



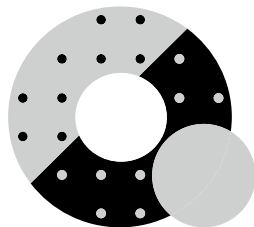
香港工商業獎
2021-22
HONG KONG
AWARDS FOR
INDUSTRIES



香港中華廠商聯合會
The Chinese Manufacturers'
Association of Hong Kong

設備及機械設計
EQUIPMENT AND
MACHINERY DESIGN





2021-22香港工商業獎： 設備及機械設計 得獎產品名單

2021-22 Hong Kong Awards for Industries: Equipment and Machinery Design
List of Winning Products



設備及機械設計大獎

Equipment and Machinery Design Grand Award

得獎公司 Winning Company

力勤科技集團有限公司
L.K. Technology Holdings Limited

得獎產品 Winning Product

IMPRESS – PLUS DCC6000大型壓鑄生產單元
IMPRESS – PLUS DCC6000 Diecasting Cell



設備及機械設計獎

Equipment and Machinery Design Award

得獎公司 Winning Company

香港應用科技研究院有限公司
Hong Kong Applied Science and Technology Research Institute Company Limited
香港生產力促進局、聯誼工程(國際控股)有限公司
Hong Kong Productivity Council, AEL (International Holdings) Limited
國際安全技術有限公司
International Security Technology Limited
光傳感有限公司
Optical Sensing Limited
路邦科技有限公司
Roborn Technology Limited
香港中華煤氣有限公司
The Hong Kong and China Gas Company Limited
威博科技有限公司
Welbot Technology Limited

得獎產品 Winning Product

用於質量控制的端到端人工智能視覺檢測平台
End-to-end AI-Powered Visual Inspection Platform for Quality Control
廚餘再生俠
Food TranSmarter
矩陣式虹膜閘機
IrisMatrix Automated Border Control System
分佈式感溫系統
Fibre Optic Distributed Sensing System
「守護」 – 香港首台5G戶外消毒機械人
"Sau Wu" – The First 5G Outdoor Disinfection Robot in Hong Kong
綜合抽濕鮮風櫃
Integrated PAU with Desiccant Wheel
自適應鑽孔樁焊接機械人
Adaptive Robotic Bored Pile Welder



設備及機械設計優異證書

Equipment and Machinery Design Certificate of Merit

得獎公司 Winning Company

靜音科技集團有限公司
Acoustic Metamaterials Group Ltd
宏圖空間信息顧問有限公司
Ambit Geospatial Solution Limited
香港生產力促進局
Hong Kong Productivity Council
香港生產力促進局、藝誠(余氏)發展有限公司
Hong Kong Productivity Council, Ngai Shing Development Limited
香港生產力促進局、東興自動化投資有限公司
Hong Kong Productivity Council, Tung Hing Automation Investment Limited
優端合科有限公司
InnoAlbator Limited
國際安全技術有限公司
International Security Technology Limited
科能三維技術(醫療)有限公司
Koln 3D Technology (Medical) Limited
Nexple Hong Kong Limited、香港應用科技研究院有限公司
Nexple Hong Kong Limited, Hong Kong Applied Science and Technology Research Institute Company Limited
愛普迪科技有限公司(金源集團)
Optec Technology Limited (Kam Yuen Group)
栢萊科技有限公司
Pino Technology Limited
普銳醫療(香港)有限公司
Precision Robotics (Hong Kong) Limited
復康機器人技術有限公司
Rehab-Robotics Company Limited
香港理工大學超精密加工技術國家重點實驗室
The Hong Kong Polytechnic University – State Key Laboratory of Ultra-precision Machining Technology
高瞻創新科技有限公司
Vista Innotech Limited
威博科技有限公司
Welbot Technology Limited
和利綠色動力有限公司
Wo Lee Green Solutions Limited

得獎產品 Winning Product

暖通空調聲學超材料消音器
Acoustic Metamaterial Silencer for HVAC
八角星(航空攝影三維測量系統)
Octagon V (Aerial 3D Mapping System)
多段式等離子拋光機
Multi-stage Plasma Polishing Machine
自動側縫壓線縫紉機
Side Seam Topstitching Machine
電流輔助自由成形技術用於具競爭優勢的數碼化定制钣金零件
Electrically-Assisted Free Forming (EAFF) Technology for Digital Competitive Customisation of Sheet Metal Parts
精準自動化配藥、派藥及跟蹤系統
Accurate & Automated Drug Dispensing, Distribution and Tracking System
載客私家車自助通關設備
Automated Passenger in Car Clearance System
Trinity 系列三列同步醫療機械人
Trinity Series – Trio Robotic Medical Machining System
NEXCAM 360
自動極性引導的光纖佈線機
Optical Fibre Routing Machine with Automatic Polarity Guide
聖衣箱
Orbit
SIRIUS 一次性機械人柔性內窺鏡系統
SIRIUS – The Single Use Robotic Flexible Endoscope System
自動鎖扣手指固定帶配合手部康復機器人
Automatic Locking Finger Strap on Light-weight Hand Training Robotics
一種新穎磁場輔助批量超精加工設備
A Novel Magnetic Field-assisted Batch Superfinishing (MABS) Equipment
防抖微雲台
Micro Gimbal Stabilizer (MGS)
外牆吊索機械人
External Wall Cable Robot
NanoFlow – 防菌防塵水性納米漆
NanoFlow – Anti-bacterial & Anti-dust & Anti-mould Waterborne Nano-coating for Air Ducting and Metal Surface

香港中華廠商聯合會會長史立德博士 BBS MH 太平紳士獻詞 Message by Dr Shi Lop Tak, Allen, BBS MH, JP President, The Chinese Manufacturers' Association of Hong Kong



由香港特區政府全力支持的「香港工商業獎」獎勵計劃，是工商界雙年舉辦的盛事，廠商會十分高興自計劃開辦至今一直擔任「香港工商業獎：設備及機械設計」組別的主辦機構。計劃旨在表揚本港企業在設備及機械的卓越設計，促使有效提高產品的競爭力，並藉此鼓勵更多傑出的設計參加這項計劃。

香港各行各業在過去一年掙扎求存，懂得善用科技已成為「疫」流而上、轉危為機的致勝之道。放眼世界，面對西方國家對中國包括本地的企業和產品施加愈來愈大限制的挑戰，企業要提升核心競爭力更變得刻不容緩。

廠商會多年來持續投入資源推動製造業轉型升級，去年 CMA 檢定中心就成立了「科技商品化平台及 CMA+」，專門為那些以科研為本的企業提供中試和測檢條件和便利；種種舉措就是希望搭好橋鋪好路，把本地科研和工業聯繫起來，配合香港「再工業化」的長足發展。

在此，本人謹向評審委員會各委員致以衷心感謝，並特別感謝評審委員會主席郭位校長領導委員會完成重要的評審工作，同時感謝所有參賽企業和支持機構，希望你們繼續支持這項意義非凡的比賽。

最後，本人謹向所有得獎公司致以熱烈祝賀。

香港中華廠商聯合會會長

史立德博士 BBS MH 太平紳士

Supported by the Government, the Hong Kong Awards for Industries (HKAI) is a flagship biennial event for Hong Kong's commercial and industrial sectors. The Chinese Manufacturers' Association of Hong Kong (CMA) is extremely honoured to be the organiser of the "Equipment and Machinery Design Competition" since its inception. The competition aims to recognise local enterprises' increasingly high standards of equipment and machinery design, and their efforts to enhance industrial competitiveness. Also, we want to inspire more outstanding designs to join the competition.

All business in Hong Kong have struggled to survive last year. The ability to make good use of technology has become the key to turn crisis into opportunity against the odds during the epidemic. In response to the challenge of greater restrictions on Chinese and local enterprises and products imposed by western countries, the first imperative for enterprises is to sharpen their core competitiveness.

The CMA has invested a lot of resources to promote transformation and upgrading for the manufacturing industry over the years. For instance, CMA Testing's technology commercialisation platform and CMA+ were launched to provide convenience for pilot-scale experiment and testing to enterprises. All the initiatives we have proposed are aimed at creating a bridge to link local R&D and industry, and to tie in with the long-term development of Hong Kong's re-industrialisation.

I wish to pay special tribute to members of the Judging Panel, especially to Panel Chairman Prof Way KUO, for the most important task of selecting the winners. I would also like to thank all participating companies and supporting organisations and wish they will continue to support this meaningful event in future.

Last but not least, I would like to warmly congratulate all the winners on their outstanding achievements in this year's event.

