心力。

## 2017 光寶特別獎前言

# INTRODUCTION

# OF 2017 LITE-ON SPECIAL AWARD



MERCK

Exponential growth in technology advancement and the increasing awareness of environment protection have resulted the formation of two major global trends—eco-friendly and intelligent technologies. Nowadays, intelligent technology is taking a big part of our lives even more than before, and expanding its application to smart phone, smart home, and smart car. It is also expected that intelligent technology will be widely applied in other new areas to meet future human needs. With this insight, Merck introduced the concept "Displaying Futures" in Taiwan in 2012, and invited top thinkers from different fields, including architecture, automobile, and industrial design, to depict future life style and identify human needs. The topic of utilizing technology to realize energy saving and intelligent living was one of the most discussed topics. Automotive industry has developed for a long history and is with the high-potential innovations. Many major manufacturers are diligent to develop the lightweight materials, the self-driving systems and improve the energy efficiency. Merck also works with the top automotive brands to apply the innovative materials and launches the "Merck Concept Car."

We are much honored to take part in the LITE-ON Special Award again and invite young designers to propose creative ideas on all kinds of transportations such as airplanes, ferries, high speed rail and even ambulances or fire trucks. Merck believes the innovation is the key of winning for Taiwan and we put education and talent cultivation is the first priority of Merck's social responsibility strategy. As well as Merck help Taiwan become the leading position in display industry, we are happy to partner with LITE-ON to encourage more young designers to develop new technology products that can make life better for the society and people in general.

Merck is the world's oldest pharmaceutical and chemical company, operating for nearly 350 years. The key to this success is the vision of investing in innovative technology that brings value and benefit to mankind. In pharmaceutical business, we have developed new treatments for cancer, infertility, multiple sclerosis and many other diseases, in order to improve the patient outcome and life quality. In life science business, we provide innovative tools and laboratory supplies for the life science industry that make research and biotech production easier, faster and more successful. In performance materials business, Merck is the world's leading liquid crystal material provider, and our products are applied in LCD TV, computers, and smartphones. In the recent years, Merck has developed many new display and lighting materials for OLED, LED, 3D and flexibility technologies, and has enabled the trend of miniaturization in the IC industry. Merck is contributing greatly to the realization of technology life. For over 25 years, Merck has been deeply rooted in the country and has continuously invested to support the local business operation. Merck not only inaugurated the "Liquid Crystal Center in Taiwan (LCCT)" but also opened the "New Technology R&D and Application Lab" in Taiwan. Being a loyal partner of the key players in Taiwan display industry, Merck always stands beside the customers and cooperate with them to break technical bottlenecks and provide real-time key materials and development services, which is to support Taiwan to reach the top position in the global display R&D and production sector. This September, Merck opened the "Asia Region IC Materials Application R&D Center." It will be fully integrated with Merck's global R&D organization to support local and Asia customers in their process development for advanced node design. It shows that Taiwan plays an important role in Merck global strategies.



