出國報告（出國類別：其他-視訊會議）

參加「第 28 屆聲音與振動國際研討會(The 28th International Congress on Sound and Vibration, ICSV28)」視訊會議報告

服務機關： 內政部建築研究所
姓名職稱： 蔡介峰 副研究員
派赴國家： 視訊會議
出國期間： 111 年 8 月 4 日至 8 月 5 日
報告日期： 111 年 10 月 14 日

摘 要

噪音無臭無味又不具殘留性，不像地震、火災、洪水、空氣及毒性化學物質污染對人有立即性之影響，以往並未受到太大重視，而近年來隨著國人居住品質的提升，人人皆盼望有一安寧的生活環境，對住宅音環境品質與要求也隨之提高，而依據行政院環保署統計，在近幾年每年約有20-30萬件公害陳情案件中，近九成屬感官可明顯感受之噪音、異味及環境衛生的污染陳情，其中噪音案件約佔30～35 %，因此有效協助解決噪音問題，特別是大幅降低鄰居間在生活上的相互干擾，幫助大家創造一個寧靜、自在的居家、辦公環境，可使民眾對政府施政成效明顯有感。

本所性能實驗中心內設有符合ISO國際標準的建築音響實驗室，其量測符合ISO、ASTM、JIS及CNS等標準規範，建置包括6間迴響室以及3間全（半）無響室，並通過財團法人全國認證基金會（TAF）、國際實驗認證聯盟（ILAC-MRA）實驗室組合標記轉授權、內政部綠建材性能試驗機構及建築新技術新工法新設備及新材料隔音性能試驗機構認可，協助研訂國家標準防音規定，以及支援高性能防音綠建材研發的驗證工作，惟科技日新月異，為瞭解國際間建築聲學、噪音與振動控制相關領域最新研究成果及未來發展趨勢，並考量國內外疫情發展與防疫規定，爰以視訊方式參加由國際聲學與振動學會(International Institute of Acoustics and Vibration, IIAV)主辦第28屆聲音與振動國際研討會(The 28th International Congress on Sound and Vibration, ICSV28)，本報告彙整與本所業務相關之研究主題，包括：浮動地板系統、微穿孔板吸音應用、隔音數值模擬、拘束層阻尼隔音應用、營建材料防音耐久性、環境噪音對人員之影響等，期能作為作為本所相關科技計畫內容研擬及實驗室營運發展之參考，最後，本文亦提出相關參與心得與建議。

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壹、 出國目的

噪音無臭無味又不具殘留性，不像地震、火災、洪水、空氣及毒性化學物質污染對人有立即性之影響，以往並未受到太大重視，而近年來隨著國人居住品質的提升，人人皆盼望有一安寧的生活環境，對住宅音環境品質與要求也隨之提高，而依據行政院環保署統計，在近幾年每年約有 20-30 萬件公害陳情案件中，近九成屬感官可明顯感受之噪音、異味及環境衛生的污染陳情，其中噪音案件約佔 30～35 %，因此有效協助解決噪音問題，特別是大幅降低鄰居間在生活上的相互干擾，幫助大家創造一個寧靜、自在的居家、辦公環境，可使民眾對政府施政成效明顯有感。

尤其居住在人口稠密的高樓大廈中，噪音干擾對於生活品質影響極大，使得越來越多人開始重視防音建材的選擇，本所性能實驗中心內設有符合 ISO 國際標準的建築音響實驗室，其量測符合 ISO、ASTM、JIS 及 CNS 等標準規範，建置包括 6 間迴響室以及 3 間全（半）無響室，可檢測門、窗、牆的空氣隔音性能；樓板及表面緩衝材衝擊音隔音性能；建築設備、家電及資訊產品的聲功率、聲壓位準、方向性及振動噪音等特性，並通過財團法人全國認證基金會（TAF）、國際實驗認證聯盟（ILAC-MRA）實驗室組合標記轉授權、內政部綠建材性能試驗機構及建築新技術新工法新設備及新材料隔音性能試驗機構認可，協助研訂國家標準防音規定，以及支援高性能防音綠建材研發的驗證工作，惟科技日新月異，須於既有基礎上持續精進，故本次擬以線上方式參加第 28 屆聲音與振動國際研討會(The 28th International Congress on Sound and Vibration, ICSV28)，希望藉由研討會這樣的平臺的交流，廣泛地瞭解各國在建築音響、聲學與振動領域最新發展資訊，擷取其中值得參考或借鏡之處，作為我國相關研究、政策推動或性能實驗中心營運發展之參考。

貳、視訊會議議程

一、國際研討會改以視訊方式參加

2022 年第 28 屆聲音與振動國際研討會(The 28th International Congress on Sound and Vibration, ICSV28)原訂於新加坡舉行，鑑於新冠肺炎 (COVID-19)肆虐全球，該大會主辦單位於網站公告，改採以線上與實體會議併行的方式辦理(圖 1)，本所評估參加線上大會即可達成蒐集資料之目的，尚無於防疫期間派員出國之必要，爰依「行政院 及所屬各級機關因公派員出國案件編審要點」第 4 點及「內政部及所屬 各級機關因公派員出國案件處理要點」第 4 點相關規定，陳報上級機關同意變更計畫，改以派員 1 人於國內參加線上大會方式執行。

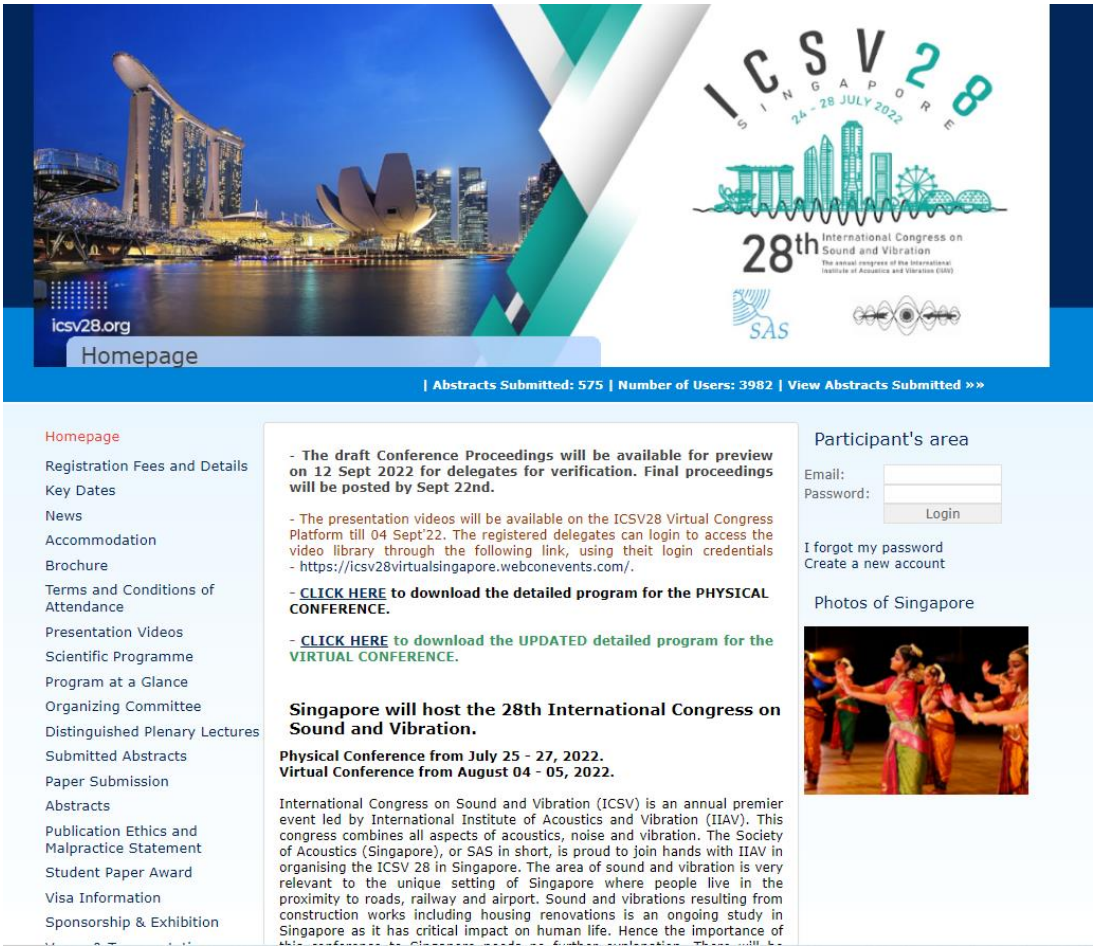


圖 1 ICSV28 改以線上與實體會議併行的方式辦理

二、會議及主辦單位簡介

第 28 屆聲音與振動國際研討會(The 28th International Congress on Sound and Vibration, ICSV28)係由國際聲學與振動學會(International Institute of Acoustics and Vibration, IIAV)主辦，每年舉辦一次，本屆會議是第 28 屆會議與新加坡聲學學會(Society of Acoustics Singapore,SAS)共同合辦於 111 年 7 月 24 日至 7 月 28 日在新加坡金沙會展中心(Sands Expo and Convention Centre) 舉行實體會議，另於 111 年 8 月 4 日至 8 月 5 日舉辦線上會議，為振動噪音領域相當重要的會議，主辦單位 IIAV 於 1995 年 6 月在美國正式成立，主要協助推動國際聲學與振動科學的發展，並定期出版 Journal of Sound and Vibration 和 Sound and Vibration 期刊及舉辦相關研討會。

本次國際研討會根據大會的統計共有 575 篇論文接受發表，註冊參加人數達到 3,982 人。其中線上會議部分，每日同時段分 ROOM1～ROOM4 等 4 個場次進行，每場次每日約有 25 至 28 篇論文發表，論文主題相當廣泛，涵蓋振動與噪音各類領域，本次會議也有廠商辦理線上參展活動，包括 RION、Polytec、tme 等儀器廠商展示各種振動與噪音量測儀器設備及提供諮詢服務。

圖 2 ICSV28 共同合辦及協辦單位

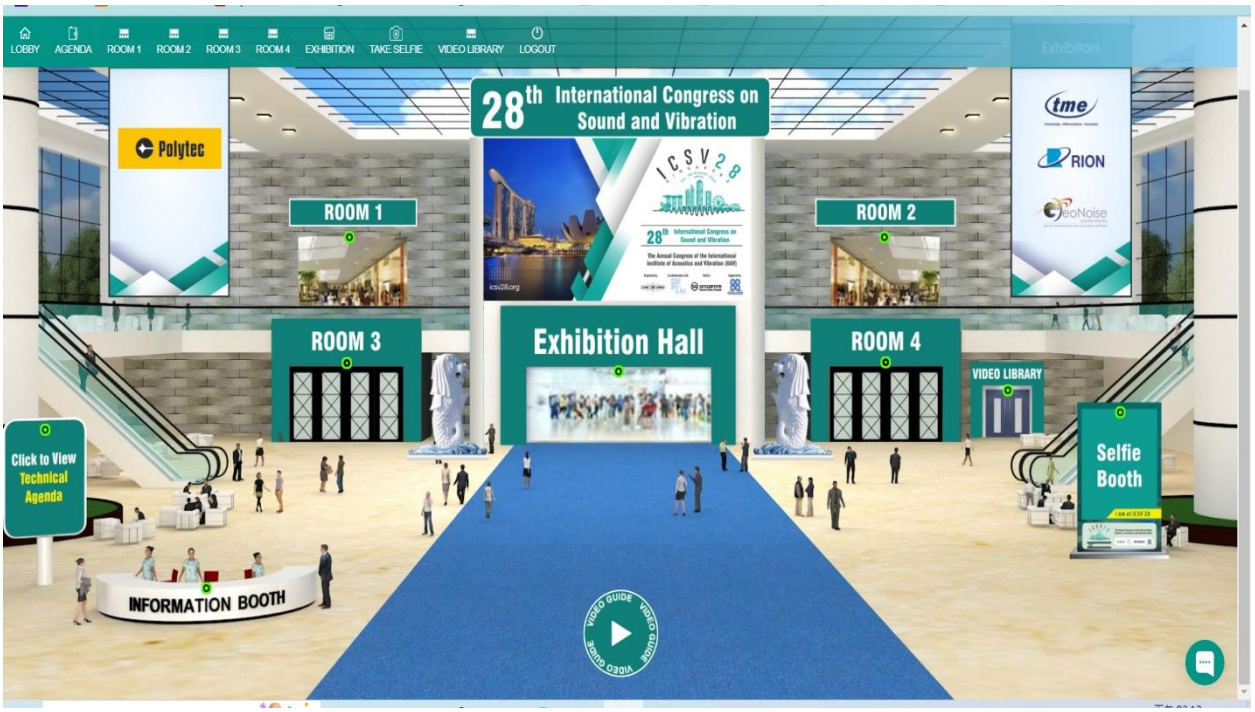


圖 3 ICSV28 線上會議分等 4 個場次

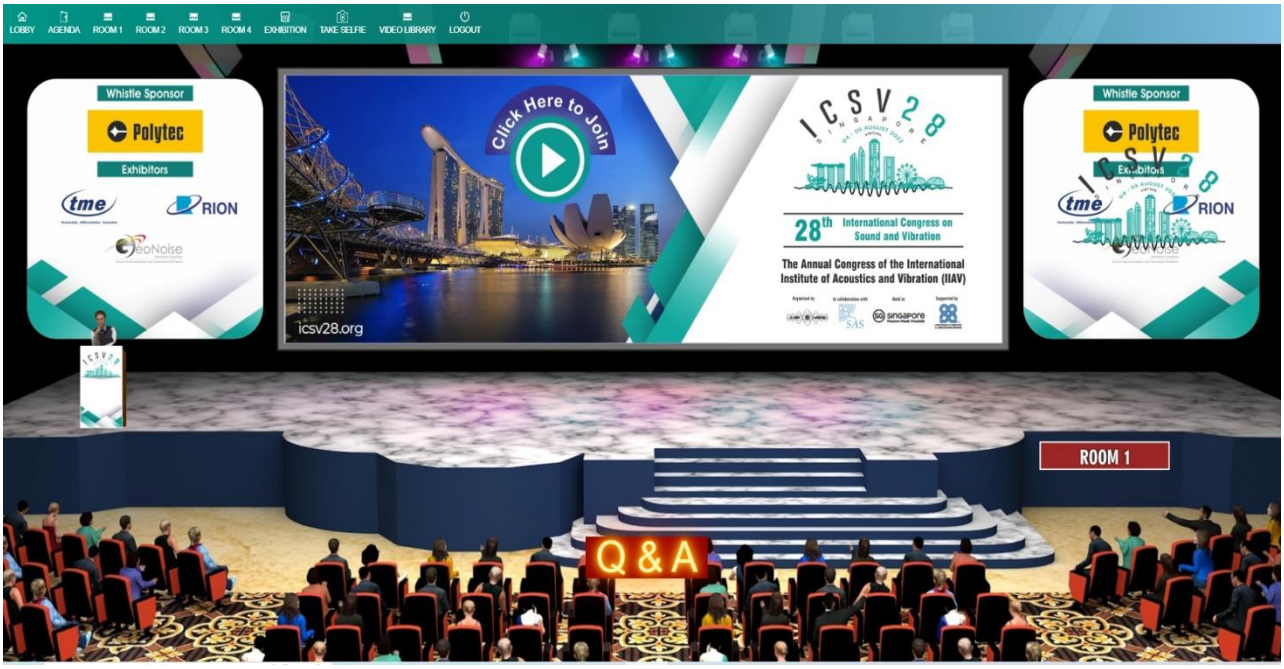


圖 4 ICSV28 論文發表畫面(ROOM1 場次)

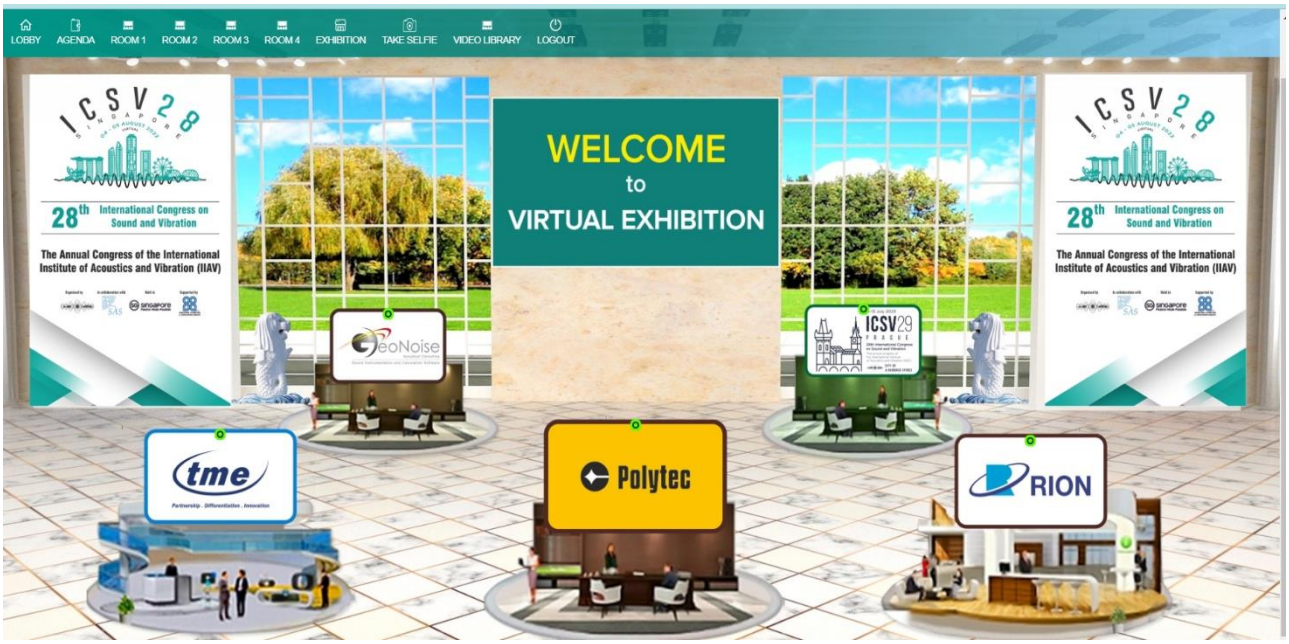


圖 5 廠商辦理線上參展活動

圖 6 廠商線上介紹量測設備影片

本次徵集論文相當廣泛，包括下列 14 個主題，其中我國屏東科技大學王栢村教授擔任本次國際研討會「音樂聲學」分項主題之會議主席，可見我國在聲音和振動相關研究能量受國際各界肯定，以擔任國際研討會重要職務。

1.聲音和振動之量測與儀器：

聲學成像和聲學檢測、聲音和振動之感測器、量測不確定度、聲音和振動量測分析、無響室設計和量測。

2.主動噪音與振動控制：

主動隔振、控制法則、主動控制的感測器及元件材料

3.氣動聲學、燃燒噪音及飛機噪音：

航空噪音之測試與控制、流場噪音、計算氣動聲學、發動機噪音、風力發電機噪音

4.環境和社區噪音

噪音建模與傳播、心理聲學、生物聲學、噪音影響評估

5.物理聲學、超音波和波動傳播

超音波量測技術和感測器、管路振動、結構聲學

6.工業和職業噪音與振動

工作場所的聲源辨識、聽力保護、機器噪音、機器振動與監測

7.結構動力學和非線性振動

振動量測、模態分析、轉子振動、振動吸收的最新進展

8.噪音和振動控制材料

吸音隔音材料、減振材料、聲子晶體之基礎與應用

9.心理、生理和生物聲學

助聽器和其他聽力技術、聽覺適應性的測試、個人聽力保護裝置

10.信號處理和非線性方法

聲學陣列信號處理技術、故障診斷與預測、機械監測、地震響應

11.建築聲學

隔音量測與預測、室內聲學、建築音響、結構噪音與衝擊噪音

12.海洋聲學

水下聲音的測量與建模、船舶水下噪音、船舶和港口的噪音與振動

13.音樂聲學

樂器振動聲學、樂器設計與製作、樂器與音樂建模、音樂的心理聲學

14.公路和鐵路的噪音和振動

鐵路運輸噪音和振動、車輛噪音和振動

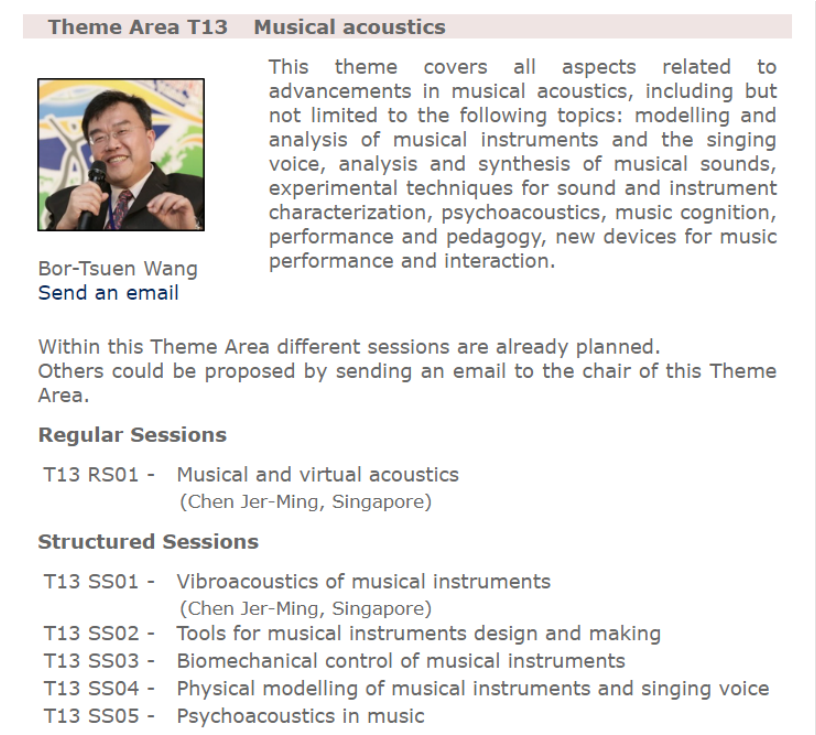


圖 7 我國王栢村教授擔任分項主題之會議主席

三、會議時間與議程

本屆會議於新加坡當地時間 111 年 7 月 24 日至 7 月 28 日舉行實體會議，另於 111 年 8 月 4 日至 8 月 5 日召開線上會議，因同時段分 ROOM1～ROOM4 等 4 個場次進行，故有提供部分論文發表之簡報影片，以利參加者會後可在有效期間內線上觀看，本次參與研討會議程與分項主題摘錄如下表 1 至表 5 所示。

表 1 第 28 屆聲音與振動國際研討會 ICSV28 議程表(111 年 7 月 24、25 日)

