



綠色創科日 GREEN I&T DAY

6 August 2019

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程序表 Run-down

08:30

茶點、登記及展覽

Coffee, Registration & Exhibition

09:30

歡迎辭：環境局局長黃錦星先生, GBS, JP

Welcoming Address: Mr WONG Kam-sing, GBS, JP

Secretary for the Environment

開幕辭：廣東省科學技術協會鄭慶順書記

Opening Address: Mr ZHENG Qingshun

Secretary, Guangdong Provincial Association for Science and Technology

09:50

粵港創新及科技合作備忘錄簽署儀式

Signing Ceremony of Memorandum of Co-operation on

Innovation and Technology between Guangdong and Hong Kong

10:05

茶點及展覽

Coffee & Exhibition

10:35

主題演講

1. 推動綠色創新

香港科技園公司董事會主席

查毅超博士, BBS

2. 廣東推進大灣區

國際創科中心建設政策舉措

廣東省科技廳

龔國平副廳長

3. 創新驅動、汽車革命、

能源革命、綠色發展

中國工程院院士、

英國皇家工程院院士、

香港大學榮譽教授

陳清泉教授

Keynote Session

1. Fostering Green Innovation

Dr Sunny CHAI Ngai-chiu, BBS

Board Chairman, Hong Kong Science and Technology Parks Corporation

2. Policy and Measures in Guangdong to Promote the Construction of International Science and Technology Hub in the Greater Bay Area

Mr GONG Guoping

Deputy Director-General,

Department of Science and Technology of Guangdong Province

3. Innovation Driven, Automobile Revolution, Energy Revolution, and Green Development

Prof CHAN Ching-Chuen

Academician of Chinese Academy of Engineering,

Fellow of the Royal Academy of Engineering, U.K.,

Honorary Professor, The University of Hong Kong

11:35

交流午餐及展覽

Networking Lunch & Exhibition

13:30

分組專題演講

1. 綠色轉型

2. 明日低碳城市

15:00

茶點及展覽

Coffee & Exhibition

15:30

分組專題演講

3. 可持續創新驅動力

4. 智能環境大數據

17:00

結束

End of Programme

Parallel Sessions

1. Green Transformation

2. Tomorrow Low-carbon City

Parallel Sessions

3. Sustainable Innovative Drivers

4. Big Data for Smart Environment

分組專題演講

Parallel Sessions

時間
TIME

主題及演講嘉賓

Topic & Speaker

1. 綠色轉型 Green Transformation

13:30	光電催化製氫材料與技術 中國廣州分析測試中心氫潔能源團隊主任/副研究員 汪福憲博士	Materials and Technologies for Photoelectrocatalytical Hydrogen Production Dr WANG Fuxian Hydrogen Clean Energy Team Director, Associate Researcher, China National Analytical Centre Guangzhou
13:45	綠色機場之創新解決方案 香港機場管理局工程及維修總經理 湯遠敬先生	Innovative Solutions for Green Airport Mr Amen TONG General Manager, Technical Services, Airport Authority Hong Kong
14:00	攜手共建生態城市 廣州綠創寶生物科技有限公司董事長 李東安先生	Build The Eco-City Together Mr LEE Dongan Chairman, LCB Biological Tech Co., Ltd.
14:15	從污水處理發掘創新的可再生能源 渠務署總工程師/機電工程 陳耀漢工程師	Innovative Way to Harvest Renewable Energy in Sewage Treatment Ir CHAN Yiu-hon Chief Engineer/Electrical & Mechanical Projects, Drainage Services Department
14:30	醫院節能之創新解決方案 醫院管理局高級行政經理(工程) 源柏樑博士、工程師 醫院管理局行政經理(工程) 林青華工程師	Innovative Energy Saving Solutions for Public Hospitals Ir Dr YUEN Pak-leung Senior Manager (Engineering), Hospital Authority Ir Way LAM Manager (Engineering), Hospital Authority

2. 明日低碳城市 Tomorrow Low-carbon City

13:30	智慧高能效建築先進技術的開發和應用 - 環球貿易廣場合作項目概要 香港理工大學屋宇設備工程學系講座教授 王盛衛教授	Development and Application of Advanced Technologies for Smart and Energy-Efficient Buildings - A Summary of Joint Efforts in ICC Prof WANG Shengwei Chair Professor, Department of Building Services Engineering, The Hong Kong Polytechnic University
13:45	通過建築中能耗計量與大數據應用實現 綠色低碳發展的未來 清華大學建築節能研究中心 魏慶芃教授	Energy Use Monitoring and Big Data Application in Buildings to a Low-Carbon Future Prof WEI Qingpeng Building Energy Conservation Research Center, Tsinghua University
14:00	數碼化持續監察平台 太古地產有限公司技術統籌及可持續發展總經理 邱萬鴻博士	On-Going Monitoring Digital Platform Dr Raymond YAU General Manager, Technical Services & Sustainable Development, Swire Properties Ltd.
14:15	智能中央空調節能管理系統與案例分析 華南理工大學 閻軍威教授級高級工程師	Smart Central Air-conditioning System in Energy Saving Management and Case Study Prof YAN Junwei South China University of Technology
14:30	香港浮動太陽能發電系統的發展 水務署助理署長/機械及電機 李大安工程師	Development of Floating Solar Power System in Hong Kong Ir LEE Tai-on Assistant Director/Mechanical & Electrical, Water Supplies Department

分組專題演講

Parallel Sessions

時間
TIME

主題及演講嘉賓

Topic & Speaker

3. 可持續創新驅動力 Sustainable Innovative Drivers

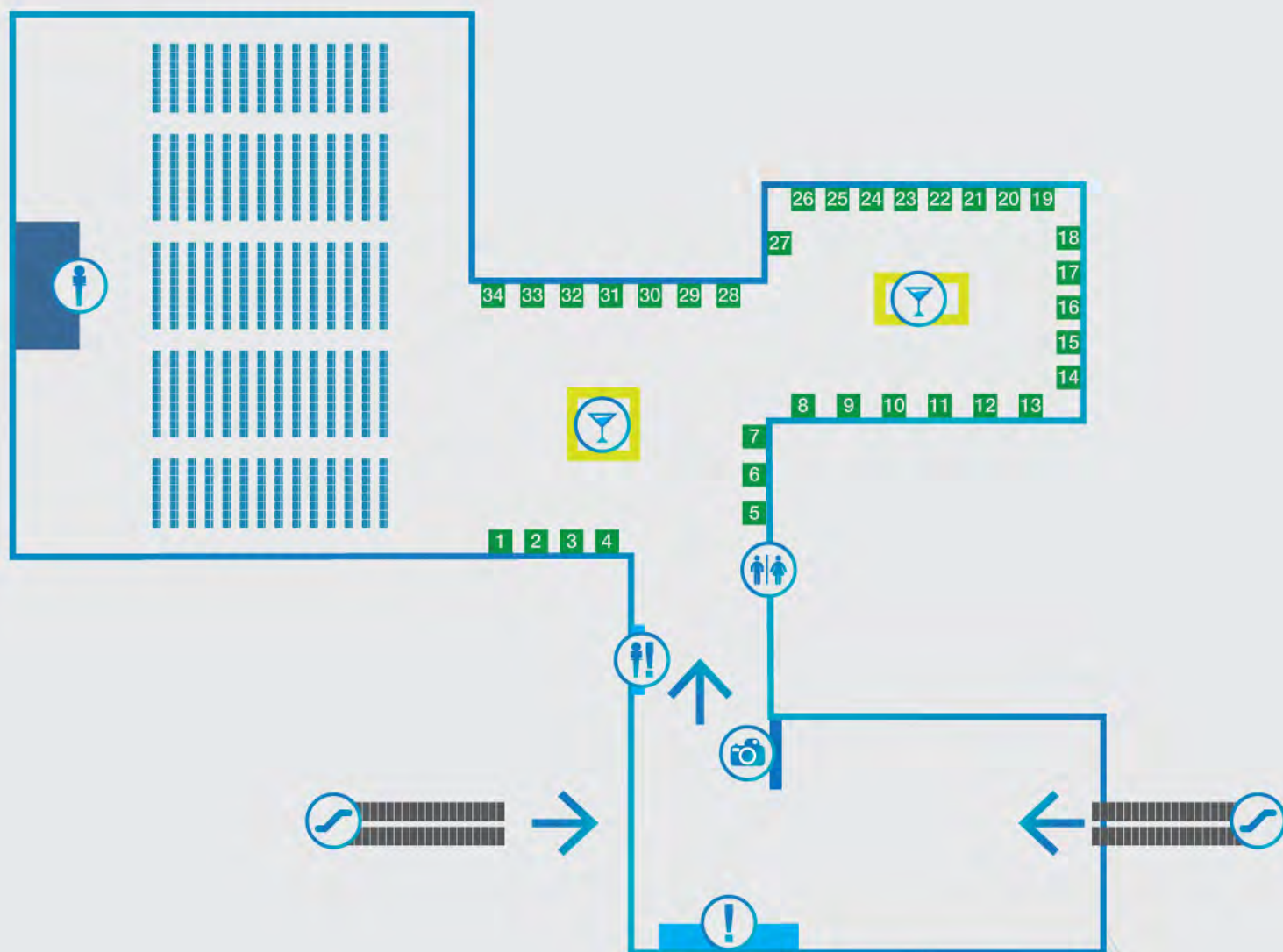
15:30	技術轉移機構的發展與商業模式探討 廣東省華南技術轉移中心執行總裁 李奎博士	Discussion on the Development and Business Model of Technology Transfer Institutions Dr LI Kui Executive President, South China Technology Commercialization Center
15:45	革命性的兩相浸沒式冷卻數據中心 聯治有限公司首席執行官 劉嘉榮先生	Revolutionizing Data Centres with 2-Phase Immersion Cooling Mr LAU Kar-Wing Chief Executive Officer, Allied Control Ltd.
16:00	可持續創新驅動力是加速燃料電池產業化的重要保證 鴻基創能科技（廣州）有限公司首席技術官兼董事 葉思宇博士，加拿大國家工程院院士	Acceleration of the Wide-Spread Commercialization of Hydrogen Fuel Cells through Innovation Dr YE Siyu, Fellow of the Canadian Academy of Engineering Chief Technology Officer and Director, SinoHykey Technology Co., Ltd.
16:15	實時智慧型數據控制中央空調系統 積奇儀器有限公司市場總監 陳海龍先生	HVAC Smart Control System with Intelligent Utility Control Mr James CHAN Chief Marketing Officer, Jacky Instruments Ltd.
16:30	空調與綠色能源 微電有限公司行政總裁兼創辦人 翟炳權先生	HVAC and Green Energy Mr Jackson CHACK Chief Executive Officer, Co-Founder, Micronics Co., Ltd.

4. 智能環境大數據 Big Data for Smart Environment

15:30	大數據締造可持續生活方式：鼓勵節能新方向 向藍天科技有限公司項目主任 何卓謙先生	Big Data Empowers Sustainable Lifestyle: Stimulate Innovative Direction in Energy Saving Mr Wallace HO Operations Executive, Bluesky Energy Technology
15:45	通過智能能源方案簡化節能 CLP Innovation Enterprises Ltd. 聯席總監 歐陽逸先生	Simplifying the Adoption of Smart Energy Solutions Mr Pubs ABAYASIRI Associate Director, CLP Innovation Enterprises Ltd.
16:00	“智慧建築的智慧架構” - 應用在香港智慧道具庫的個案分享 得能光控有限公司首席技術官 陳龍工程師	Case Sharing – Application of “Smart Infrastructure for Smart Building” in a Hong Kong Smart Prop Store Ir Geoffrey CHAN Chief Technology Officer, Delight Power Products Ltd.
16:15	冷水機集束趨勢優化模式 庫瓦有限公司行政總裁 陳維田博士	Cluster Trending Chiller Optimisation Dr Daniel CHAN Chief Executive Officer, Negawatt Utility Ltd.
16:30	中央空調系統的能源優化方案 有利集團副主席 黃天祥工程師	Advanced Energy Optimization Solution with Artificial Intelligence Algorithms for Energy Saving in HVAC System Ir WONG Tin-cheung Vice Chairman, Yau Lee Holdings Ltd.

大展覽廳地圖

Grand Hall Floor Plan



展位
Exhibition Booths



登記處
Registration Counter



演講嘉賓登記處
Speaker Registration Counter



影相區
Photo Backdrop



演講台
Stage



茶點
Refreshment



洗手間
Toilet



扶手電梯
Escalator



香港科技園公司董事會主席
查毅超博士, BBS

Dr Sunny CHAI Ngai-chiu, BBS
Board Chairman, Hong Kong Science and
Technology Parks Corporation

講者簡介 Biography

查毅超博士自2018年7月擔任香港科技園公司主席，現同時為物流及供應鏈多元技術研發中心主席及香港工業總會副主席，致力推動香港創科及工業發展。查博士為福田集團控股有限公司董事總經理。他於2018年獲頒銅紫荊星章勳銜及獲得香港理工大學院士榮銜。

Dr. Sunny Chai has been appointed as the Board Chairman of Hong Kong Science and Technology Parks Corporation since July 2018. He is also the Board Chairman of the Logistics and Supply Chain MultiTech R&D Centre Limited, the Deputy Chairman of Federation of Hong Kong Industries, as well as the Group Managing Director of Fook Tin Group Holdings Limited. Dr. Chai strives to drive the growth of the innovation and technology ecosystem and the industrial development in Hong Kong. He was awarded the Bronze Bauhinia Star and was also conferred a University Fellowship by the Hong Kong Polytechnic University in 2018.

