# IEEE Hong Kong Section
# 2020 Report

## PART A - SECTION SUMMARY

### A.1 Executive Summary

*Section Executive Committee Member List*

Office Bearers

| | | | |
|---|---|---|---|
| ***Chair*** | Paulina Yenbic Chan | ***Vice Chair*** | Kenneth K Wong |
| ***Secretary*** | Ray Chak Chung Cheung | ***Treasurer*** | Eddy Chiu |

Chapter Chairs

| | | | | | |
|---|---|---|---|---|---|
| *1.* | *Antennas and Propagation Society, Microwave Theory and Techniques Society (AP03/MTT17)* | Ka Fai Chan | *2.* | *Computer Society (C16)* | Kai Tai Tang |
| *3.* | *Circuits and Systems Society, Communications Society (CAS04/COM19)* | Edward Cheung | *4.* | *Consumer Technology Society, Ocean Engineering Society (CT08/OE22)* | Kim Fung Tsang |
| *5.* | *Electronic Design Automation Council (CEDA44)* | Wei Zhang | *6.* | *Computational Intelligence Society (CIS11)* | Jean Lai |
| *7.* | *Controls System Society, Robotics and Automation Society (CS23/RA24)* | Youfu Li | *8.* | *Education Society (E25)* | Leon Chi-Un Lei |
| *9.* | *Electron Devices Society, Solid-State Circuits Society (ED15/SSC37)* | Qiming Shao | *10.* | *Engineering in Medicine and Biology Society (EMB18)* | Pedro Mou |
| *11.* | *Electromagnetic Compatibility Society (EMC27)* | Lijun Jiang | *12.* | *Electronics Packaging Society (EP21)* | Ringo Tse |
| *13.* | *Industrial Electronics Society (IE13)* | Chunhua Liu | *14.* | *Information Theory Society (IT12)* | Chung Chan |
| *15.* | *Magnetics Society (MAG33)* | Mitch Li | *16.* | *Power Engineering Society, Industrial Application Society, Power Electronics Society, Industrial Electronics Society (PE31/IA34/PEL35/IE13)* | Zhao Xu |
| *17.* | *Photonics Society (PHO36)* | Kin Man Tsia | *18.* | *System Man and Cybernetics Society (SMC28)* | James Liu |
| *19.* | *Signal Processing Society (SP01)* | Yik Chung Wu | *20.* | *Technology and Engineering Management Society (TEM14)* | Edwin King W Cheung |
| *21.* | *Vehicular Technology Society (VT06)* | Chunhua Liu | | | |

Member at Large

George Chan

Student Branch Counselors

| | | | |
|---|---|---|---|
| *1. City University of Hong Kong (CityU, www.cityu.edu.hk)* | Ray Chak Chung Cheung | *2. Hong Kong Baptist University (HKBU, www.hkbu.edu.hk)* | Joseph Kee Yin Ng |
| *3.* **Lingnan University†** **(LU, www.ln.edu.hk)** | Haoran Xie | *4. Technological and Higher Education Institute of Hong Kong†* *(THEi, www.thei.edu.hk)* | Aileen Hou |
| *5. The Chinese University of Hong Kong (CUHK, www.cuhk.edu.hk)* | Tan Lee | *6. The Hong Kong University of Science and Technology (HKUST, www.hkust.edu.hk)* | Kam Tim Woo |
| *7. The Open University of Hong Kong (OUHK, www.ouhk.edu.hk)* | Kevin King Fai Hung | *8. The University of Hong Kong‡ (HKU, www.hku.hk)* | Vincent Wai Leuk Tam |

†Newly being formed in 2020; ‡Revitalized in 2020

Affinity Group Chairs

| | | | |
|---|---|---|---|
| *1. Young Professionals Affinity Group (YPAG)* | Lucas Cheung, George Chan | *2. Women In Engineering (WIE) Affinity Group* | David Tai Wai Chan |
| *3. Life Member Affinity Group (LMAG)* | Wan-Chi Siu | | |

Standards Association Representatives

| | |
|---|---|
| *P3141 Standards Committee for 3D Body Processing* | Kevin Lam |

Advisors

| | | |
|---|---|---|
| 1.  Nim-Kwan Cheung | 2.  Paul Ying Sheung Cheung | 3.  Kwai-Man Luk |
| 4.  Pak Chung Ching | 5.  Wan-Chi Siu | 6.  Vincent Kin Nang Lau |

*Section Highlights*
1. Major milestones:
    i. Revised Hong Kong Section's Bylaws (1972) to date
    ii. Professor Raymond Wai Ho Yeung, CUHK) received the IEEE 2021 Richard W. Hamming Medal
2. Pioneered COVID-19 webinar series (Feb 2020)
3. Engaged in Student Member recruitment: 2 new Student Branches and 1 revitalized Student Branch (encompass more than 33,000 students among these 3 institutes)
4. 2021 newly elevated IEEE Fellows of Hong Kong Section

| | |
|---|---|
| i.  Dr. Cong Wang (City University of Hong Kong) | ii.  Prof. Francis Lau (The Hong Kong Polytechnic University) |
| iii.  Dr. Kaibin Huang (The University of Hong Kong) | iv.  Prof. Matthew Mckay (The Hong Kong University of Science and Technology) |
| v.  Prof. Pascal Vontobel (The Chinese University of Hong Kong) | |

5. Awarded to host TENCON 2022

*Major Events*
International
1. APMC 2020 Conference (accumulated audience size was over 500)
2. IEEE Virtual Region 10 SYWL Congress (20 delegates from Hong Kong Section)

