

Annual Report for Session 2021/2022

1. Foreword

The Electrical Division has a fruitful and successful session in 2021/2022 with the Division Committee's effort and contribution despite the challenges of the COVID-19 pandemic throughout the year.

With enlightenment of the past Chairmen and great effort of the Committee members, we had accomplished most of the tasks successfully planned for the Session. We had unceasingly held twelve (12) meetings including the Division AGM scheduled for 10 June 2022 in this Session. Two (2) more meetings will be held in July and August 2022 due to extension of term of office of the Committee in this Session.

We had organized different technical events and professional talks including technical visits, technical webinars, professional short course, student promotion talks, etc. Some of the events and activities planned for Session 2021/2022 were inevitably cancelled, including Overseas Technical Visit, Mainland Technical Visit, Electrical Model Design Contest, Energy Innovation for Smart City Competition, etc due to COVID-19 pandemic.

The newly-established "Young CONNECT Sub-committee", aiming at providing an empowering platform for our young members to develop further and serve our members, successfully held four new and novel events as well as supported numerous HKIE events and initiatives. The success of this new initiative stemmed from determination from the Division, innovative ideas from the young Committee Members and members' unreserved support.

Details of activities for this Session are summarised in the following sections.

2. 39th Annual Symposium (Chaired by Ir W.S. TAM)

The 39th Electrical Division Annual Symposium was successfully held on 21 October 2021. The main theme was "Powering the New Normals", focusing on new development and applications of electrical engineering to match with the current trends and new normal. Papers on smart grid and cyber security, digitalization of industrial IoT, smart building technologies, high voltage battery energy storage system, critical power supply for healthcare, dynamic UPS, condition monitoring of power grid, new edition of Code of Practice on electrical safety, smart operation & maintenance of MTR rolling stock, and automatic parking systems were presented. Speakers from local, the Mainland and overseas presented their papers and took part in discussion sessions either physically or via the net, and up to 350 participants attended.

It was the most challenging event insofar among those organized by the Division, as it was the first ever conducted in hybrid mode - as a physical and a virtual one, bringing local speakers and those at other corners of the world to the same time zone, and with participants attending on-site and online. The Symposium was kicked off by HKIE Past President, Ir Professor C.C. CHAN, by giving a keynote speech, followed by an opening speech from Immediate Past President, Ir

Electrical Division
電機分部

Professor P.L. YUEN. Ten technical papers by speakers from public and private sectors, academic institution, power utilities and mass transit were well received by audience. We were honored to have Ir Eric PANG, JP, Director, Electrical & Mechanical Services Department, concluding the Symposium.

3. **Technical Programme Sub-committee** (Chaired by Ir Joseph LEUNG)

Despite challenges arising from the COVID-19 pandemic, we were well-prepared to adopt the “New Normal”. The Sub-committee had organized / co-organized a total of twelve (12) technical webinars up to end May 2022. There were more than 300 attendees in average for each event. Local and overseas experts in various areas of electrical engineering were invited to give the state-of-the-art developments in the field. Various topics were discussed ranging from latest updates on statutory requirements of electricity regulations, digital project management as well as the future smart building technologies. All webinars and sharing received enthusiastic supports and served to provide continuous professional development to our members.

Date	Topic	Speaker(s)
24 Aug 2021	Smart and Efficient Energy Management Solutions for Buildings	Mr. Travis KAN
23 Sep 2021	Major Changes of the Code of Practice (CoP) for the Electricity (Wiring) Regulations 2020 Edition and Introduction of EV-charging at Home Subsidy Scheme	Ir Johnson SZE & Ir M.K. LAM
25 Oct 2021	Merit of Vertical and Horizontal Type Automated Car Parking System: Experience from Europe	Mr. Helge Roehling
16 Nov 2021	Creating a digitally managed project for today	Ir Andy WONG
23 Nov 2021	The “Net” Hero for Net Zero: Digitization of Decarbonization	Mr. Kelvin LI
14 Dec 2021	Latest Low Voltage Distribution Protection – AFDD & Digital Breakers	Mr. Derek TAM
15 Jan 2022	Historical Research on Sung Wong Toi	Ir James NG
18 Jan 2022	Smart Village & Smart Campus	Ir Ivan LAW & Mr. Wanson WAN
28 Feb 2022	AC-DC Power Conversion Technology for Energy Efficient DC Buildings	Dr. River Tin-ho LI
22 Mar 2022	Talent Development in E&M Industry and Alternative Pathway to Become Professional Engineers	Ir Paul POON
13 Apr 2022	Critical Power Supply for Health Care	Ir Ian LEE
24 May 2022	Global Wind Energy Development Outlook	Mr. C.C. NGAN

