



School of Energy and Environment

香港城市大學  
City University of Hong Kong

# School of Energy and Environment

Established in 2009



**TOGETHER WE CELEBRATE  
SEE's 15<sup>th</sup> ANNIVERSARY**

**Together  
We Celebrate  
SEE's 15<sup>th</sup> Anniversary**

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## CONGRATULATORY MESSAGES FROM DEAN AND FORMER DEANS



**Professor Johnny C.L. CHAN**

Founding Dean (2009-2015) and Emeritus Professor

I feel greatly honored to be invited to write a short message to congratulate SEE on its 15<sup>th</sup> Anniversary. The School was founded in 2009 following the vision of the then-President, Prof. Way Kuo, to meet the challenge of the two most important subjects that the world faces: energy and environment.

In terms of education, we established the first Bachelor of Engineering in Energy Science and Engineering programme in Hong Kong that is accredited by the Hong Kong Institution of Engineers. The objective is to nurture future engineers who can have a holistic perspective in tackling the pressing issues of renewable energies, energy efficiency and conservation, climate change and environmental protection. Many of the graduates from this programme have already contributed substantially to these problems and some have also become Chartered Engineers.

Because we have always recruited faculty of very high caliber, currently with over 30 members, our research programmes, focusing on advancing our knowledge in energy, environment and sustainability, have also flourished. I am really glad to see that the research funding support for our faculty has increased substantially and many of our faculty are top researchers in their respective fields.

Looking forward, with global warming making its ever-increasing impacts throughout the world, academics must help address the three aspects related to climate change: science, mitigation (carbon reduction) and adaptation (risk and resilience), which fit perfectly into the expertise of the SEE faculty. I am therefore fully confident that in the next 15 years, SEE will continue to be a leading international academic unit in these areas.



**Professor Peter BRIMBLECOMBE**

Acting Dean (2015)

It is wonderful to add to the School of Energy and Environment's celebrations. I first visited the School in 2012 and joined it more formally a year later. It was a period of great excitement as new office and laboratory spaces were developed. The growing number of faculty members formulated imaginative research plans, successfully gaining many research grants. These were exciting beginnings to a School that continues to contribute so much.



### **Professor Chak K. CHAN**

Dean (2015-2021) and Adjunct Professor

Congrats SEE on your 15<sup>th</sup> Anniversary.

I am humbled to have served as the second Dean of SEE. Thanks to our colleagues and the support of the University, SEE has experienced tremendous growth in the number of students and programmes, faculty and staff size, laboratory and office space, and grants, especially in industrially related funding during this period.

I always promoted “SEE” as Sustainability, Energy, and Environment. Although our name remains as SEE, it is all about sustainability, which resonates with the newly established IMPACT ranking of the Times Higher Education. SEE has undoubtedly made significant contributions to the CityU THE IMPACT ranking, much of which is due to our unique combination of Energy and Environment. Our success is built on an interdisciplinary approach that includes policy and business, in addition to science and technology. This reminds me that the New York Times has a section of “Energy and Environment” under its “Business” section. Also, many world-leading universities from Columbia to Yale have combined Energy and Environment in their programmes. We are leading a global trend.

SEE achievements are not just about numbers and rankings. We have garnered a unique “brand” in higher education in HK and our graduates are “industry ready”, thanks to our special curricula. Industries and the Hong Kong government have found SEE to be a venue for recruiting and consulting on talents and policies in “SEE”. Our alumni, confidently conversant in both technical and social aspects, will be some of the best ambassadors of SEE/CityUHK in the years to come. We are proud to train graduates with a broader view beyond science and technology and be compassionate global citizens who care about the needs of people, especially those who are less privileged.

Fifteen years is not a short time. On a human time scale, we are in adolescence. We are dynamic, creative, willing to take risks, even when uncertain, perhaps naughty and not adhering to what our parents want, but with lots of energy and passion to explore something new and make a difference in society and for its people. Our future is for us to shape, but we need to firmly adhere to the principle that we are here to benefit people and their habitat, which is the essence of impact. May I wish SEE another vibrant and fruitful 15 years.



## **Professor Guohua CHEN**

Dean (2022-2024) and Chair Professor

First of all, I extend my heartfelt congratulations to the faculty members, staff, students, and alumni on the 15<sup>th</sup> Anniversary of the School.

I joined the School relatively recently and have enjoyed my time with colleagues, students, alumni, and friends. The School of Energy and Environment has had a unique mission from the very beginning. Our founding Dean and his successors have done an excellent job leading the School from its inception to its current prominent position as one of the leading schools in the world. I am proud of the achievements our School made in the fields of energy conversion, storage, and management; marine, water, and wastewater treatment; climate change and air quality control; solid waste and valorization; biorefinery; and environmental, societal, and governance issues. More than half of our faculty members have been recognized as the top 2% most influential scientists globally, according to an analysis by Stanford based on metrics from Scopus. For the internal ranking based on ten KPIs, our School has been steadily climbing each year toward excellence.

We have every reason to feel happy and to celebrate our 15<sup>th</sup> Anniversary. I am pleased to see the steady growth of our undergraduate, taught postgraduate, and PhD programmes. As a relatively small School, we manage four major undergraduate programmes and three minor programmes. We also launched a flagship programme (INSPIRE). The three streams of our taught postgraduate programme are ready to meet the ever-increasing demand for advanced education in energy and the environment. The large number of research projects and funding provides robust support for our PhD programme. This success is not possible without the dedicated hard work of our colleagues and staff. It is also due to the collaboration with our colleagues from other academic units at CityUHK. Our industrial network and alumni around the globe have made great contributions to our School by donating scholarships, giving guest lectures, and providing opportunities for our students and recent graduates.

I would like to take this opportunity to thank all of you for your support in building the School, especially during my deanship. Looking ahead, I am confident that the School of Energy and Environment will continue to build on this remarkable legacy of achievement. By remaining at the forefront of innovation, empowering future changemakers, and amplifying its global influence, the School is poised to make an even more profound and lasting impact in the decades to come.

Cheers!



**Professor Kenneth M.Y. LEUNG**

Current Dean and Chair Professor

I am filled with immense pride and gratitude to celebrate the 15<sup>th</sup> anniversary of the School of Energy and Environment (SEE) and its accomplishments with our students, alumni, staff, partners and supporters. Over the past 15 years, our commitment to high quality education as well as excellent and impactful research has remained steadfast. In 2025, we will launch a new undergraduate programme, the Bachelor of Science in Environment and Sustainable Business (BScESB), underscoring our dedication to nurturing future leaders in the field of ESG (i.e., Environmental-Social-Governance).

We will also kick start our flagship programme called INSPIRE (i.e., International Sustainability Programme for Innovation, Research and Entrepreneurship) in September 2025, aiming to provide exemplary opportunities for students with a comprehensive and globally focused education in energy and environmental engineering. As an extension of our existing BEng Programme, INSPIRE will incorporate enhanced overseas study experiences in top universities, internship opportunities, research components, mentorship support and entrepreneurial training. We hope that this new programme will attract more elite students to our educational offerings and cultivate a globally minded community of young leaders dedicated to addressing pressing environmental challenges.

Our emphasis on international collaboration and student development has been a cornerstone of our success. Our School has been recruiting Distinguished Visiting Professors, from top universities worldwide. They will provide opportunities for our PhD students and postdoctoral researchers to collaborate with them and work in their laboratories, enriching their learning experience and propelling us to new heights of knowledge advancement and scientific discovery.

In terms of our research excellence, I am particularly proud of our faculty members' achievements, with 20 individuals recognized among the Top 2% Most Cited Researchers worldwide (by the Stanford-Elsevier Indicators). Their outstanding achievements in research and innovation, which

are highlighted by numerous patents, highly cited papers, and prestigious awards, exemplify our collective pursuit of knowledge and innovation for supporting sustainable development.

Looking ahead, we are poised to welcome more international students, expand exchange opportunities for our local students, and forge new partnerships with industries and leading institutions in the region and beyond. By fostering a diverse and inclusive environment that nurtures creativity and collaboration, we are paving the way for a future where sustainability and environmental stewardship are at the forefront of our endeavours.

To all who have contributed to the success of SEE, I extend my deepest gratitude. Your unwavering support and dedication have been instrumental in shaping SEE into the beacon of excellence that it is today.

As we commemorate this milestone anniversary, let us reaffirm our commitment to advancing knowledge, fostering innovation, and creating a sustainable future for generations to come.

With heartfelt gratitude and best wishes for the continued success of SEE!

