



# Sounding Board

October 2022 Issue

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# Report on Recent Activities

2020 – 2021  
“My World of Sounds”  
Student Competition

25 May 2022  
Annual General Meeting

16 Jun 2022  
Technical Webinar “Piling Noise  
Reduction by Magnetic Tuned  
Mass Damper (MTMD)”

26 Jul 2022  
Technical Webinar “Innovative  
Construction Noise Control in  
Singapore”

7 Jul 2022  
Technical Webinar “Lift Noise and  
Vibration Control Technique”

23 Jun 2022  
Technical Webinar “A More Precise  
Method in Evaluating the Acoustical  
Performance of Resilient Sports  
Flooring System”

21 – 24 Aug 2022  
Delegates to Inter-Noise 2022  
in Glasgow, UK

29 Sep 2022  
Technical Webinar “Acoustic  
Concerns and Treatment in  
Hydraulic Installation”

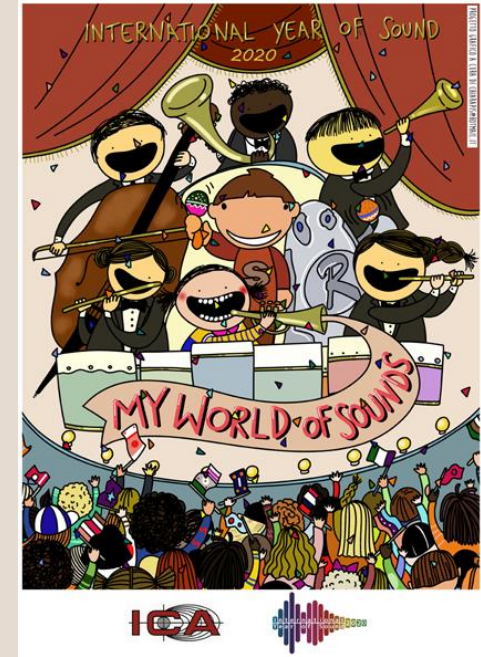
Sep – Oct 2022  
Professional Certificate Course  
on Acoustics, Noise and  
Vibration Control

# "My World of Sounds" Student Competition

"My World of Sounds" is one of the activities under the global initiative of the International Year of Sound to highlight how the sound environment 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. The competition is strictly connected to the melody "We are the sounds of our world" (<https://sound2020.org/society/student-competition>) and its refrain, and is structured in two categories, i.e. (i) Primary school students to produce hand-made drawings, pictures and patchworks related to their world of sounds and inspired by the said melody; and (ii) Secondary school students to write a stanza of 4 verses in mother tongue and/or in English inspired by the said melody.

In response to the International Year of Sound 2020 – 2021 organized by the International Commission of Acoustics (ICA), HKIOA has collaborated with International Commission of Acoustics to hold the International Competition "My World of Sounds" for students in Hong Kong and is pleased to announce that one of the winners, CHEUNG Hau-ching, has obtained the 2nd-runner up in the International Competition Category.

(Reported by Chris Kwok)



**B**

47 C A- G  
 Lis-ten-ing the beautiful voice like a bird sing a song the

53 F C A-  
 sound of the world Re-mem-ber the wonderful voices

58 G F  
 Close your eyes try to hear the sound of the world

Local Champion: Wendy NG  
 (from Po Chiu Catholic Secondary School)

**B**

47 C A- G  
 When e-very-time things go a down-hill, turn this on blast the wall the

53 F C A-  
 sound of the world Just like ma-gic sub-li-mi-nal-ly,

58 G F  
 Stop the tears when you hear the sound of the world

Local 1<sup>st</sup> Runner-up: WU Ki-wing  
 (from Salesian English School)

# "My World of Sounds" Student Competition (Cont'd)

List of Winners of the Hong Kong Contest:

Primary School Section	
<b>Champion</b>	Matthew Eden CHING (Y.C.H. Chan Lu Seng Primary School)
<b>1<sup>st</sup> Runner-up</b>	Oliver Tianjun CAI (Chinese International School)
<b>2<sup>nd</sup> Runner-up</b>	CHEUNG Hau-ching * (Ching Chung Hau Po Woon Primary School)
<b>Merit</b>	ZHANG Kwan-yiu (T.W.G.Hs Kwan Fong Kai Chi School)
	Trinity LAW (Creative Primary School)
	Alex Tianyi CAI (Chinese International School)
	Benjamin Yue-man TSO (Ching Chung Hau Po Woon Primary School)
	Wing HO (Ching Chung Hau Po Woon Primary School)

\* CHEUNG Hau-ching also won the 2<sup>nd</sup> runner-up in the Primary School Section in the International Contest.