Dr Allen LT Shi BBS MH JP

President

The Chinese Manufacturers'
Association of Hong Kong

2021-22 香港工商業獎：設備及機械設計組別最終評審委員會 2021-22 Hong Kong Awards for Industries: Equipment and Machinery Design Final Judging Panel



左起：

陳鏡昌教授、陸貴文教授、李志康博士 工程師、潘國良教授、任揚教授、郭位教授（最終評審委員會主席）、盧金榮博士、李惠光工程師、畢堅文先生、潘國英先生

From left:

Prof Keith K C CHAN; Prof LUK Kwai Man; Ir Dr Barry LEE Chi Hong; Professor PUN Kwok Leung; Prof Yeung YAM; Prof Way KUO (Chairman of the Final Judging Panel); Dr LO Kam Wing; Ir Sunny LEE Wai-kwong; Mr Mohamed Din BUTT; Mr Raymond POON

2021-22 香港工商業獎：設備及機械設計組別最終評審委員會

2021-22 Hong Kong Awards for Industries: Equipment and Machinery Design Final Judging Panel

郭位教授 太平紳士 (最終評審委員會主席) **Prof Way KUO JP** (Chairman of the Final Judging Panel)

香港城市大學校長
President
City University of Hong Kong

畢堅文先生 MH **Mr Mohamed Din BUTT MH**

香港生產力促進局總裁
Executive Director
Hong Kong Productivity Council

陳鏡昌教授 **Prof Keith K C CHAN**

香港理工大學工業及系統工程學系教授及系主任
Professor and Head
Department of Industrial and Systems Engineering
The Hong Kong Polytechnic University

李志康博士 工程師 **Ir Dr Barry LEE Chi Hong**

香港工程師學會副會長
Vice President
The Hong Kong Institution of Engineers

李惠光工程師 太平紳士 **Ir Sunny LEE Wai-kwong JP**

香港應用科技研究院董事局主席
Chairman
Hong Kong Applied Science and Technology Research Institute

盧金榮博士 太平紳士 **Dr LO Kam Wing JP**

香港中華廠商聯合會常務副會長
Executive Vice President
The Chinese Manufacturers' Association of Hong Kong

陸貴文教授 **Prof LUK Kwai Man**

香港城市大學電機工程學系電子工程學講座教授
Chair Professor of Electronic Engineering
Department of Electrical Engineering
City University of Hong Kong

柯嘉倫博士 **Dr Kalun OR**

香港大學工業及製造系統工程系副教授及助理系主任
Associate Professor & Assistant Head
Department of Industrial and Manufacturing Systems Engineering
The University of Hong Kong

潘國英先生 **Mr Raymond POON**

機電工程署副署長 / 規管服務
Deputy Director/Regulatory Services
Electrical and Mechanical Services Department

潘國良教授 **Prof PUN Kwok Leung**

香港高等教育科技學院科技學院院長
Dean of the Faculty of Science and Technology
Technological and Higher Education Institute of Hong Kong

曾漢奇教授 **Prof TSANG Hon Ki**

香港中文大學電子工程學系教授
Professor
Department of Electronic Engineering
The Chinese University of Hong Kong

王煜教授 **Prof Michael Yu WANG**

香港科大機器人研究院院長
Director of HKUST Robotics Institute
The Hong Kong University of Science and Technology

任揚教授 **Prof Yeung YAM**

香港中文大學深圳研究院院長、
香港中文大學機械及自動化工程學系教授 (研究)
Director of CUHK Shenzhen Research Institute
Professor (Research) of Department of Mechanical & Automation Engineering
The Chinese University of Hong Kong

2021-22 香港工商業獎：設備及機械設計大獎 2021-22 Hong Kong Awards for Industries: Equipment and Machinery Design Grand Award

產品名稱： IMPRESS-PLUS DCC6000 大型壓鑄生產單元
Product Name: IMPRESS-PLUS DCC6000 Diecasting Cell

公司名稱： 力勁科技集團有限公司
Company Name: L.K. Technology Holdings Limited

設計者： 劉相尚先生及力勁技術研發團隊
Designer Name: Mr S S LIU & LK R&D Team

網址 /Website: www.lk.world

評審委員會意見：

力勁 DCC6000 冷室壓鑄機是目前全球最大的壓鑄機，能一體化壓鑄出電動車的後底板部分。一體成型技術讓電動車的後底板部分由七十多個零件精簡為一個零件。此台 DCC6000 可以大大節省用料、生產時間及減低車身重量，從而降低生產成本及車輛能源損耗。機台採用了專利設計 - 線性導軌技術及進一步優化了機台的整體結構，因而增加機器的生產能力，提高效率，將不可能變成可能。

力勁創新設計的 DCC6000 超大型壓鑄機突破了汽車的車身設計及生產，更為新能源汽車行業帶來顛覆性的變革。

General Comments on the Product:

The DCC6000 Diecasting Cell which is designed to produce the rear underbody of the car, is the largest die-casting machine of its kind in the world. The die-casting method could reduce the components of forming the rear structure of the car body from over 70 pieces to become a single part.

With the use of DCC6000 Cell, the materials consumption, manufacturing time and weight of the car can be largely reduced and in turn would save the cost of production and reduce the energy consumption of the car. The patented design of the sliding rails and the improved design of the other components of the DCC6000 diecasting machine made the increase of the machine's capacity become possible.

The innovative DCC6000 diecasting machine has made a breakthrough in the design and production of the car body of automotive industry.



2021-22 香港工商業獎：設備及機械設計大獎
2021-22 Hong Kong Awards for Industries:
Equipment and Machinery Design Grand Award



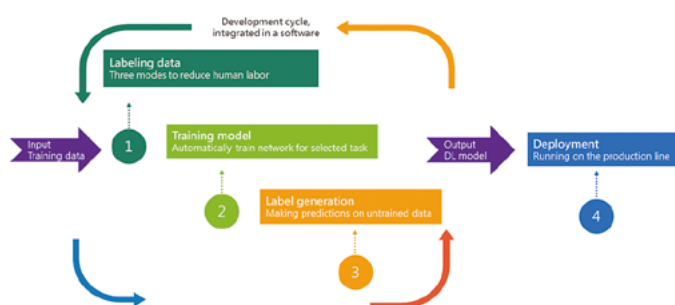
2021-22 香港工商業獎：設備及機械設計獎 2021-22 Hong Kong Awards for Industries: Equipment and Machinery Design Award

產品名稱： 用於質量控制的端到端人工智能視覺檢測平台
Product Name: End-to-end AI-Powered Visual Inspection Platform for Quality Control

公司名稱： 香港應用科技研究院有限公司
Company Name: Hong Kong Applied Science and Technology Research Institute Company Limited

設計者： 黃嘉瑤博士、劉威志先生、王志誠先生、
舒嘉瑜博士、徐偉軒先生
Designer Name: Dr WONG Ka Yiu, Mr LIU Weizhi,
Mr WONG Chi Shing Charles, Dr SHU Jiayu,
Mr CHUI Wai Hun Felix

網址 /Website: www.astri.org



評審委員會意見：

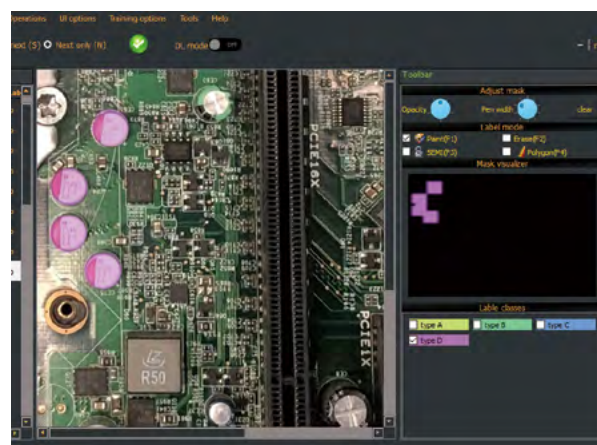
該平台是用於質量檢測的人工智能開發和生產線上在線檢測的端到端解決方案，旨在降低人工智能開發的技術壁壘，在數據準備過程中，克服人為導致的錯誤。該平台包含了一套深度學習的機器視覺軟件，不需要在現有的機器進行修改，便可以快速輕鬆地應用於在新的或現有的生產線，提高缺陷檢測的質量和效率，並降低成本。

此外，這數據驅動的方法無需專家介入，故不需要現時從事此重複性工作的工程師及操作員，這大大減低了品質保證的人手達 80%。與人眼檢測相比，此平台的檢測速度能提升 20 倍以上，遺失率亦降低 25%。

General Comments on the Product:

The platform is an end-to-end solution for inspection AI development and in-line inspection on production line to reduce the technology barrier in AI development and overcome the performance bottleneck caused by human error in data preparation. The product has a deep-learning-based machine vision software which does not require any modification to existing machinery and, could be adopted on new or existing production line quickly and easily. It can improve defect inspection quality and efficiency and reduce the cost.