演講大綱 Abstract

創新科技的核心價值，在於能為人類社會帶來更多得益。運用創新科技提升能源效益、減少全球碳排放，正正是當中一大重點。在香港科學園，我們除發展綠色科技領域外，更透過整個園區的創科生態圈，於不同科技範疇中孕育更多有助保護環境的創新方案，例如自動駕駛車輛、智能充電系統、可再生能源應用方案及節能照明系統等，共同構建更環保的生活文化及經濟模式。香港科技園公司正持續投入資源，推動更多綠色創新和智慧節能應用方案，引領社會進一步邁向可持續發展。

The intrinsic value of innovation and technology is the potential to deliver benefits for humankind. This is particularly pertinent when applied to enhancing energy efficiency and reducing carbon emissions globally. At Hong Kong Science Park, we are nurturing eco-friendly innovation not only from our green technology cluster but across the Park ecosystem. Be it sophisticated autonomous cars, smart charging, renewable energy solutions or energy efficient lighting, there are a broad spectrum of innovative solutions in our technology clusters and platforms contributing to greener business and lifestyle. HKSTP strives to build a sustainable future through supporting green innovation and enabling commercialization of smart energy ideas.



中國工程院院士、英國皇家工程院院士、
香港大學榮譽教授

陳清泉教授

Prof CHAN Ching-Chuen

Academician of Chinese Academy of Engineering,
Fellow of the Royal Academy of Engineering, U.K.,
Honorary Professor, The University of Hong Kong

講者簡介 Biography

陳清泉院士，1937年出生於印尼、原籍福建省漳州市。1957年畢業於北京礦業學院。1959年完成清華大學研究生班進修，1982年獲香港大學哲學博士學位，1993年獲烏克蘭奧德薩理工大學榮譽科學技術博士學位。2008年獲英國洛夫堡大學榮譽技術博士學位。1997年獲選中國工程院院士、前後獲選英國皇家工程院院士、匈牙利工程院榮譽院士、烏克蘭工程院院士、香港工程科學院院士暨特別顧問。現任香港大學榮譽教授及原電機電子工程系講座教授及系主任。世界電動車協會創始主席、國際院士科創中心創始人。榮獲世界工程師組織聯盟傑出工程師勳章、英國皇家工程院菲力浦親王勳章、中國工程院光華工程獎、英國電機工程師學會國際演講勳章、美國電機電子工程師學會交通技術勳章、香港工程師學會最高榮譽金勳章等。《亞洲新聞》評為亞洲最佳創新者、期刊Global View譽為“亞洲電動車之父”、在印度獲“電動汽車技術之祖”稱號。他積累了50多年的教學、科研和工業經驗，任國內外多所著名大學的名譽或客座教授，政府顧問，國內外著名企業科技戰略顧問或獨立董事。著有三百多篇學術論文、十一本專著，獲十項專利。

Prof. C. C. Chan holds BSc, MSc, PhD, HonDSc, HonDTech degrees. Honorary Professor and Former Head of the Department of Electrical and Electronic Engineering at the University of Hong Kong; Founder of Academician C.C. Chan International Science and Technology Innovation Centre in Beijing Future Science Park. Visiting Professor of MIT, University of Cambridge, etc; Founding President of the World Electric Vehicle Association; Senior Consultant to governments, Strategic Adviser or Independent Director of public companies and industries; Fellow of the Royal Academy of Engineering, U.K., Chinese Academy of Engineering, Ukraine Academy of Engineering Sciences, Honorary Fellow of Hungarian Academy of Engineering, Fellow and Senior Advisor of Hong Kong Academy of Engineering Sciences; Fellow IEEE, IET and HKIE. Recipient of the Royal Academy of Engineering Prince Philip Medal; Chinese Academy of Engineering Guang-Hua Prize, World Federation of Engineering (WFEO) Medal of Engineering Excellence; Gold Medal of Hong Kong Institution of Engineers; IEE International Lecture Medal; “Asia’s Best Technology Pioneers” by Asiaweek; “Father of Asian Electric Vehicles” by Magazine Global View; “Pitamaha (Grandfather) of Electric Vehicle Technology” in India; “Environmental Excellence in Transportation Award” by Society of Automotive Engineers (SAE). His major research field includes new energy vehicles, intelligent energy systems; published 17 books, over 450 technical papers and holds 9 patents.

演講大綱 Abstract

汽車革命和能源革命是城市低碳綠色發展的重要關鍵。汽車革命的內涵就是電動化，自動駕駛，互聯共用汽車。汽車革命和能源革命緊密聯繫，因為交通能耗大約占總能耗的25%至30%，還有因為電動汽車用的電力是二次能源，通過電動汽車可以優化一次能源，電動汽車既是移動的電力負荷，又是移動的電源。能源革命的內涵是低碳化，智慧化，終端能源電氣化和氫能化。氫能可以結合優化電力能源和化工能源。智慧能源的內涵就是將廢棄的能源轉換為有用的能源，其機理就是能源流、資訊流、物資流、價值流的融合。解決四大矛盾，即傳統化石能源和新能源的矛盾，一次能源和二次能源的矛盾，集中能源和分佈能源的矛盾，電力能源和化工能源的矛盾。舉例來說，當過剩的太陽能而電網不能吸納時，就用來電解水制氫，需要時氫氣和氧氣結合發電，還要分析其經濟性。也就是探索能源和資訊的關係，將能源流變成物質流，並核算其價值流。在做到智慧能源的同時，也做到碳平衡，因為在能源生產和消費的過程產生二氧化碳和氫氣，而二氧化碳和氫氣結合就成為甲烷等燃料。本主旨演講還討論低碳城市的特徵和案例。

The automobile revolution and the energy revolution are keys to the development of low-carbon green cities. The cores of the automobile revolution are three folds, namely electrification, automatic driving, and connected sharing cars. The automobile revolution is closely linked to the energy revolution, because transportation sector consumed about 25% to 30% of total energy consumption. Moreover because electric vehicles use secondary energy, thus electric vehicles can optimize primary energy consumption, since electric vehicles are not only mobile electric load, they also mobile electric power source. The cores of the energy revolution are also three folds, namely low carbon, intelligence, and end energy users of electrical or hydrogen energy. Hydrogen energy can couple and optimize the electrical energy and chemical energy. The essential of intelligent energy is that it can convert waste energy into useful energy. Its mechanism is the integration of energy flow, information flow, material flow and value flow. Resolve the four major contradictions, namely the contradiction between traditional fossil energy and new energy, the contradiction between primary energy and secondary energy, the contradiction between concentrated energy and distributed energy, and the contradiction between electric energy and chemical energy. For example, when excess solar energy and wind energy cannot be absorbed by the grid, it is used to electrolyze water to produce hydrogen. When needed, hydrogen and oxygen are combined to generate electricity, and the economy of the process is analyzed. The key of this mechanism is to explore the correlation between energy and information, thus to convert energy flow into material flow, and calculate its value flow. While achieving intelligent energy, carbon neutralization is also achieved. This is due to during the energy production and consumption, carbon dioxide and hydrogen are produced, but carbon dioxide and hydrogen can be combined to become fuels such as methane. This keynote address also discusses the characteristics and examples of low carbon cities.

光電催化製氫材料與技術

Materials and Technologies for Photoelectrocatalytical Hydrogen Production



中國廣州分析測試中心
氫潔能源團隊主任/副研究員
汪福憲博士

Dr WANG Fuxian

Hydrogen Clean Energy Team Director,
Associate Researcher,
China National Analytical Centre Guangzhou

講者簡介 Biography

汪福憲，柏林工業大學博士。回國前受聘於德國Helmholtz柏林材料與能源研究中心，任助理研究員。現任中國廣州分析測試中心特聘副研究員，及“氫”潔能源團隊負責人。已在JACS、JMCA等期刊上發表SCI論文11篇、申請PCT國際專利2項。

2018.11 – Present China National Analytical Center, Associate Professor, Principal Investigator.

2017.09 – 2018.02 Helmholtz Centre Berlin for Materials and Energy, Research Assistant.

2013.09 – 2017.09 Technical University of Berlin, PhD in Chemistry.

Research Interests:

- Semiconductor-based photoelectrocatalysis
- Thin film technology and its application.

Selective Publications & Patents (First Author):

1. Gradient self-doped CuBi₂O₄ with highly improved charge separation efficiency, Journal of the American Chemical Society, 2017, 139 (42): 15094–15103.
2. Spray pyrolysis of CuBi₂O₄ photocathodes: improved solution chemistry for highly homogeneous thin films, Journal of Materials Chemistry A, 2017, 5 (3): 12838–12847.
3. Magnetron sputtering of gradient self-doped multinary-metal-oxide thin films. PCT, 201910022023.5.

演講大綱 Abstract

“氫”潔能源團隊致力於光電催化製氫研究，設計了新型磁控濺射法和噴霧熱解法以用於有效製作梯度自摻雜光電極，有望實現大面積規模化生產；開發的防護塗層技術可有效提升光電極的穩定性，降低光電催化製氫的成本。

The Solar Fuel team is dedicated to the research on photoelectrocatalytical hydrogen production. Novel magnetron sputtering and spray pyrolysis methods are proposed for the controllable preparation of gradient self-doped photoelectrodes. The deposition techniques are promising for large scale fabrication of photoelectrodes. An anti-corrosion technology is developed to improve the stability of the photoelectrode and reduce the cost of photoelectrocatalytical hydrogen production.

綠色機場之創新解決方案

Innovative Solutions for Green Airport



香港機場管理局工程及維修總經理
湯遠敬先生

Mr Amen TONG

General Manager, Technical Services,
Airport Authority Hong Kong

講者簡介 Biography

湯遠敬先生，香港機場管理局工程及維修總經理，負責管理及維修機管局在香港國際機場的資產，以及規劃及執行有需要進行的改善及提升工程。湯先生有超過30年基建相關經驗，其中20年參與機場基建、設施及系統的規劃、設計、建築、運作及維修工作。他曾在機管局擔任多個高級管理職位，包括機場物業發展總經理及採購部副總經理。

Mr Amen TONG (General Manager, Technical Services, Airport Authority Hong Kong) is responsible for managing and maintaining assets of the Hong Kong International Airport. He is also responsible for planning and executing the necessary improvement works. Amen has over 30 years of experience in the engineering industry. Over his 20 years with the Airport Authority, Amen has held various managing positions, such as General Manager of Airport Property Development Department and Deputy General Manager of Procurement Department, to facilitate development of the Airport.

演講大綱 Abstract

瞭解機場管理局推行的環保措施，廢物管理、減少碳排放及應對氣候變化等方面，及介紹機場的環保設施及設備，包括電動車充電點、電動裝貨車、零排放太陽能旅客梯等。

To learn about the AA's environmental practices and discuss collaboration on waste management, emission reduction and climate change adaptation and introduce eco-friendly facilities and equipment including EV charging stations, e-loaders, zero-emission solar powered passenger stairs, etc.



廣州綠創寶生物科技有限公司董事長
李東安先生

Mr LEE Dongan

Chairman, LCB Biological Tech Co., Ltd.

講者簡介 Biography

李東安畢業於華南師範大學政治系，現任廣州綠創寶生物科技有限公司董事長，專注於綠創寶生態毯的研發，克服了佛甲草耐熱耐寒以及經緯度的局限。

Mr. LEE graduated in politics from South China Normal University. At present he is the chairman in LCB. He has concentrated on the research and development of ecological blanket for many years. His products overcome the temperature and geographical limitations of Sedum lineare Thunb.

演講大綱 Abstract

介紹屋頂綠化的現狀及重要性，以及綠創寶生態毯在屋頂綠化取得的成效和檢測數據。

To learn about the situation and the importance of roof greening, and the effect of the company products illustrated with testing data.



從污水處理發掘創新的可再生能源

Innovative Way to Harvest Renewable Energy in Sewage Treatment



渠務署總工程師/機電工程
陳耀漢工程師

Ir CHAN Yiu-hon

Chief Engineer/Electrical & Mechanical Projects,
Drainage Services Department

講者簡介 Biography

陳總工程師擁有學士學位和碩士學位。他曾於數個政府部門負責不同的工作，包括安裝及操作機電系統、執行消防設施法例和電力安全相關法例、工程項目管理等。他現於渠務署領導污水處理和可再生能源項目的工作。

Ir CHAN obtained his Bachelor Degree in 1991 and a Master Degree subsequently. Since his graduation, he joined the Electrical and Mechanical Services Department as a graduate trainee. After completing the training in 1993, he worked in various government departments for installation of electrical and mechanical (E&M) systems in new buildings, enforcement of fire services and electrical safety related ordinances, operation and maintenance of E&M systems in the airport, and E&M projects administration and implementation. He has been working in E&M engineering field for over 26 years. Ir Chan is now a Chief Engineer in the Drainage Services Department responsible for sewage and drainage related E&M projects.

演講大綱 Abstract

廚餘是香港都市固體廢物中的最大類別。廚餘及污泥進行共厭氧消化可提升固體減量化和增加生物氣的產量。在共厭氧消化後，消化物被脫水後會運往[源·區]焚燒，變成灰燼。珍貴的堆填區空間得以節省。

Food waste is the major constituent of the municipal solid waste in Hong Kong. In 2017, there were about 3,600 tonnes food waste being disposed of at landfills each day. The Government is exploring the use of the existing digesters of sewage treatment works for food waste and sewage sludge anaerobic co-digestion as an additional part of the network of organic resources recovery facilities to help raise Hong Kong's food waste treatment capacity. The 2016 Policy Address announced that a pilot trial scheme with the co-digestion of a daily capacity of 50 tonnes of food waste and sludge at Tai Po Sewage Treatment Works would be set up and commence operation in 2019.

Compared to mono-digestion, co-digestion can improve the nutrient balance in a digester. Hence, co-digestion increases the solid waste reduction rate and the boosting up of biogas production by around 30%. After co-digestion, the digestate will be dewatered and transported to T.Park to be used in the incineration process as fuel. In the incineration process, the dewatered digestate will turn to ash. This is equivalent to approximately a 90% reduction in volume of that of the dewatered digestate. Precious landfill space can therefore be saved.

