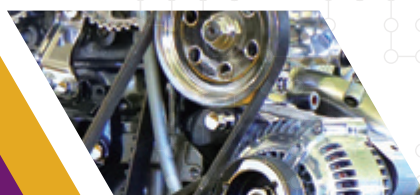


Department of

Mechanical and Automation Engineering

25TH ANNIVERSARY SPECIAL



FACTS & FIGURES (2014-19)



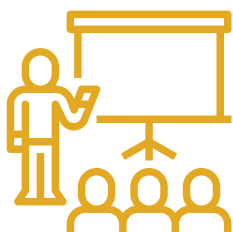
GRANTS IN TOTAL:
OVER HK\$315 MILLION



NO. OF GRANTS:
106



NO. OF PUBLICATIONS:
OVER 1000



NO. OF SEMINARS:
205



HONORS AND AWARDS:
161



NO. OF GRADUATES:
475 UG AND 248 PG
(15 MPHIL + 51 PHD + 182 MSC)

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25TH ANNIVERSARY SPECIAL

MESSAGE FROM THE VICE-CHANCELLOR



**PROFESSOR
ROCKY S. TUAN**

Congratulations to the Department of Mechanical and Automation Engineering of The Chinese University of Hong Kong on its 25th anniversary! It is certainly a remarkable milestone for the Department and the Faculty of Engineering.

Since its establishment in 1994, thanks to the concerted efforts of its faculty and staff, the MAE Department has accomplished many significant achievements and earned worldwide reputation. Generations of innovative thinkers nurtured by the Department have become professionals, academics, entrepreneurs, and leaders in the engineering field and beyond.

The Department has been quick to respond to the needs of the community, and its well-defined and highly focused research programmes are closely geared to the strategic areas of the University, producing actionable knowledge and practical results. With its faculty and students working hand in hand, the Department has not only strengthened the relationship between academia and industry, but also contributed to humanity in many different ways.

May I sincerely wish the MAE Department every success in its effort to scale new heights!

Professor Rocky S. TUAN
Vice-Chancellor and President
The Chinese University of Hong Kong

MESSAGE FROM THE PROVOST

I like to take the opportunity to congratulate the Mechanical and Automation Engineering Department in celebrating its twenty-fifth anniversary. In the last quarter century, many of our graduates have been recognised by the university as being the brightest next generation of engineers who have pursued further education or joined the engineering industry. Of the two programme streams, Mechanical and Automation Engineering (MAEG) and Energy and Environmental Engineering (EEEN), the latter is newer. We are excited to learn that both have grown with unique interdisciplinary research foci and educational opportunities and have pursued scientific discoveries and innovations that impact our community, our nation, and the world. We are consistently ranked top 50-100 in world rankings attaining strong objective scores in H-index and citations per paper. Our dedicated faculty are supporting our students in their quest for new knowledge while expanding into research areas that are relevant to today's societal needs and issues of particular importance in Hong Kong. These areas include design and manufacturing, energy/building/environmental technologies, intelligent systems, MEMS/nano/material technologies, robotics, and automation, as well as systems and control. The Department has now demonstrated excellence and has attained a leading position in Hong Kong in the areas of design and manufacturing, robotics, and control specialties. We are glad to know that the majority of our research activities were judged to meet the standard of world leading (4*) and internationally excellent (3*) in the 2014 Research Assessment Exercise in Hong Kong. Our collaborations with institutions in the



**PROFESSOR
BENJAMIN W. WAH**

US, Germany, Singapore, and the rest of China as well as newer ties with institutions in the UK, Israel, and Switzerland enable us to continue to grow. We start the next 25 years with optimism and are committed to sustainable growth, engaging with our industrial, financial, and clinical partners to nurture a vibrant educational and research enterprise.

Professor Benjamin W. WAH
Provost
The Chinese University of Hong Kong

MESSAGE FROM THE FACULTY DEAN



**PROFESSOR
MARTIN D.F. WONG**

Congratulations MAE! You have excelled in both education and research for the past 25 years ever since the Department was founded. Quarter of a century is a significant milestone and your accomplishments definitely call for celebration. We're proud of you!

Mechanical engineering has always been a popular engineering subject among students worldwide. It is the oldest and broadest engineering discipline formally established during the 1st Industrial Revolution in Europe in the 18th century. During that time, the invention of steam engine made it possible for the innovation and development of all kinds of machines, and mechanical engineering was the driving force for societal advances. Fast forward 200+ years, today we are in the midst of the 4th Industrial Revolution. Mechanical engineering has evolved and continues to play a pivoting role in technology innovation and development, in the world of automation, robotics, smart manufacturing, internet of things, nano-technology etc. This highlight the importance of having a strong mechanical engineering department at CUHK, for the benefit of Hong

Kong in its push to becoming an international innovation and technology hub. And I am glad that our MAE is such an outstanding department at CUHK with many talented faculty members and students.

I joined CUHK only 6 months ago and have been impressed to see amazing news from MAE frequently during my short time here. For examples, CNN reported Prof. Zhang Li's "swarming nano-robots" that can swim inside human body to deliver medical treatment, Prof. Chen Shih-Chi's work on nano-scale 3D printing won the prestigious 2018 R&D 100 Award ("The Oscar of Invention"), Prof. Lu Yi-Chun's breakthrough discovery of new renewable energy storage was published at the prestigious Nature Materials, MAE students won top awards at the 2019 ASME Student Design Competition and the 8th Greater China Design Competition, CUHK team was the Champion at the ROBOCON 2019 Hong Kong Contest, and many more. These are strong evidences of an outstanding department.

Once again, congratulations MAE! Please keep up the good work for another 25 years.

Professor Martin D.F. WONG
Dean
Faculty of Engineering

MESSAGE FROM THE CHAIRMAN OF ADVISORY COMMITTEE

It gives me great pleasure to offer my congratulations and best wishes to the Department of Mechanical and Automation Engineering of The Chinese University of Hong Kong on the occasion of its 25th anniversary.

Since its establishment in 1994, the Department of Mechanical and Automation Engineering has strived to be one of the best academic departments in Asia for educating and conducting research in mechanical and automation engineering. Its five areas for focused investment and development have also proven to be forward-looking and conforming to the rapid global technological developments in the past two decades.

As the Chairman of the Advisory Committee of the Department since 2008, I am particularly proud of the fact that quite a number of our faculty members have become reputable world class scholars, and that our graduates have developed to be successful entrepreneurs or technical leaders, many of whom have gained world class awards in both Hong Kong and other parts of the world.

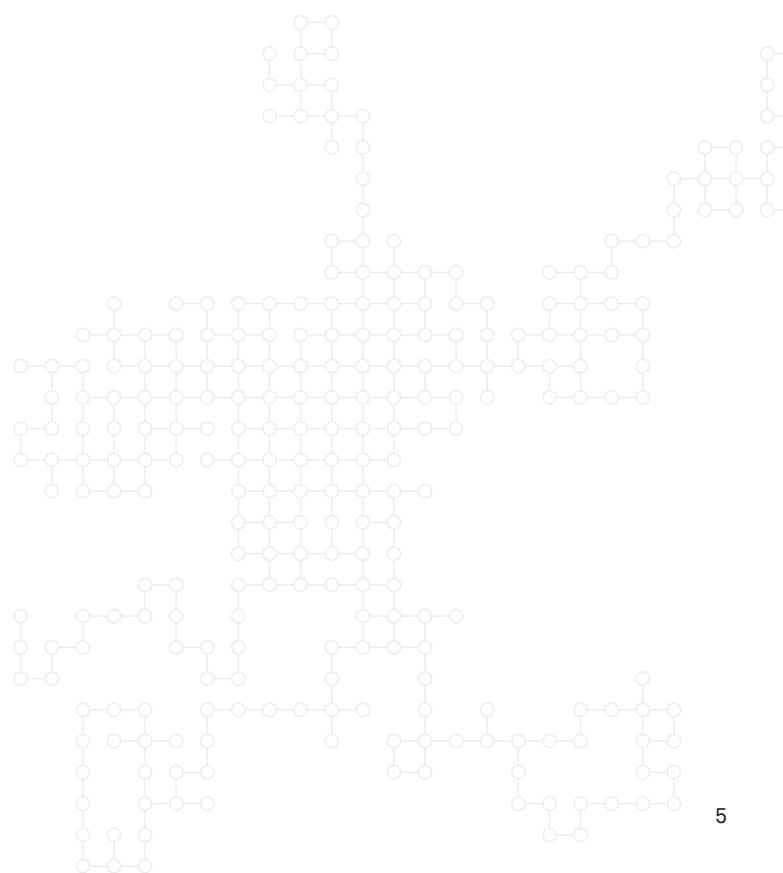
As an industry practitioner, may I extend my sincere thanks to the teaching and research staff for their dedication and contribution to the field of mechanical and automation engineering. Their pioneering and innovative approaches and methodologies have definitely helped to advance the professional level of mechanical and automation engineering in Hong Kong.

I am confident that the Department of Mechanical and Automation Engineering will continue to contribute to the betterment of the engineering industry. Best wishes for a wonderful celebration.



**MR
CHAN SIU HUNG, JP**

Mr CHAN Siu Hung, JP
Chairman of the Advisory Committee on
Mechanical and Automation Engineering



MESSAGE FROM THE PRECEDING CHAIRMAN



**PROFESSOR
HUANG JIE**

I am delighted to extend my warm congratulations to the Department of Mechanical and Automation Engineering (MAE Department) of The Chinese University of Hong Kong on its 25th Anniversary. Through the years since 1994, the MAE Department has committed herself to providing quality education and skills for our students. With concerted efforts of all department members, we have attained numerous remarkable achievements and nurtured talents in technological, academic, and entrepreneurial sectors.

It was my honour to serve the Department as a Chairman while watching it flourishing from 2012 to 2018. One of my great gratifications is that, within my term of office, our department recruited a total of 13 outstanding academics as our faculty members. Many of them are now not only the backbone of this department, but also leading researchers in their respective academic fields. Thanks to our outstanding colleagues, from the academic year 2012 to 2018, our faculty members received over HK\$290 million of research grant, and won numerous prestigious awards and prizes. Among

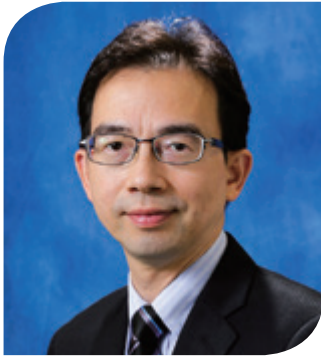
many achievements, let me note that, in the last research assessment exercise in 2014, the mechanical engineering discipline of CUHK was ranked first among its counterparts of all universities in Hong Kong in terms of the ratio of world leading research (top category of 4*).

Since 2012, the student enrollment of our department has also increased remarkably. MAE had been the smallest department within Faculty of Engineering before 2012 in terms of both the number of the students and the number of the faculty members. Today, we have grown to be the second or third largest department in this faculty. For several years, MAE was one of the most popular undergraduate programmes in this Faculty. The undergraduates enjoy studying our programmes and have won numerous awards from various competitions, including Champion in Robocon 2016 Hong Kong Contest, IMechE Greater China Region Design Competitions (2014, 2015 & 2017) and other award in "New Energy New Generation" Solar Car Competition in 2016.

With this opportunity, I would like to express my deep appreciation to all faculty members and staff who have taken the Department to new heights over the years. With Wei-Hsin Liao as our present Chairman, I am confident that MAE will continue making significant advancement in teaching, research and service.

Professor HUANG Jie
Choh-Ming Li Professor of
Mechanical and Automation Engineering
Department Chairman, Dec 2012 – Jul 2018

MESSAGE FROM THE DEPARTMENT CHAIRMAN



**PROFESSOR
LIAO WEI-HSIN**

Twenty-five years marks an important milestone for the Department of Mechanical and Automation Engineering (MAE), CUHK. I am personally honoured and delighted to be the Department Chairman on the occasion of this memorable anniversary. I joined the MAE family three years after its inauguration and am grateful to witness its development and growth ever since. Under the dedication and leadership of former Department Chairmen, faculty members, administrative and technical staff, and students have strived tirelessly to contribute to flourish the Department while the Department has also steered individuals to the fruitful achievement and career advancement over the past 2.5 decades. The Department has expanded remarkably with currently 2 undergraduate programmes admitting more than 100 students annually; 2 postgraduate programmes nurturing 109 PhD students, 15 MPhil students and 48 MSc students; and 25 faculty members, including 6 Professors, 1 Research Professor, 6 Associate Professors, 9 Assistant Professors, 1 Senior Lecturer, 1 Lecturer and 1 Research Assistant Professor.

The MAE Department is committed to educate and cultivate future technology innovators and leaders based on fundamental knowledge, analytical skills, practical training, and ethics in areas of mechanical engineering, robotics, automation, energy and environmental engineering, and beyond. Our faculty members endeavor to provide quality

teaching and have received various teaching awards. With the knowledge/skills disseminated and enthusiasm inspired by dedicated teachers, our students have excelled in many competitions and won a large number of awards locally and internationally. We are proud of our graduates too. Many of them manage to build a successful career as professors, entrepreneurs, technical leaders in Hong Kong and around the world.

Our Department also strives to excel at conducting research in Mechanical and Automation Engineering, Energy and Environmental Engineering. It is undoubted that the Department is now in a very strong position in the areas of Design and Manufacturing, Energy/Building/Environmental Technologies, Intelligent Systems, MEMS/Nano/Material Technologies, Robotics and Automation, Systems and Control, and Biomedical Engineering, which echo well with three of the four strategic areas that the University has adopted in its Strategic Plan 2016-2020—Information and Automation Technology, Environment and Sustainability, and Translational Biomedicine. With the expertise of our world-class faculty members as well as continuous support from the University and the Faculty, our colleagues have received many prestigious awards and recognitions worldwide with great impact on their research areas and to the society. Among them, there are 1 member of Chinese Academy of Engineering, 4 IEEE Fellows, 2 ASME Fellows, 6 HKIE Fellows, and fellows of other societies such as IFAC, IMechE and IOP. I would like to extend my congratulations on the achievements and express my gratitude to the efforts of our colleagues, as well as our students.

Twenty-five years old, a good age just like a magnificent young person—strong and confident, full of ambition and sanguine about a bright future. It is my firm belief that all of our colleagues and students will continue to work together to sustain our Department and create more prosperous 25 years ahead.

Carry on the past, open up the future!

Professor LIAO Wei-Hsin
Chairman
Department of Mechanical and Automation Engineering

MESSAGE FROM THE EEEN PROGRAMME DIRECTOR

Energy and environment are among the most important subjects facing the 21st century. The Energy and Environmental Engineering (EEEN) Programme at CUHK provides a comprehensive platform for students to understand the complexity and inter-linkage of these two subjects, and to acquire the knowledge for viable solutions. The Programme leverages on the broad academic coverage of CUHK as a comprehensive university, and the support of a host of CUHK entities including the Institute of Environment, Energy and Sustainability (IEES), the Jockey Club Museum of Climate Change, and the Institute of Future Cities. The Programme is designed for students with aspiration to help make the world greener and sustainable for future generations.

The EEEN curriculum is a product of academic collaboration between relevant disciplines in the Faculties of Engineering, Social Science, and Science. Students are trained on a set of courses spanning the topics of energy principles, sustainable energy technologies, energy storage and smart grid, environmental impacts, air quality and urban pollution, smart building design and control, as well as energy assessment and management. In addition to basic training, students also have the option of electing special courses of their interest, leading to the stream designations of Sustainable Energy Technology, Green Building Technology, and Environmental Engineering. Both classroom teaching and hands-on practice are emphasized in the curriculum. We envision great career prospects for our graduates in utility companies, energy-related firms, green technology startups, government agencies, and building design and service sectors.

We are happy to report that the year 2018 has been a very successful year for the Programme. Starting from 2018-19, EEEN admitted students directly to the Programme using our own separate JUPAS Code: JS4462. The first



**PROFESSOR
XU DONGYAN**

separate JUPAS admission exercise was very successful and encouraging. EEEN Programme further strengthened our curriculum by adding two more major required courses by taking into account the results of the previous HKIE accreditation exercise and advices from the Department Advisory Committee. Moreover, new research laboratories were established in the areas of energy marketing and harvesting technologies, which will benefit the future development of the Programme in terms of both research and education.

We are most excited about the future prospects of the EEEN Programme as a new and vibrant field of study. The importance of its subject matters will only grow in time. We welcome our readers to find out more about this relevant and exciting programme in the following report.

Professor XU Dongyan
Director
Programme of Energy and Environmental Engineering

MESSAGES FROM THE GRADUATES OVER 25 YEARS

1997 AU KWOK WAI SAMUEL

BEng in MAE (1997); MPhil in MAE (1999)

Associate Professor
Department of Mechanical and
Automation Engineering
The Chinese University of Hong Kong



"I am currently an Associate Professor of the MAE Department at CUHK. My research interests are in the design, system dynamics, and control of robotic systems with applications to rehabilitation, medical intervention, and human-centered machine. Before joining CUHK, I was the manager of Systems Analysis of the New Product Development Department at Intuitive Surgical, Inc.

As one of the first group of graduates of the MAE undergraduate programme in 1997, I pursued my MPhil degree at the Department from 1997 to 1999. I began to realize how significant these few years in setting up my career path. Essentially, I am convinced that MAE is the major contributor in revealing my talents and aptitudes, as well as leading me toward my childhood dream as a roboticist."

1997 WONG CHUN YU

BEng in MAE (1997)

Manufacturing Manager
VTech Communications Ltd.



"I have earned my BEng degree in MAE and MSc degree in SEEM from CUHK. I feel honored to be among the first batch of graduates of the MAE Department. The excellent studying environment with advanced robotics labs provided solid theoretical knowledge as well as practical trainings that have well equipped us to excel in our profession. After graduation, we have remained close and still gather regularly to reminisce the happiness of our good old school days. Currently, as an operations leader of an electronics factory, we leverage different automation processes to enhance the quality, cost-efficiency and productivity of our manufacturing facility."

1998 LAU SHEK KWAN MARK

**BEng in MAE (1998); MPhil in MAE (2001);
PhD in ACE (2004)**

Lecturer
Department of Mathematics
Hong Kong Baptist University



"Congratulation on the 25th anniversary of the MAE Department. I was admitted to the department in 1995 for my undergraduate study. When I obtained my PhD from the very same department in 2004, I had already spent almost 10 years of my precious time here. After so many years of learning with the department, it had really made me a better person. More than twenty years ago, MAE was the first in CUHK focusing on robotics, digital control, and machine intelligence (AI). Nowadays, they are ubiquitous and have enormous impacts on our daily lives and future generations. I am really, really thankful for all of the teachers who taught and took care of me during my study in MAE."

1999 LAM HIU FUNG ALAN

**BEng in MAE (1999); MPhil in MAE (2001);
PhD in ACE (2004)**

Group CEO and Co-Founder
Sengital Ltd.



"I and my two younger brothers got eight degrees from MAE (BEng, MPhil and PhD). MAE gave me many keys to success. One of the valuable things that MAE trained me is self-learning. The training from MAE BEng gave me a comprehensive and broad knowledge which equipped me with different skills. The training from MPhil provided me an entrance to R&D, while the PhD training offered me to have a world-class R&D approach and problem-solving skill. Over eight years of training in MAE, I was trained to be an innovative engineer with strong R&D knowledge, and with problem solving skills that allow me to be an entrepreneur to form a group of companies in the past 15 years and then have a chance to serve the society to be awarded as Hong Kong Ten Outstanding Young Person in 2015."

2000 FOK LO MING CRYSTAL

**BEng in MAE (2000); MPhil in ACE (2002);
PhD in ACE (2009)**

Associate Director
Hong Kong Science and Technology
Parks Corporation



"I am currently the Associate Director at HKSTP, managing the Robotics Platform as well as the Materials & Precision Engineering Cluster. In recent years, I was heavily involved in building the A.I. & Robotics ecosystem in Hong Kong. Prior to HKSTP, I was a Manager at ASTRI, managing a diverse project portfolio, responsible for product development and technology commercialization. I was also a Consultant at the Hong Kong Productivity Council, managing the optical design team and providing consultancy service on precision manufacturing. Fortunately, I got a chance to be the Chairperson of ROBOCON in recent years, I do observed the enhancing technical capabilities of local students, and it provides me a strong feeling of the passion and enthusiasm of our young generation. I'm so glad that I got a chance to contribute to the Innovation and Technology ecosystem in Hong Kong. Graduates from MAE will probably uplifting it to the next level with their ambition and knowledge."

2001 CHAN HO YIN

BEng in MAE (2001); MPhil in ACE (2003)

Research Assistant Professor
Department of Mechanical Engineering
City University of Hong Kong



"I had studied in MAE for 5 years. During these 5 years, I enjoyed my school life here as well as the research environment provided. I would like to take this opportunity to thank the professors and the administrative staffs. They were all great and helpful in developing my career. I am proud of being one of the MAE graduates. Congratulation to the 25th Anniversary of MAE!"

2002 CHOW WING YIN WINNIE

**BEng in MAE (2002); MPhil in ACE (2004);
PhD in ACE (2008)**

Senior Cooperation Manager
Huawei Technologies Co. Ltd



"I am delighted to extend my warm congratulations to the MAE on its 25th Anniversary. I spent 8 years in MAE to complete my undergraduate and graduate studies, which is one of the important milestones I achieved in my life. What I like MAE the most is the bonding and vibes. MAE is not a big department, everyone including professors, staff, and students, are so close to one another like a big family. MAE provided me a solid foundation of engineering knowledge and skills, and aroused my interests in learning new technologies and knowledge, which is important nowadays as technologies change rapidly. Here I would like to take this opportunity to thank all the MAE professors and staff that I met in my school days for their guidance and support. My current job in Huawei is working on company-university technology collaborations, which gives me the opportunity to work closely with the Engineering Faculty and some MAE professors. Because of my work, I also get in touch with many MAE alumni who are working in academia and industry. The MAE alumni network is still strongly connected. I would like to wish the Department continuing success in the future endeavours and the many more brilliant milestones to come."

2003 WONG TAK SING

BEng in ACE (2003)

Wormley Early Career Professor
Associate Professor
Department of Mechanical Engineering
The Pennsylvania State University, USA



"I am currently an Associate Professor of Mechanical and Biomedical Engineering and the director of the Laboratory of Nature Inspired Laboratory at The Pennsylvania State University. My current research focuses on micro - and nanotechnologies, as well as designing bio-inspired materials with applications in health, energy, and water sustainability. My undergraduate education at CUHK has equipped me with the necessary knowledge and skills to adapt and innovate in the fast-changing technological world, and the education I received has really prepared me to become an innovator and a leader in my fields."

2004 WONG CHI YIN

BEng in ACE (2004)

Chief Operation Officer
Sengital Ltd.



"I was so glad to be one of the students in the MAE department. During my undergraduate life, I did not only meet many friends and good tutors & professors there, but also learnt a lot apart from the textbook. I am equipped with broad knowledge from the Department including mathematics, programming, electronics, physics, robotics, AI, industrial knowledge, etc. All these paved the way for me to have careers in R&D. I was also given the opportunity to join the exchange program of which the study in the US grants me valuable experience to learn more about different culture."

2005 KO PUI HANG

**BEng in ACE (2005); MPhil in ACE (2008);
PhD in MAE (2015)**

Head of Technology Development
System Design & Development Team (SDD)
Master Dynamic Ltd. (AI Gasper Ltd.)



"My job nature in this company is research and development of products and solution for different projects. At the beginning, around 2010-2011, when I joined it, it is a start-up technology company in Hong Kong Science Park, working on the development of mechanical watch parts and movement. These years its business explored to other fields of technology, such as jewel, AI, etc. It leads me to reach other new technologies through different projects, like deep learning, facial recognition, object detection, etc. During my undergraduate life in MAE, I have learned knowledge of mechanical engineering and other fields, like computer programming, project management, which is applied to my postgraduate studies and career in technology research. Also, it let me grow up, understand my personal character, build up value and experience, make friends and build up my connection, which leads to my postgraduate studies and career in the recent company as well as my future career path. I wish to convey my warmest congratulations to MAE on the occasion of its 25th anniversary. May we have many more years together with MAE filled with wisdom and happiness."

