



The Institution of
Engineering and Technology

The Institution of Engineering and
Technology Hong Kong
工程及科技學會香港分會

Chairlady's Message

Besides representing the engineering profession in matters of public concern and assisting governments to make the public aware of engineering and technology issues, the IET offers our members a professional home through their careers and supports them with advices and platforms to exchange technical and professional knowledge and ideas. However, do you realize that IET also has great contributions in education and in nurturing the future generations?

Future Skills and STEM Researches – The IET carries out annual surveys of businesses to gauge the state of skills and demands in the engineering and technology sector since 2006. The results have often been incorporated into “Engineering UK Report”, which identifies STEM as one of the effective solutions to the skills shortage and provides a comprehensive picture of the trends in STEM education. The study also leads to many STEM guidelines and publications, including the recently published “IET STEM Guideline - Addressing the STEM skills shortage challenge” to tackle the STEM skills gap.

IET Digital Library - Besides Inspec, which is a major indexing database of scientific and technical literature, the IET Digital Library holds more than 190,000 technical papers from 1994 onwards for all IET journals, magazines, books, conference publications and seminar digests.

IET.tv – Being one of the world’s largest collections of authoritative and multidisciplinary engineering and technology video resources, the IET.tv comprises of over 6500 presentations, lectures, and training videos. This high quality engineering information portal offers research insight, workflow solutions and access to inspirational events and expert communities, fit for members and students of all ages. (<http://tv.theiet.org>)

STEM Resources – The IET Education Portal (<http://education.theiet.org>) provides loads of STEM and career resources for teachers, students, and parents from primary to tertiary level. Teaching Resources, such as posters, presentations, and handouts for classroom activities, and Themed STEM Activities, such as making air powered vehicles and designing roller coaster for theme parks, are available for download through the portal. IET Registered STEM Ambassadors are available to support school activities and bring real-life engineering experience into classrooms. Through Engineering Career Resources and IET Communities, Students can also look for case studies of real engineering jobs in the industry and the roadmap to become successful engineers with IET services and supports, such as Mentorship, Apprenticeship, Professional Registration, Competitions, Awards and Scholarships, Early Career Hub, and other Young Professional Programmes.

More on the fun side to encourage young children to embrace STEM, the Faraday Challenge brings together STEM subjects in an engaging way and encourages the development of young people’s problem solving and communication skills based on real-world problems. Together with our STEM partners, IET also organizes FIRST LEGO League (providing hands-on STEM experiences for children to

solve real-world problems by making use of LEGO), Greenpower Challenge (leading children to design, build and race in single seat electric race car), and F1 in Schools (providing a fun and exciting learning environment for young people to develop an informed view about careers in Formula 1, where children use CAD/CAM software to design, analyse, manufacture, test, and race a miniature compressed air-powered F1 car) amongst many other exciting activities.

My favourite so far from the Kid Invent Stuff Youtube Channel, where kids can go wild with their imaginations and get their inventions made, is a giant furry electric dog car that can actually have its tail wiggled called "Doggo". Explorify provides free activities to primary school teachers and empowers children to explore their own questions and ideas. IET also developed several series of short audio programmes, videos and comic book for children for Fun Kids Radio with the aims to explain technology that young people see around them.

We only have the space here to list out a few of the long series of exciting STEM activities that IET offers, and I hardly even mentioned those that are specifically organized for students in Hong Kong and the Asia Pacific Region. So stay tune for the next issue of IET Hong Kong Newsletter.

Justina CY Ho

Chairlady of Session 2021, The IET Hong Kong

Council and Board Member, The IET

June 2021



Webinar - Engineers fighting COVID-19 and infectious diseases - development of an automated diagnostic system

With a view to combat the increasing threat of emerging infectious diseases, Respiratory Virus Research Foundation (RVR) was established in 2015 by The University of Hong Kong and The Hong Kong Polytechnic University. As time elapses, COVID-19 has become a worldwide-spread pandemic claiming over millions of deaths since late 2019. As such, the RVR initiated a rapid diagnostic system development which can speed up the pathogens detection and assist the medical practitioners to make the most

appropriate decisions for the patients, thereby facilitating better clinical management and alleviating the burden of public health care system.