Electrical Division
電機分部

4. **Membership Drive Sub-committee (Chaired by Ir Ian LEE)**

Date	Institution	Speakers	No. of students
24 Mar 2022	Hong Kong Polytechnic University (PolyU) and School of Professional Education and Executive Development, PolyU (SPEED)	Ir Ian LEE Ms. Gloria WONG Ir Tim LEUNG and Mr. Franky WONG Mr. Ryan CHAN Ir Ben LAM Ir Calvin WONG	120
4 Apr 2022	Technological and Higher Education Institute of Hong Kong (THEi)	Ir Ian LEE Ms. Gloria WONG Ir Tim LEUNG and Mr. Franky WONG Ir Stephen YIP Ir Ben LAM	65
13 Apr 2022	Hong Kong Institute of Vocational Training (Haking Wong/Chai Wan/Tsang Yi)	Ir S.S. TANG Ms. Gloria WONG Ir Stephen YIP Ir Ben LAM	65
21 Apr 2022	University of Hong Kong (HKU)	Dr. Sam LAM Ms. Gloria WONG Ir Tim LEUNG and Mr. Franky WONG Ir Ben LAM	24

As shown above, four online membership drive / career talk presentations were organised by the Sub-committee for students of University of Hong Kong (HKU), the Hong Kong Polytechnic University (HKPolyU), School of Professional Education and Executive Development (SPEED), Technological and Higher Education Institute of Hong Kong (THEi) and the Hong Kong Institute of Vocational Education (IVE) in Chai Wan, Tsing Yi and Haking Wong.

The presentations included an introduction on the HKIE and the HKIE Electrical Division, career opportunities in the sectors of Government, power utilities, consulting and contracting, as well as the need and path of joining membership of the HKIE. Many questions from students were answered which were about the career path planning and also the recent market situation.

5. **Energy Innovation for Smart City Competition (Chaired by Ir Kit CHAN)**

The programme was sponsored by the CLP Power Hong Kong Limited and has been organised yearly since 2009 for higher form secondary students. It aims to provide an opportunity for the students to propose and implement innovative projects on energy efficiency initiatives and promote energy efficiency to the community. It was firstly launched as the “Energy Innovation Project Competition” and was re-named as “Energy Innovation for Smart City Competition” to give more focus on smart use of energy in a modern city.

Electrical Division
電機分部

Over 320 students in 84 teams joined the Competition in this session, with 34 teams being selected to transform their innovative ideas into project implementation. With the severe attack by the 5th wave of COVID-19 since late January 2022, the Competition was cancelled.

6. **Electrical Model Design Contest (Chaired by Ir Stephen YIP)**

For the past 10 years, the Division had been organizing a contest for lower form secondary school students with an aim at promoting electrical engineering, enhancing the knowledge and awareness of renewable energy, and encouraging low carbon living among them. The event was supported by the Education Bureau and Construction Industry Council. In 2021/2022 session, overwhelming application responses were received from 100 lower form secondary school students of 32 teams. The event was planned to be held at Zero Carbon Building of CIC on 8 May 2022. However, due to the 5th wave of COVID-19 in Hong Kong, the Committee decided to suspend the contest for one year with supports of all co-organizers to ensure the safety of all participants.

7. **International Council on Electrical Engineering (ICEE) Conference**
(Led by Ir Dr. Edward LO)

The ICEE Conference is an event jointly organised by the HKIE, the Chinese Society for Electrical Engineering (CSEE), the Institute of Electrical Engineers of Japan (IEEJ) and the Korean Institute of Electrical Engineers (KIEE) to offer a very good and precious opportunity for electrical engineers from all over the world with various specialties to meet, inspire each other and share vision towards our sustainable future.

The ICEE Conference 2021, hosted by the CSEE, was successfully held in Dalian, China in hybrid (both online and on-site) mode from 5 to 8 July 2021. Out of 200 technical papers presented from seven countries/regions, our delegates had presented 10 technical papers in the Conference. The next ICEE Conference will be hosted by the KIEE in Seoul, Korea from 28 June to 2 July 2022 in hybrid format.

8. **Professional Short Course in Electrical Engineering (Chaired by Ir Vincent LEUNG)**

The professional short course with four classes on the theme of “Smarter Design for our Electrified Living” was held in April 2022.