**VISION  
&  
MISSION**

## VISION

The School of Energy and Environment (SEE) at City University of Hong Kong (CityUHK) aims to be a leading school specializing in cutting-edge research in energy and environment, in the training of energy and environment professionals, and in knowledge transfer for societal benefits.

## MISSION

- Advancing research and development, fostering knowledge transfer in targeted themes of benefit to societal needs in energy, environment, and sustainability;
- Preparing leaders and practitioners to address environmental and energy needs in a rapidly decarbonizing world and build a sustainable future;
- Maintaining a collaborative and supportive atmosphere for students, faculty, alumni and other stakeholders in advancing our interdisciplinary research and educational objectives.

## OVERVIEW OF THE SCHOOL

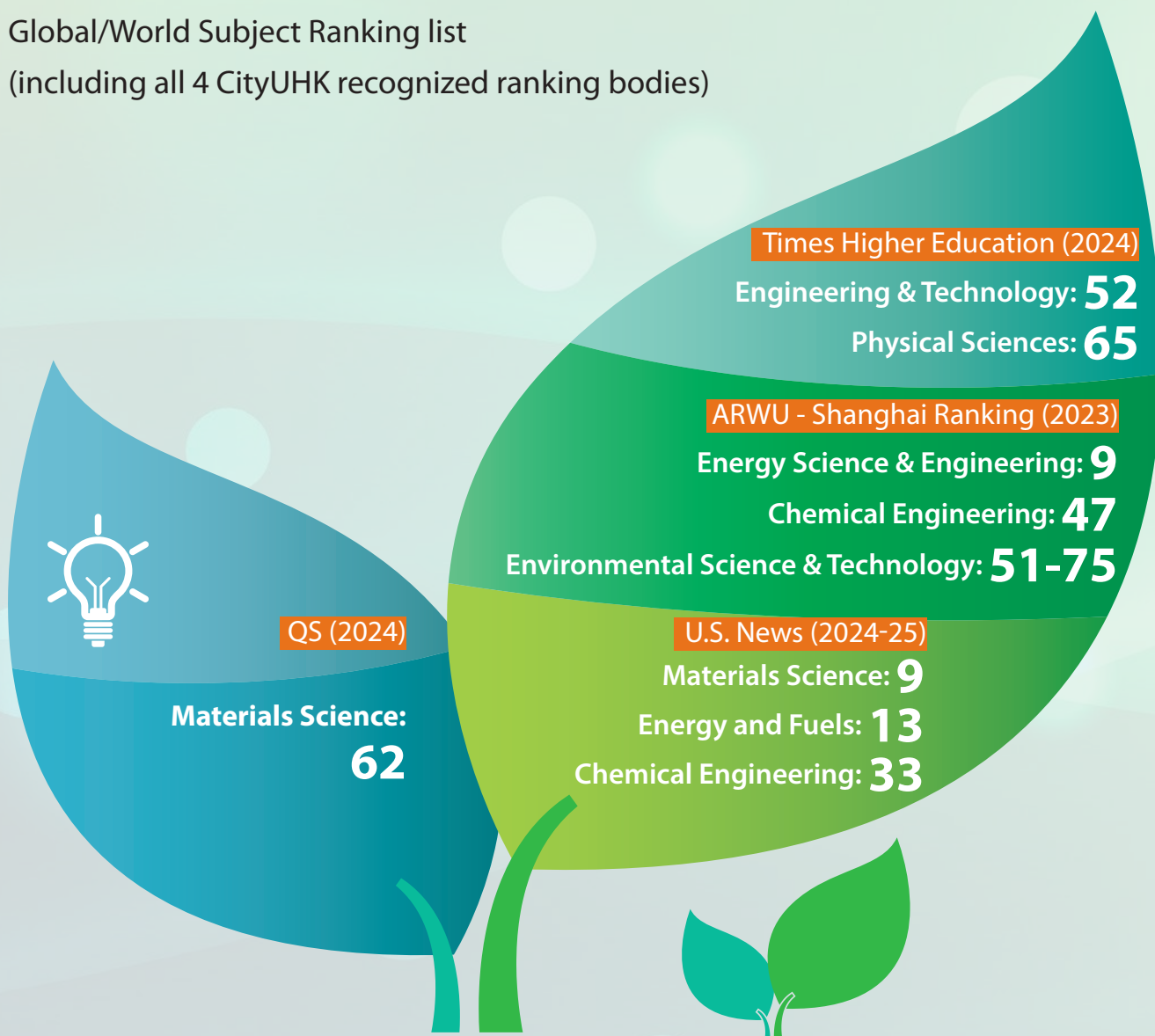
### SEE Faculty Members *(as of 30 November 2024)*

- 1 Emeritus Professor
- 7 Chair Professors
- 4 Professors
- 2 Affiliate Professors
- 10 Associate Professors
- 12 Assistant Professors
- 9 Adjunct Professors

### SEE Rankings

Global/World Subject Ranking list

(including all 4 CityUHK recognized ranking bodies)



# HISTORY AND MILESTONES

Launch of SEE PhD Programme **2009**

**2010** Launch of SEE MSc Programme

Launch of BEng Energy Science and Engineering Programme (ESE) **2012**

**2017** Launch of BEng Environmental Science and Engineering Programme (EVE)

HKIE Full Accreditation for ESE **2018**



Launch of the Industry Ready Programme (IRP) **2021**

Launch of New Stream - Energy/Environment in Science, Technology & Advanced Research (eSTAR) for SEE Undergraduate Students (2021)



Launch of SEE Laboratory at Shenzhen Research Institute (SRI) **2022**

**2023** HKIE Full Accreditation for EVE

Launch of the Double Degree Programme in BEng in Environmental Science and Engineering & BBA in Finance with Department of Economics and Finance **2024**



Launch of Bachelor of Science in Environment and Sustainable Business Programme with College of Business **2025**



Launch of the Flagship Programme: International Sustainability Programme for Innovation, Research and Entrepreneurship (INSPIRE)

## TEACHING AND LEARNING

### UG Graduates' Sharing



“““

Reflecting my time at SEE, I am immensely grateful for the opportunity to develop my passion in sustainability and explore possibilities that will help me build a career with impact. Energy and the environment are some of the most critical issues that we are facing in the century. It is by nature a multi-faceted subject that is affecting all walks of life. I have benefitted from SEE's approach to design and deliver interdisciplinary programmes, which enables me to rethink the interlinkages between human, the environment and our society, and be creative about what we can do to tackle these world challenges. Thank you and happy birthday, SEE!

**Miss Violet LAW**

Bachelor of Engineering in  
Energy Science and Engineering  
(Class of 2018)

“““

SEE's diverse curriculum not only broadened my academic horizons but also equipped me with a versatile skill set crucial for navigating the professional world. The plethora of internship opportunities provided invaluable hands-on experience, shaping my career trajectory. The lasting bonds forged with peers from different cultural backgrounds not only enriched my school experience but also continued to be a source of support and inspiration in my professional journey. Witnessing the rising influence of SEE alumni in the engineering sector is truly inspiring, reflecting the school's commitment to producing exceptional graduates who are making significant contributions to the industry.



**Mr. Ben Yiu-Ting LEE**

Bachelor of Engineering in  
Energy Science and Engineering  
(Class of 2019)



“““

I am now working at CLP Power as Assistant Engineer, after graduating from the CLP Graduate Trainee Programme in 2024. This amazing experience allowed me to rotate across various departments and collaborate with experts in electrical and mechanical engineering.

I am grateful for the support from the SEE, which provided invaluable resources, including the Industry Ready Programme (IRP). Through this programme, I participated in trainings that enhanced my understanding of industry developments. SEE's holistic approach to student development, including its integrated enrichment programme, encouraged exploration beyond academics. This well-rounded experience has been essential in equipping me with the skills I now apply in my role at CLP Power. Chance favors the prepared mind. Be prepared to meet new opportunities!