ECS has invited Dr. Parker Tsang and Mr. Sunny Chu from Emerging Viral Diagnostics (HK) Limited to present the latest development of a rapid diagnostic system in Hong Kong. It allows the simultaneous and automated detection of over 40 respiratory

pathogens based on proprietary marker sequences of pathogens commonly identified in Asia. The speakers also shared their valuable experience in relation to the R&D and commercialization challenges, as well as the engineering innovation.

This webinar attracted more than 60 of participants, and this was rewarding for the audience to understand how engineers and their interdisciplinary team help combat COVID-19. ECS would like to express gratitude to Emerging Viral Diagnostics (HK) Limited for their valuable sharing.

Reported from Aubrey Lam
Electronics and Communications Section

IET Technical Webinar:
Engineers fighting COVID-19 and infectious diseases - development of an automated diagnostic system

23 Apr 2021

Collaborative effort by
The Hong Kong Polytechnic University
The University of Hong Kong
Emerging Viral Diagnostics (HK) Limited

EMERGING VIRAL Diagnostics (HK) Limited

IET Staff Renee

Webinar on “Robotics Technologies for Smart Logistics and Enterprise”

The seminar was held online on 27 Mar 2021 which was organized by The IET Hong Kong - Manufacturing and Industrial Engineering Section (MIES), co-organized with The Department of Industrial and Systems Engineering (ISE) of The Hong Kong Polytechnic University and MILES Alumni Association Limited of The Hong Kong Polytechnic University. We have recorded a total of 106 participants (including the host and 3 speakers).

With rapid growth of e-commerce, inventory turnover management is critical to successful business maintenance and customer satisfaction in supply chain management, but traditional inventory auditing is time-consuming, labor-intensive and error-prone. According to IBM statistics, global retailers lose approximately US\$634.1 billion annually because of out-of-stock items, empty shelves, and related inconsistencies. Technological advancement, digital transformation, and computational intelligence foster industrial growth in human-computer interactions and influence workplace with regard to safety, performance, and quality. To overcome labor shortages, reduce human errors and deliver reliable customer service, robotics technologies are proposed. It is expected that the development of advanced logistics industry using robotics will be the driving force of the upgrading and transformation of logistics industry to smart production in Hong Kong.

This seminar has invited 3 experts to share their professional knowledge in smart logistics applications with the use of AI, robotics technologies and smart sensors. Real application cases will also be introduced to the audience.



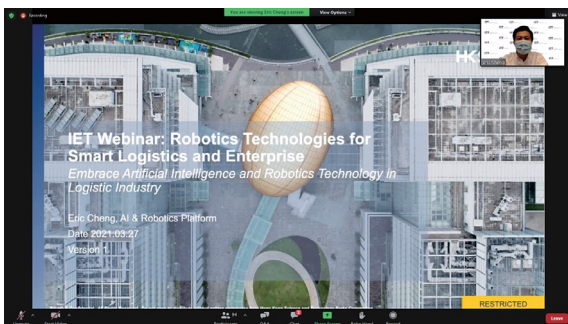
Q&A panel session

Topics and Speakers:

- Mr. Eric Cheng has over 10 years of experience in engineering, project management and strategic planning in Innovation and Technology Industry. Currently, he is the Senior Manager of Robotics Platform in Hong Kong Science & Technology Parks Corporation to drive Robotics Technology development and deployment across different industries (e.g. Real Estate, Logistic, Manufacturing, Service Sectors).
- Mr. Gabriel Lee is Associate Project Director in the RV Automation technology Company Limited. He leads the project team and coordinate with sales team, R&D team, engineering team and production team of the RV Automation technology Company Ltd, to ensure the smooth progress of various projects, including industrial projects and government-funded projects.
- Mr. Curie Lee brings 20 years of business development and technical consultancy experiences in various industries including Automation, Robotics and Innovation & Technology to the Automation and Digitization Technology group. He is currently the Business Director for SICK sensor to lead the local business and product development. He also served as Technical Advisor for various local Tech start-ups.