Moreover, the data-driven method requires no expert's intervention, releasing engineers and operators from repetitive tasks and lowering quality assurance manpower needs by 80%. The platform increases inspection speed by more than 20 times and reduces the escape rate by 25% compared to human eye inspection.



產品名稱：廚餘再生俠
Product Name: Food TranSmarter

公司名稱：香港生產力促進局、聯誼工程（國際控股）有限公司
Company Name: Hong Kong Productivity Council,
AEL (International Holdings) Limited

設計者：馬耀華博士 工程師、周治平先生、李國材博士、
黃健偉先生、何家健博士、郭必輝先生
Designer Name: Ir Dr Anthony MA, Mr Jude CHOW, Dr Vinci LEE,
Mr WONG Kin-wai, Dr HO Ka-kin, Mr Brian KWOK

網址 /Website: www.hkpc.org

評審委員會意見：

廚餘再生俠能夠簡化廚餘收集及運輸過程，以實現碳減排。此系統可於 60 分鐘內透過機械及生物分解技術，將廚餘內高達 97% 有機物轉化成廚餘漿液，整個廚餘分解過程可在 24 小時內完成。系統的密封設計能避免臭味釋放，減少對周圍環境的影響。系統設計亦充分考慮了人體工學、操作安全和環境影響等方面，並已通過在香港中文大學開展的試行計劃，證明系統有效運作。「廚餘再生俠」配合先進的污水處理技術，專為符合香港廚餘管理的需要而設計。



General Comments on the Product:

The "Food TranSmarter" can simplify the food waste collection and transportation, achieving CO₂ reduction. The system can effectively convert about 97% of organic matters of food waste into slurry by mechanical and biological actions with less than 60 minutes and the decomposition of food waste can be done within 24 hours. The air-tight design of the system avoids odour release and minimizes nuisance to the surrounding. The design fully considers the aspects of ergonomics, operational safety and environmental impacts, and has been demonstrated to be effective through a pilot trial at CUHK. The "Food TranSmarter" has been developed with advanced wastewater treatment technologies and is tailored to the needs of food waste management in Hong Kong.



2021-22 香港工商業獎：設備及機械設計獎 2021-22 Hong Kong Awards for Industries: Equipment and Machinery Design Award

產品名稱： 矩陣式虹膜閘機
Product Name: IrisMatrix Automated Border Control System

公司名稱： 國際安全技術有限公司
Company Name: International Security Technology Limited

設計者： 王榜金先生、唐文奇先生、朱炳池先生、李少南先生
Designer Name: Mr WANG Bangjin, Mr TANG Wenqi, Mr ZHU Bingchi, Mr LI Shaonan

網址 /Website: www.ist-china.com

評審委員會意見：

該產品採用虹膜識別技術，以人機互動介面進行身份驗證，可在邊檢／口岸進行自動通關之用。與其他流行的指紋或人臉識別技術相比，虹膜識別技術具有更佳的綜合性能。它的獨特性和不可複製的特性，使其在綜合安全性能（誤識率 10^{-7} ，誤拒率 10^{-3} ）方面具有顯著的優勢。

此外，該產品設計精良，採用多感應器矩陣模組，高效、準確和易於使用，即無需與感應器十分靠近，便能進行驗證。

該產品不僅在邊檢／口岸通關方面具有巨大的發展潛力，也適用於辦公大樓、住所、以至和其他安全性、效率要求高的服務場地。



General Comments on the Product:

The product adopted iris recognition technology for authentication and man-machine interaction which can be used for automated border control functions. The iris recognition technology has better comprehensive performance when compared with other popular fingerprint or face recognition technologies. Iris recognition has significant advantages in the aspect of comprehensive security performance (FAR: 10^{-7} , FRR: 10^{-3}) due to its uniqueness and irreproductivity.

Moreover, the product is well design with multiple sensor matrix module which has much improved the efficiency, accuracy and ease of use, i.e. no need to stand very close to the sensor at specific location.

The product should have great potential for developments not only for border control operation, but also for access control applications for buildings and premises.

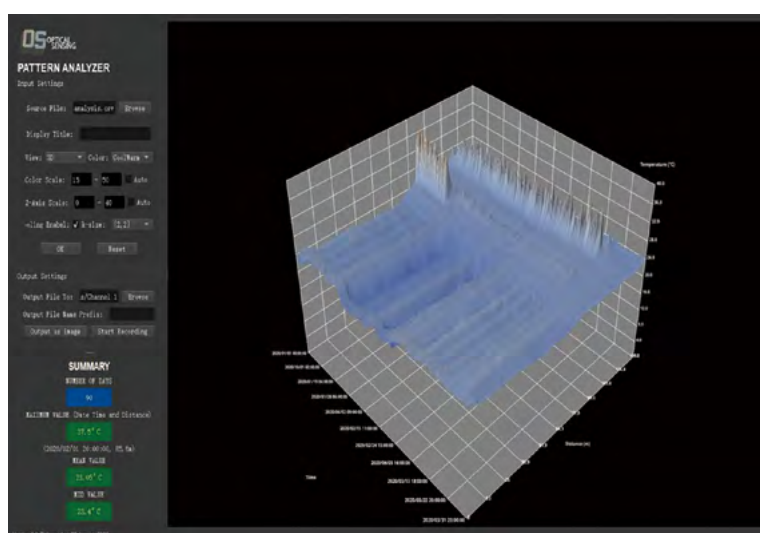


產品名稱：分佈式感溫系統
Product Name: Fibre Optic Distributed Sensing System

公司名稱：光傳感有限公司
Company Name: Optical Sensing Limited

設計者：林兆明先生
Designer Name: Mr LAM Siu Ming, Matthew

網址 /Website: www.opticalsensing-hk.com

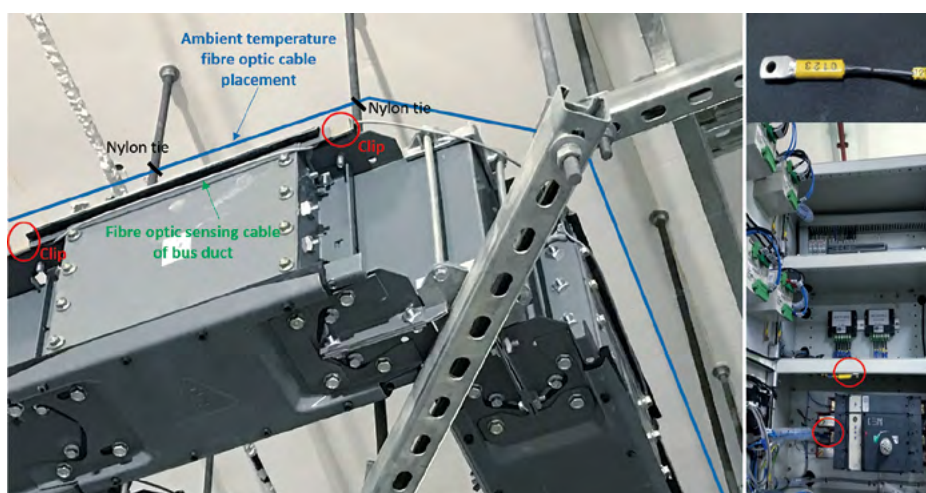


評審委員會意見：

此系統利用單模光纖中光脈衝的受激位曼散射技術，監測沿光纖的溫度分佈，而分佈式傳感器（即光纖本身）的溫度靈敏度可優於 1 度。系統可以檢測到配電網絡中的溫度異常，這項技術現時已被應用到電力總掣櫃中，以避免當中有溫度熱點上升而導致電力故障。此系統可兼容安裝在新舊建築物的現有電力網絡，具備銷售性；並可提高建築物的安全性，通過檢測溫度熱點和潛在危機，可在溫度上升到一定水平前識別出情況，避免電力故障，適用於機場及醫院等地方。

General Comments on the Product:

The system makes use of stimulated Raman scattering of optical pulses in a single mode fiber to monitor the temperature distribution along the fiber. Temperature sensitivity can be better than 1 degree in the distributed sensor. The system can detect abnormal temperature rises in power distribution networks, and has already worked to identify hotspots in power switching cabinets before they rise to the level of electrical failure. The product has demonstrated marketability, being compatible for installation in both new and old buildings with existing power network. It can improve building safety by detecting hotspots and potential power failures before they rise to the level of power failure occur in airports and hospitals.