2<sup>nd</sup> Runner-up: CHEUNG Hau-ching



香港聲學學會  
Hong Kong Institute of Acoustics

Champion: Matthew Eden CHING



香港聲學學會  
Hong Kong Institute of Acoustics

Champion: Wendy NG



Merit: Trinity LAW



Merit: Benjamin Yue-man TSO



Merit: Wing HO

Secondary School Section	
<b>Champion</b>	Wendy NG (Po Chiu Catholic Secondary School)
<b>1<sup>st</sup> Runner-up</b>	WU Ki-wing (Salesian English School)
<b>2<sup>nd</sup> Runner-up</b>	MA Tsz-yiu (St. Rose of Lima's College)
<b>Merit</b>	Emerald FUNG (Jockey Club TH College)



2<sup>nd</sup> Runner-up: MA Tsz-yiu

# "My World of Sounds" Student Competition (Cont'd)



Local 1<sup>st</sup> Runner-up: Oliver Tianjun CAI  
(from Chinese International School)



Local Champion: Matthew Eden CHING  
(from Y.C.H. Chan Lu Seng Primary School)



Local & International 2<sup>nd</sup> Runner-up: CHEUNG Hau-ching  
(from Ching Chung Hau Po Woon Primary School)

**B**

47 C A- G  
Close your eyes and opening your mind To feel to listen the

53 F C A-  
sound of the world Bird singing tidal sound, wind sound

58 G F  
can enrich our lives because of the sound of the world

Local 2<sup>nd</sup> Runner-up: MA Tsz-yiu  
(from St. Rose of Lima's College)

# Annual General Meeting 2022

The Annual General Meeting (AGM) of the HKIOA was held on 25 May 2022. Similar to the special arrangement of the AGM under the COVID-19 pandemic situation in the past two years, physical attendance of the meeting at the Conference Room of Ramboll's office in Wai Chai this year was available to the Executive Committee and nominees standing for the election of Executive Committee members, while the attendance with the Zoom online meeting system was available to all members. A total of 29 corporate members and 3 non-corporate members attended the meeting, and proxies from 37 corporate members had been received by the Secretariat.

The Chairman, Mr. William Fung presented his report on the activities organized by the Institute throughout the Session 2021 – 2022. He described that the past year had been challenging and difficult due to the COVID-19 pandemic, but the Institute still managed to organize several activities through local and international collaborations, including technical webinars and educational training. He expressed gratitude towards the support of partner institutes, the Executive Committee, Organizing Committees and those who participated in the activities for the great success of the events. The Chairman's report was followed by a financial report of the Hon. Treasurer Dr. Calvin Chiu, who reported that the Institute's finance remained in a healthy condition and the Auditor for the coming session was appointed during the meeting.

The next agenda item was the election of Chairman and Committee Members. With the support by the great majority of the voted members, Dr. Calvin Chiu was elected as the Chairman of the Institute for the coming 2-year term of 2022 – 2024, Mr. Franki Chiu, Ms. Claudine Lee, Mr. Joe Leung were newly elected, and Mr. Chris Kwok, Mr. Aaron Lui were re-elected as Committee Members of the Institute for a 3-year term of 2022 – 2025.

Before the end of the AGM, as suggested by Ir. KK Lu and supported by the audience, a vote of thanks was passed to the outgoing Chairman and Executive Committee for their good efforts in the work of the Institute.


(Reported by Cindy Cheung)



### Agenda

- Confirmation of the proceedings of the last AGM (21<sup>st</sup> April 2021)
- Report by Chairman
- Report by Hon. Treasurer
- Auditor Appointment for 2022/2023
- Election of Chairman and Committee Members
- AOB

HKIOA Annual General Meeting 2022



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 LSS0 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
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

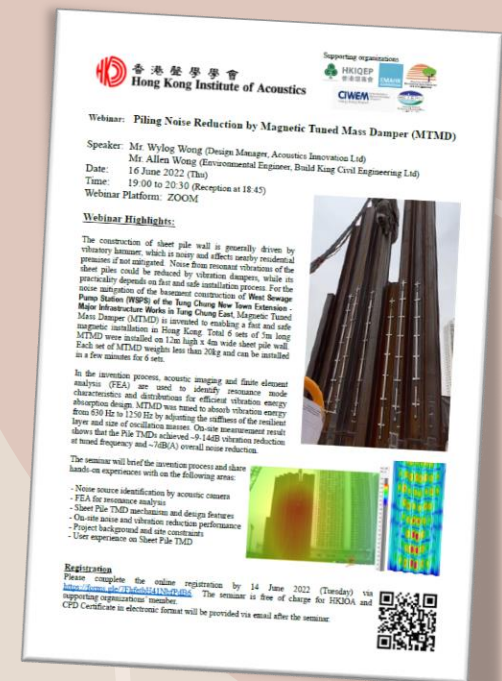
HKIOA Annual General Meeting 2022

# Technical Webinar “Piling Noise Reduction by Magnetic Tuned Mass Damper (MTMD)”

The Technical Webinar “Piling Noise Reduction by Magnetic Tuned Mass Damper (MTMD)” was held on 16 June 2022. The webinar was presented by Mr. Wylog Wong, Design Manager of Acoustics Innovation Limited, and Mr Allen Wong, Environmental Engineer of Build King Civil Engineering Limited. A total of 187 participants attended the webinar.