2005 KWOK SZE YIN

BEng in IDE (2005)

Postdoctoral Fellow
Blekinge Institute of Technology, Sweden



"I am a researcher at the Department of Strategic Sustainable Development, working on research projects related to sustainable product development. I am interested in the questions of how to enhance sustainability communication between customers and product developers; how to develop tools to support decision making and implement sustainability; and how to unlock sustainable innovation opportunities using emerging technologies. I also teach the Masters course Methods for Sustainable Product Service System Development. Reflecting on my undergraduate life, now I would say – you never know when what you learnt would come in handy. It might take a long time."

MESSAGES FROM THE GRADUATES OVER 25 YEARS

2006 LAM TIN LUN

BEng in ACE (2006); PhD in ACE (2010)

Assistant Professor
School of Science and Engineering
The Chinese University of Hong Kong, Shenzhen



"Before joining CUHK-Shenzhen, I was the founder and CEO of NXROBO, a company that specializes in providing training services and technical solutions of the Robot Operating System (ROS) for universities and technology companies. He also found the most significant ROS community in China, named "ROS Project Spark," to boost the application of ROS in China. I would like to take this opportunity to congratulate the 25th anniversary of MAE Department and thanks MAE Department for providing me invaluable experience in robotics and ignite the dream in the career of robotics."

2007 LUI PUI YAN BONITA

BEng in ACE (2007)

Systems Engineer
National Air Traffic Services (NATS)



"As an UK-based aviation consultancy company, which is a subsidiary of the UK Air Navigation Service Provider, our duties include providing engineering safeguarding assessments and other aviation consultancy services in relation to airport or airspace developments. My undergraduate life at ACE (it was called ACE at that time) has been helpful in terms of training in 3D graphics, coding and a touch on different kinds of engineering. It enhanced my knowledge in engineering in general and gave me starting points for further self-study."

2008 PENG BIAO

BEng in ACE (2008)

Senior Manager
Group Audit and Risk Management
Dairy Farm Group



"My current role supports the company to improve the internal controls and operation efficiency, as well as reduce the risks the company is facing in 11 markets across Hong Kong, China, Singapore and other South East Asia countries. Studying in the MAE Department provided me a mix of exposure in different fields of engineering, including mechanics, design and IT programming. All of these enable me to tackle any kinds of problems and conquer difficulties like the Great Mechanic - Iron Man. I am proud to be graduated from MAE, wish MAE is getting better and better!"

2009 KWOK TSZ HO

BEng in ACE (2009); PhD in MAE (2013)

Assistant Professor
Department of Mechanical, Industrial and
Aerospace Engineering
Concordia University, Canada



"As an Assistant Professor in the area of design and 3D printing, besides teaching manufacturing classes, I would describe my job as running a small company with a protected environment to conduct high-risk research. I get investments from industries and the Government, supervise graduate students, develop new technologies, present internationally and collaborate with partners. This is a perfect setting for exploration and creativity. MAE Department provides an excellent environment to promote creativity and innovation. If we take a proactive role in learning and participating in various projects available in the Department, we can make the most of this university experience."

2010 CHAN KIN LUN

BEng in ACE (2010)

Founder
Linko Smart Technology limited



"My company is specialized in smart living technology. We provide one-stop innovative solution and service. Our professional team covers 4 categories: Home automation, home safety, home entertainment and home network.

My undergraduate life in the MAE Department equipped me with advance skills in innovative and critical thinking. It allows me to constantly strive to create new and better ways of doing things. These are also part of the key components to sustain in a competitive and changing market."

2011 CHAN WAI SHEUNG MICHELLE

BEng in MAE (2011)

Assistant Electrical and Mechanical Engineer
Electrical and Mechanical Services Department,
HKSAR Government



"To explore possibilities for my early career life, I have worked in an engineering contracting company, consulting firm and then currently work for the government after graduation.

I found it fascinating to experience different roles in Electrical and Mechanical (E&M) engineering field. From learning on-site technical knowledge to verifying engineering design, these experiences enhanced my problem-solving skills and engineering knowledge and made me capable to be a chartered mechanical engineer in 2018.

I am grateful to meet my husband, who was my classmate in MAE and keep a long-lasting relationship with friends of MAE. Meeting with friends of MAE in leisure time, it is delighted that we share our daily life and working experience."

2012 ZHANG YUNBO

PhD in MAE (2012)

Assistant Professor
Department of Industrial & System Engineering
Rochester Institute of Technology, USA



"Currently, I am a tenure-track Assistant Professor in the Department of Industrial & Systems Engineering at Rochester Institute of Technology (RIT). As a faculty at RIT, my main tasks include conducting research in design and manufacturing, teaching undergraduate and graduate courses, and providing service for RIT and society.

My days at MAE are memorable. I spent 6 wonderful years there as a PhD student and a young researcher. During the 6 years, I built up the foundation as a researcher in Design and Manufacturing area, opened my eyes in the cutting edge research field, and prepared myself as an educator. I feel so grateful and proud of being a member of MAE, and I wish MAE will have a brighter future for the next 25 years!"

2013 LAU SHUN YI

BEng in MAE (2013)

Assistant Engineer
Airport Authority Hong Kong



"My current job is to carry out E&M projects at the Hong Kong International Airport, including budgeting, tendering and implementations. Teachers of the MAE Department were always very willing to answer our questions, even after class. I found them very helpful and caring. A lot of my MAE classmates and I joined the Robocon team, we always worked together until late at night, turning and milling the robot parts enthusiastically, chasing our dreams together. I enjoyed my undergraduate life a lot at MAE."

2014 LEUNG YUN YEE

BEng in MAE (2014); MPhil in MAE (2016)

PhD Candidate
Department of Mechanical and
Automation Engineering
The Chinese University of Hong Kong



"My research interests are robotics and Artificial Intelligence (AI). I am conducting research on developing an AI-based Learning and Acquisition algorithm for robots to perform different tasks. I have had an enjoyable and fruitful undergraduate life in the MAE Department. MAE offers a varied, innovative and inspiring environment. I learnt lots about engineering, for example, fluid mechanic, structures, robotics and programming, etc. I mostly appreciated courses and classes being interactive and not purely theoretical, with opportunities for assignments, projects, laboratories and field trips. Studying MAE has broadened my understanding of Engineering and developed my engineering mindset."

2014 MOK SIU CHEONG

BEng in MAE (2014)

Assistant Environmental Protection Officer
Environmental Protection Department
HKSAR Government



"I am now working in the Noise Management and Control Section in the Environmental Assessment Division. My daily work here mainly covers formation of noise enforcement strategies and guidelines for the whole jurisdiction, and processing of noise related applications. The curriculum in CUHK MAE provided me with a solid foundation of theory, which trained my analytical thinking and helped equip me with the essential knowledge and skills for pursuing my career in the engineering related field. The MAE Department is willing to communicate with the students to offer help and advice."

2015 CHU KI SUM

BEng in MAE (2015)

Partner and Product Development Engineer
Accukit Technology Ltd. (HK)

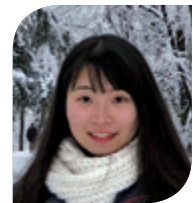


"Using engineering and research technique to design something advocating our society is my dream. I am a product development engineer who makes an idea into a prototype. It is a challenging but entertaining task. The knowledge and problem-solving skills learnt in MAE are critical. I remembered a course that students had to fabricate a prototype to solve a problem. We planned to design a vehicle running on water surface! Not floating! Sounds cool? Sadly, we failed as we were just students and did not know how to apply engineering into real life. Nevertheless, this course was inspiring and motivated me to be an engineer. Happy birthday MAE!"

2016 LAW SHUK WA

BEng in ENER (2016)

Assistant Engineer
ATAL Building Services Engineering Ltd.



"I'm currently working as an assistant engineer in the Information, Communication and Building Technology Department of ATAL Building Services Engineering Limited. The knowledge I gained from classes of Energy Engineering combined with the practical skills obtained from Industrial Training have equipped me for a better performance in my everyday's work in Building Automation."

MESSAGES FROM
THE GRADUATES
OVER 25 YEARS

2016 KWAN LOK BOND

BEng in MAE (2016)

Graduate Engineer Electrical & Mechanical
Airport Authority Hong Kong



"I joined the Airport Authority after completing my MAE bachelor degree in 2016. As an Assistant Engineer, I am mainly responsible for various development and maintenance projects regarding the wastewater treatment plant and general pumping stations in HKIA. Recalling my 3-year undergraduate memories with MAE, it was truly remarkable in terms of program diversity and staff support. The fact that MAE allowed and welcomed undergraduates to explore different streams with adequate resources nurtured us to be all-rounded graduates in preparation for our careers. Congratulations to MAE, more good years to come!"

2016 POON KA KIU

BEng in MAE (2016)

Assistant Engineer
Drainage Services Department
HKSAR Government



"Upon completion of my MAE degree in 2016, I commenced my two-year training as a Mechanical Engineering Graduate with the HKSAR government. Currently, I am serving as an Assistant Engineer in the Drainage Services Department.

Throughout my training and service in the government, I have had the privilege to take part in various projects, ranging from minor E&M works to large-scale public infrastructure projects. Using my accumulated knowledge to improve the livelihood of citizens of Hong Kong is truly a very rewarding and unique experience for a fresh graduate in engineering.

I will always be thankful for the support from the esteemed scholars of the CUHK MAE Department, who have helped me to realise my strengths and potentials, nurturing me into who I am today."

2017 LEUNG CHUN HEI

BEng in MAE (2017)

Engineering Graduate Trainee (EGT)
Hong Kong Aero Engine Services Ltd. (HAESL)



"Working as an EGT in HAESL, I am currently undergoing the 'Scheme A' training. Rotating between various production departments in the past year allowed me to learn from the experts in the aero engineering industry. The On-Job Training provided me with a valuable opportunity in acquiring the first-hand experience in overhauling an engine. Our Management attaches great importance to our all-round development; hence meaningful projects were assigned to us, which will nurture us to become future aviation experts. The company will also provide us with various secondment opportunities, including Cathay Pacific and Rolls Royce in the UK, which will definitely help me to better understand the integrity of the aviation industry. I am looking forward to my secondment training in the near future!"

2017 WONG HOI YI

BEng in ENER (2017)

Graduate Trainee
CLP Power Hong Kong Ltd.



"Time flies! I'm glad to celebrate the 25th anniversary with all MAE professors and students here! Up to now, I still remember the undergraduate life spent in the lab with my friends every single day. The EEEN programme covers a wide range of interesting topics, including building services, renewable energy, battery storage, energy efficiency and etc. Through this programme, apart from enriching the technical knowledge, it even provides with a lot of eye-opening experience, such as the site visits in Daya Bay Nuclear Power Station, exchange programme and the internship. Thanks to all these precious and unforgettable opportunities, they make me to get ready for the existing job in CLP."

2018 CHAN TSZ WING NICKY

BEng in ENER (2018)

Graduate Environmental Consultant
AECOM Asia Company Ltd.



"The duties of this position mainly relate to undertaking projects of Green Building Certificate Scheme, like BEAM Plus. Basic knowledge, which related to Building Engineering and requirement of the Green Building Scheme, is necessary for working in this post. Soft skills like communication skill are also vital in order to cooperate with various parties. I am also responsible to work on the simulation by using simulation tools, like Autodesk, Dialux, etc. As working here, it provides opportunities for building my career in Green Building Industry."

2018 YIP KWAN YI

BEng in MAE (2018)

Mechanical Engineer
ASM Pacific Technology Ltd.



"After graduation from university, I joined the ASM Pacific Technology Ltd. as a mechanical engineer. The company specializes in the production of advanced electronics manufacturing equipment. In addition to the mechanical design of the aforementioned equipment, my involvement also spans across various technical areas such as control systems and process automation. At the moment my primary focus is on developing machine automation and optimization for semiconductor packaging process. CUHK Mechanical and Automation Engineering (MAE) programme has provided me with both theoretical knowledge and practical skills in the industry. The programme covers modern engineering expertise in a comprehensive manner, as opposed to the narrowly scoped traditional mechanical engineering teachings. These professional trainings enable me to deal with the challenges in my current position as well as to advance further on my career path in the future."

MAJOR EVENTS WITHIN



/ Department's Establishment (Prof. KWONG Chung Ping as Founding Chairman)



/ Prof. LIU Yun-Hui became the Founding Director of CUHK T Stone Robotics Institute

/ Change of Programme Name from Energy Engineering (ENER) to Energy and Environmental Engineering (EEEN)

/ First batch of ENER and MAEG BEng degree students – 334 Curriculum (faculty-broad-based admission) graduated

1994

2014

2015

2016

2017

/ Department's 20th Anniversary



/ EEEN started programme-based admission (JUPAS code: JS4462) for 2018 intake

/ The new committee of the MAE Alumni Association (2017-19) was formed

/ The Department presented the souvenirs to our MAE staff for the inaugural 15-year Long Service Award as set up by the University. 3 staff were also eligible for the 20-year Long Service Award of the Department

/ Five MAE Alumni were selected as FoE 25th Distinguished Alumni

- Dr. DAI Ruoli Tristan - Co-Founder and Chief Technology Officer, Noitom Ltd.
- Dr. LAM Hiu Fung Alan - Chief Executive Officer, Sengital Limited
- Prof. SUN Dong - Chair Professor and Head, Department of Biomedical Engineering, City University of Hong Kong, Hong Kong
- Prof. WONG Pak Kin - Professor of Biomedical Engineering, Mechanical Engineering and Surgery, Department of Biomedical Engineering, The Pennsylvania State University, USA
- Prof. WONG Tak Sing - Associate Professor of Mechanical Engineering, Wormely Family Early Career Professor in Engineering, Department of Mechanical and Nuclear Engineering, The Pennsylvania State University, USA

5 YEARS



/ Prof. LIAO Wei-Hsin succeeded Prof. HUANG Jie as the Department Chairman



/ Prof. XU Dongyan succeeded Prof. YAM Yeung as the Programme Director of EEEN Programme

/ The Department introduced a new course, SIME1010 Sustainable Energy Future, for the CUHK Summer Institute in July 2018. The course was jointly taught by a group of faculty members in energy-related area: Prof. CHEN Chun, Prof. REN Wei, Prof. XU Dongyan and Prof. XU Yunjian



2018



EEEN

JUPAS Code:
JS4462



2019

/ Prof. WANG Changling Charlie appointed as the Director of CUHK Institute of Intelligent Design and Manufacturing (renamed from the Institute of Precision Engineering)

/ The Department introduced a new course, SIME1020 Robotics: Automating the Future, for the CUHK Summer Institute in July 2019. Prof. LAU Tat Ming Darwin was the course teacher

/ Department's 25th Anniversary

FACULTY MEMBERS

PROF. AU KWOK WAI SAMUEL

samuelau@mae.cuhk.edu.hk

Associate Professor

Kwok Wai Samuel Au received the Ph.D. degree in mechanical engineering from MIT in 2007. He is currently an Associate Professor with the Department of Mechanical and Automation Engineering and also the Co-Director of the Chow Yuk Ho Technology Centre for Innovative Medicine. Before joining CUHK, he was the manager of Systems Analysis of the New Product Development Department at Intuitive Surgical (ISI), Inc. He co-invented the FDA approved da Vinci Single-Site surgical platform and was also the founding team member for the da Vinci ION system. During his PhD study, he also co-invented the MIT Powered Ankle-

foot Prosthesis with Prof. Hugh Herr. He currently holds 10 US patents and over 8 pending US patents. He has won numerous awards such as ISI Problem Solving Award and Inventor Award in 2010 and 2011, respectively.



RESEARCH INTERESTS:

- Medical Robotics
- Bioinspired Robotics
- Control System Design
- Mechatronics System Development

PROF. CHEN BENMEI

bmchen@mae.cuhk.edu.hk

Professor

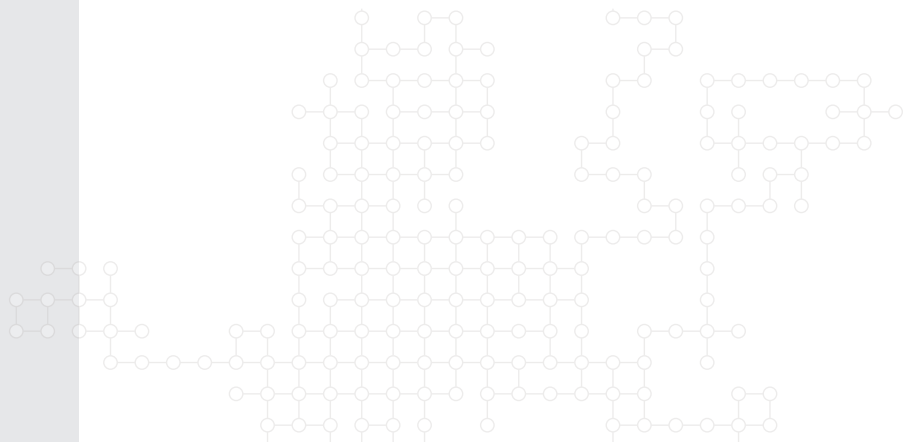
Ben M. Chen is currently a Professor in the Department of Mechanical and Automation Engineering at The Chinese University of Hong Kong. His current research interests include unmanned systems and control applications. Dr. Chen has published a dozen research monographs and more than 400 journal and conference articles. He had served on the editorial boards of several international journals including IEEE Transactions on Automatic Control and Automatica. He currently serves as an Editor-in-Chief of Unmanned Systems. His research team has

actively participated in international drone competitions, and won many championships in the contests. Dr. Chen is a Fellow of IEEE.



RESEARCH INTERESTS:

- Autonomous Unmanned Systems
- Linear Systems and Control
- Control Applications
- Financial Market Modeling



PROF. CHEN CHUN

chunchen@mae.cuhk.edu.hk

Assistant Professor

Dr. Chun Chen received his B.Eng. and M.Eng. degrees from the Department of Building Science at Tsinghua University in 2009 and 2012, respectively. He received his Ph.D. degree from the School of Mechanical Engineering at Purdue University in 2015. After his graduate study, he worked as a Visiting Assistant Professor in the School of Mechanical Engineering at Purdue University. Dr. Chen joined the Department of Mechanical and Automation Engineering at The Chinese University of Hong Kong as an Assistant Professor in August, 2016. His research interests include indoor air quality, aerosol dynamics, aircraft cabin environment, and airborne infectious disease transmission,

which has led to 45 journal publications. Dr. Chen is a member of the International Society of Indoor Air Quality and Climate (ISIAQ) and an associate member of the American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE).



RESEARCH INTERESTS:

- Indoor Air Quality
- Aerosol Dynamics
- Aircraft Cabin Environment
- Airborne Infectious Disease Transmission

PROF. CHEN SHIH-CHI

scchen@mae.cuhk.edu.hk

Associate Professor

Prof. Shih-Chi Chen received his B.S. degree in Mechanical Engineering from the National Tsing Hua University, Taiwan, in 1999. He received his S.M. and Ph.D. degrees in Mechanical Engineering from the Massachusetts Institute of Technology, Cambridge, in 2003 and 2007, respectively. Following his graduate work, he entered a post-doctoral fellowship in the Wellman Center for Photomedicine, Harvard Medical School, where his research focused on biomedical optics and endomicroscopy. From 2009 to 2011, he was a Senior Scientist at Nano Terra, Inc., a start-up company founded by Prof. George Whitesides at Harvard University, to develop precision instruments for novel nanofabrication processes. Joining since 2011, he is presently an Associate Professor in the Department of Mechanical and Automation Engineering at The Chinese University of Hong Kong. His current research interests include ultrafast laser applications, biomedical optics, precision engineering, and

nanomanufacturing. Prof. Chen is a member of the American Society for Precision Engineering (ASPE), American Society of Mechanical Engineers (ASME), SPIE, The Optical Society (OSA), and Institute of Electrical and Electronics Engineers (IEEE). He received the prestigious R&D 100 Award in 2003 and 2018 for developing a six-axis nanopositioner and an ultrafast nanoscale 3-D printer respectively. In 2013, he received the Early Career Award from University Grants Committee of Hong Kong.



RESEARCH INTERESTS:

- Ultrafast Laser Applications
- Biomedical Optics
- Nanomanufacturing
- Micro-devices

PROF. CHEN YONGSHENG

yschen@mae.cuhk.edu.hk

Associate Professor

Prof. Yongsheng CHEN received his BS in Materials Science and Engineering from Tsinghua University in 1994, MS in Physics from the Institute of Physics, Chinese Academy of Sciences, in 1997, and PhD in Chemical Engineering from Lehigh University in 2003. Dr. Chen spent 2003-2007 as a postdoctoral associate at Pacific Northwest National Laboratory in Richland, WA, USA, followed by a stint as a research associate at the National Renewable Energy Laboratory in Golden, CO. In 2007-2014 Dr. Chen was an Assistant Professor in the Department of Energy and Mineral Engineering at the Pennsylvania State University, and he joined the Department of Mechanical and Automation

Engineering at The Chinese University of Hong Kong in 2015. Prof. Chen's research interests include sustainable fuel production, vehicle emissions control, heterogeneous catalysis, and materials characterization. He is a member of the American Chemical Society.



RESEARCH INTERESTS:

- Sustainable Fuel Production
- Vehicle Emissions Control
- Heterogeneous Catalysis
- Materials Characterization

PROF. CHENG SHING SHIN

sscheng@mae.cuhk.edu.hk

Assistant Professor

Prof. Shing Shin Cheng received B.S. in Mechanical Engineering from Johns Hopkins University in 2013 and Ph.D. in Robotics under the supervision of Dr. Jaydev P. Desai from Georgia Institute of Technology in 2018. He joined the Department of Mechanical and Automation Engineering at The Chinese University of Hong Kong as an assistant professor in August 2018. His work has been published in leading robotics and materials journals and conferences, including IEEE Transactions on Robotics, Journal of Intelligent Material Systems and Structures, IEEE

International Conference on Robotics and Automation, and International Symposium on Robotics Research. He is also affiliated with CUHK T Stone Robotics Institute.



RESEARCH INTERESTS:

- Flexible Surgical Robotics
- Image-guided Surgical Navigation
- Medical Devices
- Smart Materials

DR. HAN DONGKUN

dkhan@mae.cuhk.edu.hk

Lecturer

Dongkun Han earned his Ph.D. degree in Electrical and Electronic Engineering in 2014 from the University of Hong Kong. From 2014 to 2016, he was a research associate at the Department of Informatics, Technical University of Munich, Germany. From 2016 to 2017, he was a research fellow at the Department of Aerospace Engineering, the University of Michigan, Ann Arbor, United States. From 2013 to 2014, he was an exchange research student at Information Systems Laboratory, Stanford University, USA. He joined the Department of Mechanical and Automation Engineering, The Chinese University of Hong Kong in 2017. He is focusing

on developing eLearning methods with implementations in general education, and he received the Exemplary Teaching Award in General Education 2018.



RESEARCH INTERESTS:

- Dynamical Systems and Control
- Multi-agent Systems
- Stability of Smart Grids
- Zonotope and Its Implementations

PROF. HUANG JIE

jhuang@mae.cuhk.edu.hk

Choh-Ming Li Professor of Mechanical and Automation Engineering

Jie Huang studied Power Engineering at Fuzhou University from 1977 to 1979 and Circuits and Systems at Nanjing University of Science and Technology (NUST) from 1979 to 1982 for a Master degree. He completed his Ph.D. study in automatic control at the Johns Hopkins University in 1990. After a year with Johns Hopkins University as a postdoctoral fellow and four years with industry in USA, he joined the Department of Mechanical and Automation Engineering, the Chinese University of Hong Kong (CUHK) in September 1995, and is now a Choh-Ming Li Professor of Mechanical and

Automation Engineering, CUHK. He was elected HKIE Fellow in 2017, CAA Fellow in 2010, IFAC Fellow in 2009, and IEEE Fellow in 2005.