2021-22 香港工商業獎：設備及機械設計獎
2021-22 Hong Kong Awards for Industries:
Equipment and Machinery Design Award

產品名稱： 「守護」- 香港首台 5G 戶外消毒機械人
Product Name: "Sau Wu" - The First 5G Outdoor Disinfection Robot in Hong Kong

公司名稱： 路邦科技有限公司
Company Name: Roborn Technology Limited

設計者： 麥騫譽先生
Designer Name: Mr MAK Hin Yu

網址 /Website: www.roborn.com



評審委員會意見：

這款創新機械人的面世，滿足了當前疫情下的市場需求。此機械人充份利用 5G 通信和人工智能技術，可以在室外環境噴灑消毒液，獨立地進行消毒工作。用家可透過程序設置，令機械人按預設的時間和區域，沿途進行消毒。它操作靈活、簡便易用，而且具成本效益。儘管「守護」仍處於研製階段，還需要在不同的地形上進行更多的測試，但毫無疑問，這款機械人極具潛力。

General Comments on the Product:

The debut of this innovative robot meets the market needs under the current pandemic situation. Through the effective use of 5G communication and Artificial Intelligence (AI) technologies, the robot can independently carry out the disinfection work by spraying disinfectant in outdoor areas. The robot can be programmed to disinfect along a path at critical times and areas. It is flexible, user-friendly and economically. Despite of the fact that "Sau Wu" is still under development stage and it needs to go through more test trials in different terrains, it is no doubt that the potential of this kind of robot is enormous.



產品名稱： 綜合抽濕鮮風櫃
Product Name: Integrated PAU with Desiccant Wheel

公司名稱： 香港中華煤氣有限公司
Company Name: The Hong Kong and China Gas Company Limited

設計者： 鄭曉光先生、巫志強先生、江紹權先生、蔡秋池先生
Designer Name: Ir Don CHENG, Ir Ivan MO, Ir Sammy KONG,
Ir Charles TSOI

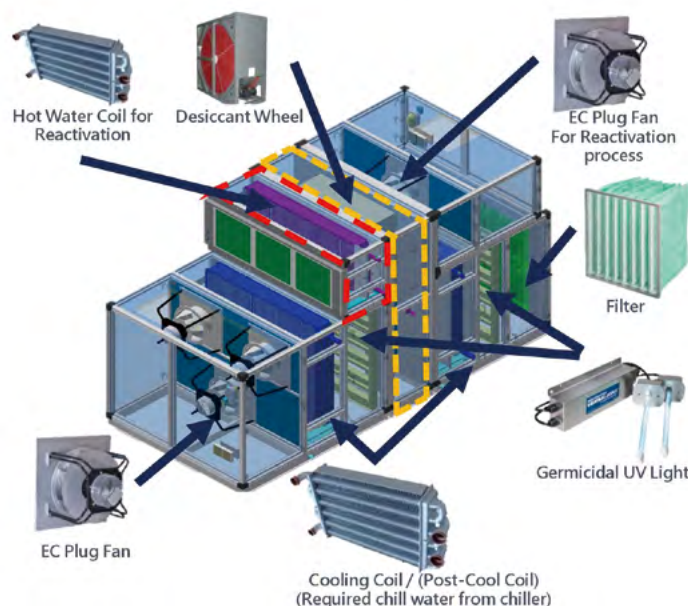
網址 /Website: www.towngas.com

評審委員會意見：

現有的空調系統在處理空間濕度時，需要把室內溫度大幅調低，影響客戶舒適度。煤氣公司成功研發一套綜合抽濕鮮風櫃，以乾燥劑抽濕技術控制室內的相對濕度，同時降低空調系統的負荷，節約能源。設備亦可應客戶所需，安裝額外的部件以提供其他功能，例如安裝空氣淨化及消毒組件以過濾和去除空氣中的異味、細菌和病毒。鮮風櫃更能令屋宇內的地板、天花、傢俬及牆身保持在最佳狀態，從而節省維護保養所需的費用。

General Comments on the Product:

The current conventional HVAC system regulating humidity causes discomfort to users due to the low temperature. Towngas innovated an "Integrated PAU (Primary Air Handling Unit) with Desiccant Wheel" unit to control the relative humidity inside the building that reduces the use of energy on supply only cold air. In addition, it can improve the air quality through an air-purification system installed in the unit to effectively reduce odours, bacteria, and viruses. The unit provides an optimal condition, that can keep the floor and ceilings, furniture and fixtures a longer life span, as well as savings in maintenance and renovation costs.



2021-22 香港工商業獎：設備及機械設計獎 2021-22 Hong Kong Awards for Industries: Equipment and Machinery Design Award

產品名稱： 自適應鑽孔樁焊接機械人
Product Name: Adaptive Robotic Bored Pile Welder

公司名稱： 威博科技有限公司
Company Name: Welbot Technology Limited

設計者： 黎志雄先生、楊煥新先生
Designer Name: Mr LAI Chi Hung, Mr YEUNG Wun San

網址 /Website: www.welbot-tech.com

評審委員會意見：

此焊接機械人於香港研發及組裝，並綜合了機械學習演算法及大數據技術，以提升機械的質量及準確度。

此焊接機械人能為客戶提供直徑 2-5 米鑽孔樁焊接工程。產品搭載了專利的 ARC 系統，及固有的焊接機械人技術，並具備以下功能，包括直觀用戶界面、自動焊接路徑、三維焊接運行軌跡、複雜焊接路徑、間縫填補及多層自動焊接（疊焊）等。

有鑑資深的燒焊工人逐漸減少，此行業亦難以吸引年青一代加入，這部機械人面世後，將有望解決建造業長期的人手短缺問題。



General Comments on the Product:

The welder is an adaptive robot which is designed and assembled in Hong Kong. It incorporates machine-learning algorithm and big-data technology to enhance the quality and accuracy of the machine.

This product is powered by the ARC system and the unique robotic welding technology with Intuitive User Interface, Auto-weld-path Generation, 3D Welding Swing Weave, Complex Welding Path, Gap Compensation and Multi-layer Auto Welding.

Experienced workers in this field are getting less and it is difficult to attract new comers from the younger generation. With the availability of this new machine, the construction industry will be able to solve this long-term problem.



2021-22 香港工商業獎：設備及機械設計優異證書
2021-22 Hong Kong Awards for Industries:
Equipment and Machinery Design Certificate of Merit

產品名稱： 暖通空調聲學超材料消音器
Product Name: Acoustic Metamaterial Silencer for HVAC

公司名稱： 靜音科技集團有限公司
Company Name: Acoustic Metamaterials Group Ltd

設計者： 陳書宇博士、楊旻博士、肖松文博士、傅財星先生
Designer Name: Dr Shuyu CHEN, Dr Min YANG, Dr Songwen XIAO,
Mr Caixing FU

網址 /Website: www.acousticmetamaterials.org

評審委員會意見：

所有傳統的吸音材料，如泡沫、岩棉和玻璃纖維，在其吸音能力方面都有物理限制 - 與其體積直接相關。此產品是利用聲學超材料消音器而開發，可從源頭控制噪音。其創新之處是利用一定的機械結構改變聲音的聲波特性的，從而實現聲音衰減。此外，在傳統的消聲材料不能夠被應用的場景中，此產品能夠替代傳統物料並達到更優秀的聲學效果（例如：需要阻燃聲學泡沫的場景中）。

General Comments on the Product:

All traditional sound absorbing materials such as foam, Rockwool, and glass fiber have physical limitations regarding its absorption capability – directly correlated to its volume. The product is about the development of acoustic metamaterial silencers that can be used to control noise at the source. It is innovative in terms of the idea of using a certain mechanical structure to alter the sound wave characteristic of sound for sound attenuation. Moreover, the product is useful when conventional sound attenuation materials cannot be used (e.g., fire-retardant acoustic foam).



2021-22 香港工商業獎：設備及機械設計優異證書 2021-22 Hong Kong Awards for Industries: Equipment and Machinery Design Certificate of Merit

產品名稱： 八角星（航空攝影三維測量系統）
Product Name: Octagon V (Aerial 3D Mapping System)

公司名稱： 宏圖空間信息顧問有限公司
Company Name: Ambit Geospatial Solution Limited

設計者： 丘之鵬先生
Designer Name: Mr Eric C P YAU

網址 /Website: www.ambit-geospatial.com.hk

評審委員會意見：

八角星 (Octagon V) 是專門針對大都會的航空攝影測量用途而設計的三維測繪系統；由於大城市空域繁忙，此產品特意設計適合低空操作模式（1000 至 2000 尺），以避免於繁忙的商業空域（2000 尺以上）操作，從而使運作效率得以大大提高。同時，低空更能獲取清晰度高的圖像數據，因此可提升三維模型的質量。八角星 (Octagon V) 系統同時配備了完善的軟件，供航測任務規劃、模擬及分析之用，讓用戶能模擬航線佈局，以優化及預覽航空攝影測量任務的全盤計劃。

General Comments on the Product:

Octagon V is an aerial 3D mapping system designed solely for application in metropolitan city to generate high-resolution 3D photo-realistic model. It is designed for operating in the low airspace altitude (1000 to 2000 feet above ground level) of these cities. The reason to choose this altitude is because that is less congested and thus will improve the quality of the final 3D model. The accomplished software of Octagon V is designed with mission design, simulation and analysis functionalities. In short, a virtual simulation can be provided to tune flight paths and other parameters so as to optimize the data capture quality and efficiency.