National / Hong Kong Section
1. Tech-in-Life (TIL) Business Hackathon (over 150 university students (in 50 teams) participated)
2. The Second Future Engineer Grand Challenge (84 submissions from 29 K12 schools in Hong Kong)

*Major Chapter Activities*
1. COVID-19 Teaching and Learning Series Webinar (accumulated audience size was over 900)
2. APMC 2020 (accumulated audience size was over 500)
3. Underwater Robotics Workshop and Competition (reaching out to 400 K12 students)
4. "AI in X" Workshop (accumulated audience size was 39)

*Major Student and Affinity Group Activities*
1. [YPAG] Tech-in-Life (TIL) Business Hackathon (over 150 university students (in 50 teams) participated)
2. [LMAG] Deep Learning Tutorial/Workshop (anticipate audience size to be over 200)
3. [WIE] WIE Global Summit 2020 (audience size was over 100)
4. [SB] Robocon 2020 (over 150 university students participated)

*Awards*
1. R10 Best Membership Growth (Large Section) Award
2. R10 Best Membership Retention (Large Section) Award
3. R10 Student Membership Development and Leadership Training Fund: Recipient
4. R10 Educational Activities New Innovative Challenge (Pre University Category): Winner
5. R10 Individual Benefits & Services (IBS): Rank 1 Best Proposal Award

## A.2  Financial Report

*Summary*

| Bank Account: 75084 Bank of China (HK) Limited HONG KONG Savings | | | |
|---|---|---|---|
| Balance (2020-01-31): USD 66,487.40 | | | |
| Transaction | Date | Amount (USD) | Memo |
| 1 | 2020-12-09 | 66,487.30 | • Individual Benefit Services Awards<br>• Bridging Loan<br>• Hong Kong Section, Reaching Locals Project<br>• Hong Kong Section, EAC Challenge |

*Any Other Financial Activities: N/A*

## PART B - ORGANIZATIONAL ACTIVITIES

## B.1 Membership Development Activities

*Total number of active members in the past 3 years*

| 2018 (December) | 2019 (December) | 2020 (December) |
|---|---|---|
| Total Members: 4,483<br><br>Associate Member: 33<br>Fellow: 95<br>Graduate Student Member: 434<br>Life Fellow: 12<br>Life Member: 36<br>Life Senior: 6<br>Member: 3,484<br>Senior Member: 301<br>Student Member: 82 | Total Members: 4,304<br><br>Associate Member: 42<br>Fellow: 99<br>Graduate Student Member: 464<br>Life Fellow: 15<br>Life Member: 38<br>Life Senior: 8<br>Member: 3,217<br>Senior Member: 311<br>Student Member: 110 | Total Members: 9,448<br><br>Associate Member: 154<br>Fellow: 93<br>Graduate Student Member: 426<br>Life Fellow: 26<br>Life Member: 45<br>Life Senior: 9<br>Member: 8,308<br>Senior Member: 310<br>Student Member: 77 |

*Summary and evidence of work done to improve the value of membership, which leads to retention and growth of members*
1. In 2020, Hong Kong Section won multiple IEEE awards on membership growth, membership retention, and enhancing individual benefits and services, namely,
   • R10 Best Membership Growth (Large Section) Award;
   • R10 Best Membership Retention (Large Section) Award; and
   • R10 Individual Benefits & Services (IBS): Rank 1 Best Proposal Award.

2. Hong Kong Section has created a tutorial video in Cantonese (local Chinese language) to introduce the IEEE and how to join the IEEE (available on YouTube at https://youtu.be/KR8PbE7um5k).

3. Hong Kong Section has launched a new program to offer complementary memberships to motivate new entrants of Student Members to Student Branches of the Section; each Student Branch receives 10 complementary memberships per year.

4. Hong Kong Section has launched a new program to guide and assist IEEE Members to elevate to Senior Member grade.

## B.2 Chapter Activities

*Total number of Chapters in the Section: 21*

*Number of Chapters formed in the current year: 1*

| Formation Date | Region | Geographic Parent | Geographic Unit Name | Society / Affinity Groups | Geographic Code | Geographic Unit Type |
|---|---|---|---|---|---|---|
| Oct 15, 2020 | 10 | Hong Kong Section / Guangzhou Section | Hong Kong / Guangzhou Joint Sections Chapter, IE13 | Industrial Electronics Society | CH10952 | Joint Chapter |

*Number of active Chapters: 20*

*Summary of Chapter activities*

March 2020

| Event | Event Type | Organizing Chapter | Details |
|---|---|---|---|
| 1 | Webinar | E25 | Event Name: COVID-19 Teaching and Learning Series<br><br>Date/Venue: Mar 18, 2020 / Online<br><br>Audience Size: 313<br><br>Topic: Online Assessment for Teaching and Learning: Why Bother? And Where to Start? (https://tl.hku.hk/2020/03/online-assessment-for-teaching-and-learning-why-bother-and-where-to-start/)<br><br>Speaker: Dr. Leon Chi-Un Lei |
| 2 | Research Webinar | EMB18 | Event Name: Bio-Med Eng. Research Seminar<br><br>Date/Venue: Mar 25, 2020 / Online<br><br>Audience Size: 25<br><br>Topic: Multiscale Biofabrication Approaches for Tissue Engineering (https://www.polyu.edu.hk/en/bme/news-and-events/event/2020/3/multiscale-biofabrication-approaches-for-tissue-engineering/)<br><br>Speaker: Prof. Hon Fai Chan, Assistant Professor, Institute for Tissue Engineering and Regenerative Medicine, Developmental and Regenerative Biology TRP, School of Biomedical Sciences, Faculty of Medicine, The Chinese University of Hong Kong |