時間 (111 年 7 月 24 日)	議程 (發表簡介)
14:00-16:30	註冊報到
(111 年 7 月 25 日)	-
08:40-09:00	開場致詞
09:00-10:00	專題講座 1.通風降噪聲學材料設計
10:00-10:30	問與答
10:30-11:30	專題講座 2.熱聲不穩定性：複雜系統的觀點
11:30-12:30	專題講座 3.振動聲優化和不確定性量化分析的概念
12:30-14:00	午休
14:00-15:30	專題講座 4.轉子動力學
14:30-15:00	問與答
15:00-17:00	T02 RS01 #110 飛機內部降噪的實驗結果 T02 RS01 #508 用於室內主動降噪控制無線麥克風 T03 RS01 #176 液滴撞擊固體表面、薄膜和水池產生的空氣音機制 T01 RS02 #589 在點焊過程中使用振動測量檢測 T02 RS01 #486 消除發動機噪音主動控制系統實驗測試 T03 RS01 #91 電子冷卻風扇的降階氣動聲學建模

表 2 第 28 屆聲音與振動國際研討會 ICSV28 議程表(111 年 7 月 26 日)

時間 (111 年 7 月 26 日)	議程 (發表簡介)
09:00-10:00	T01 RS04 #291 開發狀態監測的數據搜集系統 T01 SS01 #25 聲波疲勞分析程序與驗證 T02 SS02 #202 結構傳播噪音半主動控制 T02 SS02 #370 基於神經網路信號擷取方法
10:00-10:30	問與答
10:30-12:00	T06 SS03 #361 風電場附近工作場所噪音干擾評估 T01 SS01 #290 馬來西亞人振動感知閾值與國際標準 ISO13091 的比較 T01 SS02 #129 聲學方法進行非接觸式壓力量測 T05 RS02 #377 聲全息圖的數值研究 T06 SS01 #494 耳道形態與耳塞舒適度關聯性研究 T11 SS04 #61 超音波觸覺設備應用於探索工作環境
12:00-13:30	午休
13:30-15:00	T09 SS02 #528 助聽器和人工耳蝸使用者評估 T05 SS03 #34 曲線時空非線性超音波繞射斷層掃描 T05 SS02 #35 相變的傳輸理論方法 T07 RS01 #211 計算風力渦輪機葉片固有頻率簡化程序 T07 RS02 #69 使用時變法評估非線性振態模式 T07 RS02 #159 動力系統變頻時諧波平衡法
15:00-15:45	問與答
15:30-17:00	T05 SS04 #148 使用深度學習的消音器設計 T05 SS03 #518 氣動對流與聲音時空關係之研究 T07 RS02 #379 非牛頓流體與圓柱殼結構相互作用 T07 RS03 #138 地震作用下結構有限元素分析 T08 SS03 #367 樂器中 Kowangan 諧振器模態實驗分析 T08 SS03 #452al 小型屋頂風力渦輪機振動響應分析

表 3 第 28 屆聲音與振動國際研討會 ICSV28 議程表(111 年 7 月 27、28 日)

時間 (111 年 7 月 27 日)	議程 (發表簡介)
09:00-10:00	T07 RS03 #340 加勁後結構的振動預測 T07 RS03 #221 小型屋頂風電機組動態響應分析 T10 RS02 #484 時頻分析在故障診斷的應用 T04 SS01 #467 具成本效益的耳機校準評估
10:00-10:30	問與答
10:30-12:00	T08 SS01 #561 增益吸音效果的微晶格 T14 SS01 #7　低噪音路面的耐久性 T10 RS03 #175 使用振動和電流因子作軸承故障檢測 T07 RS03 #399 齒輪動態分析 T08 SS03 #113 聲波傳輸損失實驗研究 T10 RS02 #495 聲音信號的齒輪故障診斷
12:00-13:30	午休
13:30-15:00	T11 RS01 #594 傳統音樂表演廳聲學品質感官評價 T11 RS01 #225 餐飲場所聽覺舒適度感官調查 T11 RS01 #226 馬來西亞疫情管制期間樓板噪音研究 T08 SS03 #48 用於水下聲學共振材料實驗 T12 RS01 #158 海上打樁水下噪音的不確定性量化 T07 SS04 #52 應用聲學黑洞的疲勞分析
15:00-15:45	問與答
15:30-17:00	T11 SS01 #480 體育館室內聲學設計 T12 SS01 #254 大型遊樂設施的水下輻射噪音 T12 SS04 #448 船舶中低頻的模態響應 T12 SS05 #426 港口噪音評估-錨壽命方法 T08 SS03 #317 氣動聲學連續體解析驗證 T08 SS03 #452al 雙面板入射音傳輸損失
(111 年 7 月 28 日)	-
09:00-09:20	閉幕式
09:20-11:00	國際聲學與振動學會分組工作會議

表 4 第 28 屆聲音與振動國際研討會 ICSV28 議程表(111 年 8 月 4 日)

時間 (111 年 8 月 4 日)	議程 (發表簡介)
08:45-10:00	T11 RS01 #509 可更換隔振器的浮動地板系統 T11 RS01 #510 健身房地板隔音 T11 RS02 #353 空調噪音心理影響評估 T11 SS01 #193 被動式汽車降低噪音法 T10 RS02 #29 軸承故障診斷方法
10:00-10:30	問與答
10:30-12:00	T10 RS02 #313 船用柴油機閥門洩漏振動診斷方法 T11 SS01 #475 主觀偏好的聲學編曲研究 T03 SS01 #154 夾層板聲學優化 T11 SS03 #179 異質微穿孔吸音特性預測 T12 SS02 #51 潛艇推進軸-船體振動特性分析研究 T11 SS04 #61 醫院大樓的低頻降噪研究
12:00-13:00	午休
13:00-14:30	T07 RS03 #177 軸流風扇的振動解析度 T03 SS02 #292 基於混合氣動聲學之口哨數值研究 T12 SS04 #498 使用聲學相機探討遊艇的音環境舒適性 T12 SS05 #497 評估港口城鎮噪音的季節性 T03 SS04 #125 複合材料和金屬面板聲音透射、反射特性分析比較 T03 SS02 #258 風機空氣動力雜訊計算與降噪設計
14:30-15:00	問與答
15:00-17:30	T04 RS01 #170 城鄉居民長期環境監測模式的建立 T04 RS01 #251 低噪音瀝青混凝土的理論與實驗研究 T04 RS01 #449 環境噪音對初高中生學習能力的影響 T08 SS03 #242 可切換狀態的雙層壓電聲學材料 T08 SS03 #367 可調聲波頻率材料之隔音應用 T08 SS03 #452 新型多孔結構材料的吸音 T04 RS02 #326 住宅社區聲學環境評價及設計對策 T03 SS04 #325 新型阻尼器的設計與分析

表 5 第 28 屆聲音與振動國際研討會 ICSV28 議程表(111 年 8 月 5 日)

時間 (111 年 8 月 5 日)	議程 (發表簡介)
08:45-10:00	T13 SS01 #142 印度象鈴的振動聲學 T13 SS05 #444 運動攝影像機錄製品質主觀評價研究 T08 SS01 #243 雙層微穿孔板吸音特性研究 T08 SS01 #181 設計多層微通道及不同頻率吸音材 T14 SS03 #259 液壓氣動模擬研究
10:00-10:30	問與答
10:30-12:00	T09 RS01 #75 關於切割過程分析 T09 RS01 #93 蜜蜂翅膀振動數值分析 T14 SS03 #469 汽車坐姿人體振動特性分析 T08 SS01 #428 壓電分流電路的聲學複合結構設計 T07 RS02 #297 基於幾何非線性阻尼器抗震保護 T08 SS01 #537 隔音夾層結構設計
12:00-13:00	午休
13:00-14:30	T14 SS01 #146 香港道路低噪音鋪面最新發展 T14 SS01 #333 車道差異的降噪路面設計與性能研究 T07 RS02 #586 安全裝置制動性能對電梯動態行為影響 T14 SS01 #580 摩洛哥城市對道路交通噪音的反應分析 T12 RS01 #579 橡膠聲學性能的模擬與驗證 T14 SS02 #183 混凝土軌枕非接觸式振動監測方法比較
14:30-15:00	問與答
15:00-17:30	T14 SS02 #341 地鐵地面振動與列車速度關係實驗研究 T06 SS02 #66 頭盔的減振效果研究 T01 SS01 #559 電動機振動傳遞路徑試驗研究 T02 RS01 #436 船舶推進軸系統振動之試驗研究 T06 SS03 #198 評估建築施工、交通和其他振動研究 T05 SS04 #519 設備排氣系統的聲學優化 T06 SS06 #262 鑽柱的高頻振動：測量經驗和初步結果 T01 SS02 #63 壓電模態感測器的驗證

參、會議參與過程

本屆研討會研究論文主題廣泛且多達 575 篇，考量本次參與係以建築音環境、聲學與振動及音響實驗為主題，爰擇其中 7 篇相關之重要論文，茲摘要說明如下：

一、可更換隔振器的浮動地板系統

比利時 CDM Stravitec 公司 Reinhilde Lanoye 等所發表之論文「LABORATORY MEASUREMENTS ON REPLACEABLE JACKUP SYSTEMS」，提出浮動地板系統可以阻絕空氣音、衝擊音及振動傳音，目前有許多與住宅建築共構之公共設施，如球場、韻律教室、空調機房、視聽教室或音樂廳等，都會利用浮動地板來作隔振，一方面可將室內振動隔離以免傳至室外，另方面亦可阻隔外界振動傳遞至室內，本文開發 7 種新型可更換隔振器浮動地板系統，設計參數包括浮動地板厚度、隔振器共振頻率、空隙厚度、空隙厚度、填充材及活載重，並固定隔振墊間距 1.5m(水平)及 1.7m(垂直)之排列方式及結構樓板厚度 140mm 等因子，其試驗結果顯示 7 種新型浮動地板系統在樓板衝擊音降低量指標介於 39～45dB，在空氣音隔音指標與標準結構樓板比較可降低 15～21dB，且最大特色為可調整樓板最終高度及更換內部隔振器，供後續維修或樓板負載條件發生變化應用。

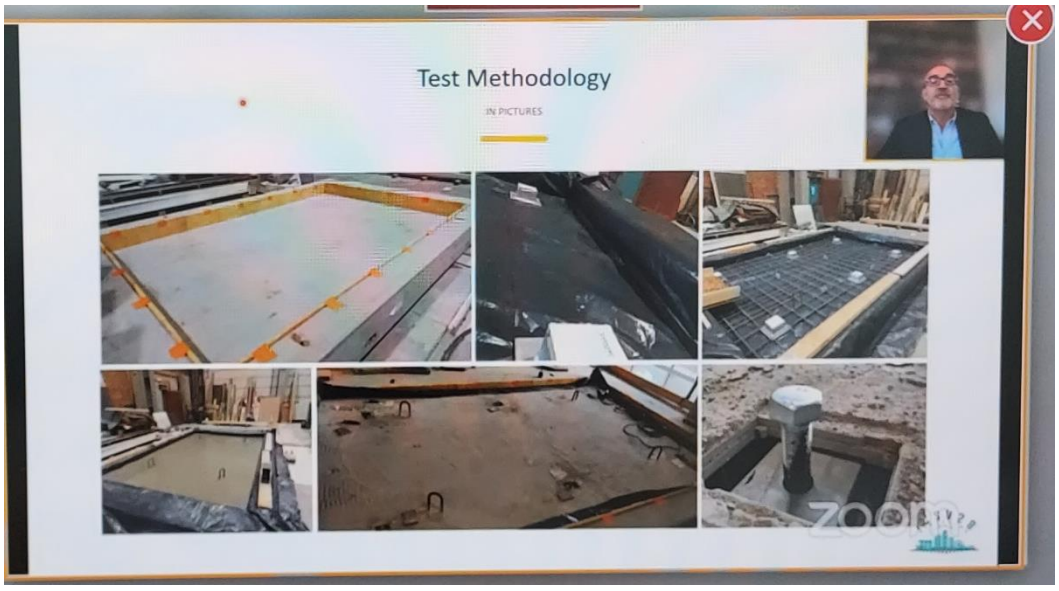


圖 8 CDM Stravitec 公司浮動地板系統實驗

表 6 新型浮動地板系統構造說明

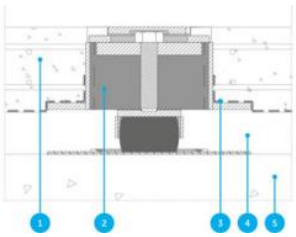
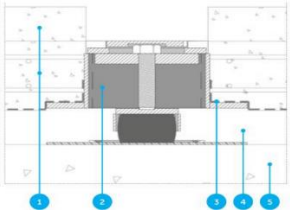
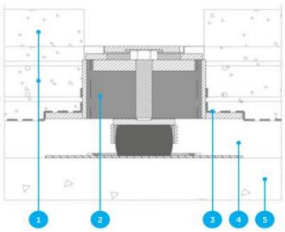
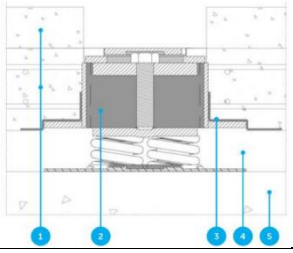
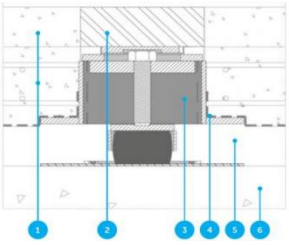
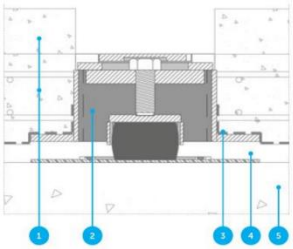
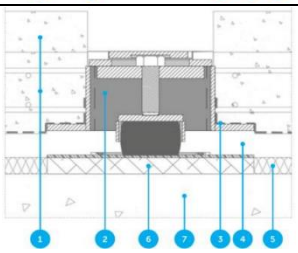
構造編號	構造說明	設計圖說
一	1.浮動地板厚度 100mm 2.隔振器共振頻率 7Hz 3.隔振墊間距 1.5m(水平)及 1.7m(垂直) 4.空隙厚度 50mm 5.結構樓板厚度 140mm	
二	1.浮動地板厚度 100mm 2.隔振器共振頻率 7Hz 3.隔振墊間距 1.5m(水平)及 1.7m(垂直) 4.空隙厚度 50mm 5.結構樓板厚度 140mm 6.活載重 100 kg/m²	
三	1.浮動地板厚度 150mm 2.隔振器共振頻率 8Hz 3.隔振墊間距 1.5m(水平)及 1.7m(垂直) 4.空隙厚度 50mm 5.結構樓板厚度 140mm 6.活載重 100 kg/m²	
四	1.浮動地板厚度 150mm 2.隔振器共振頻率 4.5Hz 3.隔振墊間距 1.5m(水平)及 1.7m(垂直) 4.空隙厚度 50mm 5.結構樓板厚度 140mm 6.活載重 100 kg/m²	
五	1.浮動地板厚度 150mm+鋼板蓋 50mm 2.隔振器共振頻率 8Hz 3.隔振墊間距 1.5m(水平)及 1.7m(垂直) 4.空隙厚度 50mm 5.結構樓板厚度 140mm 6.活載重 100 kg/m²	
六	1.浮動地板厚度 150mm 2.隔振器共振頻率 8Hz 3.隔振墊間距 1.5m(水平)及 1.7m(垂直) 4.空隙厚度 20mm 5.結構樓板厚度 140mm 6.活載重 100 kg/m²	
七	1.浮動地板厚度 150mm 2.隔振器共振頻率 8Hz 3.隔振墊間距 1.5m(水平)及 1.7m(垂直) 4.空隙厚度 30mm+填充材 20mm 5.結構樓板厚度 140mm 6.活載重 100 kg/m²	

表 7 新型浮動地板系統隔音量試驗結果

構造編號	樓板衝擊音指標 (Ln,w)	衝擊音降低量指標 (ΔLw)	空氣音隔音指標 (Rw)
標準樓板	80	-	59
一	36	42	75
二	38	39	76
三	38	40	79
四	37	41	77
五	37	41	80
六	36	40	74
七	32	45	80

本研究提出下列幾點結論：

1.本研究開發 7 種新型可更換隔振器浮動地板系統，預留可更換孔位經測試幾乎不會影響整體隔音性能，無論隔振器上方有無安裝鋼板蓋孔，設計開發之 Stravifloor Jackup 隔振器均能有效隔離衝擊音並降低空氣音傳播，並提供可隨時檢查和更換軸承的優勢。

2.本研究浮動地板系統構造採用不同空隙厚度進行測試，試驗結果顯示對整體系統之空氣音隔音有顯著影響，衝擊音部分則較不顯著，另發現於空隙內鋪設玻璃棉可有效降低高頻部分空氣音傳音。

3.本研究開發 Stravifloor Jackup 隔振器軸承，可採用彈性體支撐或彈簧彈性支撐，具有搭配不同浮動地板厚度彈性調整共振頻率之特色，尤其對低頻的樓板衝擊音隔音效果顯著。

二、微穿孔板吸音應用

德國 Akustikbüro Oldenburg 公司 Christian Nocke 等所發表之論文「MICRO-PERFORATION REVISITED」，說明中國馬大猷教授於 1975 年首先提出微穿孔的理論，利用孔徑、板厚、開孔率及背後空腔厚度，計算出微

穿孔板吸音率及其特性，以控制頻率響應與迴響時間，並於 1990 年代後期製作了第一個透明的微穿孔吸音器，本文主要介紹微穿孔板天花板應用案例及進行安裝前後室內聲學參數比較，以供各界設計應用參考。

1.游泳池

本案例係以聚碳酸酯箔為材質開發 130mm 微穿孔吸音器，安裝於游泳池天花板，其特色為可透光，且中頻帶迴響時間可由原來 3 秒減少至 1.5 秒，減少噪音干擾及提高聲音清晰度辨識。

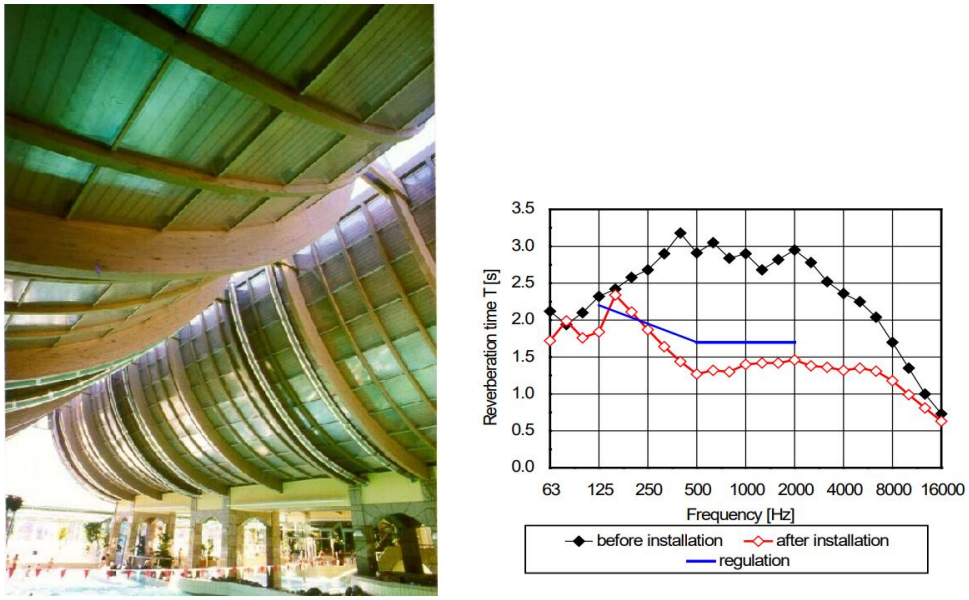


圖 9 游泳池微穿孔應用案例

2.微穿孔吸音器結合照明

一般聚碳酸酯材質之可視光透射率可達 90%以上，本案例於 LED 或螢光燈照明系統發光面下方安裝微穿孔片材，可同時兼顧照明品質及室內聲場環境控制。

圖 10 照明系統結合微穿孔應用案例

3.餐廳

本案例為餐廳原安裝礦纖天花板，其中頻帶迴響時間經測量約略大於 1 秒，續於中央空調出風口四周安裝懸吊 50mm 厚微穿孔天花板，可由原來 1 秒減少至 0.6 秒，以改善原設計值。

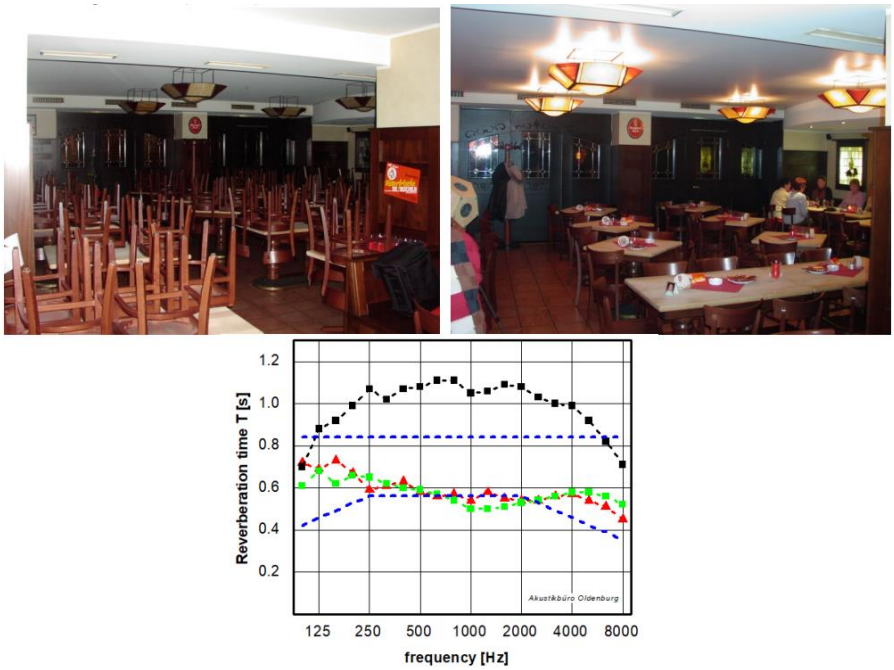


圖 11 餐廳微穿孔應用案例

4. 微穿孔多樣化設計

微穿孔吸音器除了常見平面外，亦可製作出多樣化設計產品，例如懸本案例製作成寬度 6 公尺、厚度 50mm 如豌豆狀之微穿孔吸音器，方便設計者實踐構想藍圖。

圖 12 豌豆狀微穿孔吸音器

三、牆體構造隔音數值模擬

義大利 Brescia 大學 Piana Edoardo Alessio 教授等所發表之論文「DESIGN OF SOUND INSULATING SANDWICH STRUCTURES BASED ON MULTIPLE CRITERIA」，提出波傳播理論搭配 Matlab 軟體撰寫聲學計算程式，以進行聲音穿透損失之模擬與實驗驗證，並在固定牆整體厚度條件下，找出有可能的複層牆的解決方案。

