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Hong Kong Institute of Acoustics

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## Chairman's Report 2021/2022

### 1. Introduction

I was elected as Chairman of the institute in the Annual General Meeting (AGM) in June 2020. It is my great honor to serve the institution since the conference Acoustics 2012 and elected as Executive committee (Honorary Treasurer) after the conference. In this AGM 2022, I wished to express my most sincere gratitude to ALL Executive Committee for their contribution and dedicated support to the Institute for the past two years.

Since 2019, we experienced the challenging times due to the widespread impact of the COVID-19, it had seriously affected our planned activities. As you all know, it has been very difficult to arrange any major events and international collaborations. Despite the challenges, we have arranged quite a number of technical webinars during this year and I will cover these in more details in the latter part of my report.

Last but not least, on behalf of HKIOA Executive committee, I would like to express my sincere gratitude to all of you, your dedication and unfailing support during this difficult time had enabled us to move forward and overall various difficulties. With your active participation, we are confident that our upcoming events will continue to create values for the industry. In particular, I am also grateful to the supports provided by our Executive Committee members, Student Branches, and guest speakers, which they together had made the HKIOA Events and Webinars a remarkable success.

### 2. Executive Committee of the Institute

I wish to give my heartfelt thanks again to the Executive Committee members. We generally met on a monthly basis and managed the business of the Institute. We organized and promoted various activities to foster the networking among our members and their professional development, with a view to raising the recognition of the acoustics profession in the general, as well as the professional community. The 2021/2022 Executive Committee comprised of a Chairman, 12 elected Committee Members, 4 Co-opted Member. Moreover, the Immediate Past Chairman and the 2 Honorary Advisers had also advised the Committee on various matters of the Institute.



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### 2.1. Committee Members (Session 2020 – 2021)

Chairman	Mr. William FUNG
Hon Secretary	Mr. Aaron LUI
Hon Treasurer	Dr. Calvin CHIU
Chairman, Membership SC	Mr. Chris KWOK Mr. Joshua CHUNG (Co-Opt)
Chairman, IT SC	Mr. Aaron LUI Mr. James CHOI
Chairman, Indoor Acoustic SC	Mr. Henry CHAN Mr. Wai Him TANG
Chairman, External Affairs SC	Mr. Chris KWOK Dr. Cindy CHEUNG (Co-Opt) Ms. Claudine LEE (Co-Opt)
Chairman, Environmental Noise SC	Mr. Alson PANG Dr. KW CHENG (Co-Opt)
Co-Chairman, Noise & Vibration SC	Ir Wilson HO Dr. Randolph LEUNG
Co-Chairman, Professional Development & Education SC	Dr. Clief TANG Mr. Ken WONG Prof. SK TANG Dr. Randolph LEUNG
Co-Chairman, Construction Noise SC	Mr. Ken WONG Ir Wilson HO
Chairladies, Women in Acoustics SC	Ms. Claudine LEE (Co-Opt) Dr. Cindy CHEUNG (Co-Opt)
Chairman, Publication SC	Mr. James CHOI Dr. Cindy CHEUNG (Co-Opt)

### 2.2. Others:

Immediate Past Chairman	Dr. CW LAW
Hon Adviser (Institution Advancement & Discipline)	Prof. K. C. LAM Ir KK IU
Membership	Mr. CL WONG
Administrator (Part-time)	Dr. Horus CHAN



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### 2.3. Student Branch

One of the main objectives of the work of the Institute is to nurture the growth and development of the younger generation in the field of acoustics. The Institute has therefore assisted in the formation of the Student Branches and have allowed all the student members to join HKIOA's activities free of charge. One of the most well received activities was the yearly "Career Talk" held for the Student Branch and the young professionals. The invited speakers were all members of the HKIOA, who were mostly veteran acousticians, engineers coming from the consultants, Government or the Industry. They shared experience and insights with these young people and provided them useful information and guidance about the work opportunities and prospects in the acoustics profession.

The chairman of the student branches for the current session are, Mr. Gary YUEN from HK PolyU, Mr. Bobby LEE from the Morrison Hill IVE, and Mr Zigin LAI from the Shatin IVE.

## 3. Finance

The Institute remained in a healthy financial position for this year. The accounts of the Institute have been audited by an external independent auditor and details of the financial situation would be provided by the Honorary Treasurer, Dr. Calvin CHIU, in a separate report.

## 4. Membership

The number of membership applications has gradually increased during this term. From last AGM to Jan 2022, 4 numbers of applicants were elected as Corporate Members, 10 numbers were elected as Associate Members. We are hoping that the Institute will continue to grow with more new members coming from various disciplines.