The webinar focused on a case study on the implementation of the magnetic tuned mass damper which was tailor-made for the sheet piling noise abatement at a construction site in Tung Chung East. Wylog shared the identification of locations and frequencies of major noise sources from site observations, acoustic imaging by acoustic camera and Finite Element Analysis modelling. He explained the noise abatement mechanism of the 14 modules of dampers per row at target frequencies from 630 Hz to 1250 Hz, and the use of rollers and magnets for easy installation. He showed the installation of 6 rows of the dampers to 6 piles adjacent to the pile being in operation, and the on-site measurement results, which demonstrated a vibration reduction of around 10 dB and a noise reduction of around 7 dB(A) at the target frequencies. Allen then shared the project background, and site constraints which includes the presence of noise sensitive receivers in close proximity and the spatial limitation of noise barriers within the site. He also showed videos demonstrating the damper installation and removal process, and shared his user experience on the damper that he viewed the damper as a user-friendly product and an effective tool for noise reduction.

(Reported by Wilson Ho)



# Technical Webinar “A More Precise Method in Evaluating the Acoustical Performance of Resilient Sports Flooring System”

The Technical Webinar “A More Precise Method in Evaluating the Acoustical Performance of Resilient Sports Flooring System” was held on 23 June 2022. The webinar was presented by Mr. James Bligh and Mr. Ramy El Kawkgi from Pliteq on the complex challenges of measurement and prediction uncertainties arising from variations in the structural subfloors and an alternative technique to evaluate the acoustic performance of resilient sports floors. 62 participants attended the webinar.

Ramy listed and explained the major considerations in deciding mitigations to be applied: gym type, structural contribution, local authority requirements, stability underfoot, budget, and structural tolerance.

James showed a video demonstrating their standard test rig for heavy impact testing, which provides repeatable testing conditions of drop height and mass to minimize uncertainties in the measured dynamic characteristics of resilient products. He illustrated a quantitative analysis of a typical floor system by considering it as a hybrid system of locally reactive and resonantly reactive components. He shared their experience on the use of a standard 8mm calibrated test sample sheet, which can be conveniently delivered to the site for a standard drop test for collecting in-situ baseline acoustic data under better-controlled testing conditions. A precise transfer function can then be evaluated for the prediction of the mitigated impact noise and selection of resilient products. He showed the predicted and measured noise spectra obtained from sites to demonstrate the accuracy of the prediction method, and encouraged consultants to use the prediction method as well as their resources and support.

(Reported by Cindy Cheung)

**香港聲學學會**  
**Hong Kong Institute of Acoustics**

Technical Webinar on:  
A more precise method in evaluating the acoustical performance of resilient sports flooring system

About the Seminar

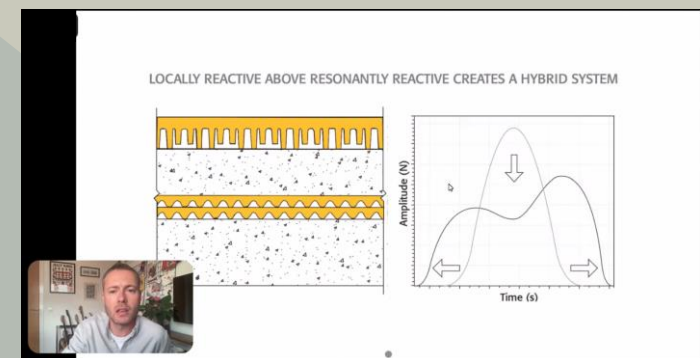
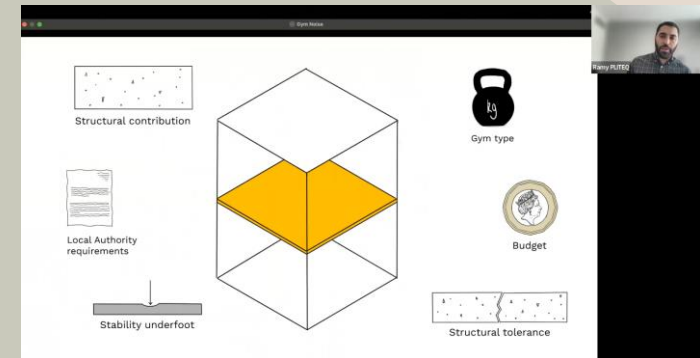
Within the fitness flooring industry, the acoustical performance of products has typically been measured in a test chamber or in the field using a dropped object, with the system response sensed as vibration or sound. The system test involves a number of measurement uncertainties arising from variations in the structural subfloor. Additional uncertainties are caused by the use of non-standard drop heights and object release methods. In this webinar, Pliteq dives into these complex challenges and discusses an alternative technique to evaluate the acoustical performance of resilient sports floors.

About the Speaker

James Bligh is the Technical Manager for UK and Scandinavia, specialising in engineered acoustic systems from recycled materials. Having over a decade of experience in Acoustics, his career has been equally split between Acoustic Consultancy and Acoustic Engineering. Leveraging Pliteq's commitment to providing third party laboratory data to support Acoustic specifications and design, his focus is on reducing conditions in buildings and infrastructure.