基於波傳播理論的推導，考慮一個被空氣介質包圍的薄型均勻板，平面聲波傳播至板的一側，在物體振動的作用下，聲音因此產生，而同時物體的振動也會產生聲波，再藉由空氣或不同的物質傳遞出去，其中，薄型均勻板的聲學與振動特性與材料厚度(m)、材料密度(kg/m^3)、材料的楊氏模量（Young's modulus，N/mm^2)及蒲松氏比(Poisson ratio)有關，聲音如在一個空間中傳遞無經過任何障礙稱之為直接音，而經過空間中的環境所干擾稱之為反射音，對直接音的噪音改善可透過一般隔音的方式，反射音便需要設置吸音材來獲得改善，波傳播及聲音穿透計算方式如公式(1)～(3)所示。

$$\left(-\mu''\omega^2 + D_p\frac{\partial}{\partial y^4}\right)v_x = i\omega[(p_i + p_r) - p_t] \qquad \cdots\cdots(1)$$

$$\tau(\theta) = \frac{1}{1+\left(\frac{\omega\mu''\cos\theta}{2\rho_0 c}\right)^2\left[1-\left(\frac{\omega\sin^2\theta}{\omega_c}\right)^2\right]^2} \qquad \cdots\cdots(2)$$

$$\tau(\theta) = \left\{\left[1+\frac{\mu''\omega}{2\rho c}\cos\theta\left(\frac{f}{\frac{c^2}{2\pi}\sqrt{\frac{\mu''}{D_p}}}\right)^2\sin^4\theta\,\eta_{tot}\right]^2 + \left[\frac{\mu''\omega}{2\rho c}\cos\theta\left(\frac{f}{\frac{c^2}{2\pi}\sqrt{\frac{\mu''}{D_p}}}\right)^2\sin^4\theta - 1\right]\right\}^{-1} \qquad \cdots\cdots(3)$$

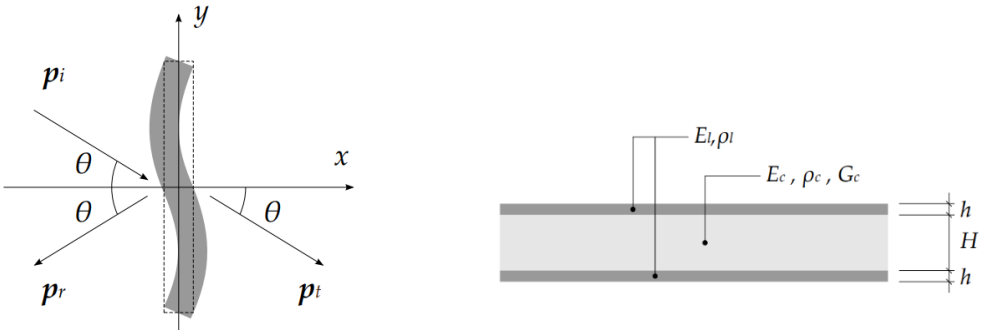
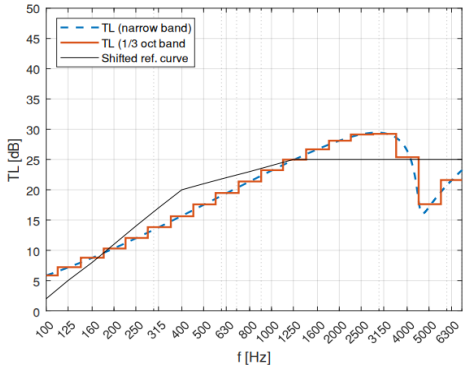
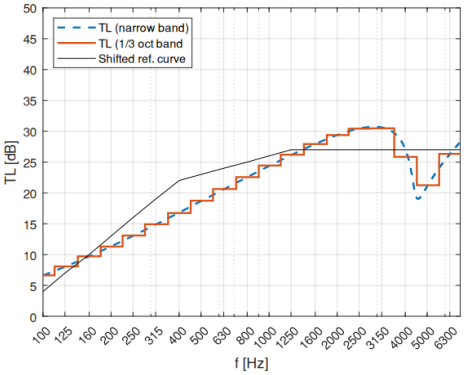
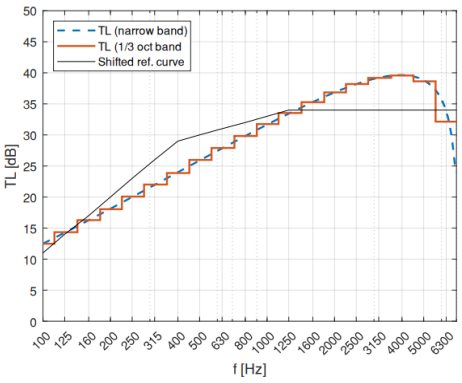
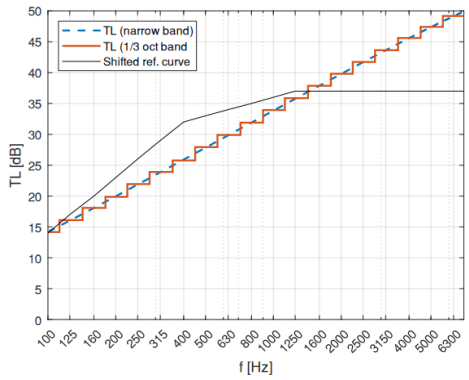


圖 13 聲波傳播至薄型板及三明治構造示意圖

表 8 數值模擬與實驗比對結果(空氣音隔音)

構造編號	構造組成	模擬與實驗比對
一	1. 0.6mm 鋁板+6mm 填充材 (Honeycomb 9.5-0.05)+0.6mm 鋁板 2.單位面積重 3.5kg/m^2 3.模擬結果空氣音隔音指標 (Rw)為 21dB	
二	1. 0.6mm 鋁板+5mm 填充材 (Balsa core)+0.6mm 鋁板 2.單位面積重 4.0kg/m^2 3.模擬結果空氣音隔音指標 (Rw)為 23dB	
三	1. 0.6mm 鐵板+6mm 填充材 (Honeycomb 9.5-0.05)+0.6mm 鐵板 2.單位面積重 9.4kg/m^2 3.模擬結果空氣音隔音指標 (Rw)為 31dB	
四	1. 0.5mm 鉛板+6mm 填充材 (Honeycomb 9.5-0.05)+0.5mm 鉛板 2.單位面積重 11.7kg/m^2 3.模擬結果空氣音隔音指標 (Rw)為 33B	

本研究提出下列幾點結論：

1.本研究提出波傳播理論搭配 Matlab 軟體撰寫聲學計算程式，以進行聲音穿透損失之模擬與實驗驗證，能快速根據採用面板及填充材之材質，模擬計算出牆體空氣音隔音量，以及估算出設置厚度、成本及單位面積重等參數，可作為噪音控制及改善之參考解決方案。

2.建議後續可建置更完整建材資料庫，包括材料密度(kg/m^3)、材料的楊氏模量（N/mm^2)及蒲松氏比等，及優化演算法、細部建模與各頻帶精進探討，俾使模擬程式更為精確。

四、風力發電機噪音對人員感受評估

波蘭國家研究所(National Research Institute) Dariusz Pleban 等所發表之論文「ASSESSMENT OF NOISE ANNOYANCE IN WORKPLACES LOCATED NEAR WIND FARMS」，探討風力發電機發出的噪音對工作場所人員的感受影響評估，目前推動再生能源為現階段政府重要政策之一，臺灣四周環海風力資源豐富，年平均風速可達 5 m/s 至 6 m/s 以上，甚具開發潛能，然風力發電機所發出的噪音可能帶來煩惱困擾的、不受歡迎的、影響生活作息等的聲音，惟對於聲音的感受，隨著個人的年齡、感覺、習慣及生理情況等而有所不同，我國勞工安全衛生設施規則規定 8 小時的工作環境其均能音量 Leq 不得超過 90 dB(A)，瞬間音量不得超過 140 dB(A)，以防止曝露在上開音環境下工作人員的聽力損失，此外，噪音亦可能導致高血壓、心臟病、胃潰瘍等疾病，和使孩童智力退化、初生兒體重減輕或生出畸形兒等情事發生。

本文提及根據波蘭統計局公布數據，在 2020 年波蘭曝露在危險工作條件下人員達到 53.82 萬人。其中屬於暴露在風險之工作環境約 32.98 萬人（61.3%）、繁重工作量約 12.7 萬人（23.6%）佔前二項，而經統計暴露在風險之工作環境中以噪音危害程度最高，影響計 18.17 萬人（55.1%），本研究參考 ISO/TS 15666: 2003 方法，以問卷方式調查工作場所距離風力發電機 3

公里以內之噪音及工作場所噪音干擾程度，對象包括教師、行政人員及辦公室工作人員等 200 位室內工作人員，包括 103 名男性和 97 名女性，地點位於 Pomorskie、Zachodniopo morskie、Lodzkie、Podkarpackie 及 Podlaskie 等 5 個轄區，調查結果如表 9 所示。

表 9 問卷調查受噪音干擾程度

噪音感受程度	風力發電機噪音干擾 調查結果人數 (百分比)	工作場所噪音干擾 調查結果人數 (百分比)
不可察覺	109 (54.5%)	42 (21.0%)
輕微干擾	57 (28.5%)	60 (30.0%)
有干擾	19 (9.5%)	55 (27.5%)
非常干擾	8 (4.0%)	16 (8.0%)
不可接受	7 (3.5%)	27 (13.5%)
合計	200 (100%)	200 (100%)

經統計超過五分之一的參與者（21.5%）抱怨關於工作場所有非常干擾噪音，來源包括建築物外的交通（公路、鐵路、航空）、外部工業廠房、外部建築或道路施工、工作場所使用設備(含空調及電梯)、人員談話（包括電話）等，另風力發電機發出噪音有 109 位(54.5%)不感覺風電場發出的噪音，57 位(9.5%)認為輕微干擾，15 位(7.5%)抱怨噪音非常干擾，並參考 ISO/TS 15666: 2003 方法進行了主觀評價，其評估尺度以 0 到 10 為級距，綜合分數越高對噪音困擾的程度越高，評估結果對工作場所噪音干擾平均分數為 3.42，另對風力發電機產生之噪音平均分數為 2.33，屬於輕微的干擾程度，另在調查過程很多參與者反應工作場所的交通噪音比風力發電機產生的噪音更令人困擾，因此增加受交通噪音干擾程度，調查結果如表 10 所示。

表 10 問卷調查受交通噪音干擾程度

噪音感受程度	交通噪音干擾 調查結果人數	百分比
不可察覺	40	20%
輕微干擾	88	44%
有干擾	62	31%
非常干擾	8	4%
不可接受	2	1%
合計	200	100%

本研究提出下列幾點結論：

1.為確保工作環境安全，以免遭受噪音危害，有必要針對工作場所進行現場量測及人員主、客觀調查評估。

2.本研究對 200 位在 Pomorskie 等 5 個轄區距離風電場 3 公里內工作場所進行問卷調查，結果顯示風力發電機產生之噪音屬於輕微的干擾程度，參與者普遍認為交通噪音比風力發電機更令人困擾。

五、低噪音道路鋪面耐久性

香港環保局(Environmental Protection Department) Dora CHAN 等所發表之論文「LATEST DEVELOPMENT OF LOW NOISE ROAD SURFACING APPLICATION ON LOCAL ROADS IN HONG KONG」，提及香港是世界上人口最稠密的城市之一，道路高度集中，且因土地不敷使用，道路往往緊鄰著住宅，所產生之道路噪音常常使沿線居民怨聲載道，為讓住戶在室內或戶外不受噪音的干擾，香港政府也採取了不同的策略，例如重鋪現有道路、低噪音路面（Low Noise Road Surface，LNRS）與加裝隔音屏等。

目前香港針對交通噪音水準超過 70 dB(A)的既有道路，採用減緩噪音主要措施包括使用低噪音路面材料重新鋪設道路鋪面以及加裝隔音屏，比

較上開 2 種措施的效果，使用低噪音路面材料比安裝隔音屏較具成本效益，優先採用，然有部分既有道路通噪音水準遠超過 70 dB(A)，應用低噪音路面材料可能仍無法降低噪音至可接受的水準，需搭配安裝隔音屏一併使用，香港政府長久以來一直在研究低噪音路面材料用於鋪設不同服務水準的道路（例如高速公路、快速道路、地方道路），評估應用其降低噪音效果與工程實施可行性本文主要簡介香港進行的相關試驗計劃與技術成果。

(一)低噪音路面材料應用於高速公路及快速道路

香港的高速公路及快速道路（即限速≥70 公里/小時）使用之低噪音路面材料主要為聚合物改質鋪面（Polymer Modified Friction Course，PMFC），道路組成包括孔隙率 18-25%且 30 mm 厚的面層，以減緩道路交通噪音，在香港長期研究結果聚合物改質之低噪音路面材料應用在高速公路及快速道路平均可降低噪音水準約 5 dB(A)。

圖 14 低噪音路面材料施工

(二)低噪音路面材料應用於地方道路

地方道路相較於高速公路及快速道路的交通順暢，交通狀況非常不同，設置應用須考慮急轉彎、剎車、等紅綠燈及路邊停車等，目前香港政府刻實驗低噪音路面材料包括聚合物改質鋪面(PMFC)、聚合物改質瀝青薄層(PMSMA6)分述如下：

1. 聚合物改質鋪面(PMFC)

香港在 60 多個路段鋪設聚合物改質鋪面（30mm 厚）的試驗計劃刻正進行中，並已完成鋪設前後交通噪音水準測量評估，聚合物改質鋪面完成鋪設後，初始降低噪音量約為 2.7dB(A)，並以降噪性能每年衰減約 0.17 dB(A)，鋪設 2 年（24 個月）後降低噪音量約為 2.4dB(A)，至鋪設 5 年（60 個月）後降低噪音量約為 1.9 dB(A)，如圖 15 所示。

此外除了隔音降噪性能之外，亦同時觀測應用於地方道路的耐久性，初步發現 30mm 厚聚合物改質鋪面較適用於坡度不大於 5%的道路，且路邊停車不可太頻繁、路口或交叉口之間的距離太短或直接鋪覆在有接縫混凝土路面上，因為可能導致表面損壞需重新再鋪設。

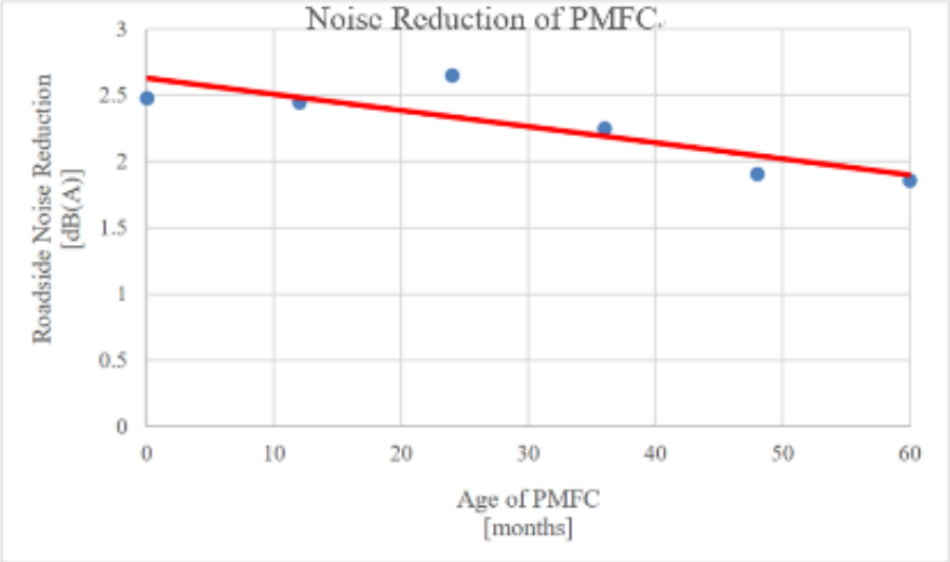


圖 15 聚合物改質鋪面(PMFC)降低噪音效果

2.聚合物改質瀝青薄層(PMSMA6)

因聚合物改質鋪面(PMFC)在耐久性存在相關問題，特別是那些經常轉彎、剎車或路邊停車的路面，因此香港刻進行 6mm 厚聚合物改質瀝青薄層(PMSMA6)實驗研究，並已進行了為期 5 年（60 個月）的監測，聚合物改質瀝青薄層(PMSMA6)完成鋪設後，觀測在 5 年（60 個月）期間沒有顯著性能衰減，如圖 16 所示。

另聚合物改質瀝青薄層(PMSMA6)耐久性較聚合物改質鋪面(PMFC)好，尤其針對路邊停車頻繁、路口或交叉口之間的距離太短的道路，在觀測期間幾乎沒有損壞需重新再鋪設。

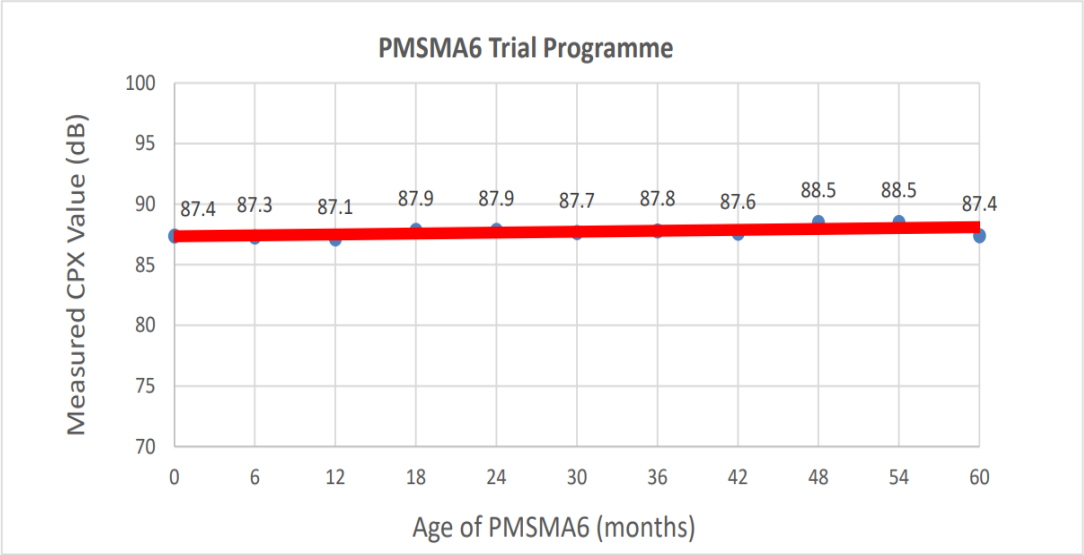


圖 16 聚合物改質瀝青薄層(PMSMA6)降低噪音效果

六、環境噪音對國中和高中學生學習影響之研究

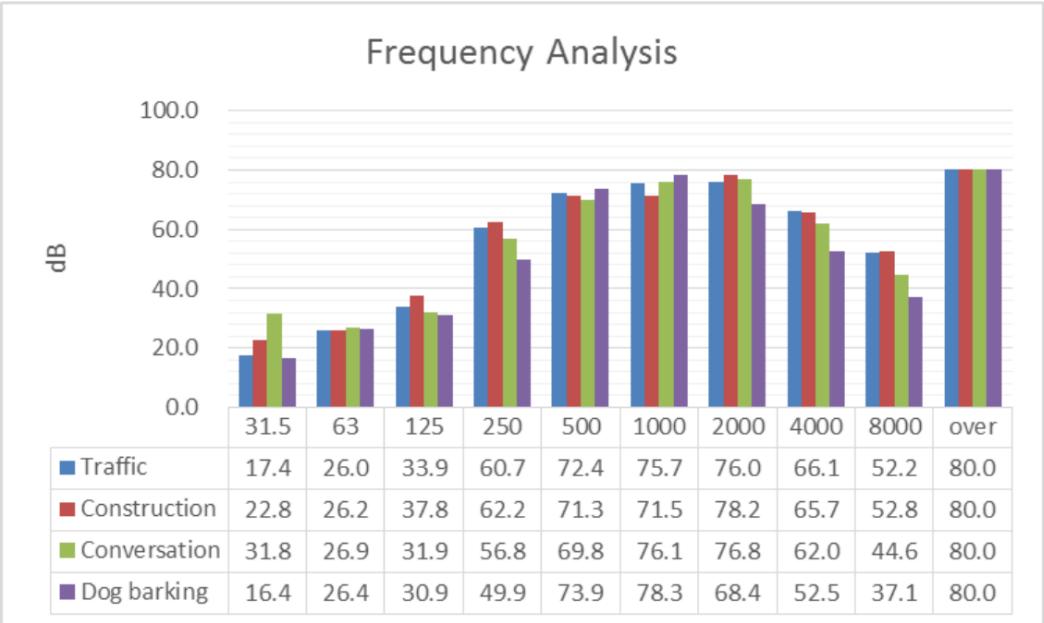
南韓 Jihwan Yoon 等所發表之論文「A STUDY ON THE EFFECT OF ENVIRONMENTAL NOISE ON THE LEARNING ABILITY OF MIDDLE AND HIGH SCHOOL STUDENTS」，提及學生遭受到噪音影響學習問題，長久以來一直是大家不斷討論與重視，依南韓噪音和振動管制法第 21 條規定，住宅區和學校的噪音應低於 65 dB(A)，但實際上住宅區的噪音和學校區域經常超過 70 dB(A)，環境噪音長久會影響教學品質及身體健康，對學生學習能力是否有存在關聯性，值得進一步探討確認，本文以數獨、記憶遊戲和英文閱讀作為一般學習能力評估，並在有無噪音干擾情況下進行相同的測試，同時記錄測試者心率，以檢查其身體狀況，評估分析環境噪音是否降低其學習能力。

測試對象選擇 13 至 18 歲之間國中和高中學生，因本文主要在評估環境噪音對國高中生學習能力的影響，故測試者性別和居住地不列入考慮，在學校環境常見噪音來源為交通噪音和群聚聊天聲音故選擇作為測試主要

噪音，根據首爾環境部環境噪音現況報告，學校和住宅靠路邊區域量測值約為 67 分貝，故將測試噪音水準控制在 65 dB(A)~70 dB(A)之間，以及使用 SRS-X55 音箱設備產生撥放預錄環境噪音，其最大輸出功率為 30 瓦，testo 816-1 麥克風測量音量值，並使用 Galaxy 或 Apple 智慧手錶量測測試對象心率，其精度達到 90%以上，

由於受測者對噪音敏感度不同，故測試前先進行個體主觀評價評估，並將人員對噪音靈敏度分為 5 個等級，級別 1 到 3 被評估為低靈敏度，級別 3 到 5 為高靈敏度，經評估結果本次測試對象在日常生活對噪音靈敏度整體平均評分為 2、學習時段對噪音靈敏度平均評分為 3.25，其中低靈敏度組別日常生活平均評分為 1.78、學習時段為 2.44，另高靈敏度組別日常生活平均評分為 2.38、學習時段為 4.13。

另針對各靈敏度組別分別進行噪音偏好測試，其中播放噪音包括交通噪音(Traffic)、建築施工(Construction)、人員交談(Conversation)及狗吠叫聲(Dog barking)等 4 種，其中交通噪音及建築施工可歸為人造聲音，人員交談及狗吠叫聲可歸為天然聲音，各種聲音頻帶頻率分析如圖 15 所示，各組別測試結果偏好喜歡自然聲音，本次主觀評價評估如表 11 所示。



	31.5	63	125	250	500	1000	2000	4000	8000	over
Traffic	17.4	26.0	33.9	60.7	72.4	75.7	76.0	66.1	52.2	80.0
Construction	22.8	26.2	37.8	62.2	71.3	71.5	78.2	65.7	52.8	80.0
Conversation	31.8	26.9	31.9	56.8	69.8	76.1	76.8	62.0	44.6	80.0
Dog barking	16.4	26.4	30.9	49.9	73.9	78.3	68.4	52.5	37.1	80.0

