

Sustainability  
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Taiwan Innotech Expo

台灣創新技術博覽會

2019-2021

Platinum Awards 鉑金獎

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# 2021 鉑金獎

Platinum Awards



專利技術名稱

## 消毒殺菌電動三輪車

ELECTRIC DISINFECTION TRICYCLE

Patent No : (R.O.C. 優先 ) 110207426

專利權人：亞全科技有限公司 / ATOZ -PULLMAN CO., LTD.

發明人：王素英博士 / Dr. Susan Wang



### 專利技術介紹：

消毒殺菌電動三輪車，經由電能驅動，機動穿梭於巷弄間，提供快速噴灑消毒，提升效率的三輪車。

1 騎 2 開 3 點 go~

- 1). 消毒殺菌電動三輪車，節能減碳，永續發展。
- 2). 全方位 360 度、半自動、手動噴灑方式，所經之處無遺漏。
- 3). 車寬 1.2 米設計，可以深入狹窄街道巷弄值動。
- 4). 500 公升大容量儲液桶設計，對照傳統一次出動 20 公升 / 每人，要 25 人次才能達到與 PULLMAN 相同的效率，25 比 1 的人力節省差異。
- 5). PULLMAN 僅需目前大型消毒殺菌車十分之一的預算，經濟型投資高效益。

6). 三合一功能—消毒防疫、農業噴灑、街道降溫清潔灑水，登革熱、瘧疾、COVID-19 OUT。

7). 藉由手持噴灑器及軟管配置，可延伸噴灑距離 50 米以上，增加消毒殺菌的範圍。

8). 操作簡便，性別平等。

### Patented technology introduction:

The electric disinfection tricycle is running between lanes and lanes by electric power transmission, providing rapid spraying and disinfection and improving efficiency.

- 1). Disinfect electric tricycles, green energy, No using petrochemical energy for the earth sustainable
- 2). All-round 360-degree, semi-automatic, manual spraying method.
- 3). The 1.2-meter-wide design can be used in narrow streets and lanes
- 4). 500 liters large-capacity storage tank design, compared with the traditional 20 liters/tradition man power using, it takes 25 person-times to reach the difference between PULLMAN 500 liters/person-time, 25 to 1 labor saving
- 5). Low cost and high efficiency-PULLMAN take economic budget to compare with current large disinfection vehicle.  
Economical investment
- 6). 3in1 function-disinfection, agricultural spraying, street cooling and cleaning watering, dengue fever, malaria, COVID19 OUT
- 7). With the hand-held sprayer and the hose, it can extend more than 50 meters disinfection area.
- 8). Easy operation, gender friendly.

### 亞全科技有限公司 / ATOZ -PULLMAN CO., LTD.

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專利技術名稱

## 前驅組成物及非晶型碳材

Precursor composition and amorphous carbon material

Patent No : (R.O.C. 優先 ) I603528

專利權人：台灣中油股份有限公司 / CPC Corporation, Taiwan

發明人：陳彥旭、廖權能、呂國旭 / Chen, Yan-Shi、Liao, Chyuan-Neng、Leu, Gao-Shee

### 軟碳導入電池產業應用之技術優勢

搭配高容量錳三元正極		人工石墨	人工石墨 + 中油軟碳
循環壽命*	充電時間		
	慢充 (3小時~8小時)	<1500 次	>6000 次
	快充 (1小時)	<1000 次	>4500 次
	特快充 (30分鐘)	<500 次	>4000 次
	更高速快充(12分鐘)	---	>2000 次
搭配高容量錳三元正極		人工石墨	人工石墨 + 中油軟碳
快充能力	充電時間		
	慢充 (3小時~8小時)	100%	100%
	快充 (1小時)	<90%	>94%
	特快充 (30分鐘)	<85%	>90%
	更高速快充(12分鐘)	---	>84%

導入中油軟碳可以大幅提升動力電池壽命與快充/快放能力

\*循環壽命測試(100%SOC)準則為原電容量留存率80%。

煉研所1

### 專利技術介紹：

中油公司軟碳材料技術優勢與特色如下：

- (1) 採用中油公司自有重質油原料，掌握自有原料，擁有自行研發關鍵專利技術。
- (2) 開發優於日本軟碳之高容量軟碳技術，解決軟碳容量偏低問題。
- (3) 掌握更高速快充(6~12分鐘)軟碳壽命提升技術。
- (4) 縮短充電時間至6~20分鐘；大幅降低充電溫升，減少鋰金屬析出，提升電池安全性能。
- (5) 人工石墨負極無法快充，軟碳具有12分鐘快充且壽命長(大於7年)。

### Patented technology introduction:

The technical advantages and characteristics of CPC's soft carbon materials are as follows:

- (1) To use CPC's own raw materials of heavy oil; To master its own raw materials, and have key patented technologies developed by CPC.
- (2) To develop high-capacity soft carbon technology superior to Japanese soft carbon to solve the problem of low-capacity soft carbon.
- (3) To master the technology of improving the life of soft carbon with higher fast charging (6~12 minutes).
- (4) To shorten the charging time to 6-20 minutes, greatly reduce the charging temperature rise, reduce the precipitation of lithium metal, and improve the safety performance of the battery.
- (5) The anode material of artificial graphite cannot be charged quickly, and the soft carbon has a fast charging capability of 12 minutes and a long life (more than 7 years).

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專利技術名稱

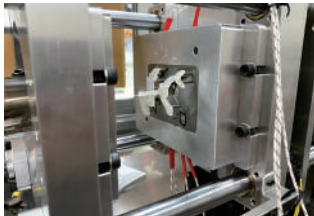
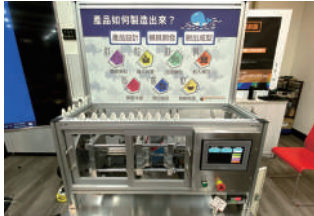
## 用於模具的智能監測系統

Intelligent monitoring system for mold

Patent No : (R.O.C. 優先 ) I673583

專利權人：國立高雄科技大學 / National Kaohsiung University of Science and Technology

發明人：鄭瑞鴻 / Jui-Hung Cheng



### 專利技術介紹：

一種用於模具的智能監測系統，在模具上設置複數感測器，透由智慧機上盒收集模具及機台感測器訊號後，從物聯網串聯雲端資料庫，如此便能於遠端即時掌控模具的各項數據。這些數據資料也可以進一步彙整，作為製程改善或參數調整依據，使產線升級為自動化及智慧化。除可單機台監測之外，亦可多機台同步監測，模擬智慧工廠生產狀況。透由本模具智能監測系統，所建置的桌上型塑膠射出成型機教學平台，主要技術突破點在於：透由寓教於樂將複雜技術簡化，安排 DIY 課程讓民眾近距離接觸，推廣技職教育動手實作精神。除適合高中程度以上學生學習之外，也適合於中小企業產品開發小批量生產，及進行相關技能培訓，兼具產業及教學應用價值。

### Patented technology introduction:

This patented technology is an intelligent monitoring system for molds. Multiple sensors are set on the mold. After collecting the mold and machine sensor signals from the smart machine box (SMB), the cloud database is connected in series from the Internet of Things. It can control the data of the mold in real-time at the remote end. These data can also be further aggregated and used for process improvement or parameter adjustment to upgrade the production line to automation and intelligence. In addition to monitoring by a single machine, multiple machines can also be monitored to simulate the production status of an intelligent factory. The desktop plastic injection molding machine teaching platform built by the intelligent monitoring system for molds is: through education and fun to simplify complex technology, arrange DIY courses for the public to get close to each other, and promote technical occupations hands-on educational spirit. In addition to learning for students above high school level, it is also suitable for small and medium-sized enterprise product development and small-batch production and related skills training, which has both industrial and educational application value.

## 國立高雄科技大學 / National Kaohsiung University of Science and Technology

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專利技術名稱

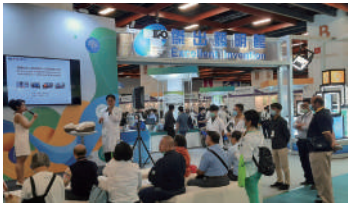
## 基於手勢動作的混合實境評量系統

### EVALUATION SYSTEM OF MIXED REALITY BASED ON GESTURES

Patent No : (R.O.C. 優先)

專利權人：國軍花蓮總醫院 / Hualien Armed Forces General Hospital

發明人：陳穎信、許秀珠 / CHEN, YING-HSIN、HSU, HSIU-CHU



#### 專利技術介紹：

本發明特色是採用混合實境，由多名學員一起演練，多名學員中，包括一位指揮者和其他操作者，必須用「語音」或「手勢控制」下達指揮命令，訓練系統會同時評價指揮者和操作者的表現，給予評價結果，學員用「語音」或「手勢控制」演練心肺復甦術+AED，眼鏡裡面顯示病人狀況，「真實的環境」加上「虛擬的病人、虛擬AED、心律專業儀器、指令視窗等」，攝影機會拍攝學員的手勢，判斷學員的處置是否正確。若是正確則會提示或累積分數，若有錯誤則會提醒或扣減分數，攝影機還能依據手掌佔據畫面的比例，來判斷深度。本軟體把學員帶入真實體驗、減少學員暈眩感，不需要「手持控制器」，節省建置成本，模擬實際操作環境，即時挽救更多的生命。

#### Patented technology introduction:

The feature of the present invention is that it uses mixed reality and is practiced by multiple trainees. Among multiple trainees, including a commander and other operators, they must use "voice" or "gesture control" to issue command commands, and the training system will evaluate them at the same time. The performance of the conductor and the operator is evaluated. The trainees use "voice" or "gesture control" to practice CPR + AED, the patient's condition is displayed in the glasses, and the "real environment" plus "virtual patient, virtual AED, Professional instrument for heart rhythm, command window, etc.", the camera will take the trainee's gestures to judge whether the trainee's handling is correct. If it is correct, it will prompt or accumulate points. If there is an error, it will remind or deduct points. The camera can also judge the depth based on the proportion of the palm that occupies the screen. This software brings the students into the real experience, reduces the students' dizziness, does not need a "handheld controller", saves the cost of construction, simulates the actual operating environment, and saves more lives in real time.

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專利技術名稱

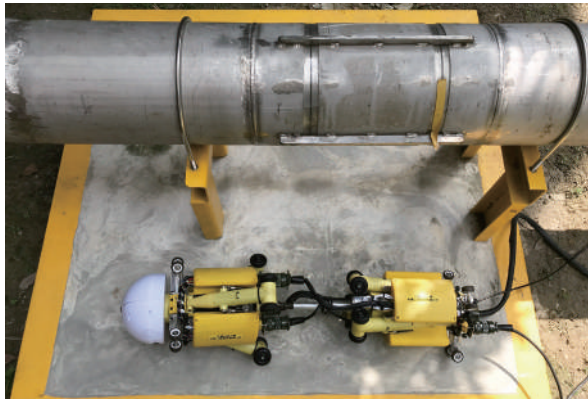
## 管線清潔機器人

Industrial pipeline cleaning robot

Patent No : (R.O.C. 優先 ) 110107379

專利權人：正修學校財團法人正修科技大學 / Cheng Shiu University

發明人：張法憲、呂亞縉、李冠瑜、吳家宏、蘇上祺、陳政方 / Fa-Shian Chang、Ya-Jin Lyu、Guan-Yu Li、Jia-Hong Wu、Shang-Chi Su、Cheng Fang Chen



### 專利技術介紹：

本發明是一種管線清潔機器人，操作人員在管線外操作，機器人在管壁內可以進行水平與垂直管線中行走，藉由攝影模組提供操作人員觀看管壁內的情況。控制頂部的清潔模組，垂直壁面旋轉或來回刷動將管壁內的焊渣加以去除，同時以吹氣與吸塵模組將鐵屑殘渣吹除與吸取，移除因施工時產生的鏽渣、細鐵屑、沙塵與雜物。避免於完工後通氣通油時，因異物卡於凹槽處與閥內部凹槽處，造成閥體磨損進而發生危險事故。本機器人員備有提高施工品質、提升施工效率與降低意外事件的發生，此外尚具備模組化與便於攜帶等功能之各種優點。

### Patented technology introduction:

The invention is a pipeline cleaning robot. The operator operates outside the pipeline. The robot can walk in the horizontal and vertical pipelines inside the pipe wall. The camera module provides the operator to watch the situation inside the pipe wall. Control the cleaning module on the top, rotate the vertical wall surface or brush back and forth to remove the welding slag in the pipe wall, while blowing and sucking the iron slag residue with the blowing and dusting module to remove the welding slag generated during construction, fine iron filings, sand and debris. Avoid the risk of abrasion of the valve body due to foreign matter stuck in the groove and the inner groove of the valve when the oil is ventilated after the completion of the work. This robot has various advantages such as improving construction quality, improving construction efficiency and reducing accidents. In addition, it also has various advantages such as modularization and portability.