RESEARCH INTERESTS:

- Systems and Control
- Guidance and Control of Flight Vehicles
- Robotics and Automation
- Computational Intelligence



PROF. LAU TAT MING DARWIN

darwinlau@cuhk.edu.hk

Assistant Professor

Prof. Darwin Lau received his BEng (Hons) in mechatronics engineering and BCS from the University of Melbourne, Australia, 2008. Subsequently, he obtained his PhD in Robotics in 2014 from the University of Melbourne, receiving the University of Melbourne Chancellor's Prize for Excellence for his thesis. From 2014 to 2015, he worked as a postdoctoral fellow at the Institute of Systems Intelligences and Robotics at the University of Pierre and Marie Curie, France, prior to joining the MAE Department as an Assistant Professor in October 2015. His main interests are in the

fundamental study, development and application of robotic systems for biomechanics and service industry, such as building construction and utilities operations.

RESEARCH INTERESTS:

- Robotics
- Dynamics and Control
- Biomechanics
- Building Construction and Maintenance Robotics



DR. LI YIYANG

yli@mae.cuhk.edu.hk

Senior Lecturer

Dr. Li is currently a senior lecturer at the Department of Mechanical and Automation Engineering, The Chinese University of Hong Kong. He obtained his B.S. in Mechanical Engineering and M.S. in Solid Mechanics in 1991 and 1995, respectively, both from Fuzhou University; and Ph.D. in Mechanical Engineering in 1999 from The Hong Kong Polytechnic University. Dr. Li is the member of ASME and IIAV. He has published more than 50 technical papers in journals and conferences, and serves in the editorial board for several international journals. In 2003, Dr. Li received the "Best papers of 50th anniversary of publication of CJME

(English Edition)". In 2010, 2013 and 2014, he received the Faculty Exemplary Teaching Award, The Chinese University of Hong Kong.

RESEARCH INTERESTS:

- Structural Health Monitoring
- Noise and Vibration Control
- Algorithm Optimization
- Smart Structures



PROF. LIAO WEI-HSIN

whliao@mae.cuhk.edu.hk

Professor and Chairman of Department of Mechanical and Automation Engineering

Prof. Wei-Hsin Liao received his PhD from The Pennsylvania State University, University Park, USA. Since August 1997, Dr. Liao has been with The Chinese University of Hong Kong. His research has led to publications of numerous papers in international journals and conference proceedings, granted patents. Three of his journal papers received awards from major engineering societies in the world. He was the recipient of the SPIE 2018 SSM Lifetime Achievement Award. He is on the editorial boards of the *Journal of Intelligent Material Systems and Structures*, as well as *Smart Materials*

and *Structures*. Dr. Liao is a Fellow of ASME, HKIE, and IOP.

RESEARCH INTERESTS:

- Smart Materials and Structures
- Energy Harvesting and Vibration Control
- 3D/4D Printing, Mechatronics
- Exoskeleton and Prosthesis



PROF. LIU YUN-HUI

yhliu@mae.cuhk.edu.hk

Choh-Ming Li Professor of Mechanical and Automation Engineering

Prof. Yun-hui is currently a Choh-Ming Li Professor of Mechanical and Automation Engineering at the Faculty of Engineering, and the Director of CUHK T Stone Robotics Institute. He is an IEEE Fellow, HKIE Fellow and the Editor-in-Chief of "Robotics and Biomimetics". He has published over 300 papers in refereed journals and conference proceedings and was listed in the Highly Cited Authors (Engineering) by Thomson Reuters in 2013. His research interests include medical robotics and biomedical

engineering. He founded VisionNav Robotics, SmartEye Tech, and other technology companies.

RESEARCH INTERESTS:

- Robotics
- Vision-based Control of Robotic Systems
- Human-robot Interactions
- Biomedical Engineering



PROF. LU YI-CHUN

yichunlu@mae.cuhk.edu.hk

Associate Professor

Prof. Yi-Chun Lu received her Ph.D. degree in Materials Science & Engineering from the Massachusetts Institute of Technology in 2012. She is currently an Associate Professor in the Department of Mechanical and Automation Engineering at The Chinese University of Hong Kong (CUHK). She is the Founding Member of Young Academy of Science of Hong Kong and was the recipient of the Hong Kong SAR Research Grants Council Early Career Award (2014), United College Early Career Research Excellence Award (2018), Young Researchers Award (2016), University Education Award, CUHK (2016), and Vice-Chancellor's Exemplary Teaching Award, CUHK (2014). Dr. Lu's research interest centers on developing fundamental understandings and material design principles for clean energy storage and

conversion including electrode and electrolyte design for high-energy metal-air and metal sulfur batteries; redox-active components and solution chemistry for redox-flow batteries. electrocatalysts and electrode design for low-temperature fuel cells and electrolyzers; and mechanistic understanding of interfacial phenomena governing electrochemical energy conversion and storage processes.

RESEARCH INTERESTS:

- Energy Storage and Utilization
- Batteries and Fuel Cells
- Redox Flow Batteries
- Energy Storage for Electric Vehicles and Micro-grid



PROF. REN WEI

renwei@mae.cuhk.edu.hk

Assistant Professor

Prof. Wei Ren received his BS and MS degrees from Tsinghua University in 2006 and 2008, respectively. He completed his PhD study in Mechanical Engineering at Stanford University in 2013. Prof. Ren joined CUHK as an Assistant Professor in the Department of Mechanical and Automation Engineering in August 2014. His research focuses on the development of new technologies and the understanding of basic principles in the areas of optical sensing, combustion and propulsion, and alternative fuels. He currently serves as the co-editor of

Springer journal Applied Physics B: Lasers & Optics.

RESEARCH INTERESTS:

- Laser Diagnostics
- Sensors and Actuators
- Chemical Sensing
- Combustion and Propulsion



PROF. SONG XU

xsong@mae.cuhk.edu.hk

Assistant Professor

Prof SONG Xu obtained his Bachelor degree in Mechanical Engineering and Automation from Tsinghua University, China (2006) and Doctorate degree (DPhil) in Materials Engineering from University of Oxford, UK (2010). After working briefly in Oxford for Rolls Royce on stress analysis and numerical simulation, he joined Singapore Institute of Manufacturing Technology (SIMTech) under A*STAR as scientist/senior scientist from 2012, and won the best industry project award (2016) and best staff presentation award (2019) during his tenure. He recently joined The Chinese University of Hong Kong in 2019 as Assistant Professor in design and

manufacturing, and serves as editor for journal <Materials and Design>. He is a member of Institute of Physics (IOP) and Chartered Engineer UK.

RESEARCH INTERESTS:

- Residual Stress Analysis and Deformation Mechanism Study
- Micro/Meso Manufacturing Processes
- Physically-based Finite Element Simulation
- Design for Additive Manufacturing



PROF. WANG ZERUI

zrwang@mae.cuhk.edu.hk

Research Assistant Professor

Prof. Zerui Wang received his BEng degree from Beihang University in 2013. Supported by the Hong Kong PhD Fellowship, in 2017, he completed his Ph.D. study in Department of Mechanical and Automation Engineering at The Chinese University of Hong Kong, where he served as a Post-Doctoral Research Fellow for five months after his graduation. Afterwards, Prof. Wang joined CUHK as a Research Assistant Professor in the Department of Mechanical and Automation Engineering. His current

research focuses on medical robotics and surgical robots with emphasis on both scientific and engineering aspects.

RESEARCH INTERESTS:

- Medical Robotics
- Development of Surgical Robots



PROF. WANG CHANGLING CHARLIE

cwang@mae.cuhk.edu.hk

Professor, Mechanical and Automation

Prof. Charlie C. L. Wang is a Professor with expertise in design and manufacturing. Before being re-appointed back to The Chinese University of Hong Kong (CUHK) in July 2018, he was a tenured Professor and Chair of Advanced Manufacturing (2016-2018) at Delft University of Technology (TU Delft), The Netherlands. After getting his PhD from Hong Kong University of Science and Technology in 2002, Prof. Wang joined CUHK and held the positions as Assistant Professor (2003-2009) / Associate Professor (2009-2015) / Professor (2015-2016) of Mechanical and Automation Engineering. He is holding a non-paid position as Professor of Advanced Manufacturing at TU Delft (2018-2023), and was a visiting professor at University of Southern California (2011).

Prof. Wang received several awards from professional societies including the ASME CIE Excellence in Research Award (2016), the ASME CIE Young Engineer Award (2009), and seven Best Paper Awards. He is a Fellow of American Society of Mechanical Engineers (ASME) and a Fellow of the Hong Kong Institute of Engineers (HKIE).



RESEARCH INTERESTS:

- Geometric Computing
- Computational Design
- Advanced Manufacturing
- Robotics

PROF. XU DONGYAN

dyxu@mae.cuhk.edu.hk

Associate Professor

Prof. Dongyan Xu received her B.Eng., M.Eng., and D.Eng. degrees in Engineering Mechanics from Tsinghua University in 1998, 2004, and 2004, respectively. She got her Ph.D. in Mechanical Engineering in 2008 from Vanderbilt University. She then did her postdoctoral work at Lawrence Berkeley National Laboratory and University of California, Berkeley. She joined the Department of Mechanical and Automation Engineering, The Chinese University of Hong Kong as an Assistant Professor in August 2010 and was promoted to

Associate Professor in August 2016.

RESEARCH INTERESTS:

- Micro/Nanoscale Heat Transfer
- Thermoelectric Materials and Thermal Energy Harvesting Devices
- Boiling Heat Transfer
- Thermal Interface Materials



PROF. XU YANGSHENG

ysxu@mae.cuhk.edu.hk

Professor of Automation and Computer-Aided Engineering

Prof. Yangsheng Xu is the President of The Chinese University of Hong Kong, Shenzhen, and Professor of Automation and Computer-Aided Engineering. Prof. Xu received his PhD from University of Pennsylvania. Prof. Xu's research includes robotics, control and dynamics. More recently, he has been interested in service and space robotics, man-machine interface and intelligent electric vehicles. He was elected as Academician of Chinese Academy of Engineering, Fellow of International Academy of Astronautics, Fellow of IEEE, Academician of International Eurasian Academy of Sciences,

and Fellow of Hong Kong Academy of Engineering Science.

RESEARCH INTERESTS:

- Robotics
- Dynamics and Control
- Human Interface
- Intelligent Vehicles



PROF. XU YUNJIAN

yjxu@mae.cuhk.edu.hk

Assistant Professor

Yunjian Xu received bachelor and master degrees in Electrical Engineering from Tsinghua University, Beijing, China. He completed his PhD degree at the Laboratory for Information and Decision Systems of Massachusetts Institute of Technology (MIT) in 2012. He worked as a postdoctoral scholar at the Center for the Mathematics of Information of the California Institute of Technology (Caltech) in 2012-2013, and as an assistant professor at the Singapore University of Technology and Design (SUTD) in 2013-2017. Dr. Xu was

a recipient of the MIT-Shell Energy Fellowship.



RESEARCH INTERESTS:

- Stochastic Optimal Control
- Power Systems
- Electricity Markets
- Dynamic Programming

PROF. YAM YEUNG

yyam@mae.cuhk.edu.hk

Research Professor

Professor Yeung Yam received his B.Sc. degree in Physics from CUHK, and his M.Sc. and Sc.D. degrees in Aeronautics and Astronautics from the Massachusetts Institute of Technology. He worked at the Jet Propulsion Laboratory in California, USA, before joining CUHK. His research interests include intelligent systems, computational control, human skill acquisition and surgical robotics. Together with his collaborators, his recent work on surgical robot has won the gold award with jury recommendation in the 47th International Exhibition of Inventions of Geneva in 2019. Professor Yam is a Fellow of the Institution of Mechanical Engineers

(IMechE) and Hong Kong Institution of Engineers (HKIE). He has published over 250 technical papers in his areas of interest.



RESEARCH INTERESTS:

- Intelligent Systems
- Computational Control
- Human Skill Acquisition
- Surgical Robotics

PROF. YUAN HAIDONG

hdyuan@mae.cuhk.edu.hk

Assistant Professor

Prof. Haidong Yuan received his BE in Electronic Engineering from Tsinghua University, Beijing, 2001. He got his MS in Engineering Science in 2002 and PhD in Applied Mathematics in 2006, both from Harvard University. He then did his postdoctoral work at Harvard University and Massachusetts Institute of Technology. From August 2012 to August 2014, he worked as an Assistant Professor at the Department of Applied Mathematics, The Hong Kong Polytechnic University. He joined the Department of Mechanical and Automation Engineering, The Chinese University of Hong Kong as an

Assistant Professor in September 2014.



RESEARCH INTERESTS:

- Dynamical System and Control Theory
- Modeling and Control of Systems at Micro, Nano and Mesoscopic Scale
- Quantum Information and Quantum Computing
- Complex Systems and Networks

PROF. ZHANG LI

lizhang@mae.cuhk.edu.hk

Associate Professor

Prof. Li Zhang received his Ph.D. degree from the University of Basel, Switzerland. Afterwards, he joined the Institute of Robotics and Intelligent Systems (IRIS), Swiss Federal Institute of Technology (ETH) Zurich, Switzerland as a postdoctoral fellow in 2007, and as a senior scientist from 2009 to 2012. He then joined the Department of Mechanical and Automation Engineering at CUHK in 2012 as an Assistant Professor. His main research interests include micro-/nanorobotics and their biomedical applications. Since 2004 he has authored and co-authored over 160 papers, including Science Robotics, Science Advances, and Nature Communications as the corresponding author. Dr. Zhang

received the Hong Kong RGC Early Career Award 2013-14, RGC Early Career Award 2013-14, CUHK Young Researcher Award 2017, and United College Early Career Research Excellence Merit Award 2018. He is a Senior Member of IEEE, and a Member of ASME, MRS and ACS.



RESEARCH INTERESTS:

- Micro- and Nano-robotics
- Robot Swarm
- Sensors and Actuators
- Biomedicine and Minimally Invasive Intervention

PROF. ZHANG WEIZHAO

wzzhang@mae.cuhk.edu.hk

Assistant Professor

Prof. Weizhao Zhang received his B.S. degree in Mechanical Engineering from Tsinghua University in 2014 and Ph.D. degree from Northwestern University in 2019. His research has focused on the numerical simulation of advanced manufacturing processes especially for polymer composite parts. He has over 15 publications and has received the Best Paper Award at the ASME - Manufacturing Science and Engineering Conference in 2016. During his research period, Mr. Zhang has worked with academic and industrial partners including the Ford Motor and Dow Chemical Companies to develop computational material tools to systematically

analyze the development of CFRP parts in large-volume consumer cars. His material model has been implemented in the commercial software code LS-DYNA by the Livermore Software Technology Corporation.



RESEARCH INTERESTS:

- Composite Materials
- Advanced Manufacturing
- Computational Mechanics

PROF. ZI YUNLONG

ylzi@cuhk.edu.hk

Assistant Professor

Prof. Yunlong Zi is an Assistant Professor in Department of Mechanical and Automation Engineering at The Chinese University of Hong Kong. Dr. Zi received his Ph.D. in Physics from Purdue University in 2014; his Bachelor of Engineering in Materials Science and Engineering from Tsinghua University in 2009. Before joining CUHK, he worked as a Postdoctoral Fellow at Georgia Institute of Technology during 2014-2017. He was honored as the winner of MRS Postdoctoral Award by Materials Research Society in 2017, as the first recipient from Georgia Tech; the Emerging

Investigators by Journal of Materials Chemistry C in 2018; and one of "5 students who are transformation makers" as highlighted in Purdue homepage in 2013.



RESEARCH INTERESTS:

- Triboelectric Nanogenerators
- Charging and Discharging Effects of Triboelectric Charges
- Self-powered Systems

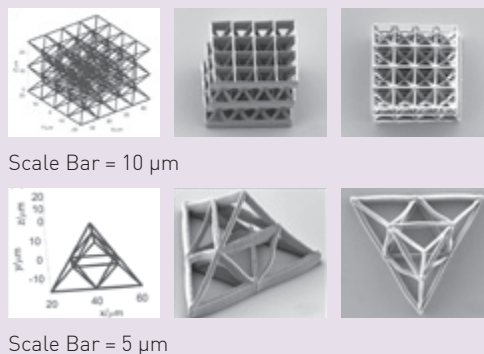
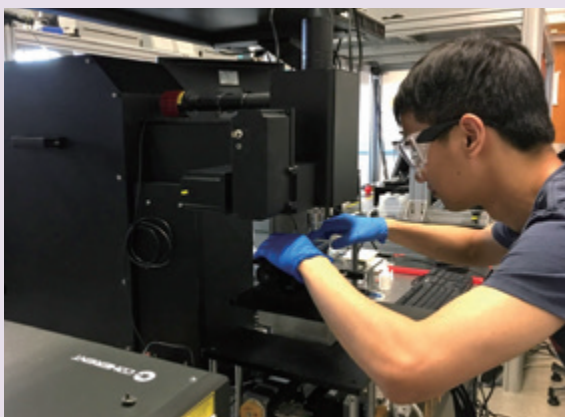
HIGHLIGHTED PROJECTS

Since the establishment, the MAE Department has striven for the research excellence. With the great efforts made by our faculty members, research staff and students, we have made many impressive accomplishments within the last five years, such as successfully applying Theme-based Research Scheme (TRS), receiving R&D 100 Award, being reported by international media channel CNN, to list just a few. Below shows some recent outstanding research achievements of our faculty members.

PROF. CHEN SHIH-CHI

Digital Holography-based Ultrafast Nano-BUILDER for Nanomanufacturing

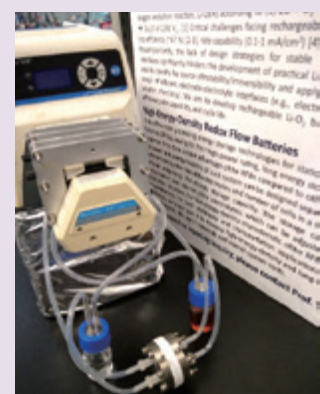
The Digital Holography-based Ultrafast Nano-BUILDER is a disruptive technology for nanoscale 3-D additive manufacturing developed by a team led by Prof. CHEN Shih-Chi. Based on the new DMD holography scanner, the Nano-BUILDER has revolutionized the way to control and steer a femtosecond laser beam. By controlling the amplitude and phase of the input laser via binary holograms and the fast-switching micromirror array, the laser beam can be split into 1 - 100 focal points for simultaneous nano-writing. Moreover, each focus can be independently controlled to scan along arbitrarily defined paths at 22.7 kHz. In addition, by superposing holograms, the voxel can further be engineered or shaped into other novel beam modes to achieve better fabrication quality and throughput. Comparing with existing point-scanning-based commercial solutions, the Nano-BUILDER presents distinctive advantages in precisely controlling the focus position (~ 100 nm) and laser dosage (i.e., grayscale control), thereby enabling the design and creation of complex 3-D photonic structures, topologically optimized mechanical devices, and many other structures, e.g., overhanging structures, that cannot be fabricated through conventional raster-scanning-based systems, bringing significant impact to the world of nanomanufacturing. The Nano-BUILDER received the 2018 R&D 100 Award - the most globally prestigious award that honors design and innovation.



PROF. LU YI-CHUN

High-Energy-Density Aqueous Redox Flow Batteries

The widespread and deep penetration of renewable energy relies on low-cost and efficient energy storage technologies. Prof. Yi-Chun Lu's group has been working on the forefront of safe and clean energy storage with strong commercialization potentials. We have demonstrated a Zinc/Iodine-Bromide flow battery with a world record energy density 101 Wh per liter in aqueous redox flow batteries. Owing to its inherent safe feature (water based) and high energy density, this work has been licensed and attracted by many industrial companies for collaboration.

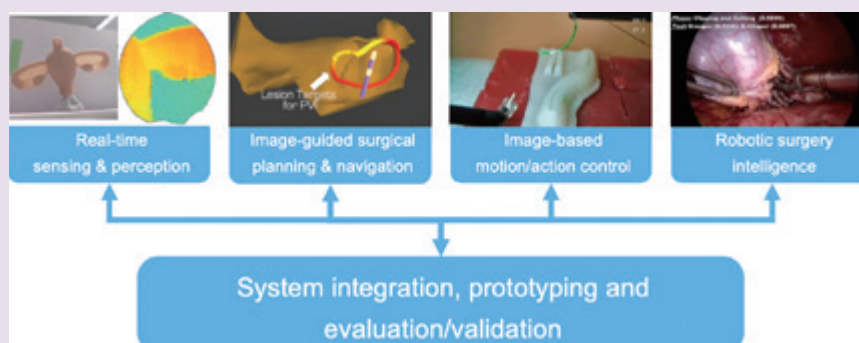


PROF. LIU YUN-HUI

Automated Robotic Surgery

Robotics surgery is being widely used in various surgical procedures. Existing surgical robots operate under the mode of remote-control by surgeons. Under the support of the RGC Theme-based Research Scheme, this project aims at automating surgical steps or supportive tasks of existing manual robotic surgery using advanced sensing, automatic control and artificial intelligence so as to reduce workload of surgeons and impacts of human factors on safety, quality, and consistency of surgical operations. The enabling technologies being developed include real-

time sensing of surgical objects, image-guided surgical planning and navigation, automatic action control, surgical intelligence, and integration and clinical verification. We have also developed two robotic assistants that automatically manipulate endoscope and uterus in sinus surgery and the total laparoscopic hysterectomy, respectively. The performance of the robots has been examined by clinical trials at Prince of Wales Hospitals. This project involves collaboration with Intuitive Surgical Inc., Imperial College London, and Johns Hopkins University.



The research project supported by the RGC Theme-based Research Scheme (TRS).



The endoscope manipulator for sinus surgery.

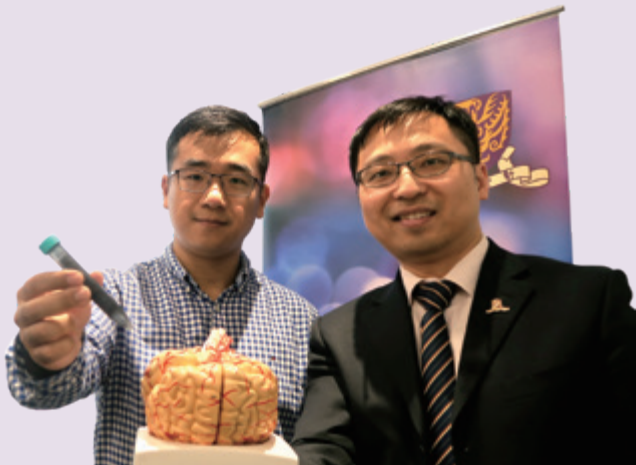


Fig. 2 (a): Prof. Zhang Li and his PhD student Jeff Jiangfan Yu are reporting their research on nanorobot swarm^[2] to Hong Kong media in a press conference.

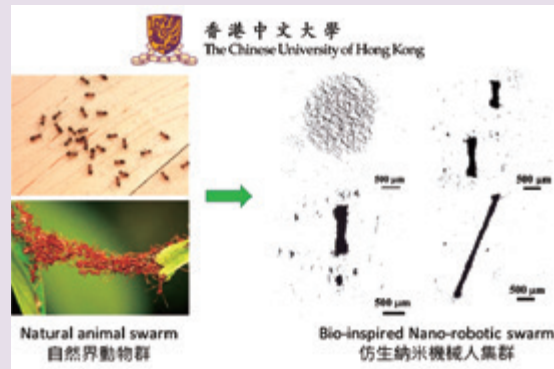


Fig. 2(b): The nano-robotic swarm is inspired by and learnt from animal behaviours, such as ant swarm^[2].