The participants found these real-life application cases very interesting and fruitful. The presentations were followed by a Q&A session with the audience. The audience are quite interested in AI, robotics and smart sensor technologies as well as the trend of applying these advanced technologies in logistics sector.

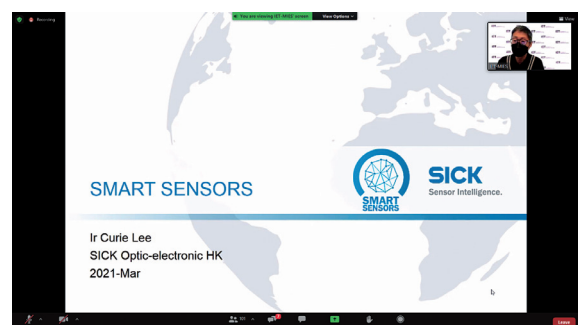
Reported by Manufacturing and Industrial Engineering Section



Mr. Eric Cheng introduced the challenge, trend and robotics technology in logistic industry and provided advices on how organization can select the right solution with case sharing e.g. disinfection robots.



Mr. Curie Lee introduced the four dimensions of smart sensors (enhanced sensing, efficient communication, diagnostics and smart tasks) and their features and benefits.



Mr. Gabriel Lee introduced the robotic applications and AIoT-based Inventory Auditing and Surveillance Autonomous Mobile Robot system for the Smart Logistics Industry

Webinar: Enhancing Escalator Safety with the Use of Optical-Fiber Sensing Technology and AI



ECS Chairman Mr. Kelvin Hung presented the souvenir to Mr William Au

Services Department (EMSD), Government of the HKSAR, shared his experience in using optical-fiber sensing technology, AI, and mobile application for the efficient prognostics of escalators system. He also showcased some of his award-winning projects that have successfully enhanced escalator safety in Hong Kong. The webinar was well-received with over 90 participants. ECS and MIES would like to take this opportunity to thank Mr. William Au for his insightful sharing.

*Reported by Chris Lam
Electronics and Communications Section*

The image shows a webinar title slide on the left and a screenshot of the webinar interface on the right. The title slide features the IET logo, the title 'Enhancing Escalator Safety with the Use of Optical-Fiber Sensing Technology and AI', the date 'IET (HK Branch) Technical Webinar (28 May 2021)', and the presenter's name 'Ir William T.W. AU, Senior Engineer/General Legislation 3 EMSD, HKSAR Government'. The webinar interface shows a grid of participants, including William AU (Speaker), Kevin HUNG (MC), Tony LEE, Jimmy LI (MC), and Louis YIU.

Group Photo with speakers and OCs

Technical Webinar on Power Line Harmonics Overview

Organized by:	Power and Energy Section, IET Hong Kong
Date:	15 July 2021 (Thursday)
Time:	18:30 – 20:00
Venue:	Zoom Webinar
Fees:	Free of charge
Participants:	100 (first come first served)
Registration:	www.theiet.org/hongkong
Enquiry:	Mr. Ralph Lau, ralphpesiet@yahoo.com

Harmonics can cause damage to sensitive electronic equipment, interference in communication equipment, and false readings on measurement devices. Harmonics can trip circuit breakers, blow fuses and cause capacitor failures. The effects also include overheating of transformers, cables, motors, generators and capacitors. Equipment must be designed to tolerate harmonics in the network and oversizing leads to higher investment costs and underutilized capacity. The problems caused by harmonics result in increased losses because more energy is wasted due to overheating, equipment has a shorter life time and is subject to unreliable operation. In the worst cases, harmonics cause unnecessary and unwanted process interruptions. Instead of trying to tackle harmonics by often ineffective actions, like adding cooling or overdimensioning equipment, why not employ equipment that do not cause harmonics in the first place?

Mr. TT Wan will give a brief introduction of harmonics and methods of harmonic mitigation.