### 正修科技大學 / Cheng Shiu University

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### 專利技術名稱

## 六聚乳糖 NOTA 衍生物、六聚乳糖正子肝受體造影劑的 Ga-68 放射標誌方法及六聚乳糖正子肝受體造影劑

Hexa-Lactoside Tri-azanonane Tri-acetic Acid (NOTA) / Derivative, Method for Radiolabeling Hexa-Lactoside Positron Emission Tomography (PET) Imaging Agent for Liver Receptor with Ga-68, and Hexa-Lactoside PET Imaging Agent for Liver Receptor

Patent No : (R.O.C. 優先) 發明第 I671077 號

專利權人：核能研究所 / Institute of Nuclear Energy Research

發明人：林武智、王美惠、于鴻文、林昆諒、江彥峰、陳瑞宇 / Wuu-Jyh Lin, Mei-Hui Wang, Hung-Man Yu, Kun-Liang Lin, Yan-Feng Jiang, Rui-Yu Chen



### 專利技術介紹：

維持足夠肝功能，是肝病患者存活的決勝關鍵。由於肝臟實質細胞細胞膜表面的去唾液酸醣蛋白受體數量，在正常肝臟和肝病肝臟有很顯著的差異，因此透過去唾液酸醣蛋白受體造影術，可靈敏看出正常肝臟與肝病肝臟的造影差別。「核研多蕾克鎳肝受體造影劑」作為肝貯存量評估已通過第一期臨床驗證，具絕佳肝標靶與高安全藥理特性，預期用於評估肝貯存量的準確度可優於並取代大部分現行的影像術。「核研多蕾克鎳肝受體造影劑」有全球專利佈局，已是醫藥級凍晶配方，只需將鎳-68 加到凍晶瓶中，溶解靜置 15 分鐘，就可以作為正子造影使用。標誌產物對肝受體有高專一標靶特性，背景值低，靈敏度高，具有方便、快速、半衰期短、穩定性佳、可全球銷售等銷售優勢。

### Patented technology introduction:

Competent residual liver function is crucial to patients' survival from liver diseases. As a significant difference exists between the number of asialoglycoprotein receptors on the parenchymal cell membrane of a normal liver and a diseased liver, asialoglycoprotein receptor imaging can be used to differentiate normal and diseased livers sensitively. INER Dolacga Kit as a tool for evaluation of liver reserve has proven in a phase I clinical trial to be highly liver-targeting and safe, and is expected to provide more accurate evaluation of residual liver function than most existing imaging technologies and replace them. INER Dolacga kit has world-wide patent map and has been developed to give lyophilized formulation that can be used for PET imaging after simple and fast (15 min) Ga-68 labeling. The labeled product specifically targets to liver receptors with high sensitivity and low background level. Convenient and rapid labeling (15 minutes), short half-life of Ga-68 (environmentally friendly), and stable (favorable to global distribution) are the key features and are advantageous to product commercialization.

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專利技術名稱

## 用於微電網之電壓控制系統及方法

VOLTAGE CONTROL SYSTEM AND METHOD FOR MICROGRID

Patent No : (R.O.C. 優先) 發明第 1735062 號

專利權人：行政院原子能委員會核能研究所 / Institute of Nuclear Energy Research, Atomic Energy Council, Executive Yuan

發明人：高俊廷、李奕德 / Gao, Jun-Ting、Lee, Yih-Der



### 專利技術介紹：

本發明係為一種用於微電網之電壓控制系統及方法，該微電網包括一分散式電源模組，該分散式電源模組用於輸出一輸出電壓以及一輸出電流，並即時偵測該輸出電流，以根據該輸出電流的電流值決定是否降低該輸出電壓，藉由此舉，本發明可即時偵測該輸出電流並降低該輸出電壓，以對應的降低該輸出電流，達到提升微電網供電品質的目的。

### Patented technology introduction:

The present application relates to a voltage control system and method for a microgrid, the microgrid comprising a distributed generation module for outputting an output voltage, an output current and detecting the output current instantly to determine whether to reduce the output voltage according to the current value of the output current. Therefore, the present application can instantly detect the output current and reduce the output voltage to correspondingly reduce the output current to achieve purpose that to improve the power quality of the microgrid.

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專利技術名稱

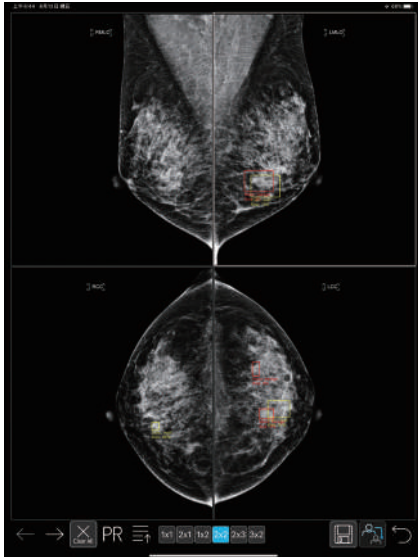
## 多視角乳房影像分析方法、多視角乳房影像分析系統及非暫態電腦可讀取媒體

### MULTI-VIEW MAMMOGRAM ANALYSIS METHOD, MULTI-VIEW MAMMOGRAM ANALYSIS SYSTEM, AND NON-TRANSITORY COMPUTER-READABLE MEDIUM

Patent No. : (R.O.C. 優先) 發明 I707663

專利權人：財團法人資訊工業策進會 / INSTITUTE FOR INFORMATION INDUSTRY

發明人：詹凱軒 / CHAN, KAI-HSUAN



#### 專利技術介紹：

一種乳房影像分析方法，包含複數個乳房影像；利用病徵辨識模型判斷乳房影像是否具有對應的異常狀態，產生乳房影像對應的複數個熱圖；利用假陽性濾除模型，判斷熱圖是否具有假陽性特徵，以產生對應於熱圖的異常機率值；以及利用第一門檻值判斷異常機率值，如果異常機率值大於第一門檻值，偵測並輸出熱圖對應的病灶位置。

#### Patented technology introduction:

A mammogram image analysis method is disclosed herein. The method includes the following operations: inputting a plurality of mammograms; utilizing a symptom identification model to determine whether the breast images has an abnormal state, and generating a plurality of heat maps corresponding to the mammograms; utilizing a false positive filtering model to determine whether the heat maps has a false positive feature, and generating an abnormal probability corresponding to the heat maps, and utilizing a first threshold to determine the abnormal probability, if the abnormal probability is greater than the first threshold, detecting and outputting a lesion position corresponding to the heat maps.

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專利技術名稱

## 膝關節輔具

KNEE FIXATION DEVICE

Patent No.: (R.O.C. 優先) 發明第 1706800 號

專利權人: 輔英科技大學 / FOOYIN UNIVERSITY

發明人: 陳姝希、李美誼、曾清祥 / Chen Shu Shi、Lee Mei Yi、Tseng Ching Shiang

**膝彎曲輔具**  
發明第 1706800 號  
發明人: 李美誼、陳姝希、曾清祥

**創新價值**  
本輔具能改善中樞、周邊神經損傷及下肢肌肉功能缺損患者，因肌力不足、異常肌肉張力或異常動作模式導致站立時的膝過度伸直，能維持行走的膝關節彎曲角度和穩定，使其趨近正常步態。

**產品特色**  
✓ 兩截式之設計  
保留行走時膝關節的活動度  
✓ 交叉固定綁帶  
維持站立期膝關節彎曲角度  
✓ 依需求客製化  
個別化調整膝關節彎曲角度

**臨床價值**  
✓ 預防異常步態，減少合併症，防止關節過度伸直  
✓ 維護行走能力，提升生活品質。  
✓ 輕便操作容易，增強獨立自主信心。  
✓ 改善膝關節動作控制，提升復健效益。

**性別友善性** 本作品無性別使用之區分或年齡之限制，具性別友善性，雖有考量疾病造成膝關節角度之差異，需量身訂做。

### 專利技術介紹:

本輔具係關於一種膝關節行走輔具，其中包括一大腿支架、一小腿支架、膝內外側連接單元各一個、固定帶。大腿支架包覆股骨遠端 1/2，小腿支架包覆脛腓骨近端 2/3，大小腿兩支架於膝內外側以一可轉動方式連接，使個案穿戴此輔具後行走仍能展現膝關節伸直與彎曲動作。膝關節前側預留一髌骨 (patellar) 活動空間，並於小腿支架脛骨處裝置一緩衝裝置可於站立期維持膝角度於微彎曲。於大腿支架近心端、小腿支架遠端各使用一綁帶固定，膝窩處兩條綁帶以交叉方式固定可避免膝反屈。

### Patented technology introduction:

The auxiliary device relates to a knee walking assisting device, which consists of a one-legged bracket, a small leg bracket, a knee inner and outer connecting unit, and a fixing strap. The thigh stent covers half the distal end of the femur, the calf stent covers 2/3 of the proximal end of the tibia, and the two legs of the large and small legs are connected in a rotatable manner on the inner and outer sides of the knee, so that the patient can still show the knee after walking with the aid. The joints are straight and flexible. A patellar active space is reserved on the anterior side of the knee joint, and a cushioning device is arranged on the shin of the calf support to maintain the knee angle in micro-bending during the standing period. Use a strap to fix the proximal end of the thigh bracket and the distal end of the calf support. The two straps at the knee socket are fixed in a crosswise manner to prevent Genu recurvatum.