PROF. ZHANG LI

Nano-robots for Biomedical Applications

Description: Magnetic micro- and nano-robots can be remotely controlled using magnetic fields to propel in complex biological fluids with high precision. Their potential for controlled navigation in hard-to-reach cavities of the human body constitutes them as promising miniaturized robotic tools to diagnose and treat diseases in a minimally-invasive manner. However, critical issues such as motion tracking, biocompatibility, biodegradation, collective behavior and diagnostic/therapeutic effects need to be resolved to allow pre-clinical in vivo development and clinic trials. Thanks to the funding support from Hong Kong RGC (Project No. 439113, 14209514, 14203715 and 14218516), Prof. ZHANG Li's lab has achieved several key breakthrough on the development of medical micro- and nanorobots for clinical applications. In 2017, Prof. ZHANG's lab had reported biohybrid magnetic robots (see Fig. 1) endowed with multifunctional capabilities by integrating desired structural and functional attributes from a biological matrix and an engineered coating which has potential for image-guided-therapy^[1]. The work was highlighted in Science News, and also in the RGC YouTube Channel. In 2018, his group has developed nanorobots swarm for targeted therapy, and the work was highlighted in Nature News and many international and local media, such as CNN. Most recently, his collaboration work with the medical school and the Institute of Digestive Disease (IDD) has been accepted in Science Advances^[3], in which the research team has demonstrated that biohybrid microrobots are capable of quick sensing on GI bacterial toxin. Currently, Prof. ZHANG and co-workers are developing medical robotic platform for translating the new micro- and nanorobotics technology for clinical applications with the funding support from Hong Kong Innovation and Technology Commission (ITC).

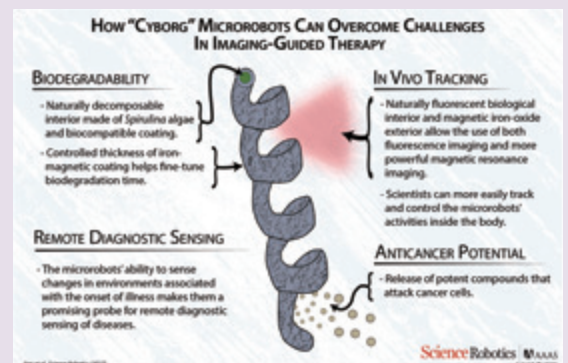


Fig. 1: Multi-functional biohybrid microrobots for biomedical applications.^[1]

Key Publications:

- [1] X Yan, Q Zhou, M Vincent, Y Deng, JF Yu, J Xu, T Xu, T Tang, L Bian, Y Wang, K Kostarelos, L Zhang*, Multifunctional biohybrid magnetite microrobots for imaging-guided therapy, Science Robotics, Vol. 2(12), eaaq1155, 2017
- [2] J. F. Yu, B. Wang, X. Z. Du, Q. Q. Wang and L. Zhang*, Ultra-extensible ribbon-like magnetic microswarm, Nature Communications, Vol. 9, 3260, 2018.
- [3] Y. Zhang, L. Zhang, L. Yang, C. I. Vong, K. F. Chan, W. K. K. Wu, T. N. Y. Kwong, N. W. S. Lo, M. Ip, S. H. Wong, J. J. Y. Sung, P. W. Y. Chiu, L. Zhang*, Real-time tracking of fluorescent magnetic spore-based microrobots for remote detection of C. diff toxins. Science Advances Vol. 5, eaau9650, 2019.

HONORS AND AWARDS

MONTH	NAME OF STAFF OR STUDENT	TYPE	DETAILS OF EVENT/PRIZES/AWARDS
Feb 2015	Mr. ZHANG Dapeng Prof. CHEN Shih-Chi	PhD Faculty Member	Student Poster Competition Award for the paper of "Multi-photon Laser Scanning Omnidirectional Imaging with Tunable Frame Rate" in the 2015 SPIE Photonic West conference (Multiphoton Microscopy in the Biomedical Sciences XV)
Feb 2015	Dr. CHEN Tianshi Dr. SU Youfeng	Alumnus Alumnus	Selected by the "Thousand Youth Talents Program" of China
Mar 2015	Prof. MAK Fuk Tat Arthur	Faculty Member	Fellow of the American Institute for Medical and Biological Engineering
Mar 2015	Prof. LU Yi-Chun	Faculty Member	Dean's Exemplary Teaching Award 2014
Mar 2015	Dr. LI Yiyang Prof. XU Dongyan Mr. LEUNG Yun Yee Martin Mr. YIP Chi Yiu Mr. LEE Chun Kong Mr. CHUNG Tsz Yin Mr. CHAN Tsz Fung Mr. CHEUNG Ho Tin Mr. CHAN Yin Pok Mr. SANTO Royce Mr. KWOK Ming Fung	Faculty Member Faculty Member Technician (Assessor) UG UG UG UG UG UG UG UG	Champion at the IMechE Greater China Region Design Competition 2015
Apr 2015	Mr. ZHANG Lin Mr. ZHANG Yabin Prof. ZHANG Li	PhD PhD, BME Faculty Member	Photo Award at the "1 st 4M/ICOMM AITeM Photo Contest" in the 4M/ICOMM2015 conference
May 2015	Mr. YIP Chi Yiu	UG	Innovation and Technology Scholarship
May 2015	Prof. BIAN Liming	Faculty Member	Young Investigator Award from the 5 th Asian Biomaterials Congress (ABMC)
May 2015	Mr. ZHONG Yong Mr. ZHANG Lin (Supervisor: Prof. DU Ruxu, Prof. ZHANG Li & Prof. CHIU Philip)	PhD PhD	Champion at the Professor Charles K. Kao Student Creativity Awards 2015 (Postgraduate Individual Entries) for the project of "Miniature Environment-friendly Tadpole Robot for Capsule Endoscope to Examine the Entire Gastrointestinal (GI) Tract"
May 2015	Mr. YIP Chun Wa Miss LAM Ho Yi (Supervisor: Prof. YAM Yeung)	MPhil UG	First Runner-up at the Professor Charles K. Kao Student Creativity Awards 2015 (Postgraduate Individual Entries) for the project of "Auto-Horizontalize Wheelchair"
May 2015	Miss LU Yuk Ying (Supervisor: Prof. DU Ruxu)	MPhil	Second Runner-up at the Professor Charles K. Kao Student Creativity Awards 2015 (Postgraduate Individual Entries) for the project of "A 360-degree Holographic Display System for Radiotherapy Treatment Planning"
May 2015	Mr. LI Cheng Lin (Supervisor: Prof. CHEN Shih-Chi)	MPhil	Merit at the Professor Charles K. Kao Student Creativity Awards 2015 (Postgraduate Individual Entries) for the project of "Flexure-based Dynamic-tunable Five-axis Nanopositioner for Parallel Nanomanufacturing"
May 2015	Mr. MA Hao Mr. CHEN Bing Miss QIN Lai Yin Mr. GUAN Xiao (Supervisor: Prof. LIAO Wei-Hsin)	PhD PhD, Orthopaedics and Traumatology MPhil, BME MSc	First Runner-up at the Professor Charles K. Kao Student Creativity Awards 2015 (Postgraduate Group Entries) for the project of "Wearable Exoskeleton Suit for Paralyzed Individuals"
May 2015	Mr. CHU Ki Sum (Supervisor: Prof. LIAO Wei-Hsin)	UG	Second Runner-up at the Professor Charles K. Kao Student Creativity Awards 2015 (Undergraduate Individual Entries) for the project of "Mechanical Energy Harvested Damper With MR Fluid"
May 2015	Mr. WANG Zengyue (Supervisor: Prof. LU Yi-Chun)	UG	Merit at the Professor Charles K. Kao Student Creativity Awards 2015 (Undergraduate Individual Entries) for the project of "Semisolid Vanadium Redox Flow Battery"
May 2015	Mr. WAN Hei Lit Mr. TAM Long Yin Simon Mr. MAN Tsz Chun Mr. LAM Shing Hin (Supervisor: Prof. ZHANG Li)	UG UG UG UG	Second Runner-up at the Professor Charles K. Kao Student Creativity Awards 2015 (Undergraduate Group Entries) for the project of "Ray Inspired Submarine with Wings"
Jun 2015	Department of Mechanical and Automation Engineering	Department	Outstanding Participating Award at the "Challenge Cup"- Hong Kong University Students Extra-curriculum Technology Contest

Jun 2015	Mr. ZHONG Yong Mr. ZHANG Lin (Supervisor: Prof. DU Ruxu, Prof. ZHANG Li & Prof. CHIU Philip)	PhD PhD	2 nd Prize at the "Challenge Cup" - Hong Kong University Students Extra-curriculum Technology Contest for the project of "Miniature Environment-friendly Tadpole Robot for Capsule Endoscope to Examine the Entire Gastrointestinal (GI) Tract"
Jun 2015	Mr. MA Hao Mr. CHEN Bing Miss QIN Lai Yin Mr. GUAN Xiao (Supervisor: Prof. LIAO Wei-Hsin)	PhD PhD, Orthopaedics and Traumatology MPhil, BME MSc	3 rd Prize at the "Challenge Cup" - Hong Kong University Students Extra-curriculum Technology Contest for the project of the project of "Wearable Exoskeleton Suit for Paralyzed Individuals"
Jun 2015	Miss LU Yuk Ying (Supervisor: Prof. DU Ruxu)	MPhil	Merit at the "Challenge Cup" - Hong Kong University Students Extra-curriculum Technology Contest for the project of the project of "A 360-degree Holographic Display System for Radiotherapy Treatment Planning"
Jun 2015	Mr. LI Cheng Lin (Supervisor: Prof. CHEN Shih-Chi)	MPhil	Merit at the "Challenge Cup" - Hong Kong University Students Extra-curriculum Technology Contest for the project of the project of "Flexure-based Dynamic-tunable Five-axis Nanopositioner for Parallel Nanomanufacturing"
Jun 2015	Mr. CHU Ki Sum (Supervisor: Prof. LIAO Wei-Hsin)	UG	2 nd Prize at the "Challenge Cup" - Hong Kong University Students Extra-curriculum Technology Contest for the project of "Mechanical Energy Harvested Damper"
Jun 2015	Mr. WANG Zengyue (Supervisor: Prof. LU Yi-Chun)	UG	3 rd Prize at the "Challenge Cup" - Hong Kong University Students Extra-curriculum Technology Contest for the project of "Semisolid Vanadium Redox Flow Battery"
Jun 2015	Mr. WAN Hei Lit Mr. TAM Long Yin Simon Mr. MAN Tsz Chun Mr. LAM Shing Hin (Supervisor: Prof. ZHANG Li)	UG UG UG UG	Merit at the "Challenge Cup" - Hong Kong University Students Extra-curriculum Technology Contest for the project "Ray Inspired Submarine with Wings"
Jun 2015	Mr. CHAN Wai Kit Miss LEE Hiu Hung (Supervisor: Prof. CHEN Shih-Chi)	MSc (UG & FYP in 2013-14) MSc, Systems Engineering and Engineering Management (UG & FYP in 2013-14)	2 nd Prize at the Institute of Measurement and Control HK Section Student Project Competition for the project of "Design, Manufacture and Study of a Nano-positioning Stage Using Compliant Mechanism"
Jul 2015	Prof. HUANG Jie	Faculty Member	Outstanding Accomplishment Award by Technical Committee of Control Theory, Chinese Association of Automation
Jul 2015	Prof. LU Yi-Chun	Faculty Member	Vice-Chancellor's Exemplary Teaching Award 2014
Aug 2015	Mr. CHOW Kwok Sum Mr. LAI Kin Wa (Supervisor: Mr. YIP Chun Wa)	UG UG MPhil	"常平杯" 2015 年首屆兩岸四地智慧型機器人大賽暨學界研發成果展輪型機器人摸黑項目 (T 組) 冠軍及最佳結構獎
Aug 2015	Mr. LEE Chun Kong Mr. CHAN Tsz Fung (Supervisor: Mr. YIP Chun Wa)	UG UG MPhil	"常平杯" 2015 年首屆兩岸四地智慧型機器人大賽暨學界研發成果展輪型機器人競速項目 (T 組) 最佳創意獎
Sep 2015	Miss LEUNG Yun Yee	MPhil	Google Anita Borg Memorial Scholarship
Oct 2015	Dr. LAM Hiu Fung	Alumnus	Selected as One of the Ten Outstanding Young Persons 2015 by the Junior Chamber International Hong Kong (JCIHK)
Nov 2015	Miss LEUNG Yun Yee	MPhil	Outstanding ICT Women Awards 2015 - Outstanding ICT Super Girl
Nov 2015	Mr. WANG Zengyue (Supervisor: Prof. LU Yi-Chun)	UG	1 st Award at the 14 th National Challenge Cup for the project of "Semisolid Vanadium Redox Flow Battery"
Nov 2015	Mr. ZHONG Yong Mr. ZHANG Lin (Supervisor: Prof. DU Ruxu, Prof. ZHANG Li & Prof. CHIU Philip)	PhD PhD	2 nd Award at the 14 th National Challenge Cup for the project of "Miniature Environment-friendly Tadpole Robot for Capsule Endoscope to Examine the Entire Gastrointestinal Tract"
Nov 2015	Mr. CHU Ki Sum (Supervisor: Prof. LIAO Wei-Hsin)	UG	2 nd Award at the 14 th National Challenge Cup for the project of "Mechanical Energy Harvested Damper"
Nov 2015	Mr. MA Hao Mr. CHEN Bing Miss QIN Lai Yin Mr. GUAN Xiao (Supervisor: Prof. LIAO Wei-Hsin)	PhD PhD, Orthopaedics and Traumatology MPhil, BME MSc	2 nd Award at the 14 th National Challenge Cup for the project of "Wearable Exoskeleton Suit for Paralyzed Individuals"
Nov 2015	Mr. CHAN Kai Fung (Supervisor: Prof. ZHANG Li)	PhD, BME	2 nd Award at the 14 th National Challenge Cup for the project of "Hollow-core, Porous-shell, Spindle-like Fe ₃ O ₄ Nanocapsules for Controlled Drug Delivery"
Dec 2015	Mr. VONG Chi Ian	MPhil	Merit Award at the HKEIA Innovation & Technology Project Competition Award 2015
Jan 2016	Miss ZHU Meiling (Supervisor: Prof. BIAN Liming)	PhD, BME	WBC (World Biomaterial Congress) 2016 Trainee Award for the abstract entitled "Immobilization of Polymersome in Hydrogels via Host-guest Complexation for Triggered Drug Delivery"

Jan 2016	Miss CHAN Miu Ying Mr. CHAN Tsz Fung Mr. CHOI Yuk Hei Mr. CHUNG Tsz Yin Mr. FUNG Tsz Hin Mr. KWOK Siu Fung Mr. LAI Kwun Leung Mr. LAU Ka Chun Mr. LEE Chun Kong Mr. LI Lok Hin Mr. PANG Yuen Ming Mr. POON Ka Kiu Mr. YIP Chun Wa Mr. YIP Kwan Yi (Supervisor: Prof. REN Wei)	UG, CSCI UG, MAEG UG, ELEG UG, MAEG UG, ENER UG, ENER UG, ENER PhD, MAEG UG, MAEG UG, ENER UG, ELEG UG, MAEG MPhil, MAEG UG, MAEG	Renewable Energy Capture & Conversion Efficiency Award at the "New Energy New Generation" Solar Car Competition
Mar 2016	Prof. WANG Changling Charlie	Faculty Member	Best Paper Award for the paper entitled "A Unified Framework for Isotropic Meshing based on Narrow-band Euclidean Distance Transformation", Journal of Computational Visual Media, Springer
Mar 2016	Prof. YAM Yeung	Faculty Member	Dean's Exemplary Teaching Award 2015
Apr 2016	Miss FENG Qian (Supervisor: Prof. BIAN Liming)	PhD, BME	Best Poster Prize at the Nature Conference on Tissue Engineering and Regenerative Medicine
May 2016	Mr. SANTO Royce	UG	Second Runner-up at the hackUST Competition 2016
Jun 2016	Prof. GUO Ping	Faculty Member	Hong Kong Research Grants Council (RGC) Early Career Award (2016-17)
Jun 2016	Power Shuttle Team Mr. YIP Ka Chun Miss LAM Lee Shan Mr. CHENG Ching Hei Mr. CHUNG Tsz Yin Mr. LEE Chun Kong Mr. LIU Ho Man Mr. CHIU Sin Hang Mr. LEUNG Chun Hei Mr. WONG Tsz Hin Mr. LEI Wing Yeung Mr. POON Ka Kiu Miss KWOK Chung Yan Mr. HO Chung Yan Mr. LAU Chi Ho (Supervisor: Prof. LIU Yun-Hui, Prof. LAU Tat Ming Darwin, Prof. LIAO Wei-Hsin, Prof. CHEN Shih-Chi, Mr. YIP Chun Wa, Mr. CHUEK Chi Ming, and Mr. LEUNG Yun Yee Martin)	Power Shuttle Team UG, BERG UG, CS UG, BERG UG, MAE UG, MAE UG, BERG UG, MAE UG, MAE UG, BERG UG, MAE UG, MAE UG, MAE UG, MAE UG, MAE UG, BERG	Champion, Best Team Spirit Award and Best Engineering Award at Robocon 2016 Hong Kong Contest
Jun 2016	Mr. CHEN Jianwei (Supervisor: Prof. CHEN Shih-Chi)	PhD	Top Prize of Innovation Category and 1 st Prize of Innovation Category (Mechanical and Control System) at the "Challenge Cup" National Competition – Hong Kong Regional Final, Hong Kong University Student Innovation and Entrepreneurship Competition 2016 for the project of "Development of a Vacuum Nanoimprinting System for Low-cost Parallel Nanomanufacturing"
Jun 2016	Mr. ZHANG Yuanming (Supervisor: Dr. LI Yiyang)	MSc	2 nd Prize of Innovation Category (Mechanical and Control System) at the "Challenge Cup" National Competition – Hong Kong Regional Final, Hong Kong University Student Innovation and Entrepreneurship Competition 2016 for the project of "Unmanned Wireless Underwater Photography Submarine"
Jun 2016	Mr. CHAN Sau Kin (Supervisor: Prof. LAU Tat Ming Darwin)	UG	2 nd Prize of Innovation Category (Mechanical and Control System) at the "Challenge Cup" National Competition – Hong Kong Regional Final, Hong Kong University Student Innovation and Entrepreneurship Competition 2016 for the project of "A 3D-Printable, Servo-Motor Driven, Hingeless Prosthetic Hand Under US \$100"
Jun 2016	Mr. ZHOU Xi Miss WANG Ji Mr. LI Chenglin Mr. WANG Dien (Supervisor: Prof. CHEN Shih-Chi)	PhD PhD PhD PhD	2 nd Prize of Innovation Category (Life Sciences) at the "Challenge Cup" National Competition – Hong Kong Regional Final, Hong Kong University Student Innovation and Entrepreneurship Competition 2016 for the project of "Jamming integrated compliant compressor for SBRT immobilization"
Jun 2016	Mr. ZOU Li Miss QIN Lai Yin Dr. MA Hao Mr. ZHONG Chunhao (Supervisor: Prof. LIAO Wei-Hsin)	MSc (2013) MPhil, BME PhD (2015) PhD	3 rd Prize of Entrepreneurship Category (Newly Established Enterprise) at the "Challenge Cup" National Competition – Hong Kong Regional Final, Hong Kong University Student Innovation and Entrepreneurship Competition 2016 for the project of "Smart Health & Fitness Device"
Jun 2016	Mr. VONG Chi Ian Mr. LIU Wai Shing (Supervisor: Prof. ZHANG Li)	MPhil UG	2 nd Prize of Entrepreneurship Category (Entrepreneurship Proposal) at the "Challenge Cup" National Competition – Hong Kong Regional Final, Hong Kong University Student Innovation and Entrepreneurship Competition 2016 for the project of "Magnetic Actuation System for Biomedical Application (Mag-dical)"

Jun 2016	Miss LAU Wing Yee (Supervisor: Prof. BIAN Liming)	UG, BME	2 nd Prize of Innovation Category [Energy and Chemical Engineering] at the "Challenge Cup" National Competition – Hong Kong Regional Final, Hong Kong University Student Innovation and Entrepreneurship Competition 2016 for the project of "A Novel Hydrogel with Enhanced Mechanical Properties"
Aug 2016	Mr. CHAN Yuen Shan (Supervisor: Prof. LAU Tat Ming Darwin)	UG	Best Project Award of Undergraduate Summer Research Internship for the project of "Large-Scale Cable Robots for Freeform Architectural Design"
Aug 2016	Mr. YOU Xiangyu (Supervisor: Prof. Guo Ping)	PhD	Best Paper Award at the 5 th International Conference on Nanomanufacturing in Macau
Aug 2016	Mr. LAU Ka Chun Miss LEUNG Yun Yee (Supervisor: Prof. YAM Yeung & Prof. POON Chung Yan Carmen (Department of Surgery))	PhD MPhil	Gold Award, Technical Challenge Award and the Best Hong Kong Team at the Engineering Medical Innovation Global Competition (EMedic Global 2016) for the project of "Surgical Robotic System for Endoscopic Submucosal Dissection"
Sep 2016	Mr. SANTO Royce (Supervisor: Dr. LI Yiyang)	UG	Won the HackNTU (Game Category) in Taipei
Oct 2016	Mr. CHAN Sau Kin (Supervisor: Prof. LAU Tat Ming Darwin)	UG (2016); Research Staff (From June 2016)	Merit Award at the HKEIA Innovation & Technology Project Competition Award 2016 for the project of "An Affordable, Functional, Intuitively-Controlled, Easy-to-Assemble Robotic Prosthetic Hand"
Oct 2016	Mr. LIU Wai Shing (Supervisor: Prof. ZHANG Li)	UG (2016)	Merit Award at the HKEIA Innovation & Technology Project Competition Award 2016 for the project of "Development of a Microrobotic Platform for a Biomanipulation"
Oct 2016	Mr. WANG Shijie (Supervisor: Prof. ZHANG Li)	UG (2016)	Merit Award at the HKEIA Innovation & Technology Project Competition Award 2016 for the project of "Activated Carbon Derived from Flesh of Fruits for Electric Double-layer Capacitors"
Nov 2016	Mr. CHEN Jianwei (Supervisor: Prof. CHEN Shih-Chi)	PhD	Best Innovation Award at the Cross-strait, HK and Macao Innovation and Entrepreneurship Competition 2016 for the project of "Vacuum Nanoimprinting Technique for Precision Optoelectronics Products Manufacturing"
Nov 2016	Mr. VONG Chi Ian (Supervisor: Prof. ZHANG Li)	MPhil	Silver Prize at the China College Students' Entrepreneurship Competition 2016
Nov 2016	Mr. ZOU Li (Supervisor: Prof. LIAO Wei-Hsin)	MSc (2013); PhD, Orthopaedics & Traumatology (From 2016)	Silver Prize at the China College Students' Entrepreneurship Competition 2016
Nov 2016	Mr. MA Lihao (Supervisor: Prof. REN Wei)	PhD	Best Paper Award for the paper entitled "Exploration of temperature/H ₂ O non-uniformity in a premixed laminar flame using tunable laser absorption spectroscopy" at the 2016 International Conference in Aerospace for Young Scientists (ICAYS)
Nov 2016	Prof. BIAN Liming	Faculty Member	CUHK Young Researcher Award 2015
Jan 2017	Mr. WONG Siu Hong (Supervisor: Prof. BIAN Liming)	PhD, BME	The Best Poster/Rapid-Fire Presenters Award
Feb 2017	Mr. WEN Chenyang Miss CHANG Yina (Supervisor: Prof. CHEN Shih-Chi)	PhD PhD	Poster Competition Award at the SPIE Photonic West
Mar 2017	Prof. REN Wei	Faculty Member	Dean's Exemplary Teaching Award 2016
Mar 2017	Dr. LI Yiyang Prof. XU Dongyan Mr. LEUNG Yun Yee Martin Mr. YIP Kwan Yi Mr. YIP Ka Chun Mr. YIP Chi Yiu Mr. CHIU Sin Hang Mr. HO Wing Hang Mr. LEUNG Chun Hei Mr. CHOW Ka Chung Mr. YUE Felix Yun Fei	Senior Lecturer Faculty Member Technician (Assessor) UG UG UG UG UG UG UG UG	Champion at the IMechE Greater China Region Design Competition 2017
Apr 2017	Mr. SANTO Royce Miss TAMARA-YUSTIAN Miss LIU Winnie Hiyadi Mr. NICHOLAS Nigel	UG, MAEG UG, BERG UG, EEEN UG, CSCI	Champion (Gaming Theme) at the HackUST 2017
May 2017	Prof. HUANG Jie	Faculty Member	Fellow of Hong Kong Institution of Engineers (HKIE)
May 2017	Mr. GAO Fei (Supervisor: Prof. LIAO Wei-Hsin)	PhD	Champion at the Professor Charles K. Kao Student Creativity Awards 2017 (Postgraduate Individual Entries) for the project of "Smart Prosthesis for Below-knee Amputees"
May 2017	Miss WANG Ji (Supervisor: Prof. CHEN Shih-Chi)	PhD	First Runner-up at the Professor Charles K. Kao Student Creativity Awards 2017 (Postgraduate Individual Entries) for the project of "Flexure-based Vibrating Blade Microtome for High-resolution Brain Imaging"
May 2017	Miss LEE Hiu Hung Miss WANG Dongping (Co-supervisor: Prof. CHEN Shih-Chi)	PhD PhD	Merit at the Professor Charles K. Kao Student Creativity Awards 2017 (Postgraduate Individual Entries) for the project of "高分辨率、高靈敏度的便攜式光譜儀的研發"