圖 17 各種噪音頻帶頻率分析

表 11 各種噪音偏好測試

噪音種類	整體受測人員	低靈敏度組別	高靈敏度組別
交通噪音	0.23	0.24	0.22
建築施工	0.17	0.18	0.16
人員交談	0.32	0.35	0.28
狗吠叫聲	0.42	042	0.45

另針對各靈敏度組別分別以數獨、記憶遊戲和英文閱讀進行學習能力評估部分，實驗情境包括無噪音干擾、交通噪音及人員交談噪音等 3 種，並以測試所花費的時間、測試準確性和心率評估為有受各種噪音的影響，結果顯示對噪音敏感度高組別，在噪音情況下，心率增加 10%以上，測試時間增加約 25%，TOEIC 閱讀測試的準確性也降低，顯示對噪聲敏感度高影響大，另針對噪音敏感度低組別，在噪音情況下，心率增加約 10%，測試時間縮短約 15%，但 TOEIC 閱讀測試的準確性沒有明顯降低。

表 12 對噪音敏感度高組別測試

能力評估	測試項目	無噪音	交通噪音	交談噪音
數獨	心率	100%	107.3%	115.9%
	時間	100%	75.2%	62.9%
	準確性	-	-	-
記憶遊戲	心率	100%	111.3%	102.9%
	時間	100%	103.4%	92.4%
	準確性	100%	97.2%	98.4%
英文閱讀	心率	100%	115.8%	115.5%
	時間	100%	79.0%	74.8%
	準確性	100%	87.7%	81.0%

表 13 對噪音敏感度低組別測試

能力評估	測試項目	無噪音	交通噪音	交談噪音
數獨	心率	100%	104.4%	112.1%
	時間	100%	81.6%	92.2%
	準確性	-	-	-
記憶遊戲	心率	100%	110.3%	113.3%
	時間	100%	78.2%	84.5%
	準確性	100%	96.6%	89.9%
英文閱讀	心率	100%	107.4%	112.7%
	時間	100%	87.6%	71.1%
	準確性	100%	98.7%	94.1%

本研究提出下列幾點結論：

1.在嘈雜的環境中，測試者心率增加 10%，測試時間縮短 20%，若測試對象為對噪音敏感度高，其測試成績會有所下降，因此，為了不影響學習能力，有必要維持學校等學習空間低於 65dB(A)，尤其是對噪音敏感度高的學生。

2.在噪聲偏好測試部分，不管測試者對噪音敏感度為何，大體而言測試結果喜歡自然聲音勝於人造的噪音。

七、拘束層阻尼隔音應用

比利時 Marina Rodrigues 等所發表之論文「CONSTRAINED LAYER DAMPING CONCEPT USED ON ISOLATED GYM FLOORS」，說明隨著全球在家健身的趨勢，以及在建築物內進行高強度健身活動，帶給建築師及相關業者在隔音技術與工法開發嚴峻的挑戰，目前健身房地板常見鋪設隔音墊、橡膠隔音磚及浮動地板系統以減緩噪音，本文提出健身房地板增加拘束層阻尼 (CONSTRAINED LAYER DAMPING)概念以阻絕空氣音、衝擊音及振動傳音。

拘束層阻尼技術於 1930 年代被提出，原主要用以處理金屬和塑膠中的噪音和振動問題，常用於航空、軍事、汽車及船舶等工業，以降低聲波傳播輻射效率和機械振動，近期相關研究將約束層阻尼系統結合到複合地板中，可使地板的動態性能提高兩倍或更多，添加阻尼層主要作用係可將樓板表面材的衝擊轉化為阻尼層的剪應力，透過阻尼層控制將機械能(振動)轉化為熱能，達到降低噪音效果。

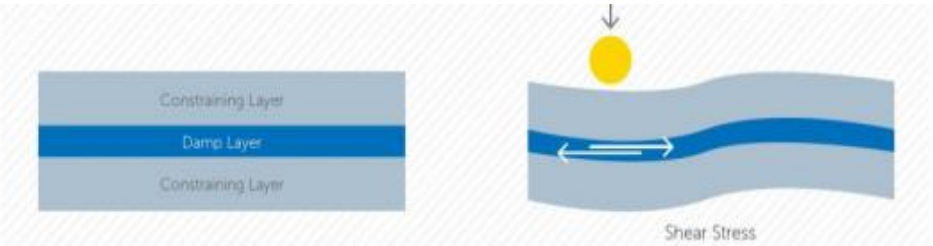


圖 18 拘束層阻尼隔音降躁機制

法國目前可接受的噪音水準定義等於背景噪音在白天允許增加 5 dB(A)，夜晚上允許增加 3 dB(A)，每個頻帶也規定了限值，如表 14 所示，在 Vélizy 的一傢健身房，位於一樓，一樓是住宅公寓，它二種運動情境 24 kg（53 磅）的重量從 1.2 m 和 80 kg (176 磅) 的重量從 0.6 m 高度落下產生的環境噪音高於規範值，本文以安裝並測試乾式工法(緩衝材)、濕式工法(浮動地板系統)及拘束層阻尼進行實驗測試，結果顯示 3 種方式進行隔音改善後均可達到規範，而拘束層阻尼的組合工法提供了較好的彎曲強度、高延展性、高阻尼和低輻射效率，此外需注意的是若施作浮動地板前，建築結構已存在振動問題，則浮動地板很難將原噪音或振動干擾排除。

表 14 各頻帶規定限值

1/3 倍頻	31.5Hz	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz
允許最大增量	+9 dB	+9 dB	+7 dB	+7 dB	+5 dB	+5 dB	+5 dB	+5 dB

圖 19 乾式工法(緩衝材)、濕式工法(浮動地板系統)及拘束層阻尼

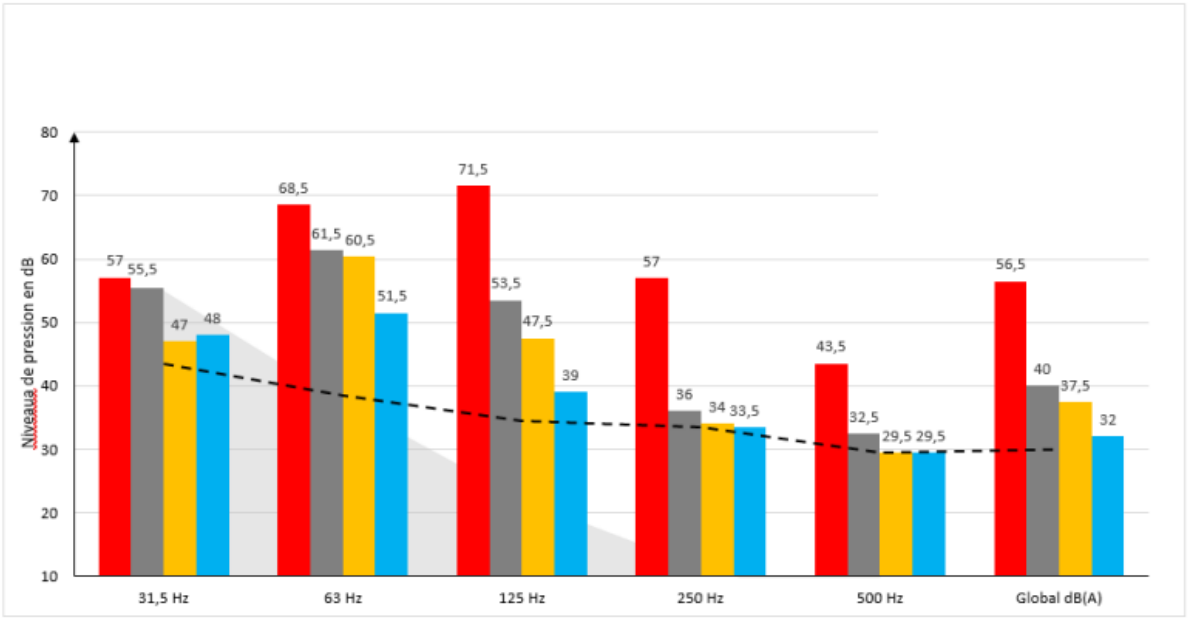


圖 20 乾式工法、浮動地板系統及拘束層阻尼隔音改善效果

肆、心得與建議

本次奉派赴新家坡參加第 28 屆聲音與振動國際研討會(The 28th International Congress on Sound and Vibration, ICSV28)，因國際間受到 COVID-19 疫情影響，以實體及視訊會議同步方式舉行，本計畫改以視訊會議方式參加，獲致幾點心得與建議如下：

一、心得

1.本次國際研討會根據大會的統計共發表 575 篇論文，註冊參加人數達 3,982 人，其中線上會議部分，每日同時段分 ROOM1～ROOM4 等 4 個場次進行，每場次每日約有 25 至 28 篇論文發表，論文主題相當廣泛，涵蓋振動與噪音各類領域，並於會後提供論文發表影片在線上撥放，以利參加者在有效期間內針對未參與場次及有興趣論文重複聆聽，有助於參與效果。

2.本次發表論文有關建築音響新技術、新工法及新材料的研究令人印象深刻，值得本所實驗室營運及結合產業發展參考，包括(1)可更換隔振器的浮動地板系統，方便後續維修或樓板負載條件發生變化拆卸與組裝，(2)微穿孔板吸音應用，以控制頻率響應與迴響時間，並可製作出多樣化設計產品，例如寬度 6 公尺、厚度 50mm 如豌豆狀之微穿孔吸音器，(3)拘束層阻尼在隔音應用，透過阻尼層將機械能(振動)轉化為熱能，達到降低噪音效果，(4)牆體構造隔音數值模擬，以迅速找出有可能的複層牆解決方案。

3.在營建材料防音效果耐久性研究部分，香港目前針對低噪音路面鋪面材料進行耐久性實驗，結果顯示如下：

(1)聚合物改質材料(PMFC)應用於高速公路及快速道路平均可降低噪音水準約 5 dB(A)，另應用於地方道路，初始降低噪音量約為 2.7dB(A)，並降噪性能每年衰減約 0.17 dB(A)，至鋪設 5 年後降低噪音量約為 1.9 dB(A)，且路邊停車太頻繁路面常見表面損壞需重新再鋪設。

(2)聚合物改質瀝青薄層(PMSMA6)在觀測 5 年期間沒有顯著性能衰減現象，且針對路邊停車頻繁、路口或交叉口之間的距離太短的道路，在觀測期間幾乎沒有損壞需重新再鋪設問題。

4.在環境噪音對人之影響研究部分，本次蒐集波蘭風力發電機噪音對人員感受評估，結果顯示風力發電機產生之噪音屬於輕微的干擾程度，參與者普遍認為交通噪音比風力發電機更令人困擾。此外，南韓針對國中和高中學生學習影響進行實驗研究，結果顯示在嘈雜的環境中，測試者心率增加 10%，若對噪音敏感度高學生，其測試成績會有所下降，因此，為了不影響學習能力，有必要維持學校等學習空間低於 65dB(A)。

二、建議

建議 (一)

透過參加本次國際研討會，已蒐集國際建築音響方面技術、工法及材料最新研究，建議後續可供本所實驗室營運及結合產業技術合作發展參考

執行時程：立即可行之建議

主辦機關：內政部建築研究所

本所性能實驗中心內設有符合 ISO 國際標準的建築音響實驗室，其量測並可符合 ISO、ASTM、JIS 及 CNS 等標準之規定。館內共有 9 間實驗室，分別為 6 間餘響室以及 3 間全(半)無響室，設備非常精良，試驗技術水準不亞於國外實驗室，透過參加本次國際研討會，已蒐集國際建築音響技術發展趨勢，建議後續可結合產業共同研發高性能防音綠建材，以提升我國防音技術水準及帶動相關產業發展。

建議 (二)

持續參與建築音響、聲學與振動相關國際活動與會議，掌握國際發展趨勢，以作為我國相關計畫或政策推動參考

執行時程：中長期性建議

主辦機關：內政部建築研究所

為使未來本所相關科技計畫之規劃符合國際發展趨勢與我國政策需求，除參考本次 ICSV28 有關建築音響新技術、新工法、新材料、耐久性及環境噪音對人影響研究研究成果外，亦應持續廣泛蒐集最新文獻資訊，並建議持續編列出國計畫參與國際會議，掌握最新國際防音技術發展趨勢，以作為我國相關計畫或政策推動參考。

伍、附錄

(附錄 1 研討會發表文章清單目錄)

No	Session	Abstract title
#1	T03 SS03	1/1 SYSTEM IDENTIFICATION AND RESPONSE OF A METHANE-FUELLED SWIRLING THERMOACOUSTIC COMBUSTOR
#2	T05 SS02	ULTRASONIC HARMONICS AND SUBHARMONICS LEADING TO CHAOS IN LIQUIDS OBSERVED BY LIGHT DIFFRACTION
#4	T01 SS02	COMPARISON OF THE TURBULENCE REJECTION OF DIFFERENT MICROPHONE TURBULENCE SCREENS
#5	T08 SS02	COMBINING NGO MECHANICAL PERFORMANCE AND NANO ZRO2 DAMPING BEHAVIOUR IN POLYCARBONATE RESIN
#6	T07 RS05	VIBRATION BEHAVIOR OF NGO-PE REINFORCED COMPOSITE ON GFRP LAMINATES
#7	T14 SS01	DURABILITY OF LOW-NOISE PAVEMENTS
#8	T04 RS01	AN INVESTIGATION OF LAWS CONCERNING NOISE DURING ROMAN ANTIQUITY
#9	T04 RS01	ANATOMY OF ETHOS, PATHOS IN MUSIC OF AFRICA AND ITS PATHOGENIC ESSENCE IN ENVIRONMENTAL HEALTH
#10	T01 RS01	DEFECT CHARACTERIZATION OF MULTI-LAYERED BONDED COMPOSITES USING FCN-BASED ULTRASONIC INVERSION
#11	T02 RS01	VARIABLE STEP SIZE FXLMS ALGORITHM FOR PIPE
#12	T07 RS03	VIBROACOUSTIC MODELING OF A COMPRESSOR PIPELINE SYSTEM
#13	T05 SS02	WEAKLY NONLINEAR THEORY ON ULTRASOUND IN LIQUID CONTAINING MANY CONTRAST-AGENT MICROBUBBLES
#15	T08 SS03	ALGORITHM IMPROVEMENT OF TRANSFER MATRIX METHOD FOR VIBRATION PROPAGATION OF PERIODIC PIPELINE STRUCTURE
#16	T08 SS03	DISORDERS IN PERIODIC SUPPORT FOR PIPELINE CONVEYING FLUID
#17	T07 RS06	PIPING VIBRATION RISK MANAGEMENT AND ADVANCED MODELLING TECHNIQUES IN THE OIL & GAS SECTOR
#18	T08 SS03	BROADBAND LOW-FREQUENCY ELASTIC WAVE ATTENUATION IN SANDWICH METASTRUCTURES
#20	T01 SS01	OBJECTIVE VERSUS SUBJECTIVE ACOUSTIC BENCHMARKING OF BATTERY ELECTRIC VEHICLES
#21	T07 RS02	STICK-SLIP-MOTION-BASED FORMATION MECHANISM OF RAIL CORRUGATION ON THE METRO SMALL RADIUS CURVE
#22	T07 SS04	TWO-WHEELED SELF-BALANCING ROBOT
#23	T07 RS03	NUMERICAL SOLUTION OF VIBRATION EQUATIONS OF A THIN-WALLED BEAM BY USING EVOLUTIONARY ALGORITHMS
#24	T13 SS01	VIBROACOUSTIC ANALYSIS FOR VIOLIN AND DISCUSSIONS ON SOUND GENERATION MECHANISM
#25	T01 SS01	GENERATION OF ACOUSTIC FATIGUE ANALYTICAL PROCEDURE AND VALIDATION
#26	T03 SS03	OUTER WALL HEAT TRANSFER EFFECT ON ATTENUATING SELF-EXCITED THERMOACOUSTIC OSCILLATIONS
#27	T09 RS01	DIFFERENCES IN PARAMETRIC-SPEAKER-EMITTED SPEECH RECOGNITION THRESHOLDS CAUSED BY SOUND LEVEL VARIATIONS AND VOICE GENDER

#28	T05 RS02	SPIN-ORBIT INTERACTION IN P-ALGAAS/GAAS/ALGAAS SQUARE QUANTUM WELL
#29	T10 RS02	A TIME-SLIDING WINDOW FOR CNN BEARING FAULT DIAGNOSIS
#30	T05 SS02	MY PHD THESIS POINEERD TOPOLOGICAL PHASE TRANSITION
#31	T07 SS03	PROPOSAL OF THE DETERIORATION DIAGNOSIS METHOD OF WATER DISTRIBUTION PIPE USING THE IN-PLANE BENDING VIBRATION MODE
#32	T01 SS01	INVESTIGATION AND COMPARISON OF THE SOUND QUALITY OF THE LURES USED FOR GREYHOUND RACING
#33	T01 RS04	DEVELOPMENT AND IMPLEMENTATION OF A MULTI-STAGE DURABILITY TEST FOR A COMMUTER RAILCAR BODY FLOOR PANEL ASSEMBLY
#34	T05 SS03	NONLINEAR ULTRASOUND DIFFRACTION TOMOGRAPHY IN CURVILINEAR SPACETIME
#35	T05 SS02	TRANSPORT THEORY APPROACH TO PHASE TRANSITION
#36	T03 RS01	CONTROL OF FLUID-ELASTIC OSCILLATIONS WITH ACOUSTIC RESONANCE IN A CAVITY FLOW WITH A CANTILEVER BY A PLASMA ACTUATOR
#37	T06 SS02	BIODYNAMIC RESPONSE OF SEATED HUMAN BODY TO 1 HZ LATERAL-ROLL VIBRATION: EFFECT OF PHASE DIFFERENCE AND MAGNITUDE
#38	T08 SS02	Damping and Modal Analysis of Nano-Titanium Oxide Damping Behavior on GFRP
#39	T02 RS03	VIBRATION ISOLATION BY USING ELECTROMAGNETIC SHUNT DAMPER
#40	T03 SS03	COMPRESSIBLE SIMULATION OF A THERMOACOUSTIC HEAT PUMP IN A CAVITY FLOW WITH A STACK
#41	T03 SS01	AN ANALYTICAL STUDY OF VIBRATION RESPONSE OF AN ORTHOGONALLY BEAM STIFFENED ORTHOTROPIC PLATE
#42	T12 SS02	RESEARCH ON THE INFLUENCE OF DYNAMIC FACTORS ON THE DYNAMIC ALIGNMENT OF SHAFTING SYSTEM
#43	T05 RS01	DIVERSITY OF ACOUSTOFUIDIC PATTERNS MODULATED BY PHONONIC CRYSTAL STRUCTURES
#44	T10 RS04	INTER-CORRELATION BAYESIAN BLOCK SPARSIFICATION METHOD FOR SOUND FEATURES
#46	T01 SS04	STUDY ON MULTI-AXIS RANDOM VIBRATION TEST CONTROL TECHNIQUES
#47	T11 SS01	MULTIFUNCTIONAL ACOUSTIC UNIT AND ITS ACOUSTIC POTENTIALS DEPENDENCE ON MATERIAL STRUCTURE
#48	T08 SS03	LOCALLY RESONANT METAMATERIALS FOR UNDERWATER ACOUSTIC APPLICATIONS: COMPARISON OF AN ANALYTICAL MODEL WITH EXPERIMENTAL RESULTS
#49	T12 RS01	ESTIMATION OF GASSY SEDIMENT PARAMETERS IN SHALLOW WATER USING SHIPPING NOISE RECORDED BY VERTICAL LINE ARRAYS.
#50	T07 RS02	COMBINATION RESONANCE OF SEMI-DIRECT DRIVE CUT-TING TRANSMISSION SYSTEM IN SHEARER CONSIDERING MULTI-FREQUENCY LOAD EXCITATION
#51	T12 SS02	ANALYTICAL STUDY ON VIBRATION CHARACTERISTICS OF PROPULSION SHAFTING-HULL OF THE SUBMARINE
#52	T07 SS04	FATIGUE ANALYSIS OF AN ACOUSTIC BLACK HOLE
#53	T05 SS02	ROBUST HAMMERSTEIN MODEL IDENTIFICATION OF NONLINEAR SYSTEMS: FILTER SELECTION CRITERIA
#54	T14 RS01	USING NATURAL SEISMIC METAMATERIALS TO MITIGATE RAILWAY GROUND-BORNE VIBRATION

#55	T02 RS01	PERFORMANCE OF THE ACTIVELY CONTROLLED ROTOR WITH TRAILING EDGE FLAPS CONSIDERING THE EFFECT OF AERO-ELASTICITY
#59	T08 SS04	PARAMETRIC STUDY OF BIOT\'S AND MECHANICAL PROPERTIES OF FLAT AND MOLDED ACOUSTIC MATERIALS
#60	T08 SS02	REUSABLE ENERGY ABATEMENT PAD FOR AIRDROP APPLICATIONS
#61	T11 SS04	LOW FREQUENCY NOISE REDUCTION IN A HOSPITAL BUILDING
#62	T08 SS02	ROBUST ISOLATION FOR VIBRATION ABATING FOR SATELLITES AND DEEP SPACE APPLICATIONS
#63	T01 SS02	SENSOR VALIDATION OF PIEZOELECTRIC MODAL SENSORS FOR PLATE STRUCTURES
#64	T12 SS02	ANALYTICAL STUDY ON VIBRATION CHARACTERISTICS OF THE COUPLED SHAFTING AND RING-STIFFENED CONICAL-CYLINDRICAL SHELL
#65	T05 RS01	CHARACTERIZATION OF POLYCRYSTALLINE MICROSTRUCUTRES BY RECONSTRUCTION OF SURFACE WAVE VELOCITY MAP FROM FIELD DATA
#66	T06 SS02	SHOCK ISOLATION AND VIBRATION ALLEVIATION (SHIVA) FOR HELMETS
#67	T07 RS03	DYNAMIC SIMULATION FOR AIRDROP PLATFORM WITH ELASTIC BUMPERS
#68	T01 RS02	LOW FREQUENCY CALIBRATION OF ACOUSTIC PARTICLE VELOCITY SENSOR IN INFRASONIC PISTONPHONE
#69	T07 RS02	EVALUATION OF NONLINEAR NORMAL MODES USING TIME VARIATIONAL METHOD
#70	T04 RS02	STANDARD SAMPLE METHOD AND APPLICATION FOR SUBJECTIVE NOISE EVALUATION
#71	T07 RS03	VIBRATION PREDICTION UNDER ELECTROMAGNETIC FORCE EXCITATION OF A THREE-PHASE INDUCTION MOTOR USING HYBRID FE-SEA METHOD
#72	T14 SS02	DESIGN OF AERODYNAMIC NOISE REDUCTION OF VACUUM CIRCUIT BREAKER
#73	T08 SS01	DESIGN OF NOISE REDUCTION STRUCTURE BASED ON RESONATOR AND MELAMINE FOAM
#74	T07 RS04	INFLUENCE OF MOTOR AIR-GAP ECCENTRICITY ON THE VIBRATION OF ROTOR WITH ASYMMETRICAL STIFFNESS
#75	T09 RS01	EFFECTS OF SOUND ENVIRONMENT ON HUMAN PERFORMANCE AND PHYSIOLOGICAL RESPONSE WHILE DRIVING
#76	T07 RS03	MAGNETOSTRICTIVE VIBRATION SEPARATION AND EXPERIMENTAL RESEARCH ON MOTOR LAMINATED IRON CORE
#77	T04 SS02	DAUMAL METHOD OF BLIND ITINERARY FOR THE STUDY OF THE CITY\'S SOUNDSCAPES
#78	T14 SS02	BALLAST TRACK VIBRATION REDUCTION: SIMULATION ON APPLICATION OF UNDER SLEEPER PAD IN TOD METRO DEPOT
#79	T04 RS03	ACOUSTIC IMPACT OF CAPODICHINO AIRPORT BY THE USE OF THE AEDT SOFTWARE
#80	T11 SS01	APPLIANCE OF SOUND MASKING SOURCES IN THE SHAPE OF PYRAMIDS IN ACOUSTIC SYSTEM OF AN OFFICE ROOM - COMPARING THE RESULTS OF CALCULATIONS AND MEASUREMENTS
#82	T14 SS03	APPLICATION OF BP NEURAL NETWORK BASED ON VEHICLE DYNAMIC RESPONSE DATA IN TIRE MODEL AND ROAD FRICTION COEFFICIENT IDENTIFICATION
#83	T14 SS01	PREDICTING ROAD ROUGHNESS PROFILE USING DYNAMIC VEHICLE ACCELERATIONS AND ARTIFICIAL NEURAL NETWORK