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專利技術名稱

## 3D 列印機之自動換料機構

Automatic material changing mechanism of 3D printer

Patent No : (R.O.C. 優先) 發明專利第 I734559 號

專利權人：龍華科技大學 / Lunghwa University of Science and Technology

發明人：陳志文、蕭志仁、蕭士凱、葉厚廷、李光耀、呂毓倫 / CHEN CHIH WEN、HSIAO CHIH JEN、HSIAO SHIH KAI、YE HOU TING、LEE KUAN YEW、LU YU LUN



### 專利技術介紹：

一般 Delta 型式的低階 3D 列印機皆為單色，在列印過程中如欲換色，則需暫停並完成換料後才能繼續列印，如此不但效率降低，且造成接續處有高低落差的現象，導致列印品質不佳。本發明品「3D 列印機之自動換料機構」不需改變原本機器的結構，以模組化方式外掛結合，即可達成列印中自動換色線的目的，此舉不但提高使用效率且因換色列印過程中機台不需暫停，列印品質可理想維持。其功能及產品特點說明如下：

1. 可將單色 3D 列印機升級成多色 3D 列印機
2. 自動換料機構，可快速達成換色列印
3. 模組化方式外掛結合，使用簡便
4. 不需改變原本機器結構，機台強度無虞
5. 機台在換色過程中不需暫停，提高列印效率
6. 多色列印過程無中斷，避免接續處有高低落差現象，維持列印品質
7. 支援高速 3D 列印，列印速度可達一般機台的 2~4 倍以上
8. 不需加購高價位多色 3D 列印機，降低使用成本達 3~5 倍

### Patented technology introduction:

Generally, the low-end Delta 3D printers are all monochrome. If you want to change the color during the printing process, you need to pause and complete the material change before you can continue printing. This not only reduces the efficiency, but also causes a gap in the connection. This phenomenon leads to poor print quality. The product of the present invention, "Automatic material changing mechanism for 3D printers", does not need to change the original machine structure, and can be combined externally in a modular manner to achieve the purpose of automatic color-changing lines during printing, which not only improves the efficiency of use And because the machine does not need to be paused during the color-changing printing process, the printing quality can be maintained ideally. Its functions and product features are described as follows:

1. Can upgrade a single color 3D printer to a multi-color 3D printer.
2. Automatic material change mechanism, can quickly achieve color change printing.
3. Modularized way of external connection, easy to use.
4. There is no need to change the original machine structure, and the machine strength is safe.
5. The machine does not need to pause during the color change process, which improves printing efficiency.
6. There is no interruption in the multi-color printing process, avoiding the high and low drop phenomenon at the connection, and maintaining the printing quality.
7. Supports high-speed 3D printing, the printing speed can reach more than 2~4 times that of ordinary machines
8. There is no need to purchase high-priced multi-color 3D printers, reducing the use cost by 3~5 times.

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專利技術名稱

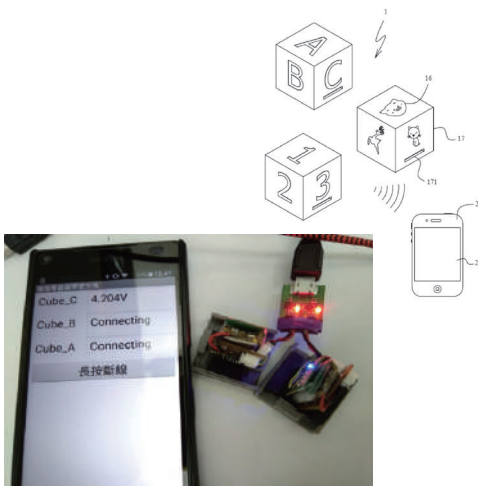
## 智慧型發聲多面載體

Smart Word Hedron

Patent No : (R.O.C. 優先) 第 110114318 號

專利權人：許祖嘉、李有名 / HSU, TSU-CHIA JULIA, LI, YOU-MIN

發明人：許祖嘉、李有名 / HSU, TSU-CHIA JULIA, LI, YOU-MIN



### 專利技術介紹：

本發明係一種智慧型發聲多面載體，其設計有兩部份：  
一、積木骰子中 32 位元微控制器通過藍芽連接到設備；  
二、手機下載遊戲的應用程式後，下載手機 App 後並確認開啓手機藍芽功能，此時，積木方塊插上電池，藍芽模組 LED 燈閃爍表示未連接，App 畫面之積木方塊狀態顯示 "Disconnect"（非連結狀態）；此時，按下手機 App 畫面中的連線按鍵，進行藍芽連線，已連接方塊之藍芽模組 LED 燈恆亮，App 畫面之方塊狀態顯示 "Connected"（連結狀態），完成積木方塊藍芽連結後，手機 App 將播放方塊進行擲骰子動作的結果，最後靜止朝上的部分發出正確的英語詞彙音檔。例如：英語詞彙 (cheetah)，選取對應的音檔會直接播放聲音。  
使用者只要進行擲骰子的動作，利用垂直加速重力系統對應模組來學習英語詞彙，每次至多三個積木同時進行，積木方塊面朝上的介面會發出圖案中的英語發音。

### Patented technology introduction:

This device design, Smart Word Hedron, has two parts: First, the dice preinstalled with a 32-bit micro-control connected by Bluetooth to a mobile device. Second, a downloadable app. After downloading the mobile app and confirming the opening of the mobile blue tooth, at the time, the building block plug battery, blue bud module LED light flashing indicates that they are not connected, the app screen building block status would show "Disconnect." The mobile app will play the box as a result of the roll of the dice, and finally English vocabulary pronunciation will be sent out in the up-and-coming part. The function and design of this invention can attain its convenience for users, for example, the Bluetooth communication is sent to the mobile device, which has been paired with its Bluetooth. The building blocks are proceeded to roll the dices, and the final static face would directly correspond to the audio file and directly sound English pronunciation.

Up to three dice can be rolled at one time. Users rolling the dice to play board games will simultaneously hear on the phone the pronunciation of the English word they can see in the pattern on the upward face of the dice.

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專利技術名稱

## 移動平均低通濾波裝置與方法

MOVING AVERAGE LOW-PASS FILTERING DEVICE AND METHOD

Patent No. : (R.O.C. 優先) I625935

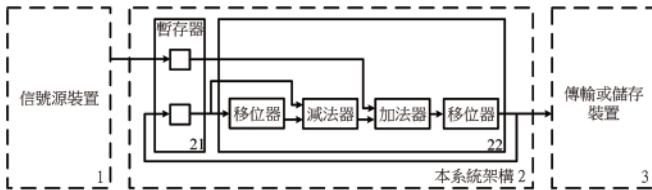
專利權人：中原大學 / Chung Yuan Christian University

發明人：陳世綸、林鼎然、趙文瑋 / Chen, Shih-Lun / Lin, Ting-Lan / Zhao, Wen-Xuan



### 專利技術介紹：

本發明提出一個創新的低通濾波器架構，此架構結合移動平均濾波的概念，利用前一次濾波的结果乘以一个倍率，再与新的输入相加来近似输入信号的总合，如此可有效减少计算输入信号总合的数量，相较于传统低通滤波器架构，本发明具有固定单一硬件架构可支援多样输入信号之新颖性，与低成本、低硬件复杂度、高弹性与高效能之进步性；本发明有效节省平均约 46% 硬件成本，运算时间平均下降 9.6%，可广泛应用于各式电子产品如穿戴式装置、物联网、手机、平板电脑等产品中。



### Patented technology introduction:

The present invention proposes a novel architecture of low-pow filter which combines the concept of a moving average filter. Compared with traditional low-pass filter, the present invention has novelty of a signal hardware architecture can support multiple input signals. In addition, the present invention has benefits of low-cost, low-hardware-complexity, high flexibility and high performance. The present invention saves 46% average hardware cost and reduces 9.6% average computing time. The present invention can be widely applied in consumer electronics such as wearable devices, Internet of Things (IoT), smart phone, tablet computer, etc.

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專利技術名稱

## 醫療氣液體供應系統

### Medical Gas-Liquid Supply System

Patent No : (R.O.C. 優先 ) I63494

專利權人：元智大學 / Yuan Ze University

 發明人：鐘國濱、葉佳鎮、余浚璋、馬嘉慶、謝崇偉 / Guo-Bin Jung / Chia-Chen Yeh / Jyun-Wei Yu /  
 Chia-Chin Ma / Chung-Wi Hsieh


#### 專利技術介紹：

在已知的醫療技術中，氫氣、高壓氧氣及超氧已被證實可應用於輔助治療糖尿病、心血管疾病、聽力損傷、心血管疾病及脊髓神經等而上述氣體各有不同生產裝置。有鑑於此，本發明提供一種(綠色)醫療系統，其藉由質子交換膜電解技術(Proton Exchange Membrane Water Electrolysis, PEMWE)將水電解來產生產生超氧，來處理提供病患所需的醫療氣體、減少化學藥劑的使用、提升病患免疫力，希望由目前化學藥物使用的醫療現況邁向綠色醫療未來。

#### Patented technology introduction:

Our invention is to explore the possibility to replaced chemicals used as medicine. The generation of high pressure oxygen, high purity hydrogen, and medical grade ozone from water with innovative proton exchange membrane water electrolysis (PEMWE) and their application is addressed. The effectiveness of oxygen, hydrogen, ozone on specific disease cure and prevention, ex. diabetes, cardiovascular unique disease, spinal nerve, hearing has been proven in literature separately. Our team hope that high quality gases from our unique device will be better utilized in these disease cure and will be the best green invention in this century.

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專利技術名稱

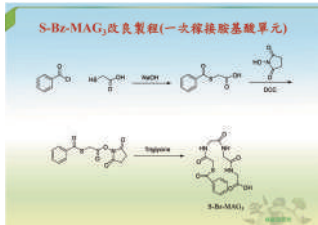
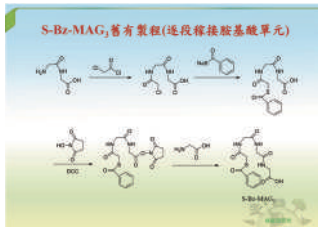
## 造影劑前驅物 S-Bz-MAG3 之製備方法

Method for preparing S-Bz-MAG3 as a precursor of contrast media

Patent No : (R.O.C. 優先 ) I663174

專利權人：行政院原子能委員會核能研究所 / Institute of Nuclear Energy Research, Atomic Energy Council, Executive Yuan, R.O.C

發明人：李青雲、張瑜、徐成芳 / Li, Ching-Yun / Chang, Yu / Hsu, Cheng-Fang



### 專利技術介紹：

Tc-99m-MAG3 為專一性診斷有效腎血流量及腎小管功能造影劑，能精確掌握及分析腎臟分泌排泄的藥理特質，已成為全世界進行腎功能診斷時重要的核醫藥物。

本專利將 Tc-99m-MAG3 造影劑之前驅物 S-Bz-MAG3 合成途徑進行調整，由四步驟反應簡化為三步驟，其關鍵在於將結構中的三個胺基酸單元一次嫁接完成，而非舊製程的逐段嫁接。改良後之製程總產率為 64%，較舊製程總產率提升了 10-20%；產品純度均達 99% 以上，在產率及純度品質上均有長足的精進，促成 Tc-99m-MAG3 造影劑的順利生產與獲得核准上市。

本專利製程不需繁複的管柱層析純化，易於進行 10 公克級以上擴量製程，並已進行多批次的驗證生產。期能將此專利技術轉移給民間製藥產業，使國內腎臟泌尿系統病患，獲得更精準有效的醫療診斷服務。

### Patented technology introduction:

Tc-99m-MAG3 is a specific diagnostic and effective contrast agent for renal blood flow and renal tubular function. It can accurately control and analyze the pharmacological characteristics of renal secretion and excretion. It has become an important pharmaceutical for renal function diagnosis worldwide.

This patent adjusts the synthetic pathway of the precursor, S-Bz-MAG3 for Tc-99m-MAG3 contrast agent from a four-step reaction to three steps. The key is to complete grafting of the three amino acid units in the structure at one time, rather than step by step of the conventional process. The total yield of the improved process is 64%, which is 10-20% higher than that of old one. The purity of the product achieves more than 99% and shows considerable improvements in terms of yield and purity quality, which has contributed to Tc-99m MAG3 contrast agent was successfully produced and approved for marketing.