### 4.1. Membership Profile

The trend of membership and its profile up to Mar 2022 are given as follows:

Grade	21/2/13	21/2/14	12/3/15	19/2/16	28/2/17	15/3/18	1/3/19	30/4/20	28/2/21	6/3/22
Hon. Fellow	4	4	4	4	4	4	4	4	4	4
Fellows	21	21	21	21	18	19	21	21	21	21
Members	205	210	231	242	235	250	260	275	277	281



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Associate Members	74	80	86	93	76	73	82	86	91	101
Students	119	120	120	120	226	226	371	341	341	280
Total	423	435	462	480	559	572	738	727	734	687

## 5. Education

### 5.1. Training on Essentials of Environmental Noise

We launched a certificate training workshop in July in the form of a webinar with a structured training including the essential concepts of acoustics, road traffic noise, noise prediction model, control and management. It was supported by HKIQEP, EMAHK, and HKIEIA. We were glad to have Mr. CL WONG, from EPD and Dr. Calvin CHIU, from Ramboll as our speakers.

There were 33 participants joining the training workshop. It covered the essential knowledge of environmental noise and the noise syllabus of the HKIQEP Qualification Examination. It helped the participants in the preparation of their examination.

## 6. Activities

We organized or co-organized various activities and fostered partnership with other institutions. Special thanks are given to EMAHK, HKIEIA, HKIQEP, CIWEM, HKIEPO, ESEA-ASA, HK PolyU, and EPD, for their continuous support to many of our activities. The table below shows a brief summary of some of the events during the year:

Date	Activities
14-7-2021	Acoustic Metamaterial Webinar Series - Product Development from Membrane-type Locally Resonant Acoustic Metamaterials
26-7-2021	Acoustic Metamaterial Webinar Series - The Genesis and Development of The KEF LS50 Meta
28-7-2021	Acoustic Metamaterial Webinar Series - Attempting Acoustic Metamaterial Liners for Duct Flow Silencer Design
30-11-2021	HKIOA Career Talk 2021
18-1-2022	Indoor Acoustics Webinar Series - Latest Technology Solutions for Challenging Acoustics Environment



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20-1-2022	Indoor Acoustics Webinar Series - Lightweight Acoustic Floor Solution for Gym & Fitness Centre
15-2-2022	HKIOA Technical Webinar - Spatial Sound Perception Experience in a Virtual Reality (VR) World

### **6.1. ACOUSTIC METAMATERIAL WEBINAR SERIES - PRODUCT DEVELOPMENT FROM MEMBRANE-TYPE LOCALLY RESONANT ACOUSTIC METAMATERIALS**

The Technical Webinar was held on July 14, 2021. Prof. Zhiyu Yang, Professor in the Physics Department of HKUST and CEO of Tranquility Acoustronics (HK) LTD shared his 20 years' research on the membrane-type locally resonant acoustic metamaterials at HKUST. Prof. Yang has developed some Light-weight Noise Barrier Panels and Super-function Silencers, which are suitable for noise control applications that have tight restrictions on weight and space. Compared to the conventional products on the market, the metamaterials products are smaller in volume and lighter in weight for the same degree of noise reduction, or are able to provide higher noise reduction within the same space and weight limit, while at competitive price.

### **6.2. ACOUSTIC METAMATERIAL WEBINAR SERIES - THE GENESIS AND DEVELOPMENT OF THE KEF LS50 META**

The seminar by Dr Sébastien DEGRAEVE, Senior Research and Development Engineer at KEF, introduced the journey of designing a masterpiece LS50 META series loudspeaker. He discussed in depth the theory behind the structure-acoustics interaction of the loudspeaker components as well as the room acoustics. The loudspeaker design performance was evaluated thoroughly starting from each component, to the assembled speaker set, with computer simulation and experimental measurement. The sound quality of the LS50 META was being push further beyond the limit with acoustic metamaterial absorption technology.

### **6.3. ACOUSTIC METAMATERIAL WEBINAR SERIES - ATTEMPTING ACOUSTIC METAMATERIAL LINERS FOR DUCT FLOW SILENCER DESIGN**

Dr Racer LAM from the department of Mechanical Engineering of the HKPolyU introduced his work of design and evaluation of the acoustic liners using acoustic metamaterial for duct flow silencer application. The webinar discussed the drawbacks of conventional duct silencer in terms of flow and size. Dr LAM then delivered the integration of small scaled metamaterials which are



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well tuned for different frequency response into a large panel liner. A comprehensive experimental verification in grazing incident tube verified the liner's outstanding performance.