Ramy El Kawkgi is Technical Service Manager at Pliteq MENA & AP. He partners with Acoustics consultants, Customers and Pliteq's product development team to deliver value-led acoustic solutions for building projects. A highly motivated professional with a degree in Civil Engineering, he specialises in leveraging data and evidence-based structural practices to solve large and complex issues. He is passionate about bettering our built environment and improving sustainability - a main tenet of Pliteq's business model.

Date: 23 June 2022 (Thursday)  
Time: 7:30pm - 8:15pm (1 CPD Hour)  
Webinar Platform: ZOOM  
Fee: Free of charge, open to all  
Enquiry: [admin@hkiaa.org](mailto:admin@hkiaa.org)  
Please register online via:  
<https://forms.gle/ZkAPQbUxTqTQ4519w6>  
(on or before 22 June)





# Technical Webinar “Lift Noise and Vibration Control Technique”

The Technical Webinar “Lift Noise and Vibration Control Technique” was held on 7 July 2022. 78 participants attended the webinar.

The first speaker Dr. Mors Leung, Technical Director of Architectural Acoustics Limited shared a few cases on his project experience on the troubleshooting of lift noise and vibration problems, which includes the identification of whether the main noise propagation path is airborne or structureborne, and the improvement after acoustic treatment. He shared some soundtracks of noise from problematic lifts, and discussed the investigation, findings and solutions. He also shared a laboratory setup investigating noise from guide shoes and guide rails and quantifying the effectiveness of the planned mitigation measure.

The second speaker was Mr. Denghua Ma, Technical Director of Shenri Elevator's Noise Abatement Center in Shenzhen, who is an expert on lift noise and vibration control. Mr. Ma shared some recent lift noise problems from high speed lifts at skyscraper residential buildings due to improper design of vibration isolation. He shared a few case studies, and explained some common errors and misconceptions in lift noise and vibration control design that he observed in the Mainland China.

(Reported by Cindy Cheung)

**Hong Kong Institute of Acoustics**

**Technical Webinar**  
Lift Noise and Vibration Control Technique 電梯噪音及震動防治

**Introduction**  
The lift generated noise and vibration is a classic problem for residential buildings in Hong Kong. Noise generated from lift motor and lift shaft transmitting to the habitable area is a nuisance to residents. This seminar shares the experience of lift noise and vibration control from investigation, study and real life application.

**Speakers**  
**Dr. Mors Leung**  
Architectural Acoustics Limited - Technical Director  
Mors started in the architectural acoustic field in 2016 after he obtained PhD in the Mechanical Department from the University of Hong Kong. He provides local support to the manufacturer and company by utilizing different tools to investigate problems. This included acoustic simulations and laboratory tests for lift noise study in his recent project.

**Mr. Ma Deng Hua 馬登華先生** (Language: Cantonese 廣東話)  
Shenri Elevator's Noise Abatement Center 深日電梯噪音治理研究中心 - Technical Director 副總經理  
馬先生是國內又稱電梯先生，深圳市高層次棟樓級人才，深圳市生態環境局建築設計師專家，超高速電梯導軌防抖研究專家負責人，專注電梯防抖防震實踐研究超過16年，實踐研製了多種針對不同建築結構、不同電梯安裝工藝的電梯防抖治理解決方案，並獲得2項國家發明專利，6項實用新型專利。主要核心技术成果有：電梯梯步踏踏控制系統、無繩房電梯踏踏控制系統、電梯軌導踏踏控制系統、立體車庫踏踏控制系統、別墅電梯踏踏系統、電梯反繩輪減速控制系統等。技術已在全國省會城市及地區中得到應用。

**Webinar Detail**  
Date: July 07, 2022, (7:00 - 8:30pm, HK Time)  
Medium: English / Cantonese  
CPD: 1.5 Hr  
Platform: Zoom  
Fee: Free of Charge  
Target Audience: Open to all interested parties, including non-HKOA Member  
Enquiry: adm@hkhoa.org  
Please register online via:  
<https://forms.gle/C9v1a7u6y5fz7W7EG>

**LIFT NOISE AND THE TREATMENT**

1. Traction Machine: Provide traction and move the cabin up and down. Noisy? Yes
2. Controller: Circuit and the main control of the lift system. Noisy? Yes
3. Cabin and CounterWeight. Noisy? Not really
4. Guide rails and Guide shoes. Noisy? Yes, create Noise to adjacent room

Typical vs. Machine Room-Less diagrams.

**LIFT NOISE AND THE TREATMENT** Case 5: Madrid Case

Noise and vibration data obtained simultaneously under lift operation

BEDROOM	Type of an	Noise Data		
		Before CDM	After partial CDM	After full CDM
RECEIVER	100 Hz	27.7 dB	26.7 dB	23.9 dB
	125 Hz	34.4 dB	33.4 dB	31.4 dB
	160 Hz	35.2 dB	33.8 dB	31.4 dB

4/F Bedroom vs. G/F Room graphs.