May 2020

| Event | Event Type | Organizing Chapter | Details |
|---|---|---|---|
| 3 | Research Webinar | EMB18 | Event Name: Bio-Med Eng. Research Seminar<br><br>Date/Venue: May 7, 2020 / Online<br><br>Audience Size: 30<br><br>Topic: Base Modification Enhances the Performance of Synthetic RNAs (https://www.polyu.edu.hk/bme/news-and-events/event/2020/5/base-modification-enhances-the-performance-of-synthetic-rnas/)<br><br>Speaker: Prof. Becki Yi Kuang, Assistant Professor, Department of Chemical and Biological Engineering, Hong Kong University of Science and Technology |

| 4 | Research Webinar | EMB18 | Event Name: Bio-Med Eng. Research Seminar |
|---|---|---|---|
| | | | Date/Venue: May 20, 2020 / Online |
| | | | Audience Size: 28 |
| | | | Topic: Cellular-Based Therapy for Cartilage Regeneration – Focus on Tissue Specific Stem/Progenitor Cells |
| | | | (https://www.polyu.edu.hk/bme/news-and-events/event/2020/5/cellular-based-therapy-for-cartilage-regeneration/) |
| | | | Speaker: Prof. Yangzi Jiang, Research Assistant Professor Institute for Tissue Engineering and Regenerative Medicine (iTERM), School of Biomedical Sciences, Faculty of Medicine, Faculty of Medicine, The Chinese University of Hong Kong |

June 2020

| Event | Event Type | Organizing Chapter | Details |
|---|---|---|---|
| 5 | Technical Webinar | MAG33 | Event Name: MAG Online Technical Seminar |
| | | | Date/Venue: Jun 22, 2020 / Online |
| | | | Audience Size: 32 |
| | | | Topic: Two-Dimensional Materials for Energy-Efficient Spin-Orbit Torque Devices |
| | | | (https://events.vtools.ieee.org/m/233774) |
| | | | Speaker: Dr. Qiming Shao |
| 6 | Technical Webinar | MAG33 | Event Name: MAG Online Technical Seminar |
| | | | Date/Venue: Jun 29, 2020 / Online |
| | | | Audience Size: 6 |
| | | | Topic: Optical Imaging of Nanoscale Magnetic Field Using Spin Defects in Diamond |
| | | | (https://events.vtools.ieee.org/m/233775) |
| | | | Speaker: Dr. Zhiqin Chu |

July 2020

| Event | Event Type | Organizing Chapter | Details |
|---|---|---|---|
| 7 | Online Tutorial | E25 | Event Name: COVID-19 Teaching and Learning Series |
| | | | Date/Venue: Jul 17, 2020 / Online |
| | | | Audience Size: 498 |
| | | | Topic: Virtual Flipped Classroom Design: Lecturing |
| | | | (https://tl.hku.hk/2020/07/virtual-flipped-classroom-design-lecturing/) |
| | | | Speaker: Dr. Leon Chi-Un Lei |

August 2020

| Event | Event Type | Organizing Chapter | Details |
|---|---|---|---|
| 8 | Project Competition | EMB18 | Event Name: Bio-Med Eng. Student Project Competition 2020 |
| | | | Date/Venue: Aug 15, 2020 / Online |
| | | | Participants: 20 |
| | | | Project Manager: Pedro Mou |

October 2020

| Event | Event Type | Organizing Chapter | Details |
|---|---|---|---|
| 9 | Online Tutorial | E25 | Event Name: COVID-19 Teaching and Learning Series<br><br>Date/Venue: Oct 6, 2020 / Online<br><br>Audience Size: 150<br><br>Topic: Taking Students on Virtual Field Trips<br>(https://tl.hku.hk/2020/09/taking-students-on-virtual-field-trips/)<br><br>Speaker: Dr. Leon Chi-Un Lei |
| 10 | Research Webinar | EMB18 | Event Name: Bio-Med Eng. Research Seminar<br><br>Date/Venue: Oct 21, 2020 / Online<br><br>Audience Size: 31<br><br>Topic: Artificial Intelligence for Radiotherapy in the Era of Precision Medicine<br>(https://www.polyu.edu.hk/bme/news-and-events/event/2020/10/research-seminar-on-21-oct/)<br><br>Speaker: Prof. Jing Cai, Professor, Department of Health Technology & Infomatics, The Hong Kong Polytechnic University |

November 2020

| Event | Event Type | Organizing Chapter | Details |
|---|---|---|---|
| 11 | Research Webinar | EMB18 | Event Name: Bio-Med Eng. Research Seminar<br><br>Date/Venue: Nov 12, 2020 / Online<br><br>Audience Size: 30<br><br>Topic: Light and Sound: Integrating Photonics with Ultrasonics<br>(https://www.polyu.edu.hk/bme/news-and-events/event/2020/11/lightand-sound-integratingphotonicswithultrasonics/)<br><br>Speaker: Prof. Matthew O'Donnell, Frank and Julie Jungers Dean Emeritus, College of Engineering, Professor, Department of Bioengineering University of Washington |
| 12 | International Conference | AP03/MTT17 | Event Name: The 21st IEEE (HK) AP/MTT Postgraduate Conference<br>(http://www.ee.cityu.edu.hk/skltmw/apmtt/postgraduate_conference/Postgraduate%20Conference.html)<br><br>Supporting Organizations / Sponsors: Keysight Technologies<br><br>Date/Venue: Nov 21, 2020 / Online (Shenzhen and Hong Kong)<br><br>Audience Size: 72<br><br>Topics: 1) Microwave Theory and Techniques<br>2) Antennas and Propagation<br><br>Submitted Papers: 20<br><br>Number of Speakers: 20 |