The process of patent does not require complicated column chromatography purification, and is easy to carry out an expansion process above 10 grams, then has undergone multiple batches of verified production. It is anticipated to transfer this patented technology to the private pharmaceutical industry, then domestic patients with renal and urinary system can obtain more accurate and effective medical diagnosis services.

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專利技術名稱

## 含綠能之配電饋線轉供方法

### Method of transfer supply containing green energy for distribution feeder

Patent No : (R.O.C. 優先 ) I691144

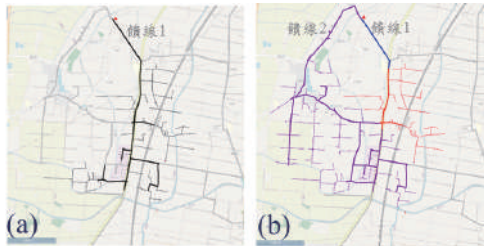
專利權人：行政院原子能委員會核能研究所 / Institute of Nuclear Energy Research, Atomic Energy Council, Executive Yuan, R.O.C.

發明人：蔡佳豪、姜政綸、李奕德、劉力源、何元祥 / Cai, Jia-Hao / Jiang, Jheng-Lun / Lee, Yih-Der / Liu, Li-Yuan / Ho, Yuan-Hsiang



#### 專利技術介紹：

本系統係整合配電監控 (SCADA)、地理圖資系統 (GIS)、及配電潮流程式之本土配電網絡圖資管理系統，提供饋線地理空間資訊及定位服務，透過資料視覺化技術，呈現饋線上電力設備與再生能源相關電力資訊，可輔助調度員迅速掌握饋線故障位置。SCADA 除了可進行饋線故障偵測與區間判斷、隔離、上游復電與下游轉供 (FDIR) 等快速復電功能外，透過配電潮流計算方法提出饋線裕度、最高/最低電壓、及線路損失等重要資訊，可供調度員作為轉供調度決策參考依據，以加速排除故障並恢復用戶供電。使用本系統，期可有效提高饋線調度運轉與管理再生能源能力。



#### Patented technology introduction:

This system is a domestic distribution network management system with graphic visualized information that integrates SCADA(Supervisory Control and Data Acquisition), GIS(Geographic Information System), and distribution power flow programs. It provides feeder geospatial information and positioning services, and displays power generation information of electric devices and renewable energy on feeders through data visualization technique, which can assist dispatchers to quickly track the fault locations on feeders. Besides ability to conduct fast FDIR, with distribution flow calculations, SCADA can also provide important information such as feeder margin, maximum/minimum voltage, and line loss for dispatchers as a reference for decision-making to speed up troubleshooting and restoration of user power supply. It is expected that the proposed system can enhance the ability of feeder dispatch operation and renewable energy management.

行政院原子能委員會核能研究所

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專利技術名稱

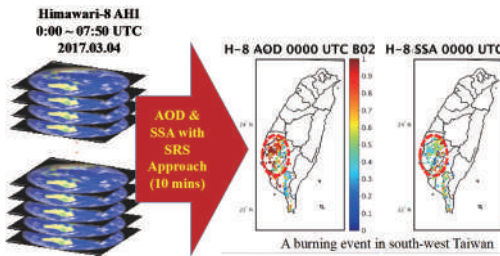
## 大氣層頂反射率之時間空間影像融合方法於氣膠光學厚度反演

### A TOA-reflectance-based Spatial-temporal Image Fusion Method for Aerosol Optical Depth Retrieval

Patent No : (R.O.C. 優先) I684755

專利權人：國立中央大學 / National Central University

發明人：黃智遠、何炫騏、林唐煌 / Chih-Yuan Huang / Hsuan-Chi Ho / Tang-Huang Lin



#### 專利技術介紹：

本技術克服傳統影像融合方法 (STARFM) 在大氣參數反演之限制，提出 TOA-STFM 方法進行大氣層頂反射率高時、空影像融合，應用於氣膠光學厚度 (大氣懸浮微粒) 之反演，並整合高空間 (Landsat-8 與 SPOT-6) 與高時間 (Himawari-8) 解析影像，產製高時、空之衛星影像 (每 10 分鐘 6~30 米亞洲地區)，並應用至空氣品質監測，彌補現行傳統與衛星觀測之不足，掌握空氣污染時、空之變化。

#### Patented technology introduction:

The proposed TOA-STFM is a spatiotemporal remote sensing image fusion technology that can preserve top-of-atmosphere (TOA) reflectance. By fusing high spatial resolution images (Landsat-8 and SPOT-6) and high temporal resolution images (Himawari-8), the fused 10-minute- and 6~30-meter-resolution TOA images can solve the problem of existing air quality monitoring techniques and effectively capture the dynamic changes of air quality in a large region.

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專利技術名稱

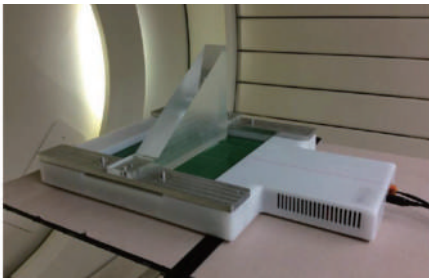
## 用於放射治療中掃描式離子束量測的偵測器

### DETECTOR FOR MEASURING SCANNING ION BEAMS IN RADIATION THERAPY

Patent No. : (R.O.C. 優先) I610698 / US9,884,207

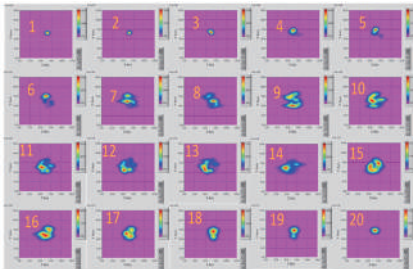
專利權人：國立中央大學、中央研究院 / National Central University, Academia Sinica

發明人：陳鑑鋒、林志勳、鄧炳坤 / Augustine Ei-fong Chen / Chih-Hsun Lin / Ping-Kun Teng



#### 專利技術介紹：

以掃描式離子束進行放射治療為進行中趨勢。此發明為游離腔式探測器，以陣列條型電極方式讀出取得掃描式離子束一維空間分布訊息，分別以 XY 方向讀出粒子束訊息，而後再行重建其二維分布，因此達到快速及高空間解析度目的；可依此準確量測掃描式離子束的不同參數及輻射劑量。並依此架構搭配不同配件及軟體可進行每日品保及病患劑量品保，同樣達到快速精準效果。



#### Patented technology introduction:

Particle therapy with pencil beam scan (PBS) has becoming major trend in radiotherapy. This invention is an ionization chamber detector with array of strip electrodes to readout one dimensional information of PBS beam profile. Information readout from XY directions are used to reconstruct two dimensional beam profile. Therefore detector can be operated at high speed and with high spatial resolution. Beam profile parameters and dose of a pencil beam can be accurately measured. Daily QA and patient dose QA can be executed with high accuracy and speed, if proper auxiliary and software are applied.

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專利技術名稱

## 預測癌症放射線治療之預後的分析器及方法

Analyzer and method for predicting the prognosis of cancer after radiation therapy

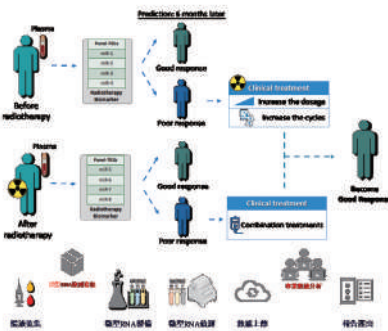
Patent No : (R.O.C. 優先 ) I614629 / US 10,738,363

專利權人：國立中央大學、張煥禎 / National Central University, Huan-Cheng Chang

發明人：馬念涵、鍾道生、李安倫、詹曜寧、陳建隆 / Nian-Han Ma / Tao-Sheng Chung / An-Lun Li / Yao-Ning Chan / Chien-Lung Chen

### 專利技術介紹：

目前有半數以上的癌症病患需要接受放射線治療，伴隨而來的為治療後的復發，臨床上，醫師會利用影像學或臨床數據判斷治療的預後，但都亟需經驗豐富的醫師評斷；另外，臨床上也沒有用來監測病人復發可能性的預測標的。所以，在此技術中，透過抽取病人的血液，使用臨床上最快速之精準檢測法即時定量 PCR 偵測血液所純化之微型 RNA，達到預測病人接受放射線治療 6 個月後的效果，提供臨床醫師資訊進行治療處方。並且對於通用性而言，此技術不需要一個新穎的儀器，配合相佐的檢測試劑，即可以完成定量。本發明具有簡易性、穩定性等特色，檢測者、受試者於不同性別皆可實施，提供癌症病患即時提供臨床預後評估，增加癌症病患治療之醫療品質，更進一步提高癌症治療之存活率。



### Patented technology introduction:

With more than 50% of the cancer patients will receive radiation therapy as part of treatment in cancer, recurrence is still a major cause of treatment failure. Computed tomography imaging (CT) and tumor markers are the methods to evaluate the prognosis status of patients, but the diagnosis need to rely on the clinical experience of doctors. In this technology, the detection device is configured to detect expression levels of a plurality of miRNAs in a plasma for predicting the prognosis of cancer radiotherapy. The plan of radiation therapy could be adjusted through the prediction results of miRNAs expression. The advantage is that the reagents are suitable for different platform of Q-PCR. The hospital or institute don't need to purchase the new equipment for the detection of miRNAs. We could apply the result for clinical diagnosis and prognosis, and give the benefits to cancer patients in the future.

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專利技術名稱

# 桌球發球機系統

## TABLE TENNIS SERVING SYSTEM

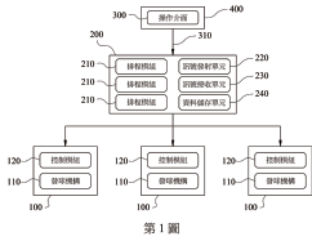
Patent No : (R.O.C. 優先)

專利權人：

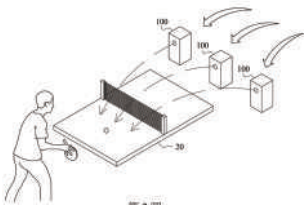
發明人：許永和、陳裕芬、吳昇光、吳承彬、吳承育、陳哲甫 / Yung Hoh Sheu / Yu Fen Chen / Sheng Kuang Wu / Chen Bin Wu / Cheng Yu Wu / Zhe Fu Chen

### 專利技術介紹：

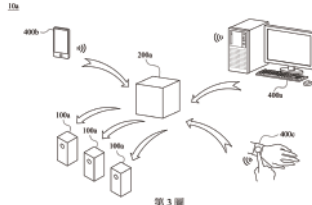
本發明提供一種桌球發球機系統，其包含複數發球機、一排程裝置以及一使用者裝置。各發球機包含一發球機構及一控制模組，控制模組訊號連接發球機構。排程裝置訊號連接各控制模組且包含複數排程模組，各排程模組分別與前述控制模組對應且包含複數參數。使用者裝置訊號連接排程裝置，並供操作以產生複數指令，各指令對應設定各排程模組的各參數。藉此，透過排程裝置改變複數發球機之球路速度，可增加發球的變化性，因而提升使用者的訓練效果；且透過使用者裝置對排程裝置進行參數設定可提升調整的便利性，使用者不須每次更換訓練模式時都要實際到發球機旁進行設定而可提升訓練效率。



第 1 圖



第 2 圖



第 3 圖

### Patented technology introduction:

The present provides a table tennis serve machine, which comprises a multi-serving machines, a scheduling device and a user device. Each serving machine includes a serving mechanism and a control module, the control module signals are connected to the serving mechanism. The communication number of the user device is connected to the scheduling device, and is used for operation to generate multi-commands, and each command corresponds to setting each parameter of each scheduling module.