Dick Hsieh

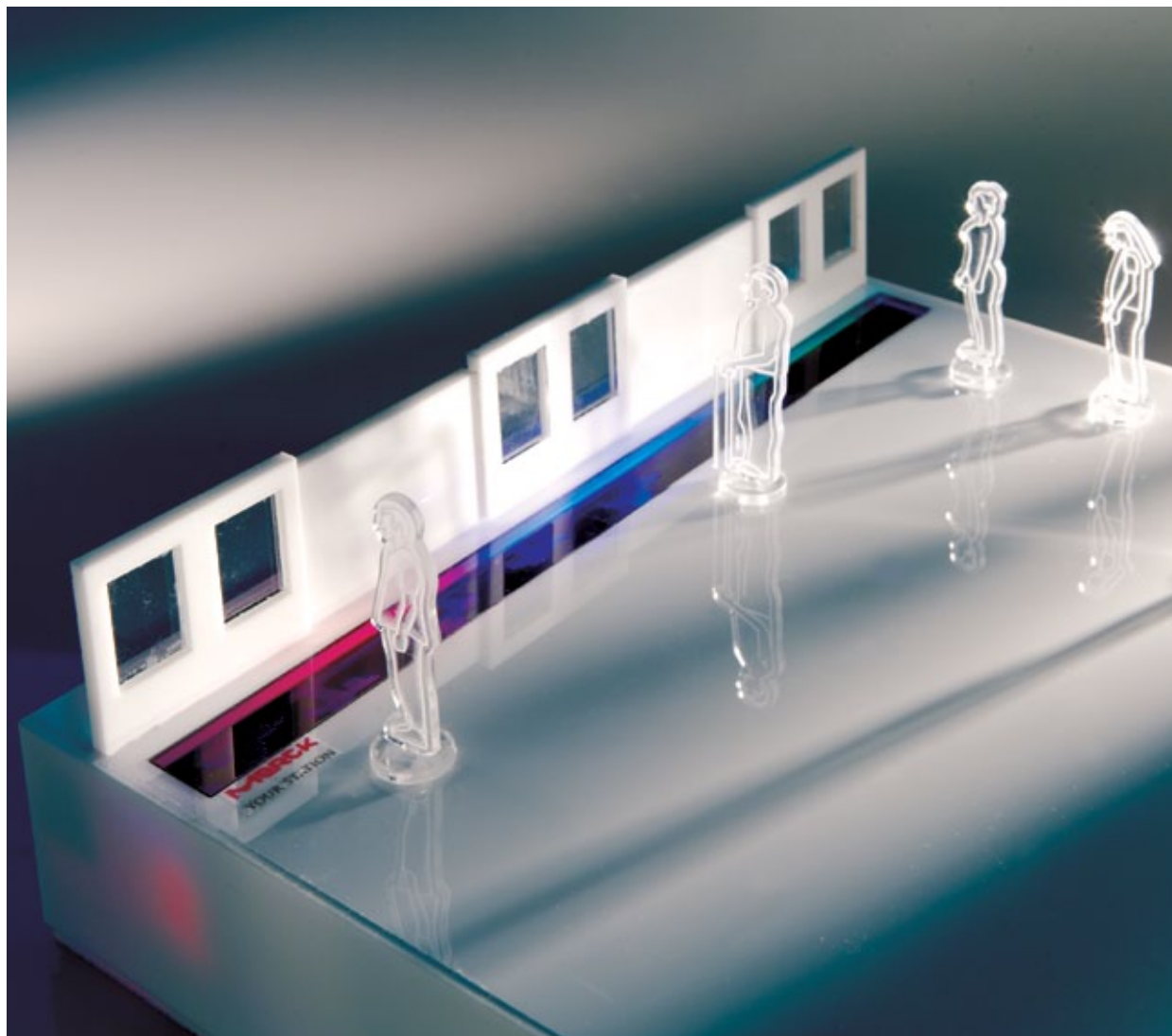
台灣區默克集團 董事長  
謝志宏Managing Director, Merck in Taiwan  
Dick Hsieh

成功經營將近 350 個年頭，默克能成為全球歷史最悠久的製藥與化學公司，關鍵在投入能提升人類生活品質的創新研發。透過三大領域，我們致力於發展提升人類福祉的技術。在醫藥健康方面，我們發展新型治療方法，讓癌症、不孕症、多發性硬化症等病患獲得治療並改善生活品質。在生命科學方面，我們提供實驗室耗材、儀器設備、生物科技及製程相關產品，幫助生技和製藥領域的發展。在特用材料方面，默克為全球液晶材料的領導廠商，所提供的先進液晶材料廣泛應用在電視、電腦、手機等各類液晶面板。近年來默克也投入在新顯示器與照明科技如 OLED、LED、3D、可撓式面板等材料，以及幫助 IC 產品微型化的半導體材料技術，使人類更貼近科技生活。默克身為台灣面板大廠的重要研發夥伴，一直與客戶們站在同一陣線，共同合作來突破技術瓶頸，即時提供亞洲市場關鍵材料開發服務，目標將臺灣在國際顯示器研發與生產地位推向高峰，因此成立「液晶生產暨研發中心」與亞洲第一座「新技術研發暨應用中心」。而今年九月也在高雄成立「積體電路材料應用研究與開發中心」，並與默克全球的研發部門全面整合，以協助台灣本地和亞洲的客戶開發積體電路先進製程，顯示出台灣在默克全球布局中佔有非常重要的位置。