December 2020

| Event | Event Type | Organizing Chapter | Details |
|---|---|---|---|
| 13 | Online Workshop | CIS11 | Event Name: "AI in X" Workshop (https://www.facebook.com/permalink.php?id=29333 1424845112&story_fbid=801307160714200)<br><br>Date/Venue: Dec 5, 2020 / Online<br><br>Audience Size: 39<br><br>Topic 1: Fano's Story: From AI Research to Enterprise Products<br>Speaker: Dr. Albert Lam, Chief Scientist & CTO Fano Labs<br><br>Topic 2: Word Representation Learning in Natural Language Processing<br>Speaker: Dr. Junqiu Wei Victor, AI Researcher, Noah's Ark Lab of Huawei<br><br>Topic 3: Auton for Quantitative Trading<br>Speaker: Mr. Ken So, Senior Quant. Developer, Global eSolutions (HK) Ltd<br><br>Topic 4: Applications of AI for the Visually Impaired People<br>Speaker: Mr. Felix Wong and Mr. Desmond Wong, Founders, Lumino Limited |
| 14 | Project Competition | CIS11 | Event Name: Final Year Project and Postgraduate Paper Competition<br><br>Date/Venue: Dec 5, 2020 / Online<br><br>Participants: 30 |
| 15 | International Online Workshop | E25 | Event Name: IEEE International Conference on Teaching, Assessment, and Learning for Engineering<br><br>Supporting Organizations / Sponsors:<br>Kagawa University, IEEE Education Society All-Japan Joint Chapter, IEEE Circuits and Systems Society, Shikoku Chapter, IEICE Technical Committee on Educational Technology (ET)<br><br>Date/Venue: Dec 8, 2020 / Online<br><br>Audience Size: 40<br><br>Topic: Sharing Experiences of Teaching and Learning During COVID-19: Building Responsive and Resilient Curriculum for the Next Normal<br>(https://tale2020.org/workshop-1/)<br><br>Speaker: Dr. Leon Chi-Un Lei |

| 15 | Conference | AP03/MTT17 | Event Name: 2020 Asia-Pacific Microwave Conference (APMC 2020) (http://www.ee.cityu.edu.hk/skltmw/apmc2020/index.php) |
|---|---|---|---|
| | | | Supporting Organizations / Sponsors: Hong Kong Science and Technology Parks Corporation, Huawei Technologies, Anritsu, Keysight Technologies, Rhode & Schwarz, Broadradio Communication Technology, Onwa Maine Electronics, Antwave Technology, Shenzhen Wavetone, Fragrant Mountain Microwave, Virginia Diodes |
| | | | Date/Venue: Dec 8 – 11, 2020 / Online |
| | | | Audience Size: 562 |
| | | | Topics: 1) Active Devices and Circuits; 2) Passive Components; 3) Antennas and Wireless; 4) Systems; and 5) Emerging Technologies |
| | | | Submitted Papers: 402 |
| | | | Number of Speakers: 397 |
| 16 | Research Webinar | EMB18 | Event Name: Bio-Med Eng. Research Seminar |
| | | | Date/Venue: Dec 17, 2020 / Online |
| | | | Audience Size: 24 |
| | | | Topic: Optical Focusing and Imaging of Deep Biological Tissue (https://www.polyu.edu.hk/bme/news-and-events/event/2020/12/20201217/) |
| | | | Speaker: Dr. Jiamiao Yang, Associate Professor, Doctoral Supervisor, Shanghai Jiao Tong University |

All-Year-Round

| Event | Event Type | Organizing Chapter | Details |
|---|---|---|---|
| 17 | Government Sponsored Project | CT08/OE22 | Event Name: Underwater Robotics Workshop and Competition (https://eeca.ecc.org.hk/english/projects/list_detail2019.html) |
| | | | Supporting Organizations / Sponsors: Hong Kong Government's Environment and Conservation Fund |
| | | | Project Brief: To help primary and secondary students to understand and solve environmental issues using technology and remotely operated vehicle through competitions and workshops |

## B.3 Professional and Continuing Education Activities

*Summary of continuing Educational activities including conferences, technical activities, training courses, and distinguished lecture programs with attachment table / information*

| Event | Event Type | Section / Organizing Chapter | Details |
|---|---|---|---|
| 1 | Webinar | Hong Kong Section | Event Name: Webinar on COVID-19 |
| | | | Collaborating Parties: Imperial College Alumni Association of Hong Kong, Chartered Management Institute (CMI) |
| | | | Date/Venue: Feb 27, 2020 / Online |
| | | | Topic: What You Need to Know About COVID-19 (https://www.youtube.com/watch?v=sSJL1mUarp8) |
| | | | Moderated by: Dr. Stephen Ng |
| | | | Featuring Prof. Christl Donnelly |