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專利技術名稱

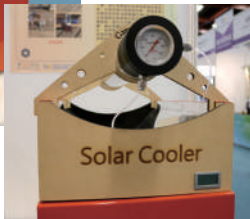
## 太陽能熱轉換冷氣機

Solar heat conversion air conditioner

Patent No : (R.O.C. 優先)

專利權人：國立雲林科技大學 / National Yunlin University of Science and Technology

發明人：曾博仁、曾博彥、沈立晴、郭昭吟 / Tseng Po Jen / Tseng Po Yen / Shen Li Qing / Chao-Yin Kuo



### 專利技術介紹：

太陽能熱轉換製冷氣機主要由吸附劑和冷媒兩者配對使用，當吸附劑吸附系統中冷媒蒸汽時，會加速液態冷媒揮發，同時帶走周遭環境之熱量，產生製冷效果，當吸附劑吸滿冷媒後，可利用玻璃真空集熱管轉換太陽能的輻射熱能，將吸附的冷媒脫附再生，是一個非電力驅動的製冷技術。而本專利技術可設立於同時兼顧供應熱和冷氣空調的建築大樓，潛在的技轉廠商如建築業、綠能製造業等皆在範圍內，因此本專利之技術轉移可行性相當良好，對於預期之效益著眼注重於減少能量消耗、降低能源成本且提升空間製冷的效率。

本專利採取一種非電力驅動並且無污染的空調系統，以解決酷暑造成的嚴重尖峰負載問題，對於環境保護和節省能源上亦是一個重要的解決方法。

### Patented technology introduction:

Solar heat conversion air conditioner of the invention is a product that does not need to use electric energy to complete the cycle cooling effect, and its working principle includes adsorption cooling and heating desorption. The basic cycle is that the liquid refrigerant absorbs heat when it evaporates, producing a cooling effect, and the evaporated refrigerant gas enters the adsorbent, thereby completing an adsorption refrigeration cycle. The heating and desorption is to use the heat source of solar energy to thermally desorb the refrigerant in the adsorbent. At this time, after the refrigerant vapor enters the condenser, the heat energy is transferred to the condensed water, and the condensed refrigerant liquid flows back to the evaporator through the valve. When the condensed water is heated, it can be used as domestic hot water. The solar heat conversion air conditioner has the advantages of low cost, simple structure, no moving parts and long working life. It can provide refrigeration air conditioning in the summer, and can obtain water source for solar heating, contributing to slowing the peak power consumption.

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專利技術名稱

## 可自動分離髒水之清洗桶結構

Cleaning bucket structure capable for automatically separating dirty water and clean water

Patent No : (R.O.C. 優先) M579957

專利權人：富商國際股份有限公司 / Full Sun International Co., Ltd.

發明人：吳長馨 / Wu Chang Hsin



### 專利技術介紹：

本專利『髒水分離拖把』是拖把界革命創新，每一次都能真正用乾淨水來洗淨拖把的髒污，創新技術可瞬間分離髒水與乾淨水，百分之百淨髒分離！

創意的發想來自三年前，觀察一般人在拖地時總是用同一桶髒水來回洗拖把，地板真的能拖乾淨嗎？想拖乾淨，就必須提著超重的水桶不斷換水，拖個地板真的好辛苦！

專利的設計，除了洗拖把時可瞬間分離髒水與淨水，都用乾淨水洗清拖把外，並且打造僅需 4 公升的淨水桶來取代傳統 16 公升的拖把桶，每桶可用乾淨水清洗拖把 20 次，讓使用者不須要來回提水換水，省時又省力！

### Patented technology introduction:

Are you still use dirty water to rinse mop? Are you tried to keep changing water?

The patent is a built-in pump and innovative two-bucket system which separates

dirty water from clean water, so you never mix dirty with clean water again, and the mop head remains effortlessly clean.

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專利技術名稱

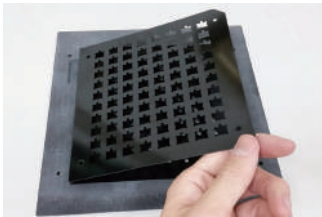
## 印刷載具

Printing Carrier

Patent No. : (R.O.C. 優先) M579591

專利權人：程陽有限公司 / Sunny Process Co., Ltd.

發明人：江文宏 / Chiang, Wen-Hung



### 專利技術介紹：

本專利由三大結構——載具、真空貼片和防震板所構成，以解決電子業生產問題、改革生產程序為出發點，印刷載具進行加工製作時，業界普遍以膠帶黏貼於印刷電路板四周，此固定方式不僅無法準確定位在印刷載具上，以致發生錯位狀況，也因膠帶覆蓋部分有厚度會形成不平整的印刷層，作業環境若溫度過高導致膠帶熔化為液體，進而影響印刷品質。

本專利特點在於

- (1) 使用壽命長：經加工後的膠帶無法二次使用，本專利真空貼片可更換並重複使用高達 1,500 次以上。
- (2) 生產良率提高：印刷品質提升，防止 PCB 卡線問題，利於構裝。
- (3) 減少人力與時間成本並實現自動化生產：省去手動黏貼與撕除膠帶的步驟，搭配機器手臂，實現 SMT 自動化。
- (4) 環保：避免產生膠帶廢料帶來的汙染。

### Patented technology introduction:

This patent is composed of three major structures: carrier, vacuum patch and shockproof board. It takes solving production problems and reforming the production process in the electronics industry as the starting point. When the printing carrier is processed and manufactured, the industry uses tapes to stick around the printed circuit board generally. This kind of fixing method is not only unable to position accurately on the printing carrier, but also affects the printing quality because of the covered parts of tapes with thickness have an uneven printed layer and the working environment temperature is too high to melt the tape into liquid.

The features of this patent are

- (1) Long service life: After machining, the tape cannot be used twice, but the vacuum patch can be replaced and reused up to 1,500 times.
- (2) Improving the yield rate of the production: the printing quality is improved and avoid the production line getting stuck to be beneficial to packaging.
- (3) Reduce labor and time costs and realize automated production: It saves the steps of sticking and tearing off the tape manually, and works with robotic arms to realize SMT automation.
- (4) Environmental protection: To prevent pollution of the environment by tape waste.

### 程陽有限公司 / Sunny Process Co., Ltd.

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專利技術名稱

## 電鍍組合機構

### PLATING COMBINED MECHANISM

Patent No : (R.O.C. 優先)

專利權人：黃博道、劉耀崇 / Huang, Po Tao / Liu, Yao Chung

發明人：黃博道、劉耀崇 / Huang, Po Tao / Liu, Yao Chung



#### 專利技術介紹：

##### 傳統電鍍的缺點：

1. 精密小尺寸產品：容易卡料或漂浮無法電鍍。
2. 因為滾筒的密封結構，鍍液於被鍍物週圍補充困難。
3. 缺少金屬離子，容易造成表面粗糙及焊性不良。
4. 難鍍物須混合大量鋼珠，損失大量成本。

##### 離心電鍍的優點：

1. 利用離心力使被鍍物於滾筒
  - (1) 高速旋轉時，貼於陰極離心環表面進行電鍍。
  - (2) 低速時被鍍物落於筒底，進行週期性混合。
2. 正反旋轉轉換，增加混和率。
3. 鍍液由上及下方進行滾筒交換，極高的金屬離子交混效率。
4. 鍍槽底部驅動滾筒，軸心磁封技術，徹底防漏。

#### Patented technology introduction:

##### Disadvantages of traditional barrel plating

1. Precision small size products; easy to jam or float and cannot be plated.
2. Mixing cycle: about 15 times per minute, the overall uniformity is difficult to control.
3. Due to the sealing structure of the barrel, it is difficult to the plating solution around the object to be plated.
4. The lower metal ions concentration, easy to cause rough surface and poor solderability.
5. The plating solution is difficult to exchange when the mesh hole size smaller than 250x250um.
6. Some product should add a lot of steel balls mixing, and it will lose a lot of material and cost.

##### The key to improve plating quality:

1. Alternation of centrifugal force and release.
2. Use the centrifugal force to make the object to be plated on the surface of the cathode ring when the barrel rotated at high speed, and the object fell on the bottom of the barrel at low speed for periodic mixing.
3. Positive and negative rotation switch, increase mixing rate.
4. The plating solution enters the barrel for exchange from top and bottom, extremely high efficiency of metal ion exchange.
5. Barrel driven below bottom of the plating tank and the shaft magnetic seal technology is completely leak-proof.
6. The machine is a modular design, and the installation is within 3 days.

#### 漢瑪科技股份有限公司 / Hallmark Technology Co., Ltd

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專利技術名稱

## 光波治療裝置及光波治療模組

Light wave treatment Device and Light wave treatment Module

Patent No : (R.O.C. 優先) M528756

專利權人：何國梁 / Ho Ko Liang

發明人：何國梁 / Ho Ko Liang



### 專利技術介紹：

一種光波治療裝置，包括機台及光波治療單元，該光波治療單元包含一支架、一燈罩、多個第一光源模組、兩個燈罩翼板及多個第二光源模組，支架連接於燈罩及機台之間，該些第一光源模組設置於燈罩，兩個燈罩翼板分別樞接於燈罩的兩側，該些第二光源模組分別設置於兩個燈罩翼板。藉此，光源能同時照射於人體治療部位的多側，以具有較佳的治療效果。

### Patented technology introduction:

A Light wave treatment Device includes a Machine and a Light wave treatment Unit.

The Light wave treatment Unit includes a bracket, a lampshade, a group of first light source modules, two lampshade wings, and a group of second light source modules.

The bracket is connected between the lampshade and the machine; the first light source modules are arranged on the lampshade, the two lampshade wings are pivotally connected to both sides of the lampshade; the second light source modules are respectively arranged on the two lampshade wings.

Thereby, the light source can simultaneously irradiate multiple sides of the human body to be treated, so as to have a better treatment effect.

## 衡奕精密工業股份有限公司 / TRANSVERSE INDUSTRIES CO., LTD.

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專利技術名稱

## 電子門票入場驗證防偽系統與方法

Patent No : (R.O.C. 優先 ) I660308

專利權人：優票股份有限公司 / OQR Ticket Co., Ltd

發明人：曾銀宏、林俊明、劉勝昌、王冉卉、卓瑩鎔 / Tseng Yin-Hung / Lin Chun-Ming / Liu Sheng  
Chang / Wang Jan-Hui / Cho Ying-Chiang

### 優勢 綁定手機的帳號認證(實名制)

- 驗證** 註冊、購票、轉售票、入場、互動皆須經過手機號碼與行動裝置驗證
- 唯一** 綁定並驗證手機號碼與行動裝置，達到使用者和帳號的唯一性與識別度
- 安全** 轉換裝置均須重新進行手機與帳號驗證，達到絕對的安全



### 專利技術介紹：

手機 APP 與驗票機台電腦各自植入本技術之程式碼，操作時 APP 顯示合法下載之 QR-Code 即可通過驗證；若為複製或截圖轉傳之 QR-Code 則無法通過驗證。本發明達到兩項效益：

- 1.100% 杜絕仿冒 QR-Code 被驗證通過。
2. 使用簡單：消費者可與一般手機 QR-Code 使用方式相同，都是手機 App 呈現 QR-Code 讓 Reader 掃讀即可。



### Patented technology introduction:

The mobile phone APP and the ticket inspection machine are respectively implanted with the code of this technology. During operations, the APP displays the legally downloaded QR-Code to pass verification; if the QR-Code is copied or transmitted by the screenshot, the verification would fail.

