香港工程科學院舉辦第二屆香港工程科技獎
表揚香港創科精英 成就貢獻非凡

圖一：香港工程科學院於 2024 年 8 月 23 日假香港理工大學舉辦「2023 年香港工程科技獎頒獎典禮暨傑出講座」

為了表彰和肯定香港年輕新一代在工程科技領域的卓越貢獻和優秀成就，香港工程科學院於 2022 年起推出了備受業界推崇的「香港工程科技獎」。第二屆（2023 年）香港工程科技獎頒獎典禮暨傑出講座在 2024 年 8 月 23 日於香港理工大學舉行，共有四名來自材料科學、再生能源工程，及顏色與影像科學的本地專家獲獎。當日匯聚約 200 名工程及科技界的學者及領袖，在現場及線上形式出席見證盛事。

香港工程科學院是香港工程界的領導機構，由業界的傑出領袖於 1994 年成立，致力推動香港工程科技的發展。在香港特區政府創新科技署的贊助下，香港工程科學院於 2022 年起設立香港工程科技獎，支持及表揚來自不同領域並且在研究、開發、創新等方面為社會提供創意解決方案並取得重大進展的本地年輕科學家、工程師和技術專家。香港工程科學院高級副院長兼香港工程科技獎遴選委員會主席陳兆根博士，SBS 指：「香港工程科學院設立這個獎項，不僅希望透過這個平台表揚業界內的出色同儕外，更希望讓年輕優秀的學者或工程師展示他們的研究及專業，並讓市民大眾認識本地科研的豐碩成果，促進香港的創科發展。憑藉香港與大灣區及國際的緊密連繫，我們希望能攜手推動香港成為國際創科中心。」

第二屆香港工程科技獎得獎者分別為（排名不分先後）：香港大學機械工程系講座教授及系主任黃明欣教授；香港中文大學機械與自動化工程學系教授、易池新能聯合創辦人盧怡君教

授工程師；香港理工大學建築環境與能源工程系教授、顏色影像與元宇宙研究中心主任魏敏晨教授；以及香港城市大學材料科學及工程學系能源及環境學院教授、香港清潔能源研究院副院長葉軒立教授。香港工程科學院院長、香港理工大學校長滕錦光教授工程師，BBS，JP，在介紹本屆獲獎者時指：「四名專家在各自研究領域的成就非凡，他們的研究不僅為業界帶來世界頂尖兼具革新性的技術；其研究成功地產品化、市場化，也為香港創科發展帶來更多新機遇。」

圖二：（前排左起）葉軒立教授、盧怡君教授工程師、陳兆根博士、雷添良先生、滕錦光教授工程師、魏敏晨教授及黃明欣教授

頒獎典禮邀請了大學教育資助委員會主席雷添良先生，GBS，JP 擔任頒獎嘉賓並致開幕辭。他表示：「當我們慶祝幾位得獎者的成就時，我們亦明白到支持和培養下一代工程師和科學家的重要性。行政長官在去年施政報告中強調進一步加強推廣 STEAM（即科學、科技、工程、藝術和數學）教育，工程學正是當中不可或缺的一環」。他更指四名本地大學學者榮獲獎項，不僅證明了本地大學培育創科精英的成功及貢獻，更能鼓勵有志投身工程及科技學科的莘莘學子加入相關學術研究行業。

是次活動除了邀請到四位得獎者與業界進行專題分享外，亦榮獲機場管理局工程及科技執行總監梁永基工程師，以及香港嶺南大學校長、韋基球數據科學講座教授秦泗釗教授向與會者進行主旨演講。梁永基工程師以「The Development of Autonomous Vehicles at Hong Kong

International Airport」為題，闡述香港國際機場內，從應用無人駕駛電動列車系統，至未來發展無人駕駛車輛及自動駕駛運輸系統的藍圖及願景。秦泗釗教授則主講「Probabilistic Reduced-Dimensional Modeling of Multidimensional Time Series in Engineering and Science」，向與會者分享在數據科學領域內，數據及資料建模的最新研究及發展。

2023 年香港工程科技獎得獎者簡介：

- 黃明欣教授是材料工程領域的專家，特別擅於研發高性能金屬。他發明的「超級鋼」曾創下兩項世界紀錄。這款新型鋼材具有超高強度、延展性及韌性，強度為一般建築鋼材的四倍。「超級鋼」的重量亦遠輕於傳統鋼材，且生產成本較低。此外，黃教授成功研發全球首個製氫用不鏽鋼，可使海水電解製氫的過程更環保；在新冠疫情期間，他亦研發出表面可殺滅新冠及其他病毒的高銅含量不鏽鋼。現時，他的項目已獲得約共 8000 萬港元的研究資金，未來將會進一步研發更輕更堅固的金屬，特別是用於電動車生產。