#84	T08 SS02	DESIGNING THE POLYMER COMPOSITE PARAMETRIC ELEMENTS WITH NEGATIVE AND QUASI-ZERO STIFFNESS FOR THE VIBRATION ISOLATION SYSTEMS
#85	T02 RS01	ACTIVE CONTROL OF THE VIBRATION ISOLATION SYSTEMS WITH ELEMENTS OF NEGATIVE STIFFNESS NEAR ZERO FREQUENCIES
#86	T02 RS01	ANALYSIS OF INFLUENCING FACTORS ON NOISE REDUCTION PERFORMANCE OF FEEDBACK ACTIVE ROAD NOISE CONTROL SYSTEM
#87	T01 SS01	TRANSVERSE VIBRATIONAL CHARACTERISTICS ANALYSIS OF COMPLEX MULTIPLE-BEAM STRUCTURE
#88	T06 SS03	NUMERICAL SIMULATION AND VIBRATION CONTROL OF SWING CHECK VALVE
#89	T05 SS02	NONLINEAR DYNAMICS AND STABILITY ANALYSIS IN ELECTROMECHANICAL VALVE ACTUATOR
#90	T08 SS03	INVERSE DESIGN OF BANDGAPS IN METABEAMS USING CLOSED-FORM FORMULAS
#91	T03 RS01	REDUCED-ORDER AEROACOUSTIC MODELING OF ELECTRONICS COOLING FANS
#92	T10 RS03	GENERATING RANDOM SIGNALS OF A GIVEN SPECTRAL SHAPE FOR LIFE TESTS
#93	T09 RS01	NUMERICAL VIBRATION ANALYSIS OF HONEYBEE COMB STRUCTURES
#96	T01 SS01	COVERT COLLECTION AND AUTOMATED ANALYSIS OF VIBROACOUSTIC INTELLIGENCE FROM DRONE MOUNTED LASER DOPPLER VIBROMETERS
#97	T12 RS01	SIGNAL DESIGN FOR DIRECT ARRIVAL ECHO DETECTION IN UNDERWATER ACOUSTIC MULTIPATH CHANNEL
#98	T12 RS01	THIS CONFERENCE ARTICLE IS INVALID
#99	T02 SS03	TRAPPING AND MANIPULATION OF MIE PARTICLES IN A LIQUID WITH SINGLE BEAM ACOUSTIC VORTICES
#100	T01 RS02	STUDY ON THE METHOD OF ASSOCIATION AMBIGUITY ELIMINATION FOR MULTI-SOURCES LOCALIZATION
#101	T11 SS03	NUMERICAL PREDICTION OF HONEYCOMB SANDWICH STRUCTURE TRANSMISSION LOSS
#102	T13 SS04	HOW THE STRING ENDS AFFECT THE BUNDENGAN STRING VIBRATIONS
#103	T09 SS01	UNCERTAINTY QUANTIFICATION IN HEAD-RELATED TRANSFER FUNCTIONS WITH ANTHROPOMETRIC VARIATIONS
#104	T10 SS03	SOLUTIONS OF THE INTERMEDIATE SUPPORTS STRUCTURES OF THE NORTHERN MARMARA HIGHWAY (ISTANBUL’S RING ROAD) IN THE CONTEXT OF SEISMIC ACTIVITY
#105	T03 SS01	DESIGN AND STRUCTURAL ANALYSIS OF MULTI-AXIAL ELECTRODYNAMIC SHAKING TABLE
#106	T02 RS01	EXPERIMENTAL RESEARCH ON ACTIVE CONTROL OF SHIP SHAFTING TRANSVERSE VIBRATION BASED ON ELECTROMAGNETIC ACTUATOR AT BEARING SUPPORT
#108	T05 RS01	CPFE METHOD FOR TEXTURE EVOLUTION SIMULATION FOR HCP-ALPHA TITNAIUM WITH POTENTIAL APPLICATION IN ULTRASONIC ATTENUATION
#109	T14 RS01	ENHANCED TRAIN-TRACK NOISE SEPARATION FROM PASS-BY MEASUREMENTS
#110	T02 RS01	EXPERIMENTAL RESULTS OF AN ACTIVE SIDEWALL PANEL WITH VIRTUAL MICROPHONES FOR AIRCRAFT INTERIOR NOISE REDUCTION
#111	T01 SS01	EFFECTS OF INFILL PARAMETERS ON THE VIBRATION CHARACTERISTICS OF ADDITIVELY MANUFACTURED SPECIMENS
#112	T07 RS03	DAMAGE MITIGATION STRATEGY THROUGH BRANCHING OF STIFFENERS ON STIFFENED PLATES
#113	T08 SS03	LABORATORY STUDY OF THE TRANSMISSION LOSS OF LAYERED STRUCTURES OF SONIC CRYSTALS

#114	T07 RS02	MODELING OF INVERSE KINEMATICS AND DYNAMICS OF A 3DOF PARALLEL PLATFORM FOR STABILIZATION PURPOSES
#115	T01 RS04	NOISE-ROBUST PITCH EXTRACTION COMBINING AIR-CONDUCTED SPEECH WITH BONE-CONDUCTED SPEECH IN WHITE GAUSSIAN NOISE ENVIRONMENT
#116	T05 SS02	NUMERICAL SIMULATION OF 2D NONLINEAR WAVE SCATTERING BY AN ELLIPTICAL DAMAGE ZONE VIA A SPECTRAL ELEMENT METHOD
#117	T02 RS01	LONGITUDINAL VIBRATION TRANSMISSION CONTROL OF THE FLEXIBLE SHAFTING SYSTEM WITH AN AUXILIARY ELECTROMAGNETIC SUPPORT
#118	T07 RS01	FREE VIBRATION ANALYSIS OF LAMINATED TOROIDAL STRUCTURES USING WAVEGUIDE FINITE ELEMENT
#119	T14 SS02	THE TEST AND ANALYSIS OF VIBRATION SOURCE INTENSITY OF A SUBWAY TRAIN
#120	T07 SS02	DESIGN OF HIGH-PERFORMANCE VIBRATION ENERGY HARVESTER USING NONLINEAR FORCE CUSTOMIZATION TECHNOLOGY
#121	T11 SS03	SOUND INSULATION MEASUREMENT OF BUILDING COMPONENTS BASED ON PATCH NEAR-FIELD ACOUSTIC HOLOGRAPHY
#122	T07 RS01	FREE VIBRATION ANALYSIS OF A SANDWICH PLATE WITH VISCOELASTIC CORE HAVING CENTRAL CUT-OUT
#123	T05 RS02	ACOUSTIC STREAMING PATTERN AROUND A CYLINDER UNDER ACOUSTIC-INDUCED OSCILLATORY FLOW
#124	T08 SS03	NORMAL INCIDENCE SOUND TRANSMISSION LOSS OF METAMATERIAL DOUBLE PANELS
#125	T03 SS04	COMPARATIVE ANALYSIS OF TRANSMISSION, REFLECTION AND DISSIPATION CHARACTERISTICS OF COMPOSITE AND METAL PANELS AT SOUND AND PSEUDO-SOUND EXCITATION
#126	T10 RS02	A NEW MATHEMATICAL APPROACH FOR ON LINE GEAR FAULT DETECTION
#127	T04 RS02	CHALLENGES OF ENVIRONMENTAL ASSESSMENT OF WIND FARM NOISE IN CHILE: BACKGROUND NOISE
#128	T02 RS01	OPTIMIZATION OF VIBRATION CONTROL PATHS IN A LARGE STRUCTURAL SYSTEM
#129	T01 SS02	NON-CONTACT PRESSURE MEASUREMENT OF SEALED UNITS USING ACOUSTIC METHODS.
#130	T05 RS01	DEVELOPMENT AND TEST OF THE HIGH BANDWIDTH HETERODYNE LASER INTERFEROMETER FOR THE MEASUREMENT OF HIGH INTENSITY FOCUSED ULTRASOUND PRESSURE
#131	T12 RS01	UNDERWATER SOUND PROPAGATION THROUGH AN AIR-BUBBLE MEDIUM IN AN ACOUSTO-ELASTIC WAVEGUIDE
#133	T05 RS01	ROBUST FIBER OPTIC HYDROPHONE CALIBRATION BASED ON LASER INTERFEROMETRY
#134	T03 RS01	A FLOW FIELD AND NOISE INVESTIGATION OF TANDEM NACA 65-710 AEROFOILS WITH TRAILING-EDGE SERRATIONS
#135	T02 RS02	PRACTICAL INSIGHT INTO INERTIAL ACTUATORS ARRANGEMENT OPTIMIZATION FOR ACTIVE CONTROL SYSTEMS
#136	T07 RS02	SEISMIC BASE ABSORBER WITH A NOVEL NEGATIVE STIFFNESS MECHANISM FOR THE HORIZONTAL SEISMIC PROTECTION OF STRUCTURES
#137	T08 SS02	CHARACTERIZING THE VIBRATION ATTENUATION IN HERSCHEL-QUINCKE AND METAMATERIAL BEAMS BY THE TRANSMITTED VIBRATION AND THE TRANSMISSION LOSS
#138	T07 RS03	LINEAR DYNAMIC FINITE ELEMENT ANALYSIS OF MAINFRAME COMPUTER STRUCTURES UNDER SEISMIC LOADING

#139	T07 RS03	IMPACT WAVES IN A ROD CONSTRAINED BY A STATIONARY MASS AT ONE END AND STRUCK BY A MOVING MASS AT THE OTHER END
#140	T10 RS04	SONAR-BASED BURIED OBJECT DETECTION VIA STATISTICS OF RECURRENCE PLOT QUANTIFICATION MEASURES
#141	T07 SS02	INVESTIGATION OF THE EFFECT OF PIEZOELECTRIC MATERIAL NON-LINEARITY ON UNIMORPH ENERGY HARVESTER
#142	T13 SS01	INVESTIGATING THE VIBROACOUSTICS OF INDIAN ELEPHANT BELLS
#143	T03 SS06	MULTI-ROW CENTRIFUGAL IMPELLER OPTIMIZATION USING THE DISCREET-VORTEX METHOD TO REDUCE BPF PRESSURE PULSATIONS
#144	T03 SS01	EFFECT OF PRETENSION ON THE SOUND TRANSMISSION LOSS THROUGH AN ACOUSTIC METAMATERIAL PLATE
#145	T06 SS02	NUMERICAL INVESTIGATION OF DVA IN ATTENUATING THE TRANSMITTED HAND-ARM VIBRATION FROM THE MOTORBOAT ENGINE
#146	T14 SS01	LATEST DEVELOPMENT OF LOW NOISE ROAD SURFACING APPLICATION ON LOCAL ROADS IN HONG KONG
#148	T05 SS04	GENERATIVE DESIGN OF A SILENCER USING DEEP LEARNING
#149	T07 RS03	INFLUENCE OF TEMPERATURE GRADIENT ON THE VIBRATION CHARACTERISTICS OF VISCOELASTIC-FGM DOUBLY CURVED SANDWICH PANELS USING FEM
#150	T11 RS01	PRINCIPAL ENGINEER
#151	T01 RS02	SYSTEM CONSIDERATIONS IN THE OPTICAL MEASUREMENT OF FREE-FIELD SOUND PRESSURE BY FORWARD SCATTERING COLLECTION CONFIGURATION
#152	T01 RS02	EXPERIMENTAL EXPLORATION ON THE RESONANT FREQUENCY AND DIAPHRAGM TENSION OF CONDENSER MICROPHONES
#153	T01 RS02	DISCUSSION ON THE HARMONIC DISTORTION SUPPRESSION TECHNOLOGY IN SOUND CALIBRATORS
#154	T03 SS01	AN ACOUSTIC OPTIMIZATION OF SANDWICH PLATES WITH VISCOELASTIC DAMPING CORE CONSIDERING STIFFNESS AND STRENGTH CONSTRAINTS
#155	T09 RS01	IMPORTANCE OF ACCOUNTING FOR THE MIDDLE EAR IN THE COMPUTATION OF HEAD-RELATED TRANSFER FUNCTION
#156	T03 SS04	DESIGN AND EXPERIMENTAL STUDY ON SOUND ABSORPTION PERFORMANCE OF SHUNT LOUDSPEAKER
#157	T10 RS04	MONO-TREND NONLINEAR CHIRP MODE DECOMPOSITION
#158	T12 RS01	UNCERTAINTY QUANTIFICATION IN UNDERWATER NOISE EMISSION BY OFFSHORE PILE DRIVING
#159	T07 RS02	AN ALTERNATING FREQUENCY-TIME HARMONIC BALANCE METHOD FOR FAST-SLOW DYNAMICAL SYSTEMS
#160	T07 RS03	DYNAMIC BEHAVIOR OF STRUCTURE SUBJECTED TO TRAVELLING MASS WITH DIFFERENT TYPES OF CRACKS
#161	T09 SS02	ADDRESSING MULTI-MODAL MULTI-MODEL MULTI-FEATURE CUES IN ALZHEIMER\\\'S DEMENTIA
#162	T08 SS01	INNOVATIVE TRIM MODELLING FOR INDUSTRIAL APPLICATIONS
#163	T12 RS01	A MULTI-PHYSICS MODEL FOR MODELLING NOISE MITIGATION USING AN AIR-BUBBLE CURTAIN IN IMPACT PILE DRIVING
#164	T07 RS01	DYNAMIC ANALYSIS OF THE SANDWICH BEAM SUPPORTED ON AN ELASTIC FOUNDATION HAVING NATURAL RUBBER NANOCOMPOSITES FUNCTIONALIZED CNTS BASED CORE

#165	T10 RS04	OPTIMAL CARRIER FREQUENCY BAND SELECTION OF VIBRATION SIGNALS BASED ON THE CYCLIC SPECTRAL COHERENCE
#166	T12 RS01	THE EFFECT OF PILE-SOIL SLIDING ON UNDERWATER NOISE FROM VIBRATORY PILE DRIVING
#167	T13 RS01	EXPERIMENTAL STUDY OF SOUND RADIATION PATTERNS OF RESONATOR OF SARASVATI VEENA
#168	T02 RS01	EFFICIENT MODAL CONTROL OF A PLATE UNDER WIND LOADING
#169	T01 RS02	Sound Field Measurement at an Enclosure Opening Using Refracto-Vibrometry
#170	T04 RS01	ESTABLISHMENT MODEL FOR LONG-TERM PERIODIC ENVIRONMENTAL SOUND MONITORING IN URBAN AND RURAL RESIDENCES
#171	T08 SS01	THE ACOUSTIC AND STRUCTURAL DAMPING PROPERTIES OF JUTE WITH CRUMB RUBBER
#172	T05 SS01	SEMI-ANALYTICAL FINITE ELEMENT METHOD FOR PREDICTING PHASE AND GROUP VELOCITY DISPERSION CURVES
#173	T02 RS01	TRANSMISSION LOSS AND BACK PRESSURE ANALYSIS OF PERFORATED RESONATORS WITH EXTENDED INLETS
#174	T01 RS04	CONVOLUTION NEURAL NETWORK-BASED ROAD CLASSIFICATION AND DEFECT DETECTION USING VIBRATION DATA
#175	T10 RS03	BEARING FAULT DETECTION IN PERMANENT MAGNET SYNCHRONOUS MOTORS USING VIBRATION AND MOTOR CURRENT SIGNATURE ANALYSIS
#176	T03 RS01	AIRBORNE SOUND GENERATION MECHANISM OF A LIQUID DROPLET IMPACT ON A SOLID SURFACE, THIN FILM AND A DEEP POOL
#177	T07 RS03	VIBRATION RESOLUTION OF AN AXIAL FAN DUE TO GYROSCOPIC STIFFENING OF THE SUSPENSION ASSEMBLY
#178	T07 RS03	FREE VIBRATION OF LAYERED CYLINDRICAL SHELLS OF VARIABLE THICKNESS FILLED WITH FLUID
#179	T11 SS03	PREDICTION OF SOUND ABSORPTION CHARACTERISTICS OF HETEROGENEOUS MICROPERFORATED PANEL ABSORBER
#180	T08 SS03	A METAMATERIAL PLATE WITH BROADBAND LOW-FREQUENCY FLEXURE WAVE MANIPULATION
#181	T08 SS01	DESIGN OF MULTILAYERED MICROCHANNELS FOR HIGH ABSORPTION AT DIFFERENT FREQUENCY RANGES
#182	T08 SS03	ANALYSIS OF PHONONIC LATTICE STRUCTURES WITH PERFORATED ZIG-ZAG-MEMBERS BY THE SEM
#183	T14 SS02	COMPARISON OF NON-CONTACT VIBRATION MONITORING METHODS FOR CONCRETE RAILWAY SLEEPERS
#184	T02 RS03	MAGNETORHEOLOGICAL ELASTOMER-BASED FLEXIBLE COUPLING FOR TORSIONAL VIBRATION ISOLATION
#185	T03 RS01	COMPLETION OF AN EXISTING FAST TURN&MDASH;AROUND SLAT NOISE PREDICTION MODEL BASED ON STATISTICAL ANALYSIS
#186	T04 RS02	SYSTEMATIC ANALYSIS OF MACHINE LEARNING TECHNIQUES IN THE CONTEXT OF NOISE ANNOYANCE
#187	T10 SS03	DECENTRALIZED IDENTIFICATION OF LOCAL DAMAGE IN POST-EARTHQUAKE STRUCTURES
#188	T13 RS01	A SURVEY OF PLAYER-DÍZI PERFORMANCE PARAMETERS
#189	T10 SS03	IDENTIFICATION OF STRUCTURAL STATE AND UNKNOWN SEISMIC INPUTS USING GKF-UI

#190	T07 SS02	AIRFOIL-BASED SELF-ADJUSTABLE PIEZOELECTRIC ENERGY HARVESTER IN FLUID-FLOW APPLICATIONS FOR PERFORMANCE OPTIMIZATION
#191	T04 RS03	HOW DO THE CITY AUTHORITIES IN POLAND EVALUATE THE DUTY OF CREATING AND USING THE STRATEGIC ACOUSTIC MAPS DUE TO THE EU REGULATIONS?
#192	T08 SS01	MPP ABSORPTION ENHANCEMENT BY SCATTERER UNITS
#193	T11 SS01	PASSIVE REDUCTION OF THE NOISE IN A CAR
#195	T08 SS01	SOUND TRANSMISSION LOSS OF PARTICULATE FILTER OF EXHAUST SYSTEM BY HOMOGENIZATION METHOD
#196	T10 RS03	EARLY FAULT DIAGNOSIS OF WIND TURBINE FAILURE BY COMBINATION OF MULTI-VARIATE LEARNING AND SIGNAL PROCESSING
#197	T01 RS03	MEASUREMENT CONSIDERATIONS AND CHALLENGES ON INFRASOUND SENSING USING A COMBINED ACOUSTIC WAVE AND OPTICAL APPROACH
#198	T06 SS03	MEASUREMENT AND EVALUATION TOOLS FOR GROUND AND BUILDING VIBRATIONS FROM INDUSTRIAL PROCESSES, CONSTRUCTION WORK, TRAFFIC AND OTHER SOURCES
#199	T01 SS01	VIBRATION BASED INTELLIGENT FAULT DIAGNOSIS OF ROLLING ELEMENT BEARING USING NEURAL NETWORK CLASSIFIERS
#200	T08 SS03	COMPLEX BAND STRUCTURE OF FLEXURAL WAVES IN THIN PLATONIC CRYSTALS
#201	T08 SS01	STOCHASTIC HOMOGENIZATION ANALYSIS OF POROUS SOUND ABSORBING MATERIALS UNDER UNCERTAINTY
#202	T02 SS02	SEMI-ACTIVE CONTROL OF NONSTATIONARY NOISE TRANSMITTED THROUGH STRUCTURES
#203	T05 SS02	NONLINEAR ANALYSIS ON PRESSURE WAVE PROPAGATION IN A FLOWING WATER CONTAINING TRANSLATIONAL BUBBLES ACTING A DRAG FORCE
#204	T05 RS02	NONLINEAR ACOUSTIC THEORY IN WATER CONTAINING MANY GAS BUBBLES WITH VARIOUS TYPES OF INITIAL RADII
#205	T08 SS03	PASSIVE CONTROL OF MECHANICAL VIBRATION USING METACONCRETE
#206	T05 SS02	NONLINEAR ACOUSTIC LANDMINE DETECTION USING AIRBORNE SOUND: COMPARING A BURIED INERT PLASTIC LANDMINE WITH A BURIED CLAMPED CIRCULAR ELASTIC PLATE - CYLINDRICAL COLUMN SOIL OSCILLATOR
#207	T13 SS04	GREY-BOX MODELLING OF ADDITIVE PHYSICAL MODEL FOR KARPLUS – STRONG STRING
#208	T01 SS02	MEASUREMENT MICROPHONE TRANSIENT RESPONSE ANALYSIS
#209	T10 RS01	GREY-BOX RECONSTRUCTION OF DRC AUDIO THROUGH VARIATIONAL AUTOENCODER
#210	T05 RS01	STUDY OF THE PHYSICAL PROPERTIES OF LIQUIDS BY ELECTROACOUSTIC METHOD
#211	T07 RS01	A SIMPLIFIED PROCEDURE TO CALCULATE THE NATURAL FREQUENCIES OF A SMALL WIND TURBINE BLADE WITH CENTRIFUGAL LOADS
#212	T05 RS02	ACOUSTIC LEVITATOR-TWEEZER USING PRE-PROGRAMMED ACOUSTIC HOLOGRAMS
#213	T07 RS03	COMPARISON BETWEEN 2D AND 3D FE MODELS IN REPRESENTING DYNAMIC BEHAVIOUR OF A BOLTED STRUCTURE USING FINITE ELEMENT MODEL UPDATING AND EXPERIMENTAL MODAL ANALYSIS
#214	T09 RS01	LASER INTENSITY-INDUCED DAMAGE EFFECTS ON DYNAMIC CHARACTERISATION OF WINGS OF THE EUROPEAN HONEY BEE (APIS MELLIFERA)