2021-22 香港工商業獎：設備及機械設計優異證書
2021-22 Hong Kong Awards for Industries:
Equipment and Machinery Design Certificate of Merit

產品名稱：多段式等離子拋光機
Product Name: Multi-stage Plasma Polishing Machine

公司名稱：香港生產力促進局
Company Name: Hong Kong Productivity Council

設計者：馮國輝先生、黃鯤鵬先生、陳煒暘先生
Designer Name: Mr Chuck FUNG, Mr Daniel WONG, Mr Wayne CHEN

網址 /Website: www.hkpc.org

評審委員會意見：

此部全新研發的多段式等離子拋光機，旨在克服傳統拋光機用於金屬表面拋光的缺點。產品已通過手錶、眼鏡、模具等行業的金屬部件表面進行拋光測試，證明能夠有效達到所需鏡面效果。與機械拋光機相比，此拋光機在為錶殼進行拋光時，能夠節省 80% 營運成本。另外，此拋光機所使用的電解液並無毒性，與電化學拋光機相比，可省卻昂貴的廢水處理。

General Comments on the Product:

The Machine is intended to overcome the shortcomings of the conventional polishing machines for metallic object surface polishing. The trial run of the newly developed plasma polishing machine for metal parts from watch, eyewear and molding industries demonstrated that the machine can achieve the required mirror-like surface effectively. In compared with the mechanical polishing machine, this machine can reduce the operation cost by 80% for polishing a watch case. Additionally, the Electrolyte used in this machine is non-toxic and does not require expensive posttreatment as compared with the electro-chemical polishing machine.



2021-22 香港工商業獎：設備及機械設計優異證書 2021-22 Hong Kong Awards for Industries: Equipment and Machinery Design Certificate of Merit

產品名稱： 自動側縫壓線縫紉機
Product Name: Side Seam Topstitching Machine

公司名稱： 香港生產力促進局、藝誠（余氏）發展有限公司
Company Name: Hong Kong Productivity Council,
Ngai Shing Development Limited

設計者： 余嘉誠先生、黃宇虔先生、袁廣傑先生
Designer Name: Mr Cason YU, Mr Ivan WONG, Mr Kit YUEN

網址 /Website: www.hkpc.org; www.ngaishing.com

評審委員會意見：

此產品性價比高，因此自推出以來一直保持穩定的銷量。在傳統「明線」車縫過程中，在縫製恤衫袖和主體的壓線時，需要分開兩個獨立步驟來完成（一是縫製衣袖的壓線，二是縫製主體的壓線）。此產品採用了創新的自動對位裝置，巧妙利用地心吸力，同步完成縫製衣袖和主體的壓線，從而提升生產效率。

General Comments on the Product:

The value/cost of the product appears to be effective (not high), which has resulted in a reasonable sales volume since the launch of the product. In the conventional process for seam topstitching the sleeve and body of a shirt, two independent steps were generally involved (one step for seam topstitching the sleeve and another step for the body). This machine exploits an innovative alignment mechanism with the use of gravity to permit the seam topstitching of the sleeve and body to occur in one go (only one single step is involved), which leads to efficiency improvement.



2021-22 香港工商業獎：設備及機械設計優異證書
2021-22 Hong Kong Awards for Industries:
Equipment and Machinery Design Certificate of Merit

產品名稱： 電流輔助自由成形技術用於具競爭優勢的數碼化定制鈹金零件
Product Name: **Electrically-Assisted Free Forming (EAFF) Technology for Digital Competitive Customisation of Sheet Metal Parts**

公司名稱： 香港生產力促進局、東興自動化投資有限公司
Company Name: **Hong Kong Productivity Council, Tung Hing Automation Investment Limited**

設計者： 單銘賢先生、陳偉倫先生、鄧柏鉅先生、溫烱新先生、張倚樂先生、林朗熙先生、周麗娟女士、陳永強先生
Designer Name: **Mr SHAN Ming-yin, Mr CHAN Wai-lun, Mr TANG Pak-kui, Mr WAN Kwing-san, Mr CHEUNG Yee-lok, Mr LIM Long-hei, Ms ZHOU Li-juan, Mr CHEN Yong-qiang**

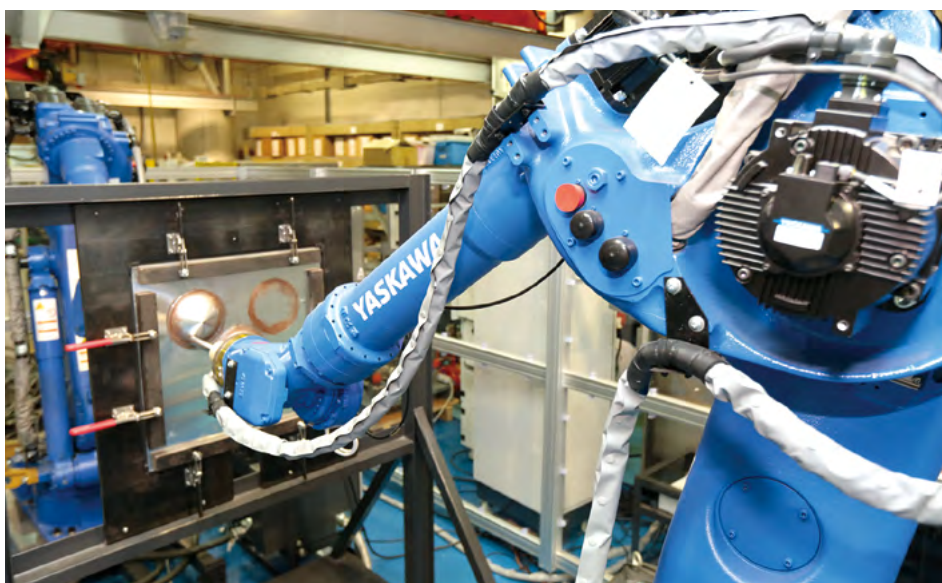
網址 /Website: **www.hkpc.org; www.tunghingautomation.com**

評審委員會意見：

電流輔助自由成形技術是一種用於製造鈹金零件的新型數碼化技術。與傳統的沖壓工藝相比，由於此技術不需要製作專用的成型模具，因此可大大降低投放在模具上的成本，大幅縮短製作原型的時間和小批量生產的週期，從而改善現時鈹金成型行業面對的問題。此技術透過於兩個機械臂末端安裝壓針型工具，以實現無模成型工藝，並利用電流在成形過程中局部軟化鈹金。另外，此技術亦應用虛擬化技術來模擬、改善及監控鈹金成型過程。此技術目前已提交三項專利申請。

General Comments on the Product:

Electrically-assisted free forming (EAFF) is a new digital manufacturing process in the industry for sheet metal parts. Compared to the traditional stamping process, the EAFF process does not require a forming die which can minimise the tooling cost and can greatly reduce the production lead time for prototyping and small batch production, which can benefit the industry. The EAFF system utilises two robot arms with stylus tools for the dieless forming process and electric currents for locally softening the sheet metal during forming process. Moreover, virtualisation technology is employed to simulate, optimise and monitor the sheet metal forming process. Three patents relating to this new system have been filed.



2021-22 香港工商業獎：設備及機械設計優異證書 2021-22 Hong Kong Awards for Industries: Equipment and Machinery Design Certificate of Merit

產品名稱： 精準自動化配藥、派藥及跟蹤系統
Product Name: Accurate & Automated Drug Dispensing, Distribution and Tracking System

公司名稱： 優端合科有限公司
Company Name: InnoAlbator Limited

設計者： 馮威棠教授
Designer Name: Prof FUNG Wai Tong, Torin

網址 /Website: innoalbator.com, www.yunxundevic.com

評審委員會意見：

此一體化系統包含配藥、派藥、分藥和取藥處理，通過自動化有效提高當前的手動配藥過程的服務效率。該智能分藥機含獨特的創新功能，包括：三重驗藥、直接從不同大小的片裝和藥瓶中自動取藥和配藥、另使用1x4/3x4/7x4藥格順序排列，以減低服錯藥的風險。系統配備身份認證的手機APP可自助取藥或派藥。因其價格低廉，易於負擔，故在醫療保健服務行業例如醫院、診所、安老院舍和殘疾人士院舍等具備潛力。

General Comments on the Product:

An all-in-one system for drug dispensing, drug distribution, drug sewing and drug taking processing is developed for precise medication. It helps to improve the medication service efficiency by automating the current manual dispensing process. Unique innovative feature of the smart dispensing machine includes triple drug verification, automatically dispensing drug directly from blister pack and pill bottle in different size, use 1x4/3x4/7x4 pillbox ordering to reduce the risk of taking the wrong drug. Also, it can connect mobile APP with identity authentication for self-collection or distribution. It has potential for the health care service segment as it is offered at low cost which hospitals, clinics, RCHes and RCHDs can afford.