May 2017	Miss Feng Qian (Supervisor: Prof. BIAN Liming)	PhD, BME	Second Runner-up at the Professor Charles K. Kao Student Creativity Awards 2017 (Postgraduate Individual Entries) for the project of "A Robust and Thermoplastic Supramolecular Gelatin Hydrogels for Tissue Engineering and Regenerative Medicine"
May 2017	Mr. DANG Xiaobing (Supervisor: Prof. DU Ruxu)	PhD	Merit at the Professor Charles K. Kao Student Creativity Awards 2017 (Postgraduate Individual Entries) for the project of "Incremental Bending of Three-dimensional Free-form Metal Plates Using Minimum Energy Principle and Model-less Control"
May 2017	Mr. WANG Dien Mr. WEN Chenyang Miss CHANG Yina Miss LEE Hiu Hung (Supervisor: Prof. CHEN Shih-Chi)	PhD PhD PhD PhD	Champion at the Professor Charles K. Kao Student Creativity Awards 2017 (Postgraduate Individual Entries) for the project of "3D Metal Printing Based on Parallel Femtosecond Laser Machining and Electrodeposition"
May 2017	Miss CHENG Hiu Yee (Supervisor: Prof. LAU Tat Ming Darwin)	UG, BME	Champion at the Professor Charles K. Kao Student Creativity Awards 2017 (Undergraduate Individual Entries) for the project of "Easy-to-produce Functional Robotic Prosthetic Finger Driven by Human Intention"
May 2017	Mr. CHENG Hung Hon Miss YIP Hang Man (Supervisor: Prof. LAU Tat Ming Darwin)	UG UG, BME	First Runner-up at the Professor Charles K. Kao Student Creativity Awards 2017 (Undergraduate Individual Entries) for the project of "EMG-driven Exomuscular Cable-robot for Targeted Shoulder Rehabilitation"
May 2017	Miss CHAN Ka Ian (Supervisor: Prof. LIAO Wei-Hsin)	UG, BME	Second Runner-up at the Professor Charles K. Kao Student Creativity Awards 2017 (Undergraduate Individual Entries) for the project of "Knee Rehabilitation Healthcare Device"
May 2017	Mr. CHAN Ngo Foon Mr. LEE Ka Fai Mr. CHAN Ngo Ming (Supervisor: Prof. GUO Ping)	UG UG UG	Champion at the Professor Charles K. Kao Student Creativity Awards 2017 (Undergraduate Group Entries) for the project of "Multicolor Fused Deposition Modelling FDM Printing: An Application of Fused Multi-Filament Method"
May 2017	Mr. CHAN Yuen Shan Mr. MA Fei Yeung Mathew Miss MOK Ching Wah (Supervisor: Prof. LAU Tat Ming Darwin)	UG UG UG	Second Runner Up at the Professor Charles K. Kao Student Creativity Awards 2017 (Undergraduate Group Entries) for the project of "Spiderbot - Cable Driven Robot and Robot Arm System"
May 2017	Mr. TING Sin Hang Mr. POON Mong Wah Mr. YIP Kin Chiu Mr. LEUNG Wai Man (Supervisor: Prof. LAU Tat Ming Darwin)	UG UG UG UG	Second Runner Up at the Professor Charles K. Kao Student Creativity Awards 2017 (Undergraduate Group Entries) for the project of "Cable-driven Robot for Large-scale On-site 3D Printing of Concrete Structures"
May 2017	Mr. DANG Xiaobing (Supervisor: Prof. DU Ruxu)	PhD	Top Prize and First-Class of Innovation Category at the "Challenge Cup" National Competition – Hong Kong Regional Final, Hong Kong University Student Innovation and Entrepreneurship Competition 2017 for the project of "Incremental Bending of 3D Free Form Metal Plates: Theory, Prototype Machine and Applications"
May 2017	Miss LEE Hiu Hung Miss WANG Dongping Dr. CHEN Jianwei (Co-supervisor: Prof. CHEN Shih-Chi)	PhD PhD PhD (graduated in 2016)	Second-Class of Innovation Category at the "Challenge Cup" National Competition – Hong Kong Regional Final, Hong Kong University Student Innovation and Entrepreneurship Competition 2017 for the project of "Development of High-resolution Compact Spectrometers Based on Custom-printed Concave Gratings"
May 2017	Mr. GAO Fei Mr. LIU Yannan (Supervisor: Prof. LIAO Wei-Hsin)	PhD MSc (2015); Research Staff (From June 2015)	Second-Class of Innovation Category at the "Challenge Cup" National Competition – Hong Kong Regional Final, Hong Kong University Student Innovation and Entrepreneurship Competition 2017 for the project of "Smart Prosthesis for Below-knee Amputees"
May 2017	Mr. CHAN Chun Kei (Supervisor: Dr. LI Yiyang)	UG	Merit of Innovation Category at the "Challenge Cup" National Competition – Hong Kong Regional Final, Hong Kong University Student Innovation and Entrepreneurship Competition 2017 for the project of "Portable Eyes"
May 2017	Miss CHENG Hiu Yee (Supervisor: Prof. LAU Tat Ming Darwin)	UG	Merit of Innovation Category at the "Challenge Cup" National Competition – Hong Kong Regional Final, Hong Kong University Student Innovation and Entrepreneurship Competition 2017 for the project of "Easy-to-produce Functional Robotic Prosthetic Finger Driven by Human Intention"
May 2017	Mr. TING Sin Hang Mr. POON Mong Wah Mr. YIP Kin Chiu Mr. LEUNG Wai Man (Supervisor: Prof. LAU Tat Ming Darwin)	UG, MAE UG, MAE UG, MAE UG, MAE	Merit of Innovation Category at the "Challenge Cup" National Competition – Hong Kong Regional Final, Hong Kong University Student Innovation and Entrepreneurship Competition 2017 for the project of "Cable-driven Robot for Large-scale On-site 3D Printing of Concrete Structures"
Jun 2017	Prof. DU Ruxu	Faculty Member	Fellow of the Canadian Academy of Engineering (CAE)
Jun 2017	Mr. WANG Zerui Prof. LIU Yun-Hui	Research Staff Faculty Member	Best Innovation Prize of the Surgical Robot Challenge 2017 at Hamlyn Symposium on Medical Robotics Project Title: Smart Autonomous Unknown Deformable Object Manipulation Using the da Vinci Research Kit
Jul 2017	Prof. Li Xiang Mr. Su Xing Prof. LIU Yun-Hui	Faculty Member Research Staff Faculty Member	Best Paper Award in Robotic Control at 2017 International Conference on Advanced Robotics

Jul 2017	Ms. YIP Hiu Man Tiffany (Supervisor: Prof. LIU Yun-Hui)	Research Staff	Best Student Paper Award in 2017 IEEE International Conference on Real-Time Computing and Robotics Paper Title: An Image-Based Uterus Positioning Interface Using ADALINE Networks for Robot-Assisted Hysterectomy
Jul 2017	Dr. LIU Wei (Supervisor: Prof. HUANG Jie)	PhD (2016) Research Staff (From October 2016)	CUHK Young Scholars Thesis Award 2016
Sep 2017	Prof. LIAO Wei-Hsin Dr. BODAGHI Mahdi Dr. DAMAN PAK MOGHADDAM Alireza	Faculty Member Research Staff Research Staff	ASME Best Paper Award in Mechanics and Material Systems for the journal paper entitled "Self-expanding/shrinking structures by 4D Printing"
Sep 2017	Prof. LI Xiang Mr. SU Xing Prof. LIU Yun-Hui	Faculty Member Research Staff Faculty Member	Best Application Paper Finalists in 2017 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) Project Title: Cooperative Robotic Soldering of Flexible PCBs
Oct 2017	LI Chenglin WANG Dien WANG Ji (Supervisor: Prof. CHEN Shih-Chi)	PhD PhD PhD Faculty Member	2 nd prize in student competition at the 32 nd Annual Meeting of the American Society for Precision Engineering
Oct 2017	Prof. CHEN Shih-Chi	Faculty Member	Best Oral Presentation at the 32 nd Annual Meeting of the American Society for Precision Engineering Talk Title: DMD-Based Random-Access Scanner for Fast 3D Imaging and Fabrication
Nov 2017	Prof. LIU Yun-Hui	Faculty Member	Faculty Member Choh-Ming Li Professorship
Nov 2017	Prof. LU Yi Chun	Faculty Member	CUHK Young Researcher Award 2016
Nov 2017	Dr. LIU Wei (Supervisor: Prof. HUANG Jie)	PhD (2016); Research Staff (From October 2016)	CUHK Postgraduate Research Output Award 2016
Nov 2017	Mr. GAO Fei Mr. LIU Yannan (Supervisor: Prof. LIAO Wei-Hsin)	PhD MSc (2015); Research Staff (From June 2015)	Third-Class Award at the 15 th National Challenge for the project of "Powered Ankle-Foot Prosthesis"
Nov 2017	Dr. CHEN Jianwei (Supervisor: Prof. CHEN Shih-Chi)	PhD (2016); Research Staff (From November 2016)	Third-Class Award at the 15 th National Challenge for the project of "Development of a Vacuum Nanoimprinting System for Low-cost Parallel Nanomanufacturing"
Nov 2017	Mr. DANG Xiaobing (Supervisor: Prof. DU Ruxu)	PhD	Second-Class Award at the 15 th National Challenge for the project of "Research on Incremental Bending of Three Dimensional Free Form Metal Plates and its Prototype Machine"
Dec 2017	Prof. LAU Tat Ming Darwin Mr. CHAN Sau Kin	Faculty Member Research Staff (From June 2017)	CUHK Teaching and Learning Expo Poster Award Title: Hands-on Robotics Lectures
Dec 2017	Prof. DU Ruxu Mr. DANG Xiaobing (Supervisor: Prof. DU Ruxu)	Faculty Member PhD	2017 Hong Kong Awards for Industries (HKAI): Equipment and Machinery Design Certificate of Merit Product Name: A Flexible Incremental Bending Machine Company Name: The Chinese University of Hong Kong - Institute of Precision Engineering
Mar 2018	Prof. LIAO Wei-Hsin	Faculty Member	2018 SSM Lifetime Achievement Award (SPIE)
Mar 2018	Prof. CHEN Chun	Faculty Member	Dean's Exemplary Teaching Award 2017
Apr 2018	Mr. GAO Fei Mr. LIU Yan-Nan Prof. LIAO Wei-Hsin	PhD Student Research Staff Faculty Member	Gold Medal in 46 th International Exhibition of Inventions of Geneva Project Title: Powered Ankle-Foot Prosthesis
Apr 2018	Mr. WANG Ben Prof. ZHANG Li	PhD Faculty Member	Third-Class Poster Award at the 2 nd National Conference on Micro-/Nanomotor Project Title: Remote Actuation of Magnetic Liquid Marble for Targeted Transportation and Controlled Drug Release
May 2018	Mr. XIE Fengran (Supervisor: Prof. DU Ruxu)	PhD	First-Class of Innovation Category at the "Challenge Cup" National Competition – Hong Kong Regional Final, Hong Kong University Student Innovation and Entrepreneurship Competition 2018 Project Title: Design and Control of a Biomimetic Robot Fish With Active Body and Compliant Tail
May 2018	Miss LEE Hiu Hung (Supervisor: Prof. CHEN Shih-Chi)	PhD	Second-Class of Innovation Category at the "Challenge Cup" National Competition – Hong Kong Regional Final, Hong Kong University Student Innovation and Entrepreneurship Competition 2018 Project Title: Development of a High-speed Stealth Laser Dicing System Based on Multi-depth Bessel Beams
May 2018	Miss TAM Sau Wai (Supervisor: Prof. LAU Tat Ming Darwin)	UG, MAEG	Merit of Innovation Category at the "Challenge Cup" National Competition – Hong Kong Regional Final, Hong Kong University Student Innovation and Entrepreneurship Competition 2018 Project Title: Large Scale Artwork Painting for Architectural Designs using a Cable-driven Robot with Serial Robot Arm End-effector
May 2018	Mr. SZE-TO Koon Fung Mr. LAW Chi Leung Mr. LAI Chun Kit (Supervisor: Dr. LI Yiyang)	UG, MAEG UG, MAEG UG, MAEG	Merit of Innovation Category at the "Challenge Cup" National Competition – Hong Kong Regional Final, Hong Kong University Student Innovation and Entrepreneurship Competition 2018 Project Title: The AuLaitino

Jun 2018	Power Shuttle Team Mr. CHEUNG Chi Hang Mr. CHEUNG Kam Ho Mr. HON Chung Lai Mr. KWOK Chun Keung Mr. YIU Wu Kwong Mr. LAM Chun Ting Jeff Mr. LAM Ming Yuen Miss LEE Cheuk Yan Miss MAN Cheuk Ying Tiffany Mr. OUYANG JianLin Mr. SZETO Ling Yeung Mr. WONG Fei Yan, Fiat Miss WONG Sin Yi	Power Shuttle Team UG, ERGN UG, CSCI UG, MAEG UG, MAEG UG, ELEG UG, CENG UG, CENG UG, MAEG UG, ERGN UG, IFAA UG, MAEG UG, ERGN UG, ERGN	Power Shuttle Team: First Runner-up at Robocon 2018 Hong Kong Contest
	Phantom Dancer Team Mr. CHEUNG Chun To Mr. CHEUNG Ka Wing Teddy Mr. CHEUNG Tsang Kit Mr. FAN Chun Yin Mr. HO Siu Sum Mr. KWOK Pok Man Kendrick Mr. LEE Tin Chun Mr. LIU Ho Man Mr. TONG Chi Sang Hezekiah Mr. WONG Hon Sai Miss WONG Sau Yee Mr. WONG Tsz Hin Miss YEUNG Ka Long Carina Mr. YIP Ka Chun Mr. YIP Kwan Yi	Phantom Dancer Team UG, MAEG UG, IERG UG, CSCI UG, MAEG UG, MAEG UG, CSCI UG, MAEG UG, CSCI UG, MAEG UG, ELEG UG, MAEG UG, CSCI UG, MAEG UG, MAEG UG, MAEG	Phantom Dancer Team: Second Runner-up at Robocon 2018 Hong Kong Contest Power Shuttle Team and Phantom Dancer Team: Most Impressive Shuttlecock Award at Robocon 2018 Hong Kong Contest
	[Supervisor: Prof. LIAO Wei-Hsin, Prof. LIU Yun-Hui, Prof. LAU Tat Ming Darwin & Prof. CHEN Shih-Chi Instructor: Mr. YIP Chun Wa]		
Jun 2018	Mr. WU Junjun (Supervisor: Prof. REN Wei)	PhD	Best Paper Award at the 18 th National Conference on Shockwave and Shocktube
Jul 2018	Prof. ZI Yunlong	Faculty Member	Young Scientist Award Finalist at the Microsystems & Nanoengineering Summit 2018
Aug 2018	Mr. WANG Shimin Prof. HUANG Jie	PhD Faculty Member	Best Conference Paper Award at the 2018 IEEE International Conference on Information and Automation
Aug 2018	Mr. WU King Keung Prof. MENG Helen Prof. YAM Yeung	PG graduate (MAE) Faculty Member (SEEM) Faculty Member	Best Paper Award at the 9 th IEEE International Conference on Cognitive Infocommunications
Sep 2018	Mr. WU Cho Him	UG, MAEG	IET Prize 2018
Oct 2018	Prof. ZI Yunlong	Faculty Member	Journal of Materials Chemistry C Emerging Investigators 2018
Oct 2018	Prof. LU Yi-Chun	Faculty Member	United College Early Career Research Excellence Award 2018
Oct 2018	Miss LEE Hiu Hung Mr. REN Mindan Miss WANG Dongping (Supervisor: Prof. CHEN Shih-Chi)	PhD PhD PhD	Bronze Award at the 4 th China College Students' "Internet Plus" Innovation and Entrepreneurship Competition
Nov 2018	Prof. ZHANG Li	Faculty Member	CUHK Young Researcher Award 2017
Nov 2018	Prof. CHEN Shih-Chi Mr. GENG Qiang Mr. WANG Dien Dr. ZHANG Dapeng Mr. CHEN Dihan Mr. REN Mindan Mr. DATAR Charudatta Achyut (On behalf of Precision Instrument and Optics Limited, The Chinese University of Hong Kong)	Faculty Member PhD PhD Research Staff PhD PhD Research Staff	2018 R&D 100 Awards: One of 100 Best New Technical Products of the Year Project Title: Digital Holography-based 3-D Nano Builder
Dec 2018	Dr. HAN Dongkun Mr. LEUNG Yun Yee Martin	Faculty Member Technician	People's Prize and the Poster Commendation Award at the Teaching and Learning Innovation Expo 2018, CUHK
Dec 2018	Prof. ZHANG Li	Faculty Member	United College Early Career Research Excellence Merit Award
Mar 2019	Miss MAN Cheuk Ying Tiffany	UG, MAEG	Silver Award of the General Education Best Essay Award of 2017-2018 (CUHK) Essay Title: How Much to the Individual, and How Much to the Society? Of Self-Interest and Common Good

Mar 2019	Dr. LI Yiyang Prof. XU Dongyan Mr. LEUNG Yun Yee Martin Mr. AU Tsz Him Vincent Miss BHATTACHARJYA Eshanee Mr. CHUNG Sing Yin Derick Mr. FAN Chun Yin Miss HO Ka Wai Mr. HO Siu Sum Mr. HO Man Kit Mr. KWOK Chun Keung	Faculty Member Faculty Member Technician (Assessor) UG, MAEG UG, EEEN UG, IERG UG, MAEG UG, MAEG UG, MAEG UG, MAEG UG, MAEG	Champion at the IMechE Greater China Region Design Competition 2019
Mar 2019	Miss LEUNG Yun Yee	PhD	Sir Edward Youde Memorial Fellowship for Postgraduate Research Students 2018/19
Mar 2019	Prof. WANG Changling Charlie	Faculty Member	Fellow of Hong Kong Institution of Engineers (HKIE)
Mar 2019	Prof. HUANG Jie	Faculty Member	Chinese Association of Automation (CAA) Excellent PhD Thesis Supervisor Award
Mar 2019	Dr. LIU Wei (Supervisor: Prof. HUANG Jie)	Research Staff	Chinese Association of Automation (CAA) Excellent PhD Thesis Award
Mar 2019	Dr. LI Yiyang Mr. YU Siu Ning Mr. LAU Sin Pang Miss SO Sze Wing Mr. KWOK Chun Keung	Faculty Member Technician (Assessor) UG, EEEN UG, MAEG UG, MAEG	Best Design Award at the ASME Student Design Competition 2019 (Hong Kong)
Mar 2019	Prof. LAU Tat Ming Darwin	Faculty Member	Dean's Exemplary Teaching Award 2018
Apr 2019	Prof. CHIU Wai Yan Philip Prof. YAM Yeung Dr. LAU Ka Chun	Faculty Member (Dept of Surgery) Faculty Member Research Staff	Gold Medal with Congratulations of the Jury in the 47 th International Exhibition of Inventions of Geneva Project Title: Endoscopic Surgical Robot
Apr 2019	Prof. LIAO Wei-Hsin Mr. ZHONG Chunhao Mr. ZHAO Xuan Prof. QIN Ling Dr. LAW Sheung Wai	Faculty Member PhD Research Staff Faculty Member (Dept of Orthopaedics and Traumatology) Clinical Staff (Dept of Orthopaedics and Traumatology)	Silver Prize in the 47 th International Exhibition of Inventions of Geneva Project Title: Robotic Exoskeleton for Motion Assistance
Apr 2019	Prof. WANG Changling Charlie Dr. ZHANG Yunbo Dr. KWOK Tsz Ho Mr. SHEUNG Hoi	Faculty Member Alumnus Alumnus Alumnus	Silver Prize in the 47 th International Exhibition of Inventions of Geneva Project Title: Shape-driven Design and Manufacturing Technology for Industry 4.0
Apr 2019	Dr. LI Xiaoyi (Supervisor: Prof. ZI Yunlong)	Research Staff	Best Poster Award at the Symposium ES21: Nanogenerators and Piezotronics as held at the 2019 MRS Spring Meeting
May 2019	WANG Qianqian (Supervisor: Prof. ZHANG Li)	PhD Student	1 st Runner-up at the CUHK Research Poster Exhibition 2019
May 2019	Mr. LAW, Chi Leung Mr. SZE-TO Koon Fung Mr. LAI Chun Kit (Supervisor: Dr. LI Yiyang)	Alumnus Alumnus Alumnus	Champion at the Vice Chancellor's Cup of Student Entrepreneurship (VCCE) Boot Camp 2019 Project Title: The AuLaitino
May 2019	Mr. YAN Kim (Supervisor: Prof. CHENG Shing Shin)	UG, MAEG	Champion at the Professor Charles K. Kao Student Creativity Awards 2019 (Undergraduate Individual Entries) Project Title: Development and Evaluation of a Low-cost Mechanical Simulator for Flexible Endoscopy in Gastrointestinal Tract
May 2019	Mr. CHAN Hugo Hung-tin (Supervisor: Prof. LIAO Wei-Hsin)	UG, MAEG	First Runner-up at the Professor Charles K. Kao Student Creativity Awards 2019 (Undergraduate Individual Entries) Project Title: Cable Driven Biomechanical Energy Harvesting Over the Knee
May 2019	Mr. CAI Mingjing Mr. WANG Jiahua (Supervisor: Prof. LIAO Wei-Hsin)	PhD PhD	First Runner-up at the Professor Charles K. Kao Student Creativity Awards 2019 (Postgraduate Individual Entries) Project Title: Self-powered Smart Watch and Wristband
May 2019	Mr. CHEN Dihan Mr. GENG Qiang Mr. CHEN Jialong Mr. REN Mindan Mr. FU Zhiqiang (Supervisor: Prof. CHEN Shih-Chi)	PhD PhD PhD PhD PhD	Champion & Special Award at the Professor Charles K. Kao Student Creativity Awards 2019 (Postgraduate Group Entries) Project Title: Digital Holography (DH)-based Two-photon Excitation (TPE) Microscope for Ultrafast 3-D Imaging and Optogenetics Applications
May 2019	Mr. CHU Xiangyu Mr. AN Jiajun Mr. CHUNG Tsz Yin Mr. LO Chun Ho (Supervisor: Prof. AU Kwok Wai Samuel)	PhD PhD MPhil PhD	Second Runner-up at the Professor Charles K. Kao Student Creativity Awards 2019 (Postgraduate Group Entries) Project Title: Tail-inspired Robotic System Design and Control