**电梯机房振动噪声影响的解决方案**

**电梯机房噪声扰民示意图**

噪音太大了! 终于安静啦!

正确治理方案

不安装减振系统—机房噪声扰民

安装减振系统—室内环境安静

**电梯减振案例 (电梯主机加装大橡胶块减振)**

电梯电力不平衡，减振严重下陷导致侧偏严重，电梯导向轮及钢丝绳严重磨损

# Technical Webinar “Innovative Construction Noise Control in Singapore”

The Technical Webinar “Innovative Construction Noise Control in Singapore” was held on 26 July 2022. The webinar was presented by Dr. Vincent Hii (Director of Affinity Engineering Consultancy Pte. Ltd.) on an overview of construction industry in Singapore, local regulations and requirements, government support on innovative noise control measures, construction noise impact assessment and noise management plan, construction noise troubleshooting and innovative control measures case study. The webinar was well received by 179 attendees.

Vincent presented the growth of construction market in Singapore, the increase in the number of complaints on construction noise in recent years and during COVID-19 pandemic situation. He introduced and explained the common practice of noise impact assessment and noise management plan. He showcased a range of examples of conventional noise control measures and innovative measures, including (i) reduction of noise source generation such as the use of continuous, gentle methods like spinning, rotatory, crushing in construction procedure and equipment in place of the conventional impulsive hacking method; (ii) reduction at path with alternative barrier shape (such as the jagged edge cantilevered barrier), barrier material (such as the lightweight and waterproof aluminium form material) and barrier with special features (such as the retractable noise barrier); and (iii) consideration on human factor such as relieving public’s negative impression by improving the greenery at the periphery of the construction site, introducing visual warning display of the prevailing noise level to alert workers to avoid any excess generation of noise, etc.

(Reported by Wilson Ho)

**Organiser:** 香港建築師學會 Hong Kong Institute of Acoustics

**Supporter:** HKIEEP, NEA, CWEM

**Technical Webinar on “Innovative Construction Noise Control in Singapore”**

**Dr Vincent Hii – Director of Affinity Engineering Consultancy Pte Ltd**  
 24/07/2022 (Tue) | 19:00 – 20:30  
 Webinar Platform: ZOOM

**In-High Barrier: Jagged Edge Barrier, Noise Management Plan, Localised Enclosure, Retractable Barrier, Expandable Barrier**

**Seminar Highlights:**

- Overview of construction industry in Singapore
- Local regulations and requirements
- Government support on innovative noise control measures
- Construction Noise Impact Assessment and Noise Management Plan
- Construction noise trouble shooting and innovative control measures case study

**Speaker:**  
 Dr Vincent Hii has more than 17 years of experience in noise/acoustic consultancy and has been involved in a wide range of construction projects in Singapore, internationally involving commercial and residential developments, major infrastructure projects such as MRT stations, tunnels, railway viaduct, underground expressway, locality buildings, road upgrading and repair works.

His expertise in construction noise involves carrying out construction noise impact assessment, recommending construction noise mitigation measures and control, developing construction noise management plan, handling of noise complaint and stakeholders liaison, performing construction noise inspection and audit to evaluate the mitigation measures and control to achieve as low as reasonably practicable (ALARP).

He had been involved in validating the effectiveness of the noise control measures for the application of Quieter Construction Fund by National Environment Agency.

Dr Vincent Hii is also involved in providing training to Singapore Land Transport Authority (SLA) on Construction Noise Control training.

**Registration**  
 HKIEEP, HKIEEA, HKIEQP, HKIEPO, EMAHK and CWEM members: Free of charge  
 Please register online via: <https://zoom.us/j/84988543048>  
 CPD Certificate (1 hour) in electronic format will be provided via email after the seminar.

**Noise Monitoring**

Class 1 Sound Level Meter, Solar panel, Web server, SMS alerts to Contractors, Noise monitoring by Project Manager to ECC or NEA.

**Innovation (Source)**

- Modified Auger Bucket
- Spinning method to discharge the soil without generating high pitched intermittent metal clanking noise
- Sliding steel plate separator

Use of modified auger bucket (suitable for sticky soil conditions)

**Innovation (Path)**

- Aluminium foam materials
- Transmission loss and absorption
- Light weight, weather resistant and fire proof
- Localised screening panels for machine engine

**Innovation (Receiver)**

- Change people’s negative reactions to the construction work site
- Reducing carbon emissions and dust
- Public area – crowded – main entrances

**Innovation (Human)**

- Visual warning display
- Human behaviours and actions are one of the main noise sources at work site
- Visual warning for awareness and information – responsible

# Delegates to Inter-Noise 2022 in Glasgow, UK



The 51<sup>st</sup> International Congress and Exposition on Noise Control Engineering (Inter-Noise 2022) was held at the Scottish Event Campus in Glasgow, UK on 21 – 24 August 2022. Inter-Noise is a major international conference on noise control engineering, organized by the International Institute of Noise Control Engineering (I-INCE) and the local organising committee every year. A total of 1,244 delegates around the world joined the conference this year, 949 joined in person and 295 joined virtually.