醫院節能之創新解決方案

Innovative Energy Saving Solutions for Public Hospitals



醫院管理局高級行政經理(工程)
源柏樑博士、工程師

Ir Dr YUEN Pak-leung

Senior Manager (Engineering), Hospital Authority

講者簡介 Biography

源柏樑博士工程師負責為醫院管理局監管香港所有公立醫院的電機設施及醫院發展項目。源博士投入公立醫院衛生工程及管理工作超過三十多年，先後在建築處、機電工程處、英國及中東地區的醫院工作。源博士現為香港工程師學會高級副會長。

Ir Dr P L Yuen worked for Hospital Authority (HA) overseeing the electrical & mechanical engineering facilities management across all public hospitals, as well as public hospital development and construction projects since the establishment of the Hospital Authority back in 1993. He is an engineer by training with an Engineering Doctorate Degree researching into hospital isolation ventilation design. Before joining HA he worked in the Government's Electrical & Mechanical Services Department for over ten years on public hospital construction and maintenance. In the late 80's under the Confederation of British Industry (CBI) scholarship he had also worked for hospitals in both Europe and Middle East. Ir Dr P L Yuen is a Registered Professional Engineer (Building Services), Fellow of the Chartered Institution of Building Services Engineers (CIBSE), Fellow of the Hong Kong Institution of Engineers (HKIE), and Fellow of the UK Institute of Healthcare Engineering and Estate Management (IHEEM). He was the Chairman of the Committee of the Gas & Energy Division of the HKIE in 2007/08, and currently the elected Senior Vice President of the HKIE.

演講大綱 Abstract

醫管局致力推行節能減排，應對醫院因不斷上升的服務使用量而增加對能源的需求。透過良好的設施運作管理，配合不同高能效及先進的節能技術，如首個在醫院使用的電熱聯供系統、無油製冷機組及智能LED照明等，令各醫院的能耗顯著減少。

Hospital Authority (HA) is committed to foster a greener environment. The application of advanced energy efficient technologies, together with proper facility management, helps HA to offset the rising trend of energy consumption due to increasing hospital activities.

A Combined Heat and Power (CHP) plant has commenced operation in Alice Ho Miu Ling Nethersole Hospital in 2016. By adopting waste-to-energy concept, the system generates electricity from landfill gas, and at the same time supplies steam and hot water for hospital by reclaiming waste heat from the generator's cooling and exhaust systems.

By replacing aged air-conditioning chillers with high energy-efficient oil-free chillers in 21 HA venues, a considerable energy reduction was recorded in 2018. To take a step forward, HA is exploring with EMSD to develop an intelligent real-time monitoring and analysis program to further optimize the chiller plant operations.

Besides, the first batch of lighting retrofitting projects was completed in early 2019. The new lighting system, adopting LED technology with intelligent wireless lighting controls, not only energy efficient but also provides real-time status of each light fitting for better lighting control and energy monitoring.

Various energy conservation measures have resulted in significant reduction of energy consumption in hospitals.

醫院節能之創新解決方案

Innovative Energy Saving Solutions for Public Hospitals



醫院管理局行政經理(工程)

林青華工程師

Ir Way LAM

Manager (Engineering), Hospital Authority

講者簡介 Biography

林青華先生是一位註冊專業工程師，現於醫院管理局任職工程經理，負責協調所有公立醫院的能源管理及機電設施管理。林工程師有超過二十年的工程及項目管理經驗。他曾在工程顧問公司工作，負責亞太區大型基建項目的工程設計及項目管理。

Ir Way LAM is the Manager of Hospital Authority (HA), responsible for coordination among HA clusters on energy management and engineering facilities management of all public hospitals.

He earned his bachelor's degree and master's degree in Hong Kong, and has over 20 years' experience in engineering design, project management and facilities management. Before joining HA, he worked in E&M consulting firms and stationed in Singapore, Taiwan and India, for engineering management and construction management of various mega infrastructure projects.

Ir LAM is a Registered Professional Engineer. He is a member of the Hong Kong Institution of Engineers (HKIE), The Institution of Engineering and Technology (IET), and The Hong Kong Institute of Facility Management (HKIFM).

演講大綱 Abstract

醫管局致力推行節能減排，應對醫院因不斷上升的服務使用量而增加對能源的需求。透過良好的設施運作管理，配合不同高能效及先進的節能技術，如首個在醫院使用的電熱聯供系統、無油製冷機組及智能LED照明等，令各醫院的能耗顯著減少。

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智慧高效建築先進技術的開發和應用 - 環球貿易廣場合作項目概要
Development and Application of Advanced Technologies for Smart and
Energy-Efficient Buildings - A Summary of Joint Efforts in ICC



香港理工大學屋宇設備工程學系講座教授
王盛衛教授

Prof WANG Shengwei

Chair Professor, Department of Building Services Engineering,
The Hong Kong Polytechnic University

講者簡介 Biography

王盛衛教授分別於1983年和1986年從華中科技大學獲得學士和碩士學位，並於1993年從列日大學獲得博士學位。他於1993年加入香港理工大學並於2008年晉升講座教授。他是IBPSA，CIBSE，HKIE等組織的高級會員。他是理工大學的建築節能 and 自動化研究室的帶頭人。他活躍於建築節能和自動化領域的研究和應用方面，包括能源效率和優化控制、系統穩定和優化設計、建築系統診斷、不確定性分析、系統模擬、面向智能電網的需求響應，以及智能建築技術。他獲得16項香港研資局的GRF研究資助項目。他是四本書的作者或合作作者，發表了300多篇論文（包括220多篇SCI期刊文章）。他是能源科學和工程領域前150位常被引用的作者之一。他還從工業界獲得大量資助（超過1800萬港幣）以從事研究和應用。他成功完成了多個節能項目達到15%到40%的實際節能效果，包括環球貿易廣場，酒店，機場大樓，醫院，工業建築，港鐵地下車站，以及理工大學校園建築。

Prof. Shengwei Wang obtained his BSC and MSc degrees from Huazhong University of Science and Technology and PhD from University of Liege in 1983, 1986 and 1993 respectively. He joined The Hong Kong Polytechnic University in 1993 and was promoted to chair professor in 2008. He is a fellow of the IBPSA, CIBSE and HKIE. He is leading the Building Energy and Automation Research Laboratory in PolyU. He is actively involved in the research and applications on building energy and automation in: energy efficient and optimal control, system robust optimal design, building system diagnosis, uncertainty analysis, system simulation, demand response for smart grid, and intelligent building technologies. He has obtained 16 GRF grants from Hong Kong RGC. He authored/co-authored four books and published over 300 papers (over 220 papers in SCI journals). He is one of the top 150 highly-cited scholars in "Energy Science and Engineering". He also received significant amount of funding (totally over 18 million HKD) from industry for research and applications. He has successfully conducted many energy saving projects, such as International Commerce Centre (ICC), hotels, airport buildings, hospitals, industrial buildings, MTR underground station as well as buildings in PolyU campus with energy savings from 15% to 40%.

演講大綱 Abstract

香港的建築物消耗了超過90%的電力。增加建築能效可以使建築用戶和全球環境顯著收益。本演講總結了過去十多年環球貿易廣場合作項目中的優化和能效控制技術，以及他們的實際效果。

該合作項目始於2007，兩個核心目標是建築全生命周期測試和校驗（持續校驗），和一系列空調系統運行中節能控制策略的開發和應用。

所開發的優化控制策略包括了商業空調的所有子系統，旨在將系統運行效能推向極致，達到甚至超過設計期望。基於大量歷史數據，採用先進機器學習算法獲得知識並應用於優化策略。

基於電費單計算，所有這些應用在環球貿易廣場的優化策略實現了年能耗降低一千萬度電的成果。

Buildings consume over 90% of electricity in Hong Kong. Enhancing their energy efficiency can significantly benefit building users as well as global environment. This presentation provides a summary on the optimal and energy efficient control methods and their actual energy benefits based on the joint efforts in ICC and achievements in the past over ten years.

The collaboration between PolyU and ICC started in 2007 to optimize the energy efficiency and achieve energy saving. The two core objectives are building life cycle testing and commissioning (on-going commissioning), as well as the identification and implementation of a series of energy saving strategies for the MVAC system operations.

Those optimization methods, which were developed aiming to push the operation performance of the systems delivered to approach the best, often exceed the design intent, covers all sub systems in commercial MVAC systems. Those methods were developed based on knowledges learned from the big historical data. Advanced machine learning techniques were involved.

Based on the electricity bill, all the methods which had been permanently implemented in ICC has achieved an annual saving of over 10 million kWh.

通過建築中能耗計量與大數據應用實現綠色低碳發展的未來
Energy Use Monitoring and Big Data Application in Buildings
to a Low-Carbon Future



清華大學建築節能研究中心
魏慶芃教授

Prof WEI Qingpeng

Building Energy Conservation Research Center,
Tsinghua University

講者簡介 Biography

專注公共建築及HVAC系統運行節能研究，先後獲得省部級獎勵共9項。建立公共能耗計量與實時分析系統，完成中南海、人民大會堂，及北京、上海、香港、美國、日本等地500餘座公共建築運行節能研究，通過調適實現節能30%。

Dr. Qingpeng Wei received his B.Sc., M.Sc., and Ph.D. degrees in building services engineering from Tsinghua University. As the team leader of study on energy efficiency in commercial buildings, Dr. Wei established an on-line energy monitoring and benchmarking system of commercial buildings through detailed metering. By this monitoring and benchmarking system, current situation, characteristics and saving potentials of energy consumption for HVAC, lighting, office appliances in commercial buildings are clearly disclosed with real time energy consumption data. Therefore, Dr. Wei develops data-driven model and data mining methodology for energy consumption in commercial buildings. With his effort, lowcost retrofitting techniques including Retro-Commissioning, control strategy optimization, FDD, etc. have been implemented in about 500 commercial buildings which obtained more than 30% of energy savings.

演講大綱 Abstract

中國建築運行能耗約佔全社會總能源消耗的24%，巨大的節能潛力使得建築節能被廣泛接受，但關鍵是怎麼做。近年來綠色建築的發展推動了建築節能的進步，在信息技術和數據技術幫助下，基於大量能耗監測“大數據”而發展的新方法，將極大地推動建築節能發展。

There are tremendous challenges on energy and environmental issue in buildings of China since around 24% of energy is consumed in operating buildings for HVAC, lighting, appliances, etc. Energy efficiency in buildings is well accepted as a key to a low-carbon future but HOW. Concept of green building is also well known and various technology and products labelling with “energy efficiency” are installed in buildings, however, the actual performance and operational system efficiency are not as good as they expected. People realized that with help of ICT people can run their buildings and systems properly with extremely high efficiency if they can have both DATA and Knowledge on systems. Monitoring-Based Commissioning (Cx) approach is expected as the KEY. In this presentation, case study and methodology of applying Monitoring-Based Cx and Big-data in buildings will be presented.



太古地產有限公司
技術統籌及可持續發展總經理
邱萬鴻博士

Dr Raymond YAU
General Manager, Technical Services &
Sustainable Development, Swire Properties Ltd

講者簡介 Biography

邱萬鴻博士是太古地產有限公司技術統籌及可持續發展總經理，領導技術統籌及可持續發展部。他為公司旗下香港和中國大陸的物業管理營運制定並推行了創新性可持續發展策略。

邱博士在設計可持續建築和可持續發展諮詢領域擁有超過28年的工作經驗。他曾是一家國際諮詢工程公司的董事，負責多項大型建設，例如：巴黎Maison du Japon、關西國際機場航站樓、北京僑福芳草地購物中心、香港建造業議會之零碳天地和香港太古坊一座辦公樓等。自2016年加入太古地產作為負責其全球物業的技術統籌和可持續發展的領導者以來，他實施了一系列對公司長期可持續發展的新措施。其中包括制定公司SD 2030願景和策略，促進技術服務的數碼化轉型和雲端能源管理平台，對公司現有物業營運進行基於監測的深度節能調試，制定公司首個綠色債券5億美元的ESG框架，以及積極回應符合「巴黎協定」和全球資產「氣候風險評估」的基於科學的碳目標倡議。

邱博士現為中國城科會綠建委委員，商界環保協會董事和中國重慶大學客座教授。他是美國綠色建築協會及香港綠色建築議會認證的綠色建築專家，同時也是香港工程師學會和英國工程師學會註冊工程師及資深會員。

Dr Raymond Yau is the General Manager, Technical Services & Sustainable Development in Swire Properties Limited, leading the Department of Technical Services and Sustainable Development. In this role, Dr Yau formulates and executes innovation and sustainability strategies for the company's technical services operations across Hong Kong and Mainland China.

Dr Yau had been practicing as a professional consulting engineer for over 28 years in the field of designing sustainable buildings and sustainability consulting across the Globe. He was director of an international consulting engineering firm responsible for notably projects such as Maison du Japon in Paris, Kansai International Airport Terminal, Beijing Parkview Green, Hong Kong CIC First Zero Carbon Building and One Taikoo Place Office Tower in Hong Kong. Since joining Swire Properties in 2016 as the leader of technical services and sustainable development for its global portfolios, he leads a number of new initiatives that are pivotal to the long term sustainable development of the firm. These include formulation of firm-wide SD 2030 Vision and strategies, digital transformation of technical services and cloud based energy management platform, implementation of monitoring-based commissioning of all existing portfolios for deep energy savings, ESG framework of the firm's first green bond of US\$500m and most recently the Science-based Carbon Target Initiative in accord of The Paris Agreement & the Climate Risk Assessment of its global assets.

Dr Yau is a Committee Member of China Green Building Council, a Director of Business Environment Council and a Guest Professor of Chongqing University, China. He is a LEED AP, Green Building Faculty, BEAM Pro, Chartered Engineer and Fellow Members of Hong Kong Institution of Engineers and the UK Chartered Institution of Building Services Engineers.