Biography of speaker:

Mr. TaiTsang TT WAN currently is a Senior Technical Engineer in ABB (Hong Kong) Limited. TT has been in the field of electrical engineering for over 25 years, he gains much experience in project management and technical consultant of various ABB Products and Systems, including LV Switchboard, MV & LV Drives, MV & LV Motor Overhaul Service, ABB Ability™ Smart Sensor, ABB EV Fast Charging System and UPS System.

Technical Webinar on Causation of Cancer by Stress

Organized by:	Management Section Committee, IET Hong Kong
Date:	17 July 2021 (Saturday)
Time:	10:00 am – 11:00 am
Venue:	Zoom Webinar
Speaker:	Ir. David Cheng, CEng, MIET, MHKIE, MBA, CISSP, PMP
Language:	Cantonese with English terminologies
Registration:	www.theiet.org/hongkong
Fees:	Free of charge
Enquiry:	Mr. Eric HL CHAN, ehlchan@hotmail.com

Work life of engineers are always associated with stress, especially in a society of fast pace and high living standards like Hong Kong. It will not be surprising if some of our close friends and neighbours contracted cancers in increasingly young age.

This talk is educational to beef up our knowledge in causation of cancer by stress. In the process of carcinogenesis, warning signals abound that are noteworthy. Hopefully, we can be watchful of these warning signals to avoid unnecessary life calamities.

About the speaker:

Ir. David Cheng is a multi-disciplinary neuroscientist and engineer in Electronics, Information Technology, and Neuroscience. His specialty included internet and telecommunication infrastructures for some Government departments, global financial institutions, Asia Pacific multinationals, the Third Generation Command and Control System of the Hong Kong Police Force.

Urged by his relentless curiosity to explore the nature of human intelligence and Artificial Intelligence (AI), he challenged himself to join the Faculty of Medicine Department of Neuroscience in the University of British Columbia to study the brain, neurological disorders, and related treatments. His pivotal interests span neuroimmunology, deep brain stimulation, and transcranial magnetic stimulation that integrate neuroscientific knowledge, AI, and electronic engineering to devise novel treatment strategies in neurological disorders such as major depressive disorders (MDD), bipolar disorders (BD), Obsessive & Compulsive Disorder (OCD), migraine and Parkinson Disease (PD). He was a frequent speaker of this subject for the Chinese and local Christian societies when he was in Canada.

Supporting Event: MTR New Projects - Opportunities and Challenges

Organized by:	MTR Corporation
Supported by:	IET Hong Kong
Date:	19 July 2021 (Monday)
Time:	18:00 – 19:30
Venue:	Webinar – Bluejeans
Enquiry:	Ms Jessica CHENG jyhcheng@mtr.com.hk Ms Cherry MAK cherrym@mtr.com.hk
Fees:	Free of charge
Registration:	www.theiet.org/hongkong
Registration Deadline:	12 July 2021

In this event, engineering and construction industry practitioners will be able to obtain first-hand information about our new projects, including key project information, challenges and potential risks, as well as expectations on supply chain. The Capital Works Business Unit (CWBU) senior management team from MTR will be the speakers to give the presentation and respond to questions. The IET members could also take this opportunity to exchange their valuable comments and ideas with the speakers.

Tentative list of presenters as below:

- Barry SUM, General Manager - New Projects
- Robin WONG, General Manager - Capital Works Technical
- CL LEUNG, General Manager - E&M Construction
- Tim LEUNG, Project Manager - SCL E&M
- Sha WONG, Head of E&M Engineering (CW)
- Balazs TROJAK, Senior Digital Engineering Manager

Supporting Event: The International Conference on Intelligent and Green Building Technology (IGBT 2021)

Organized by:	School of Science and Technology, The Open University of Hong Kong,
Supported by:	ASHRAE Hong Kong Chapter IET Hong Kong Chartered Institute of Building Services Engineering, UK Institute of Industrial and Systems Engineers, Hong Kong Chapter
Date & Time:	22 Jul 2021 (Thur) 3-5pm (Green Council Webinar) 22 Jul 2021 (Thur) 6-9pm (IGBT keynote speech webinar) 23 Jul 2021 (Fri) 10-12nn (Workshop on correlating indoor built environment and outdoor climate)
Venue:	Zoom Webinar
Enquiry:	+852 3120 2700 Email: sct@ouhk.edu.hk Website: http://IGBT-2021.ouhk.edu.hk

The International Conference on Intelligent and Green Building Technology aims to bring together leading academic scientists, industrial technologist and research scholars to exchange and share their experiences and research results on all aspects of advances in smart and green building technology. It also provides an interdisciplinary platform for researchers, practitioners and educators to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered, and solutions adopted in the fields of smart and green building technology.