**Miss Ceci Kam-Sze LAM**

Bachelor of Engineering in  
Energy Science & Engineering  
(Class of 2022)

## UG ACTIVITIES

### *Career Aspiration and Development Events*

#### *Career Evening*



#### *CV Writing & Interview Skill Workshops*



#### *Dialogue with Professionals*



# Information Day



## Graduation Ceremonies



2011



2012



2013



2014



2015



2016



2017



2018

## Graduation Ceremonies



2023



2024

## Field Trips

2010



Hong Kong Observatory



CLP Daya Bay Nuclear Power Plant

2011



Cathay Pacific



Hong Kong Electric Company Lamma Power Station

## Field Trips

### 2012



Gammon KTSP



Wetland Park



Swire Properties



Zero Carbon Building



Shatin Sewage Treatment Works

### 2013



Hong Kong Science Park



ElectriCity



Sludge Treatment Facility



Shatin Water Treatment Works



Ngong Ping Sewage Treatment Plant



International Commerce Centre

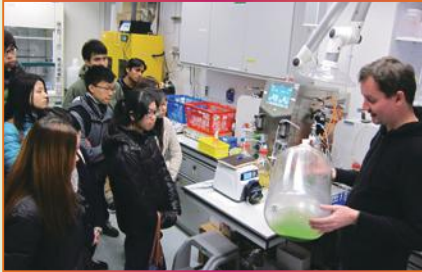


ASB Biodiesel Plant

# SEE's 15<sup>th</sup> Anniversary

## Field Trips

### 2014



Food Waste Research Lab



HK Organic Waste Recycling Centre



CLP Nuclear Resources Centre



Towngas Tai Po Plant



HK International Airport

### 2015



Eco Park & WEEE Go Green



HK Maritime Museum



Building Facilities & Energy Saving Measures@CityUHK



EMSD Education Path



Jockey Club Museum of Climate Change of CUHK



ElectriCity@Castle Peak Power Plant

2016



Hong Kong Organic Waste Recycling Centre



T-park



Ma On Shan Water Treatment Works

2017



Harbour City



Building Facilities and Energy Saving Measures



2018



HKJC Shatin Racecourse-district Cooling System



Stanley Sewage Treatment Works



Kai Tak District Cooling System

2019



HK Electric Solar Photovoltaic Power System



Ngau Tam Mei Water Treatment



Western Salt Water Service Reservoirs

# SEE's 15<sup>th</sup> Anniversary

## Field Trips

### 2021



EcoPark



Y Park



Eco Expo Asia

### 2023



CIC-Zero Carbon Park



O Park



ASB Biodiesel

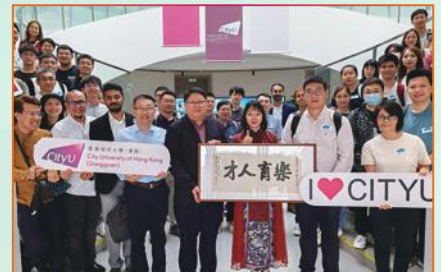
### 2024



Chemical Waste Treatment Plant



Songshan Lake Materials Laboratory (SLAB) & China Spallation Neutron Source (CSNS)



CityU(HK) Dongguan Campus



Tseung Kwan O Desalination Plant



CityUHK-Arizona State University Summer Program to WEEE Park



Siu Ho Wan Solar Farm and Wastewater Treatment Plant

## Study Tours and Summer Programmes

Singapore (June 2013)



South Korea (June 2014)



South Korea (June 2016)



Singapore (July 2017)



## Internship Programmes



## Outbound Exchange



## SEE's 15<sup>th</sup> Anniversary

### CityUHK-Arizona State University Summer Programme on Urban Sustainability



### CityUHKSEE-JILIN University of China Summer Academic Exchange Programme 2024



## Innovative VR Teaching in Classrooms

**Prof. Jason C.H. LAM** uses this innovative teaching approach to provide students with immersive learning experiences in the impacts of extreme weather and coral bleaching.



**EXCLUSIVE INTERVIEW WITH TEACHING DEVELOPMENT GRANT AWARDEE**

By Ada Maichela //

Are you looking for ways to make your teaching more memorable for your students? Or make your an effective Professor in the School of Energy and Environment (SEE) at CUHK did just that with his award-winning Teaching Development Grant (TDG) of CUHK in an exclusive interview with TED. Dr Lam shared the pedagogical process of integrating emerging educational technologies such as VR into his course design and class delivery with the aim of creating memorable classroom learning for his students.

VR has always been one of Dr Lam's favourite activities used to help his students understand the VR game has. He wanted to bring that delightful experience into the classroom. He has received and trained received a TDG project grant from TED. Dr Lam shares the VR studies and findings that are especially relevant and insightful for students. By using VR as an immersive learning experience, he has designed and created an engaging virtual learning experience to simulate real life scenarios in the classroom environment and enhance the students' understanding of the environmental content and their own learning.

Students APRIL 2023 | INAUGURAL ISSUE | TED NEWSLETTER 31

Dr Lam told TED that almost every student who had tried VR learning found it vivid and refreshing, with a significant impact on their learning experience. First, it gave students an appealing encounter that differs from traditional classroom learning and inspired them to further explore the application of VR tools. Moreover, it allowed them to gain knowledge and insights into locations beyond the classroom, such as virtual field trips to distant or inaccessible places, which offered long-lasting and memorable learning activities. For example, VR classroom activities were provided to take the students on a virtual tour of the deep sea, where they could roam in a captivating environment and see how the underwater landscape has altered due to climate change and pollution. This kind of activity not only made learning fun and exciting but also helped students to understand complex environmental issues in a way that traditional teaching methods could not.



But there are challenges, Dr Lam noted, while implementing VR in classroom teaching. For example, traditional VR setups often require complex equipment – such as motion sensors, elaborate VR goggles, tailored headsets, and controllers – which restricts their use in a larger classroom setting. Dr Lam noted that *“It is very challenging to acquire that amount of equipment for larger classes.”* However, he suggested a strategy to overcome this hurdle: *“By providing VR headsets, we empower students to use their cell phones as VR viewing*



devices.” This approach enabled all of his students to participate in VR journeys using standalone VR headsets, making the technology accessible to more students and facilitating its implementation in other classes.

In recent years, VR has been an emerging technology for enhancing the efficiency and effectiveness of teaching activities. Dr Lam is convinced of its value, saying, *“Students share their excitement with peers orally or via social media platforms.”* Because of this enthusiastic feedback from his students, other faculty members became increasingly aware of the benefits of this wonderful technology. *“We are discussing and planning how to implement the VR technology in other classes at SEE,”* he said.

Having witnessed the benefits of VR in teaching and learning, Dr Lam is eager to share his expertise with other faculty members. He believes that *“Preparation of readiness is the key to the successful implementation of VR to maximise its applicability.”* Today, individual faculty members can access a wide range of VR resources online or even in published literature to help them become more acquainted with the technology, understand how to implement it effectively, and design course materials tailored to their teaching style and content.



Dr Lam expressed his sincere gratitude for the TDG funding and TED's support in developing and implementing this innovative pedagogy for advancing teaching and learning. *“This is my first TDG project and also the first grant I received at CUHK. The entire application process was a pleasant episode because the TED staff was very accommodating and enthusiastic about helping faculty members develop innovative teaching programmes,”* he said, adding, *“The proposal itself asked critical questions that helped us rethink the most impactful way to design our teaching exercises and maximise our students’ learning. I was extremely grateful to have been awarded HK\$270,000 to develop this VR exercise from scratch.”*



Looking ahead, Dr Lam is keen on exploring other potentialities of enhancing teaching and learning via VR technology. One recent advancement is that he has implemented this pedagogical VR exercise in a larger class, and positive responses have been received on how modern and inspirational the technology is. He looks forward to expanding this VR exercise to students among sister institutions to enhance VR teaching and learning.



Interview Video

*If you would like to have a taste of an immersive experience in VR, you may consider building your own cardboard viewer, with reference to the demonstration in the online video.*



DIY Cardboard Viewer

*Please see below the VR scenes produced by the e-Learning team under the Office of the Chief Information Officer, with technical equipment support from TED – Smart Class Initiative.*



Smart Class Initiative

*Please also browse the following YouTube links for 360-degree virtual travelling:*



AirPano VR



Underwater Life



Diving with Sharks

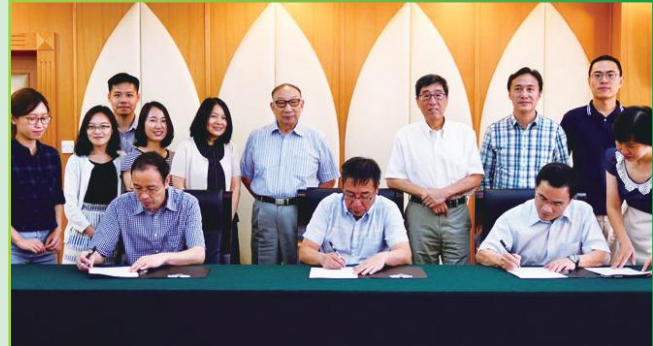


Around the World

## MOU Signing Ceremonies



Agreement Signing Ceremony with Sinopec Fushan Research Institute of Petroleum and Petrochemicals (19 February 2013)