全球高科技呈現蓬勃發展，外加環保意識抬頭、各國政府積極推動節能政策之下，環保節能與智慧科技成為科技應用的兩大趨勢，尤其智慧科技已廣泛應用在人類生活當中，例如手機平板等個人行動裝置、居家住宅生活等，未來預期將擴大延伸至新領域。默克自 2012 年在台灣推出「Displaying Future - 未來新視界」的概念，邀集國內外建築、文創、汽車、設計等專家，共同擘劃未來生活型態，並思考人類的需求，以提出符合未來人們所需的科技產品。而現今汽車可以說是發展歷史悠久但創新程度最高的話題性產業，隨著各大廠投入輕量化與提生能源效率，甚至是自動駕駛的技術與研發，默克同時也與世界汽車大廠共同來開發各式材料的應用，進而推出了「默克概念車 Merck Concept Car」。

默克期待這樣的拋磚引玉，能鼓勵參賽者以液晶、有機太陽能電池 OPV(Organic Photovoltaic)、LED/OLED 等創新材料，在各式交通運輸工具包含飛機、遊艇、高鐵，甚至是負有特殊任務的救護車、消防車的顯示器、照明指示燈、能源等裝置做創意應用，以符合未來生活型態所需。默克深信，創新是台灣的致勝關鍵，而推動人才教育是默克企業社會責任之一。如同將台灣面板產業推向世界領導地位一樣的心情，默克攜手與光寶科技合作，期待培育更多具創新思維的年輕設計師與人才，讓台灣在世界舞台發光發熱，同時也發展出能幫助社會、提升人類福祉的創新科技產品。

## 「默克概念車」引領年輕設計師投身交通工具新革命，以符合未來生活型態所需 "Merck Concept Car" Leads Young Designers to Devote Themselves to Innovating Transportation to Meet the Needs for Future Lifestyle



## 捷運分流互動裝置

### YOUR STATION

YOUR STATION 透過紅外掃描、人臉偵測技術，判斷車廂內擁擠程度，並顯示在候車區的 LED 面板上，幫助等車的民眾選擇較為空曠的車廂，以利搭乘。此設計也結合公共互動藝術，以自由飛翔往返的候鳥為題，為大眾捷運系統增添了人性化與親和力。

"YOUR STATION" is a design to help people easily to find less crowded carriages to get on during peak hours when taking the MRT. It monitors the density of each carriage through infrared scanning and face detection and then shows the results on LED panels for passengers. The design also integrates public interactive art. By using the symbol of migrant birds, "YOUR STATION" humanizes and enlivens the image of public transportation.

設計者 蔡東伯  
指導老師 謝大立  
學校 實踐大學  
地區 台灣  
Designer Dong-Bo Cai  
Instructor Ta-lih Shieh  
School Shih Chien University  
Area Taiwan

**MERCK**  
默 克 特 別 獎



## e 動巴士智能照護系統

### eBus

「e 動巴士智能照護系統」是一套全新且唯一的行車安全解決方案，結合電腦視覺的技術，包含人臉偵測與辨識、影像式生理資訊量測、駕駛行為辨識、疲勞駕駛偵測、酒駕辨識以及痛苦表情分析，可有效監控駕駛者的狀態與行為，進一步提升行車安全。

"eBus" is a latest solution for the safety of transportation. With the technology of computer vision, the system can effectively monitor the status and behavior of drivers by face detection and recognition, image based physiological information measurement, behavior recognition, fatigue detection, drunk driving recognition, and painful expression analytics, which can improve the driving safety.

設計者 林俊賢、黃柏維、吳宜樵、鐘孟良、林子閔  
指導老師 吳炳飛  
學校 交通大學  
地區 台灣  
Designer Chun-Hsien Lin, Po-Wei Huang, Yi-Chiao Wu, Meng-Liang Chung, Tzu-Min Lin  
Instructor Bing-Fei Wu  
School National Chiao Tung University  
Area Taiwan

# 災難補給機器人

Hope keeper

「Hope Keeper」 災難搜救補給機器人可以在地震廢墟瓦礫下自動搜尋生還者，反饋其位置訊息給搜救人員，大大提高搜救人員的搜索效率。同時，「Hope Keeper」 能對生還者給予水補給以及精神補給。透過對講功能，生還者能與搜救人員進行對話。補給完成後將亮起小小的燈，陪伴在生還者身邊，給予受困者希望。

"Hope Keeper" is a rescue robot which can prolong the lives of earthquake victims by providing biological and mental support. It can locate survivors stuck under ruins, and access the spaces which are too tiny or dangerous for human to get, which can significantly enhance the rescue efficiency. "Hope Keeper" can not only offer water but also enable victims to talk to rescuers. The function of communication can substantially inspire human beings' will to survive.