Title of the Event: Workshop - Online Presentation Skills

Organized by:	Younger Members Section Committee, IET Hong Kong
Date:	24 July 2021 (Saturday)
Time:	10:00 – 12:00
Venue:	Zoom Webinar
Speaker:	1 st Speaker: Ms Jacqueline Lo (Director, Hadar Consulting Limited) 2 nd Speaker: Ir Dr Jimmy Tong (Associate, Arup)
Language:	English
Registration:	www.theiet.org/hongkong
Fees:	Free of charge
Note:	To know more about the Young Professionals Exhibition & Competition 2021 (YPEC 2021), please visit our website at http://www.ietypec.org and subscribe the below channels:
Facebook page:	http://www.facebook.com/IETYPEC/
LinkedIn page:	https://www.linkedin.com/company/ietypec
Enquiry:	Mr Gabriel Wong, (+852) 9377 8240 / Miss Yingyu Xu, (+852) 5133 8024 Email: info@ietypec.org

Programme Outline

The presentation workshop is to help audience, especially for the young professionals who would attend the coming YEPC 2021 in August, to better prepare themselves for pitching ideals effectively and online presenting their projects professionally. Speakers would share their valuable online presentation skills, experience on delivering ideals, such as the elements of storytelling, along with a few examples from real cases.

Speaker Biography

Ms Jacqueline Lo is a seasonal human resource professional with over 10 years of experience in training, talent acquisition and development. She has conducted a wide range of soft-skill and project management training to corporates like Thomson Reuters and InProjects, as well as public classes through an engaging and fun environment. She is the Careers & Employability Consultant of City University of Hong Kong, and the part-time Instructor for the courses of Human Resource Management and Human Resource Development in the Department of Management in Hong Kong Baptist University.

Dr Jimmy Tong is an Associate at Arup focusing on Innovation and Sustainability. He has applied his expertise in energy systems in various sectors, including renewable energy, infrastructure and building services, product and system development, ventilation, and filtration equipment for over 20 years. He is a guest lecturer at several universities in Hong Kong and co-authored book publication, book chapters and publications in archival, refereed journals. He obtained a Ph.D. in computational fluid flow and heat transfer from the University of Minnesota.

Supporting Event: Build a Secure Cyberspace 2021 "Be Smart Online, Stay Away from Pitfalls" GIF Graphic Design Contest

Organized by:	The Hong Kong Computer Emergency Response Team Coordination Centre (HKCERT), the Office of the Government Chief Information Officer (OGCIO) and the Hong Kong Police Force (HKPF)
Supported by:	IET Hong Kong
Enquiry:	2788 5704 Email: judysmliu@hkpc.org Website: https://www.hkcert.org/event

Categories:

Open:	All Hong Kong residents
Secondary School:	All secondary school students in Hong Kong
Primary School:	All primary school students in Hong Kong
Submission Deadline:	6 July 2021 (Monday)
For event leaflet in English, please download form Here	
For event leaflet in Chinese, please download form Here	

Contest Link:

<https://www.hkcert.org/event/build-a-secure-cyberspace-2021-be-smart-online-stay-away-from-pitfalls-gif-graphic-design-contest>

Online Submission Link:

<https://form.jotform.me/hkcert/securecyberspace2021>

IET YP Global Chat #1: Life as a Young Professional

Organized by:	IET Hong Kong Younger Members Section Committee, IET Malaysia Young Professionals Committee and IET Singapore Young Professionals
Date:	18 August 2021 (Wednesday)
Venue:	Zoom Webinar
Time:	19:30 – 20:30
Language:	English
Fees:	Free of charge