| | | | |
|---|---|---|---|
| 2 | Webinar | Hong Kong Section | Event Name: IEEE HK Section Professional Series<br>Date/Venue: Sep 5, 2020 / Online<br>Topic: Wireless AI: A New Sixth Sense to Deciphering Our World<br>    (https://r10.ieee.org/hk/2020/09/03/ieee-professional-series-1/)<br>Speaker: Prof. K. J. Ray Liu (2021 IEEE President-Elect) |
| 3 | Webinar | Hong Kong Section | Event Name: IEEE HK Section Professional Series<br>Date/Venue: Sep 5, 2020 / Online<br>Topic: The IEEE New Initiative Committee and the IEEE Digital<br>    Reality Initiative<br>    (https://r10.ieee.org/hk/2020/09/03/ieee-professional-series-2/)<br>Speaker: Prof. Chun Che Lance Fung (2021 R10 Director-Elect) |
| 4 | International Conference (U of London & HKU SPACE) | Hong Kong Section | Event Name: International Conference on Quality and Self-financed<br>    Higher Education "Connecting Local and Global"<br>    (https://hkuspace.hku.hk/collection/international-confer<br>    ence-on-quality-and-self-financed-higher-education-<br>    connecting-local-and-global)<br>Date/Venue: Oct 23, 2020 / Online & On-site<br>Topic: Navigating the Myriad Opportunities of Transnational<br>Educational<br>Speaker: Dr. Paulina Chan |
| 5 | International Conference (U of London & HKU SPACE) | E25 | Event Name: International Conference on Quality and Self-financed<br>    Higher Education "Connecting Local and Global"<br>    (https://hkuspace.hku.hk/collection/international-confer<br>    ence-on-quality-and-self-financed-higher-education-<br>    connecting-local-and-global)<br>Date/Venue: Oct 23, 2020 / Online & On-site<br>Topic: Unlocking the Potential of Teaching and Learning Through<br>    Multimedia and Artificial Intelligence<br>Speaker: Dr. Leon Chi-Un Lei |
| 6 | Seminar (Innovation Technology Commission) | Hong Kong Section | Event Name: Virtual InnoCarnival 2020<br>    (https://enroll.innocarnival.hk/en/venue/webinar/?type=<br>    webinar)<br>Date/Venue: Dec 25, 2020 / Online<br>Topic: IoT Home Safety Webinar<br>Speaker: Ir George Chan |

## B.4 Students Activities

*Total number of Student Branches in the Section: 8*

*Number of Student Branches formed in the current year: 3*
- Reactivation: The HKU student branch has been re-activated in 2020
- New Student Branches: Lingnan University and THEi Student Branches are being formed in 2020

*Number of active Student Branches: 5*

*Summary of Student Branch activities*

| Event | Event Type | Organizing Student Branch | Details |
|---|---|---|---|
| 1 | Information Day | OUHK | Event Name: Info Day<br>Date/Venue: Jul 15, 2020 / Online<br>Topic: Introduction to OUHK studies and the IEEE<br>Organizer: Dr. Kevin King Fai Hung |

| 2 | Orientation | OUHK | Event Name: JUPAS (Joint University Programmes Admissions System) Registration<br><br>Date/Venue: Aug 20, 2020 / Online<br><br>Topic: Orientation for pre-university students<br><br>Organizer: Dr. Kevin King Fai Hung |
|---|---|---|---|
| 3 | Orientation | OUHK | Event Name: Programme Session<br><br>Date/Venue: Sep 22, 2020 / Online<br><br>Topic: Introduction to OUHK studies<br><br>Organizer: Dr. Kevin King Fai Hung |
| 4 | Webinar | OUHK | Event Name: Meet & Greet (JUPAS)<br><br>Date/Venue: Sep 24, 2020 / Online<br><br>Topic: Introduction to OUHK studies and the IEEE<br><br>Organizer: Dr. Kevin King Fai Hung |
| 5 | Webinar | OUHK | Event Name: Meet & Greet (top-up)<br><br>Date/Venue: Sep 25, 2020 / Online<br><br>Topic: Introduction to OUHK studies and the IEEE<br><br>Organizer: Dr. Kevin King Fai Hung |
| 6 | Webinar | OUHK | Event Name: Virtual Info Day<br><br>Date/Venue: Nov 7, 2020 / Online<br><br>Topic: Introduction to OUHK studies and the IEEE<br><br>Organizer: Dr. Kevin King Fai Hung |
| 7 | Career Talk | OUHK | Event Name: Career Talk<br><br>Date/Venue: Dec 4, 2020 / Online<br><br>Topic: Career development and introduction to the IEEE<br><br>Organizer: Dr. Kevin King Fai Hung |
| 8 | Hackathon | CityU | Event Name: CityHack 2021<br>(https://r10.ieee.org/hk/2021/01/17/cityhack-2021/)<br><br>Supporting Organizations / Sponsors:<br>Huawei, SenseTime, Siemens, AWS Educate, Sengital<br><br>Date/Venue: Jan 30 – 31, 2021 / Online & On-site<br><br>Participants: 200+ students from all major universities in Hong Kong<br><br>The event was planned, organized, and executed by student leaders in Hong Kong since 2020. |

All-Year-Round

| Event | Event Type | Organizing Student Branch | Details |
|---|---|---|---|
| 9 | Project Competition | CityU, CUHK, HKU, HKUST | Hong Kong Section Student Branches organize robotics teams and participate in international robotics competitions. There were about 130 students in tertiary education joining the Asia-Pacific Broadcasting Union (ABU) Robocon 2020 Hong Kong domestic competition. The students were from local universities including CityU, CUHK, HKU, HKUST, etc. (total 9 teams). The Champion team and 1st runner-up team represented Hong Kong in joining Asia Pacific ABU competition. The HKUST Robotics Team won 3 awards, namely the First Runner-Up, Best Presentation Award, and a Special Award in ABU Robocon Festival 2020 (http://www.official-robocon.com/aburobofes.html), which was joined by 21 winning teams from 11 places in Asia-Pacific. The CUHK Robocon team also won a Special Award in the festival. |