May 2019	Mr. YIP Hoi Wut Mr. CHUNG Tsz Yin Mr. CAI Yuanpei Mr. CHU Xiangyu (Supervisor: Prof. AU Kwok Wai Samuel)	MPhil MPhil PhD PhD	Merit at the Professor Charles K. Kao Student Creativity Awards 2019 (Postgraduate Group Entries) Project Title: 3D Compliant Robotic Retractor for Organ Retraction and Space Opening
May 2019	Dr. HAN Dongkun	Faculty Member	Exemplary Teaching Award in General Education 2018
May 2019	Mr. REN Mindan Mr. GENG Qiang Mr. CHEN Dihan Mr. CHEN Jialong (Supervisor: Prof. CHEN Shih-Chi)	PhD PhD PhD PhD	First-class Award at the 5 th Hong Kong University Student Innovation and Entrepreneurship Competition (Category: Innovation) Project Name: Multi-modality Digital Holography-based Two-photon Excitation Microscope
May 2019	Mr. YAN Kim (Supervisor: Prof. CHENG Shing Shin)	UG, MAEG	Second-class Award at the 5 th Hong Kong University Student Innovation and Entrepreneurship Competition (Category: Innovation) Project Title: Design and Development of an Economical Mechanical Gastrointestinal Tract Simulator
May 2019	Mr. LI Ming (Supervisor: Prof. CHEN Yongsheng)	PhD	Third-class Award at the 5 th Hong Kong University Student Innovation and Entrepreneurship Competition (Category: Innovation) Project Title: Controlling the Reduction Extent for Optimal Performance of a Ni/Al ₂ O ₃ Dry Reforming Catalyst
May 2019	Mr. CHU Xiangyu Mr. AN Jiajun Mr. LO Chun Ho Mr. CHUNG Tsz Yin (Supervisor: Prof. AU Kwok Wai Samuel)	PhD PhD PhD MPhil	Third-class Award at the 5 th Hong Kong University Student Innovation and Entrepreneurship Competition (Category: Innovation) Project Title: Tail Inspired Robotic System Design and Control
May 2019	Mr. YIP Hoi Wut Mr. CHU Xiangyu Mr. CAI Yuanpei Mr. CHUNG Tsz Yin (Supervisor: Prof. AU Kwok Wai Samuel)	MPhil PhD PhD MPhil	Third-class Award at the 5 th Hong Kong University Student Innovation and Entrepreneurship Competition (Category: Innovation) Project Title: Novel Compliant Robotic Instrument for Organ Retraction and Space Opening
May 2019	Miss MAN Cheuk Ying Miss WONG Fei Yan Mr. CHEUNG Chi Hang Mr. CHEUNG Chun To (Supervisor: Prof. LIU Yun-Hui & Instructor: Mr. YIP Chun Wa)	UG, MAEG UG, MAEG UG, CSCI UG, MAEG	Third-class Award at the 5 th Hong Kong University Student Innovation and Entrepreneurship Competition (Category: Innovation) Project Title: Self-propelled Pole Climbing Robot with Kinesthetic Teleoperation Robotic Arm
May 2019	Mr. CAI Mingjing Mr. WANG Jiahua (Supervisor: Prof. LIAO Wei-Hsin)	PhD PhD	Merit at the 5 th Hong Kong University Student Innovation and Entrepreneurship Competition (Category: Innovation) Project Title: Self Powered Smart Watch and Wristband
May 2019	Mr. CHAN Hugo Hung-tin (Supervisor: Prof. LIAO Wei-Hsin)	UG, MAEG	Merit at the 5 th Hong Kong University Student Innovation and Entrepreneurship Competition (Category: Innovation) Project Title: Cable Driven Biomechanical Energy Harvester Over the Knee
May 2019	Mr. SIU Ngai Chun Edward Mr. CHOW Timothy Hong Yin (Supervisor: Prof. LAU Tat Ming Darwin)	UG, MAEG UG, MAEG	Merit at the 5 th Hong Kong University Student Innovation and Entrepreneurship Competition (Category: Innovation) Project Title: Wearable Actuated Material Using Smart Materials to Excite the C-tactile Afferents for Comfort Feeling
May 2019	Prof. LAU Tat Ming Darwin	Faculty Member	CUHK Vice-Chancellor's Exemplary Teaching Award 2018
Jun 2019	Prof. WANG Changling Charlie	Faculty Member	Best Paper Award at the Symposium on Solid and Physical Modeling (SPM) 2019
Jun 2019	Phantom Dancer Team Mr. TONG Chi Sang Hezekiah Mr. Ho Siu Sum Mr. CHEUNG Chun To Mr. WONG Wai Chiu Mr. LEUNG Kwok Po Miss YEUNG Ka Long Carina Mr. WONG Fei Yan Fiat Miss MAN Cheuk Ying Tiffany Mr. LIU Ho Man Mr. WONG Tsz Hin Mr. LAM Chun Ting Jeff Mr. CHEUNG Tsang Kit Mr. CHEUNG Kam Ho Mr. KWOK Pok Man Kendrick Miss WONG Sin Yi Mr. CHEUNG Chi Hang Calvin Mr. CHAN Yin Ching Mr. LEUNG Chung Him Mr. CHEUNG Ka Wing Mr. NG Pui Hin Mr. OUYANG Jianlin	Phantom Dancer Team UG, MAEG UG, MAEG UG, MAEG UG, MAEG UG, MAEG UG, MAEG UG, MAEG UG, CSCI UG, CSCI UG, CSCI UG, CSCI UG, CSCI UG, CSCI UG, CSCI UG, CSCI UG, CSCI UG, CENG UG, CENG UG, IERG UG, BERG UG, IFAA	Phantom Dancer Team: Champion at Robocon 2019 Hong Kong Contest
Jun 2019	Dr. WANG Dien Mr. WEN Chenyang Miss CHANG Yina Dr. LIN Wei Prof. CHEN Shih-Chi	Alumnus (PhD 2018) PhD PhD Research Staff Faculty Member	Precision Engineering Editors' Choice Article for the paper entitled "Ultrafast Laser Enabled 3D Metal Printing: A Solution to Fabricate Arbitrary Submicron Metal Structures"

2018-19 NEWS AND UPDATES

RECENT ACHIEVEMENTS

PRESS RELEASES

MARCH 2018

CALLIGRAPHY ROBOT WAS PRESENTED IN CUHK CHINESE NEW YEAR MEDIA RECEPTION

Prof. YAM Yeung and his research team have developed a robot called REAP (Robotic Expression of Acquired Penmanship) which attempts to learn Chinese calligraphy and painting by imitation. With a high precision platform for the fine motion control of brush-pen, the robot aims to achieve acquisition, modeling, emulation and rendering of the artistic skills of Chinese calligraphers and painters. The robot was reported by a local television station and presented during the CUHK Chinese New Year Media Reception.



APRIL 2018

NEW PROSTHETIC ARM DEVELOPED MAKES AMPUTEE'S MUSICAL DREAMS COME TRUE

Collaborating with the Prince of Wales Hospital, Prof. LAU Tat Ming Darwin and his research team developed different prosthetic prototypes to fit for user needs. Through countless hours of data collection, Prof. LAU's team developed a lighter and more flexible prosthetics that helps a user to hold his violin bow steadily. The user praised the design because it gives him a wider repertoire to perform a nice piece of music.



MARCH 2018

TRIBOELECTRIC NANOGENERATOR - ADVANCED TECHNOLOGY FOR HIGH-EFFICIENCY MECHANICAL ENERGY HARVESTING

Prof. ZI Yunlong and his research team have collaborated with different renowned research teams to investigate the triboelectric nanogenerator (TENG), which has been developed for high-efficiency mechanical energy harvesting from ambient environment. These studies include the fundamental mechanism about triboelectric effect (Adv. Mater. 30 (15), 2018), the novel power-management solution for TENG (Adv. Func. Mater., DOI: 10.1002/adfm.201805216, 2018), and the application of TENG in micro plasma generation (Nature Commun. 9 (1), 2018) and field-emission of electrons (Adv. Func. Mater. 28 (21) 2018).



MAY 2018

MULTIFUNCTIONAL BIOHYBRID MAGNETITE MICROROBOTS FOR IMAGING-GUIDED THERAPY

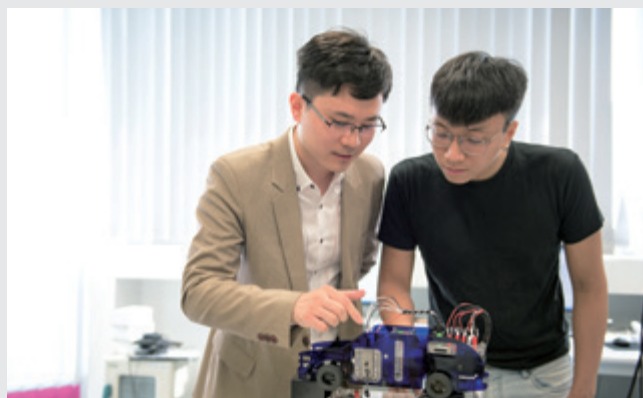
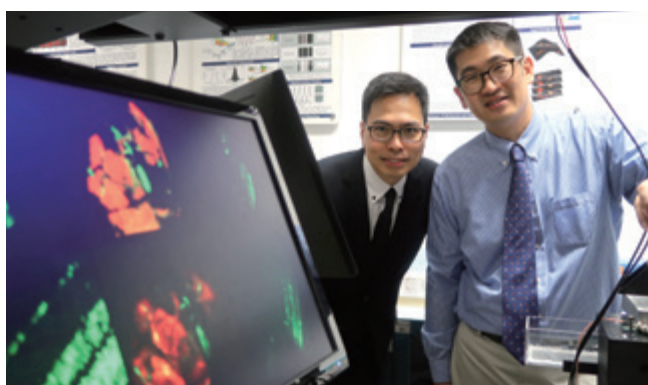
Prof. ZHANG Li and co-workers recently developed the Biohybrid Magnetite Microrobots that could be remotely controlled to propel in biological fluids precisely by using magnetic fields. In addition to the renowned AAAS's journal – Science Robotics, his research findings were also featured in the IEEE Spectrum (Chinese Version) in May 2018, and the Hong Kong Research Grant Council (RGC) YouTube channel. It is envisioned that, the microrobots could be applied to the biomedical field, especially in minimally invasive treatment, for accurate drug delivery and targeted therapy.



JUNE 2018

ULTRAFAST MICROSCOPE - NEW TECHNOLOGY TO HELP TACKLE GLAUCOMA AND OTHER NEUROLOGICAL DISEASES

The first digital holography-based (DH) twophoton excitation (TPE) microscope developed by research team of Prof. CHEN Shih-Chi could generate simultaneous optical stimulation and realtime fluorescent imaging to track nerve cells activities. With the new invention, Prof. CHEN is now collaborating with CUHK's Faculty of Medicine and the Hong Kong Eye Hospital to study the molecular mechanisms of optic nerve degeneration in glaucoma. In the future, this technology could be applied to researches on other diseases and hence contributes to studying the causes of diseases.



MAY 2018

EEEN PROGRAMME - NURTURING ENGINEERS FOR A GREENER AND SUSTAINABLE WORLD

To nurture engineers to help make a greener and sustainable world, the EEEN Undergraduate Programme provides a comprehensive platform for students to understand the complexities and inter-linkages of energy and environment. Moreover, EEEN students could acquire technological know-hows for possible tradeoffs and solutions by gaining knowledge about engineering as well as relevant academic disciplines. Having this integrative curriculum involving other Departments and Schools, the EEEN Undergraduate Programme has been in the spotlight and was reported by Ming Pao, the local newspaper.



AUGUST 2018

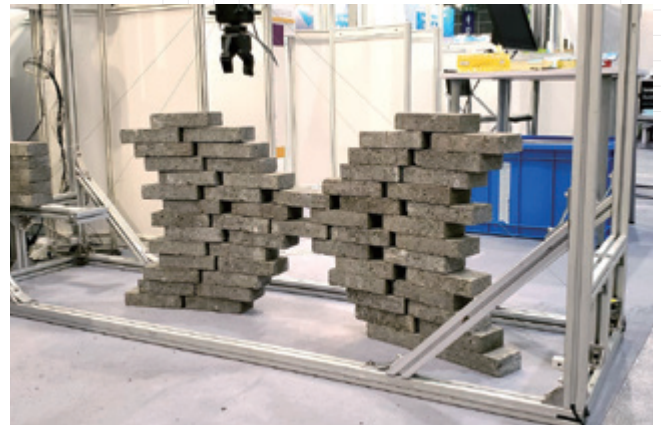
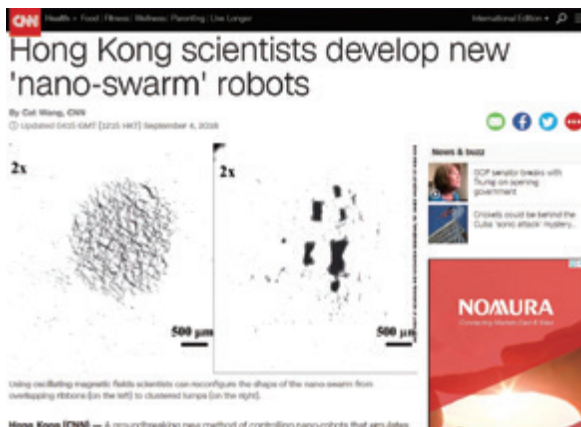
NANO-ROBOTS SWARM LEARN COLLECTIVE MORPHOLOGICAL TRANSFORMATION FROM NATURE FOR BIOMEDICAL APPLICATIONS

The research team led by Prof. ZHANG Li has developed a new way to control the collective movement of nano-robots, and the finding has been published in the top-tier scientific journal Nature Communications. By studying and implementing swarm behaviors, the research team can control the nano-robots developed to change morphologically and split. This reconfigurable microswarm with environmental adaptability has a high potential for in-vivo biomedical applications including targeted drug delivery.

SEPTEMBER 2018

NANO-ROBOTS SWARM IS IN INTERNATIONAL SPOTLIGHT

In addition to local media, the international media channel CNN has reported the nano-robots swarm developed by Prof. ZHANG Li and his research team. The nano-robots swarm which can be reconfigured using magnetic fields has a high morphological adaptability, the research team is now exploring the potential clinical applications.



OCTOBER 2018

CABLE-DRIVEN ROBOT HELPS CONDUCT DIFFERENT TASKS

Cable-driven robots developed by Prof. LAU Tat Ming Darwin and his research team is now applied for a range of construction and maintenance applications, including construction of brick buildings and cleaning of sedimentation tanks, to cleanse the drainage system in Hong Kong. The invention was reported by TVB News.

OCTOBER 2018

INTERVIEW OF PROF. LIU YUN-HUI ON EAST WEEK



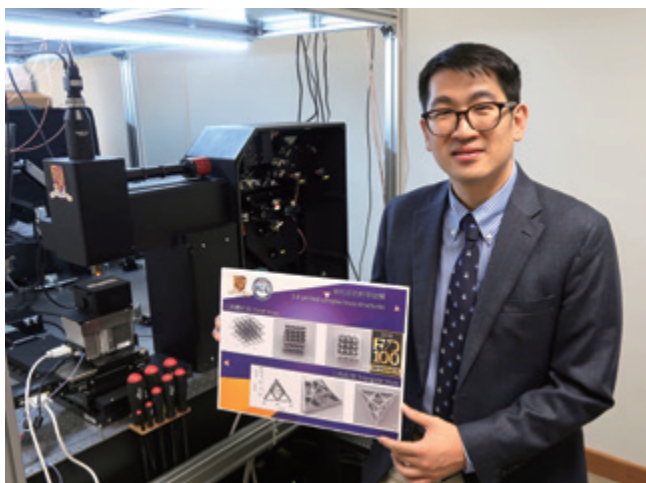
Prof. LIU Yun-Hui, Choh-Ming Li Professor of Mechanical and Automation Engineering and the Director of CUHK T Stone Robotics Institute, was featured in the local magazine East Week. Prof. LIU talked about his career pathway of designing robots for applications in medical and industrial fields. To read more about Prof. LIU's story, please refer to the East Week (Issue no.: 792).

NOVEMBER 2018

MICROBOTS MADE FROM MUSHROOM SPORES CAN CLEAN POLLUTED WATER



Created by Prof. ZHANG Li and his research team, the system made of external magnetic field and mushroom spores with coating could reduce the lead levels in contaminated water by 82%. With this recoverable system, it is predicted that the research could lead to a breakthrough in solving global water crisis.



DECEMBER 2018

DIGITAL HOLOGRAPHY-BASED 3-D NANO-BUILDER – NEW TECHNOLOGY FOR ULTRAFAST MICRO-/NANO-PROTOTYPING

Prof. CHEN Shih-Chi and his research team have developed the Digital Holography-based 3-D Nano-BUILDER which can additively write micro-nano-scale components with complex structures in high speed. The Nano-BUILDER can be applied in research and development such as printing photonic, robotic, metamaterials, micro-scaffolds, and drug delivery devices. With this advanced technological development, the team has recently been honoured with the renowned 2018 R&D 100 Award – “The Oscar of Invention”.

FEBRUARY 2019

MEDICAL MICRO-ROBOTS FOR DIAGNOSIS CAN DETECT CLOSTRIDIUM DIFFICILE BACTERIAL TOXINS IN 15 MINUTES

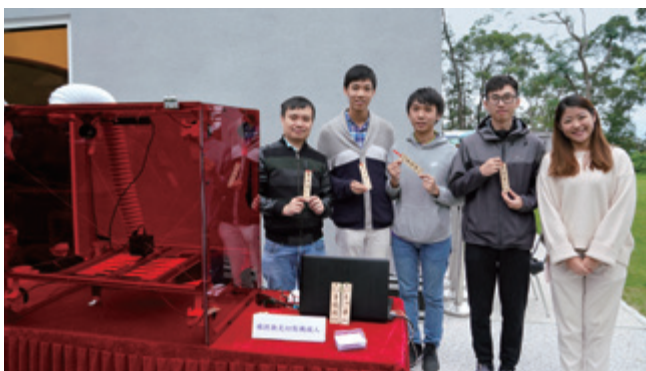
The research team led by Prof. ZHANG Li has developed fluorescent magnetic spore-based microrobots (FMSMs) which is capable of accurately detecting toxins within 15 minutes based on a specific combination. This greatly shortens the detection time. The research team will move forward to construct an automated microrobotic platform for the practical diagnostic application that can be used in clinics and hospitals.



FEBRUARY 2019

CABLE-DRIVEN LASER CUTTING ROBOT WAS PRESENTED IN CUHK CHINESE NEW YEAR MEDIA RECEPTION

Prof. LAU Tat Ming Darwin and his research team have developed a cable-driven laser cutting robot which was presented during the CUHK Chinese New Year Media Reception. In addition to laser cutting, the cable-driven robots can complete different tasks including construction and cleaning work.



MARCH 2019

INTERVIEW OF PROF. AU KWOK WAI SAMUEL ON CUHK ALUMNI MAGAZINE

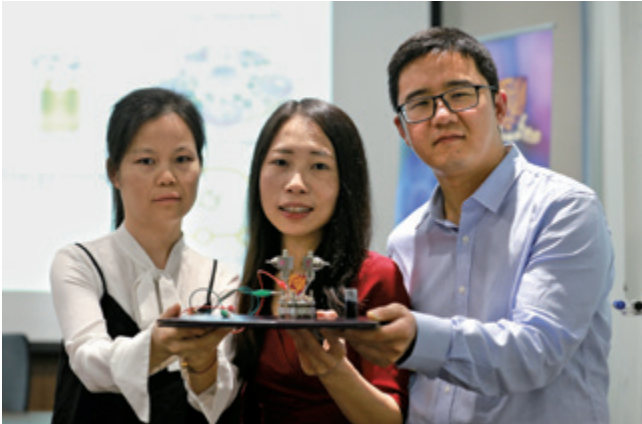


Prof. AU Kwok Wai Samuel received the B.Eng. and M.Phil degrees in Mechanical and Automation Engineering from CUHK in 1997 and 1999, respectively. He continuously focus on leveraging the design and control knowledge, together with medical science and innovative design to create novel robotic solutions to address fundamental clinical questions limitations. His ultimate goal is to provide profound impacts in the quality of life of patients through technologies.

MARCH 2019

BREAKTHROUGH OF CUHK ENGINEERING IN BATTERY RESEARCH

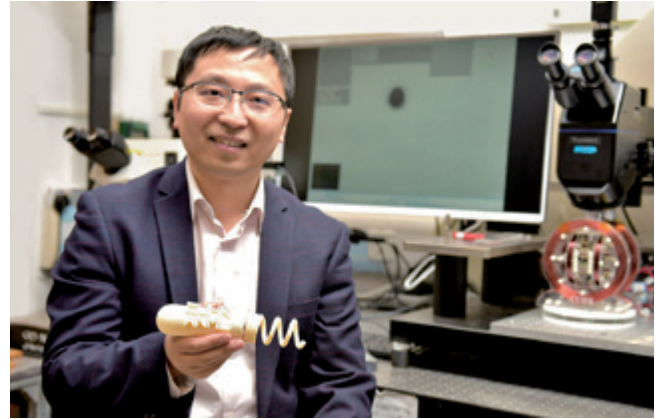
Prof. LU Yi-Chun and her research team have developed a safe, high-rate and long-life oxygen battery that exploits a potassium biphenyl complex anode instead of the traditional potassium metal one. This technology provides a safe and efficient solution for the storage of renewable energy sources. The breakthrough was published in the world-leading scientific journal, Nature Materials.



MARCH 2019

SENDING RED CROSS TO THE BRAIN

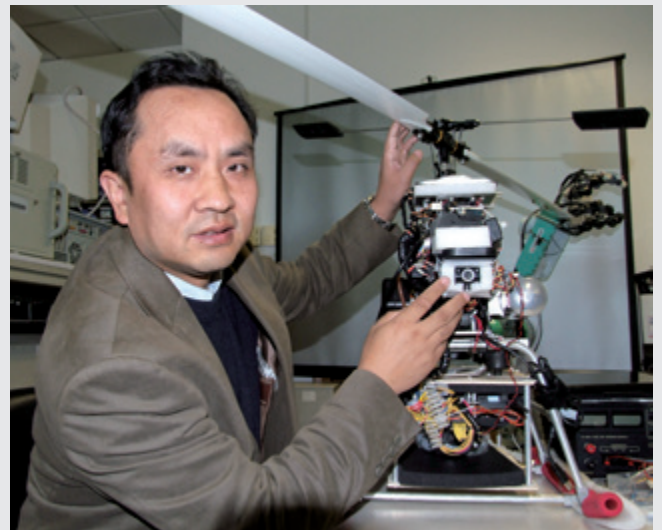
Prof. ZHANG Li has taken mini-medicine and biohybrid technology to a whole new level. He has forged nanorobots that can help administer drugs selectively and with a high degree of precision.



MAY 2019

INTERVIEW OF PROF. LIU YUN-HUI ON HONG KONG ECONOMIC JOURNAL

Prof. LIU Yun-Hui, Choh-Ming Li Professor of Mechanical and Automation Engineering and the Director of CUHK T Stone Robotics Institute, was featured in the local newspaper Hong Kong Economic Journal. Prof. LIU mentioned about his work on the development of surgical robots that can help surgeons side-by-side in supportive tasks or automate surgical steps in robotic surgery. The assistive surgical robots developed by his group for sinus surgery and hysterectomy have undergone clinical trials at the Prince of Wales Hospital.



JUNE 2019

SHAPE DRIVEN TECHNOLOGY

Prof. WANG Changling Charlie from MAE Department and his team have developed Shape Driven Technology. After different stages of improvement, it is now equipped with the mature fast scanning, the big-data driven artificial intelligence and the digital knitting technology to achieve its mission of automatically fabricating personalised clothes and footwear according to individual forms. This project recently won the Silver Award in the 47th Geneva International Invention Exhibition.



DEPARTMENT NEWS

DEPARTMENT AFFAIRS



JANUARY 2018

Departmental Retreat

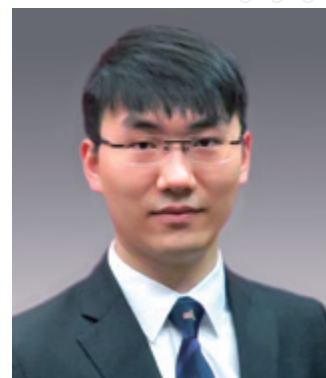
The Departmental retreat was held successfully from 20 to 21 January 2018 in Shangri-La Hotel, Shenzhen. The retreat not only offered an excellent opportunity for faculty members to discuss developments on research and education, but also provided a relaxing environment for the faculty members to set some strategic goals for the Department to achieve in the future.