#215	T02 RS01	SLIDING MODE CONTROL OF JOINT FLEXIBLE ROBOT BASED ON ADAPTIVE NEURAL NETWORK
#216	T02 RS01	TRAJECTORY PLANNING AND VIBRATION SUPPRESSION OF FLEXIBLE MANIPULATORS
#217	T12 SS04	THE CONTRIBUTION OF CRUISE SHIPS TO THE SOUND EMISSION OF A HARBOUR
#218	T02 RS01	VIBRATION CONTROL OF FLEXIBLE MANIPULATOR BASED ON INPUT SHAPER AND PID CONTROLLER
#219	T05 SS01	ULTRASONIC CHARACTERIZATION OF ALUMINA/SILICONE-RUBBER COMPOSITES FOR ACOUSTICAL APPLICATIONS
#220	T07 RS03	DYNAMIC RESPONSE ANALYSIS OF TRUSS TOWER FOR CUSTOMIZED SMALL ROOFTOP-MOUNTED WIND TURBINES IN RARHI BENGAL
#221	T07 RS03	DYNAMIC RESPONSE ANALYSIS OF MONOPOLE TOWER FOR CUSTOMIZED SMALL ROOFTOP-MOUNTED WIND TURBINES
#222	T06 SS03	FEATURES OF NOISE EMISSION FROM VARIOUS TYPES OF COOLING TOWERS
#223	T03 RS01	EFFECT OF PERFORATED PLATE ON TRAILING EDGE NOISE FROM AIRFOILS
#224	T11 RS02	FLOOR IMPACT NOISE STUDY IN MULTIPLE DWELLING HOUSES DURING MALAYSIAN MOVEMENT CONTROL PERIOD
#225	T11 RS01	INVESTIGATION ON THE PERCEPTION OF ACOUSTICAL COMFORT IN EATERY PLACES: PART 1 – SUBJECTIVE ASSESSMENT
#226	T11 RS01	INVESTIGATION ON THE PERCEPTION OF ACOUSTICAL COMFORT IN EATERY PLACES: PART 2 – FIELD MEASUREMENT
#227	T03 RS01	NOISE CHARACTERISTICS OF DRONES (UAV) ACCORDING TO TESTING ENVIRONMENTAL CONDITIONS
#228	T11 SS03	ASSESSMENT OF FLANKING TRANSMISSIONS IN MEASUREMENTS OF SOUND TRANSMISSION LOSS OF MULTILAYER PANELS
#229	T11 RS01	ACOUSTICAL DESIGN OF LARGE STADIUM BUILDINGS
#230	T05 RS01	EFFECTS OF IN-PLANE LOAD ON LAMB WAVE TRANSMISSION USING PIEZOELECTRIC TRANSDUCERS
#231	T14 SS02	A WIDEBAND SOUND ABSORBER DESIGNED FOR LOCOMOTIVE CAB NOISE CONTROL
#232	T05 SS01	TUNABLE SOUND ABSORPTION IN HELMHOLTZ ABSORBERS MADE OF SOFT MATERIALS
#233	T05 RS01	EFFECT OF SURFACE ROUGHNESS ON THE ACCURACY OF CHARACTERIZING SURFACE-BREAKING CRACKS USING ULTRASONIC ARRAYS
#234	T13 SS01	EXPERIMENTAL MODAL ANALYSIS OF THE KOWANGAN RESONATOR IN THE BUNDENGAN MUSICAL INSTRUMENT
#235	T13 RS01	VIBRATION ANALYSIS OF THE BUNDENGAN BAMBOO BARS
#236	T07 SS04	FAILURE MECHANISMS OF PENTAMODE LATTICE-BASED BRIDGE BEARINGS DUE TO EARTHQUAKE INDUCED LOADS
#237	T07 RS05	INVESTIGATION ON THE INFLUENCE OF DYNAMIC LOAD ON FATIGUE LIFE OF DIESEL ENGINE CRANKSHAFT
#238	T04 RS03	CURRENT DEVELOPMENT OF AN AIRCRAFT NOISE PREDICTION ALGORITHM: AN OVERVIEW
#239	T05 SS01	VIBRATION-BASED DETECTION OF RAIL FOOT FASTENERS BASED ON THE DEEP LEARNING METHOD
#240	T02 RS03	ANALOG COMPUTATIONAL ACOUSTIC METAMATERIALS FOR DOMINANT FREQUENCY TRACKING

#241	T08 SS03	EFFECT OF IRON PLATELET SIZE ON MAGNETIC FORCE AND SOUND INSULATION OF MEMBRANE ACOUSTIC METAMATERIALS
#242	T08 SS03	DOUBLE-LAYERED PIEZOELECTRIC ACOUSTIC METAMATERIAL POSSESSING TWO SWITCHABLE STATES
#243	T08 SS01	INVESTIGATION OF ABSORPTION CHARACTERISTICS OF COMPACT DOUBLE LAYER MICROPERFORATED PANEL ABSORBER
#244	T14 SS03	OPTIMIZATION OF LOW-FREQUENCY VIBRATION ISOLA-TION FOR CAB RIDE COMFORT OF MINING TRUCKS
#245	T09 RS01	CONSIDERATIONS HOW TO IMPROVE GROUND REACTION FORCE MEASUREMENTS IN SMALL WALKING INSECTS
#247	T03 RS02	RESEARCH ON PREDICION METHOD OF AEROACOUSTIC VIBRATION ENVIRONMENT ON AIRCRAFT SURFACE
#248	T03 SS02	OPTIMIZATION DESIGN FOR AERODYNAMIC NOISE REDUCTION OF TRAIN AIR-CONDITIONING AXIAL FAN
#249	T14 SS03	MEASUREMENT OF TIRE TRANSFER FUNCTION USING FBS DECOUPLING METHOD
#250	T03 SS02	REASEARCH ON AERODYNAMIC NOISE PREDICTION AND NOISE REDUCTION OF DUAL-FAN COOLING SYSTEM
#251	T04 RS01	LOW-NMAS AND LOW-NOISE ASPHALT CONCRETES: A THEORETICAL AND EXPERIMENTAL INVESTIGATION
#252	T07 RS03	MECHANICAL IMPEDANCE: DIFFERENCES BETWEEN DRIVING-POINT AND TRANSFER IMPEDANCE
#253	T05 SS01	SEISMIC EVALUATION OF A SCALED MODEL FOR SPENT FUEL RACKS IN NPP SPENT FUEL POOL
#254	T12 SS01	UNDERWATER RADIATED NOISE FROM A LARGE PLEASURE CRAFTS
#255	T07 RS02	ANOMALOUS RESPONSE DURING FREQUENCY LOCKING IN THE INTERNAL RESONANCE OF TWO COUPLED MICRO-RESONATORS
#256	T13 RS01	OPTIMIZING MICROPHONE PLACEMENT FOR INDOOR MUSIC RECORDING
#257	T05 SS02	SENSITIVITY AND BIFURCATION ANALYSIS OF AN ANALYTICAL MODEL OF A TRAPPED OBJECT IN AN EXTERNALLY EXCITED ACOUSTIC RADIATION FORCE FIELD
#258	T03 SS02	AERODYNAMIC NOISE CALCULATION AND NOISE REDUCTION DESIGN OF MULTI-BLADE CENTRIFUGAL FAN
#259	T14 SS03	EFFECT OF GAS CHAMBER OF COMPACTED DOUBLE-GAS-CHAMBER HYDRO-PNEUMATIC STRUT
#260	T14 SS03	EFFECT OF THE FRICTION FORCE TO THE VIBRATION RESPONSE OF HYDRO-PNEUMATIC SUSPENSION
#261	T06 SS02	THE DYNAMIC PROPERTIES (ROD MODE) OF BONE-PLATE SYSTEM
#262	T06 SS06	HIGH-FREQUENCY VIBRATIONS OF A DRILLING STRING: MEASUREMENT EXPERIENCE AND PRELIMINARY RESULTS
#263	T05 SS02	EXPERIMENTAL STUDY OF DYNAMIC LOADING RESPONSES
#264	T08 SS03	RECONFIGURABLE COUPLED-RESONATOR ACOUSTOELASTIC WAVEGUIDES IN FLUID-FILLED PHONONIC METAPLATES
#265	T07 SS04	ANALYSIS METHOD OF THE MODAL DAMPING RATIO OF THE PLATE WITH DISTRIBUTED DISSIPATIVE OSCILLATORS
#266	T02 SS02	PRACTICAL APPROACH TO STABILITY VERIFICATION FOR THE LINEAR CLOSED-LOOP ACTIVE VIBRATION CONTROL
#267	T02 RS01	VIBRATION SUPPRESSION IN A SHAFTING SYSTEM BY ELECTROMAGNETIC FORCE

#268	T03 SS02	ANALYSIS OF THE EFFECTS OF PERIODIC SUCTION-BLOWING EXCITATION ON THE GENERATED AERODYNAMIC SOUND FOR FLOW PAST A CIRCULAR CYLINDER
#269	T02 RS01	INVESTIGATION ON ACTIVE VIBRATION CONTROL OF AN ISOLATION PLATFORM WITH HYDRAULIC ACTUATORS
#270	T03 SS02	GLOBAL-SPECTRAL ANALYSIS OF THE SPACE-TIME DISCRETIZATION SCHEMES TO UNDERSTAND THEIR APPLICABILITY IN PERFORMING AEROACOUSTICS SIMULATIONS
#271	T12 RS01	USING TRAJECTORY FEATURES AND SVDD-SVM FOR UNDERWATER SLOW AND SMALL TARGET RECOGNITION
#272	T07 RS03	VIBRATION ANALYSIS OF COUPLED CYLINDRICAL SHELL STRUCTURES WITH DIFFERENT CURVATURE USING THE DYNAMIC STIFFNESS METHOD
#273	T08 SS01	HIGH-AMPLITUDE SOUND ENERGY ABSORPTION FOR HELMHOLTZ RESONATORS WITH A SERRATED NECK
#274	T02 RS01	ACTIVE CONTROL FOR MILLING CHATTER SUPPRESSION OF THIN-WALLED WORKPIECE
#275	T05 SS02	ON THE CHAOS IN A CUTTING PROCESS
#276	T05 SS02	SOME ASPECTS REGARDING THE SIMULTANEOUS MULTIPOINT COLLISION WITH FRICTION
#277	T01 RS01	MODIFIED TIKHONOV REGULARIZATION WITH U-CURVE FOR BOUNDARY ELEMENT METHOD-BASED NEAR-FIELD ACOUSTICAL HOLOGRAPHY
#278	T08 SS03	DOUBLE-SIDED ACOUSTIC METAGRATING FOR BILATERAL THREE-CHANNEL SOUND RETROREFLECTION
#279	T10 RS01	ON PERFORMANCE COMPARISION OF ROBUST ADAPTIVE BEAMFORERS APPLIED TO LINE SPECTURM SIGNALS DETECTION
#280	T08 SS03	MULTIMODE TOPOLOGICAL INTERFACE STATES IN ELASTIC PLATE
#281	T09 SS03	SYNTHESIS AND EVALUATION OF LO-FI LOW-LOAD HEARING AIDS MODULE WITH PIEZO FILM AND CONDUCTIVE POLYMER
#282	T01 RS02	COMPARISON OF NOISE REDUCTION PERFORMANCE OF TWS HEADPHONES
#283	T12 SS02	INFLUENCE OF THE RING GAP SIZE ON THE FLOW FIELD AND VIBRATION CHARACTERISTICS OF THE CENTRIFUGAL PUMP
#284	T07 RS03	A VIBRATING PERIODICAL STRUCTURE OF A BEAM CARRYING MULTIPLE IDENTICAL TWO DEGREE-OF-FREEDOM SPRING-MASS SYSTEMS
#285	T08 SS03	ELASTIC WAVE PROPAGATION IN ORIGAMI-BASED PERIODIC STRIP STRUCTURES
#286	T02 RS03	MODELLING AND EXPERIMENTAL VERIFICATION OF A CURVED LIGHTWEIGHT STRUCTURE WITH ADAPTIVE DYNAMIC BEHAVIOUR
#287	T08 SS02	EXPERIMENTAL INVESTIGATIONS ON COMPRESSED NONWOVENS AS DAMPING MATERIAL FOR ENHANCED CONSTRAINED LAYER DAMPING
#288	T07 SS04	EXPERIMENTAL STUDY ON THE STRUCTURAL DAMPING OF FIBER-FILLED HOLLOW PROFILES
#289	T14 RS01	NOISE RADIATION MODELING STUDY FOR INTERNAL ELECTRICAL REACTOR OF AUXILIARY CONVERTER
#290	T01 SS01	COMPARISON BETWEEN VIBRATION PERCEPTION THRESHOLD OF HEALTHY MALAYSIANS PEOPLE AND THE INTERNATIONAL STANDARD ISO13091
#291	T01 RS04	DEVELOPMENT OF AN ARDUINO DATA ACQUISITION SYSTEM FOR CONDITION BASED MONITORING
#292	T03 SS02	NUMERICAL STUDY OF WHISTLE SOUND BASED ON HYBRID AEROACOUSTICS METHOD

#293	T01 SS01	UNDERWATER SOURCE FIELD RECONSTRUCTION USING NEAR-FIELD MEASUREMENTS MADE BY A LINEAR HYDROPHONE ARRAY
#294	T09 RS01	CHARACTERISING AND CALIBRATING PIEZO ACTUATORS FOR MICRO-EXCITATION FOR VIBRATION PLAYBACK IN BIOASSAYS OF INSECTS
#295	T14 SS03	EFFECT OF PRELOAD AND VIBRATION MAGNITUDE ON DYNAMIC STIFFNESS OF VEHICLE SEATS
#296	T07 RS02	INFLUENCE OF FOUNDATION FLEXIBILITY ON SCISSOR-LIKE STRUCTURED VIBRATION ISOLATION PLATFORM
#297	T07 RS02	SEISMIC PROTECTION OF MULTI-STORY BUILDING STRUCTURES WITH GEOMETRIC NONLINEAR NEGATIVE STIFFNESS-BASED OSCILLATOR
#298	T01 RS02	SMALL SEABED TARGET SONAR IMAGE GENERATION USING SONAR PERFORMANCE EVALUATION AND AFFINE TRANSFORMATION
#299	T07 SS04	MAGNETO RHEOLOGICAL DAMPER SEMI ACTIVE SYSTEM IN AUTOMOTIVE SUSPENSION
#300	T03 SS03	MODAL DECOMPOSITION ANALYSIS OF THE BEATING BEHAVIOR OF A SELF-EXCITED COMBUSTION INSTABILITY IN A PREMIXED HYDROGEN-FUELED COMBUSTOR
#301	T03 SS03	INVESTIGATION OF THE FLAME DESCRIPTING FUNCTION OF A RADIAL CROSS-JET FLOW DIFFUSION FLAME WITH MODAL DECOMPOSITION
#302	T05 SS01	ACHIEVING VIBRATION ISOLATION IN PLATES EMBEDDED WITH REPEATING PERIODIC CAVITIES
#303	T03 RS01	EXPERIMENTAL STUDIES ON SURFACE PRESSURE SPECTRAL CHARACTERISTICS OF WALL JETS
#304	T14 SS03	STUDY OF A PASSIVE AUTOMOTIVE SUSPENSION USING AN INERTER DEVICE
#305	T07 RS04	PREDICTING THE VIBRATION CHARACTERISTICS OF DEFECTIVE BALL BEARING UNDER DRY AND LUBRICATED CONDITIONS
#306	T01 SS01	MODELLING OF DTH DRILLING CYCLE COMBINING BOTH AXIAL MOTION AND ROTATION.
#307	T08 SS03	THE SOUND ABSORPTION PERFORMANCE OF A HYBRID ACOUSTIC STRUCTURE UNDER DIFFERENT HYDROSTATIC PRESSURES
#308	T07 RS04	INVESTIGATION ON THE NONLINEAR DYNAMIC BEHAVIORS OF HIGH-SPEED WATER LUBRICATED BEARING-ROTOR SYSTEM
#309	T01 SS01	INVESTIGATION OF ACOUSTIC PERFORMANCE OF ACOUSTIC VENTS IN INSERT EARPHONES
#310	T07 RS04	INFLUENCE OF PROPELLER CYCLOTRON EFFECT ON BENDING-TORSIONAL COUPLED VIBRATION OF TRANSMISSION SHAFTING
#311	T08 SS03	BROADBAND SOUND ATTENUATION WITH SONIC BLACK HOLES
#312	T11 SS01	A PILOT STUDY ON CHINESE SPEECH INTELLIGIBILITY IN TWO NURSING HOMES
#313	T10 RS02	RESEARCH ON VIBRATION DIAGNOSIS METHOD OF VALVE LEAKAGE FOR MARINE DIESEL ENGINE
#314	T02 RS03	SOUND ISOLATION VIA TEMPORAL MODULATION MATERIAL BASED ON PIEZOELECTRIC ELEMENTS
#315	T08 SS01	PRELIMINARY STUDY ON VIBRATION CHARACTERISTIC FOR A NONLINEAR SYSTEM
#316	T03 RS01	DETERMINATION OF ACOUSTIC IMPEDANCE OF PERFORATED PLATES WITH GRAZING FLOW BY USING FREQUENCY-DOMAIN LINEARIZED NAVIER – STOKES METHOD
#317	T08 SS03	VALIDATION OF ANALYTIC CONVECTIVE CORRECTIONS FOR METACONTINUA IN THE AEROACOUSTIC SPACETIME

#318	T06 SS03	ANALYTICAL CALCULATION OF NO-LOAD ELECTROMAGNETIC FORCE IN PERMANENT MAGNET SYNCHRONOUS MOTOR WITH ROTOR ECCENTRICITY
#319	T02 RS01	EFFECT DUT TO MONOPOLE ASSUMPTION OF SPEAKER IN COMPACT HYBRID NOISE CONTROL SYSTEM USING THEORETICAL CONTROL FILTER
#320	T08 SS02	ANALYSIS OF NONLINEAR MEMBRANE SOUND ABSORBERS BASED ON COMPOUND AVERAGE METHOD
#321	T06 SS04	CAVITATION CHARACTERISTICS AND SUPPRESSION OF PILOT STAGE TWO-DIMENSIONAL VALVE
#322	T10 RS02	A NOVEL TECHNIQUE FOR TRANSMISSION PATH RESTORING TO NON-STATIONRIES SIGNALS
#323	T03 SS03	EFFECT OF SHAPE OF HELMHOLTZ RESONATOR ON SUPPRESSION OF THERMO-ACOUSTIC INSTABILITY
#324	T10 RS02	MODEL OF THE DECISION-MAKING SYSTEM FOR ASSESSMENT OF THE STATE OF TECHNICAL OBJECTS
#325	T03 SS04	DESIGN AND ANALYSIS OF A NOVEL EDDY CURRENT DAMPER
#326	T04 RS02	INFLUENCE OF ENVIRONMENTAL PERCEPTION ON ACOUSTIC ENVIRONMENT EVALUATION AND DESIGN COUNTERMEASURES IN RESIDENTIAL BLOCKS
#327	T01 SS02	Design and Simulation of Porous Resonant Photoacoustic Chambers
#328	T07 RS05	EFFECT OF INTERFACE LAYER ON MECHANICAL PROPERTIES OF SIC/TC4 COMPOSITES
#329	T07 RS05	STATIC STRENGTH DESIGN AND ANALYSIS OF FIBER REINFORCED COMPOSITES LOW PRESSURE TURBINE SHAFT
#330	T07 RS02	RESEARCH ON PARALLEL POWER CONFIGURATION FOR HYBRID PROPULSION SYSTEM: THEORY AND EXPERIMENT BASED ON DYNAMICS
#331	T12 RS01	A PROPOSED DEFINITION OF CLUTTER IN THE CONTEXT OF PASSIVE SONAR
#332	T02 RS01	ON-LINE MULTIPLE FREQUENCY ESTIMATION IN A CONTROLLED DUFFING NONLINEAR VIBRATING MECHANICAL SYSTEM
#333	T14 SS01	DESIGN AND PERFORMANCE STUDY OF NOISE REDUCING PAVEMENT BY CONSIDERING TRAVEL LANE DIFFERENCES
#334	T12 RS01	AN EFFICIENT PARALLEL METHOD OF THE UNDERWATER BEAM TRACING MODEL BELLHOP3D
#335	T07 RS02	IDENTIFICATION OF DYNAMIC CHARACTERISTICS OF AN AUTO-RICKSHAW ENGINE MOUNT
#336	T02 RS01	ON-LINE ALGEBRAIC DISTURBANCE ESTIMATION FOR A QUADROTOR UAV
#337	T03 SS01	calculation and analysis of fluid-induced sound field in rectangular cavity pipe based on acoustic analogy
#338	T14 SS02	ENVIRONMENTAL VIBRATION INDUCED BY METRO TRAIN DECELARATED OPERATION IN LARGE-SCALED INTEGRATED TRANSPORTATION HUB
#339	T01 SS04	TRANSMISSIBILITY ANALYSIS OF A MAGNETO-RHEOLOGICAL DAMPER
#340	T07 RS03	VIBRATION PREDICTION OF A STRUCTURE AFTER STIFFENING
#341	T14 SS02	EXPERIMENTAL STUDY OF THE RELATIONSHIP BETWEEN GROUND VIBRATION AND THE TRAIN SPEED OF CRH SUBWAY
#342	T03 SS06	ON THE DYNAMICS AND STABILITY OF DIESEL COMBUSTION WITH A DOUBLE SWIRL BURNER
#343	T02 RS01	THE INFLUENCE OF SANDWICH PLATE PARAMETERS ON THE EFFICIENCY OF ACTIVE DAMPING OF ITS NON-STATIONARY VIBRATIONS
#344	T10 RS02	THE EFFECT OF RAIDAL INTERNAL CLEARNCE ON CYLINDIRAL ROLLER BEARING VIBRATION