設計者 劉琪、黃海韻、李垚毅  
指導老師 鐘韜  
學校 廣東工業大學  
地區 中國

Designer Qi Liu, Haiyun Huang, Yaoyi Li  
Instructor Tao Zhong  
School Guangdong University of Technology  
Area China



# 寵物球

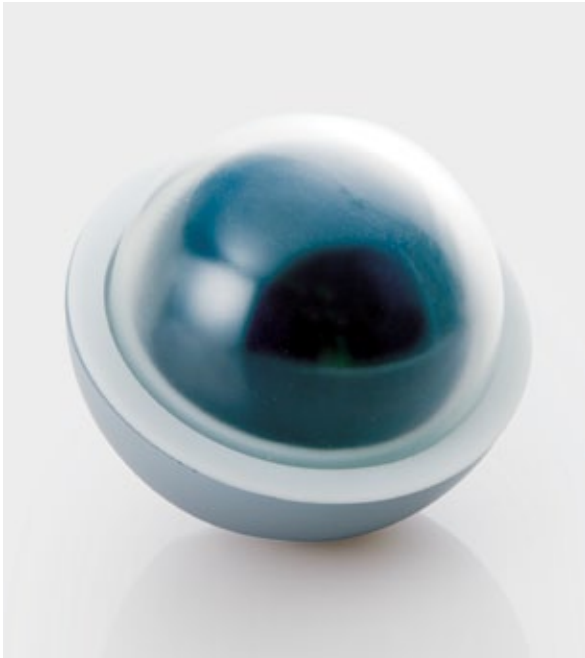
Pet ball

一款通過 Wi-Fi 連接移動設備與寵物視頻互動並且檢測心情的寵物球。主人通過連接手機等設備可以控制寵物球發射出移動的激光，吸引寵物的注意力，使寵物可以追隨激光玩耍。寵物球通過檢測寵物的微表情以及肢體動作來判斷寵物的愉悅度，並紀錄下每個時刻的數據。主人可以在手機上直觀的了解寵物的的心情狀況，給它更多的關愛。

"Pet Ball" connects to mobile devices through Wi-Fi, which enables pet owners to interact with their pets and observe pets' emotions by video. Through devices such as smartphones, owners can make "Pet Ball" produce moving laser beams which can arouse pets' interests and enable them play with the beams. "Pet Ball" can discern how happy the pets are through monitoring their micro-expressions and body movements and record the information at the same time. Owners can directly check the data on smartphones to understand their pets' emotions and give them more love and care.

設計者 馬蘇琪、孟晨嫻  
指導老師 陸軍石  
學校 華東師範大學  
地區 中國

Designer Suqi Ma, Chenxian Meng  
Instructor Junshi Lu  
School East China Normal University  
Area China



# 大型牧場牛隻智能監控系統

Intelligent Monitoring System for Large Cattle Ranch

大型牧場牲口數目眾多，每天的存欄數據統計以及疾病的預防性檢測往往為管理員帶來大量的工作。本設計透過技術監控牛隻位置及健康狀況，並提供無線端的後續應用實施，如存欄管理及疾病治療等，提高管理效率和質量，同時減輕管理員的工作量。

The large number of livestock often brings enormous workloads for administrators, for instance, the daily calculation of livestock inventory and the preventive testing against diseases. This design can monitor the locations and health status of cattle. It also provide a wireless application to help the administrators to manage livestock inventory and disease treatment. In this way, the efficiency and quality of management will be improved and the workload for keepers will be reduced at the same time.

設計者 鄺家健、馮志亨、鍾志森、趙茜雨、鄭紫茵  
指導老師 張勇  
學校 廣東工業大學  
地區 中國

Designer Jiajian kuang, Zhiheng Feng, Zhisen Zhong, Xiyu Zhao, Ziyin Zheng  
Instructor Yong Zhang  
School Guangdong University of Technology  
Area China







### 新型多孔二氧化鈦複合微球 Novel Porous TiO2 Composite

傳統的多孔材料製程步驟繁鎖難以量產，因此我們研發出一全新的多孔材料合成方法使其製備更快速、品質更佳、且更具量產潛力。很榮幸也很開心我們的研發成果得以獲得光寶創新獎的肯定；藉此機會也想特別感謝我的指導老師李嘉甄 教授給予我這個學習的機會，並在實驗室團隊的共同努力下獲得這份殊榮。同時亦想感謝光寶科技提供高專業度的研發競賽平台，邀集各方評審專家進行仔細而嚴謹的審查程序，並給予我們的研發成果高度肯定，使有機會得以讓更多人看見。