演講大綱 Abstract

太古地產在2016年開始對旗下的商用物業進行系統性的重新校驗計劃。此計劃主要考慮能耗效果，改善運行效率及減少浪費能耗。太古地產通過系統營運數據和數碼化持續監察平台去緊貼系統運行指標以達至節能效果，這些指標包括制冷機組及制冷系統的效能，空調水泵傳輸系數等。通過持續監察這些運行指標，營運技術團隊可以確保節能效果或當節能效果滯後時可以盡早修正系統運作，以達到最終節能目標。

Most of Swire Properties' Portfolios operated over 20 years and chiller replacement works have been completed across portfolios in recent years. Starting from 2016, a systematic approach for Retro-commissioning (RCx) has been carried out across portfolios. RCx focuses on identifying energy performance, determining what changes need to be made to improve operating efficiently and diagnostic of energy waste.

Swire Properties utilized on-going monitoring digital platform to track Key Performance Indicator (KPIs) to ensure efficiency and maintain target energy saving after rectification actions from RCx. Such KPIs included Individual Chiller COP, Chiller Group COP, Pump's Water Transfer Factor (WTF), and Chiller Plant COP. By monitoring these KPIs, it allows the operation team to ensure rectification works have achieved its projected improvement and to allow the early identification of reduction in performance to allow quicker response in maintaining performance.

智能中央空調節能管理系統與案例分析

Smart Central AC System in Energy Saving Management and Case Study



華南理工大學

閻軍威教授級高級工程師

Prof YAN Junwei

South China University of Technology

講者簡介 Biography

閻軍威，華南理工大學教授，廣東省城市空調節能與控制工程技術研究開發中心主任，廣州遠正智能科技股份有限公司董事長，兼任中國建築節能協會副會長，從事智慧城市能源監管和暖通空調節能優化控制技術研究與產業化應用工作。

Yan Junwei, Professor of South China University of Technology (SCUT), Chairman of Guangzhou i-MEC Technology Co.,Ltd., and Vice-president of China Association of Building Energy Efficiency(CABEE), engaged in research and industrial application of smart city energy monitoring and HVAC energy-saving optimization control technology.

演講大綱 Abstract

第一部分：通過描述影響中央空調系統能耗的主要因素引出中央空調節能關鍵點（管理+設備+控制），進一步詳細介紹智能中央空調節能管理系統應用技術（i-mec技術）。

第二部分：選取1-3個改造案例，將i-mec技術應用至中央空調系統，介紹其具體改造內容與改造效果。

Part 1: Based on the analysis of energy consumption key points in central air-conditioning system, the main factors affecting the energy saving of the central air-conditioning system, can be summarized as management, equipment and control. Then, the energy-saving management (i-mec technology) will be further introduced to fully describe the smart energy-saving application technology of the central air-conditioning system.

Part 2: 1~3 transformation cases are selected to show the application of i-mec technology in the central air conditioning system, this part introduces its specific transformation content and transformation effect.

香港浮動太陽能發電系統的發展

Floating Solar Power System in Hong Kong



水務署助理署長/機械及電機
李大安工程師

Ir LEE Tai-on

Assistant Director/Mechanical & Electrical, Water Supplies Department

講者簡介 Biography

李大安工程師於1983年畢業於香港大學，並於1991年於香港工程師學會註冊成為工程師。現在他也是國際工程技術學會的會員。

李大安工程師在香港電燈有限公司完成了見習工程師訓練計劃及兩年的助理工程師工作後，於1987年，他加入了水務署。自此以後，他一直在水務署轄下的機械和電機部門從事水務工程相關的工作，包括設計，採購，安裝，運行和保養機械，電機和儀器裝置，並提供機械電機和信息科技方面的技術建議和支援。於2006年，李大安工程師晉升為高級工程師，於2015年，他晉升為總機電工程師，於2018年6月，他出任水務署助理署長。於現職位中，李先生著重加強部門服務和提升效率，為部門制定機電和信息科技方面的發展策略，部門政策和守則等。目前，李先生致力於推動智能水錶在香港的應用，發展再生能源，透過資產管理的方法提高系統可靠性和效率方面的工作。

Ir LEE Tai-on graduated from the University of Hong Kong in 1983. He became a Member of the Hong Kong Institution of Engineers (MHKIE) in 1991. Currently, he is also a member of the Institution of Engineering and Technology (MIET).

Ir LEE joined the Water Supplies Department (WSD) in 1987 after completing his graduate training and subsequent 2-year service as an Assistant Engineer in the Hong Kong Electric Co. Ltd. Since then, he has worked in the Mechanical and Electrical Branch (M&E) of WSD on various facets of waterworks including the design, procurement, installation, operation and maintenance of mechanical, electrical and instrumentation plant and equipment; and giving advice and support on M&E and IT matters for the Department. In 2006, he was promoted to Senior Engineer and served in the General Administration Section to provide administrative and technical support for the Department. Ir LEE was promoted to the Chief Electrical & Mechanical Engineer in 2015 and Assistant Director of Water Supplies in June 2018. In his current post, he oversees the M&E Branch of WSD which supports the Department by providing M&E engineering input, and developing strategies, policies and guidelines in IT utilization for enhancing the efficiency and services by the Department. In current major initiatives of the WSD, Mr LEE involves in establishing the use of smart water meters in Hong Kong, development of renewable energy and enhancement of system reliability and efficiency through asset management.

演講大綱 Abstract

隨著近年科技的日益進步，太陽能板不再局限於只可以在陸地上的應用。安裝太陽能板在浮臺上的浮動太陽能板發電系統應運而生，而且這種方法比陸地安裝的太陽能系統有多項優勢。在香港擁有17個廣闊的食水水塘的先天優勢下，水務署推行了兩項先導計畫，以測試和觀察浮動太陽能發電系統技術是否適用於香港。是次演講會總結了先導計畫的成效和經驗，並探討浮動太陽能發電系統在香港長遠發展的可行性和策略。

In recent years, solar power photovoltaic systems installed in floating platform on water surface has becoming prevalent, known as Floating Photovoltaic (FPV) system. FPV system would have a number of advantages over the conventional PV system installed on land. There are 17 impounding reservoirs in Hong Kong which can provide great potential for the development of such kind of installations. To assess the feasibility and adaptability of such technology in Hong Kong, Water Supplies Department of HKSAR has implemented two pilot FPV projects at Shek Pik Reservoir and Plover Cove Reservoir in 2017. This presentation shares the experience on design, installation and operation of these two pilot FPV systems and discusses the feasibility and strategic arrangement on implementation of large scale floating solar farms in Hong Kong.



廣東省華南技術轉移中心執行總裁
李奎博士

Dr LI Kui

Executive President,
South China Technology Communication Center

講者簡介 Biography

李奎，經濟學博士，副研究員，先後任職於政府部門及科研單位，現任華南技術轉移中心執行總裁。曾主持國家科技部委託項目1項，主持並參與各類省級科技項目67項，多次負責及參與省級各部門的政策制定、調研報告撰寫。

Li kui, PhD in economics, associate researcher, has worked in government departments and scientific research institutions. And now Dr. Li joined the south China technology commercialization center as the chief executive officer. He has presided over one project supported by the ministry of science and technology of the People's Republic of China, participated in 67 provincial science and technology projects, and played important roles in many provincial policy formulation processes as well as various project studies.

演講大綱 Abstract

結合華南技術轉移中心建設綜合型技術轉移轉化樞紐平臺的工作經驗，分析國內外技術轉移機構的運行模式，探討構建“企業全生命週期、產業大生態”技術轉移體系及商業模式。探索與港澳機構的合作模式，實現多方共贏。

Based on the experience of south China technology commercialization center in establishing comprehensive technology transfer and transformation hub, this speech aims to analyze the operation mode of domestic and foreign technology transfer institutions, and to explore the construction of technology transfer system and business model which highlights the industrial ecology covering the whole life cycle of enterprises, and the models of cooperation among GD, HK and Macao institutions to achieve a win-win situation.

革命性的兩相浸沒式冷卻數據中心

Revolutionizing Data Centres with 2-Phase Immersion Cooling



聯治有限公司首席執行官
劉嘉榮先生

Mr LAU Kar-Wing

Chief Executive Officer, Allied Control Ltd.

講者簡介 Biography

劉嘉榮先生，聯治有限公司的創辦人，首席執行官。聯治憑著其專利注冊的兩相浸沒式冷卻技術，發展成香港最省能、獲獎無數的數據中心供應商。

在區塊鏈巨擘Bitfury Group全權收購聯治之後，劉嘉榮先生繼續領導開發全球最大達到40MW及120MW IT負荷的兩相浸沒式冷卻數據中心。

創辦聯治之前，劉嘉榮先生為全球十大物流公司 - 亞致力物流 (Agility Logistics) 的環球高管，負責資訊科技以及商業流程改善方案，以及全球性的組織重組。更早之前，在2000年，劉嘉榮先生在德國創立了資訊科技顧問公司Connecta AG，主力為德國各大財經、印刷，以及航空公司提供完善商業流程，以及度身訂造資訊技術方案。

Kar-Wing Lau is the CEO and co-founder of Allied Control, which has created Hong Kong's most energy-efficient and multi-award winning datacenter based on patented revolutionary 2 - phase immersion cooling technology. After the acquisition by the full-service Blockchain technology company The Bitfury Group, he consecutively led the creation of the world's largest immersion cooled datacenters with 40MW and 120MW IT load. Before Allied Control, Kar-Wing was in the global senior management of the top 10 logistics company Agility Logistics, responsible for IT and business process improvements, and restructuring the global organization. He also founded the German IT consultancy firm Connecta AG in the year 2000, optimizing business processes with custom IT solutions for some of Germany's major financial, print and airline companies.

演講大綱 Abstract

傳統的數據中心主要以風冷散熱，而空氣並不是很好的傳熱體，相反更具隔熱的效果，因此風冷的效能甚低。

今時今日，數據中心需要大型的散熱器以及大量的冷氣以作散熱。數據中心超過40%以上耗電是單單用於冷卻用途，只有少部份電量是用於資訊設備。聯治有限公司發展出革命性的兩相浸沒式冷卻技術。利用不導電液體達到直接，極度節能的冷卻效果。

除了在科技界獲獎無數，聯治建成了香港最節能的數據中心，並四度建立全球最大的浸沒式冷卻數據中心，達到120MW的IT負荷(大約是香港聯合交易所的15倍)

從減省了大型的散熱器，我們可以節省90%地面空間，在地價高昂的香港，珠三角，以至亞洲其他地區，我們可以節省大量樓宇面積，我們的設備亦非常適合亞洲炎熱而潮濕的天氣，達到至為節能的效果。

我們未來會致力於提供微型人工智能超級電腦，以及5G通訊塔的節能冷卻方案。

Traditional data centres using air cooling are inherently very inefficient, because air is rather an insulator than a good heat transfer medium. Large metal heat-sinks and a lot of cold air-flow is needed to cool data centres today. Very often 40% or even more of an entire data centres' electricity consumption is being used for cooling alone, only a fraction goes to operating the IT equipment.

Allied Control has developed a revolutionary 2-Phase Immersion Cooling technology which uses a non-conducting fluid for direct and extremely energy-efficient cooling. Multiple awards have been won, amongst those for having created Hong Kong's Most Energy-Efficient Data Centre. Subsequently, Allied Control has created four times consecutively the world's largest immersion cooling data centres with up to 120MW IT load (about 15x times the capacity of HKEX).

By removing bulky heat-sinks, up to 90% of floor space can be saved, which is extremely important for high real estate cost locations like the Pearl River Delta and other locations in Asia, especially if combined with hot and humid sub-tropical climate. We also aim to provide mini AI-supercomputers nearby 5G cell-phone towers to support IoT and other applications requiring very low latency, while saving electricity.

可持續創新驅動力是加速燃料電池產業化的重要保證
Acceleration the Wide-Spread Commercialization of
Hydrogen Fuel Cells through Innovation



鴻基創能科技（廣州）有限公司
首席技術官兼董事

葉思宇博士, 加拿大國家工程院院士

Dr YE Siyu, Fellow of the Canadian Academy of
Engineering

Chief Technology Officer and Director,
SinoHykey Technology Co., Ltd.

講者簡介 Biography

葉思宇博士是加拿大工程院院士，鴻基創能董事和首席技術官。葉博士在電化學尤其是燃料電池領域具有30餘年研發和產業化經驗，是國際公認的燃料電池電催化和膜電極的領軍人物，為現代燃料電池的發展做出了傑出貢獻。

Dr. Siyu Ye is a Fellow of the Canadian Academy of Engineering, a recognized world-leading expert in electrocatalysis and catalyst layer/MEA design for fuel cells. Dr. Ye earned his Ph.D. from Xiamen University in 1988, and was a Principal Scientist at Ballard Power Systems, a leading global fuel cell company. Currently, Dr. Ye is Chief Technology Officer and Board Member at SinoHyKey, Guangzhou, China. Over the last 20 years he has been involved in all aspects of fuel cell R&D. He has made significant contributions to the advancement of the modern PEM fuel cell. He has over 100 peer-reviewed papers, and over 50 patents and patent applications.

Dr. Ye is also an Adjunct or honorary Professor at the University of British Columbia and University of Waterloo, Canada, South China University of Technology, Southern University of Science and Technology, Southwest Jiaotong University, China.

演講大綱 Abstract

氫燃料電池被認為是解決人類能源危機和綠色環保的最佳方案，在許多領域的應用越來越廣泛。為了實現燃料電池的大規模商業化，可持續創新驅動力是其重要保證，尤其是在燃料電池關鍵材料和核心部件的研發和生產領域。

Hydrogen fuel cells are able to meet the demand of world energy consumption and ensure sustainable society development simultaneously. They have been used in many different areas in the last decade. However, further reduction of the cost, along with the improvement of performance and lifetime of fuel cells are required for their wide-spread commercialization. Innovation is at the heart of this development, particularly the research and development of key materials.