## B.5 Affinity Group Activities

*Young Professional (YP)*

- Newly formed in 2020
- Activities (since June 2020)

| Event | Event Type | Organizing Affinity Group | Details |
|---|---|---|---|
| 1 | Hackathon | YP | Event Name: Tech-in-Life (TIL) Business Hackathon (https://www.youtube.com/watch?v=4vVO-8FykYw)<br><br>Supporting Organizations / Sponsors: Cyberport, AWS, Imperial College Alumni Association of Hong Kong, Chartered Management Institute (CMI), City University of Hong Kong, Hong Kong Baptist University, The Chinese University of Hong Kong, The Hong Kong University of Science and Technology, The Open University of Hong Kong, The University of Hong Kong<br><br>Date/Venue: Sep 20 & 26, 2021 / Online & On-site<br><br>Participants: 150+ university students (in 50 teams) |
| 2 | Congress Delegation | SWYL | Representing the Hong Kong Section, 20 delegates across all membership grades attended and some gave invited-presentations at the IEEE Virtual Region 10 SYWL Congress (September 1, 15 and 20). Prof Nim Cheung (LMAG), Fred Han (YPAG), Dr Kevin Hung (SB Counselor) and Keke Li (SB Leader) received special recognitions at the biannual Congress. |

*Women In Engineering (WIE)*

| Event | Event Type | Organizing Affinity Group | Details |
|---|---|---|---|
| 1 | Summit | WIE | Event Name: WIE Global Summit 2020 (https://btc.ieeebangalore.org/wie/)<br><br>Date/Venue: Nov 5, 2020 / Online<br><br>Topic: Innovative Leadership and Leadership in Innovation<br><br>Speaker: Dr. Paulina Chan |
| 2 | Congress | WIE | Event Name: IEEE Bangladesh Section International COVID19 Congress (http://www.ieeebd.net/international-covid19-congress-icc2020/)<br><br>Date/Venue: Aug 9-10, 2020 / Online<br><br>Topic: Exploring Challenges, Opportunities, and Solutions for Women in Engineering During COVID-19<br><br>Panelist: Dr. Paulina Chan |
| 3 | Summit | WIE | Event Name: IEEE Beijing Section WIE 2020 Summit (https://site.ieee.org/beijing-wie/wie2020/)<br><br>Date/Venue: Dec 18-19, 2020 / Online<br><br>Topic: Diversity of Globe<br><br>Panelist: Dr. Paulina Chan |
| 4 | International Leadership Conference | WIE | Dr Paulina Chan is a member of the IEEE WIE International Leadership Conference (ILC) 2021 Sponsorship Committee (see https://www.aconf.org/conf_178033.html). |

*Life Member (LM)*
- Newly formed in 2020
- Activities (since Aug 2020)

| Event | Event Type | Organizing Affinity Group | Details |
|---|---|---|---|
| 1 | Workshop | LM | Event Name: IEEE Joint Tutorial/Workshop on Deep Learning (https://cis.cihe.edu.hk/workshop.html) <br><br>Collaborating Parties: <br><br>The Hong Kong Polytechnic University, Caritas Institute of Higher Education, TeleEye Founders' Charity Foundation, Asia-Pacific Signal and Information Processing Association <br><br>Part I: 2-Day Tutorial on Deep Learning <br>Date/Venue: Mar 5-6, 2021 / Online & Onsite <br><br>Part II: 2-Day IEEE Workshop on Deep Learning <br>Date/Venue: Mar 19-20, 2021 / Online |

## B.6 Awards & Recognition Activities

*Award constituted by the Section*
- Institute of Electrical and Electronics Engineer (Hong Kong Section) Prize
- New awards conceptualized in 2020 for the implementation in 2021
  - Outstanding Chapter/Affinity Group Achievement Award
  - Outstanding Student Branch Achievement Award
  - Outstanding Volunteer Service Awards

*Awards and Recognitions received by the Section, and members in the Section, from R 10 and IEEE HQ during the year*
1. R10 Best Membership Growth (Large Section) Award
2. R10 Best Membership Retention (Large Section) Award
3. R10 Student Membership Development and Leadership Training Fund: Recipient
4. R10 Educational Activities New Innovative Challenge (Pre University Category): Winner
5. R10 Individual Benefits & Services (IBS): Rank 1 Best Proposal Award
6. IEEE 2021 Richard W. Hamming Medal (Recipient: Professor Raymond Wai Ho Yeung, CUHK)

## B.7 Communication Activities (Newsletter, Home Page, E-mail etc.)

*Newsletter (name and number of issues in the year)*
- Number of issues: 6
  1. IEEE Hong Kong Section Newsletter – August 2020 (https://r10.ieee.org/hk/2020/08/23/ieee-hong-kong-section-newsletter-august-2020/) and IEEE HK Section Newsletter (https://r10.ieee.org/hk/2020/11/30/ieee-hk-section-newsletter/)
  2. IEEE R10 Quarterly Newsletter (https://newsletter.ieeer10.org/home_jan2021/archive_jan2021/)

*Home Page of the Section:* https://r10.ieee.org/hk/ (updated bi-weekly and as needed)

*Other means of contacts with Section members*
1. Facebook page (https://www.facebook.com/ieeehk/) and YouTube channel (https://www.youtube.com/channel/UCeOlCH7bz1xjsO2TkagYB3A)
2. 1 AGM and 5 ExCom meetings were held in 2020 for communications with Section members
3. IEEE eNotice is used for disseminating news and information to Section members

## B.8 Industry Relations

*Membership growth and retention*
As detailed in the Section's award winning proposal (R10 Individual Benefits & Services (IBS): Rank 1 Best Proposal Award), Hong Kong Section is implementing the following initiatives to encourage membership growth and retention:

- Section awards for local and worldwide recognition;
- Accreditation with higher education institutions;
- Collaborations with Mainland China's academia and industry; and
- Collaborations with non-engineering professional bodies including Chartered Management Institute (CMI).