The process of traditional porous material is complicated and it is difficult to be put into mass production. Therefore, we develop brand-new “Novel Porous TiO2 Composite” to make the process faster and better the quality to raise the potential of mass production. I feel honored and delighted that our work can be recognized by LITE-ON Award. I would like to give gratitude to professor Chia-Chen Li for giving me opportunity of learning and winning this title with great support from the members of the Lab. Furthermore, I am grateful that LITE-ON Technology provides this professional platform, which invites experts with various background to make fair and careful judgment on the entries. They gave high acknowledgement to the result of our research which enables our project to draw more public attention.

|            |  |
|------------|--|
| 設計者        | 張家豪                                      |
| 指導老師       | 李嘉甄                                      |
| 學校         | 台北科技大學                                   |
| 地區         | 台灣                                       |
| Designer   | Jia-Hao Jhang                            |
| Instructor | Chia-Chen Li                             |
| School     | National Taipei University of Technology |
| Area       | Taiwan                                   |



### 基於光體積變化描記圖之肢體 血氧飽和濃度反射式檢測法 Reflective Detection of Limbs' Blood Oxygen Saturation Based On Photoplethysmography

感謝光寶科技舉辦 2017 年光寶創新獎，此為華人設計類與技術類的競賽聖殿，亦感謝評審無私且專業的審查，讓我有幸可以獲得技術組銀賞佳績，配合台灣推動之長照 2.0 議題，冀望未來能夠將此作品實際應用在老人居家照護與下肢缺血快速檢測上，提供一個客觀且快速的檢測方法，發揮其功效去造福廣大人群。

I am very grateful that LITE-ON Technology organized this competition, which offered a platform for global young Chinese innovative talents to interact with each other. Meanwhile, I am also thankful to the judge panel for their professional and fair evaluation. I am fortunate to win the Silver Award. I hope that my work will exert its strength to benefit the public through providing a rapid and objective test method which can be actualized in long-term home care and rapid test of limb hypoxia.

|            |  |
|------------|--|
| 設計者        | 林韋廷                                      |
| 指導老師       | 段袞慶                                      |
| 學校         | 台北科技大學                                   |
| 地區         | 台灣                                       |
| Designer   | Wei-Ting Lin                             |
| Instructor | Chiu-Ching Tuan                          |
| School     | National Taipei University of Technology |
| Area       | Taiwan                                   |



### 腦波數位戰士 BCI-Teaming Solider

非常感謝光寶科技公司舉辦這次光寶創新獎與創新論壇，同時非常榮幸能得到評審團銅獎的肯定。此次我們腦波數位戰士團隊將 SSVEP 的 BCI 技術以軍事創新應用的方式呈現，首要感謝指導教授神經工程實驗室的柯立偉教授，同時感謝 Sai Kalyan 學長與呂蘊宸學長在此技術上的貢獻。最後感謝辛苦的工作人員，我們會持續努力。

We felt appreciated that LITE-ON Technology organized LITE-ON Award and LITE-ON Award Forum. We also felt much honored to receive the recognition from the jury panel to win the Bronze Award. Our team apply the BCI technology of SSVEP in military filed which is new to this domain. We would like to give gratitude to our instructor, Professor Li-Wei Ko of Computational Neuroscience Lab and senior members, Sai Kalyan and Yun-Chen Lu, for their contribution on this project. Finally, I would also like to thank the LITE-ON Award staff for their hard work. We will continue to move forward.

|            |                                |
|------------|--------------------------------|
| 設計者        | 張惟喬、鄒恆安                        |
| 指導老師       | 柯立偉                            |
| 學校         | 交通大學                           |
| 地區         | 台灣                             |
| Designer   | Wei-Chiao Chang, Heng-An Tzou  |
| Instructor | Li-Wei Ko                      |
| School     | National Chiao Tung University |
| Area       | Taiwan                         |