#345	T07 RS03	VIBROACOUSTIC SIMILITUDE LAWS FOR FLUID-LOADED PLATES EXCITED BY POINT FORCES
#346	T10 RS01	UNSUPERVISED MACHINE LEARNING ALGORITHMS FOR CLUSTERING ACOUSTIC EMISSION FEATURES IN CHARACTERIZING OSTEOARTHRITIC KNEES
#347	T07 RS05	STRUCTURAL MECHANICAL PROPERTIES CALCULATION AND OPTIMIZATION DESIGN OF CONTINUOUS FIBER REINFORCED METAL MATRIX COMPOSITE TURBOSHAFT
#348	T06 SS02	EXAMPLE OF NUMERICAL MODEL OF THE 3D ANTIVIBRATION STRUCTURE
#349	T14 SS02	DETERMINATION OF SUBSOIL DYNAMIC CHARACTERISTICS BY WAVE SPECTRAL ANALYSIS
#350	T14 SS02	STUDY ON VIBRATION RESPONSE AND CONTROL MEASURES OF GAS EQUIPMENT CAUSED BY SUBWAY TRAIN LOAD
#351	T01 RS01	AN ACOUSTIC HAAR FEATURE EXTRACTION METHOD FOR UNDERWATER TARGET RECOGNITON
#352	T04 SS04	DEVELOPMENT OF PSYCHOACOUSTICS PERCEPTION SCALE (PPS) FOR SOUNDSCAPE EVALUATION OF ENVIRONMENTAL NOISE
#353	T11 RS02	ASSESSMENT OF THE MULTIDIMENSIONAL PSYCHOLOGICAL IMPACTS FROM THE NOISE IN AIR-CONDITIONING BUILDING ENVIRONMENTS
#354	T12 SS02	INVESTIGATION ON PROPELLER EXCITING CHARACTERISTICS UNDER OBLIQUE FLOW AND SHAFTING LATERAL VIBRATION CONDITIONS
#355	T03 SS01	EQUIVALENT NUMERICAL CALCULATION METHOD IN SPACECRAFT SATELLITE NOISE AND VIBRATION ANALYSIS
#356	T03 SS01	THE MODEL MODIFICATION FOR EXPLOSION SEPARATION DEVICE IN SPACECRAFT BASED ON RESPONSE SURFACE METHOD
#357	T03 SS05	AERODYNAMIC NOISE CONTROL OF A BLUNT TRAILING EDGE BY UNIFORM AIR BLOWING
#358	T01 RS01	THE SOUND FIELD RECONSTRUCTION OF PLATE USING COMPRESSED SINGULAR VALUE DECOMPOSITION EQUIVALENT SOURCE METHOD COMBINED WITH GENERALIZED INVERSE OF MATRIX
#359	T06 SS02	ANALYSIS OF A POTENTIAL USE OF THERMOELECTRIC MODULES IN AN ANTI-VIBRATION GLOVE
#360	T02 RS01	RESEARCH ON THE INFLUENCES OF THE ELASTICITY OF PIPE WALL AND BAFFLE ON THE ACTIVE CONTROL OF LIQUID-FILLED PIPELINE
#361	T06 SS03	ASSESSMENT OF NOISE ANNOYANCE IN WORKPLACES LOCATED NEAR WIND FARMS
#362	T07 RS03	NONLINEAR VIBRO-ACOUSTIC ANALYSIS OF A TWO-DIMENSIONAL HYPERELASTIC STRUCTURE IMMERSED IN INFINITE FLUID
#363	T14 RS01	MODELLING CHANGES IN RAILWAY VIBRATION DUE TO DIFFERENTIAL SETTLEMENT
#364	T14 SS02	THE EFFECT OF SOIL IMPROVEMENT AND AUXILIARY RAILS ON VIBRATIONS AT RAILWAY TRACK TRANSITION ZONES
#365	T01 SS02	A TRANSFER STANDARD ACCELEROMETER
#366	T07 RS02	A HYBRID OF THE DYNAMIC MODEL AND GANS TO CLASSIFY GEAR MESHING FAULTS IN RV REDUCER SYSTEMS
#367	T08 SS03	SOUND INSULATION OF MEMBRANE-TYPE ACOUSTIC METAMATERIALS WITH TUNABLE FREQUENCY
#368	T10 RS04	NOISE SUPPRESSION FOR SPEECH SIGNAL BASED ON BAYESIAN ESTIMATION BY APPLYING FUZZY PROBABILITY TO BONE-CONDUCTED SPEECH
#369	T10 RS04	DUAL-PATH TRANSFORMER PLUS FOR MULTI-SPEAKER SPEECH SEPARATION

#370	T02 SS02	SIGNAL FEATURE EXTRACTION METHOD BASED ON 1D CONVOLUTIONAL NEURAL NETWORK
#371	T02 SS01	PLACEMENT OPTIMIZATION OF HYBRID MOUNTING SYSTEM ON A PLATE STRUCTURE
#372	T08 SS04	CHARACTERISATION OF NANOFIBERS FOR ENHANCED ABSORPTION OF POROUS MEDIA
#373	T01 SS01	SOUND FIELD PREDICTION TECHNOLOGY BASED ON EQUIVALENT SOURCE METHOD
#374	T14 SS01	PROJECT STEER: THE EFFECT OF UNCERTAINTIES IN DETERMINING THE EU TYRE NOISE LABEL
#375	T05 SS04	TRANSFER PROPERTIES OF PERFORATES UNDER HIGH LEVEL ACOUSTIC EXCITATION
#376	T07 RS02	NONLINEAR DYNAMICS OF SPIRAL BEVEL GEAR FOR HELI- COPTER TRANSMISSION IN THE PRESENCE OF AXIAL AND RADIAL MISALIGNMENTS
#377	T05 RS02	NUMERICAL STUDY OF ACOUSTIC HOLOGRAMS AND PARTICLE AGGLOMERATION
#378	T01 RS01	ACOUSTIC IMPEDANCE MEASUREMENTS USING AN ADVANCED GRAZING FLOW TUBE FACILITY
#379	T07 RS02	FLUID STRUCTURE INTERACTION OF NON-NEWTONIAN FLUIDS AND CIRCULAR CYLINDRICAL SHELL
#380	T03 SS06	COMPARISON OF NOISE OF FANS FOR DIRECT-DRIVEN AND GEARED TURBOFAN
#381	T08 SS01	INVERSE METHOD TO OBTAIN THE LOSS FACTOR OF VISCOELASTIC SHEETS
#382	T03 SS06	NUMERICAL INVESTIGATION OF AXIAL SPACING INFLUENCE ON AERODYNAMIC AND ACOUSTIC CHARACTERISTICS OF THE MODEL ULTRA HIGH BYPASS RATIO COUNTER-ROTATING FAN
#383	T03 SS05	STUDY ON THE NOISE REDUCTION MECHANISM OF PROPELLERS WITH BIONIC DESIGNS
#384	T07 RS01	A REALISTIC DYNAMIC MODEL FOR HELICAL GEAR
#385	T12 SS05	ACOUSTIC CAMERA SHIP NOISE MEASUREMENTS DURING DOCKING OPERATIONS: A CASE STUDY IN GENOA
#386	T10 RS02	WAVELET ANALYSIS FEATURE EXTRACTION OF MICROPHONE ARRAY SPEECH SIGNAL AND NEURAL NETWORK FAULT PREDICTION
#387	T10 RS02	RESEARCH ON FEATURE EXTRACTION OF DIESEL ENGINE BASED ON ACOUSTIC ARRAY
#388	T10 SS02	SIMULTANEOUS ESTIMATION METHOD OF SOUND AND VIBRATION BY USING BAYES' THEOREM BASED ON SOUND OBSERVATION GENERATING FROM A MACHINE UNDER BACKGROUND NOISE
#389	T07 RS03	DAMAGE ASSESSMENT FOR TRUSS STRUCTURES WITH MASS VARIATIONS USING MODAL KINETIC ENERGY CHANGE
#390	T09 RS01	ADAPTIVE CORRELATION FILTER FOR ERP COMPONENTS ASSOCIATED WITH SELECTIVE ATTENTION UNDER MEANINGFUL OR MEANINGLESS NOISE
#391	T03 SS01	APPLICATION OF PASSIVE CONSTRAINED VISCOELASTIC LAYER IN PLATES WITH ACOUSTIC BLACK HOLES
#392	T03 RS01	EXPERIMENTAL INVESTIGATION OF THE BOUNDARY-LAYER TRASNSITION ON THE ROTOR BLADE SURFACE AND ITS INFFLUENCE ON THE NOISE
#393	T14 RS01	ADDRESSING CHALLENGES IN MEASURING RAIL ROUGHNESS USING AXLE-BOX ACCELEROMETERS ON TRAINS
#394	T07 RS02	MODELLING AND SIMULATION FOR EVALUATING VIBRATION CONTROL STRATEGIES IN MILLING
#395	T02 RS01	RESEARCH ON INFLUENCE FACTORS OF ACTIVE NOISE CONTROL IN AIR PIPES WITH STRONG TURBULENT PRESSURE FLUCTUATIONS

#396	T11 RS01	A DISCUSSION ON CORRELATION BETWEEN CLARITY AND REVERBERATION TIME
#397	T10 RS04	APPROXIMATING HEAD-RELATED TRANSFER FUNCTIONS IN THE DOMAIN OF COMMON BASIS FUNCTIONS
#398	T05 SS01	BROAD BANDGAP OF FRACTAL META-STRUCTURES
#399	T07 RS03	DYNAMIC ANALYSIS OF SPUR GEARS WITH ECCENTRICITY
#400	T01 RS01	A REINFORCEMENT LEARNING ENVIRONMENT FOR OPTIMAL EFFICIENCY DETECTION OF UNDERWATER EQUIPMENT
#401	T08 SS01	STUDY ON MULTI-ORDER TUBE-CAVITY COUPLING RESONANCE SOUND ABSORPTION CHARACTERISTICS OF PERFORATED PANEL RESONATOR WITH TUBE BUNDLES
#402	T06 SS01	EXPERIMENTAL RESEARCH ON VIBRATION CHARACTERISTICS OF MOTOR WATER COOLING PIPELINE
#403	T10 RS02	META-LEARNING FOR GENERALIZED COMPOUND FAULT DIAGNOSIS
#404	T02 SS03	VIBRATION CONTROL OF A PIEZOELECTRIC METAMATERIAL SHELL SHUNTED WITH HIGH-ORDER RESONANT CIRCUITS
#405	T02 SS03	SOUND INSULATION CHARACTERISTICS OF A DIGITALLY PROGRAMMABLE PIEZOELECTRIC ACOUSTIC METASURFACE
#406	T14 RS01	SEMI-ANALYTICAL STUDY OF TRAIN INDUCED GROUND BORNE-VIBRATIONS
#407	T07 RS05	DYNAMIC PROPERTIES OF SCREW-BOLTS CONNECTIONS LOOSENING
#408	T07 SS04	DEPRECIATION OF VIBRATION-SENSITIVE ELEMENTS OF WHEELED VEHICLES
#409	T10 RS04	PRODUCT QUALITY PREDICTION USING VIBRATION SIGNALS IN PULSED LASER CUTTING
#410	T06 SS06	COMPUTATIONAL ASSESSMENTS FOR VIBRATORY COMPACTION SIMULATION - A SHORT REVIEW
#411	T06 SS06	METHODS BASED ON DYNAMIC TESTS FOR ESTIMATION OF THE ROAD LAYERS COMPACTION DEGREE
#412	T07 RS03	TRANSVERSE VIBRATION OF ORTHOTROPIC PLATE WITH A COLLECTION OF CUTOUTS AND INCLUSIONS OF ANY CONFIGURATION TAKING INTO ACCOUNT ARBITRARY DISTRIBUTED LOAD ON THE PLATE SURFACE
#413	T08 SS01	A SURVEY TO BIO-COMPOSITES BASED ON RECYCLED CELLULOSE FIBERS FOR SOUNDPROOFING APPLICATIONS
#414	T08 SS01	COMPUTATIONAL ASSESSMENTS ON POROACOUSTICS OF CELLULOSE FIBERS BASED COMPOSITES
#415	T07 RS03	INVESTIGATIONS ON STRUCTURAL VIBRATIONS DUE TO THE TRANSITORY REGIMES OF HIGH SPEED BOATS
#416	T07 RS03	PRACTICAL ASPECTS FOR IDENTIFICATION AND CHARACTERIZATION OF LUMPED MASS DYNAMIC SYSTEMS
#417	T07 RS02	NONLINEAR DYNAMIC ANALYSIS OF AUXETIC GFRP COMPOSITE STRUCTURES
#418	T07 RS02	NON-LINEAR VIBRATIONAL ACTUATION IN SOFT CONVEX TAPERED DIELECTRIC ELASTOMER
#419	T08 SS03	COMPLEX WAVENUMBER ANALYSIS OF FLEXURAL WAVES IN PLATE STRIP WITH PERIODIC ACOUSTIC BLACK HOLES
#420	T10 RS02	IDENTIFICATION OF A TURBINE ROTOR UNBALANCE USING A HYBRID APPROACH
#421	T08 SS01	A SUB-STRUCTURING APPROACH FOR ANALYZING THE ACOUSTIC PERFORMANCES OF A BILATERALLY COATED STEEL PLATE IN WATER
#423	T03 SS05	AN AEROACOUSTIC INVESTIGATION OF AN AEROFOIL EQUIPPED WITH A FLEXIBLE TRAILING EDGE

#424	T07 RS03	IDENTIFICATION OF THE DISPERSION CURVES AND THE DAMPING LOSS FACTOR USING GREEN'S FUNCTION-BASED MODEL OF NON-ISOTROPIC STRUCTURES
#425	T07 RS03	GEOMETRICALLY NONLINEAR VIBRATION ANALYSIS OF A MESHLESS VARIABLE SECTION BEAM
#426	T12 SS05	ASSESSING PORT NOISE: THE ANCHOR LIFE APPROACH
#427	T10 RS04	RESEARCH AND PRACTICE IN AQUACULTURE SAFETY MONITORING BASED ON MULTI-SOURCE INFORMATION FUSION
#428	T08 SS01	AN ACOUSTIC COMPOSITE SANDWICH STRUCTURE DESIGN USING PIEZOELECTRIC SHUNTING CIRCUITS
#429	T03 SS03	FINITE-AMPLITUDE SATURATION OF SELF-SUSTAINED OSCILLATIONS IN A STANDING WAVE THERMOACOUSTIC ENGINE
#431	T14 SS01	INSERTION LOSS OF FULLY ENCLOSED SOUND BARRIERS IN URBAN CANYONS IN HIGH-RISE CITIES
#432	T08 SS01	SOUND DIFFUSION OF MICRO-PERFORATED PANEL ABSORBERS WITH PARALLEL-ARRANGED SUB-CAVITIES: EXPERIMENTS
#433	T08 SS01	DESIGN AND SOUND INSULATION OPTIMIZATION OF A COMPOSITE STEEL PLATE WITH CONSTRAINED LAYERED DAMPING FOR ACOUSTIC ENCLOSURES
#434	T05 SS05	MEASUREMENT OF THE LEAK FLOW RATE IN VALVES BY ACOUSTIC EMISSION AND PRESSURE DECAY
#435	T06 SS01	ACOUSTICAL ROLE OF EAR CANAL IN EXPOSURE TO THE TYPICAL OCCUPATIONAL NOISE LEVELS
#436	T02 RS01	EXPERIMENTAL STUDY ON THE ACTIVE-PASSIVE APPROACH OF VIBRATION OF SHIP PROPULSION SHAFT SYSTEM
#437	T03 RS01	TURBULENCE DISTORTION EFFECTS FOR LEADING-EDGE NOISE PREDICTION
#438	T10 RS01	RESEARCH ON BEAMFORMING SOUND SOURCE IDENTIFICATION AND LOW-FREQUENCY EXPANSION WITH NON-SYNCHRONOUS MEASUREMENTS
#439	T07 RS06	STOCHASTIC FREQUENCY RESPONSE OF 3D BRAIDED TWISTED PLATES USING SURROGATE MODELS AND 3D FINITE ELEMENT METHOD
#440	T07 RS03	RESEARCH ON THE INFLUENCE OF MAIN BEARING RESTRAINT MODE ON DIESEL ENGINE VIBRATION
#441	T03 SS03	THE OPTIMAL DESIGN OF COMBUSTION CHAMBER ON DIRECT-INJECTION DIESEL ENGINE
#442	T07 RS06	EFFECT OF EMBEDDED METAL ON STATIC CHARACTERISTICS OF RUBBER ISOLATOR
#443	T07 RS03	THE VIBRATION ENERGY TRANSFER CHARACTERISTIC OF PROPELLER-SHAFT-SHELL COUPLED STRUCTURES
#444	T13 SS05	A PRELIMINARY STUDY ON THE SUBJECTIVE EVALUATION OF THE RECORDING QUALITY OF MOTION CAMERAS
#445	T07 RS03	PASSIVE PIEZOELECTRIC DAMPING FOR VIBRATION MITIGATION OF BLADES
#446	T08 SS03	AN ACOUSTIC BIONIC METASURFACE BASED ON PLANT SURFACE MICROSTRUCTURES
#447	T10 RS04	PEDESTRIAN DETECTION USING AN ACTIVE MEMS MICROPHONE ARRAY ASSOCIATED TO AN AUTONOMOUS EMERGENCY BRAKING SYSTEM
#448	T12 SS04	MODAL RESPONSE OF CABINS AT LOW FREQUENCIES IN A RO-PAX VESSEL
#449	T04 RS01	A STUDY ON THE EFFECT OF ENVIRONMENTAL NOISE ON THE LEARNING ABILITY OF MIDDLE AND HIGH SCHOOL STUDENTS

#450	T11 SS01	MEASUREMENT OF THE REVERBERATION TIME IN ROOM ACOUSTICS USING AN OMNIDIRECTIONAL PARAMETRIC LOUDSPEAKER AND EXPONENTIAL SINE SWEEPS
#451	T08 SS03	NUMERICAL OPTIMIZATION OF A MULTILAYER SOUND BARRIER BASED ON EMBEDDED HELMHOLTZ RESONATORS
#452	T08 SS03	BROADBAND SOUND ABSORPTION BY A NOVEL POROUS METAMATERIAL STRUCTURE
#453	T07 RS03	LOCALIZATION OF MULTIPLE VIBRATION SOURCES USING MODIFIED MUSIC ALGORITHM
#454	T05 SS01	PROPAGATION OF PRESSURE PULSES IN RECTANGULAR ENCLOSURES USING THE LATTICE BOLTZMANN METHOD
#455	T10 RS02	USING ADAPTIVE FILTERS AND ARTIFICIAL SIGNAL FOR SPINDLE BEARING CONDITION DIAGNOSTICS
#456	T08 SS03	FAST INVERSE DESIGN OF MULTIPLE FUNCTIONAL ACOUSTIC METASURFACE BASED ON DEEP LEARNING TECHNIQUES
#457	T08 SS03	ACOUSTIC EVANESCENT AMPLIFICATION ENABLES BROADBAND HOLEY-STRUCTURED METALENS WITH ENHANCED DEEP-SUBWAVELENGTH IMAGING
#458	T01 RS01	A DOUBLE CIRCULAR PLANAR ARRAY FOCUSING A POINT-LIKE SOURCE BASED ON ARTIFICIAL ITERATIVE PHASE CONJUGATED PROCESSING
#459	T01 RS01	THREE KINDS OF CIRCULAR PLANER ARRAY FOCUSING A POINT-LIKE SOURCE USING ARTIFICIAL ITERATIVE PHASE CONJUGATED PROCESSING
#460	T07 RS02	DESIGN AND ANALYSIS OF A NOVEL PNEUMATIC NONLINEAR VIBRATION ISOLATOR
#461	T03 SS06	APPLICATION OF PROPER ORTHOGONAL DECOMPOSITION IN THE DEEP NEURAL NETWORKS BASED JET TURBULENCE MIXING NOISE PREDICTION
#462	T07 RS03	VIBRATION ANALYSIS OF PROPELLER SHAFT SYSTEM CAUSED BY ICE LOAD
#464	T04 RS01	AN OUTLET COMPOUND MUFFLER WITH WIDEBAND NOISE ATTENUATION FOR AN OUTDOOR AIR PURIFIER
#465	T10 RS01	TIME DIFFERENCE OF ARRIVAL ESTIMATION USING FOURTH-ORDER CUMULANT IN SPATIALLY CORRELATED NOISE
#466	T03 SS05	NUMERICAL ANALYSIS OF THE AERODYNAMIC NOISE CHARACTERISTICS OF A THREE-ELEMENT AIRFOIL
#467	T04 SS01	PRELIMINARY ASSESSMENT OF A COST-EFFECTIVE HEADPHONE CALIBRATION PROCEDURE FOR SOUNDSCAPE EVALUATIONS
#468	T11 SS01	REVERBERATION ROBUST TIME DELAY ESTIMATION BASED ON MULTICHANNEL MARGINAL MUTUAL INFORMATION
#469	T14 SS03	INFLUENCING FACTORS ANALYSIS ON VIBRATION CHARACTERISTICS OF THE SEATED HUMAN BODY FOR INTELLIGENT VEHICLES
#470	T07 RS01	A STUDY OF THE INFLUENCE OF CONSTRUCTIVE AND TECHNOLOGICAL FACTORS ON MODAL PARAMETERS OF A HOLLOW METAL FAN BLADE FOR A GAS TURBINE ENGINE
#471	T10 RS01	OPTIMIZATION OF NONLINEAR BEAMFORMER WITH LONG SHORT-TERM MEMORY
#472	T12 RS01	BOTTOM REVERBERATION SUPPRESSION USING DELAY-DOPPLER DECONVOLUTION FOR THE DETECTION OF LOW-SPEED SMALL TARGETS IN VERY SHALLOW WATER
#473	T07 RS06	THE OPTIMIZATION DESIGN OF THE REACTOR COOLANT SYSTEM BASED ON OPTIMUS
#474	T05 RS01	DEVELOPMENT OF A KALMAN FILTER BASED SIGNAL ENHANCEMENT METHOD FOR A LASER-GENERATED ULTRASONIC WAVE

#475	T11 SS01	A STUDY OF ACOUSTICAL ARRANGEMENTS IN RELATION TO SUBJECTIVE PREFERENCE OF TRADITIONAL OPERA PERFORMER ON THE STAGE – EXAMPLE OF NAN-GUAN MELODY
#476	T08 SS03	HIGHER-ORDER TOPOLOGICAL STATES IN LOCALLY RESONANT ELASTIC METAMATERIALS
#477	T07 RS02	MODELING AND ANALYSIS OF FORCE-CLOSURE PROPERTIES FOR THE FLEXIBLE SPACE MANIPULATOR DURING DOCKING AND CAPTURING PROCESS
#478	T04 RS01	A NEW CULTURE FOR QUIETENING RENOVATION NOISE
#479	T05 RS01	REAL TIME MONITORING OF ELECTRONIC POWER BOX USING WAVEGUIDE-BASED ULTRASONIC TEMPERATURE AND ACOUSTIC EMISSION SENSORS
#480	T11 SS01	CONTEMPORARY SPORTS ARENA ROOM ACOUSTICS DESIGN
#481	T06 SS01	PASSIVE HEARING PROTECTOR AND EQUIPPED WITH ELECTRONIC CIRCUITS
#482	T01 RS01	EXPERIMENTAL TEST RIG FOR ACOUSTIC LEAK LOCATION IN WATER DISTRIBUTION SYSTEMS
#483	T08 SS03	INVERSE DESIGN OF LOCALLY RESONANT TRUSS-LATTICE ACOUSTIC METAMATERIALS USING GRAPH MACHINE LEARNING
#484	T10 RS02	A COMPARATIVE STUDY OF TIME-FREQUENCY ANALYSIS FOR THE APPLICATION OF FAULT DIAGNOSIS SYSTEM
#485	T14 SS02	MONITORING OF VIBRATIONS ON EARTHQUAKE-DAMAGED MASONRY STRUCTURES INDUCED BY TRAM TRAFFIC
#486	T02 RS01	EXPERIMENTAL TESTS OF A MULTICHANNEL ACTIVE NOISE CONTROL SYSTEM FOR THE CANCELLATION OF ENGINE NOISE APPLIED TO THE CABIN OF A TRACTOR
#487	T10 RS04	Linear weighted predictive beamforming method based on Microphone array
#488	T05 RS02	Efficient Perfectly Matched Layer for heterogeneous potential medium with presence of non-uniform flow
#489	T07 RS02	AEROELASTIC SCALING LAWS AND COMPENSATION FOR ACTIVE FLUTTER SUPPRESSION SYSTEM
#490	T12 SS04	ACOUSTIC CLASSIFICATION SCHEMES FOR INDOOR ENVIRONMENTS: COMPARISON BETWEEN BUILDING AND BOAT SECTORS.
#491	T10 RS01	A LOW-COMPLEXITY SPEECH DEREVERBERATION METHOD BASED ON KRONECKER PRODUCT DECOMPOSITION
#492	T13 SS04	PHYSICAL MODELING OF WOODWIND ANCIENT GREEK MUSICAL INSTRUMENTS: THE CASE OF PLAGIAULOS
#493	T07 SS04	A CLAMPED PERIODIC SEISMIC METAMATERIAL FOR SHIELDING OF LOW FREQUENCY VIBRATIONS
#494	T06 SS01	EARCANAL MORPHOLOGY AND ITS RELATIONS TO SOME ATTRIBUTES OF EARPLUGS COMFORT
#495	T10 RS02	SOUND SIGNAL BASED GEAR FAULT DIAGNOSIS UNDER VARYING WORKING CONDITIONS
#496	T03 RS02	ARTIFICIAL NEURAL NETWORKS METAMODELS TAILORED TO JET INDUCED WALL PRESSURE FLUCTUATIONS
#497	T12 SS05	EVALUATION OF THE SEASONALITY OF NOISE IN A PORT TOWN
#498	T12 SS04	ACOUSTIC COMFORT IN YACHTS: MEASUREMENTS WITH ACOUSTIC CAMERA.
#499	T09 RS01	HEAD-RELATED TRANSFER FUNCTION INDIVIDUALIZATION BASED ON SPARSE REPRESENTATION-BASED CLASSIFICATION
#500	T05 SS05	ACOUSTIC EMISSION SENSING OF MATERIALS
#501	T03 SS01	ACOUSTIC ANALYSIS OF A LIQUID ROCKET ENGINE: APPROACHES FOR TREATMENT OF NOZZLE FLOW