實時智慧型數據控制中央空調系統

HVAC Smart Control System with Intelligent Utility Control



積奇儀器有限公司市場總監
陳海龍先生

Mr James CHAN

Chief Marketing Officer, Jacky Instruments Ltd.

講者簡介 Biography

James有多年科技產品的市場推廣經驗，其專業領域涵蓋電訊軟件，能源管理及保安產品。

James Chan is a seasoned businessman in commercial business development for technology solutions.

He has many years' experience in deploying technology solutions in Asia covering telecommunication software, energy management and security.

演講大綱 Abstract

在現代建築中央空調 (HVAC) 系統保持室內空氣質量 (IAQ) 和熱舒適性。由於傳統型恒溫器的局限性，它會導致一些不希望的問題，包括過度冷卻，溫度調節不良以及缺乏IAQ監測。

“節能器”和“智能恒溫器”是採用先進技術提升盤管風機 (FCU) 系統效率的設備。在不修改FCU的情況下，它可以降低FCU 40%以上的能耗。它可通過自動無級氣流控制提供平穩的熱調節，從而改善熱舒適度。此外，通過在系統中引入“無線室內舒適傳感器”來提高控制精度，從而減輕過度冷卻問題。不僅室內溫度而且濕度都被調節到合理的水平。

由於基於雲與大數據技術的進步，用戶可以通過移動應用程序和實時監控系統，更好地瞭解系統性能，例如電力消耗，碳減少量和熱舒適度。

In modern buildings, Heating, Ventilation and Air-Conditioning (HVAC) system maintains indoor air quality (IAQ) and thermal comfort. Due to the limitations of conventional type thermostat, it leads to several undesirable issues, including excessive cooling, poor thermal regulation with fluctuating temperature, and lack of IAQ monitoring. It raises the operational cost of buildings and reduces occupant's thermal comfort. Several studies show thermal discomfort impacts productivity and health.

“Energy Saver” and “Smart Thermostat” are next-generation intelligent devices to transform HVAC Fan Coil Unit (FCU) System with advanced technologies. Without modifying the FCU, it magically improves occupant's thermal comfort with reduced over 40% energy consumption on the FCU. It also provides smooth thermal regulation by using automatic step-less airflow control. Besides, control accuracy is improved by introducing “Wireless Indoor Comfort Sensors” to the system so that excessive cooling issue is mitigated. Not only the indoor temperature but also humidity is regulated at a reasonable level.

Thanks to the advancement in cloud-based technologies, users could have a better understanding of the system performance, such as electricity consumption, amount of carbon reduction and thermal comfort level, by accessing with mobile application and web-based monitoring system.



微電有限公司行政總裁兼創辦人
翟炳權先生

Mr Jackson CHACK

Chief Executive Officer, Co-Founder, Micronics Co., Ltd.

講者簡介 Biography

微電有限公司由翟炳權先生於2017年成立。翟先生和聯合創始人蘇教授多年來一直在開發節能智能風機盤管裝置，不僅可以降低營運成本，還可為綠色可持續發展的世界奠定基礎。

Jackson is the co founder of Micronics Company Limited, established in 2017. Jackson and co founder Albert So has been developing a smart fan coil unit that will not only reduce operations cost, but also provide a foundation for a greener sustainable world.

演講大綱 Abstract

微電有限公司創辦人，翟炳權先生和蘇廷弼博士一直研究從空調系統著手減少樓宇能源消耗。經過多年，成功獲得重大成果，並研發智慧節能風機盤管。

微電的智慧節能風機盤管具有以下特點：

配合永磁同步電機，使耗電量減少，比起傳統的交流電機，最多減少80%的耗電量；減少電機發出的噪音多達3dB，即人類聽覺少了一半有多；用家有善的設計，於風機背後安裝了多一塊底板並用用崩沙螺絲和彈弓介指連接，使工人在每年清潔時能減少一半時間；永磁同步電機壽命比傳統的交流電機長一倍，多達8年或以上。

Micronics Co. Ltd started with a vision to research and develop products and technology to contribute towards a sustainable world. Smart and Energy Saving Fan Coil Unit.

The uniqueness of our product is:

Electricity consumption is reduced by up to 80% by Permanent Magnet Synchronous Motor (PMSM) compared to traditional AC or DC motors; Noise level is reduced by 3dB, which to the human ear, is half compared to fan coil units of the past; A user-friendly design feature was implemented for easy maintenance; and A long-life expectancy more than 8 years.



大數據締造可持續生活方式：鼓勵節能新方向
Big Data Empowers Sustainable Lifestyle:
Stimulate Innovative Direction in Energy Saving



向藍天科技有限公司項目主任
何卓謙先生

Mr Wallace HO

Operations Executive, Bluesky Energy Technology

講者簡介 Biography

何卓謙為向藍天公司的項目主任，負責協調智能電錶安裝和推動，使客戶能夠充分利用系統的優勢。他在大學主修環境科學，工作經驗涉獵節能，可再生能源和GIS。曾服務於美國加州的非牟利機構GRID Alternatives，致力接觸三藩市的低收入家庭，為邊緣社群安裝太陽能板，減輕電費負擔。

Wallace Ho is the Program Officer at Blue Sky Energy Technology. He coordinates smart meter installation and engagement program to enable our clients to fully utilize the benefits of the system. Majored in Environmental Science at college, his experience ranges from energy conservation, renewable energy to GIS. Before joining Blue Sky, Wallace worked for GRID Alternatives, a non-profit solar panel installer based in California, US, who emphasized on equal access to solar power. Wallace outreached to low-income households in the San Francisco Bay Area, making renewable energy accessible to marginalized communities who needed savings most.

演講大綱 Abstract

Blue Sky利用大數據推動個人節能與創新！我們透過安裝智能電錶，收集大廈各個空間的能源數據，實時分析及向用戶展示結果。我們同時分享香港大學宿舍的案例，討論大數據如何促進個人行為改變，以及增強群眾參與，令用家的節能意識有所提高。

Big data empowers individuals to innovate and conserve! With Blue Sky deployed smart meters in buildings, energy data is monitored for room-level appliances. Big energy data is then analyzed and displayed real-time to users via user-friendly app or web interface. It sets the foundation for user collaboration and story-telling.

Case study of HKU dormitory will be shared on how big data fostered both in person and mass engagement. Residents voluntarily take part in a year-long Living Lab Program getting insights from energy data captured from themselves or their peer's. Others experience the benefits and peer- influence under the mass energy competition and data-informed infographics. Residents awareness level has increased while some testifies on their change in attitude from skepticism to believe in the power of data.

通過智能能源方案簡化節能

Simplifying the Adoption of Smart Energy Solutions



CLP Innovation Enterprises Ltd. 聯席總監

歐陽逸先生

Mr Pubs ABAYASIRI

Associate Director, CLP Innovation Enterprises Ltd.

講者簡介 Biography

Pubs Abayasiri擁有15年於不同資訊科技及能源企業中擔任諮詢及內部管理職務，而是次Pubs引領中電集團數碼產品團隊為各企業提供及推廣與時並進節能應用產品。

Pubs除了主導一系列先導計劃當中包括建構初步智能電網計量設施、管理跨部門節能應用產品及湊合數據分析外，Pubs同時亦重點經營以可持續發展目標的智能應用產品平台CLP Smart Energy Connect。

Mr. Pubs Abayasiri has worked in the technology and energy sector for over fifteen years. At CLP Holdings, Pubs oversees the Digital Products team, which focuses on energy saving solutions. He leads a range of initiatives, which include setting up the initial Smart Grid Advanced Metering Infrastructure, managing cross business unit applications, and establishing an analytics practice. More recently, Pubs has been managing the Smart Energy Connect program whose mission is to make sustainability a practical reality through the deployment of energy saving solutions.

演講大綱 Abstract

香港一直蘊藏極大節能機遇，全因現時本港擁有超過四萬幢舊式設計樓宇，當中消耗全港百分之九十電力，如何於舊式設計中融合現代節能環保概念？最佳方案是於樓宇中增設節能感應裝置，利用數據分析讓樓宇用戶了解能源消耗狀況再配合自動操作來提升全面節能效果。

但市場上節能產品繁多，質素及選擇過程參差複雜如新型產品未必經過產品測試、未擁有充分全面實際應用經驗，甚至未必合適於本地公司採用等。另外，對於有潛質的應用產品公司及供應商於不停轉變的能源市場中尋求及迎合新客戶群亦是相對大的挑戰。

因此，我們看準時機為各方建立全新平台CLP Smart Energy Connect - www.clpsec.com，為客戶提供一站式節能方案。此外，亦為有潛能的應用產品公司及供應商建構合作平台，增廣客戶層面同時亦能於瞬息萬變的能源市場中作好準備。

With more than 40,000 buildings consuming over 90% of Hong Kong's electricity consumption, there is an opportunity now more than ever to explore energy savings in the city. Historically, buildings were not designed and constructed with energy efficiency in mind, but as we are moving into an era where sustainability is a concern, effective solutions, such as smart sensors and data-driven solutions can be adopted in existing buildings.

As a customer, the end-user, finding the right energy saving solution is key and may prove to be a challenge as some of the solutions may be complex, are new to the market, and require detailed knowledge for deployment. As a solution provider, a challenge may be reaching and engaging potential customers.

At CLP Smart Energy Connect, we provide the bridge between customers and solution providers. We provide customers with an energy saving solution tailored to specific needs and we provide solution providers with the opportunity to go-to-market.

“智慧建築的智慧架構” – 應用在香港智慧道具庫的個案分享
Case Sharing – Application of “Smart Infrastructure for Smart Building”
in a Hong Kong Smart Prop Store



得能光控有限公司首席技術官
陳龍工程師

Ir Geoffrey CHAN

Chief Technology Officer, Delight Power Products Ltd.

講者簡介 Biography

陳龍工程師1977年畢業於香港大學電機及電子工程系，他在本地一間電力公司工作37年，期間取得資訊系統，碩士學位。2014年退休後他被香港得能光控有限公司發明的“智慧建築的智慧架構”所吸引，現時協任該公司的首席技術官。

Ir Geoffrey Chan graduated from the Electrical & Electronic Engineering (EEE) Department of the University of Hong Kong in 1977. He worked 37 years in a local power utility in electricity transmission and distribution business before retiring in 2014. In this period, he acquired a master degree in Information Systems. He was appointed Adjunct Professor of EEE Department of University of Hong Kong in 2018.

After retirement, he was attracted by the ground breaking ‘Smart Infrastructure for Smart Building’ invented by DeLight Power Product Limited in the Hong Kong Science & Technology Park. He is now Advisor and Chief Technical Officer of the Company.

演講大綱 Abstract

Under the sponsorship of the Eco Building Fund of CLP, a smart lighting system in a 1200 m² Prop Store in Hong Kong was implement in June 2019. The system comprises of an array of over 100 sensors, intelligent drivers and controllers to adjust the output of 2 x 235 T5 LED Tubes. The system successfully reduces lighting power demand by 87% (18.6KW→2.4KW) and saves 94% of energy consumed. Furthermore, streaming of real-time sensor and LED data on-the-fly provides big data for fault detection and application beyond lighting control.

The core technology is a self-configured network call NALA – Neural Automate Linked Array, invented by a startup company incubated in the Hong Kong Science & Technology Park. NALA establishes a network of linked objects quickly. These objects worked seamlessly upon power up without programming nor central processor to achieve its objective, which in this case is lighting energy saving.

NALA system is designed to last as long as the building as no electronic parts nor battery replacement is needed. Together with the self-configured algorithm, NALA addresses the two biggest hurdles in indoor big data application, namely network set-up and powering of sensors. It is a “Smart Infrastructure for Smart Building”



庫瓦有限公司行政總裁
陳維田博士

Dr Daniel CHAN

Chief Executive Officer, Negawatt Utility Ltd.

講者簡介 Biography

Professor Daniel Chan graduated from the University of Hong Kong with a BSc degree and in Mechanical Engineering in 1973, a MPhil in aerodynamic noise in 1978, and a PhD from the University of Wales in 2000. Between 1980-1987, he joined Parsons Brinckerhoff (Asia) Ltd as a consultant for environmental control systems in large buildings and the Mass Transit Railway Stations. He joined the Hong Kong Polytechnic University in 1987. He proposed the integrated IEQ model in mid-1990s. He started the Hong Kong Building Environmental Performance Method (HK-BEAM) by receiving a contract from Read Estate Developers' Association of Hong Kong. He was stunned by the failure of building services engineering technology in combating SARS in 2003. So, in 2004, he launched a noble concept of building quality - the "Sustainable Immunized Building". Following his retirement in 2011, he joined Arup for two years. In 2013-2015, Professor Chan developed a new BSE degree program in the THEi of VTC. Bringing together his decades of experience in industry and research and development, in 2016, Professor Chan started his own Company Negawatt to launch a new notion of "Building Operating System" (BOS). The BOS intends to facilitate digitizing any building into an intelligent building.

演講大綱 Abstract

This talk describes a data comprehensive approach of analyzing the performance signatures and energy signatures of a chiller and a chiller group. This approach is named Heuristic-Engineering-Statistic method (HES) when it was started. The conventional approach of chiller optimization is based on various simulation models of building load, system configuration and equipment. Very often, high accuracy and precision data quality is required. However, it is very rare in reality that data are of good quality to render converging results for model simulation and verification. The HES method correlates any number of available data points, presented in three to five dimensions. The data points are divided into clusters based on measurement points or parameters derived from engineering relationships. The clusters always inspire heuristic trends for chiller performance, energy saving opportunities and fault detection. Hence, these graphs can identify the chiller performance signatures and energy signatures. Since the analysis is very data driven, it makes the analysis very pragmatic and often feasible even for poorly BMS serviced plants. The data are then used to train an artificial intelligent model specifically for such application. Each chiller can then have its proprietary continuously fine-tuned A.I. model to be used in further energy saving opportunity and fault detection diagnosis.