Collaborative Agreement Signing Ceremony with the Institute of Atmospheric Physics, Chinese Academy of Sciences (IAP/CAS) (22 August 2017)



Agreement Signing Ceremony for Academic Collaboration between CityUHK and CLP Power Hong Kong Limited (12 November 2018)



Between New World Development Company Limited and CityUHK on Accelerating Net Zero Carbon by 2050 (24 September 2021)



Industry Ready Programme (14 December 2021)



HKPC x CityUHK SEE (31 August 2022)



Great Eagle Group x CityUHK SEE (20 April 2023)



CLP x CityUHK SEE (28 March 2024)



RAISE+ Scheme Signing Ceremony (28 May 2024)



Signing Ceremony with Vietnam National University - Hanoi University of Science (VNU-HUS) (24 June 2024)

## Forum/Symposium/International Conferences Organised by SEE



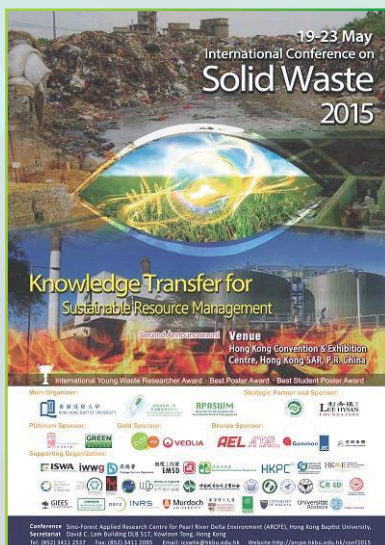
Hong Kong Climate Change Forum – Distinguished Lecture on “Latest Findings and Policies in China on Climate Change – Challenges and Opportunities” (3 December 2011)



International Conference on Energy for the Next Decade (20 to 22 September 2012)



Symposium on Application of Physical Scale Prevention Technologies for Chiller Condensers (12 January 2013)



International Conference on Solid Wastes 2015: Knowledge Transfer for Sustainable Resource Management (ICSWHK2015) (19 to 23 May 2015)



Forum on “Way Forward for Hong Kong Environment Industry: From Greater Bay Area to Belt & Road” (5 May 2018)



The 6<sup>th</sup> International Conference on Energy– Meeting the Challenges of Energy Transition Through Multi-disciplinary Collaboration (13 to 14 September 2018)



SEE 10<sup>th</sup> Anniversary – Improving Building Energy Efficiency by Retro-Commissioning (11 October 2019)



The 7<sup>th</sup> International Conference on Hydrogen and Clean Energy to Net Zero (1 to 2 December 2022)



The 2024 Croucher Advanced Study Institute on Electrochemical Energy Storage (14 to 16 June 2024)



## School Talks



Fanling Rhenish Church Secondary School  
(8 Nov 2011)



Yew Chung International School of Hong Kong  
(8 Nov 2011)



St. Mark's School (9 Nov 2011)



Kwun Tong Kung Lok Government Secondary School  
(8 Nov 2012)



Zhejiang University (22 Aug 2017)



King George V School (27 Oct 2016)



Hotung Secondary School (4 May 2018)

## RESEARCH EXCELLENCE

The School of Energy and Environment at City University of Hong Kong strives to excel as a premier institution dedicated to pioneering research in energy and environment, the education of professionals in these fields, and the dissemination of knowledge for the betterment of society.

Our commitment extends beyond research and development; we actively promote knowledge transfer in key areas that directly impact societal needs related to energy, environment, and sustainability. By engaging in targeted themes, we aim to bridge the gap between cutting-edge research and practical applications, thereby maximizing our impact on communities and industries.

In addition to research, we focus on cultivating leaders and practitioners who are equipped to tackle environmental and energy challenges in an increasingly decarbonized world. Our goal is to empower individuals to shape a sustainable future through informed decision-making and innovative solutions.

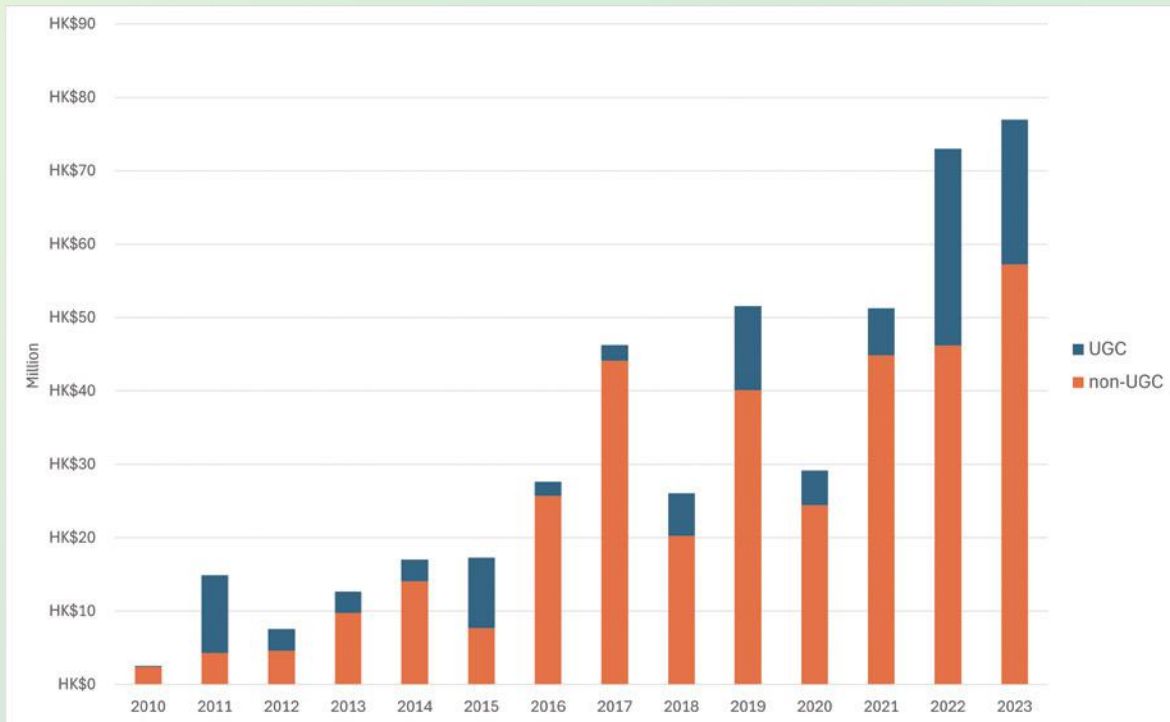
Furthermore, we foster a collaborative and nurturing environment for students, faculty, alumni, and other stakeholders. By fostering interdisciplinary cooperation, we aim to collectively advance our research and educational objectives, ensuring that our efforts result in tangible and lasting impacts on the world around us.

### Publications and Citations Statistics

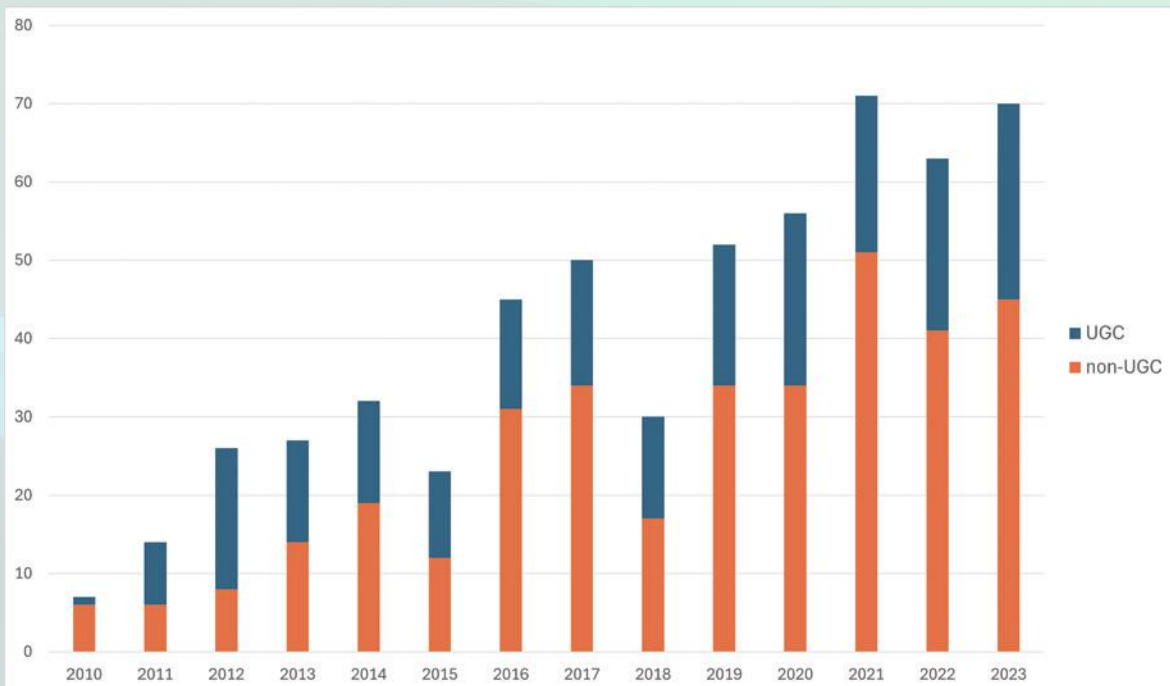
	Publications in 2017-2019 (No. of FT faculty on 31 Oct 2019: 25)	Publications in 2020-2022 (No. of FT faculty on 31 Oct 2022: 27)	Publications in 2021-2023 (No. of FT faculty on 31 Oct 2023: 29)
	SEE Average	SEE Average	SEE Average
Number of citations per FT faculty ratio	<b>335.5</b>	<b>844.2</b>	<b>1,018.9</b>
Number of top-1%- cited publications per FT faculty ratio	<b>1.57</b>	<b>2.78</b>	<b>3.83</b>
Number of top-10%- cited publications per FT faculty ratio	<b>11.5</b>	<b>17.6</b>	<b>22.1</b>