2021-22 香港工商業獎：設備及機械設計優異證書
2021-22 Hong Kong Awards for Industries:
Equipment and Machinery Design Certificate of Merit

產品名稱：載客私家車自助通關設備

Product Name: Automated Passenger in Car Clearance System

公司名稱：國際安全技術有限公司

Company Name: International Security Technology Limited

設計者：王榜金先生、龍泉先生、胡瓊仁先生、呂永幘先生、
蘇曉華先生、朱許榮先生

Designer Name: Mr WANG Bangjin, Mr LONG Quan, Mr HU Qiongren,
Mr LV Yongzhen, Mr SU Xiaohua, Mr ZHU Xurong

網址 /Website: www.ist-china.com

評審委員會意見：

此載客私家車自助通關系統，是以智慧機械臂技術，集成了不同身份驗證／識別技術，包括面部識別、指紋識別等用於跨境汽車通關的身份驗證技術。

其創新的智慧機械臂控制部分已獲得多項專利。產品在達至各種功能（例如避免碰撞）的同時，亦要面對很多實質性的限制，因此，機械臂控制與後端處理系統和現有多種身份驗證技術的融合是相當複雜的。毋庸置疑，該系統正朝著實現高智慧乘客清關系統的方向邁進。

General Comments on the Product:

The automated passenger in car clearance system is a robotic arm integrated with different authentication/identification technologies, including facial recognition, fingerprint recognition, and other authentication technologies used in cross border car clearance check.

The innovation is mainly on the robotic control part, and there are many patents related to this product. The integration of the robotic control with backend system and existing authentication technology is complicated, as there are many physical constraints to achieve various functionalities such as collision avoidance. Definitely, this system is on the correct path towards the realization of highly intelligent passenger in car clearance system.



2021-22 香港工商業獎：設備及機械設計優異證書 2021-22 Hong Kong Awards for Industries: Equipment and Machinery Design Certificate of Merit

產品名稱： Trinity 系列三列同步醫療機械人
Product Name: Trinity Series - Trio Robotic Medical Machining System

公司名稱： 科能三維技術（醫療）有限公司
Company Name: Koln 3D Technology (Medical) Limited

設計者： 丘榮豐先生、麥思爾博士、黃尚賢博士、許教明博士、
杜振邦先生、鍾綽然先生、翁正行先生、徐韶華小姐、
譚光亮先生、謝龍峰醫生
Designer Name: Mr YAU Wing Fung, Dr MAK Sze Yi, Dr WONG Seung Yin,
Dr HUA Meng, Mr TO Chun Bong, Mr CHUNG Cheuk Yin,
Mr YUNG Ching Hang, Ms CHUI Siu Wa,
Mr TAM Kwong Leong, Dr TSE Lung Fung

網址 /Website: medical.koln3d-tech.com

評審委員會意見：

Trinity 加工機械系統，具備三台同步全自動化的工業用機械臂，其高規格精準度適用於醫療產品的後處理。此系統的運作範圍和操作自由度是其明顯優勢。通過軟／硬體的配合，令加工的誤差值大大縮減。在可持續發展方面，系統使用二氧化碳輔以生物柴油作噴射冷卻，比傳統切削液污染較低，更加環保。系統置於金屬框架搭設的空間內，採用高強度防撞擊膠窗，同時設有二氧化碳濃度計和緊急暫停按鈕，以確保運作安全。

此一站式全自動系統，為醫療產品提供適切的後處理加工方案。

General Comments on the Product:

The Trio-robotic Machining System with three synchronized industrial robotic arms of high functionality is a fully automated post-processing system for biomedical products. The machining area and degree-of-freedom of the system are apparently its advantages. With the integration of advanced software and hardware, the mean tolerance of mechanical inaccuracy of the system is reduced. On the aspect of environmental protection, the use of CO₂ gas with biodiesel requires less rinsing and is more environmentally-friendly and non-toxic when compared to traditional coolants. Mechanisms to ensure safety during the operation of the system include metal frame enclosure, impact resistance plastic windows, emergency buttons and CO₂ detection sensor.

This all-in-one system provides post-processing machining solution particularly for medical devices.

HOLDING ARM
• Automatic flipping

CUTTING ARM
• 5 function
• 6+2 DoF
• ISO10 spindle

COOLING ARM
• CO₂ + biodiesel
• No extra cleansing

Highlights

COST EFFECTIVE
The whole system is fully automated, with auto-cleansing by CO₂ jet. Leading to no extra-care for disposal, less washing and longer tool life.

BIO-SAFE
CO₂ sublimates immediately, resulting in no residuals left on products.
Post-processed surgical implants and jigs fulfill ISO 10993 requirement.

ECO-FRIENDLY
CO₂ sublimates immediately, resulting in no harmful wastewater.
Using atmospheric CO₂ as raw material, causing no additional emission.

Speed Range : 400-6000 RPM
Max. Torque : 0.32Nm at 100%
Tolerance : ±0.15mm
Pressure : 4 Bar

<https://medical.koln3d-tech.com/>
Room 322, 3/F Core Building 2,
Hong Kong Science Park, Shatin
(852) 2618 2993
enquiry@koln3d-tech.com

BSTC

2021-22 香港工商業獎：設備及機械設計優異證書
2021-22 Hong Kong Awards for Industries:
Equipment and Machinery Design Certificate of Merit

產品名稱：
Product Name: NEXCAM 360

公司名稱：
Company Name: Nexlore Hong Kong Limited、香港應用科技研究院有限公司
Nexlore Hong Kong Limited,
Hong Kong Applied Science and Technology Research
Institute Company Limited

設計者：
Designer Name: 何展鴻先生、郭冠輝先生、趙俊鵬先生、陳建龍先生、
陳國頌先生、張瑋女士、薩德先生、張轉運先生、鄭林翰先生
Mr Andy HO, Mr Marcus KWOK, Mr Kelvin CHIU,
Mr Kenny CHAN, Mr Calvin CHAN, Ms Wendy ZHANG,
Mr Sultan Malik SAAD, Mr ZHANG Zhuanyun,
Mr ZHENG Linhan

網址 /Website: www.nexlore.com; www.astri.org

評審委員會意見：

NEXCAM 360 是一種採用人工智能的安全攝像系統，應用於建築工地的重型移動機械，以防止與路人發生碰撞。此系統通過在機械周圍安裝多個高清攝像鏡頭，掃描和監控周圍環境中的人和其他車輛，提醒操作人員並會發出警報提醒路過的旁人，從而防止事故發生。

此產品操作靈活且易於安裝及拆卸，在提高施工現場的安全性，極具發展潛力。

General Comments on the Product:

It is a safety camera system adopting artificial intelligence for heavy mobile machineries in construction sites to prevent collision with passerby. The system functions by mounting multiple high definition (HD) cameras around the machineries, scanning and monitoring the surrounding environment for humans and other vehicles, alert operator and emits siren to alert passerby, thereby preventing accidents.

The product is flexible and easy to install / dismantle and it possesses high potential for further developments for the objective of improving construction site safety.



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產品名稱： 自動極性引導的光纖佈線機
Product Name: Optical Fibre Routing Machine with Automatic Polarity Guide

公司名稱： 愛普迪科技有限公司（金源集團）
Company Name: Optec Technology Limited (Kam Yuen Group)

設計者： 黎錦龍博士，陳偉雄先生，葉梓豐先生，葉永豐先生及金源集團技術中心機械及自動化工程團隊
Designer Name: Dr Danny LAI, Mr Anthony CHAN, Mr Cedric IP, Mr Marcus IP and Kam Yuen Group-Technical Centre Mechanical and Automation Engineering Team

網址 /Website: www.optectechnology.com

評審委員會意見：

自動極性引導光纖佈線機裝配不同程式數據處理單元、數據分析及視覺辨別系統。

機械數據控制系統可根據不同產品型號，進行全自動轉換及設置，包括：(i) 激光單元顯示不同作業位置；(ii) 送料單元控制不同光纖的長度、顏色及次序；(iii) 自動通光單元測試裝配位置及亮度；以及 (iv) 視覺檢查單元最後決定光纖的排序。

此設備在產能效率及品質上得到顯著的改善，可支援製造業對全光交叉網絡板日益增長的需求。

General Comments on the Product:

The optical fibre routing machine consists of various programmable processing units, data analysis and computer vision systems.