Experienced engineers and industry practitioners from consultant, suppliers and railway operator were invited to enrich our members with the latest knowledge of electrical systems under rapid development and active exploration. The classes of the course were arranged as online broadcasting in view of the current pandemic situation in Hong Kong. It was encouraging that over 180 participants in average attended each class of the course.

Electrical Division
電機分部

Date	Theme	Speaker	No. of Participants
7 Apr 2022	Powering the Future with Innovation and Technologies	Mr. Keith WONG, Head of Digital Business and Electrical Products, Siemens Limited – Smart Infrastructure Mr. Raymond WONG, Senior Manager, Siemens Limited – Smart Infrastructure	209
12 Apr 2022	Data Centre Design Approach to Meet the Ever-increasing Demand	Ir Ben LAM, Director from Ove Arup & Partners Hong Kong Limited Ir Ray CHOI, Vice President, Schneider Electric (Hong Kong) Limited Mr. Daniel KWONG, Solution Architect, Schneider Electric (Hong Kong) Limited	208
20 Apr 2022	Design of HV Power Distribution and Traction Power Systems for Railway Systems in Hong Kong	Ir William LEE, Chief Engineering Manager-Services (Capital Works), MTR Corporation Limited	176
25 Apr 2022	Sustainable Lighting	Mr. Cole SIU, Manager, Signify Hong Kong Limited	137

9. **Annual Dinner (Chaired by Ir Mandy LEUNG)**

The Annual Dinner always serves as a platform for fellow engineers to meet each other to exchange professional ideas and also another good opportunity for networking. The Annual Dinner 2022, which was scheduled on 6 May 2022, would be postponed to a later date due to the current COVID-19 situation.

10. **Local Technical Visit Sub-committee (Chaired by Mr. Keith WONG)**

The main theme of the local technical visits this year was innovation and digitalization. The objective was to facilitate the member understanding on how the technology can improve our engineering solution in productivity, sustainability and safety aspects. Due to outbreak of the 5th wave of COVID-19 since January 2022, some of the local technical visits planned had been postponed. The Sub-committee had organized four technical visits to places of technical interests for members up to end December 2021. Green Mobility Innovation for pantograph installation, Exhibition Hub operated by CIC center, HK Airport Authority for battery management storage system, and CLP High Voltage Training Centre & Smart Grid Operation Centre at IVE Haking Wong were visited. Response for each visit conducted was enthusiastic, with about 30 attendees in average.

Electrical Division
電機分部

Date	Place of Technical Visit / Theme
27 Aug 2021	Green Mobility Innovation (GMI) - Pantograph High Power Charge & Electric Public Light Buses
27 Sep 2021	CIC Exhibition Hub Tour - BIM Space, CITAC, MiC Resources Centre and Zero Carbon Park
26 Nov 2021	HK Airport Authority - Battery Energy Storage System
17 Dec 2021	IVE HV Training Centre (Waterfront Annex) - High Voltage Training Centre, Smart Grid Operation Centre

Due to the continuation of the outbreak of COVID-19 and the implementation of the social distancing measures by the Government, no local technical visit had been arranged up to end May 2022. Subject to the relaxation of social distancing measures, technical visits to some newly commissioned infrastructure projects would be arranged in later time.

11. **Overseas Technical Visit Sub-committee** (Chaired by Ir Edward YEUNG)

Due to the global outbreak of COVID-19, no overseas technical visit had been arranged in 2021/2022. The overseas technical visit can only be resumed when the pandemic situation improves and restrictions on international travel are relaxed.

12. **Mainland China Technical Visit Sub-committee** (Chaired by Ir W.S. TAM)

Similar situation as the Overseas Technical Visit, the Mainland technical visit could not be launched in 2021/2022 due to the impact of COVID-19. Temporary border crossing restrictions limited non-essential travel between Hong Kong and the Mainland throughout 2021/2022. The event can only be resumed when the pandemic situation improves and restrictions on border crossing are relaxed.

13. **Young CONNECT Sub-committee** (Chaired by Ir Alex FU)

The Young CONNECT Sub-committee is aimed at establishing a young engineer networking group for enhancing the belongingness of HKIE Electrical Division. This Sub-committee encourages young members to participate in Institution affairs and was led by a group of young members. In the 2021/22 session, the Sub-committee organized a series of activities, including 2 workshops focusing on the preparation for Corporate Membership application, titled “Inspire the Next” Workshops - Road to be Professional Electrical Engineer, between October and November 2021. The workshop explained the assessment criteria and points to note during the assessment interview for the young members in electrical discipline. By participating in the workshops, our young members equip themselves with solid technique to face the assessment and improve their confidence to participate in the HKIE Corporate Membership application.