### 優票股份有限公司 / OQR Ticket Co., Ltd

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2019  
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Platinum Awards



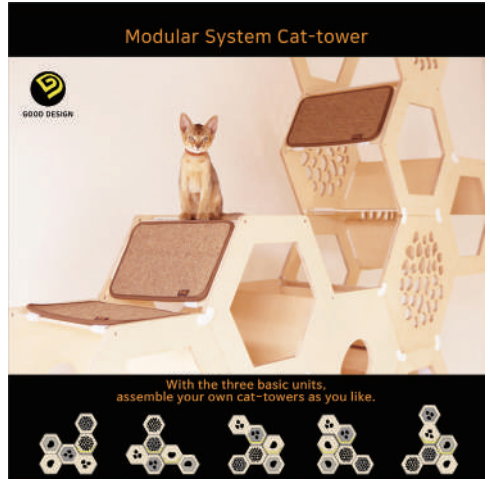
專利技術名稱

## Module system Cat Tower

Patent No : 1859125( Republic of Korea )

Patent Owner : MONDOMIO CO.,LTD

Inventor : JIN KYUNG-HEUI / YIM EUN-JIN



**Patented technology introduction:**

The modular system cat tower, which is easy to expand and vary, is an eco-friendly furniture developed based on analysis of cat behavior characteristics and research into modular system structures utilizing traditional wood making technology.

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專利技術名稱

## 以臼齒為抗力點之手動口腔擴張裝置

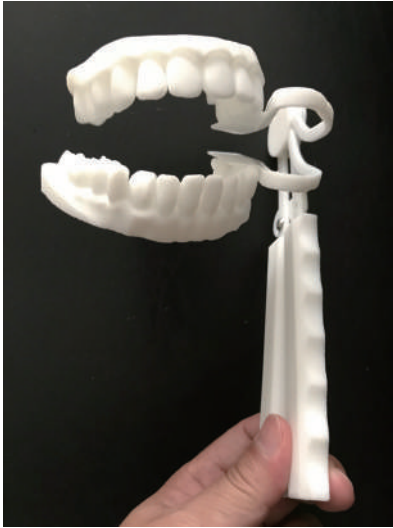
An innovated handy open jaw device acting on molars

Patent No : (R.O.C. 優先 ) I532470

專利權人：明志科技大學、國立台灣大學醫學院附設醫院 /

Ming Chi University of Technology, National Taiwan University Hospital

發明人：胡志中、王蕙茜 / Chih-Chung Hu, Yi-Chian Wang



### 專利技術介紹：

罹患頭頸癌變患者常常發生牙關緊閉症狀，往往無法進行開口閉合、刷牙或吞嚥食物。患者無法自行完成上述運動，一般皆尋求復健科醫師協助。治療時，臨床以壓舌板堆疊固定的方式來做被動式開口訓練，相當克難。不論居家照護或醫院復健，壓舌板堆疊固定的方式需要第三者協助，其程序人為誤差難以避免，不易插入正確位置及高度。不僅對罹患頭頸癌變患者產生不便，患者居家時往往不進行口腔開合動作，更對患者間接產生損傷。

本發明針對罹患頭頸癌發生牙關緊閉症狀患者所設計，以臼齒為抗力點之手動口腔擴張裝置，協助患者自行執行開口動作、刷牙或吞嚥食物，可從事保健與復健治療，同時防止二次傷害，具醫療功能與實用性。期能嘉惠國內數萬名罹患頭頸癌患者自主復健。

### Patented technology introduction:

Oral cancer and nasopharyngeal cancer are top 4th and 11th cancer in men in Taiwan. These patients would have difficulties in biting, extracting, and even brushing their own teeth. For patients with trismus, speech therapists have difficulties in treating their oropharyngeal dysphagia, and dentists sometimes could not extract or mend their caries. Clinical treatment for trismus include therapeutic exercise and open jaw device. However, for patients with trismus there is no appropriate open jaw device operated by themselves without injury on their front teeth. The developed innovated handy open jaw device could be easily used by the patients, and the device could protect the front teeth of the patients from injury, which are acting on molars with a larger and steadier contact area.

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專利技術名稱

## 用來評估一勞工之過勞風險的電子裝置

### Method And Electronic Device For Evaluating Overfatigued Risk Of A Laborer

Patent No : (R.O.C. 優先) M574266

專利權人：勞動部勞動及職業安全衛生研究所 /

Institute of Labor, Occupational Safety and Health, Ministry of Labor

發明人：鐘琳惠、陳瑞發、洪煥程、周瑞淑、鄭乃云、廖唯亨

Chung, Lin-Hui / Chen, Jui-Fa / Horng, Huann-Cheng / Chou, Jui-Shu / Cheng, Nai-Yun /

Liao, Wei-Heng

### 用來評估一勞工之過勞風險的電子裝置



#### 專利技術介紹：

一種用來評估一勞工之過勞風險的方法，其中該方法可應用於一電子裝置，且該方法可包含：透過一感測裝置取得該勞工之心率資料以及睡眠資料；透過執行於該電子裝置中之一問卷模組收集該勞工之心理資訊，以產生一過勞量表；透過該問卷模組收集該勞工之加班資訊，以產生一加班時數；依據預先建置的一疾病風險資料庫以及該勞工之相關資訊，產生該勞工之疾病風險指標；透過執行於該電子裝置中之一睡眠分析模組分析該睡眠資料，以產生一睡眠分數；以及依據該過勞量表、該加班時數、該疾病風險指標以及該睡眠分數產生一綜合分數。

#### Patented technology introduction:

A method for evaluating overfatigued risk of a laborer, wherein the method may be applied to an electronic device, and the method may include: obtaining heart rate data and sleeping data of the laborer through a sensing device; collecting mental information of the laborer through a questionnaire module executing in the electronic device, to generate an overfatigued scale; collecting overtime work information through the questionnaire module, to generate hours of overtime work; according to a disease risk database that is built in advance and related information of the laborer, generating a disease risk index of the laborer; analyzing the sleeping data through a sleeping analyzing module executing in the electronic device, generating a sleeping score; and according to one or more of the overfatigued scale, the hours of overtime work, the disease risk index and the sleeping score, generating a comprehensive score.

勞動部勞動及職業安全衛生研究所 /

Institute Of Labor, Occupational Safety And Health, Ministry Of Labor

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專利技術名稱

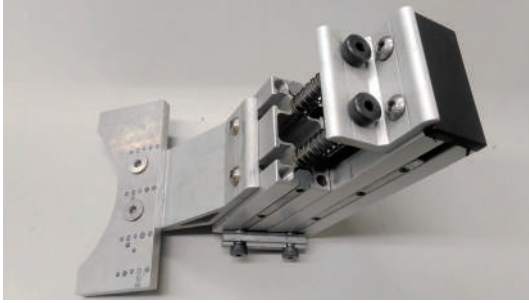
## 用於連續沖壓模具移料的夾爪傳送機構

Plate Holder Transport Mechanism for Transfer Die

Patent No : (R.O.C. 優先) I604916

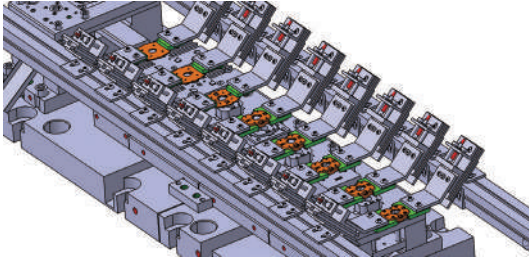
專利權人：國立高雄科技大學 / National Kaohsiung University of Science and Technology

發明人：林栢村、郭峻志、楊正鈺 / Lin, Bor Tsuen / Kuo, Chun Chih / Yang, Cheng Yu



### 專利技術介紹：

本發明的特點在於相對精簡且易適整的結構及作動方式，提供穩定的不同道次的模具間的料件傳送作業。利用與水平方向呈一適當角度配置的滑動結構和限位裝置，配合前後臂前進夾料的動作，在一個純平面的移動行程中，產生了垂直的上、下行動作，可巧妙地將局部垂直陷入模塊狀態的料件，利用其夾持後段行程中所產生的垂直向上的功能，順利將料件自模塊上取出，而不需要因為該垂直行程的需求，而購置昂貴的三軸向伺服送料機。



### Patented technology introduction:

The features of the present invention provide a simple structure for material transfer between the transfer die stations. The structure utilizes a sliding structure and a limit device arranged at an appropriate angle to the horizontal direction, and with the action of the front and rear arms advancing the material, the vertical upper and lower strokes are generated in the original pure plane moving stroke. The invention design can vertically and horizontally move the material between transfer die stations.

## 國立高雄科技大學 / National Kaohsiung University of Science and Technology

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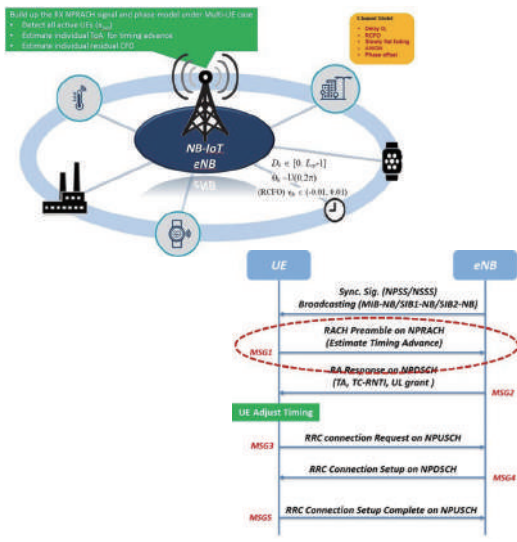


專利技術名稱

# 多用戶隨機存取訊號之分析方法

An Analysis Method for Multi-Users Random Access Signals

Patent No : (R.O.C. 優先 ) 107116680  
 專利權人 : 元智大學 / Yuan Ze University  
 發明人 : 黃正光 / Hwang, Jeng-Kuang



**專利技術介紹：**

本發明專利可有效解決窄頻物聯網傳送上隨機存取訊號時，基地台與用戶間的最初連線問題，讓基地台能準確偵收多個用戶裝置所各自上傳的第一道前導訊號，以利後續之通訊。其訊號分析方法首先求得一最佳偵測門檻值來有效判定欲進行連線之多重用戶端；然後再針對每一偵測到的用戶端，利用跳頻點相位差來估算其所需要的同步參數，即前導訊號的抵達時間 (ToA) 以及殘餘載波頻率誤差 (RCFO)。除了可以讓基地台偵收多個欲連線的用戶及同時獲取其同步資訊，本發明更具有低複雜度及高精度，已成功應用於資策會小基站平台，經由多種環境之場測結果，證實本專利方法可克服各樣困難傳輸場域，在低 SNR 下達到優越的偵測及同步參數估測性能。

**Patented technology introduction:**

This patent discloses an efficient method to solve the initial attachment problem between the narrowband IoT base station and user equipment (UE), making the base station able to acquire the multiple UEs which are transmitting their first uplink random access signals. Hence it is essential for subsequent communications. First, the signal analysis method derives an optimal detection threshold to catch those UE identities attempting for attachment. Then for each detected UE, the method estimates the UE's time-of-arrival (ToA) and residual frequency offset error (RCFO) by using the phase differences at frequency hopping point. Besides the capability of letting base station to acquire identities and synchronization parameters of multiple UEs, this patent also possesses low complexity and high accuracy. It has been successfully implemented onto the III small-cell base station. From a lot of field trial results, it is confirmed that the patent could indeed overcome many difficult transmission scenarios, and achieve excellent detection and synchronization parameters estimation performances under low SNR.