## SEE's 15<sup>th</sup> Anniversary

### Total funding amount from 2010 to 2023

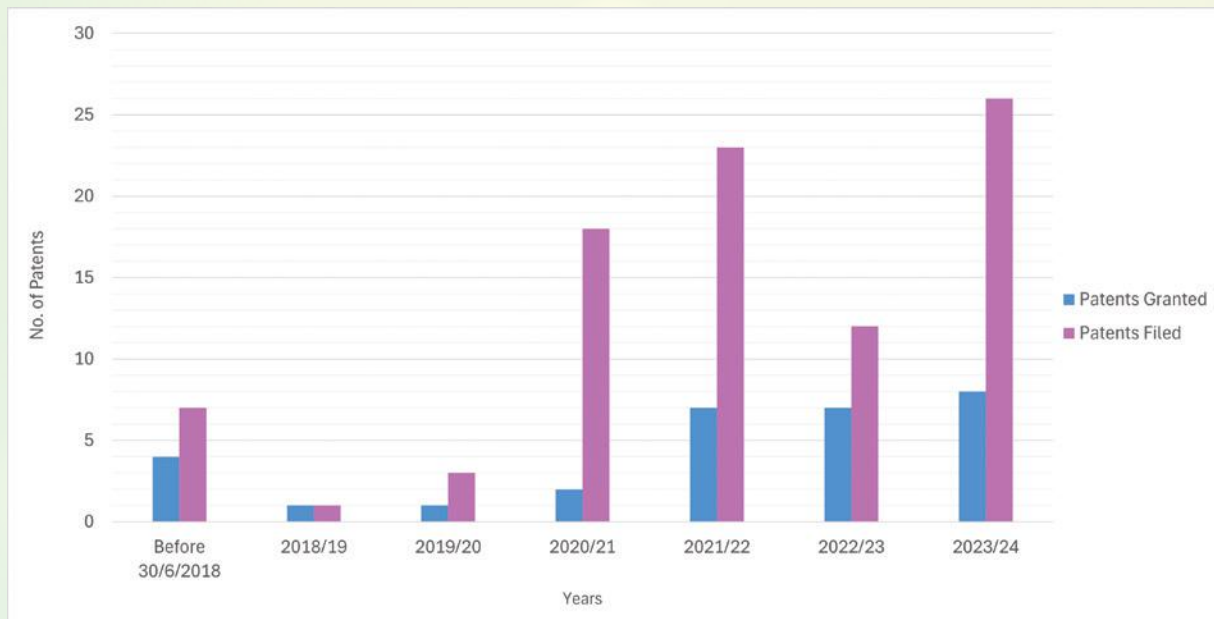


### Total Number of Projects from 2010 to 2023



CityUHK actively promotes knowledge transfer and encourages staff and students to seek patent protection for their inventions. In 2023/24, SEE had **8 patents granted, 26 patents filed in China, Hong Kong, and the US**. The number of granted and filed patents indicates our continuous commitment to creating applicable knowledge for social and economic advancement and contributing high-quality research outputs to society.

### Patent involving SEE faculty, research staff and students (filed till 30 June 2024)



CityUHK launched **HK Tech 300**, a large-scale flagship innovation and entrepreneurship programme, in 2021. Since its inception, a total of 31 teams with SEE members have received funding from the Seed Fund under the HK Tech 300 programme, with 6 teams also securing investment from the Angel Fund. Here are some start-up companies incubated through this funding:

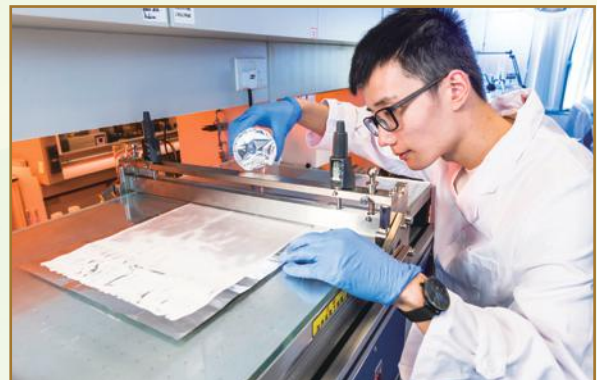


# SEE's 15<sup>th</sup> Anniversary

## Journal Paper Published by SEE Faculty Members



SEE Research Laboratories



### SEE Laboratory at Shenzhen Research Institute (SRI)

Inaugurated in January 2022 at the Innovation Centre of Sustainability, Energy, and Environment (ICSEE) at SRI, the laboratory is supervised by Prof. Chunhua LIU and has been actively engaged in cutting-edge research endeavors, focusing on the development of advanced electric motor technologies and drive systems.

The laboratory has successfully developed several innovative systems, including an integrated motor drive system based on wide-bandgap power semiconductor devices, a multimode axial-flux double-rotor motor drive system for hybrid unmanned aerial vehicles, and low-cost wearable robotic arm actuators that employ semi-direct drive synchronous reluctance motors and integrated multifunctional converters for vehicle-to-grid applications. These research efforts have not only driven technological advancements but also attracted significant funding support.

To date, the laboratory has secured three grants from the National Natural Science Foundation of China (NSFC), three grants from the Shenzhen government, and one grant from the Chinese Association of Science and Technology, totalling approximately 5.6 million CNY. Notable milestones achieved include the training of 8 PhD students and 6 researchers, contributing to the laboratory's vibrant research environment.

With its modest footprint of 39 square meters, our lab at SRI serves as a hub for innovation and collaboration, advancing electric motor technologies and sustainable energy solutions.



## Ability R&D Energy Research Centre (AERC)

Housed under the School of Energy and Environment, the Ability R&D Energy Research Centre (AERC) was established in August 2011. AERC aims to develop innovative technologies that increase energy efficiency and offer a clean, safe, cost-effective and sustainable energy supply to help combat impending energy problems.

AERC's research interests include solar photocatalysis, fuel cells, hydrogen power, advanced refrigeration/air-conditioning, marine anti-fouling, biotechnology for energy and environment, Electric Vehicle technologies, power grid systems, advanced heat pumps, and Energy Efficient Building Technology.

### Marine Antifouling Paint Technology



### Organic Rankine Cycle (ORC) Technology



### PG Graduates' Sharing



**Dr. Yunzi HU**  
PhD Energy and Environment  
(Class of 2017)

“”

The four years I spent in SEE as a PhD student was a very good time. In international research projects, I learnt a lot from my supervisor Dr. Carol LIN and schoolmates; through the exchange programme to UK, I participated in global collaboration; as a teaching assistant, I gained experience in undergraduate teaching; in spare time, I went hiking and went to islands with my friends, enjoying the rich culture of Hong Kong. All of these have left a deep impression on me, shaped a new me and led the way to a bright future! Thank you, SEE CityUHK! Happy 15<sup>th</sup> anniversary!