Electrical Division
電機分部

“Young Explorer Series” was organized through online media during the pandemic period. The Sub-committee invited young persons from other professions to share knowledge, including metaverse, NFT and Chinese Medicine, besides engineering in April and May 2022.

“Enjoy the Balance Series”, aimed to provide leisure activities for members who were interested in some new hobbies. Planned activities, including the Wine and Cheese Appreciation Workshop and Cooking Class were however postponed due to COVID-19 situation.

14. **The HKIE Boards and Committees**

The Division actively supported and participated in the work of the HKIE and had representation / ex-committee members in the following Boards and Committees:

- Learned Society Board (represented by the Chairman, Ir Y.H. LEUNG)
- Public Service Committee (represented by the Deputy Chairman, Ir Mandy LEUNG)
- Council (represented by Ir Y.H. CHAN)
- Discipline Representative (represented by Ir Dr. Edward LO)
- Continuing Professional Development Committee (represented by Ir Raymond SZE)

15. **Learned Society Board (LSB) (Represented by Ir Y.H. LEUNG)**

Ir Y.H. LEUNG represented the Division to participate in the LSB to coordinate learned society activities and provide recommendation to the Council at strategic level in upholding and enhancing the integrity and status of the HKIE, representing the profession to the public, and promoting and advancing the science and practice engineering.

16. **Public Service Committee (PSC) (Represented by Ir Mandy LEUNG)**

The Public Service Committee is responsible to the Learned Society Board for developing and coordinating public relations policies; reviewing / revising these policies from time to time and enhancing the HKIE’s public image. Two working groups, namely Working Group for Publicity Activities and Working Group for Promotion to Schools are formed under the Public Service Committee to oversee the co-ordination and planning of tasks in school ambassadors programme, editorial contributions, and relationship with District Council. A new mechanism established for nomination of engineers to serve in external boards and committees was initiated in the session for first trial in session 2022/23 that aims to engage a bigger pool of engineers who have the interest in serving the community.

17. **Council (Represented by Ir Y.H. CHAN)**

Ir Y.H. CHAN represented the Division in the HKIE Council for the Session 2021/2022 to update the latest development, policy and direction to be implemented by the Council to Division members.

18. **Discipline (Represented by Ir Dr. Edward LO)**

Ir Dr. Edward LO is the Discipline Representative who chairs the Electrical Discipline Advisory Panel. Being responsible to advise on aspects in relation to Qualifications and Professional Membership, there were major tasks of the Discipline in Session 2021/2022 including reciprocal recognition agreement of professional qualification between professional bodies, accreditation of engineering-related Bachelor and Master degree programme in Hong Kong and overseas, etc.

In particular, a Mutual Recognition Agreement (MRA) with the Guangdong Society for Electrical Engineering (GSEE) had been signed. The signing ceremony for MRA between the HKIE and the GSEE was held in conjunction with the Greater Bay Engineer Forum on 5 December 2021. Application procedures and assessment criteria had been established.

19. **Continuing Professional Development Committee (CPD) (Represented by Ir Raymond SZE)**

Ir Raymond SZE represented the Division in the CPD Committee providing update to Division members on all matters relating to CPD requirements.

20. **Publication and Communication with Members (Chaired by Ir Stanley LEUNG)**

Ir Stanley LEUNG served as the authorised representative of the Division to coordinate the publication and communication for the Division covering divisional events, event reports and newsletter, via the HKIE eNewsletters system, the journal of the HKIE (Hong Kong Engineer) as well as the divisional website (<http://el.hkie.org.hk>).

Apart from activity reports, the Division submitted and published two feature articles, namely “Strengthening Applied Education through Collaboration between Engineering Industry and Academic Institutions” and “Battery Energy Storage System at Hong Kong International Airport”, in the Hong Kong Engineer September 2021 issue and May 2022 issue respectively.

Besides publication in the Hong Kong Engineer, our young members were given the opportunity to contribute articles to the public talking about the career as an engineer for living and explicating how electrical engineers contribute to the “New Normal” during the pandemic. An article, “Powering the New Normal”, presented by a young electrical engineer was published to Classified Post in January 2022.