**元智大學 / Yuan Ze University**

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 聯絡人：黃正光 / Hwang, Jeng-Kuang  
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專利技術名稱

## 多氣囊調節裝置

AIQ Pillow

Patent No : (R.O.C. 優先 ) M571180

專利權人：鄭美麗 / Cheng,Mei- Li

發明人：鄭美麗 / Cheng,Mei- Li

AIQ元氣枕 KN-Q18



樂肩頭 KN-06



樂腰墊 KN-013

### 專利技術介紹：

藉由定位件及多個閥體來控制多層氣囊之內部與外部之氣體是否流通,除了可使氣囊依據所受壓力(如頭、頸、臀部)大小自動調整高、低、軟、硬、形狀,降低氣囊反作用力,使抵靠部(如頭、頸、臀部)受到自然舒適地支撐之外,具有調適性更佳之高度支撐(更多之軟硬度)及塑形(更服貼)效果,更能有效地因應不同使用者。且氣囊所受壓力消失後,可自動再充氣恢復原狀,可避免彈性體彈性疲乏變形。

本創作由過去的「輕、薄、短、小」進化到「優、柔、效、省」趨向,在研發時已擬定「環保、節能」概念,機能上符合綠能要求,「簡易、快速、調整」免電力的便利性、友善性,已商品化並行銷於國內外市場,為指標性創新生活保健商品。

### Patented technology introduction:

- AIQ Pillow is a unique innovative product with the curved design in line with neck, shoulder and head ergonomic, so you can fill the pillow with air and release it within seconds to quickly adjust pillow height.
- A patented valve, applying the principle of natural "negative pressure" to set three sections in height of a pillow to adjust the memory position according to individual needs, and when the user is away, the pillow will be back to the set height, thereby making it more comfortable than any other memory pillows.
- A more advanced pillow: When the user lies on the back again, the pillow will automatically adjusted to more suitable height and hardness according to personal head weight.
- Ultimate-Re-Evolution: uPillow to meet your need as to its height which is adjustable within a golden ratio of 0.5~1.5cm.
- No electricity needed with environmental performance.

### 闊腦有限公司 / Kuonao Co.,Ltd.

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專利技術名稱

# 低介電樹脂組合物及應用其的膠片及電路板

Low dielectric resin composition, film and circuit board using the same

Patent No : (R.O.C. 優先 ) I637405

專利權人：臻鼎科技股份有限公司 / Zhen Ding Technology Limited

發明人：蘇賜祥、向首睿、徐茂峰、何明展

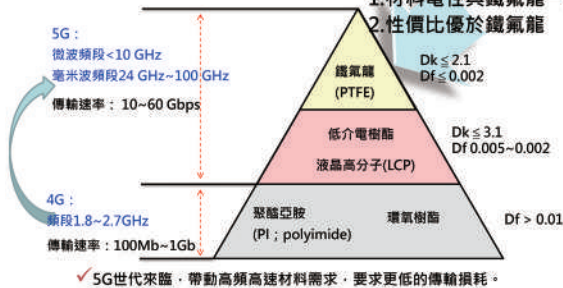
Su, Szu-Hsiang / Hsiang, Shou-Jui / Hsu, Mao-Feng / Ho, Ming-Jaan

突破電路板材料極限的根本式創新，  
從傳統PI邁入低損耗下世代材料

獨家創新技術

優勢：

1. 材料電性與鐵氟龍一樣
2. 性價比優於鐵氟龍



專利技術介紹：

本發明技術創新點是使用具將兩種不同反應機制之樹脂串接在一起，並且可均相，傳統環氧樹脂、醃酐軟段樹脂與雙鍵硬段樹脂是無法均相（相容），藉特殊分子設計其化學結構有軟鏈段與硬鏈段，嵌段聚合（AAA-BBB），非隨機聚合（ABAABB），讓硬鏈段有序排列，降低絕緣性，不僅電性符合下世代需求（低介電），在高頻高速傳輸時兼具訊號完整性，並且符合軟性電路板（FPC）製程所需之耐熱性及耐化性。因應5G世代，高頻基板材料需求向上攀升，本發明可運用手機天線、射頻模組、小基站、汽車電子、無人機、生醫感測、智慧工廠等。

Patented technology introduction:

The key concept of the patent is the combination of two different reaction resin; while general epoxy resin cannot compatible with the resin with double bonds, the special designed resin is capable to be miscible. The molecular design features its regular arrangement of soft chains and hard chains like (AAA-BBB); instead of random layout (ABAABB). To meet the 5G trend of high frequency and high speed, the resin can perform low dielectric and keep its signal integrity; moreover. Thanks to its thermal resistance and chemical affordability, the resin agrees with FPC manufacturing process. Smart phone antennas, radio frequency modules, small cells, automotive, drones, bio sensors, smart factories and etc.

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專利技術名稱

## 抗菌水凝膠

Antimicrobial Hydrogel

Patent No : (R.O.C. 優先 ) I644676

專利權人：婁敬 / Lou Ching

發明人：婁敬、林幸鈺 / Lou Ching, Lin Hsing Yu

### 專利技術介紹：

品寶生物科技有限公司致力於新型水凝膠敷料的研究與發展，透過「發明專利」技術下所生產之品寶水凝膠傷口敷料 (Green Guard® Hydrogel Wound Dressing) 經動物實驗與臨床使用證實，產品具備抗菌、高保濕性、高吸收性、高滲透能力、高生物相容性、使用簡易等優點特色。2018 年在本公司專家團隊何美鄉教授帶領下，與國內醫學院之產學合作動物傷口試驗證明，產品具有增強組織再生、加快傷口閉合、減弱發炎反應、促進角質細胞增殖和皮膚屏障的形成，最後能達到傷口癒合，這些結果都是與目前進階功能性敷料有顯著之差異所在，也使品寶水凝

膠敷料在臨床上具有作為理想傷口敷料的巨大潛力與商機。

目前產品已被多家醫學中心與教學醫院應用在術後傷口以及高齡化所引發之褥瘡、糖尿病足、燒燙傷及靜脈潰瘍等傷口治療上效果卓越。

產品已取得新加坡註冊 (CLASS C) 與菲律賓註冊中，並計畫向美國與歐盟申請註冊。

### Patented technology introduction:

Here we report a newly developed hydrogel wound dressing – Green Guard®. Clinical experience of Green Guard® hydrogel dressing in treating human cutaneous acute and chronic wounds has demonstrated remarkable effects in facilitating wound closure. This study was to evaluate the in vivo performance of Green Guard® hydrogel dressing in treating full-thickness wound in a mouse model as an attempt to explore possible wound healing mechanism this hydrogel may involve. We demonstrated that Green Guard® hydrogel dressing facilitated wound healing process by reducing inflammation of wounded skin, promoting keratinocyte proliferation and skin barrier formation and ultimately to accelerate tissue regeneration. These results demonstrated that Green Guard® hydrogel dressing has great potential as an ideal wound dressing clinically

Green Guard® Hydrogel Wound Dressing is proved to be able to facilitate wound healing from the following aspects:

- (1) Enhance tissue regeneration
- (2) Speed up wound closure
- (3) Attenuate the pro-inflammatory response level
- (4) Reduce the keratinocyte activation level
- (5) Maintain tissue integrity

The product is best for the following wounds:

Acute wounds: Skin tears, cuts or abrasions · 1st and 2nd degree burns · Surgical incisions · Graft donor sites

Chronic wounds: Pressure ulcers · Diabetic limb ulcers · Burn

Other causes

### 品寶生物科技有限公司 / Ping Bao Biotechnology Co.,Ltd.

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專利技術名稱

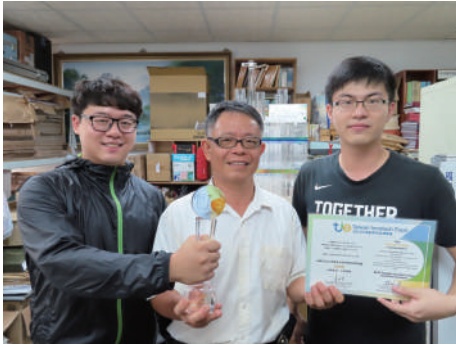
## 沈箱式岸置風機與離岸風機減振抗液化基礎

Vibration and liquefaction resistance foundation for shore and offshore wind turbine by using Caissons

Patent No : (R.O.C. 優先) I639749

專利權人：國立高雄科技大學 / National Kaohsiung University of Science and Technology

發明人：沈茂松 教授 / Professor Shen Mao-song



### 專利技術介紹：

台灣預計在 2025 年達成非核家園的目標，而干支海上風機是達成非核家園的途徑。但海上風機施工有四大課題：風機直徑 5m~10m 的鋼管樁基礎在海上需打入海底岩盤的超高技術與風險、日後海面上 100m 高的風機柱，需面對歐亞版塊和菲律賓版塊擠壓的大地震、親潮與黑潮摩擦的共振、以及每年高達 8 個月的颱風吹襲，因此工期與施工風險及日後運轉都是挑戰。

若以混凝土沈箱當作風機的基礎，則風機鋼管樁的打設如同在陸地上，許多施工工期與風險，及地震、颱風與洋流對日後海上風機的運轉影響，便能被克服。沈箱式岸置風機與離岸風機減振抗液化基礎與一般海上單支風機的比較：

沈箱式岸置風機與離岸風機減振抗液化基礎與一般海上單支風機的比較：

1. 在沈箱上施作全套管基樁比在海上打設鋼管樁之效率高、工期短、精度高。
2. 沈箱上風機可避免海上單基柱風機受洋流共振影響風機運轉效率與壽命。
3. 沈箱上風機比海上風機單支鋼管基樁受地震液化的影響少。
4. 沈箱式風機比海上風機 (單支鋼管基樁) 減振、並減少水下噪音對鯨豚生態影響小。
5. 沈箱式風機比海上風機 (單支鋼管基樁) 抗風浪、抗颱風與抗海嘯能力強。
6. 沈箱式風機使用全套管鋼筋混凝土樁比海上風機之單支鋼管樁耐久性、抗腐蝕性強。
7. 沈箱式風機可做成多風機陣列，共同使用一條海底電纜槽線，可省多條海底電纜。
8. 風機在沈箱上，有餘裕空間放置發電設備；在海上維修人員有落腳地方，甚至放置永久工作站。

### Patented technology introduction:

Taiwan aims to reach the goal of nuclear-free homeland in 2025. In response, thousands of offshore wind turbines were constructed. However, challenges still exist regarding offshore wind turbine construction. Some main concerns include: (1) the intense technology demand and the danger of inserting the steel pipe pile foundation (5m~10m in diameter) into the subsea bedrock, (2) the threat posed by earthquakes (caused by the Eurasian plate and the Philippine sea plate) to the wind turbine columns which stand 100m above sea level (3) the resonance of ocean currents, and (4) the local typhoon season which lasts up to eight months per year. Namely, the risk during construction and future operation are both major issues.