- 盧怡君教授工程師專於材料科學工程及能源工程的研究，以解決全球暖化的問題。她研發的「電荷增強型離子選擇性膜」，克服了多硫化物液流電池因多硫離子交叉污染，而導致電池壽命短的技術瓶頸。她研發的另一項技術，則大大提高這款環保電池的反應速率及能量效率，為未來大型儲存可再生能源，如太陽能、風能等，提供了重要的技術基礎。盧教授於 2020 年聯合創辦易池新能，專注開發並生產用於電網儲存的安全和可持續的電池技術。她的研究亦為她贏得不少國際獎項如「Falling Walls 年度科學突破獎 2020」。

- 魏敏晨教授憑藉他在色彩與照明科學領域的貢獻，成為了今屆香港工程科技獎的得獎者。他的多項研究不僅為影視製作帶來革新性的進步，更是發展虛擬實境（VR）、擴增實境（AR）、元宇宙（Metaverse）等必不可少的技術。他研發的六色 RGBACL（紅、綠、藍、琥珀、青、檸檬黃）燈光模組和智能混色控制算法已廣泛於國際影視界中運用，包括電影《阿凡達》及《蝙蝠俠》等荷里活大製作。他最新研發的色彩捕捉及顯像技術，亦獲華為、小米等大型手機開發商採用。魏教授現時正在與 Meta（Facebook 母公司）合作，研發供 VR、AR 及元宇宙使用的顯像方案。

- 葉軒立教授是材料科學及可再生能源技術的專家。他透過研發創新光伏技術，促進城市運用可再生能源。他的研究包括如菲林般輕薄又可彎曲的新型柔性太陽能電池，可以以打印薄膜方式生產，增加開發更多智能產品的可能性。葉教授亦引入一種新型鈣鈦礦材

料，用於製作更便宜的太陽能電池。葉教授連續於 2014 至 2022 年度入選 ESI 全球「高被引科學家」，並擔任 Matter 雜誌國際顧問，Science Bulletin 及 Nanomaterials 期刊的編委會會員。

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二零二四年九月十一日

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HKAES holds the 2nd Hong Kong Engineering Science and Technology Award

Commends Hong Kong's I&T Elites for their Extraordinary Achievements

Picture 1: The HKAES held the 2023 HKEST Award Ceremony cum Distinguished Lectures on 23 August, at the Hong Kong Polytechnic University

In order to commend and recognize the outstanding contributions and achievements of Hong Kong's young generation in the field of engineering science and technology, the Hong Kong Academy of Engineering Sciences (HKAES) has launched the prestigious Hong Kong Engineering Science and Technology (HKEST) Award since 2022. The 2nd HKEST Awards (2023) Ceremony cum Distinguished Lectures was held at the Hong Kong Polytechnic University on 23 August. Four local experts from materials science, renewable energy engineering, and color and imaging science won the award. On the day, around 200 engineers, scholars, industry experts and leaders gathered physically and virtually to celebrate the event.

Founded in 1994, HKAES was formed by eminent engineers to promote scientific advancement and the practice of engineering for the benefit of Hong Kong. With the sponsorship of the Innovation and Technology Commission of the Hong Kong SAR Government, the HKAES established the HKEST Awards in 2022, aiming to acclaim young scientists, engineers, and technologists from diverse disciplines who have excelled in developing creative solutions to problems through research, development, innovation, and

entrepreneurship, and have made significant advancements to the betterment of society. Ir Dr Alex CHAN, SBS, Senior Vice President of the HKAES and Chairman of the Selection Committee of the HKEST Award, said in his welcome speech: “We envision this award as an excellent platform for young researchers and engineers to demonstrate their skills and expertise in the field of engineering. It not only highlights their accomplishments but also fosters innovation and technology development. With the unique advantage of closely connecting with the Greater Bay Area and the rest of the world, we hope to collectively enhance Hong Kong’s recognition as a leading hub for I&T on the global stage.”

The winners of the 2nd HKEST Awards are (in alphabetical order):

- **Prof. Mingxin HUANG**
  Chair Professor and Head of Department, Department of Mechanical Engineering, The University of Hong Kong
- **Ir Prof. Yi-Chun LU**
  Professor, Department of Mechanical and Automation Engineering, The Chinese University of Hong Kong; Co-founder, Luquos Energy Ltd
- **Prof. Minchen Tommy WEI**
  Professor, Department of Building Environment and Energy Engineering; Director of Color Imaging and Metaverse Research Centre, The Hong Kong Polytechnic University
- **Prof. Angus Hin-Lap YIP**
  Professor, Department of Materials Science and Engineering and School of Energy and Environment; Associate Director, Hong Kong Institute for Clean Energy, City University of Hong Kong

Ir Prof. Jin-Guang TENG, BBS, JP, President of the HKAES and President of The Hong Kong Polytechnic University, introduced and read the citations of each awardee. Prof. TENG described the four award winners as “having made extraordinary achievements in their respective fields. Their research not only presents world-class advancements and solutions to their industries, but how their research outcomes have translated into successful products also brings numerous opportunities for engineering science and technology development in Hong Kong”.