中央空調系統的能源優化方案

Advanced Energy Optimization Solution with Artificial Intelligence Algorithms
for Energy Saving in HVAC System



有利集團副主席
黃天祥工程師

Ir WONG Tin-cheung
Vice Chairman, Yau Lee Holdings Ltd.

講者簡介 Biography

黃天祥工程師有超過三十年的建築工程管理經驗，現為有利集團有限公司副主席。他獲委任為香港公開大學校董會副主席、環境諮詢委員會成員、能源諮詢委員會成員、工業貿易諮詢委員會委員和環境運動委員會委員。過往，黃工程師亦是職業安全健康局主席、香港綠色建築議會主席、香港建造商會會長和職業訓練局理事會副主席。

Ir Conrad Wong has over 30 years of building construction experience. He is Vice Chairman of Yau Lee Holdings Limited. He is currently the Deputy Chairman of the Council of the Open University of Hong Kong, Member of the Advisory Council on the Environment, Member of the Trade and Industry Advisory Board and Member of Energy Advisory Committee. In the past, Ir Wong served as the Chairman of the Occupational Safety and Health Council, the Chairman of the Hong Kong Green Building Council, the President of the Hong Kong Construction Association, and the Deputy Chairman of Vocational Training Council.

演講大綱 Abstract

我們將介紹一個名為中央空調系統的能源優化方案（“EOS”）的解決方案，運用大數據分析，按最慳電的情況計算出當時最優化的設點，同時亦保持使用者的舒適度。該過程更吸收了機件的損耗數據以便調整設備的準確性。首個應用項目是香港蘇豪智選假日酒店，引證到節能率達到30%，整個過程沒有涉及更換大型設備。

Our World is warmer than ever before, and people and wildlife are already suffering the consequences. In human life, green building is a practice of reducing the environmental impact of buildings and reducing carbon dioxide emissions which in turn helps the overall climate.

To reduce greenhouse gas emissions arising from electricity consumption in buildings, we need to manage our HVAC system with an advanced solution. We shall implement the Artificial Intelligence (AI) algorithms to operate buildings without lowering the occupants' comfort, maintain and/or improve HVAC system efficiency, better HVAC component life and reduce greenhouse gas emission.

Today, we would like to introduce our solution named as Energy Optimization Solution (“EOS”), it is to manage and optimize HVAC plants from a global point of view and the re-commissioning process will be executed to search for energy saving opportunities. This is different to the traditional BMS, where its focus usually on monitoring, scheduling and optimizing set of HVAC equipment independently.

By using big data analysis; the optimal set points are calculated to produce the lowest energy consumption of the system while maintaining the thermal comfort of the occupants. The effects of the equipment degradation are also taken into consideration by the software solution. The first application project is the Holiday Inn Express Hong Kong Soho. While its system energy saving performance reaches 30%, the whole process does not involve the replacement of major equipment.

參展公司 Exhibiting Companies

展位
Booth 01

積奇儀器有限公司
Jacky Instruments Ltd.



技術及產品 Technology & Product

現代建築中央空調HVAC和空氣質量IAQ都很重要。我們提供簡單方案選擇，從不修改盤管風機（FCU）的情況下，採用先進半導體技術它可以降低FCU 40%以上的能耗。通過在系統中引入“無線室內舒適傳感器”結合實時監控系統來提高控制精度，從而減輕過度冷卻問題。不僅室內溫度而且濕度都被調節到合理的水平。

In modern buildings, Heating, Ventilation and Air-Conditioning (HVAC) system maintains indoor air quality (IAQ) and thermal comfort. Due to the limitations of conventional type thermostat, it leads to several undesirable issues, including excessive cooling, poor thermal regulation with fluctuating temperature, and lack of IAQ monitoring. It raises the operational cost of buildings and reduces occupant's thermal comfort. Several studies show thermal discomfort impacts productivity and health.

“Energy Saver” and “Smart Thermostat” are next-generation intelligent devices to transform HVAC Fan Coil Unit (FCU) System with advanced technologies. Without modifying the FCU, it magically improves occupant's thermal comfort with reduced over 40% energy consumption on the FCU. It also provides smooth thermal regulation by using automatic step-less airflow control. Besides, control accuracy is improved by introducing “Wireless Indoor Comfort Sensors” to the system so that excessive cooling issue is mitigated. Not only the indoor temperature but also humidity is regulated at a reasonable level. Thanks to the advancement in cloud-based technologies, users could have a better understanding of the system performance, such as electricity consumption, amount of carbon reduction and thermal comfort level, by accessing with mobile application and web-based monitoring system.

展位
Booth 02

廣州綠創寶生物科技有限公司
LCB Biological Tech Co., Ltd.



技術及產品 Technology & Product

我公司自主研發產品針葉佛甲草，含水量在70%左右，耐寒零下20度，耐熱零上40度，容易維護，已確定為新型屋頂綠化創新產品的首選，利用生態隔溫層取代傳統隔溫層，實現建築隔溫領域顛覆性的技術革命。

The moisture content of Our product, called sedum lineare Thunb, is about 70%, and its survival temperature range is -20°C to 40°C , which is easy to maintain. Recently, it has become the first choice of the roof greening products, as it uses the ecological septum to lead the technological revolution in the land of Building insulation.

參展公司

Exhibiting Companies

展位
Booth 03

新盈環保科技有限公司
Sunlight Eco-tech Ltd.

技術及產品 Technology & Product

本公司主要展示並網太陽能系統。本系統具有三大優勢：1. 太陽能板具有自清潔塗層，可自動分解粘附於太陽能板表面的有機污染物，並防止灰塵沉積，提高發電量5-15%。2. 太陽能板具有被動散熱技術，可有效降低板面溫度3-5°C，提高太陽能板效能。3. 本公司具有bypass系統，如果組串中一塊太陽能板不工作仍然可以保持整個組串其他太陽能板的效能。

此外，本公司亦生產獨有太陽能高爾夫球車，以太陽能為主要動力，電池為輔助，減少普通高爾夫球車的能耗，並延長電池使用壽命。目前客戶有賽馬會，愉景灣等。

We will display our on-grid solar system, which has three exclusive advantages. 1. Self-cleaning coating. This coating on the solar panels decomposes organic contaminant and preventing the dust accumulation then enhance the efficiency by 5-15%. 2. Passive cooling technology. The solar panels can exhaust heat and decrease the surface temperature by 3-5°C, which enhance the solar panels efficiency. 3. Our system have by-pass technology, one broken solar panel will not influence the whole string.

Besides, we produce exclusive solar drive golf car, which use solar power as main power, assisted by battery. It reduces the energy consumption and prolongs the life-time of battery. Our clients are Jockey Club, Discover Bay etc.



展位
Booth 04

中國廣州分析測試中心
China National Analytical Centre Guangzhou

技術及產品 Technology & Product

“氫”潔能源團隊致力於光電催化製氫研究，設計了新型磁控濺射法和噴霧熱解法以用於有效製作梯度自摻雜光電極，有望實現大面積規模化生產；開發的防護塗層技術可有效提升光電極的穩定性，降低光電催化製氫成本。

The Solar Fuel team is dedicated to the research on photoelectrocatalytical hydrogen production. Novel magnetron sputtering and spray pyrolysis methods are proposed for the controllable preparation of gradient self-doped photoelectrodes. The deposition techniques are promising for large scale fabrication of photoelectrodes. An anti-corrosion technology is developed to improve the stability of the photoelectrode and reduce the cost of photoelectrocatalytical hydrogen production.



參展公司 Exhibiting Companies

展位
Booth 05

盈電環保科技有限公司
REC Green Technology Co. Ltd.



技術及產品 Technology & Product

中央空調系統能源優化方案("EOS") – 運用大數據分析，按最慳電的情況計算出當時最優化的設點，同時保持環境舒適度。該過程更吸收了機件的損耗數據以便調整設備的準確性。首個應用的酒店項目，引證到節能率達到30%。

Energy Optimization Solution of the HVAC System ("EOS") - Using big data analysis, the optimal set points are calculated to produce the lowest energy consumption of the system while maintaining the thermal comfort of the occupants. The effects of the equipment degradation are also taken into consideration by the software solution. The first application project is for a hotel in Hong Kong Island and its system energy saving performance reaches 30%.

展位
Booth 06

廣東玖星光能低碳科技有限公司
GD COR Low Carbon Tech., Ltd.



技術及產品 Technology & Product

廣東玖星光能低碳科技有限公司是國家高新技術企業，位於廣東省惠州市國家級仲愷高新區。公司擁有自主發明專利6項，實用新型等專利技術50多項。產品主要應用於道路、機場、港口、碼頭、體育場館等大功率照明領域。

Guang Dong COR Low Carbon Tech., LTD is the national high and new technology enterprise located in the HI - TECH Industry Park of Zhongkai, Huizhou City. The cooperation has 6 patents for invention, more than 50 patents for utility models and other technologies. The products are mainly used in road, airport, port, dock, stadium and other high-power lighting fields.

參展公司 Exhibiting Companies

展位
Booth 07

聯治有限公司
Bitfury / Allied Control Ltd.



技術及產品 Technology & Product

風冷散熱的數據中心效能甚低，40%以上的電能用於冷卻。

聯治革命性的兩相浸沒式冷卻技術，利用不導電液體達到節能的冷卻。除了在科技界獲獎無數，聯治四度建立全球最大的浸沒式冷卻數據中心，達到120MW的IT負荷(香港聯合交易所的15倍)。

從減省散熱器，我們可以節省90%的數據中心面積。我們未來會致力於提供微型人工智能超級電腦，以及5G通訊塔的節能冷卻方案。

Traditional data centres using air cooling are inherently very inefficient. Large metal heat-sinks and a lot of cold air-flow is needed. Very often 40% of an entire data centres' electricity consumption is being used for cooling.

Allied Control has developed a revolutionary 2-Phase Immersion Cooling technology which uses a non-conducting fluid for direct and extremely energy-efficient cooling. Multiple awards have been won, amongst those for having created Hong Kong's Most Energy-Efficient Data Centre. Subsequently, Allied Control has created four times consecutively the world's largest immersion cooling data centres with up to 120MW IT load (about 15x times the capacity of HKEX).

By removing bulky heat-sinks, up to 90% of floor space can be saved, which is extremely important for high real estate cost locations like the Pearl River Delta. We also aim to provide mini AI-supercomputers nearby 5G cell-phone towers to support IoT and other applications requiring low latency.

展位
Booth 08

微電有限公司
Micronics Co. Ltd.

Permanent Magnet
Synchronous Motor



技術及產品 Technology & Product

微電發明了用於建築物中風機盤管的，永磁同步電機，可將能量降低到50-80%。通過這樣做，我們相信這有助於減少碳排放，從而減緩全球暖化的威脅。

產品優點：適應性強；功率大而噪音低；電機壽命長；工作溫度低；用戶友好的設計，減少一半的每年維修時間。

我們還有一個副產品來幫助控制我們的電機在無級變速下運行，智能溫控器。只需一個溫控器即可同時控制多達10個風機盤管單元。並連接到樓宇自動化系統進行在線控制。

Micronics invent and develop high efficiency motor, Permanent Magnetic Synchronous Motor (PMS Motor) for Fan Coil Unit (FCU) in buildings, which can reach an energy reduction to 50-80%. By doing so, we believe that could help reduce carbon emission and thus slow down the threat of global warming.

There are several advantages of our products like, high adaptability, easy integration; high power but low noise; promote sustainability with the long-life expectancy; low operation temperature; user friendly design that reduce half of the annual maintenance time.

We have also a side product to help control our PMS motor to operate under a step-less operation, the intelligent thermostat. It can also operate in group control, up to 10 unit of FCU can be simultaneously controlled by just 1 thermostat. And connect to building automation system for online control.

參展公司 Exhibiting Companies

展位
Booth 09

瀚藍環境股份有限公司
Grandblue Environment Co., Ltd.



技術及產品 Technology & Product

廚餘垃圾處理：破碎、制漿、分離一體化預處理設備，縮短預處理流程，簡化操作維護，提升漿料及油脂回收率；獨特設計的多點攪拌厭氧罐，程序根據反應數據控制攪拌器的運行及進出料，提高反應效率。

Kitchen Waste Treatment: Integrated pretreatment equipment for shredding, pulping and separation, shorten the pretreatment process, simplify operation and maintenance, recycle more organic slurry and grease. Unique designed anaerobic tanks are equipped with side agitators. According to the reaction data, a program regulates the mixing, feeding and discharging to boost the reaction efficiency.

展位
Booth 10

香港碳交易有限公司
Carbon Exchange (Hong Kong) Ltd.



Carbon Exchange (Hong Kong) Ltd.
香港碳交易有限公司

技術及產品 Technology & Product

本公司為一所香港科學園園區公司，專門研發如亮美納™等環保和節能方案。此產品以我們專利的納米光學塗層改善室內照明（增加光亮度、光均勻性和顏色度，並減低炫光）及減緩燈具的老化。無論是用於新燈具設計或是翻新舊燈具，它都可減低能耗及碳排放達37%，並為香港機電工程署E&M InnoPortal裏其中一項創新科技解決方案，為一項卓越便利的環保產品。

Carbon Exchange (Hong Kong) Limited is a tenant at the Hong Kong Science and Technology Park conducting R&D on various environmental and energy saving solutions. One of our products is LampMate™ which is a locally developed and patented nano optimal material for enhancing lighting performance and reducing carbon footprint. It can be applied to new lighting fitting design or existing lighting retrofit. It works harmoniously with LED and other conventional light sources by reducing its discomfort glare, improving the lighting uniformity and resuming true colour experienced in space. By enhancing the lighting performance and extending the product life cycle, LampMate™ reduces the energy consumption and carbon footprints of lighting products by at most 37% as demonstrated by its usage at an EMSD site and its listing as one of the I&T Solutions under EMSD's E&M InnoPortal. It is an excellent environmental-friendly lighting design and retrofit solution.