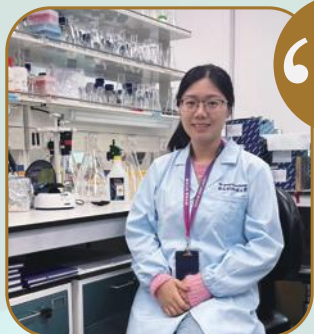
I began my PhD journey at SEE in 2012, back when the lab was still at the Hong Kong Science Park. It was a time of immense growth and discovery, marked by setbacks and challenges in my research and moments of doubt about my future. Fortunately, SEE was more than just an academic environment—it was a warm and supportive community. Beyond providing a solid academic foundation, SEE fostered curiosity, resilience, and personal growth. I received invaluable support and formed lasting friendships with my cohort and all the members of SEE.

My mentor, Professor Patrick Lee, had an especially profound impact on my journey. More than a mentor, he became a role model and lifelong friend. He was always there to listen when I faced frustration and to guide me through setbacks, even after I graduated from SEE. I would not be where I am today without his unwavering support. I am deeply grateful and proud to be part of the SEE family.

“”



**Prof. Hongyuan LU**  
PhD Energy and Environment  
(Class of 2017)



**Dr. Xinzhao TONG**  
PhD Energy and Environment  
(Class of 2019)

“”

I am Xinzhao Tong, currently an Assistant Professor at the Department of Biological Sciences at Xi'an Jiaotong-Liverpool University, where my research focuses on microbiomes and human health. I completed my PhD and postdoctoral training over seven years at the School of Energy and Environment (SEE), City University of Hong Kong, under the mentorship of Prof. Patrick Lee. I am genuinely grateful for Prof. Lee's guidance, which played a pivotal role in shaping me as a researcher, and for the support and resources provided by SEE that facilitated my academic growth and research exchange opportunities. These experiences have been fundamental to my development in academia.

As a proud PhD alumnus of CityUHK's School of Energy and Environment, I am honored to celebrate this remarkable 15<sup>th</sup> anniversary. The school has been a beacon of innovation, fostering cutting-edge research and sustainable solutions that address global challenges. Our time here equipped us with unparalleled skills and knowledge, empowering us to make significant contributions to the world. The faculty's dedication and the collaborative spirit among peers have been instrumental in shaping our future. As we commemorate this milestone, let us continue to strive for excellence and sustainability, building a brighter, cleaner future for generations to come.

“”



**Dr. Martin Yi-Hao ZHU**  
PhD Energy and Environment  
(Class of 2022)

# NURTURING TALENTS

## Students and Alumni's Attainments



Innovation and Technology Scholarship Award Scheme 2014 (16 April 2014)



Innovation and Technology Scholarship Award Scheme 2015 (24 April 2015)



Challenge Cup - Hong Kong University Students Extra-curriculum Technology Contest 2015 (28 June 2015)



Solar Car Competition Prize Presentation Ceremony cum Electric Vehicles Exhibition (10 January 2016)



Innovation and Technology Scholarship Award Scheme 2016 (21 April 2016)



Challenge Cup National Competition - Hong Kong Regional Final, Hong Kong University Student Innovation and Entrepreneurship Competition 2016 (22 June 2016)

# SEE's 15<sup>th</sup> Anniversary



Goat House Design Competition  
(17 May 2017)



HKIE Best Paper on Materials 2017  
(20 October 2017)  
Miss Joyce CHAN Cheuk Ying



Outstanding Final Year Project Award  
Winner - Mr. XUE Licheng  
1<sup>st</sup> Runner-up - Mr. CHAN  
2<sup>nd</sup> Runners-up - Mr. C  
Miss



IET Outstanding Electrical Power and Energy Engineering Student Award 2018  
(22 June 2018)



Hong Kong Jockey Club Scholarship Award  
2018 (10 July 2018)  
Miss ZHOU Yujing



HKIE Environmental Division Prize for Best Final-Year Environment Project  
Miss Felice Adeline YA



Best Poster Award at the 10<sup>th</sup> International Conference of the International Society for Industrial Ecology (ISIE 2019)  
(7-11 July 2019)  
Mr. Nallapaneni Manoj Kumar



HKIE Environmental Division Prize for Best Final-Year Environmental Project  
(08 January 2020)  
Miss Wylie CHUNG Wai Yi



Outstanding Final Year Project Award  
Winner - Miss FU Chen  
1<sup>st</sup> Runner-up - Mr. CHAN  
2<sup>nd</sup> Runner-up - Miss T



Project Award (2020/21)  
 CHONG Man Hin  
 CHING Man Kit,  
 MAK Wai Yu



Championship in Social Innovation Inventor -  
 Competition for Innovation Design (2020/21)  
 Miss TSOI Wing Tung  
 Mr. SHUM Chak Pong



First Runner-up in the HK Electric "Green Energy  
 Dreams Come True" (2024)  
 Miss Kathy LAU Cheuk Ying



Division Prize for Best Final-  
 Project (2021/22)  
 CHEN YU



Best Presenter Award of 2023 IEEE 6th Student  
 Conference on Electrical Machines and Systems  
 (IEEE SCEMS 2023) Mr. CHEN Yong



CLP Trainees Graduation cum  
 Engineering Studies Award (2024)  
 Miss Ceci LAM Kam Sze



Project Award (2023/24)  
 CHANG Man Chi  
 CHAN Kam Fai  
 CHAN Wing Ki



VTech Innovation & Sustainability Award (2023/24)  
 Champion: Miss LEUNG Tsz Kei  
 1<sup>st</sup> Runner-up: Mr. CHAN Kam Fai  
 2<sup>nd</sup> Runner-up: Mr. JIANG Yinuo  
 Honorable Mentions: Mr. CHAN Ho Chun and  
 Mr. CHAN Ho Laam

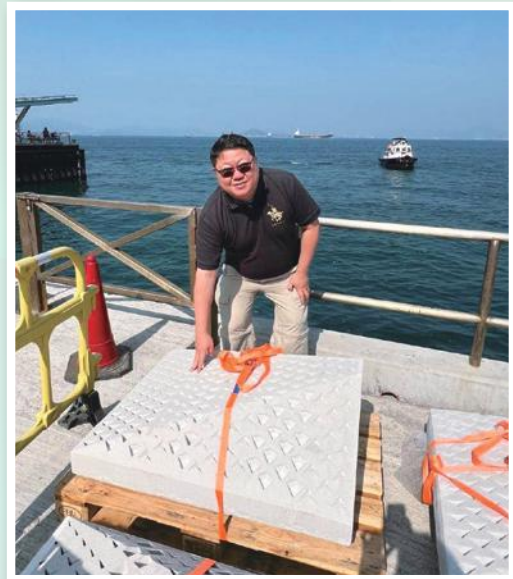


CLP Trainees Graduation cum  
 Engineering Studies Award (2024)  
 Miss Ceci LAM Kam Sze

### Spin-off Companies Led By Our Faculty Members

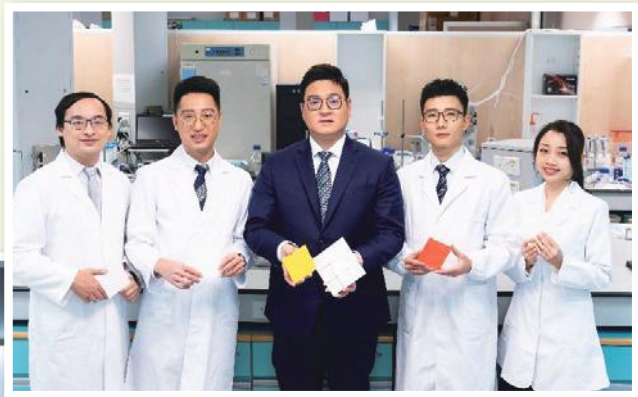
#### AfterNATURE Limited (Prof. Kenneth M.Y. LEUNG)

Translational research is a core mission of the State Key Laboratory of Marine Pollution (City University of Hong Kong), which is under the directorship of Professor Kenneth Leung (Dean of SEE). The laboratory encourages young researchers and alumni to create startup companies and translate research results to benefit the environment and mankind. AfterNature is a startup created by Professor Leung, his former postdoc (Dr. Juan Carlos Astudillo), and his current PhD student (Thea Bradford), and is dedicated to developing ecologically engineered solutions to enhance biodiversity and ecosystem functioning of artificial shorelines and degraded habitats. Their innovative eco-engineered concrete features efficiently increase surface area and create microhabitats suitable for various intertidal and subtidal species to inhabit artificial seawalls. For some of AfterNature products, locally produced waste materials are incorporated to reduce the carbon footprint and promote sustainability. Furthermore, AfterNature provides professional consultancy services on the design and construction of eco-shorelines. AfterNature has secured seed funding from the HK TECH-300 Programme of CityU and the Ideation Programme of the Hong Kong Science and Technology Parks Corporation. They have successfully sold their products to the Hong Kong SAR Government. Recently, they have expanded their business into the United Arab Emirates.