Prof. Li Cheng, Chair Professor of Mechanical Engineering of The Hong Kong Polytechnic University, and Prof. Lixi Huang, Professor of The University of Hong Kong were among the session chairs of the conference.

The following papers were presented by delegates from Hong Kong:

- *Five years' monitoring data on rail damper performance*  
Wilson Ho, Max Yiu, Ron Wong
- *A large-scale study of the social response to construction noise in Hong Kong*  
Silver C.K. Chan, K.C. Lam, C.L. Wong, Richard Kwan, Wilson Ho
- *Lightweight retractable noise barrier in Hong Kong*  
Wilson Ho, Wylog Wong, Eric Chu
- *Optimizing the performance of a sidebranch array duct muffler*  
Shiu Keung Tang, Ho Man Yu
- *Programmable time-serial resonances for broadband spectrum*  
Yumin Zhang, Keming Wu, Lixi Huang
- *Railway groundborne noise reduction by rail dampers*  
Wilson Ho, Max Yiu, Ron Wong
- *Sheet pile tuned mass damper for construction noise control*  
Wilson Ho, Wylog Wong, Eric Chu, Aldous Lo, Allen Wong
- *Track decay rate measurement method for reactive damping by tuned mass damper*  
Wilson Ho, Marco Ip, Yi-Qing Ni

In the Congress, Prof. Li Cheng was elected to be the President-elect of the I-INCE, and that he will take over the Presidency of the I-INCE in 2026 for a three-year term. Congratulations to Prof. Cheng!

(Reported by Cindy Cheung)



# Technical Webinar “Acoustic Concerns and Treatment in Hydraulic Installation”

The Technical Webinar Acoustic Concerns and Treatment in Hydraulic Installation was held on 29 September 2022. This is the first joint webinar with the Chartered Institute of Plumbing and Heating Engineering (CIPHE) and HKIOA. A total of 97 participants attended the webinar.

The webinar was presented by Mr. Ben Yuen from CIPHE and Dr. Jeffery Tam from HKIOA. Mr. Ben Yuen is the Technical Director from WSP (Asia) Limited, he explained the general principles in plant room design planning to reduce potential noise nuisance to noise sensitive receiver. He also shared the detailed design concepts against noise from pump sets, including the cause of noise problems, and the control of pipeline noise. Apart from the equipment, Mr. Yuen showed different noise sources due to fitting and accessories along the supply network. His presentation covered a comprehensive review of all possible noise sources in a pumping and drainage system.





The Chartered Institute of Plumbing and Heating Engineering  
英國特許水務工程師學會  
Hong Kong Branch 香港分會



香港聲學學會  
Hong Kong Institute of Acoustics



## PLANT ROOMS PLANNING

### Noise Sensitive receiver vs Plant Room

- Water tanks
  - Concrete
  - Fiberglass
  - Steel









CIPHE & HKIOA JOINT WEBINAR  
Acoustic Concerns and Treatment in Hydraulic Installation

2022/09/29 14



The Chartered Institute of Plumbing and Heating Engineering  
英國特許水務工程師學會  
Hong Kong Branch 香港分會



香港聲學學會  
Hong Kong Institute of Acoustics

Pump Questions and Answers  
Warthington Pump and Machinery Corp. (1st)

## PUMP SETS DESIGN CONCERNS

### Booster Pump sets

- Maintenance

**Suction Troubles**


1. Pump
2. Pump or suction pipe not completely filled with liquid.
3. Suction lift too high.
4. Insufficient margin between suction pressure and vapor pressure.
5. Foot valve too small.
6. Air
7. Air
8. Air
9. Foot
10. Foot
11. Inlet of suction pipe insufficiently submerged.
12. Valves
13. Seal cap improperly located in stuffing box, preventing sealing fluid from entering space to form the seal.

**System Troubles**

14. Speed too low.
15. Speed too high.
16. Wrong direction of rotation.
17. Total head of system higher than design head of pump.
18. Total head of system lower than pump design head.
19. Specific gravity of liquid different from design.
20. Viscosity of liquid differs from that for which designed.
21. Operation at very low capacity.
22. Parallel operation of pumps unsuitable for such operation.

**Mechanical Troubles**

23. Foreign matter in impeller.
24. Misalignment.
25. Foundations not rigid.
26. Shaft bent.
27. Rotating part rubbing on stationary part.
28. Bearings worn.
29. Bearings rimmed worn.
30. Packing worn.
31. Packing not seated.
32. Packing not seated.
33. Packing not seated.
34. Packing not seated.
35. Packing not seated.
36. Packing not seated.
37. Packing not seated.
38. Packing not seated.
39. Packing not seated.
40. Dirt or grit in sealing liquid, leading to scoring of shaft or shaft sleeve.
41. Excessive thrust caused by a mechanical failure inside the pump or by the failure of the hydraulic balancing device, if any.
42. Excessive grease or oil in antifriction bearing housing or lack of cooling, causing excessive bearing temperature.
43. Lack of lubrication.
44. Improper installation of antifriction bearings (damage during assembly, incorrect assembly of stacked bearings, use of unrotated bearings as a pair, etc.).
45. Dirt getting into bearings.
46. Rusting of bearings due to water getting into housing.
47. Excessive cooling of water-cooled bearing, resulting in condensation in the bearing housing of moisture from the atmosphere.