According to different models, machine data's driving whole system can automatically change over and setup including (i) the laser pointer unit indicating the work locations; (ii) the feeder unit controlling the fibre length, colors and sequences; (iii) the auto brighten unit testing the fibre locations and brightness; and (iv) the vision color inspection unit final confirming of the fibres arrangement.

The machine has made significant improvement in efficiency and quality, and can support the manufacturing industry to meet the increasing demand of optical cross-connect system



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產品名稱： 聖衣箱
Product Name: Orbit

公司名稱： 栢萊科技有限公司
Company Name: Pino Technology Limited

設計者： 胡中和先生
Designer Name: Mr WU Chung Wo

網址 /Website: www.pinotechnology.com

評審委員會意見：

Orbit「聖衣箱」是一款適用於家庭和小型企業的座枱式電鍍機。其體積輕巧，它可在工件鍍上各種金屬效果，為 DIY 物品、學校項目和小批量生產提供了方便且價格合理的金屬後處理解決方案。用家只需簡單輸入參數：電鍍厚度、物件的表面面積、以及電鍍的金屬材料（6 種選擇：金、銀、銅、鉑、鎳及玫瑰金），Orbit 將計算出其電鍍所需的時間和耗材用量，並進行自動化電鍍工藝，一般可於 30 分鐘內完成。

General Comments on the Product:

Orbit is a desktop electroplating machine for home and small business uses. The machine is compact in size, and presents a handy and affordable metallic post-processing solution for DIY items, school projects, and small batch production. It works readily on small metallic items. Upon user's inputs on coating thickness, rough coating area, and the choice of the 6 possible coating materials (gold, silver, copper, platinum, nickel, rose gold), Orbit will calculate the time and amount of liquid materials to be used for coating and conduct the automated electroplating process, to be completed normally within 30 minutes.



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產品名稱： SIRIUS 一次性機械人柔性內窺鏡系統
Product Name: SIRIUS - The Single Use Robotic Flexible Endoscope System

公司名稱： 普銳醫療（香港）有限公司
Company Name: Precision Robotics (Hong Kong) Limited

設計者： 郭肇麟先生、蘇德禮先生
Designer Name: Mr Alan KWOK, Mr Sotiris TSOURIS

網址 /Website: surgicalrobot.com.hk

評審委員會意見：

此產品是基於專利鋼絲拉扯技術以及柔性關節的機械人技術平台而開發，是首款採用機械人技術的腹腔鏡產品。SIRIUS 系統的操控介面亦融入人體工學設計哲學，直觀的觸控屏幕以及符合人體工學握感的操控桿，提供了方便和簡單的內窺鏡操控體驗。此外，SIRIUS 系統配備三自由度高可動性尖端部分，大大擴闊內窺鏡的可視角度，有潛力成為新一代微創手術的標準。

General Comments on the Product:

This flexible endoscope system is developed based on robotic technology and proprietary tendon-pulling and flexible mechanical joint mechanism is applied first time into a laparoscope product. The control interfaces of the SIRIUS system are ergonomically designed. The intuitive touchscreen and ergonomically designed joystick controller provide convenient and simple controls of the endoscope. Moreover, The SIRIUS laparoscope head features a flexible robotic tip with 3 degrees of freedom (3 DoF) maneuverability, made possible by the proprietary tendon-pulling and flexible mechanical joint mechanisms. It has the potential to set the standard for the next generation minimally invasive procedures.



產品名稱：自動鎖扣手指固定帶配合手部康復機器人
Product Name: Automatic Locking Finger Strap on Light-weight Hand Training Robotics

公司名稱：復康機器人技術有限公司
Company Name: Rehab-Robotics Company Limited

設計者：葉智斌博士、徐沛湧先生、陳永堅先生
Designer Name: Dr YIP Chi Bun, Mr TSUI Pui Yung, Mr CHEN Yong Jian

網址 /Website: www.rehab-robotics.com.hk

評審委員會意見：

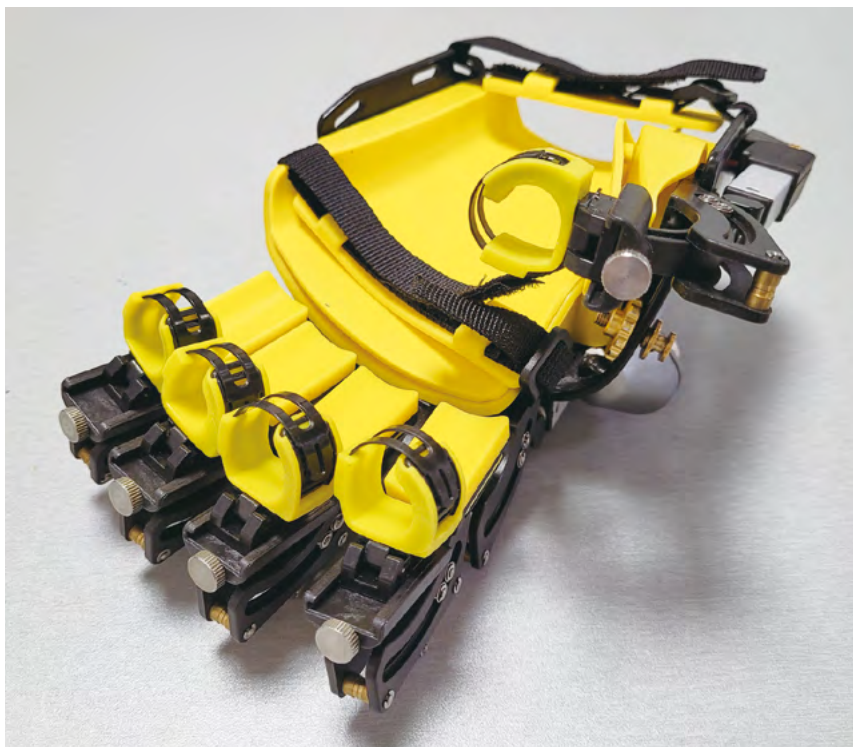
第一代希望之手在 2013 年獲得機器及機械工具設計獎，是一套應用「運動再學習」理論，專門為復康人士進行手部及上肢神經肌肉復康訓練的醫療器械。產品設有一組感應器負責測量使用者手部的表面肌電訊號，以生物反饋技術，協助並訓練使用者透過它自主控制手部活動。

新一代的希望之手利用可拆式自鎖磁扣，改善使用者（例如中風康復者）因高肌張力而令手指痙攣，引至出現穿戴困難的情況。產品以玻璃纖維強化塑料製成，其重量比上一代輕 40%。

General Comments on the Product:

The Hand of Hope was first won the Machinery and Machine Tool Design Award in 2013 with their first generation designed for neuromuscular rehabilitation of the hand and forearm helping patients regain hand mobility through motor relearning. It has the function as a biofeedback device where surface electromyography sensors utilizing a patient's own muscle signals to activate their desire to move their hand.

The second generation product update with an improvement feature of detachable finger rings that allow the patients to put on the ring first before attaching to the unit. Moreover, it uses fiber-glass reinforced plastic as the main material, as compared with the previous version, about 40% weight was reduced.



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產品名稱： 一種新穎磁場輔助批量超精加工設備
Product Name: A Novel Magnetic Field-assisted Batch Superfinishing (MABS) Equipment

公司名稱： 香港理工大學 - 超精密加工技術國家重點實驗室
Company Name: The Hong Kong Polytechnic University - State Key Laboratory of Ultra-precision Machining Technology

設計者： 張志輝教授、王春錦博士、羅依雯女士、何麗婷博士、
陳建良先生、李澤先生

Designer Name: Prof CHEUNG Chi Fai Benny, Dr WANG Chunjin, Ms. LOH Yee Man Kristy, Dr HO Lai Ting Lesley, Mr CHAN Kin Leung Chris, Mr LI Ze

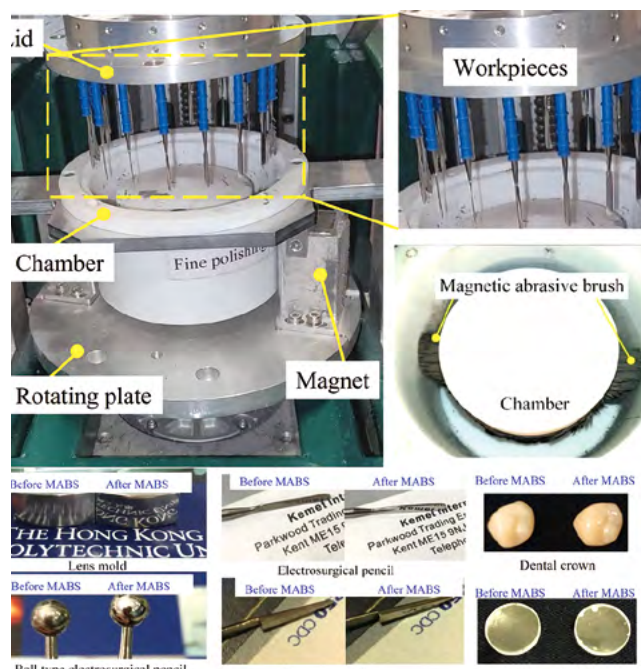
網址 /Website: www.sklumt.polyu.edu.hk

評審委員會意見：

磁場輔助批量超精加工 (MABS) 設備將為當前的磁流變輔助拋光技術轉變為一種具備經濟效益的超精加工工具邁出了堅實的一步。該設備能同時對各種幾何形狀表面和不同形狀的部件進行批量超精加工。該系統能夠實現納米級的表面粗糙度，適用於多種材料，如金屬、陶瓷和玻璃等部件，通過在腔內正確地固定部件位置，此設備可以同時容納數十到數百個元件。MABS 系統非常適合應用於光學、生物醫學、牙科和珠寶等行業的產品。