#### **6.4. INDOOR ACOUSTICS WEBINAR SERIES - LATEST TECHNOLOGY SOLUTIONS FOR CHALLENGING ACOUSTICS ENVIRONMENT**

For decades now, the acoustics industry has been using computer simulation and advanced audio solutions to predict and overcome acoustics design challenges. Thanks to the technology advancements in digital and intelligent signal processing, there are now more tools available to professionals as well as end-users to tackle challenging acoustics environments, facilitating communications in noisy and/or reverberant spaces.

#### **6.5. INDOOR ACOUSTICS WEBINAR SERIES - LIGHTWEIGHT ACOUSTIC FLOOR SOLUTION FOR GYM & FITNESS CENTRE**

Following current acoustic standards and using common testing equipment, it is difficult to mimic the effects of noise generated in gym areas, as the structure is not being excited at low enough frequencies. As no two buildings are the same, drop weight and in situ tests are recommended when designing acoustic floating floors for gym areas. There are many different types of noise being generated in these facilities. In many cases, gyms are opening in existing buildings, where the extra weight and height of a wet system is not feasible, and a well-designed lightweight acoustic floor solution may be necessary.

#### **6.6. HKIOA Technical Webinar - Spatial Sound Perception Experience in a Virtual Reality (VR) World**

There is increasing effort to characterize the soundscapes around us so that we can design more compelling and immersive experiences. This webinar focused on how we can percept sound in a virtual reality (VR) environment. In particular, some demonstrations on 3D sound perception in the VR environment and different technical setups of spatial sound cues were shared to illustrate the ideas.

Moreover, the difference in both real-world and VR settings to evaluate spatial sound perception and an overview of emerging VR technology applications especially with the advances in spatial sound stimulation were highlighted with the audience.





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## 7. Publications & information technology

Most of the activities conducted by the Institute have been reported in our newsletter “Sounding Board”, which is released as an electronic publication to Members and posted on our website. It provides a good medium not only for keeping members informed on our achievements throughout the year, but also for other interested readers to know more about our acoustics community. We have to thank those members who have contributed to the informative contents in this publication. We will continue to make full use of the Sounding Board to promote sharing and communication among Members.

Asides from this, our website served as a platform of communications between the Institute and our Members. Members can update their personal details and pay their membership fee, seminars and conferences on line. Indeed, we had announced that the membership fee for year 2022 will be waived back in October 2021.

Our membership application process can now be done all through electronic means and any person who is interested in joining HKIOA can visit our website to learn about the entry requirements, download and submit their appropriate application form via emails.

Our website ([www.hkioa.org](http://www.hkioa.org)) has continued to provide services to members and interested parties in the public. The photo gallery containing photos taken during various activities were uploaded for easy sharing among members. It does help to bring back many wonderful memories. The information on the institute’s membership was updated from time to time and published in the website for verification. More and more information and contacts of acoustics related local suppliers/contractors/consultants have also been posted for the information of the public.

Apart from the email based communication, the official Facebook page of the institute is now put into service to facilitate the communication. All the activities, information, updates, promotions and photos would be posted on the page regularly. It also provides an open platform for the members and public in case there have any enquiries.

## 8. External Liaison

In 2021/22, while we were pre-occupied in organizing various local activities, representatives of our institute also attended international conference/meeting/events to promote the institute and foster long term relationship with the counterparts. During the year, we had worked with the International Commission for Acoustics (ICA) as the local organizer



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of the Student Competition – My World of Sounds for the International Year of Sound (IYS) for the HK session.

The IYS is a global initiative aims to highlight the importance of sound in all aspects of life on earth, which also is a key component in the equilibrium of all human beings, in their relationship with others and with the world, in its economic, environmental, societal, medical, industrial and cultural dimensions, and leads toward an understanding of sound-related issues at the national and international level.

One of the national winners Hau-ching CHEUNG has also obtained the 2<sup>nd</sup> runner-up in the primary school section in the international contest of this competition.

Moreover, we had worked with HKIQEP and its Institutional Partners (IP) in promoting their events.

## **9. The Way Forward**

This year is the second year for me being the Chairman of HKIOA. I would like to express my sincere gratitude to all executive committee members, friends of the institute and organizing committee members who have been involved in the various HKIOA activities. Last but not the least, I look forward to having your continuous support to the institute, and I will continue to participate in the work of the institute, as the immediate past chairman. With your support and the great efforts of our committee members, the institute will continue to grow and we should have another fruitful and successful session in the next term.