CIPHE & HKIOA JOINT WEBINAR  
Acoustic Concerns and Treatment in Hydraulic Installation

2022/09/29 26

# Technical Webinar “Acoustic Concerns and Treatment in Hydraulic Installation” (Cont’d)

Dr. Jeffery Tam is the General Manager of Kinetics Noise Control (Asia) Ltd. He first presented the fundamental acoustic knowledge to the members from noise criteria, sound insulation and reverberation noise control to vibration isolation principle. Then he shared the practical solutions to noise and vibration control for equipment, including some real-life examples of installation defects to the members.

The Webinar received many favourable responses from both CIPHE and HKIOA members.

(Reported by Him Tang)



**CIPHE** The Chartered Institute of Plumbing and Heating Engineering  
英國特許水務工程師學會  
Hong Kong Branch 香港分會

**香港聲學學會**  
Hong Kong Institute of Acoustics

### COMMON PROBLEMS

Isolator overloading

Free standing isolator in outdoor area

CIPHE & HKIOA JOINT WEBINAR  
Acoustic Concerns and Treatment in Plumbing and Drainage Installation

2022/09/29 38

This slide shows two photographs of hydraulic equipment. The first, titled 'Isolator overloading', shows a piece of equipment with a single isolator supporting a heavy load. The second, titled 'Free standing isolator in outdoor area', shows a piece of equipment with a free-standing isolator in an outdoor setting.

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Hong Kong Institute of Acoustics

### COMMON PROBLEMS

Isolator misalignment

Trucking Across the acoustics wall

CIPHE & HKIOA JOINT WEBINAR  
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2022/09/29 40

This slide shows two photographs of hydraulic equipment. The first, titled 'Isolator misalignment', shows a close-up of an isolator that is not properly aligned. The second, titled 'Trucking Across the acoustics wall', shows a piece of equipment with a trucking across the acoustics wall.

# Professional Certificate Course on Acoustics, Noise and Vibration Control

The Professional Certificate Course is organized under a structured framework comprising basic acoustics, noise control concept and management to local professionals. Courses which form the two compulsory modules of the Professional Certificate have been announced earlier and are being held in September and October 2022. Elective modules will be announced in the next stage.

Candidates who passed these 2 compulsory modules and other elective module(s) with overall not less than 40 hours are considered fulfilling the membership requirements of the HKIOA as have been educated in acoustics or in a discipline relevant to the practice of acoustics.

September 2022						
S	M	T	W	T	F	S
				1 S1	2	3 S2
4	5 S3	6 S4	7	8 S5	9	10
11	12	13 S6	14 S7	15	16 S8	17
18	19 S10	20	21 S11	22	23 S12	24
25	26 S13	27	28 S14	29	30 S15	

October 2022						
S	M	T	W	T	F	S
						1
2	3 S16	4	5 S17	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24 S9	25	26	27	28	29
30	31 S18					

Compulsory Module 1: Fundamentals in Acoustics and Noise Control (Total 18 Hours)		
Session	Topic	Speakers
S1	Basic Acoustics Principle (Part 1)	Dr. Calvin Chiu
S2	Basic Acoustics Principle (Part 2)	Dr. Calvin Chiu
S3	Basic Acoustics Principle (Part 3)	Dr. Calvin Chiu
S4	Architectural Acoustics (Part 1)	Mr. Henry Chan
S5	Architectural Acoustics (Part 2)	Mr. Henry Chan
S6	Noise Control & Ordinance (Part 1)	Mr. Joe Leung
S7	Noise Control & Ordinance (Part 2)	Mr. Joe Leung
S8	Noise Control & Ordinance (Part 3), Noise Pollution Sources and Impacts	Mr. Joe Leung
S9	Assessment	-

Compulsory Module 2: Noise Modelling, Monitoring and Measurement (Total 18 Hours)		
Session	Topic	Speakers
S10	Calculation of Road Traffic Noise Methodology	Mr. Frankie Chiu
S11	Noise Prediction Modeling (Part 1)	Mr. Benson Lee
S12	Noise Prediction Modeling (Part 2)	Mr. Benson Lee
S13	Experience and Practical Solution on Road Traffic Noise Assessment	Mr. Frankie Chiu
S14	Noise Monitoring & Measurement (Part 1)	Mr. CL Wong
S15	Noise Monitoring & Measurement (Part 2)	Mr. CL Wong
S16	Hands-on Experience on Road Traffic Noise Measurement and Latest Developments in Instrumentation	Mr. Ivan Ho
S17	On-site Road Traffic Noise Measurement (Site Practices)	Mr. Ivan Ho
S18	Assessment	-

# Notice

## HKIOA Taxation and Follow Up

The Hong Kong Institute of Acoustics Limited (HKIOA) has been informed by the Inland Revenue Department (IRD) that the HKIOA's exemption claims on the profits tax cannot be granted. As a result, the HKIOA shall have the obligations to pay the profits tax due on the previous years. The IRD is now chasing on the HKIOA's tax returns starting from 2016/17 onwards for their assessment of the tax due and the penalties, if any.