APRIL 2018

Departmental Scholarship Presentation Ceremony

The 2018 Scholarship Ceremony was held on 24 April 2018 in CUHK. In the 2017/18 academic year, more than 120 scholarships and awards were awarded to students from MAEG and EEEN with the total value amounting to over a HK\$876 thousand. The scholarships were awarded from the HKSAR Government, industrial sponsorships and the University.



MARCH 2018

Prof. WANG Zerui Joins the MAE Department

Prof. WANG Zerui has joined the Department as a Research Assistant Professor in March 2018.



MAY 2018

MSc Banquet

The Annual Banquet for the part-time and full-time MSc Programme in Mechanical and Automation Engineering was held on 11 May 2018. The MSc Programme aims to provide practicing engineers with the knowledge and capability to use some of the latest technical advances in mechanical and automation engineering, especially related to energy systems.



MAY 2018

Visit of HKMPTA to MAE Department

Hong Kong Mould and Product Technology Association (HKMPTA) visited the MAE Department on 11 May 2018. Apart from exchanging ideas about the current development in innovation and technology in Hong Kong, Chairman and Executive Committee Members of HKMPTA visited research laboratories of the Department and the CUHK T Stone Robotics Institute. HKMPTA is an association aiming to advance technology, innovation and creativity of local production field.



JULY 2018

Prof. WANG Changling Charlie Joins the MAE Department

Prof. WANG Changling Charlie has joined the Department of Mechanical and Automation Engineering as a Professor in July 2018.



JULY 2018

IMechE Public Lecture

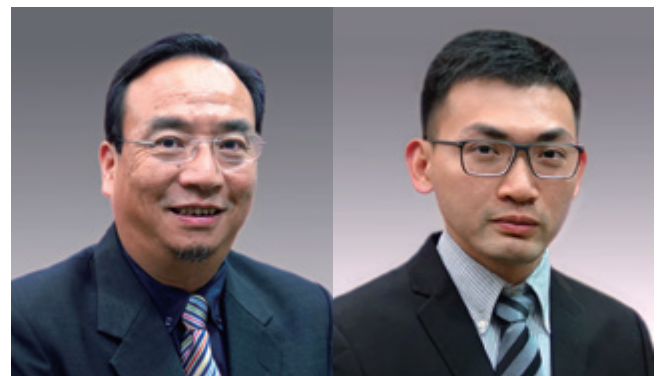
The Public Lecture co-organized by the IMechE – Hong Kong Branch, Education Bureau and the MAE Department was held on 7 July 2018. In addition to the talks delivered by three senior experts, the MAE Department organized lab visits and set up a booth to let students know more about our advanced research projects and our MAEG and EEEN Undergraduate Programmes.



AUGUST 2018

Department Announcement

Prof. LIAO Wei-Hsin and Prof. XU Dongyan are appointed respectively as the Chairman of the Department of Mechanical and Automation Engineering, and the Programme Director of Energy and Environmental Engineering Programme.



AUGUST 2018

Prof. CHEN Benmei and Prof. CHENG Shing Shin Join the MAE Department

Prof. CHEN Benmei and Prof. CHENG Shing Shin have joined the Department as a Professor and an Assistant Professor respectively in August 2018.



AUGUST 2018

Excellent Tutor Award Ceremony

To promote excellence in teaching, the Department establishes Excellent Tutor Award to recognize the outstanding tutors for their teaching. This year, Mr. CHAN Yin Pok (left), Miss WANG Yu (middle right) and Miss XIE Jing (right) received the award.



OCTOBER 2018

CUHK Orientation Day

The Department held a booth and lab tours on the Orientation Day for Undergraduate Admissions on 20 October 2018, and it attracted flocks of visitors coming to know more about the undergraduate programmes provided by MAE Department.



SEPTEMBER 2018

Department Academic Advisory Gathering

To support students' academic development with pastoral care, the Department-level advisory system is set to encourage interactions between MAE teaching members and students. Gatherings and meetings are organized under the system to provide platforms for communications. The first Department Academic Advisory Gathering in the academic year 2018-19 was held on 18 September 2018 in CUHK.



NOVEMBER 2018

EEEN Career Talk Series

By co-organizing with Hong Kong Green Building Council (HKGBC) and Arup, the EEEN Career Talk Series was held in November 2018. Various guests, including Ms. Fiona SYKES (Senior Engineer, Arup) and Mr. Ryan LEE (Technical and Sustainability Manager, Hongkong Land Limited), were invited to share their experience about developing their own career.

NOVEMBER 2018

MAE Career Talk by HKIE MMNC Division

In collaboration with the Hong Kong Institution of Engineers Mechanical, Marine, Naval Architecture & Chemical Division (HKIE MMNC Division), the HKIE Career Talk was held on 6 November 2018. Ir. LEE C. K., Ir. LAM P. T. and Ir. TSANG Bowie were invited to introduce HKIE Scheme A Training Programme and share their working experience as a professional engineer.



NOVEMBER 2018

The 85th Congregation for the Conferment of Degrees

The 85th Congregation for the Conferment of Degrees was held on 15 and 29 November 2018 in CUHK. Graduates of undergraduate and postgraduate programmes of the MAE Department celebrated their graduation with the professors. This year, a total of 92 undergraduates and 50 postgraduates (including 18 research postgraduates and 32 taught postgraduates) have graduated from the MAE Department.



DECEMBER 2018

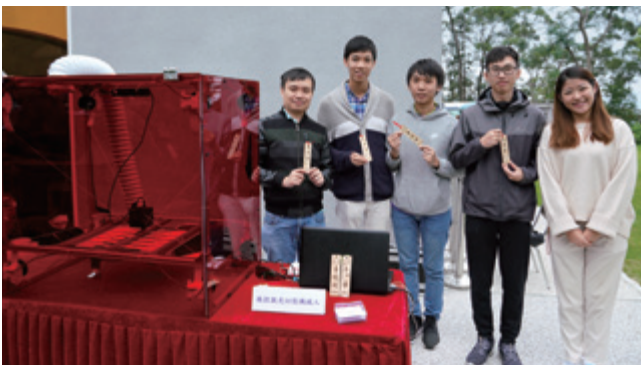
Department Advisory Committee Meeting

The Department Advisory Committee Meeting that was held on 7 December 2018 provided the MAE Department strategic directions and possible explorations on programme enhancement.

FEBRUARY 2019

CUHK Chinese New Year Media Reception

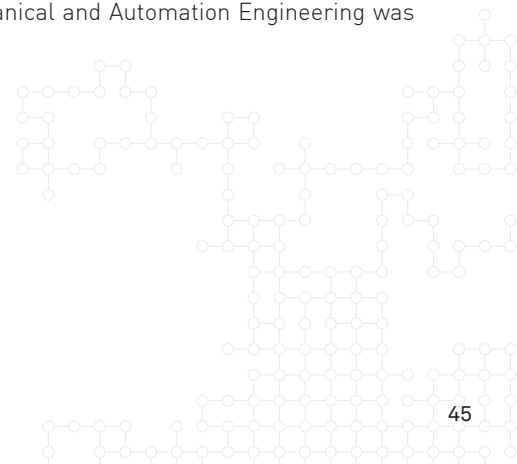
Prof. TUAN Rocky S., Vice-Chancellor and President of the CUHK, hosted a Chinese New Year media reception at the Vice-Chancellor's Lodge. Prof. LAU Tat Ming Darwin and his research team demonstrated their cable-driven laser cutting robot by making wooden bookmarks during the event. The cable-driven robots developed can perform different tasks in addition to laser cutting, such as construction and cleaning work.



MAY 2019

MSc Banquet

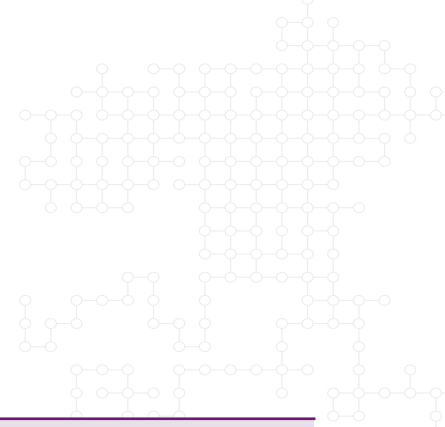
The Annual Banquet for the part-time and full-time MSc Programme in Mechanical and Automation Engineering was held on 17 May 2019.



SEMINARS

72 seminars were organized by the Department of Mechanical and Automation Engineering in CUHK from January 2018 to June 2019. The following are some of the highlights:

TOPIC	DATE	SPEAKER
Robot Oriented Design - Robotic Industrialization - Site Robotics and Automation - Robotic Ambience	10 Jan 2018	Prof. BOCK Thomas Chair Building Realization and Construction Robotics Technical University of Munich Germany
Information Thermodynamics Meets Technology	9 Feb 2018	Prof. DAHLSTEN Oscar Department of Physics Southern University of Science and Technology China
A Four Modal Finger-Tip Sensor for Robotic Dexterous Operations	22 Mar 2018	Prof. SUN Fuchun Professor Department of Computer Science & Technology Tsinghua University China
Microrobotics, Microrobots: Interactive Systems for Small Scales	3 Apr 2018	Prof. RÉGNIER Stéphane Professor Institute of Intelligent Systems and Robotics (ISIR) Sorbonne University France
Understanding Nanoscale Transport Phenomena for Engineering Applications	5 Jun 2018	Prof. LI Deyu Professor of Mechanical Engineering Department of Mechanical Engineering Vanderbilt University USA
Self-powered Smart Sensing System	27 Jun 2018	Prof. ZHANG Haixia Professor Institute of Microelectronics Peking University China
Micro and Nano-robotic Manipulation and Applications	25 Jul 2018	Prof. FUKUDA Toshio Professor Beijing Institute of Technology China
Volumetric Modeling	31 Aug 2018	Prof. ELBER Gershon Department of Computer Science Technion, Israel Institute of Technology Israel
On Irregular Linear Quadratic Control	12 Sep 2018	Prof. ZHANG Huanshui Professor School of Control Science and Engineering Shandong University China
Quantum Dynamics and Control for Emerging Quantum Technologies	29 Oct 2018	Prof. KOCH Christiane Professor Institute of Physics University of Kassel Germany
Hexahedral Mesh Subdivision and Simplification for Isogeometric Analysis	22 Nov 2018	Prof. XU Gang Professor Department of Computer Science and Technology Hangzhou Dianzi University China



Thermoelectric Studies of Graphene Antidot Lattices and Comparable Nanoporous Thin Films	3 Dec 2018	Prof. HAO Qing Associate Professor Department of Aerospace and Mechanical Engineering University of Arizona USA
A Fast Convergent Distributed Algorithm for Solving Linear Systems with Diagonal Dominance	23 Jan 2019	Prof. FU Minyue School of Electrical Engineering and Computer Science University of Newcastle Australia
Lighting A New Way Forward: Optical Sensing for Future Mobility Applications	18 Feb 2019	Prof. YOON Jihyung Assistant Professor Department of Automotive Engineering Hanyang University South Korea
Functional Bio-inspired Structures via Multi-material and Multi-scale 3D Printing	11 Mar 2019	Prof. CHEN Yong Professor Department of Industrial and Systems Engineering and Department of Aerospace and Mechanical Engineering University of Southern California USA
Is the Gaussian Distribution "Normal"? – Signal Processing under Impulsive Noise	29 Apr 2019	Dr. KURUOGLU Ercan E. Senior Researcher ISTI-CNR Pisa, Italy
Development and Application of Laser Techniques for Combustion Diagnostics	16 May 2019	Prof. ALDÉN Marcus Professor and Head Division of Combustion Physics Lund University Sweden
Intrinsically Stretchable Polymer Electronics for Merging with Biological Systems	28 June 2019	Prof. WANG Sihong Assistant Professor Pritzker School of Molecular Engineering University of Chicago USA



EXHIBITIONS



DATE: 12 Dec 2017 – 12 Feb 2018
2017 Hong Kong Bi-City Biennale of Urbanism\Architecture

Prof. LAU Tat Ming Darwin, Prof. YAM Yeung, Prof. CROLLA Kristof (Architecture), Prof. FINGRUT Adam (Architecture), WU Yulong, CHEUNG Man Kit – CU-Brick For Robotic Architecture



DATE: 7 – 18 Apr 2018
HKIE “Smart Tomorrow, Engineers’ Motto” Programme

Mr. CHEUNG Man Kit (Supervisor: Prof. YAM Yeung) – Sitting Posture Monitor (SPM)



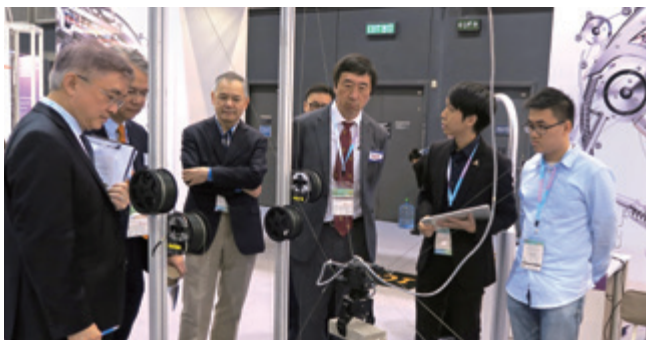
DATE: 13 – 16 Apr 2018
International ICT Expo 2018 (Hong Kong)

Prof. CHEN Shih-Chi – Development of a High-speed Stealth Laser Dicing System based on Multi-depth Bessel Beams



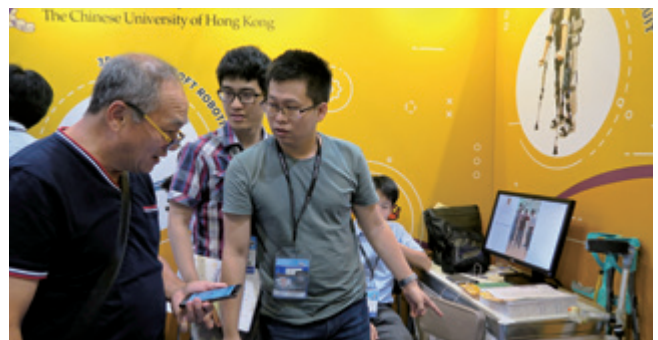
DATE: 3 – 11 Nov 2018
InnoCarnival 2018: Knowledge Transfer and Preventive Chinese Medicine

Prof. LU Yi-Chun – Integrated Thermal Energy Harvesting and Storage for Autonomous Wireless Sensor Network



DATE: 7 – 18 Dec 2018
HKTDC SmartBiz Expo 2018

Prof. LAU Tat Ming Darwin – CU-Brick



DATE: 14–16 May 2019
Hong Kong International Medical and Healthcare Fair

Prof. LIAO Wei-Hsin – Robotic Exoskeleton for Motion Assistance

STUDENT EXCHANGE AND INTERNSHIP

In the year of 2018, a total of 53 incoming and outgoing students were sent to exchange via our Department. Having this opportunity, both the incoming and outgoing exchange students could immerse themselves in the academic and social life of their host institution.

Moreover, 11 MAEG or ENER/EEEN undergraduates were selected to join the Work Study Programme or Summer Internship Programme in 2018. This helps the students broaden their horizons, and get prepared for their future career in the field of engineering.

POSTGRADUATES

To promote the exchange in research and development of the research groups in the Department, 15 graduate students were sent to exchange via our Department. The following shows some highlights of the incoming students who took part in the exchange programme:

EXCHANGE - INCOMING STUDENTS

Name: TANG Lei

Home University: Shanghai Jiao Tong University, China

"I am very impressed by the cable-driven robot. It can be put anywhere randomly, and the cable keeps in tension all the time. It would be wonderful if I have chance to go back to Prof. LAU Tat Ming Darwin's lab to learn from the team. Many thanks for Prof. LAU's instructions and consideration."



Name: MAO Huade

Home University: Nanjing University, China

"During the exchange programme, I obtained first-hand experience of Hong Kong as well as CUHK, and most important of all, I enhanced my research skills. During my spare time, I travelled around Hong Kong to learn some Cantonese and enjoy the delicious food. Besides, I found CUHK is far more captivating, not only for its beautiful scene, but also for the kind staff I have met. As for the research, my skills were greatly enhanced. This is attributed to the kind guidance of Prof. REN Wei and Dr. CHEONG K.P.. All in all, it is an unforgettable research experience in CUHK."

UNDERGRADUATES

With aid of the MAE Department and the University, 9 undergraduate students from MAEG or ENER/EEEN could go to various countries including USA, Austria and Sweden for an exchange. Moreover, 28 undergraduates from different countries including Canada, USA and UK joined the exchange programmes to take courses provided by the Department. Many of those exchange students are from prestigious universities such as the Pennsylvania State University and University of Toronto.



EXCHANGE - OUTGOING STUDENTS

Name: LEUNG Chun Ming (Undergraduate, MAEG)

Host University: Graz University of Technology, Austria

Period: 2017/18 2nd Term

"I would like to express my sincere gratitude to CUHK for offering me the opportunity to spend a semester at TU Graz. I regard the last 6 months experiences as utter contentment, though there was some hard time. Studying in TU Graz is fascinating no matter in term of subjects or in-class experiences. I was taking the programme of Industrial engineering and Mechanical engineering and had the chance to take courses related to the automobile, a strong industry in Austria, which I always eager to learn. Apart from studying, there was way more. The exchange is never limited to the study field. Making friends from around the world, discovering the cultures and landscape of Europe also broaden my horizon. I wouldn't say I have grown a lot in the last 6 months but explicitly learnt a lot."



Name: WONG Cho Hang Jonathan (Undergraduate, MAEG)
Host University: KTH Royal Institute of Technology, Sweden
Period: 2017/18 2nd Term

“My exchange studies started with various challenges: freezing Nordic winter, difficult master-level classes, and living alone in an unknown land. Gladly, friends I have met during pre-departure briefing in Hong Kong and orientation day in Stockholm were really supportive. Without them, I would not have pulled through winter depression.

The master-level courses turned out to be a blessing. I took a course about flight mechanics, and two about rail vehicles. During these courses, I ran simulations with real aircraft data; performed wind tunnel tests; completed a project with industrial software GENSYS; and briefly explored railway system of Sweden on paper. To go in such depth in an engineering topic was a one-of-a-kind experience for me.

Of course, I have also explored SJ’s long distance railway in person, to travel. I took a night train to the Swedish Lapland to chase northern lights, and a X2000 tilting high-speed train made for curvy lines from Norway.

More highlights include cycling to school, enjoying fika and strolling in old towns in different European countries.”

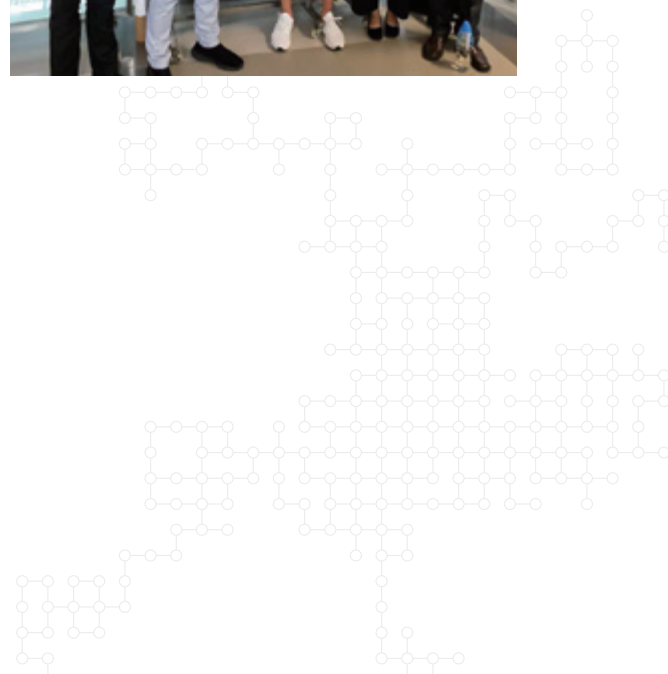
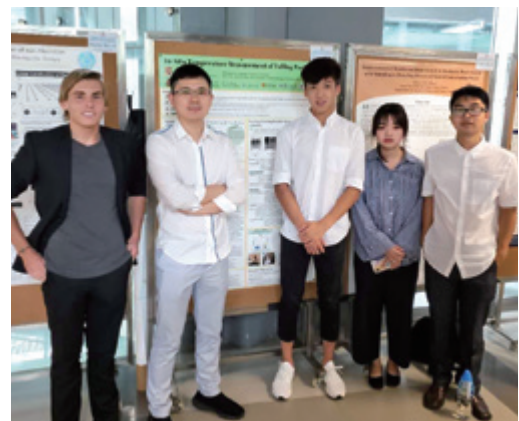
EXCHANGE - INCOMING STUDENTS

Name: YI Ni
Home University: University of Toronto, Canada
Period: 2017/18 Summer Term

“During these 8 weeks, I worked as a full-time associate undergraduate research student in Prof. REN Wei’s lab. The project assigned to the team is Combustion Chemistry & Diagnostics, and my role is designing a scaled model along with a laser that can be used in a high-temperature concentrating solar power system model. Hence, this system is divided into a falling particle model and a temperature-detecting laser. The mechanical part of this system is what the team mainly focused on, while the laser part aims to detect the instantaneous temperature of falling particles. To design this scaled falling particle model, it can be categorized into supporting structures, a funnel and a receiver.

In order to accomplish this project, detailed research and analysis must be conducted to come up with alternatives. After discussing all alternatives, the team made scaled models in solidworks and did 3D printing together. With the help of members of the Laser Diagnostics & Combustion Lab, the model was finally tested successfully. Although this design is not thorough, since it can still be improved in many aspects like material used etc.

Finally, I would like to give my sincere thanks to my supervisor Prof. REN Wei, Dr. CHEONG Kinpang and Mr. MA Lihao. They were very serious, responsible and really helped us a lot, we could not finish this project without their contribution.”





Name: CHEN Jizhuo
Home University: The University of Sydney, Australia
Period: 2018/19 1st Term

"As an exchange student, I'm very glad and fortunate to study in The Chinese University of Hong Kong. During the period of exchange, I'm studying in the Department of MAE as a mechanical engineering student. I am honoured to study in the excellent department which provides both good quality of teaching and excellent studying environment. I enjoy the brilliant studying opportunity which the MAE Department provided. All the academic and administrative staffs are keen to help me with my problems. I am very satisfied with my exchange experience."

In addition to the exchange programme, 11 MAEG or ENER/EEEN undergraduates joined the Work Study Programme or Summer Internship Programme in 2018. By immersing themselves in the real working environment in the field of engineering, the students have gained working experience which helps create their future career plan.

WORK STUDY/INTERNSHIP

Name: YANG Minyi (Undergraduate, MAEG)
Company: ASM Pacific Technology Ltd
Period: 2017/18 (1 Year)

"It was a fantastic experience in joining work study program. All the time at ASM was filled with diversified tasks, which enabled me to gain more engineering concepts in the industry. My interests in the mechanical design field was built this year. It was really my first time in designing an innovative "machine" which helped the project to run smoothly. I did help starting from research to conceptual design, functional test to optimisations etc. I was satisfied that the product turned out useful. Besides that, I am happy to meet new friends in ASM. I have joined their annual performance, charity run and off-duty parties etc., which were amazing. It was really enjoyable to stay in the work-life balanced environment."



Name: LAU Sin Pang (Undergraduate, EEEN)
Company: CLP Power Hong Kong Ltd.
Period: 2018 Summer

"My goal is to change the world, to make the world a better place for living in the matter of energy use. Thus, to be honest, I was excited when I knew that I have a chance to work for CLP."

In the past, I was pessimistic about the current situation in Hong Kong. But, during my trip to CLP, I prepared activities to engage public about energy-saving, followed my mentor to promote green energy, did reports to show the availability of solar system. Those experiences ignite my enthusiasm to work more so as to achieve my goal because many people support me to pay efforts to make the world greener."



STATISTICS

SCHOLARSHIPS

In the academic year of 2017/18 and 2018/2019, near 210 scholarships and awards were awarded to students from MAEG and EEEN with the total value amounting to HKD \$1,541,544. The scholarships were awarded from the HKSAR Government, industrial sponsors and the University.