*Activities for/with industrial members*
Hong Kong Section has engaged in the following activities:
- Event co-organization and sponsorship with industry
    1. The Tech-in-Life (TIL) Business Hackathon was co-organized with Cyberport (www.cyberport.hk) and AWS
    2. The APMC 2020 conference was sponsored by companies that include Hong Kong Science and Technology Parks Corporation (www.hkstp.org), Huawei Technologies, Anritsu, Keysight Technologies, Rhode & Schwarz, etc.
    3. The pioneering webinar on COVID-19 was co-organized with the Imperial College Alumni Association of Hong Kong and the Chartered Management Institute (CMI)
- Tech Talks: "AI in X" Workshop with Fano Labs, Huawei, etc.
- Industry collaborators
TAL Apparel Ltd, Hong Kong Applied Science and Technology Research Institute Company Limited (ASTRI, www.astri.org), Hong Kong Productivity Council (HKPC, www.hkpc.org), SizeStream (www.sizestream.com/), AIphtonics (aiphotonics.ai), etc.

## B.9 Humanitarian Technology Activities

*Humanitarian Technology related activities supported by the Section / SIGHT Activities*
- First COVID awareness seminar with Imperial College London on the challenges of the new normal.
- OUHK Student Branch to set up solar and wind-power charging stations in testbed in Tap Mun (a lightly populated island), Hong Kong, and transfer the packages to Cambodia, Fiji, etc.

## B.10 Community Activities

*IEEE Social activities (Family day, IEEE day, Engineers Week)*
Hong Kong Section celebrated the annual IEEE Day and shared the video broadcast on YouTube and Facebook (October 6th, 2020). The video also features from the Tech-in-Life (TIL) Business Hackathon including congratulatory speeches by VIPs and highlights of the event.

*Local community activities*
1. In 2020, the Hong Kong Section was one of the co-organizers of The Second Future Engineer Grand Challenge (https://stem-alliance.org.hk/zh-tw/new-past-events/2020enginner). The objective of this event was to advocate the importance of STEM education in Hong Kong and in the World for cultivating young engineers. Due to the COVID-19 pandemic, the rules of the challenge have been changed from face to face to online presentation. All participants are required to submit the video records that capture the innovative STEM-related project only. In total, the Grand Challenge has received 84 submissions from 11 primary schools and 18 secondary schools in Hong Kong. At last, 6 different student teams were nominated to attend the grand final in Beijing, with 6 grand prizes awarded.
2. In 2020, Hong Kong Section supported the Hour of Code Hong Kong event, which included over 120 online coding workshops to cultivate the importance of computational thinking to Hong Kong general public (https://www.meetup.com/Hong-Kong-Hour-of-Code-Meetup-Group/events/past). On average, each lesson had over 30 participants including both parents and their children.

## PART C - OTHERS

## C.1  Special Events

1. Hong Kong Section has been awarded to host TENCON 2022
    - **[Importance]** The Hong Kong Section has its 50-year Anniversary in 2022. Furthermore, the Hong Kong Section held the first TENCON in 1980. Later, The Hong Kong Section also organized TENCON 1995 and TENCON 2006. TENCON 2022 will be a good signature opportunity for the Section to reflect the development of the Section and TENCON. It also demonstrated the consistency and successful succession of the Section and TENCON as well as further advanced the technological development.
    - **[Outcomes]** Since December 2020, Hong Kong Section has formed an organizing committee for TENCON 2022.

- **[Funding]** Hong Kong Section anticipates to attract US$ 150K sponsorship from industry and Hong Kong Government

2. Underwater Robotics Workshop and Competition
   - **[Importance]** This workshop and competition enables young K12 students with the opportunity to explore, advance their knowledge and abilities on underwater robotics and engineering.
   - **[Outcomes]** Since program launch in the second half of 2020:
     1. 8 schools were trained in 53 hours of workshop; and
     2. A total of 20 remotely operated underwater vehicles (ROVs) were built by 93 students participated.
   - **[Funding]** Received HK $449,661 funding from the Hong Kong Government's Environment and Conservation Fund. Currently applying for further funding to expand the project and reach out to other Hong Kong schools and communities.