21. **Concluding Remarks**

The COVID-19 has continued affecting the entire world over the past years. Social and physical distancing measures and restrictions imposed in many countries caused lockdown of businesses, schools, social life and physical activities globally including Hong Kong. It is no doubt that we are living through a difficult time for our profession and the society under this pandemic situation. We, as electrical engineers, have been demonstrating the highest resilience to power through this period of “new normal”. Despite the challenges that we are facing, the Division has not stopped advancing the profession of electrical engineering and supporting the professional development of our members.

The Committee organized and completed various technical events including Annual Symposium, technical visits, technical webinars, professional short course, etc. for broadening our members’ technical knowledge to keep pace with the latest technologies. Professional talks were organised for universities and higher education institutions to share our members’ working experience with students in different sectors of electrical industries, and to provide students with a wide range of career information. The talks also introduced the HKIE and encouraged the students to join and participate in the HKIE’s activities.

The new initiative “Young CONNECT Sub-committee” successfully held several series of events in this Session ranging from practical workshop for preparation of professional assessment to online sharing session for broadening knowledge of other fields and professions.

In addition, the Division was actively supporting the initiatives and participating in the events of the HKIE, such as the Robocon Hong Kong 2022 to be held in June 2022 and the ICEE Conference to be held in June/July 2022 in Seoul, Korea, etc, to enhance the Institution’s status and public image. The Division was also nominating our Committee members to join the External Boards and Committees for enhancing professionalism and standard of the works in electrical industries.

Being the Chairman of this Session, I would like to thank the Past Chairmen and Committee Members for their guidance, dedication, contribution and commitment to the Division. Without their unfailing support, I would not be able to lead the Division through this challenging but successful session. In the meantime, I would also like to extend my sincere thanks to our members, supporters and sponsors for their continuous support in the Division’s activities.

Last, but not least, I am confident that the Electrical Division will be able to upkeep the momentum in serving the electrical engineering stakeholders in the coming sessions.



(Ir Y.H. LEUNG)

Chairman, Electrical Division Session 2021/2022
27 May 2022

Electrical Division
電機分部

Electrical Division Committee Session 2021/2022

Chairman	Ir Y.H. LEUNG	
Immediate Past Chairman	Ir W.S. TAM	
Deputy Chairman	Ir Mandy LEUNG	
Honorary Secretary	Ir Andrew YAN	
Honorary Treasurer	Ir Y.K. CHU	
Members	Ir Walter AU Ir Kit CHAN Ir Banson LAM Ir Joseph LEUNG Ir Tim LEUNG Ir Stephen YIP Ir Yani KO	Ir Hugo CHAN Ir Steve CHAN Ir Ian LEE Ir Stanley LEUNG Ir Raymond SZE Ir Alex FU Ir Vincent LEUNG
Ex-officio Members	Ir Y.H. CHAN Ir Dr. Edward LO Mr. Indi WONG Ms. Carmen LAM Ir Simon TSUI	(Council Member (Division)) (Discipline Representative) (AMC Representative) (YMC Representative) (SSC Representative)
Co-opted Members	Mr. Keith WONG Ir Ben LAM Ir Dr. K.C. WONG	
In Attendance	Ir Tony YEUNG Ir T.K. CHIANG Ir C.F. CHAN Ir Dr. F.C. CHAN Ir Geoffrey CHAN Ir Simon CHUNG Ir C.L. LEUNG Ir Sai King HO Ir Siu Kwong HO Ir Gary KO Ir Albert TO	Past Chairman as advisor Past Chairman as advisor Past Chairman as advisor Past Chairman as advisor Past Chairman as advisor Past Chairman as advisor Past Chairman as advisor Past Chairman as advisor Past Chairman as advisor Past Chairman as advisor Past Chairman as advisor

Electrical Division
電機分部

Ir Henry CHAN
Mr. Ryan CHAN
Mr. Jackie CHOI
Dr. Sam LAM
Mr. Dickson LAW
Ir W.K. LEE
Ir Kevin LEUNG
Ms. Jenny LIN
Mr. Stan MOU
Ir Perry PUN
Ir S.S. TANG
Mr. Smith TSAI
Mr. Franky WONG
Ir Dr. K.F. WONG
Ir W.H. YAN
Ms. June YIP

Mr. Jason CHAN
Ir. Dr. W.L. CHAN
Ir W.I. HO
Ir Edmund LAU
Ir Dr. Albert LEE
Ir Dennis LEUNG
Ir Kelvin LI
Ms. Jacqueline LO
Ir Alan NG
Ms. T.T. SUEN
Ir Sherman TONG
Ir C.L. WONG
Ms. Gloria WONG
Ir Gordon WOO
Ir Edward YEUNG