Picture 2: (front, from left) Prof. Angus Hin-Lap YIP; Ir Prof. Yi-Chun LU; Ir Dr Alex CHAN; Mr Tim LUI; Ir Prof. Jin-Guang TENG; Prof. Minchen Tommy WEI; and Prof. Mingxin HUANG

The award ceremony invited Mr Tim LUI, GBS, JP, Chairman of the University Grants Committee as the guest of honor. “As we celebrate these achievements today, we are reminded of the importance of supporting and nurturing our next generation of engineers and scientists. In the Policy Address last year, the Chief Executive stressed the importance of further strengthening the promotion of STEAM education, for which, the pursuit of engineering study is an intergrow and indispensable component". He also applauded that four local scholars had won the award not only proved the success of local universities in cultivating innovation and technology elites, but also encouraged aspiring students to join related academic research.

In addition to the lecture sessions conducted by the four award winners, the event also invited Ir Ricky Wing-kee LEUNG, Executive Director of Engineering & Technology of the Airport Authority Hong Kong, as well as Prof. Joe S. QIN, President and Wai Kee Kau Chair Professor of Data Science of Lingnan University, to deliver keynote speeches to the attendees. Ir Ricky Wing-kee LEUNG shared his topic on “The Development of Autonomous Vehicles at Hong Kong International Airport” and elaborated on the vision of the Hong Kong International Airport, from the application of driverless electric train systems to the future development of

driverless vehicles and autonomous transportation systems. Prof. Joe S. QIN gave a lecture on “Probabilistic Reduced-Dimensional Modeling of Multidimensional Time Series in Engineering and Science” and shared with participants the latest research and development of data modeling in the field of data science.

Introduction to the winners of the 2023 HKEST Awards:

- Prof. Mingxin HUANG is a renowned scientist in materials engineering, especially in the development of high-performance metals. His invention of "super steel" has set two world records. This new type of steel has ultra strength, ductility and toughness, and is four times stronger than ordinary construction steel. "Super steel" is also much lighter than traditional steel and has lower production costs. In addition, Prof. HUANG successfully developed the world's first stainless steel for hydrogen production, enabling its potential application for green hydrogen production from seawater. During the COVID-19 epidemic, he also developed stainless steel with high copper content that can kill COVID-19 and other viruses on its surface. At present, his project has received approximately HK$80 million in research funding, which he aims to further develop lighter and stronger metals, especially for the production of electric vehicles.
- Ir Prof. Yi-Chun LU specializes in materials science and energy engineering. The charge-reinforced ion-selective (CRIS) membrane she created has overcome the technical bottleneck of the short battery life of sulphur-based redox flow batteries. She also developed another groundbreaking technology which can greatly improve the reaction rate and energy efficiency of this environmentally friendly battery, providing an important solution for large-scale storage of renewable energy, such as solar and wind energy. Prof. LU co-founded Luquos Energy in 2020, focusing on scalable, safe, and sustainable battery technologies for grid storage. She is also a recipient of multiple international awards, such as Top 10 Falling Walls Science Breakthroughs of the Year Award (2020).
- Prof. Minchen Tommy WEI dedicates his research to color and lighting science, His works not only bring innovative progress to film and television production, but are also essential for the development of virtual reality (VR), augmented reality (AR), and Metaverses. The six-color RGBACL (red, green, blue, amber, cyan, lemon yellow) lighting module and control algorithm he created have been widely used in the global film and television industry, including Hollywood blockbusters such as "Avatar" and "Batman" movies. Earlier this year, he developed breakthrough solutions to achieve accurate color

capturing and rendering for Huawei and Xiaomi. Moreover, he has been working with Meta (i.e., Facebook) to develop solutions for VR/AR/MR, the new generation of imaging products.

- Prof. Angus Hin-Lap YIP is an expert in materials science and renewable energy technology. He promotes the use of renewable energy in cities through the development of innovative photovoltaic technologies. His research includes new printable perovskite solar cells that are as thin and flexible as film, increasing the possibility of using solar power and developing more smart products. Prof. YIP also introduced a new perovskite material for producing solar cells at a lower cost. He was also honored as ESI “Highly Cited Researcher” by 2014-2022, and currently serves as an editorial board member of Science Bulletin and Nanomaterials, and the international advisory board member for Matter.

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