The tax issue came into the attention when the Executive Committee (ExCom) of the HKIOA received a letter from the IRD on 29 July 2019 requesting for supplementary information in support of IRD's assessment on the HKIOA's tax return in 2017/18. After two rounds of reply to the IRD on 21 August 2019 and 14 May 2020 respectively, the IRD replied the ExCom representative on 2 June 2022 that the request from profits tax exemption claims cannot be granted. The ExCom had discussed and considered whether it would be preferable to engage a tax expert (i.e. consultant/auditor) to i) conduct a review of our case from due diligence perspective and ii) provide a review report to confirm whether the HKIOA is liable to pay the profits tax claims and any associated penalty from the IRD under the IRO. In past few months, the ExCom has approached several tax experts for the above, but none of them offered services except that only one tax expert provided a quote for preparing a simple report for the case, at a lump sum cost of HK\$8,600, for Item ii). Indeed, in the informal discussions between the ExCom representative and the few tax experts, and further discussion with the IRD officers, it has become more clear that the HKIOA cannot exempt from taxation under the Inland Revenue Ordinance (IRO) and the chance for a successful tax exemption claim is unlikely. Hence, the ExCom considered it is not worth the while for the HKIOA to hire a tax expert to re-confirm the above and the views of the IRD. It is, therefore, recommended that the ExCom should ask the HKIOA's CPA Accountant to file the proper tax return as required in order to close the case with the IRD.

An email has sent to all HKIOA members on the above for opinions on 7 Sept 2022. 46 feedbacks from the members were received, all of the reply are concurred with the recommendations of the ExCom not to further argue on the tax exemption matter and pay the tax due and any associated penalty as requested by the IRD.

(Reported by Henry Chan)

# Notice

## Survey on Members' Specialisation and the Proposed Chinese Names for HKIOA Membership Titles


In the recently-proposed amendments to the Noise Control (Air Compressors) Regulations (Cap. 400C) and the Noise Control (Hand Held Percussive Breakers) Regulations (Cap. 400D), the Government is considering to include the Corporate Member of the Hong Kong Institute of Acoustics (HKIOA) in the legislation. Taking this opportunity, we sent out a survey to collate views from our corporate members on the Chinese translations of various membership types. A total of 60 feedback has been received. It appears that large majority of the members responded to the survey (88%) agrees to the proposed translation. The membership titles are confirmed as follows:

English	中文
<b>Corporate Member of the HKIOA (include)</b>	香港聲學學會正式會員 (包括)
1. Honorary Fellow of the HKIOA (Hon FHKIOA)*	香港聲學學會名譽資深會員
2. Fellow of the HKIOA (FHKIOA)*	香港聲學學會資深會員
3. Member of the HKIOA (MHKIOA)*	香港聲學學會專業會員
* Authorized Titles & Abbreviations under para.7 of the Articles of Association of the HKIOA	
<b>Non-Corporate Member of the HKIOA (include)</b>	香港聲學學會非正式會員 (包括)
1. Associate Member of the HKIOA (AMHKIOA)	香港聲學學會準會員
2. Student Member of the HKIOA	香港聲學學會學生會員

The survey also collected information from our corporate members regarding their specialisation areas. Results indicate that Environmental Noise, Architectural Acoustics, and Structural / Groundborne Noise and Vibration are the 3 areas that most of our members specialise in. While we would try our best to implement a specialisation scheme to serve as many members as possible, it is necessary to set a priority for the road map for the specialisation scheme. We would let you know once a consensus is reached.

(Reported by Alson Pang & Franki Chiu)





# In Remembrance of Ir Dr James W.H. WONG 1958 – 25th Aug 2022

On behalf of the Hong Kong Institute of Acoustics, we wish to convey our deepest condolences to the family of Ir Dr James W.H. WONG on his passing.

Ir Dr James W.H. WONG would be remembered as a pioneer bringing awareness and the development of architectural acoustics to Hong Kong.

James chose to develop his specialty in room acoustics based on his background as a musician & engineer with special interest in eco-architecture. He was a guitar player in school band as early as in the 1970's. In 1988, James was invited to join a small acoustics and theatre consulting firm in London. His expertise and talent is in conceiving the acoustic design of auditoria in collaboration with architects and theatre consultants.

He was educated and worked in the U.K. until 1991 when he returned to HK to lead the design team participating in the construction of HKUST. He joined the Noise Policy Group of Environmental Protection Department in 1992 and later found his consultancy firm in 1995.

In this time of mourning, please accept our compassion and we will long remember Ir Dr James W.H. WONG and his dedication to the science of acoustics.

Sincerely,

Mr William FUNG  
Immediate Past Chairman,  
On behalf of Hong Kong Institute of Acoustics