參展公司 Exhibiting Companies

展位
Booth 11

庫瓦有限公司
Negawatt Utility Ltd.



技術及產品 Technology & Product

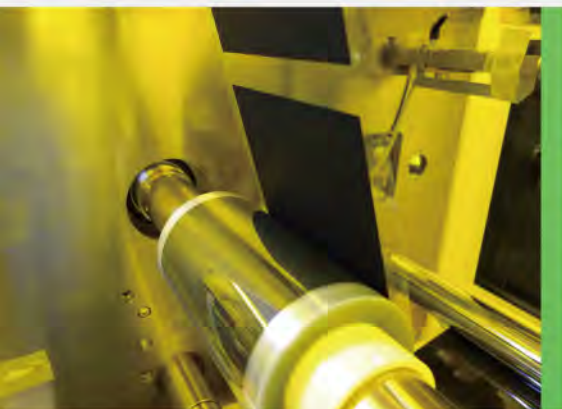
庫瓦智能建築操作系統(庫瓦 BOS)是一款，以去樓宇管理系統(BMS)中心化、使建築數據透明化，而建立的雲端整合平台。配以我們的人工智能(A.I.)技術和大數據解決方案，數碼化後的信息資料會被快速分析並作出建議，從而簡單化和優化建築操作管理。

Negawatt Smart Building Operation System (Negawatt BOS) is a centralized platform to decentralize building inform across stakeholders to increase building data transparency. Negawatt BOS transforms day-to-day building data from analog to digital, making all building related information available and accessible in a digital format. Our Artificial Intelligence (AI) and Big Data solution will analyze and consider how to apply these digitized information to simplify and optimize building management operations. Lastly, we will integrate all the data with our proprietary modules to improve energy efficiency, building operator's productivity and optimize resources and control operation risk for building excellence.

Negawatt Smart Building Solution serves as an A.I. Virtual Engineer to assist building owners and operators in reaching Easy & Smart Building Management through E&M Digital Transformation.

展位
Booth 12

鴻基創能科技(廣州)有限公司
SinoHykey Technology Co., Ltd.



技術及產品 Technology & Product

鴻基創能使用國際上最先進的設計和雙面直塗技術配合自動化快速封裝技術，實現膜電極的大規模產業化。鴻基創能的CCM和MEA設計兼顧燃料電池汽車在各種工況條件下的性能和穩定性，具有功率密度高、壽命長、成本低等特點。

SinoHykey uses the most advanced double-sided direct coating technology and rapid automatic packaging technology, along with its advanced design, to realize large-scale production of MEA. SinoHykey's CCM and MEA enables fuel cell electric vehicles perform very well under real-world operating conditions, with high power density, long lifetime and low cost.

參展公司 Exhibiting Companies

展位
Booth 13

Neosen Energy HK Ltd.



技術及產品 Technology & Product

EZI無線充電器能提供最高15W輸出，穿透距離高達22mm，支援iPhone和Samsung等手機進行快速充電，在35分鐘內把手機由0%充電至60%。

EZI設計成可嵌入式安裝在桌下，只需把手機放在桌上便能充電，避免由充電線和充電座等裝置對用家造成的滋擾，空出更多空間。

EZI wireless charger is capable to have an output power of 15W, it can wirelessly charge up phone, up to 22mm. It supports fast charge function of both iPhone, Samsung, and others, can be charge up from 0% to 60% just within 35 minutes only.

EZI can be installed to embed under the table, to avoid wires or charging stand will occupy the area. Users can get rid of messy cables and charge their phone by simply putting the phone on top of the charging label.

展位
Booth 14

香港應用科技研究院有限公司

Hong Kong Applied Science and Technology Research Institute Company Ltd.



1/8 砖式模块 (240W)
广晟集团



GaN 基大功率砖式模块 (500W)
南方半导体



1/4 砖式模块 (300W)
广晟集团



直流点电源
南方半导体

技術及產品 Technology & Product

1. 基於氮化鎵的高密度電能轉換技術平台

應科院開發「垂直驅動氮化鎵」封裝技術來實現一種新型的模塊化功率開關封裝，以解決柵極高速和高效率的驅動及氮化鎵器件互連的長期可靠性挑戰。

2. 無線電能傳輸技術

應科院研發的中等距離無線電能傳輸方案是基於磁場耦合共振理論。此中等距離無線充電系統的設計可實現發射功率大於33瓦及充電距離遠至15釐米，並支援多個接收器同時工作，成為支援用於不同類型產品的無線充電技術平台。

1. GaN-based High Density Power Conversion Platform

This technology platform aimed to develop a novel modularized power switching package by proposing the "Vertical-Driver-GaN (VDG)" packaging technology to solve the concurrent high speed & high efficiency switching of the gate driver and the long term interconnect reliability challenges.

2. Wireless Power Transfer (WPT) Technology

ASTRI has developed the medium-range power transfer solution based on the magnetic coupling resonance theory. Our WPT system has a performance of transmitting power higher than 33W at up to 15cm and supporting the charging of multiple devices simultaneously. It can serve as the wireless power transfer technology platform for various electronic products and applications.

參展公司 Exhibiting Companies

展位
Booth 15

香港理工大學
The Hong Kong Polytechnic University



技術及產品 Technology & Product

曲面超級電容模組結構以電動車的車身集成超級電容與能量均衡技術製成，可安裝在車身任何部分來儲存能量。其中，能量均衡技術能把能量調節電路的體積大幅縮小，減低能量損失，同時加強超級電容於充電及放電方面的效能，提升超級電容電動車的性能和實用性。

“Whitewash”塗層含有加入石墨烯的二氧化鈦納米纖維光催化劑，吸收光線後能釋放大量自由基，將接觸到塗層內納米纖維的有害氣體、細菌及病毒等轉化成無害物質。

Body Integrated Supercapacitor and Energy Storage Balancing Technologies for Electric Vehicles (EVs) enable the production of curved supercapacitor modules which can be integrated in any part of the car body to maximize energy storage. Besides, the energy storage balancing technology can reduce energy loss and the size of energy balancing circuit, and improve the efficiency of charging and discharging, thus enhancing the performance and functionality of EVs.

“Whitewash” is a proprietary coating with titania composite nanofibre photocatalyst with graphene core. Upon light harvesting, it releases radicals to covert harmful gas molecules, bacteria and viruses in contact with the nanofibres to harmless substances.

展位
Booth 16

華南技術轉移中心
South China Technology Commercialization Center



技術及產品 Technology & Product

華南技術轉移中心是廣東省政府統一部署，省市區聯合支持共建的國有創新平台，由省生產力促進中心負責具體建設。中心立足廣州南沙，面向粵港澳大灣區，是廣東省推進粵港澳大灣區建設重點打造的科技成果對接轉化平台。

South China Technology Commercialization Center is a stated-owned enterprise engaged in providing a complete range of innovation and technology services. It is the result of joint effects of Guangdong Science and Technology Department, Guangzhou Municipal Science and Technology Bureau and Nansha District Government. Owing to the great efforts made by the Guangdong productivity promotion center.

Located in Nansha district, Guangzhou, the geometric center of the Greater Bay Area, SCTCC is an important primary technology service platform of the National Demonstration Zone for Transfer and Commercialization of Science and Technology Achievements in Guangdong-Hong Kong-Macao Greater Bay Area. It is committed to creating technology transfer ecosystem through an optimized governance mechanism by integrating resources conducive to innovation or technology upgrading on an open platform covering essential elements like technology demand and supply, incubation and capital investment.

參展公司 Exhibiting Companies

展位
Booth 17

香港數碼港管理有限公司
Hong Kong Cyberport Management Company Ltd.



技術及產品 Technology & Product

碳世界有限公司是一家綠色科技公司，致力於通過其創新的Carbon Coins獎勵平台，將不同的飲品容器回收轉化為獎賞，從而鼓勵大家實行回收，源頭分類。通過智能回收機消費者可以將容器回收兌換成Carbon Coins來換取優惠或電子錢包價值。

Carbon World Limited is a green technology company through its innovative **Carbon Coins** incentive-based platform turns recycled different beverage containers into rewards and benefits so as to encourage people to participate in recycling and separation at source. Consumer who recycles bottle through **reverse vending machines RVM** will receive e-Wallet value or **Carbon Coins** as rewards.

展位
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香港城市大學
City University of Hong Kong



技術及產品 Technology & Product

IoT監控太陽能LED燈柱技術提供遠程監控信息。信息會轉發到雲端服務器以進行存儲和數據分析，數據包括電池電壓，壽命和健康，電燈電流，其持續時間及溫度，信息可通過電腦或移動設備上監控，括免了現場檢查，節省成本。

IoT application on monitoring solar-driven LED Lampposts is a project of setting up a demonstration system to provide remote monitoring information about a number of solar LED lampposts to predict if there are any faults in these lampposts without on-site inspection. A sensor board consists of a proprietary real-time battery state and health diagnostics system, temperature sensor, LED lamp current sensor, and a LoRa transceiver. In addition, a local LoRa gateway was installed nearby to receive information sent from the sensor boards of the lampposts. The gateway also forwards the information to the cloud server for storage and data analysis. The data measured include the battery voltage, the lamp current and its on time duration, temperature within the power cabinet, and the battery state and health under monitoring which could be monitored through the web interface on PC or mobile device. Instead of carrying on-site inspection, it saves a lot of maintaining cost.

參展公司

Exhibiting Companies

展位
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香港生產力促進局
Hong Kong Productivity Council



技術及產品 Technology & Product

廚餘全面轉化系統

香港每日產生約3,600公噸廚餘垃圾，佔都市固體廢物三分之一。生產力局開發的三段式「廚餘全面轉化系統」，能把廚餘的有機物質全部轉化為高純度的沼氣、環保魚糧，和生產生物柴油的高品質油脂三種具商業價值的產品和原料，推動資源回收和回用。整個過程更不會排出廢水，非常環保。

清煙化寶爐系統改善廟宇空氣

燃燒香燭冥鏹祭祀祖先是中國人的傳統習俗，廟宇香火鼎盛的同時，室內煙霧瀰漫，空氣質素不佳，影響健康。這套清煙化寶爐系統針對燃燒冥鏹造成的煙霧和空氣灰燼而設計，運用工業級技術去除較大的懸浮粒子，改善寺廟、火葬場、骨灰龕和殯儀館的空氣質素，現代化方案不但保留傳統習俗，更減少對環境的影響。

Total Food Waste Recycling System

Hong Kong produces about 3,600 tonnes of food waste each day - around one third of the city's solid waste. HKPC developed the three-stage "FTR Total Food Waste Recycling System" which can fully convert the organic fraction of food waste into three high market value products: high purity biogas, eco fish feed, and quality waste oil for biodiesel production. This environment-friendly process has no wastewater discharge.

Joss Paper Furnace that cleans the air

Burning joss paper and incense to ancestors is a traditional Chinese ritual. The thick smoke permeated in temples often results in poor air quality thereby poses risk to health. Targeting smoke and airborne ash caused by burning joss paper, this high particulate removal method applies industrial technology to improve air quality among temples, crematoria, columbaria and mortuaries. This solution helps preserve the important ritual and the environment, as well as transforms it to suit the modern needs.

展位
Booth 20

汽車零部件研究及發展中心
Automotive Parts and Accessory Systems R&D Centre



技術及產品 Technology & Product

手提式電動車充電系統

手提式電動車充電系統便於攜帶，毋須安裝傳統的掛牆式充電裝置，體積小巧、成本低，易於安裝和維修保養。系統備有獨立充電器及插座，採用無線認證技術，電動車車主只需將自攜手提式充電器，插於對應的停車場插座，即可為座駕進行中速至快速充電，大幅降低停車場安裝充電樁的成本。

智能電力分配系統

智能電力分配系統會連接多個充電車位，實時監察和分析充電器的用電情況，善用有限的能源。當只有少量電動車充電時，充電器能以額定值（100%）為電動車充電；當同時有多輛電動車需要充電，系統會因應電池的電量來分配電力，調低部份充電器的電力輸出（例如50%），以騰出電力為剛到達的電動車充電。

Portable Charger Kit

The Portable Charger Kit (PCK) is a handheld electric vehicle charger. It replaces the traditional wall-mounted AC charger by using a PCK Socket, which is small, low cost, easy to install and maintain. It uses a proprietary AC power socket with wireless authentication for medium to fast charging, reducing the need and cost to install numerous PCK sockets in car parks.

Smart EV Charging Station Load Management System

The Smart EV Charging Station Load Management System monitors and analyses power usage of each Electric Vehicle (EV) charger in real-time connecting multiple parking spaces, optimizing the use of limited power. It provides rated power (100%) when there are only a few EVs. When more EVs are connected, the system can reduce power output of some chargers (e.g. 50%) so as to allocate additional power to the just-arrived vehicles.

參展公司 Exhibiting Companies

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香港科技園公司

Hong Kong Science and Technology Parks Corporation



技術及產品 Technology & Product

IoT主動式綠牆

一個創新利用植物根部加上物聯網（IoT）控制，具備空氣淨化和裝飾的主動式綠牆。

IAG是包括香港在內的大灣區首創此類創新和開發項目 – 由香港科學園（一家香港初創公司百麗科技有限公司）在2018年底推出。

“IoT Active Greenwall” (IAG)

An all new innovative natural plant based, Internet of Things (IoT) enabled air purification - functional and decorative green wall.

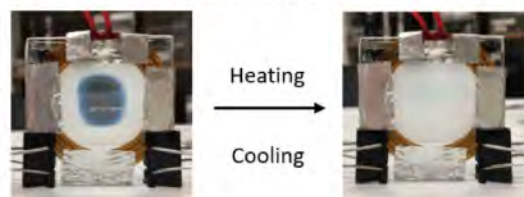
IAG is first of its kind innovation and development in probably all of the Greater Bay Area (GBA) including Hong Kong – introduced in end of 2018 by a HK Science Park, indigenous start-up company, named BRAVOLINEAR TECH Ltd.