# WORDS FROM THE WINNERS

## 設計組得獎感言



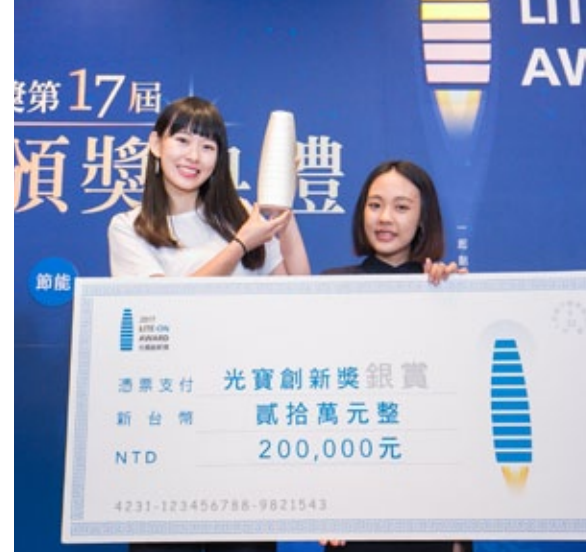
### 無臂人士的未來牙刷

Future Toothbrush for Armless People

能夠獲得光寶創新獎的金賞是我們的榮幸，也感謝光寶集團以及各位評審對我們作品的肯定。我們生活中有一位無臂人朋友，瞭解到他刷牙時的一些麻煩以及市場上這類產品的空白，於是我們設計了這款「無臂人士的未來牙刷」。在我們做整個產品的過程中，我們考慮了一些現有可行的技術，不希望一直讓設計停留在一種概念設計上，我們也希望我們的設計能夠幫助到無臂人士，讓產品真正有社會意義。

It is such a great honor for us to win the Gold Award. We are very thankful to LITE-ON Group and the jury who gave us recognition. We learnt the troubles of brushing teeth that armless people are facing from one of our friends who suffers from it and found the vacancy of this type of device in the market. Therefore, we came up with the idea of "Future Brush for Armless People." During the process of designing, we put technology feasibility at high priority to enable our project to be real rather than a conceptual idea. We sincerely expect that our design to be meaningful to the society and truly help the armless people.

|            |                                     |
|------------|-------------------------------------|
| 設計者        | 劉成傑、劉謀遠                             |
| 指導老師       | 林宇峰、劉志剛、付志偉                         |
| 學校         | 山東工藝美術學院                            |
| 地區         | 中國                                  |
| Designer   | Chengjie Liu, Mouyuan Liu           |
| Instructor | Yufeng Lin, Zhigang Liu, Zhiwei Fu  |
| School     | Shandong University Of Art & Design |
| Area       | China                               |



### 行動電源租借站

Power Go

首先能夠入圍光寶創新獎決選對我們來說就是很大的肯定，在這個華人的設計界奧斯卡獎一起角逐冠軍是非常難得的經驗。在這之中我們學習到非常多，不論是和廠商的接洽或是與其他參賽者的交流。終能獲得評審們的肯定，很感謝一路上協助我們的老師與同學，也能在這次與三位厲害的評審接觸，再次謝謝光寶給我們這個機會及肯定。未來希望我們的作品能繼續發展，更希望能藉此回饋社會。

It's a valuable experience to contest the Gold Award on this prestigious platform with experts from all over the world. Listing as one of the finalist teams is already a great recognition to us. We learnt a lot from the journey of participating in LITE-ON Award, no matter in communicating with the vendors or interacting with other participants. We are very grateful to the teachers and classmates who supported us all the way of the journey. We finally won the acknowledgement from the judges and had the opportunity discuss our project with them in person. We would also like to give our appreciation to LITE-ON for the opportunity and recognition. We expect that our project will be further developed to make contribution to the society.

|            |                            |
|------------|----------------------------|
| 設計者        | 曾子芸、王郁雯                    |
| 指導老師       | 洪珮芬                        |
| 學校         | 銘傳大學                       |
| 地區         | 台灣                         |
| Designer   | Tzu-Yun Tseng, Yu-Wen Wang |
| Instructor | Pei-Fen Hong               |
| School     | Ming Chuan University      |
| Area       | Taiwan                     |



### UV 環保水龍頭

UV Waterless Faucet

感謝光寶科技多年來對華人界設計及技術創新所做的貢獻！設計師創造的是作品，而光寶創新獎創造的是標準。通過環保科技，改善普衆生活質量，反哺公益教育體現社會責任感。最終達到引導設計共識的目的。這也是鼓勵我第三次登上光寶創新獎的舞臺的動力。希望光寶科技的可持續的普世設計情懷可以影響到更多人。最後祝光寶創新獎越辦越好，願未來的參賽接力者回歸初心，為真實的世界而創想，共勉！