Speakers:

Mr. Chong Yi Sheng (Chairman of the IET YP Singapore)

Mr. Olaf Li (Chairman of the IET YMS Hong Kong)

Dr. Ivan Ling (Chairman of the IET YPC Malaysia)

Registration : www.theiet.org/hongkong

Enquiry: Mr Olaf Li
<olaf.tyli@gmail.com>,
Mr. Chong Yi Sheng
<YiSheng.Chong@ietvolunteer.org>,
Dr. Ivan Ling
<Ivan.Ling@ietvolunteer.org>

This is the first Global Chat for young professionals which is co-hosted by IET HK YMS, MY YPC and SP YP.

The main topics for the event are the following:

- How do you survive the challenge times during COVID Pandemic?
- How can a young engineer take up soft skills?
- What inspired/motivates you to be part of IET? / to volunteer for IET?

Technical Seminar on IET Professional Registration Talk

Organized by:	Management Section of IET Hong Kong
Date:	27 August 2021 (Friday)
Time:	19:00 – 21:00
Venue:	Zoom Webinar
Fees:	Free of Charge
Language:	Cantonese / Terminology in English
Registration:	www.theiet.org/hongkong
Enquiry:	Mr. Roy Ng. Email: roycfng@clp.com.hk

About the Event

What is Professional Registration?

If you've thought about becoming professionally registered, or even wondered what it's all about, we're here to answer all your questions.

Professional registration is a status awarded to qualified engineers and technicians. It is awarded by licensed bodies who represent the Engineering Council and is based on knowledge, competence and commitment to professionalism. The IET is licensed to award:

- Chartered Engineer (CEng)
- Incorporated Engineer (IEng)
- Engineering Technician (EngTech)
- ICT Technician (ICTTech)

Through the seminar, the speaker will guide you through why you have to get professionally registered? There are many benefits to registration:

- Use of an internationally protected title, e.g. Chartered Engineer.
- Recognition as a professional in your field.
- Improved career opportunities and salary prospects.
- Greater influence within your organisation.
- Opportunities to connect with influential and inspirational people.
- International recognition of your professional competence and commitment.

Technical Webinar: Future of UAS in Construction Industry

Organized by:	Electronics & Communications Section Committee, IET Hong Kong
Date:	8 October 2021 (Friday)
Time:	19:00 - 20:00
Venue:	Zoom Webinar
Speakers:	Mr Jesse Lee
Language:	English
Registration:	www.theiet.org/hongkong
Fees:	Free of charge
Enquiry:	Henry Au (Email: henryauchkliet@gmail.com)

Unmanned Aerial Systems (UAS), sometimes referred to as drones, are replacing expensive traditional surveying methods. The construction industry is expected to be revolutionized by UAS. It will be one of the most prominent sectors that uses commercial UAS. Through innovative applications, as well as improved productivity and cost-effectiveness, UAS technology is expected to uplift the Gross Domestic Product (GDP) in the UK's construction and manufacturing industries to £8.6 billion by 2030. In this webinar, we will explore the usage of drones in the construction project lifecycle through the stages of bidding, surveying, design, on-site construction, handover, and maintenance. The speaker will share his experience in using UAS, and discuss how the technology will transform the construction sector in the coming years.

Speaker:

Mr Jesse Lee is a chartered engineer and qualified UAS pilot. Since 2013, he has been serving in aviation advisory services in a broad range of technical capacities, ranging from aviation systems, airport planning to project management. He has led airport development projects with some of the most well-known stakeholders in the industry in Asia-Pacific. He also taught in aviation-related programmes in two universities in Hong Kong. Jesse sees the growing necessity for an affordable solution to help periodic inspections, site progress monitoring, and keeping everyone safe while focusing on delivering projects on time and within budget. With over eight years of experience in Asia Pacific, he finds that UAS are affordable platforms to address all those concerns.

Online Registration: www.theiet.org/hongkong

IET Hong Kong

Administration: admin@theiet.org.hk

Event Registration & Enquiry: reg@theiet.org.hk

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