## i2Cool Limited (Prof. Edwin C.Y. TSO)

i2Cool is a green and energy-efficient technology pioneer specializing in passive radiative cooling. Originating from a research team at the City University of Hong Kong, the company has brought together a world-class R&D team composed of the top 2% of leading professors and researchers. i2Cool's core products include the electricity-free cooling paint (iPaint) and electricity-free cooling film (iFilm). By focusing on electricity-free cooling technology, the company is dedicated to providing comprehensive energy-saving cooling solutions for low-carbon cities and green communities. Supported by the HK Tech 300 Programme at the City University of Hong Kong and the Incubation Programme at Hong Kong Science and Technology Parks Corporation, i2Cool has successfully transformed cutting-edge technology into commercial applications. i2Cool's electricity-free cooling technology has also been applied for more than ten invention patents and received multiple green product certifications worldwide.



### CAT Limited (Prof. Michael K.H. LEUNG)

CAT specializes in catalysis for advanced technologies in energy and environment. Co-founded by Miss Annie Wong (SEE UG graduate) and Miss Keda Chen (SEE PhD student) under HKTech300, CAT strives to address the adverse impact of current antifouling paints on marine ecosystems and the lack of effective antifouling coatings available in the market. CAT has successfully commercialized Nano-photocatalytic Marine Antifouling Paint (Nano-MAP) and Nano-Photocatalytic Lubricant. Our ongoing research efforts are leading to more advanced technologies that can effectively solve practical problems. Our goal is to harness the power of science to create sustainable solutions.



From left to right: Mr. Huacheng LI (PhD Student), Miss Keda CHEN (PhD Student), Miss Annie WONG (UG Graduate & CEO), Prof. Michael LEUNG (Chair Professor), Dr. Yingguang ZHANG (Post-Doc), Miss Qinglan TANG (RA), Dr. Jinsong ZHOU (Post-Doc)



## HKTech Solar Limited (Prof. Angus H.L. YIP)

HKTech Solar Ltd. holds the core technology of printable perovskite photovoltaics (PV) that can be manufactured in an energy-saving and scalable way to penetrate the trillion-dollar global PV market. This technology also offers diverse form factors, and low energy payback time.

HKTech Solar currently holds both top efficiency and lifetime in the field, comparable to the most advanced crystalline silicon PV. The company is comprised of an integrated team with interdisciplinary experts covering materials science, chemistry, and solar engineering backgrounds. The Company is therefore self-sustainable with its own technologies and highly competitive in all technical aspects. HKTech Solar also holds the key patent on mitigating the lead leakage issue in perovskite panels, which is a major social concern that hinders the large-scale deployment of perovskite PV.

The company's experience in designing novel materials also allows for the improvement of perovskite PV and versatile applications, while accelerating the development of more advanced PV technologies, such as organic/perovskite tandem PVs. The company currently stands at the forefront of the field with the highest efficiency and stability and is advancing technology for the development of solar modules and panels to enable a significant reduction in carbon emissions in HK and China.

**HKTech Solar Core Team**  
City University of Hong Kong

**Prof. Alex JEN, Co-Founder & Chief Scientist**

- Global top 10 in perovskite field (THU, 2018)
- "Highly Cited Researchers" 2014-2024
- Extensive technology translation experience
- >1,000 SCI papers & 67 IPs filed

**Prof. Hin-Lap Angus YIP, Co-founder & Scientific Advisor**

- "Highly Cited Researchers" 2014-2024
- Close collaboration with local industries
- >300 SCI papers & 33 IPs filed

**HKTech Solar Ltd.**

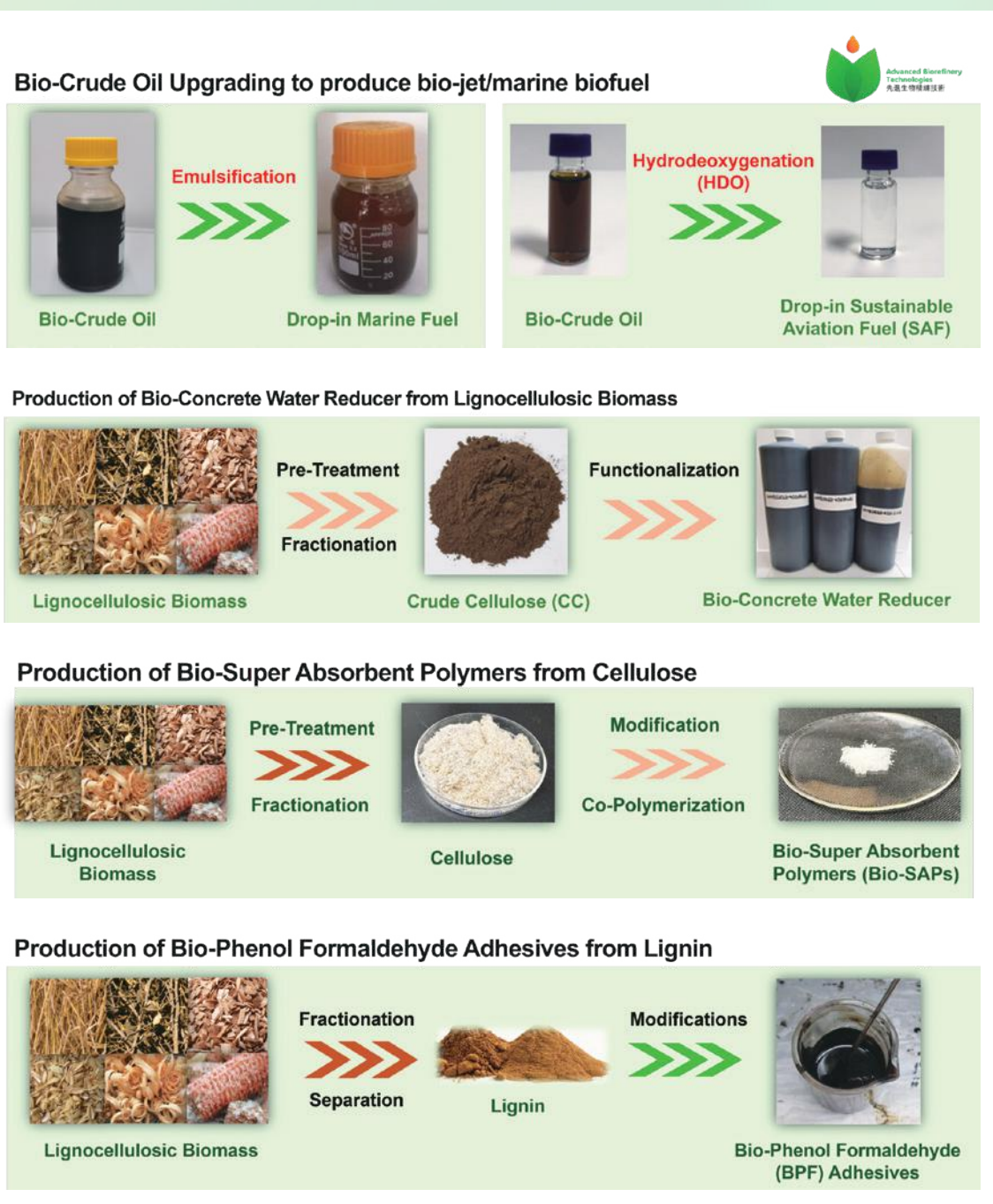
**Dr. Francis LIN, Co-Founder & COO**

- "Highly Cited Researchers" 2024
- Expert in organic and hybrid materials
- 10-year academic and industrial experience
- >100 SCI papers & >10,000 citations



## Advanced Biorefinery Technologies Limited (Prof. Charles Chunbao XU)

Aiming to achieve waste-free cities and carbon neutrality, Advanced Biorefinery Technologies Ltd. strives to develop advanced biorefinery technologies for the conversion of organic solid wastes and biomass into high value-added bioproducts (energy, fuels, chemicals and materials), including hydrothermal liquefaction technologies coupled with bio-oil hydrotreatment to produce bio-marine fuels and sustainable aviation fuels (SAFs) from organic solid wastes, and cost-effective processes for the fractionation of lignocellulosic biomass coupled with chemical modification to produce bio-polymers and resins.