I would like to express my appreciation to LITE-ON Technology's continuous contributions on enlightening deign and technology innovation among the Chinese community. Designers create ideas whereas LITE-ON Award create standards. LITE-ON Award realizes social responsibility through encouraging innovation on green technology to improve the quality of life for the public, which also leads to consensus of the purpose of design. It is also the momentum that I participate in the competition for the third time. I hope that the spirit of LITE-ON Award can influence more people. Finally, I wish LITE-ON Award will be better and better and the participants will remember to think of the purpose of design to enlighten the real world by design.

|            |                              |
|------------|------------------------------|
| 設計者        | 汪少烽、王少宏                      |
| 指導老師       | 林偉                           |
| 學校         | 福州大學                         |
| 地區         | 中國                           |
| Designer   | Shaofeng Wang, Shaohong Wang |
| Instructor | Wei Lin                      |
| School     | Fuzhou University            |
| Area       | China                        |



# REMEMBERING THE EVENT

## 活動記錄





# REMEMBERING THE EVENT

活動記錄







光寶創立於 1975 年，以「光電節能、智慧科技最佳夥伴」為願景，聚焦核心光電元件及電子關鍵零組件之發展，致力以資源整合與管理最佳化建立量產優勢。光寶提供產品廣泛應用於電腦、通訊、消費性電子、汽車電子、LED 照明、雲端運算及生技醫療等領域，其中旗下產品包括光電產品、資訊科技、儲存裝置、手持式機構件等皆居全球領先地位。

光寶 40 年來專注於建立量產競爭優勢，將多元化產品組合進行效益最佳化的資源整合與管理，實現優質的營收成長與獲利能力。2014 年光寶順利完成「One Lite-On」九大子公司整併，主要營運策略聚焦於提升資產使用率、運用自動化生產優化產能與效率、推動精實生產改造整體生產流程與效能；長期則著重於實現獲利、穩健營運體質，提升股東權益報酬，期為百年企業的永續經營扎根。

光寶近年來積極由資通訊產業朝向雲端、LED 照明、汽車電子、生醫與工業自動化等五大物聯網 (IoT) 應用領域拓展，積極打造光寶新一波營運成長動能，其豐碩成果涵蓋了 LED 室內外與車用照明等新光源產品、應用於雲端運算中心之電源管理系統及固態硬碟儲存裝置，以及汽車電子的節能產品；電動車充電設備與無線充電、快速充電電池模組等儲能產品。時值全球科技產業正迎來新一波變革，光寶期許在此極具變動與挑戰的時代中，發揮世界級卓越企業的既有優勢，成為全球客戶在發展光電節能與智慧科技之創新及應用時，首選的最佳事業夥伴。

Founded in 1975, Lite-On embraces being "Best Partner in Opto-Electronic, Eco-Friendly and Intelligent Technologies" as its vision to focus on the development of optoelectronics and key electronic components, and strives to build up competitive edge through resource integration and optimized management. Lite-On produces products that are used in a broad range of applications, such as computers, communications, consumer electronics, automotive electronics, LED lighting, cloud computing as well as biotech and healthcare. Lite-On is a worldwide leading provider of optoelectronics, information technology, storage devices, and mobile devices components.

For more than 40 years, Lite-On has concentrated on establishing a competitive advantage in mass production. Through resource integration and management, we maximize the returns from a diverse product portfolio to realize excellent revenue growth and profits. In 2014, Lite-On successfully completed its "One Lite-On" program by integrating nine of its main subsidiaries under one management, while the main business strategy remains focusing on improving resource utilization, automation, production optimization, and streamlined processes for better productivity

and efficiency. In the long-term, the focus is on profitability, sound governance and improving shareholder returns to lay down the foundation for a sustainable century enterprise.

In recent years, Lite-On has been shifting its production focus from IT and communication towards IoT (Internet of Things) applications such as cloud computing, LED lighting, automotive, biotech, and industrial automation. Its current business focuses are aligned with the world's most prominent trends in energy saving products such as new LED lighting sources (indoor, outdoor, and automobile), cloud computing power supply systems, solid-state drives, and automotive electronics. Meanwhile, power storage products such as electric car charging, wireless charging, and fast charging modules are also presenting immense potential.

The global technology industry is now set to welcome a new wave of changes, Lite-On hopes to leverage its existing advantage as a world-class enterprise in this age of changes and challenges to become the partner of choice for global customers developing innovations and applications for photonics, energy-saving and smart technologies.