THE FOLLOWING TABLES SHOW SOME OF THE AWARDEES AND SCHOLARSHIPS:

HONG KONG GOVERNMENT (2017-18) :

STUDENT NAME	NAME OF SCHOLARSHIPS
CHAN Chung Pan	Exchange for Post-secondary Students (SSE)
FANG Shitong	Hong Kong PhD Fellowship Scheme (HKPFS)
GONG Xuwen	Hong Kong PhD Fellowship Scheme (HKPFS)
YANG Bohan	Hong Kong PhD Fellowship Scheme (HKPFS)

HONG KONG GOVERNMENT (2018-19) :

STUDENT NAME	NAME OF SCHOLARSHIPS
LIU Kangcheng	Hong Kong PhD Fellowship Scheme (HKPFS)
OUYANG Wenqi	Hong Kong PhD Fellowship Scheme (HKPFS)
YAO Fengju	Hong Kong PhD Fellowship Scheme (HKPFS)

INDUSTRIAL SPONSORS (2018-19) :

STUDENT NAME	NAME OF SCHOLARSHIPS
LAU Ying Yeung	CLP Scholarship in Energy Engineering
LAW Tsz Kin	CLP Scholarship in Mechanical and Automation Engineering
AU Tsz Him Vincent	Dahua Education Scholarship
KIMAN Malvin	Hip Yick Scholarship
CHEUNG Ka Hin	Hongkong Maker Association Scholarship
CHENG Jianlong	Hongkong Zhuhai Commerce Association Scholarship
XIONG Chuyu	Hongkong Zhuhai Commerce Association Scholarship
SHEN Ting-feng	NTK Scholarship
CHEN Zhihong	Polywell Scholarship
WANG Huai Te	Polywell Scholarship
CHENG Wui Chung	Pro-Technic Scholarship
LEUNG Chi Hang Hans	Pro-Technic Scholarship
LIU Winnie Hiyadi	Vigor Precision Limited Scholarship
SUGIARTO Lawnardo	Vigor Precision Limited Scholarship
WONG Fei Yan Fiat	Wah Kat On Scholarship



HIGHLIGHTS:

“I am really excited and feeling blessed in learning that I was selected as one of the recipients of the Li Po Chun Charitable Trust Fund Postgraduate Scholarship. The scholarship is awarded to a local full-time research postgraduate student who has made good progress in his/her research studies in the previous academic year. Being the recipient meant that my hard work, late nights of extracurriculars, studying, and constant pursuit of being my best self was being noticed and encouraged.”

Miss LEUNG Yun Yee Awardee of Li Po Chun Charitable Trust Fund Postgraduate Scholarship 2017/18

Awardees received their industrial scholarships from the representatives of industrial sponsors on 24 April 2019.



GRANTS

Over HK\$126 million of grant funding was successfully applied and received by faculty members of MAE Department in 2018 and 2019. The grants commenced in the above period include funding from Research Grant Council (RGC), Innovation and Technology Fund (ITF) from the Innovation and Technology Commission of the HKSAR Government, and grants from other industrial companies, Mainland organizations and foreign institutes.

RGC GRANTS (NEW)

PRINCIPAL INVESTIGATOR	PROJECT TITLE	PROJECT AMOUNT (HK\$)	GRANT PERIOD
Prof. AU Kwok Wai Samuel	Safe Robotic Organ Retraction System with Force Sensing and Semi-automatic Retraction Capability	\$632,421.00	2019-21
Prof. AU Kwok Wai Samuel	Agile Legged Locomotion based on External Appendage and Null Space Avoidance Control Framework	\$695,919.00	2019-22
Prof. CHEN Chun	Investigation of the Air Resistance of Nanofiber Window Screens for Reducing Indoor Exposure to PM2.5 of Outdoor Origin	\$750,000.00	2019-21
Prof. CHEN Shih-Chi	High-throughput 3-D Nano-fabrication Based on Two-photon Polymerization	\$632,421.00	2018-21
Prof. CHEN Yongsheng	Effect of CO ₂ Adsorption on Catalyst Deactivation in Dry Reforming of Methane	\$336,865.00	2019-21
Prof. CHENG Shing Shin	A Novel Continuum Manipulator for Transoral Robotic Surgery	\$461,565.00	2019-22
Prof. HUANG Jie	From Purely Decentralized Control to Fully Distributed Control for Complex Multi-agent Systems	\$790,526.00	2018-21
Prof. HUNAG Jie	A Framework for the Cooperative Output Regulation of Multi-agent Systems by Sampled-data Distributed Control and its Applications	\$695,919.00	2019-22
Prof. LAU Tat Ming Darwin	Analysis and Configuration Design of Continuously Reconfiguring Cable-driven Parallel Robots	\$495,000.00	2019-22
Prof. LI Xiang	Shape Control and Task Planning for Robotic Manipulation of Deformable Linear Objects	\$695,919.00	2019-22
Prof. LIAO Wei-Hsin	Intelligent System and Control of Wearable Exoskeleton for Motion Assistance	\$695,919.00	2019-22
Prof. LIU Yun-Hui	Robotic Deformation Control of Soft Objects Using 3D Image Feedback	\$632,421.00	2019-21
Prof. LIU Yun-Hui	Modeling and Vision-based Control of a Robot Manipulator Climbing a Rope	\$695,919.00	2019-22
Prof. LU Yi-Chun	Model System Investigations of Solid-State Lithium-Oxygen Cathode-Electrolyte Interfaces: Reaction Kinetics, Electrode Reactivity and Degradation Mechanism	\$522,898.00	2018-20
Prof. LU Yi-Chun	Electrode-electrolyte Design and Degradation Mechanism of Potassium-oxygen Batteries: Reaction Kinetics, Product Morphology and Cell Reversibility	\$558,272.00	2019-22
Prof. LU Yi-Chun	Probing the Degradation Mechanisms of Water-in-salt Aqueous Lithium-Ion Batteries using Model Electrode-electrolyte Systems	\$505,298.00	2019-21
Prof. REN Wei	Mid-infrared fiber-based photoacoustic and photothermal trace gas sensors	\$443,950.00	2018-20
Prof. WANG Changling Charlie	Computing Tool-paths for Strengthening Parts Fabricated by Filament-based Multi-axis 3D Printing	\$731,089.00	2019-22
Prof. XU Dongyan	Enhancing Flow Boiling Heat Transfer in Microchannels by Surface Engineering	\$495,000.00	2019-22
Prof. XU Dongyan	Enhancing Thermoelectric Figure of Merit of Bismuth Selenide Nanoribbons by Defect Engineering	\$632,421.00	2019-21
Prof. YUAN Haidong	Adaptive feedback Hamiltonian Estimation	\$582,000.00	2018-20
Prof. YUAN Haidong	Cooperation between Coherent Controls and Noises in Quantum Metrology	\$502,444.00	2019-22
Prof. ZHANG Li	3D Printing of Miniature Robots for Minimally Invasive Ophthalmological Treatment	\$2,980,000.00	2019-21
Prof. ZI Yunlong	Boosting Dynamic Performance of the Triboelectric Nanogenerator	\$461,565.00	2019-22

ITF GRANTS (NEW)

PRINCIPAL INVESTIGATOR	PROJECT TITLE	PROJECT AMOUNT (HK\$)	GRANT PERIOD
Prof. AU Kwok Wai Samuel	Vibration Cutting for Structural Coloration of Metallic Surfaces	\$1,399,985.00	2018-19
Prof. AU Kwok Wai Samuel	Development of a Compact, Dexterous Flexible Telerobotic Manipulator for Confined Space Minimally Invasive Surgery	\$5,800,000.00	2019-21
Prof. CHEN Shih-Chi	High Throughput Organ Tissue Microarray Imaging System	\$1,382,300.00	2018-19
Prof. CHEN Shih-Chi	Advanced Vision and Sensing System for Next-generation Medical Robots	\$4,997,000.00	2018-20
Prof. CHENG Shing Shin	Development of an Ultrasound-guided Robotic Steerable Catheter for Pericardiocentesis	\$1,396,100.00	2019-21
Prof. LAU Tat Ming Darwin	Hybrid Cable-driven Serial Robot for Exterior Façade Window Cleaning and Wall Painting	\$5,196,850.00	2018-20
Prof. LI Xiang	Enabling Technologies for Indoor Renovation Robots	\$1,996,300.00	2018-19
Prof. LI Xiang	Development of Sanding Robot for Wooden and Coated Surfaces	\$887,109.00	2018-19
Prof. LIAO Wei-Hsin	Self-powered Smart Prosthetic Knee	\$1,400,000.00	2019-21
Prof. LU Yi-Chun	Development of a High-Energy-density Flow Battery for Fast-refueling in Electric Vehicles (Evs)	\$1,394,950.00	2018-20
Prof. WANG Changling Charlie	Trial: Ultra-personalized Design and Fabrication of 3D Wetsuit	\$553,908.54	2019-20
Prof. YAM Yeung	Development of Robotic Endoscopic Platform with Semi-autonomous Capability in Tissue Resection and Repair	\$4,882,650.00	2019-21
Prof. ZHANG Li	Public Sector Trial Scheme Project: Development of Enhanced Micro Hybrid Powertrain Systems	\$1,480,000.00	2018-19
Prof. ZHANG Li	Development of RefluxChip - A Miniature Battery-free Remote Sensing System for Real-time Monitoring of Gastroesophageal Reflux Disease	\$2,791,443.60	2018-20
Prof. ZHANG Li	Development of a Magnetically Enhanced TPA Accumulation (META) System to Enhance Endovascular Treatment for Elderly Patients with Acute Ischemic Stroke	\$5,399,549.00	2019-22
Prof. ZHANG Li	Development of QuickCAS: An Easy-to-use Analysis System for Quick Detection of C. Diff Toxin in Patients Stool	\$2,612,665.45	2019-21
Prof. ZI Yunlong	High-performance Triboelectric Nanogenerators for Vibration Energy Harvesting	\$1,382,495.50	2019-20



UNDERGRADUATE NEWS



DATE: 5 Feb 2018

Inauguration Ceremony (EEEN Society - Enorigin)

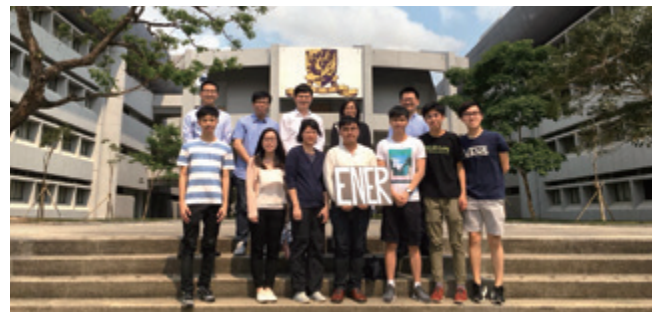
The Inauguration Ceremony of the 1st society of the Programme of EEEN, Session 2018-2019, was held in TY Wong Hall in Ho Sin-Hang Engineering Building. Under the witness of guests and participants, the society chop was successfully handed over to the Chairperson of the new cabinet, Mr. LAU Sin Pang after making the vows.



DATE: 21 Sep 2018

EEEN Orientation Night

To build connection with the new EEEN undergraduates, the EEEN Society organized an orientation night for them to join. The ice-breaking party games planned by the Society helped the new students to meet new friends while having fun.



DATE: 6-13 Apr 2018

Photo Day

The society decorated booths for the class of 2018 of the MAEG and ENER/EEEN undergraduates to celebrate their first step before graduation. With the non-alcohol champagne and party poppers, the Department and the societies gave the graduates-to-be the best wishes for their next adventure.



DATE:

22 Nov 2018 EEEN Gathering

The EEEN Society organized a gathering so as to improve the relationship between the EEEN undergraduates and faculty members under a relaxing environment. Many EEEN students and faculty members joined the activity and shared their ideas upon the programme.



DATE: 10 Dec 2018

E-league

The MAEG and EEEN students joined the E-league to have some sports matches against students from other undergraduate programmes. While stimulating healthy rivalry, this annual sports competition could help the MAEG and EEEN students to connect with undergraduates from other engineering programmes.



DATE: 20 Feb 2019

Inauguration Ceremony (MAEG Society – Mechange)

The Inauguration Ceremony of the 12th society of the Programme of MAEG, Session 2019-2020, was held in TY Wong Hall in Ho Sin-Hang Engineering Building. The society chop was successfully handed over to the Chairperson of the new cabinet, Mr. CHAN Sheung Yan under the witness of guests and participants.



DATE: 18 Feb 2019

Inauguration Ceremony (EEEN Society – Encentric)

The Inauguration Ceremony of the 4th society of the Programme of EEEN, Session 2019-2020. Under the witness of guests and participants, the society chop was successfully handed over to the Chairperson of the new cabinet, Mr. WONG Kin Sum, in TY Wong Hall in Ho Sin-Hang Engineering Building.



DATE: 26 Feb 2019

MAEG Spring Festival Dinner Gathering 2019

The MAEG Society organized the Spring Festival dinner gathering for MAEG undergraduates and faculty members to join. Participants, including MAE Department Chairman Prof. LIAO Wei-Hsin, had a nice evening by having a "poon choi" meal and playing some games, followed by an exciting lucky draw.



DATE: Apr 2019

Photo Day

The society decorated booths for the class of 2019 of the MAEG and ENER/EEEN undergraduates to celebrate their first step before graduation. With the non-alcohol champagne and party poppers, the Department and the societies gave the graduates-to-be the best wishes for their next adventure.

ALUMNI NEWS

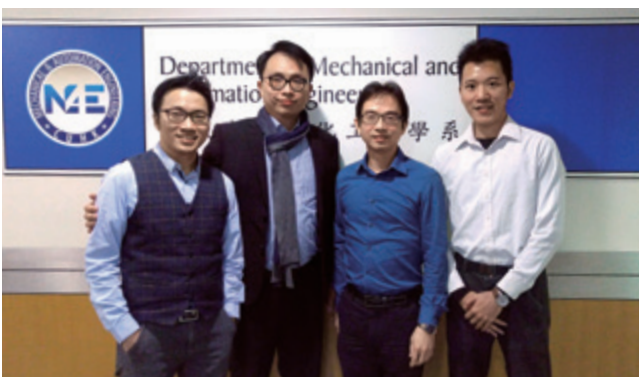


DATE: 20 Jan 2018

Opening Ceremony of ERGAA Mentorship Programme cum Distinguished Alumni Sharing

In order to provide a platform for mentees and mentors to widen their social network, the Engineering Alumni Association (ERGAA) of CUHK, and the Mechanical

Automation Engineering Alumni Association (MAEAA) organized the Engineering Mentorship Programme 2018. The opening ceremony was held in the TY Wong Hall in Ho Sin-Hang Engineering Building, followed by an alumni sharing session for the new publication “創夢工程人——行業領袖篇” of Dr. LAM Hiu Fung. Graduated from the MAE Department in 1999, Dr. LAM is the Chief Executive Officer of Sengital Limited. He was selected as one of the 25 Distinguished Alumni by CUHK’s Faculty of Engineering in 2017.



DATE: 21 Mar 2018

Lunch Meeting of MAE Department with MAEAA

To establish a better communication platform with the MAE Department and alumni, the MAEAA and MAE Department organized a lunch meeting on 21 March 2018. During the meeting, they shared their views on strengthening the relationship among alumni while enhancing their professional network.

DATE: 21 Apr 2018

Annual General Meeting cum Inauguration Ceremony of MAEAA

Annual General Meeting cum Inauguration Ceremony of MAEAA was held on 21 April 2018. During the meeting, the MAEAA leadership officiated the inauguration ceremony of the new committee. After the inauguration ceremony, the Association conducted the annual general meeting and shared the annual plan to enhance professional network of the alumni.





DATE: 4 May 2018
Alumni Sharing Session

To widen the career horizons of the graduates-to-be, the MAEAA invited some MAE alumni and organized an alumni sharing session for the undergraduates. The following guests were invited to share their views about job hunting after graduation:

- Mr. WONG Chi Yin (2004 graduate, CEO of Medisen Limited)
- Mr. SIN Kwong Fei (2004 graduate, Planning Engineer of Johnson Electric)
- Miss YAN Tsz Tung (2014 graduate, Assistant Electrical and Mechanical Engineer of Electrical and Mechanical Services Department, HKSAR)
- Mr. YUEN Yik Ting (Founder of Venturenix)



DATE: 24 Nov 2018
Alumni Homecoming Day

The annual CUHK Alumni Homecoming Day was held on 24 November 2018, with numerous visitors and alumni participating the event. This year, the MAEAA set up a booth and organized a booth game for visitors to play. The MAE Department also showed some demonstrations to introduce the undergraduate programmes of the department.



DATE: 1 Jun 2018
Interview of Alumnus in the CU Alumni Magazine

The story of Dr. LAM Tin Lun, was published on the CU Alumni Magazine in June with the title “林天麟 矢志推動機械人技術革命”. Dr. LAM, Assistant Professor of School of Science and Engineering in CUHK, Shenzhen, graduated from the MAE Department with a bachelor degree in 2006 and a PhD degree in 2010. He is currently developing BIG-i, a personalized family robot with mobility, 3D vision, voice programming, and active perception.



DATE: 28 Nov 2018
Interview of Alumni on the “CUHK Lives and Legends”

The stories of Prof. WONG Tak Sing and Dr. LAM Hiu Fung Alan were published on the “CUHK Lives and Legends”. Prof. WONG, Associate Professor in the Pennsylvania State University, and Dr. LAM, CEO of Sengital Limited, were previously selected as the 25 Distinguished Alumni by CUHK’s Faculty of Engineering.

DEPARTMENT MEMBERS

ACADEMIC STAFF

FACULTY MEMBER

Prof. AU Kwok Wai Samuel	Associate Professor
Prof. CHEN Benmei	Professor
Prof. CHEN Chun	Assistant Professor
Prof. CHEN Shih-Chi	Associate Professor
Prof. CHEN Yongsheng	Associate Professor
Prof. CHENG Shing Shin	Assistant Professor
Prof. DU Ruxu (till 31 July 2018)	Professor
Prof. GUO Ping (till 31 August 2018)	Assistant Professor
Dr. HAN Dongkun	Lecturer
Prof. HUANG Jie	Choh-Ming Li Professor of Mechanical and Automation Engineering
Prof. LAU Tat Ming Darwin	Assistant Professor
Prof. LI Xiang (till 21 August 2019)	Research Assistant Professor
Dr. LI Yi-Yang	Senior Lecturer
Prof. LIAO Wei-Hsin	Professor, Chairman
Prof. LIU Yun-Hui	Choh-Ming Li Professor of Mechanical and Automation Engineering, Director of CUHK T Stone Robotics Institute
Prof. LU Yi-Chun	Associate Professor, MSc Programme Director
Prof. REN Wei	Assistant Professor
Prof. SONG Xu	Assistant Professor
Prof. WANG Zerui	Research Assistant Professor
Prof. WANG Changling Charlie	Professor, Director of CUHK Institute of Intelligent Design and Manufacturing
Prof. XU Dongyan	Associate Professor, EEEN Programme Director
Prof. XU Yangsheng	Professor of Automation and Computer-Aided Engineering
Prof. XU Yunjian	Assistant Professor
Prof. YAM Yeung	Research Professor
Prof. YUAN Haidong	Assistant Professor
Prof. ZHANG Li	Associate Professor
Prof. ZHANG Weizhao	Assistant Professor
Prof. ZI Yunlong	Assistant Professor

PROFESSORS (BY COURTESY)

Prof. ZHAO Ni	Associate Professor (by courtesy)
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ADJUNCT PROFESSORS / ADJUNCT ASSISTANT PROFESSORS

Prof. CHUNG Chi-Kit Ronald	Adjunct Professor
Prof. DU Ruxu	Adjunct Professor
Prof. GUO Ping	Adjunct Assistant Professor
Prof. HUI Kin Chuen	Adjunct Professor
Prof. KWONG Chung Ping	Adjunct Professor
Ir. Dr. LAM Hiu Fung Alan	Adjunct Professor
Prof. WONG Ching Ping	Adjunct Professor

SUPPORTING STAFF

COMPUTING STAFF

Mr. LAU Chun-hung Thomas	Assistant Computer Officer
Ms. CHAN Yuk-kuen	Computer Technician
Ms. DJIN Kie Karina	Computer Technician

ENGINEERING STAFF

Mr. MOK Wai-kit Allan	Electronic Officer
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Dr. LAI Lai-fan Asta	Technician
Mr. LEE Yuk-keung Philip	Technician
Mr. LEUNG Yun-ye Martin	Technician
Dr. TONG Hang	Technician
Mr. YU Siu-ning	Technician

ADMINISTRATIVE STAFF

Ms. KAN Yuet-lin	Executive Assistant
Ms. CHAN Miu-ling Maggie	General Clerk
Miss FUNG Ka-yin Kay	General Clerk
Miss WONG Fung-kuen Winnie	General Clerk
Ms. WONG Mei-ha Joyce	General Clerk
Miss AU Ho-ling June	Project Coordinator
Ms. MOK Siu-ping Connie	Project Coordinator
Miss TSE Pui-kei Charmaine	Project Coordinator
Mr. CHEW Chi-kin, Paul	Office Assistant

SCHOLARSHIP DONOR COMPANIES IN 2018 & 2019 (IN ALPHABETICAL ORDER)

2018

CLP Power Hong Kong Limited
Dahua Education
Hip Yick Industrial Company Limited
Hongkong Maker Association
Hong Kong Mould and Product Technology Association (HKMPTA)
Hongkong Zhuhai Commerce Association
Kin Yip (Huizhou) P.C. Board Company Limited
NTK Holdings Limited
Polywell Machinery Limited
Pro-Technic Machinery Limited
Vigor Precision Limited

2019

CLP Power Hong Kong Limited
Dahua Education
Hip Yick Industrial Company Limited
Hongkong Maker Association
Hongkong Zhuhai Commerce Association
NTK Holdings Limited
Polywell Machinery Limited
Pro-Technic Machinery Limited
Vigor Precision Limited
Wah Kat On Bio-Technology Company Limited

ADVISORY COMMITTEE (2019-20)

CHAIRMAN

Mr. CHAN Siu Hung, JP	Managing Director – China CLP Holdings Limited
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MEMBERS

Ir. CHANG Che Son	Chairman and Director Key Direction Limited
Ms. CHIANG Maria L. L.	Managing Director Chen Chien Holdings Limited
Mr. CHU Weiman	Managing Director Leeport Tools Limited
Mr. IP Simon P. S.	Director NTK Holdings Limited
Mr. LAI Robert K. T.	Managing Director Pro-Technic Machinery Limited
Ir. Dr. LAM Alan Hiu Fung	CEO Sengital Limited
Ir. Dr. LEE Barry C. H.	Director Environmental Engineering Operation ATAL Engineering Limited
Dr. LEUNG Raymond S. H.	Chairman of FiMax Technology Limited Chairman & CEO of Altai Technologies Limited
Mr. LIU Chi Hung Kevin	General Manager (Metal Business Unit) CN Innovations Limited
Mr. WONG Yam Mo	Chief Technical Officer ASM Pacific Technology Limited
Prof. XIE Lihua	Professor School of Electrical and Electronic Engineering Nanyang Technological University

EX-OFFICIO MEMBERS

Prof. WONG Martin D. F.	Dean Faculty of Engineering The Chinese University of Hong Kong
Prof. LIAO Wei-Hsin	Chairman Department of Mechanical and Automation Engineering The Chinese University of Hong Kong
Prof. LU Yi-Chun	M.Sc. Programme Director Department of Mechanical and Automation Engineering The Chinese University of Hong Kong

SECRETARY

Prof. AU Kwok Wai Samuel	Chairman Industrial Relationship Committee Department of Mechanical and Automation Engineering The Chinese University of Hong Kong
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Department of Mechanical and Automation Engineering
Room 213, William M.W. Mong Engineering Building
The Chinese University of Hong Kong
Shatin, N.T., Hong Kong

Tel: 3943 8337

Fax: 2603 6002

Email: dept@mae.cuhk.edu.hk

Website: www.mae.cuhk.edu.hk

Facebook: <https://www.facebook.com/MAE.CUHK>

Instagram: <https://www.instagram.com/MAE.CUHK>

Website



Facebook



Instagram



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