展位
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香港大學

The University of Hong Kong

Smart Thermochromic Window Film



技術及產品 Technology & Product

調控建築外層玻璃的太陽光透射率有利於減少樓宇空調製冷方面的能量消耗。來自麻省理工學院和香港大學的研究者發展了一種pNIPAm-AEMA水凝膠微粒的熱致變色材料。通過調控水凝膠微粒在相變前後的光學散射性能，研究人員實現了寬波段的太陽光透射率調控。

Intelligent control of solar irradiance through windows is promising to reduce building energy consumption. The researchers from MIT and HKU have developed a new type of thermochromic film, which is made of the poly (N-isopropylacrylamide) (pNIPAm) and 2-Aminoethylmethacrylate hydrochloride (AEMA) co-polymerized pNIPAm-AEMA hydrogel microparticles. This thermochromic film can effectively modulate the solar irradiance in both visible and IR regions, obtaining an unprecedented solar transmittance modulation of 81.3% at ~32°C.

參展公司 Exhibiting Companies

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機電工程署

Electrical and Mechanical Services Department

技術及產品 Technology & Product

展位
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納米及先進材料研發院有限公司

The Nano and Advanced Materials Institute Ltd.

技術及產品 Technology & Product



應用於空氣淨化的微藻綠化牆

在戶外環境如交通繁忙及工業活動密集的地區，二氧化碳濃度可達500至600ppm。而在多人聚集的室內空間，二氧化碳含量更可高達1000ppm以上。高濃度的二氧化碳會引發睡意、頭痛及活動功能下降。

NAMI致力研發利用微藻去除空氣中二氧化碳的技術。此技術效能高，可去除進氣中達90%的二氧化碳。此外，亦可把此微藻技術與綠化牆結合，除易於安裝、潔淨室內和戶外空氣外，亦能提供美化的作用。

Microalgae Green Wall for Air Purification

Carbon dioxide (CO₂) concentration can vary from 500-600ppm or higher in outdoor areas with high traffic or industrial activities. It can be even higher at over 1000ppm in crowded indoor places. High level of CO₂ can cause drowsiness, headaches and low functioning.

NAMI has developed a technology in CO₂ removal using microalgae, having high removal performance of up to 90% of inlet CO₂. The NAMI microalgae technology has been incorporated into green walls. These easy-to-install microalgae green walls also serve to provide aesthetic stimulation in addition to the air purification function to both indoor and outdoor environments.

參展公司

Exhibiting Companies

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香港中文大學
The Chinese University of Hong Kong

技術及產品 Technology & Product

能源節約的數據分析政策

信息工程學系

邱達民教授

- 用於能源節約的反饋系統
- 以獎勵制度去鼓勵用者
- 可應用於不同範疇
- 鼓勵能源節約

點藍天空

地理與資源管理學系

黃波教授

- 即時空氣污染監測手機應用程式
- 基於即時空氣監測資料、氣象資料以及遙感影像資料的空氣污染物濃度估算模型
- 用戶可以獲得香港及中國大陸任何地點的實時污染物濃度，包括PM2.5、PM10、二氧化氮、臭氧、二氧化硫和一氧化碳等

Data Analytic Policy Design for Energy Conservation

Prof. CHIU Dah-Ming

Department of Information Engineering

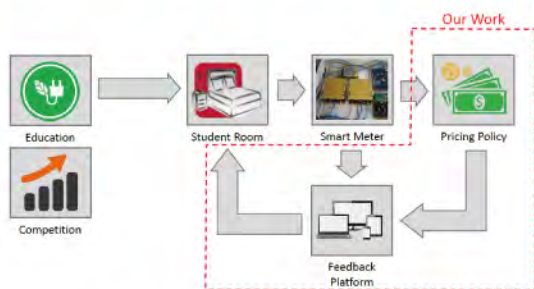
- A group-based feedback system for energy conservation
- A way to use grouping for incentive-based pricing
- The methodology may have broad applicability
- Encourage energy conservation

TouchAir

Prof. HUANG Bo

Department of Geography and Resources Management

- A real-time air quality app
- Based on a spatio-temporal statistical model that utilizes MODIS data, AERONET data and meteorological parameters
- Users can access real-time air pollutant concentrations at any locations in Hong Kong and Mainland China, including PM2.5, PM10, NO₂, Ozone, SO₂ and CO



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香港科技大學
The Hong Kong University of Science and Technology

技術及產品 Technology & Product

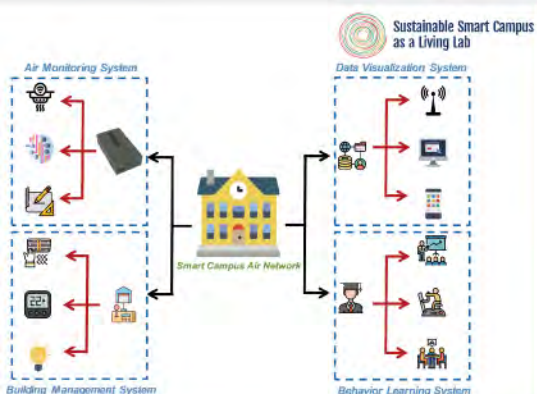
用於社區環境意識和校園可持續發展的智能校園空氣網絡

本項目在校園內建立香港首個基於尖端傳感技術，對室內外環境同時實施高準確度實時監測的智能空氣傳感器網絡。智能空氣網絡提供的資訊將有助於改善空氣質素，降低學生和教職員個人健康風險，同時亦能提升建築的能耗，發展更具智慧和可持續的校園。

Smart Campus Air Network (SCAN) for community environmental awareness and campus sustainable development

Air pollution is one of the key health risks as identified by World Health Organization (WHO) with various adverse health effects. In urban areas, people spend more than 80% of the daily time inside the buildings and indoor air quality becomes one major contributor of population exposure risks. Campus is a special community in which the students, staff and faculty spend vast majority of time studying, working and living.

This project aims to establish a smart air sensor network in HKUST campus, also the first in Hong Kong, based on the cutting-edge sensing technologies to monitor the critical environmental quality in real-time both outside and indoor of different function rooms. Campus wide air quality information would benefit the campus occupants to be environmentally conscious and it will also benefit the campus management to be accurately informed in the building healthiness for sustainable operation.



參展公司 Exhibiting Companies

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物流及供應鏈多元技術研發中心
Logistics and Supply Chain MultiTech R&D Centre



技術及產品 Technology & Product

智能泥石壩

智能泥石壩協助提高土木工程拓展署多年來於偏遠地區建立的山泥傾瀉防護屏障的防護效能。它利用物聯網傳感器技術，實時監測掉落的泥石碎片及堆積情況，並利用網絡平台及流動應用程式向署方發出警報。這個低成本、可靠及低能量消耗的監察系統可實時偵測山泥傾瀉的風險。

智能泥石壩是於2019年舉行的第47屆日內瓦國際發明展獲得銀獎。

Smart Barrier

To enhance the effectiveness of the remote barriers built throughout the years by the Civil Engineering and Development Department (CEDD), the Smart Barrier has been developed. By deploying internet-of-things sensor technologies, the Smart Barrier allows real-time monitoring of falling debris and build-up. It uses a web platform and mobile application to issue instant alerts to the authority. This low cost, reliable, low power consumption system ensures real-time detection of landslide.

The Smart Barrier won the Silver Medal at the 47th International Exhibition of Inventions Geneva in 2019.

展位
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CLP Innovation Enterprise Ltd.



Smart Energy
Connect

powered by CLP

www.clpsec.com



技術及產品 Technology & Product

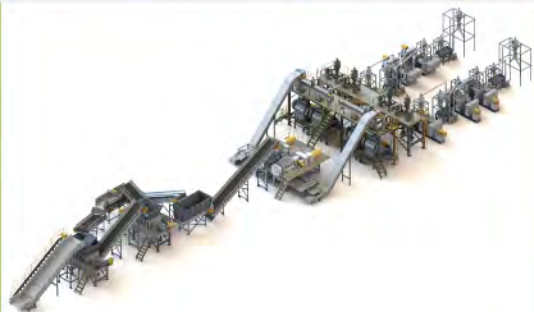
CLP Smart Energy Connect (www.clpsec.com) – 一個以可持續發展及節能為目標的新平台，提供一站式節能方案及產品，建構客戶與應用產品公司及供應商之間的橋樑，達到節省能源同時節省金錢與時間。

CLP Smart Energy Connect (www.clpsec.com) is a new platform that bridges the gap between customers looking for energy saving solutions and energy saving solution providers. Our experts, through rigorous testing phases, have sourced, selected, and developed premium, innovative solutions to provide to the market. Together, with the providers, we offer smart energy management solutions to customers to help save on energy, time, and money. Our goal is to help you achieve your sustainability goals.

參展公司 Exhibiting Companies

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廣東雋諾環保科技股份有限公司
Genox Recycle Tech



技術及產品 Technology & Product

廣東雋諾環保科技股份有限公司成立於2010年，從事提供固體廢棄物資源化系統解決方案與核心設備研發、製造的高新技術企業，在固體廢棄物資源化處理領域具有多年的研發技術和項目實施經驗積累。

GENOX RECYCLING TECH(CHINA) CO.,LTD, founded in 2010, is a new high-tech enterprise, being engaged in the development of solid waste recycling solutions and the manufacture of core machinery.

It has many-year experience of technology development and project implementation in the field of solid waste treatment.

展位
Booth 30

向藍天科技有限公司
Blue Sky Energy Technology Ltd.

Empowering Smarter Buildings

Incentivizing behaviors to save energy and improve well-being



Nudge · Compare · Set Aims
www.hibluesky.co

技術及產品 Technology & Product

向藍天公司收集實時能源及室內空氣質素，顯示於自家研發的儀錶板。用戶透過手機app參閱數據，接收由A.I.設定的能源目標和推送通知，輕鬆管理能源及健康。

向藍天公司屢獲殊榮，2018年贏得匯豐可持續發展目標 - 金獎。

Blue Sky collects clients' real-time energy and IAQ data by smart sensors, and display them on our mobile-friendly dashboard. With A.I. set energy targets and notifications deployed, building users are actively engaged in energy and well-being management.

Blue Sky is an award winning local start-up. We won the Gold Award in 2018 HSBC Living Business Award. Our signature program was featured in HK Economic Times, Ming Pao, and SCMP.

參展公司

Exhibiting Companies

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廣州高瀾節能技術股份有限公司
Goaland Energy Conservation



技術及產品 Technology & Product

廣州高瀾節能技術股份有限公司專注於電力電子裝置用純水冷卻設備的研發、設計、生產、銷售及售後服務，致力於成為行業領先的熱管理方案提供商，產品廣泛應用於發電、輸電、配電及用電各個環節的電力電子裝置冷卻。

Goaland focuses on water cooling systems R&D, design, manufacturing, sales & after-sale services. Committed to become the leading provider of thermal management solutions in the industry, its products have been widely applied to electrical generation, transmission, distribution & utilization parts & the others.

展位
Booth 32

聯邦集團環球有限公司
Federal Group Global Ltd.

可持續發展LED照明及LED智慧路燈解決方案供應商



技術及產品 Technology & Product

「被動式LED電源」已在全球77個地區申請專利保護，並於2018年獲得日內瓦國際發明展海灣阿拉伯國家合作委員會專利局特別獎及特別金獎和香港綠色創新大獎之優異獎。採用「被動式LED電源」的照明系統能夠在惡劣的天氣下操作，工作壽命長達10年以上，更由「綠色照明」進升至「可持續發展照明」的層次。

Passive LED Driver has been patented in 77 regions around the world. And in 2018 the invention won the Prize of Patent Office of Cooperation Council for the Arab States of the Gulf (GCCPO), as well as the Special Gold Award in the 46th International Exhibition of Inventions Geneva. Domestically it won a Merit in the Hong Kong Green Innovations Awards. Using 'Passive LED Driver' enables the lighting system to operate under extreme weather; makes the lighting system to last over 10 years – the system is even elevated from 'Green Lighting' into 'Sustainable Lighting'.

參展公司 Exhibiting Companies

展位
Booth 33

佛山市玉凰生態環境科技有限公司
Yuhuang Ecological Co., Ltd.



技術及產品 Technology & Product

佛山市玉凰生態環境科技有限公司是具有自主研發及知識財產權的，使用複合微生物技術對黑臭河道、湖泊進行生態修復綜合治理的專業科技公司，公司的專有技術 - “多元生態平衡修復技術”具有穩定性、可持續性及有效性。

Foshan Yuhuang Ecological environment Technology Co., Ltd. is a professional technology company with independent research and development and intellectual property rights. It uses composite microbial technology to comprehensively control the ecological restoration of black and stinky rivers and lakes. The company's proprietary technology - "multiple ecological balance restoration technology" has stability, sustainability and effectiveness.

展位
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得能光控有限公司
Delight Power Products Ltd.



DeLight Power Products Limited

- Incubated by Hong Kong Science and Technology Park
- Leading technology and innovation by a team of Hong Kong people
- Our mission is "... to deliver Healthy, Intelligent & Green
- Illumination and Building Control to Everyone"



技術及產品 Technology & Product

此基於IoT3 智能系統採用恆流分佈式網絡、控制器和傳感器LED照明。產品採用低壓直流供電提高安全性。產品透過分佈式控制系統、手機應用程式、傳統開關和雲端控制，具靈活性、穩定性及無單點故障等特點。

The smart lighting system uses a distributed network of sensors, controllers and constant current supply to control the lighting level of LEDs in different locations. The extra low DC power distribution improves safety in installation. With the distributed control system, user interface via wireless mobile apps, wall switch and cloud control, the system appears to be user friendly and has inherent flexibility and robustness, without a single point failure. The system enables precise control of lighting levels and can enable energy savings: it may satisfy market which precise control of power utilization for dynamic control of loads to keep peak electrical power utilization to within limits of power grids.