General Comments on the Product:

The MABS Equipment presents a strong step to translate current MR-assistive polishing technology towards becoming an economical and effective tool of superfinishing workpieces. The Equipment has the ability to conduct simultaneous batch superfinishing of components with wide-ranging surface geometries and shapes. The system is capable of achieving nanometer-scale surface roughness and can be used on metals, ceramics, and glass components. Tens to hundreds of components can be accommodated at the same time with proper positioning of the items inside the chamber. The MABS system is well suited for products from industries such as optics, biomedical, dental, and jewelry, and more.



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產品名稱： 防抖微雲台
Product Name: Micro Gimbal Stabilizer (MGS)

公司名稱： 高瞻創新科技有限公司
Company Name: Vista Innotech Limited

設計者： 麥練智博士、朱怡宗先生、吳華興先生
Designer Name: Dr MAK Lin Chi, Mr CHU Yee Chung, Mr NG Wah Hing

網址 /Website: www.vit.com.hk

評審委員會意見：

防抖微雲台是一種機械裝置，可以有效減少拍攝者意外晃動攝影裝置時所引致的抖動影像。該產品採用專利彈簧和軟性電路板設計，能顯著減低機械防抖雲台的尺寸，最小體積只有 1.4 釐米 x 1.4 釐米。微雲台韌體能支援非感測器式閉環控制，在省卻傳感器的情況下能達致傳統閉環系統的防抖效果。微雲台防抖補償角度可高達 5 度，能應付一般行走所出現的抖動。

General Comments on the Product:

Gimbal stabilizers are mechanical devices to reduce shaking and vibration in video cameras, despite unintended shaking by the person holding the camera. This product uses a patented spring and flexible circuit board design to reduce the size of the mechanical gimbal significantly. It is only 1.4cm x 1.4cm in size and the anti-shake firmware can support sensor less feedback but provides anti-shake performance similar to systems with feedback sensors. The stabilizer can compensate for 5 degrees angular shake, sufficient for walking motion compensation.



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產品名稱： 外牆吊索機械人
Product Name: External Wall Cable Robot

公司名稱： 威博科技有限公司
Company Name: Welbot Technology Limited

設計者： 黎志雄先生
Designer Name: Mr LAI Chi Hung

網址 /Website: www.welbot-tech.com

評審委員會意見：

對於那些需要在吊船上工作的人而言，這款機械人大大降低了他們受傷甚至死亡的風險。此產品以智能方式提供外牆清潔服務，其特點包括：安裝簡單、減低成本、適應性強、同時能避免潛在的風險和節省時間等。

此外，產品的自動功能和精密的視覺系統有助減少工人在現場工作的時間，這不但可提升效率，更能增加利潤。

General Comments on the Product:

This robot substantially reduces the risk of injuries or even loss of life for those who need to work outdoor on the gondola lift.

It provides exterior cleaning service in a SMART way with the following features: simple installation, minimizing cost, adaptive features, risk avoiding and time saving.

Moreover, its autonomous features and sophisticated vision systems may help to reduce or eliminate labor time on the site, that will increase the efficiency and eventually the profit.



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產品名稱： NanoFlow - 防菌防塵水性納米漆
Product Name: NanoFlow - Anti-bacterial & Anti-dust & Anti-mould
Waterborne Nano-coating for Air Ducting and Metal
Surface

公司名稱： 和利綠色動力有限公司
Company Name: Wo Lee Green Solutions Limited

設計者： 鮑素萍博士
Designer Name: Dr. Sherry, BAO Su Ping

網址 /Website: www.wolee.com

評審委員會意見：

Nanoflow 是一種抗菌防塵納米塗層，應用於風管內表面。該塗層可減少風管內常見的塵垢、細菌、黴菌和黴菌生長。該塗料既環保，亦具有低 VOC 和防水性。Nanoflow 為保護居住者免受有害微生物的侵害而提供了全面的解決方案，還可以減少灰塵聚集，從而使建築物的室內空氣質量更潔淨。

General Comments on the Product:

Nanoflow is an anti-bacterial and anti-dust nano-coating, applied on the inner surface of air ducting. The coating can reduce the dust collection, preclusion of bacteria, mold and mildew growth that are frequently found inside the airducts. The coating is eco friendly with low VOC and water resistance. Nanoflow provides a comprehensive solution for the protection of the occupants from harmful microbes and also reduces dust aggregation, allowing for cleaner indoor air quality in buildings.



主辦機構 ORGANIZER



香港中華廠商聯合會
The Chinese Manufacturers'
Association of Hong Kong

簡介

香港中華廠商聯合會創立於 1934 年，歷史悠久，80 多年來歷經時代變遷，現已成為本港最大及最具代表性的非牟利工商團體之一，擁有會員企業 3,000 家，致力促進工商業發展。

宗旨

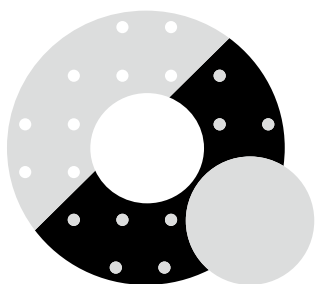
- 促進香港工業與貿易的發展
- 改善營商環境
- 代表工業界就政府政策的訂定與執行發表意見
- 參與社會發展工作
- 促進國際間的了解與合作
- 履行企業社會責任

INTRODUCTION

Established in 1934, the Chinese Manufacturers' Association of Hong Kong (CMA) is a non-profit making industrial organisation. In the past 80 years, CMA has grown significantly and is now one of the most representative industrial associations in Hong Kong. With some 3,000 member companies, CMA is committed to promoting Hong Kong's industrial and commercial development.

MISSION

- Promoting trade and industrial development
- Improving the business environment
- Representing the industrial sector in the formulation and implementation of Government policies
- Participating in community development work
- Fostering international understanding and co-operation
- Fulfilling corporate social responsibility



2021-22 香港工商業獎：設備及機械設計
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宗旨 OBJECTIVE

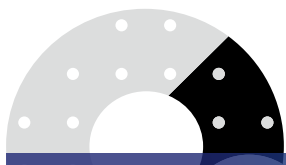
是項比賽旨在鼓勵和提高本港設備及機械的設計及生產水準，藉此提高產品競爭力，及對傑出的產品加以獎勵。

The objective of the competition is to encourage the upgrading of the design of equipment and machinery in Hong Kong so as to enhance competitiveness and to give recognition to outstanding products.

評審標準 JUDGING CRITERIA

- | | |
|----------|---------------------------|
| • 創新 | Innovation |
| • 應用新技術 | Application of technology |
| • 性能 | Functionality |
| • 方便使用 | Ergonomics |
| • 成本效益 | Cost-performance |
| • 安全程度 | Safety |
| • 對環境的影響 | Environmental impact |
| • 市場銷售性 | Marketability |

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2021-22 Hong Kong Awards for Industries:
Equipment and Machinery Design



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香港工商業獎：設備及機械設計

主辦機構：香港中華廠商聯合會

**Hong Kong Awards for Industries:
Equipment and Machinery Design**

Organizer : The Chinese Manufacturers' Association of Hong Kong

Tel 電話：2542 8621/2542 8624 Fax 傳真：2541 8154

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I would like to have more information about the Hong Kong Awards for Industries: Equipment and Machinery Design

公司名稱

Name of Company

業務性質

Nature of Business

地 址

Address

聯絡人

Contact Person

電 話

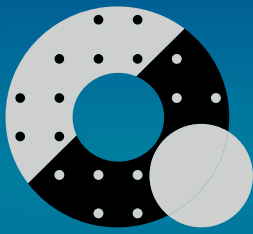
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二零二一至二二香港工商業獎籌備委員會

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Executive Director
Hong Kong Retail Management Association



香港中華廠商聯合會

The Chinese Manufacturers' Association of Hong Kong

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