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專利技術名稱

## 流體分散盤及其設計方法

Fluid distributor and its design

Patent No : (R.O.C. 優先 ) I635894

專利權人：義守大學 / I-Shou University

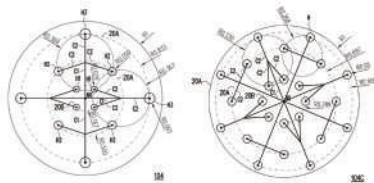
發明人：陳建霖、梁明在、梁茹茜、劉丞哲 /

Chen, Jiann-Lin / Liang, Ming-Tsai / Liang, Ru-Chien / Liu, Cheng-Che



依電腦輔助設計與製作完成之分散盤

Prototype of compound distributors by CAD and CAM



依流體力學原理設計的分散盤

Distributor designs based on fluid dynamics

### 專利技術介紹：

本發明設計是以流體力學之原理為基礎，提出一套應用在層析管柱內的分散盤設計方式，藉此方法使層析管柱之流場速度形成一致的均勻流，讓溶劑內的溶質獲得良好的分離效果，本設計方法是應用電腦輔助設計 (CAD) 與工程分析 (CAE) 來完成最佳化分散盤元件，且此元件對於化工量產設備的長 / 徑比較小之層析管特別有分離效果。

### Patented technology introduction:

This invention is based on the principles of fluid mechanics. We propose a set of distributor design procedure applied to the conventional Dynamic Axial Compression (DAC) column. By this design method, the solvent flow velocity field inside the DAC column is formed into a plug flow, and a good solute separation will be achieved effectively. The distributors by present design method via CAD and CAE techniques are particularly effective for the chromatography column with a small length/diameter configuration for the mass production in applications of chemical industry.

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專利技術名稱

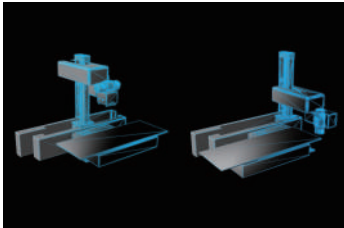
## 造影掃描系統 SCANNING SYSTEM

Patent No : (R.O.C. 優先 ) I640300

專利權人：行政院原子能委員會核能研究所 /

Institute of Nuclear Energy Research, Atomic Energy Council, Executive Yuan, R.O.C.

發明人：謝和諱、曾聖彬、黃宣雅 / Hsieh, Ho Hui ; Tseng, Sheng Pin; Huang, Syuan Ya



### 專利技術介紹：

本專利「造影掃描系統」是一種創新落地式放射造影床台機構設計，可簡便切換仰躺、站姿造影模式。在切換至站姿造影模式時，X光造影儀的光源可迴避放射造影床，不受其影響達成大範圍垂直方向運動，並可朝向造影儀側面進行X光攝影。站躺兩用之設計使一機即可應付各式X光二維及三維造影需求，適用臨床應用廣泛，包含一般X光檢查與三維數位斷層合成掃描，提升整體醫療友善度。

本專利已應用於核研所開發之低劑量三維X光機－Taiwan TomoDR，作為系統機構設計之重要關鍵技術，預期適用病灶範圍涵蓋胸腔、頭頸部、骨科、急診等多項應用，目前於台大醫院新竹分院進行臨床試驗，影像品質與臨床應用性獲醫師肯定。



### Patented technology introduction:

The patent "scanning system" is about an innovative radiography table mechanism design, which can easily switch between reclining and standing posture imaging modes. When switching to the standing imaging mode, the X-ray source is not blocked by the radiography table to achieve a wide range of vertical movement, and can perform X-ray imaging toward the lateral direction. This design makes it possible to meet all kinds of X-ray 2D and 3D imaging requirements, and is suitable for a wide range of clinical applications, including conventional 2D X-ray and 3D digital tomosynthesis.

This patent has been applied to the low-dose 3D X-ray imaging system "Taiwan TomoDR", developed by Institute of Nuclear Energy Research. It is expected to cover a wide range of diagnostic applications including chest, head and neck, orthopedics, emergency department. The academic clinical trial of Taiwan TomoDR is currently being conducted at National Taiwan University Hospital Hsinchu Branch. The imaging quality and clinical applicability are recognized by clinicians.

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專利技術名稱

## 無感測器至電子剎車控制系統 Sensorless Electronic Brake Control System

Patent No : (R.O.C. 優先 ) I664804

專利權人：國立中興大學 / National Chung Hsing University

發明人：林俊良、陳恩平、陳譽展 / Lin, Chun-Liang; Chen, En-Ping; Chen, Yu-Chan



### 專利技術介紹：

本發明提供一種無感測器之電子剎車控制系統，其主要係藉由將習知無轉子位置感測器的磁場導向控制電路透過以剎車開關控制制(車)驅(動)一體控制裝置使等效轉子角度為循序變化的負值，並控制切換部使電子控制部與可調式負載部電性連接，進而能夠透過消耗可調式負載部之反電動勢以使永磁無刷同步電機停止，以達到剎車之功效，而且，剎車之轉矩與永磁無刷同步電機之轉矩成比例，因此透過控制電子控制部特定電子開關的占空比，以達到進一步調整剎車轉矩之效。本專利並已成功實務應用至電動機車防鎖死剎車控制和循跡控制系統。

### Patented technology introduction:

This invention proposes an adjustable electromagnetic braking technique which can be applied to the permanent-magnet synchronous motors without the need of position sensors. When there is no driving current entering the motor stator and the motor is remaining inertial rotation, it becomes a power generator with current generated opposite to the driving current, according to the Fleming's left-hand rule. When the preset braking condition is satisfied, the proposed braking control system activates. The field oriented control is applied to drive the motor reversely until the stored back EMF is exhausted. This will cause a significant braking effect. The braking force is adjustable by changing duty cycle of the switching components with pulse-width modulation (PWM) technique. The invention has been successfully applied to the anti-lock braking system (ABS) and tracing control system (TCS) of electric scooters.

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專利技術名稱

## 結構體解析方法、電腦程式產品與裝置

### Analysis Method, Computer Product and Device for Discontinuous Structure

Patent No : (R.O.C. 優先 ) 108121267

專利權人：國立中央大學 / National Central University

發明人：李姿菱、洪文孝、鍾昆潤、張顯

Lee, Tzu-Ying ; Hung, Wen-Hsiao ; Chung, Kun-Jun ; Chang, Hao

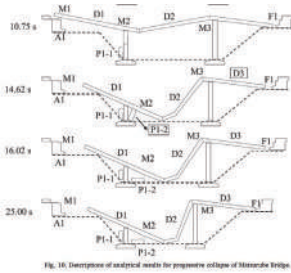


Fig. 16. Development of analytical models for progressive collapse of Matsurube Bridge.



Fig. 3. (a) Sketch of collapsed Matsurube Bridge [22] and (b) in-situ photograph [23].

#### 專利技術介紹：

本發明主要關於一種結構體解析方法，其特徵為經由電腦執行如下處理：為不連續非線性結構體建立基於有限元素分析之時空離散控制模型，該時空離散控制模型包含在現在時步上之等效節點割線阻尼係數以及等效節點割線勁度係數；經由電腦迭代演算，從前一時步上之已知參數、該等效節點割線阻尼係數以及該等效節點割線勁度係數，反覆計算割線阻尼係數斜率以及割線勁度係數斜率直到收斂；以及以收斂後之該割線阻尼係數斜率以及該割線勁度係數斜率，分別取代該等效節點割線阻尼係數以及該等效節點割線勁度係數為下一時步之初始係數。

"Ishikawa M, Okuyama Y and Niizeki H. Simulation of collapsed bridge under an intense earthquake. Tohoku Society for the Promotion of Concrete Technology, Sendai, Japan, 2010. (in Japanese)"

#### Patented technology introduction:

The present invention primarily relates to a civil engineering structure analysis method, characterized in that a computer is employed to implement processes as follows: establishing a spatial-temporal discrete governing model for a discontinuous nonlinear structure based on a finite element analysis, in which the model includes an equivalent nodal secant damping coefficient and an equivalent nodal secant stiffness coefficient at current time step; repeatedly calculating until convergence a secant damping coefficient slope and a secant stiffness coefficient slope based on known parameters, the known equivalent nodal secant damping coefficient and the known equivalent nodal secant stiffness coefficient at previous time step through a computer iterative algorithm; and replacing the equivalent nodal secant damping coefficient and an equivalent nodal secant stiffness coefficient by the converged secant damping coefficient slope and the converged secant stiffness coefficient slope to be the initial values for the next time step.

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專利技術名稱

## 電化學量測方法與系統

System and method for electric chemical sensor

Patent No : (R.O.C. 優先 ) 108105149

專利權人：國立中央大學 / National Central University

發明人：黃貞翰、林幸瑩 / Chen-Han Huang ; Hsing-Ying Lin



### 專利技術介紹：

本專利為跨領域整合技術，係包含奈米材料、電化學感測、物聯網技術之垂直整合系統。本技術中特殊的奈米材料可對檢測物進行快速萃取並具有相當高的專一性，能解決傳統在生化檢測上所需花費的時間與資源成本。相較於現行生化檢測技術領域，本整合型裝置實現了單一步驟與快速檢測功能之技術，透過本團隊多年研發之特殊自組裝分子層修飾之磁性奈米粒子對目標標本進行特異性與高度預濃縮，進而提升成為高靈敏專一性系統。此外，本搭載物聯網功能之系統，可經由 WiFi 或是藍芽連結智慧型手機後，將數據上傳至雲端進行追蹤與記錄。目前也已實際應用於食品安全、醫療檢測、環境監控等項目。

### Patented technology introduction:

The patent is a cross-domain integration technique including the vertical integration system of nanomaterials, electrochemical sensor, and IoT. The special nanomaterials applied by the technique can extract the target quickly with high specificity which can solve the problem of the cost of time and resource by traditional biochemical detection. Compare with the field of the other current biochemical detection, the integration system realizes the technique of single-step and rapid detection function. Through the magnetic nanoparticle of special self-assembled monolayers developed by our team, it can target the sample to conduct specificity and highly pre-concentration and upgrade to a high-sensitive and specific system. Moreover, the system equipped with the function of IoT can connect the smartphone by WiFi or Bluetooth to upload the data to the cloud platform for tracking and recording. At present, it has already been applied to the item such as food safety, medical test, environmental monitoring and so on.

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專利技術名稱

## 爐具用之安全防護器

Driving device of stove safety protective equipment

Patent No : (R.O.C. 優先 ) M554154

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### 專利技術介紹：

現代人忘記關閉爐火愈趨頻繁，而爐火烹調亦是廚房火警主因；全台平均每天有 10 起以上廚房火警，造成家庭單位損失、消防單位勤務繁重，亦增加社會資源的投入。加上老年化社會的到來，相信這個問題相信只會越來越嚴重。對年長者而言，是否能夠自主打理生活非常在意，而其中又以會忘記關火最是擔憂。

現有廚房警報方式只能在災害發生後警報，而本創作「e+自動關」為適用於事前預防以及便利使用之外掛式瓦斯爐裝置，能有效降低忘記關閉爐火發生機率，其特色如下：

1. 安裝簡單：不須更換爐具
2. 自動啟動：不忘記設定
3. 不改習慣：不改使用習慣
4. 時間調整：可自由調整時間
5. 愛心提醒：可做到最大程度的提醒
6. 主動協助關閉爐火：自動關閉旋鈕
7. 省電耐用：耐用且替換方便

### Patented technology introduction:

Statistics shows more than 10 kitchen fires reported daily in Taiwan, and number of unreported cases is even higher, however existing kitchen safety solution only gives alarm passively.

E+Autoff is a plug-in device that can solve the problem effectively. Major features as follows:

1. Easy installation
2. Automatic start
3. No habit change
4. Time-adjustable
5. sincere reminder
6. Actively shut down fire
7. Power saving and durable

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