# ACHIEVEMENTS

## Major Awards Received by Faculty Members

2011

**Prof. Johnny C.L. CHAN**

- AMS Fellowship 2011



2014

**Prof. Carol S.K. LIN**

- PepisoCo Global R&D Research Forum Award

2015

**Prof. Shauhrat S. CHOPRA**

- 2015 Environmental Science & Technology Best Paper Runner-Up in Environmental Policy

**Prof. Chunhua LIU**

- Best Presentation Award at IEEE IECON 2015

2016

**Prof. Michael K.H. LEUNG**

- The President's Award of City University of Hong Kong

**Prof. Carol S.K. LIN**

- Golden Medal with the Congratulations of Jury in Geneva Invention Exhibition 2016
- BESS Achievement Award 2016
- RITA Award 2016

**Prof. Patrick K.H. LEE**

- The President's Award of City University of Hong Kong

**Prof. Chunhua LIU**

- 2016 Advanced Individual of Achievement for State Science and Technology Project

2017

**Prof. Carol S.K. LIN**

- The President's Awards of City University of Hong Kong

**Prof. Chunhua LIU**

- 2017 Advanced Individual of Achievement for State Science and Technology Project

2018

**Prof. Edwin C.Y. TSO**

- HKIE Best Transactions Paper Prize



**Prof. Carol S.K. LIN**

- BESS Achievement Award 2018
- Gold Medal Award for Novel Bioprocess
- Gold Medal in Geneva Invention Exhibition 2018

**Prof. Patrick K.H. LEE**

- Outstanding Supervisor Award
- Special Recognition Award, World Cultural Council (WCC)
- BESS Achievement Award 2018



2019

**Prof. Edwin C.Y. TSO**

- Best Innovation Award, Energy Saving Championship Scheme
- Hanson I&T Outstanding Awards, Energy Saving Championship Scheme



**Prof. Alex JEN**

- Fellow of the European Academy of Sciences 2019

**Prof. Wei WU**

- Distinguished Associate Award of NIST (National Institute of Standards and Technology)
- Excellent Young Scholar Award of Energy and Built Environment
- Willis H. Carrier Young Researcher Award of IIR (International Institute of Refrigeration)



2020

**Prof. Patrick K.H. LEE**

- The President's Award of City University of Hong Kong

**Prof. Liang DONG**

- Award of Excellent Session Chair, ICWMT2020

**Prof. Jin SHANG**

- Outstanding Academic Performance Award (OAPA)
- Young Researcher Award

2021

**Prof. Michael K.H. LEUNG**

- The HKIE Best Transactions Paper Prize (Mechanical)

**Prof. Edwin C.Y. TSO**

- Gold Medal with Congratulations of the Jury in 2021 Inventions Geneva Evaluation Days
- HKIE Environmental Division, Champion, Environmental Paper Award
- The HKIE Best Transaction Paper Prize



**Prof. Angus H.L. YIP**

- IAAM Medal

**Prof. Alex JEN**

- Outstanding Research Award 2021

**Prof. Wei WU**

- The HKIE Best Transactions Paper Prize
- The HKIE Environmental Paper Award

**Prof. Lin ZHANG**

- The HKIE Environmental Paper Award



2022

**Prof. Kenneth M.Y. LEUNG**

- The President's Award of City University of Hong Kong
- Fellow of the Royal Society of Biology
- Fellow of the Royal Society of Chemistry

**Prof. Edwin C.Y. TSO**

- CityU Outstanding Research Award for Junior Faculty 2022



## 2022

- Outstanding Paper Award, ASME 16<sup>th</sup> International Conference on Energy Sustainability
- Gold Medal at 2022 Inventions Geneva Evaluation Days

**Prof. Michael K.H. LEUNG**

- Silver Medal at 2022 Inventions Geneva Evaluation Days

**Prof. Angus H.L. YIP**

- Fellow of The Hong Kong Young Academy of Sciences

**Prof. Alex JEN**

- The President's Award of City University of Hong Kong
- Hong Kong Scholars Programme (Dr. ZHAO Chaowei)

**Prof. Chunhua LIU**

- RGC Research Fellow 2022/23

**Prof. Alicia K.J. AN**

- RGC Research Fellow 2022/23

**Prof. Liang DONG**

- The Gold Medal and Top 10 Best Innovation Award

**Prof. Jin SHANG**

- ISPT-Bogen Young Scientist Award

## 2023

**Prof. Kenneth M.Y. LEUNG**

- Gold Medal of the Asia International Innovative Award 2023
- Gold Medal with Congratulations of the Jury and Special Prize at 2023 International Exhibition of Inventions Geneva
- Gold Award at the Hong Kong Green Innovations Award (HKGIA)

**Prof. Edwin C.Y. TSO**

- Outstanding Paper Award, ASME 17<sup>th</sup> International Conference on Energy Sustainability
- Silver Medal at the 48<sup>th</sup> International Exhibition of Inventions Geneva
- Gold Award, TERA-Award Smart Energy Innovation Competition

**Prof. Angus H.L. YIP**

- Fellowship of the Royal Society of Chemistry (FRSC)
- IUMRS Frontier Materials Young Scientists Award

**Prof. Sam H.Y. HSU**

- Best Research Award on International Research Excellence and Best Paper Awards
- Best Research Award on Advanced Materials and Nanotechnology

**Prof. Xue WANG**

- IAAM Scientist Medal
- Future Chemical Engineering Scholar

**Prof. Wei WU**

- National HVAC Distinguished Young Scholar Award
- Gold Medals at the Asian International Innovative Invention Exhibition for two projects respectively
- Gold Medal at 2023 International Exhibition of Inventions Geneva

**Prof. Shauhrat S. CHOPRA**

- Young Scientist Award 2023

2024

## Prof. Liang DONG

- The Championship (Postgraduate Session) in the IET Young Professional Exhibition & Competition (YPEC 2023)
- Asia's Science, Technology and Research Awards 2023
- 2022 Rising Stars of Science (Research.com)
- 2023 Best Scientists in Environmental Sciences (Research.com)
- NERPS Best Paper Award

## Prof. Jin SHANG

- The 2023 RINENG Young Investigator (YI) Award
- The 2023 IChemE & CCST Young Investigator (YI) Award
- The 2023 University Alliance in Talent Education Development (UAiTED) Faculty Exchange Scholarship

## Prof. Johnny C.L. CHAN

- Asia Oceania Geosciences Society (AOGS) Honorary Member Award (2024)



## Prof. Kenneth M.Y. LEUNG

- Silver Medal at the 49<sup>th</sup> International Exhibition of Inventions of Geneva

## Prof. Wen-Xiong WANG

- RGC Senior Research Fellow 2024/25

## Prof. Edwin C.Y. TSO

- RGC Research Fellowship 2024/25
- The Best Paper Award, 8<sup>th</sup> International Conference on Energy Harvesting, Storage, and Transfer (EHST 2024)
- The HKIE Grand Award - Grand Prize (Innovation Category, Sub-category II - All Member Group)



## Prof. Angus H.L. YIP

- Hong Kong Engineering Science and Technology (HKEST) Award 2023

## Prof. Carol S.K. LIN

- Gold Medal at the 49<sup>th</sup> International Exhibition of Inventions of Geneva
- Millipore Sigma Green Chemistry Education Challenge Award

## Prof. Jason C.H. LAM

- Teaching Excellence Award (2023/24)



## Prof. Charles XU

- Prestigious Humboldt Research Award 2023

## Prof. Alicia K.J. AN

- Outstanding Research Award 2024



## Prof. Lin ZHANG

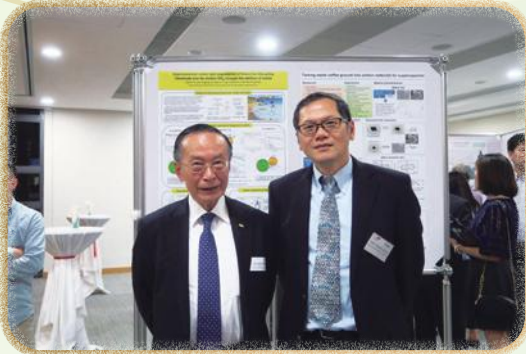
- Best Paper Award, International Conference on Energy and Climate Conference 2024

## Prof. Jin SHANG

- IACC-SMS Carbon Capture Award for Exceptional Research



# PRECIOUS MOMENTS



# SEE 15<sup>th</sup> Anniversary





# SEE 15<sup>th</sup> Anniversary





# SEE 15<sup>th</sup> Anniversary



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Prof. Edwin C.Y. TSO

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Ms. Ka Yan LIU

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