## C.2 Relationship with National and International Societies and Non-Government Organizations (NGO)

| Name of Societies and Non-Government Organizations (NGO) | Details of Joint Activities | Benefits to IEEE Members | Benefits to Hong Kong Section |
|---|---|---|---|
| Chartered Management Institute (CMI) | Co-organized the Webinar on COVID-19 | Gain cross-disciplinary information and insights | Improve event exposure |
| Hong Kong Institution of Engineers (HKIE)  The Institution of Engineering and Technology Hong Kong Section (HKIET) | Co-organized The Second Future Engineer Grand Challenge | Reach out to other engineering professionals in Hong Kong | HKIE and HKIET are other 2 major engineering organizations in Hong Kong. Joint activities among Hong Kong Section and these organizations can reach out to most engineering professionals in Hong Kong. |
| Cyberport (www.cyberport.hk) | Co-organized the Tech-in-Life (TIL) Business Hackathon | Explore funding opportunities from Cyberport | Allows the Hong Kong Section to reach out to companies in Cyberport and seek collaboration opportunities. |

## C3. Collaboration with other IEEE Sections

*Support extended to neighboring Sections*
1. Hong Kong Section sponsored the Xian and Macau Sections in organizing the 2020 IEEE International Conference on Signal Processing, Communications, and Computing (ICSPCC 2020).
2. The WIE Affinity Group supported the WIE Global Summit 2020 (Bangalore Section), the International COVID19 Congress (Bangladesh Section), and the WIE 2020 Summit (Beijing Section).

*Joint activities with any other Section*
1. The Engineering in Medicine and Biology Society Chapter (EMB18) is a joint chapter between the Hong Kong Section and the Macau Section.
2. The newly formed Industrial Electronics Society (IE13) is a joint chapter between the Hong Kong Section and the Guangzhou Section.

## C.4 Support extended to Sub-sections & Society Chapters within the Section

*Support extended for organising technical, educational and professional activities*
- Hong Kong Section has created a video on a 360-degree Immersive Visit of HKUEEE Applied Life Photonics Lab (https://youtu.be/zPRQAPwS_28).
- Hong Kong Section has created the COVID-19 Teaching and Learning Series seminars to educate trainers on how to make use of new technologies to teach more efficiently under the new normal.

*Joint activities for membership development*
Hong Kong Section and Society Chapters have launched a new program to guide and assist IEEE Members to elevate to Senior Member grade.

*Support extended for the formation of a Sub-section or transition of a Sub-section into a full Section: N/A*

## C.5 Best Practices of your Section (which you would like to share with other Sections for the benefits of members)

In 2020, Hong Kong Section revised its Bylaws (1972) following the practices described below and these practices should be shared with other Section for the benefits of members.

- First, Hong Kong Section established a team for reviewing the Section Bylaws. The team introduced the importance of revising the IEEE Section Bylaws and the need to change the Bylaws due to historical reasons.
- Second, the team presented the draft of the revised Hong Kong Section Bylaws with highlights of the new changes, including the name in Chinese and in English. Three committees were the formed within IEEE Hong Kong Section, namely, Section Executive Committee (SEC), Section Sub committees (SSC) and Society Chapter Committee (SCC).
- Third, the details of the revised Bylaws were made available on the Section website. The final draft of the Bylaws was sent to managing director of MGA for approval and the revised Bylaws were approved at the Hong Kong Section AGM 2020.

## C.6 Problems anticipated and suggestions for solutions, if any

While Hong Kong Section has many higher-grade members including many prolific and renowned academia, industry leaders, and researchers (e.g., 93 Fellows and 26 Life Fellows as of December 2020), there is slow growth in Student Membership comparing to that of higher-grade categories. Suffering from the COVID-19 pandemic and social unsettlement on campus, Student Branches were not successful in organizing events for student membership recruitment and development. The Hong Kong Section intends to address this problem by hosting hybrid virtual-in person events such as the highly successful "IEEE Professional Series Webinars" to reach a wide local/regional/world members. Also, Hong Kong Section has launched a new program to offer complementary memberships to motivate new entrants of Student Members to Student Branches of the Section.

## PART D - GOALS AND PLANS

### D.1 Continuation of project/activity in progress and their implementation plans

We focus on implementing the rich assets and resources from IEEE including VOLT for leadership succession, TryEngineering for member engagement, Future50 for Student Member recruitment, pursue Center for Leadership Excellence, and mentoring program.

### D.2 Goals and Future Plans

Following a widely successful year 2020, the Hong Kong Section will continue its many projects and activities in 2021 and realize the major priorities of IEEE and IEEE Region 10.

| | |
|---|---|
| • Conferences and its quality<br>• Member value, member engagement and member satisfaction through collaborative programs<br>• Industry academia partnership<br>• Diversity: more leadership and volunteering opportunities for YP and women | • Programs for students and YP, where YP helps students in their career growth<br>• Sustainable "Humanitarian Technology" projects<br>• Promote "Reaching Locals" initiative |

### D.3 Any innovative ideas to make IEEE more creative and value added for sustaining the membership retention and recruitment goals.

The COVID-19 pandemic has generated pendulum changes in organization ecosystems and human behaviors to embrace new norms. In 2020, the IEEE Hong Kong Section made use of IEEE resource tools (e.g., TryEngineering in English and Chinese, VOLT, and Collabratec) and novel technologies in organizing technical, educational, and professional activities. In 2021, Hong Kong Section will continue to host various hybrid virtual-in person events such as the highly successful "IEEE Professional Series Webinars" to reach a wide local/regional/world members.

### D.4 Business Plan for Sustainable Growth and Financial Stability.

The Hong Kong Section has an excellent track record in membership growth and retention (i.e., over 80% retention rate in 2019 and 2020). Financially, Hong Kong Section expects an income of more than US $30,000 annually, which will be utilized in membership recruitment, retention, re-instatement, and engagement initiatives.

## ADDENDUM: EVENT PHOTOS



**First COVID awareness seminar with Imperial College London on the challenges of the new normal**



**Tech-in-Life (TIL) Business Hackathon (over 150 university students (in 50 teams) participated)**

**Underwater Robotics Workshop and Competition (target to reach out to 400 K12 students)**