#502	T07 RS02	THEORETICAL MODELING AND ANALYSIS OF A BIONIC HORSE LEG QUASI-ZERO-STIFFNESS VIBRATION ISOLA-TION PLATFORM
#503	T02 RS01	FEEDFORWARD ACTIVE NOISE CONTROL SYSTEM WITH DEEP SOURCE SEPARATION NETWORK
#504	T02 RS01	MULTICHANNEL FEEDFORWARD ACTIVE NOISE CONTROL SYSTEM WITH DEEP SOURCE SEPARATION NETWORK
#505	T10 RS04	CONSTRUCTION OF SPARSE PLANAR ANTENNA ARRAYS USING MONTE CARLO METHOD
#507	T05 SS05	SIMULATION STUDY TOWARDS PASSIVE STRUCTURAL HEALTH MONITORING USING AMBIENT NOISE
#508	T02 RS01	WIRELESS IN-EAR MICROPHONE FOR ACTIVE NOISE CONTROL IN A ROOM
#509	T11 RS01	LABORATORY MEASUREMENTS ON REPLACEABLE JACK-UP SYSTEMS
#510	T11 RS01	CONSTRAINED LAYER DAMPING CONCEPT USED ON ISOLATED GYM FLOORS. BETTER THAN CONCRETE?
#511	T01 RS03	ISO 9614-2 APPLIED TO AN EXTERNAL GEAR PUMP: EFFECT OF GEOMETRIC MEASUREMENT PARAMETERS ON THE UNCERTAINTY
#512	T12 SS04	EVALUATION OF MEASUREMENT UNCERTAINTIES IN THE ASSESSMENT OF THE NOISE IMPACT OF SHIPS
#513	T11 SS02	SIMPLIFIED EVALUATION OF THE CLARITY INDEX IN UNIVERSITY CLASSROOMS: OVERVIEW OF EXISTING METHODS AND PROPOSAL OF A NEW METHOD
#514	T03 SS02	IMPLEMENTATION OF A DUAL SURFACE REGULARIZATION TECHNIQUE IN ACA-BASED BEM SOLVER
#515	T01 RS02	APPLICATION OF DOWNHOLE MEASUREMENT TOOLS TO IDENTIFY MUD LOSS
#516	T07 RS02	OPTIMIZATION DESIGN OF VERTICAL AND FAST DRILLING BHA FOR ULTRADEEP WELL
#517	T02 RS01	REASEARCH ON THE MECHANISM OF LATREAL VIBRATION AND BHA DYNAMICS
#518	T05 SS03	ON THE RELATIONSHIP BETWEEN AERODYNAMIC CONVECTION AND ACOUSTIC SPACETIME CURVATURE
#519	T05 SS04	AN ACOUSTIC OPTIMIZATION APPROACH FOR EXHAUST SYSTEMS INCLUDING MULTIFARIOUS DEVICES
#520	T01 RS02	METHODS TO MEASURE THERMAL DEPOLARIZATION EFFECTS IN PIEZOELECTRIC RING ELEMENTS FOR KNOCK SENSORS
#521	T02 RS01	PERCEPTUAL ACTIVE NOISE EQUALIZATION WITH VIRTUAL MICROPHONES
#523	T06 SS03	ULTRASONIC HAPTIC DEVICES – EXPLORATION OF POSSIBILITIES AND THREATS WHILE APPLIED IN WORKSPACE ENVIRONMENTS
#524	T09 RS01	EFFECT OF EARMUFFS SOUND ABSORBERS ON THE PSYCHOACOUSTIC PARAMETERS: ROUGHNESS & FLUCTUATION STRENGTH
#525	T04 RS01	CHANGES IN THE ACOUSTIC SITUATION IN LIMASSOL, CYPRUS, DUE TO THE CORONOVIRUS PANDEMIC
#526	T03 SS02	USE OF REINFORCEMENT LEARNING IN MULTIFIDELITY OPTIMIZATION WITH MULTIPLY-CONNECTED TRUST REGION
#527	T06 SS03	THE SAFER WEBSITE AS A SOURCE OF KNOWLEDGE ON NOISE IN THE WORK ENVIRONMENT AND A TOOL SUPPORTING THE PREVENTION OF NOISE HAZARD
#528	T09 SS02	ECOLOGICAL ASSESSMENT AND REHABILITATION FOR HEARING AID AND COCHLEAR IMPLANT USERS
#529	T03 SS06	CHARACTERIZING COMBUSTION DYNAMICS OF A SWIRL BURNER USING WAVELET TRANSFORM
#530	T07 RS06	RESPONSE MAP OPTIMIZATION FOR A TMD CONNECTED TO A LARGE WIND TURBINE

#532	T05 RS01	INFLUENCE OF THE LIQUID CONDUCTIVITY ON LIQUID/ICE PHASE TRANSITIONS IN PRESENCE OF THE PLATE ACOUSTIC WAVES
#533	T01 RS03	OPTICAL-CAVITY-BASED PRIMARY SOUND STANDARD
#534	T10 RS04	ENGINE-NOISE CANCELLATION TECHNIQUES APPLIED IN VEHICLE-MOUNTED ACOUSTIC ARRAYS WITH BEAMFORMING TECHNIQUES
#535	T06 SS03	A NUMERICAL STUDY OF INDUSTRIAL ACOUSTIC BARRIER WITH LOCAL RESONANT ARCHIMEDEAN SPIRALS
#536	T07 RS06	A PHYSICS-BASED APPROACH FOR IDENTIFIABILITY OF MODEL STRUCTURE UNCERTAINTY DUE TO NEW DYNAMICS
#537	T08 SS01	DESIGN OF SOUND INSULATING SANDWICH STRUCTURES BASED ON MULTIPLE CRITERIA
#538	T07 RS05	ON THE ALGEBRAIC ESTIMATION AND EVALUATION OF CRACKS IN EULER-BERNOULLI BEAMS
#539	T03 RS01	EXPERIMENTAL INVESTIGATION OF THE SOUND SOURCE OF THE CYLINDER FLOW IN THE CRITICAL REGIME
#540	T08 SS01	SOUND INSULATION PROPERTIES OF HANDMADE MULTILAYERED RECYCLED MATERIAL PANELS: AN EXPERIMENTAL AND ANALYTICAL INVESTIGATION
#542	T11 SS01	MICRO-PERFORATION REVISITED
#543	T01 SS01	METHOD OF HIGH PRECISION POINTING CONTROL FOR SPACECRAFT SYSTEM BASED ON THE ACTIVE-PASSIVE INTEGRATED ORTHOGONAL MICRO-VIBRATION ISOLATION PLATFORM
#544	T03 SS01	PERFORMANCE OF ACOUSTIC BLACK HOLES IN A BUILT-UP CYLINDRICAL SHELL
#545	T08 SS03	ACOUSTIC FOCUSING OF AN ACOUSTIC METASURFACE BASED ON SURFACE COUPLING APPROACH
#546	T03 RS01	COMPARATIVE STUDY OF SURFACE INTEGRAL METHODS IN AEROACOUSTIC PREDICTION
#547	T06 SS03	NOISE EXPOSURE IN THE IRISH NEONATAL INTENSIVE CARE SETTING
#548	T11 RS01	TRANSMISSION LOSS OF MICROPERFORATED PANEL IN SIDEBRANCH EXPANSION CHAMBER
#549	T07 SS02	NUMERICAL STUDY OF A QZS BASED SIMULTANEOUS VIBRATION ISOLATION AND VIBRATION ENERGY HARVESTING DEVICE
#550	T07 RS02	A CONSTANT FORCE MECHANISM BASED VIBRATION ISOLATOR FOR LOW FREQEUNCY EXCITATIONS
#551	T07 SS02	NUMERICAL STUDY OF A QZS BASED SIMULTANEOUS VIBRATION ISOLATION AND VIBRATION ENERGY HARVESTING DEVICE
#553	T03 RS01	UNCERTAINTY FACTORS IN PROPELLER AEROACOUSTIC MEASUREMENTS
#554	T01 SS01	DYNAMIC FORCES ESTIMATION OF STRUCTURAL SYSTEMS BY USING A BAYESIAN REGULARIZATION METHOD
#555	T14 SS02	RESEARCH ON HUMAN COMFORT EVALUATION INDICATORS OF ENVIRONMENTAL VIBRATION INDUCED BY URBAN RAIL TRANSIT
#557	T07 RS01	MODAL ANALYSIS OF FIBROUS COMPOSITE PLATES WITH CENTRAL CIRCULAR HOLE
#558	T07 RS03	ANALYTICAL MODELLING FOR VIBRATION ANALYSIS OF PARTIALLY CRACKED S-FGM PLATE
#559	T01 SS01	EXPERIMENTAL STUDY ON VIBRATION TRANSFER PATH OF ASYNCHRONOUS MOTOR
#560	T03 SS02	NUMERICAL STUDY ON THE EFFECTS OF INSTALLATION ANGLE OF BLADE ON DESIRED COMPREHENSIVE PERFORMANCE OF AXIAL FLOW FAN

#561	T08 SS01	ADDITIVELY MANUFACTURED MICROLATTICES FOR SOUND ABSORPTION
#562	T07 RS03	NONLINEAR ANALYSIS OF THE TRACK-BRIDGE INTERACTION EFFECT ON THE DYNAMICS OF A HIGH SPEED RAILWAY BRIDGE
#563	T07 RS03	EFFECTS OF ROTATIONAL CONSTRAINTS ON DYNAMIC RESPONSE OF HIGH-SPEED RAILWAY BRIDGES
#564	T06 SS03	NUMERICAL SIMULATION ON FLOW-INDUCED CHARACTERISTICS OF PODDED PROPULSOR
#565	T12 SS02	NUMERICAL STUDY ON FLOW-INDUCED VIBRATION AND NOISE OF FIN STABILIZER
#566	T01 SS01	EXPERIMENTAL STUDY ON VIBRATION CHARACTERISTICS AND VIBRATION IMPROVEMENT MEASURES OF PERMANENT MAGNET MOTORS
#567	T02 RS01	COUPLING ANALYSIS USING ANSYS AND MATLAB FOR SIMULATION OF ACTIVE CONTROL OF VIBRATION
#568	T04 RS03	VALIDATION AND FORECASTING ACCURACY IN ENVIRONMENTAL NOISE MODELS
#569	T03 SS02	SIMULATION AND EXPERIMENT STUDY OF EXTERIOR WEATHERSTRIP CAVITY-INDUCED WIND NOISE
#570	T12 SS02	FAULT ANALYSIS OF RUDDER PROPELLER BASED ON VIBRATION SIGNAL
#571	T07 RS03	EFFECT OF LINEAR AND NONLINEAR SUPPORTS ON THE DYNAMIC RESPONSE OF RAILWAY BRIDGES
#572	T07 RS06	OPTIMAL TRAJECTORY PLANNING AND SIMPLIFIED TORQUE MODELING FOR DIFFERENT ROBOTS SIZES
#574	KL	Design of Acoustic Metamaterials for Noise Mitigation with Ventilation
#575	KL	Concepts for Frequency Sweep and Efficient Repeated Analysis in the context of Vibroacoustic Optimization and Uncertainty Quantification
#576	KL	Rotor Dynamics in a Multi-Field Environment (Virtual Presentation)
#577	T10 RS02	WAVELET ANALYSIS FEATURE EXTRACTION OF MICROPHONE ARRAY SPEECH SIGNAL AND NEURAL NETWORK FAULT PREDICTION
#578	T06 SS04	EFFICIENCY CRITERION FOR DESIGN SOLUTIONS IN MACHINE VIBROACOUSTICS
#579	T12 RS01	SIMULATION AND VALIDATION OF ACOUSTIC PROPERTIES OF RUBBER UNDER SONOELASTIC EFFECT
#580	T14 SS01	SOCIAL STUDY: ANALYSIS OF THE RESPONSE TO THE ROAD TRAFFIC NOISE AMONG THE URBAN MOROCCAN POPULATION
#581	T03 SS04	TBL INDUCED VIBRO-ACOUSTIC RESPONSE OF AIRCRAFT PANEL INVOLVING CFD WITH ARTIFICIAL INFLOW AND FE-RRM APPROACH
#582	T08 SS01	HIERARCHICAL DESIGN IN MECHANOACOUSTIC METAMATERIALS
#583	T11 RS01	ACOUSTICAL PROPERTIES OF VERMICULITE USED AS MULTILAYERED MATERIALS
#584	T02 RS01	AN EFFICIENT CONTROL OF REACTION WHEEL INDUCED VIBRATION USING WHEEL SPEED INFORMATION
#585	T04 RS02	EVALUATION OF INDUSTRIAL NOISE CONTROL ACTIONS IN THE PRESENCE OF LOW RESIDUAL ENVIRONMENTAL BACKGROUD WITH ACOUSTIC SIMULATIONS
#586	T07 RS02	EFFECTS OF THE BRAKING PERFORMANCE FOR THE SAFETY GEAR ON THE DYNAMIC BEHAVIOR OF THE ELEVATOR TRACTION SYSTEM
#587	T05 RS01	ATOMIZATION OF LIQUID METAL BY HIGH-POWER ULTRASONIC FIELD: PROCESS AND MECHANISMS
#588	T05 RS01	POTENTIAL OF USING OF ULTRASOUND TECHNOLOGY TO SUPPORT RESISTANCE SPOT WELDING OF METAL-POLYMER COMPOSITE

#589	T01 RS02	DETECTION OF THE EXPULSION PHENOMENON WITH USE OF VIBRATION MEASUREMENTS DURING THE SPOT WELDING PROCESS
#590	T05 RS01	TOOL DESIGN AND MECHANICAL CHARACTERISTICS FOR ULTRASONIC VIBRATION SUPPORTED LIQUID-METAL ATOMIZATION
#591	T07 RS03	AMPLITUDE SENSITIVE HYDRAULIC ENGINE MOUNTS
#592	T01 SS01	A METHOD AND EQUIPMENT FOR AUTOMATICALLY DRAWING NOISE DISTRIBUTION MAP IN WORKPLACE
#593	KL	Thermoacoustic Instability: A Complex Systems Perspective
#594	T11 RS01	PERCEPTUAL EVALUATION OF THE ACOUSTICAL QUALITY OF A TRADITIONAL MUSIC PERFORMANCE HALL BASED ON PREFERENCE TESTS
#595	T02 RS01	MULTICHANNEL IMPROVED FXAPM ALGORITHM AGAINST IMPULSIVE NOISE
#596	T04 SS02	INVESTIGATION OF PSYCHOPHYSIOLOGICAL RESPONSES TO SOUNDSCAPES IN A VIRTUAL FOREST ENVIRONMENT
#597	T02 RS01	ACTIVE DAMPING FOR ENHANCED TIME RESOLUTION IN MEASUREMENT WITH NARROWBAND TRANSDUCERS
#598	T03 SS01	STUDY ON MECHANISM AND EFFECT OF PANTOGRAPH AERODYNAMIC NOISE REDUCTION BASED ON AIR CURTAIN NOISE REDUCTION TECHNOLOGY
#599	T01 RS01	A DOUBLE CIRCULAR PLANAR ARRAY FOCUSING A POINT-LIKE SOURCE BASED ON ARTIFICIAL ITERATIVE PHASE CONJUGATED PROCESSING
#600	T01 RS01	THREE KINDS OF CIRCULAR PLANER ARRAY FOCUSING A POINT-LIKE SOURCE USING ARTIFICIAL ITERATIVE PHASE CONJUGATED PROCESSING

附錄 2 研討會分項主題及會議主席

In order to cover the broadest range of high-level technical contributions from all over the world, the Scientific Programme is structured into 14 Theme Areas (T), that include several Structured Sessions and Regular Sessions.

Theme Area T01 Acoustical and vibration measurement and instrumentation

This theme area covers all aspects related to the measurement of sound and vibration. It includes sessions concerning traditional measurement instruments, but also proposals concerning new measurement concepts: new transducers, new mathematical algorithms, new acoustical parameters, or new applications of traditional technologies for multimedia and virtual reality.

Håkansson Lars

Send an email

Within this Theme Area different sessions are already planned.

Others could be proposed by sending an email to the chair of this Theme Area.

Regular Sessions

T01 RS01 - Acoustic imaging and acoustic detection
(Håkansson Lars, Sweden)

T01 RS02 - Measurement techniques and sensors
(Håkansson Lars, Sweden & Triantafillos Koukoulas, Canada)

T01 RS03 - Measurement uncertainty in acoustics
(Triantafillos Koukoulas, Canada)

T01 RS04 - Instrumentation for sound and vibration measurements and analyses
(Claes Hedberg, Sweden)

Structured Sessions

T01 SS01 - Sound and vibration measurements and analysis
(Håkansson Lars, Sweden & Claes Hedberg, Sweden)

T01 SS02 - Measurement techniques and sensors
(Lixue Wu, Canada)

T01 SS03 - Anechoic Chamber Design and Measuremets

T01 SS04 - Vibration testing

Theme Area T02 Active noise and vibration control-mechatronics

The theme includes any concept or device that requires a combination of actuators (loudspeaker, piezoceramic, inertial actuator...), sensors (accelerometer, microphones...), and control units for real-time signal processing. The theme includes active and semi-active, control of sound and vibration, smarts structures, smart earplug, smart headset, mechatronics... Presentations can include conceptual design of system, theoretical development, algorithms design and practical implementations.

Marek Pawelczyk

Send an email

Within this Theme Area different sessions are already planned.

Others could be proposed by sending an email to the chair of this Theme Area.

Regular Sessions

T02 RS01 - Active control of sound and vibration
(Marek Pawelczyk, Poland)

T02 RS02 - Active structural acoustic control
(Marek Pawelczyk, Poland)

T02 RS03 - Semi-active control
(Marek Pawelczyk, Poland)

Structured Sessions

T02 SS01 - Actuators and sensors for active control
(Marek Pawelczyk, Poland)

T02 SS02 - Algorithms for active control
(Marek Pawelczyk, Poland)

T02 SS03 - Active meta-materials
(Marek Pawelczyk, Poland)

Theme Area T03 Aeroacoustics, thermoacoustics, combustion noise, aircraft noise, and vibration

This subject area includes all aspects concerning sound generated by fluid flow, combustion processes or by the interaction of a flow with surfaces, as well as aircraft noise and vibration. Some examples are: the description of source mechanisms or of the propagation in particular situations; jet noise; fan and compressor noise; wind turbines; active or passive control of aerodynamically generated sound and vibration, notably in aircraft, trains, and other vehicles, including space vehicles; analytical and numerical solutions for specific problems.

Ricardo Musafir

Send an email

Within this Theme Area different sessions are already planned.

Others could be proposed by sending an email to the chair of this Theme Area.

Regular Sessions

T03 RS01 - Aeroacoustics
(Ricardo Musafir, Brazil)

T03 RS02 - Aviation noise

Structured Sessions

T03 SS01 - Acoustic simulation, test and control in spacecraft
(Zheng Ling, China & Xiang Shuhong, China)

T03 SS02 - Computational Aeroacoustics

T03 SS03 - Combustion noise and thermoacoustics
(Jim Kok, Netherlands)

T03 SS04 - Aircraft cabin noise and vibration control
(Sven Reimer, Germany)

T03 SS05 - Airfoil/High-Lift Device Noise
(Yu Liu, China)

T03 SS06 - Aircraft Engine Noise
(Jim Kok, Netherlands)

T03 SS07 - Wind turbine noise

Theme Area T04 Environmental and community noise, soundscapes

This theme area covers all aspects of environmental, community noise and soundscape research. These topics include, but are not limited to, environmental noise strategy, the role of sound in urban experience, outdoor noise propagation, community involvement and soundscape assessments.

Gaetano Licitra

Send an email

Kang Jian

Send an email

Within this Theme Area different sessions are already planned.

Others could be proposed by sending an email to the chair of this Theme Area.

Regular Sessions

T04 RS01 - Community and environmental noise
(Linus Yinn Leng Ang, Singapore)

T04 RS02 - Noise impact assessment
(Linus Yinn Leng Ang, Singapore)

T04 RS03 - Noise modelling and mapping
(Linus Yinn Leng Ang, Singapore)

Structured Sessions

T04 SS01 - Soundscape auralization
(Linus Yinn Leng Ang, Singapore)

T04 SS02 - Urban soundscapes
(Linus Yinn Leng Ang, Singapore)

T04 SS04 - Psychoacoustics

T04 SS05 - Bioacoustics

Theme Area T05 Physical acoustics, ultrasound, and wave propagation

All aspects of ultrasonic wave propagation including analytical modelling, numerical modelling, transduction mechanisms, imaging algorithms, quantitative inversion algorithms as well as nonlinear acoustic. This theme is interested in the biomedical, nondestructive testing and structural health monitoring fields of application.

Serge DOS SANTOS

Send an email

Serge Dos Santos

Send an email

Within this Theme Area different sessions are already planned.

Others could be proposed by sending an email to the chair of this Theme Area.

Regular Sessions

T05 RS01 - Ultrasound and Ultrasonic measurements techniques and sensors
(W. S. Gan, Singapore)

T05 RS02 - Physical acoustics
(W. S. Gan, Singapore)

Structured Sessions

T05 SS01 - Wave propagation in heterogenous and architectured media

T05 SS02 - Nonlinear acoustics and vibrations
(Serge DOS SANTOS, France & W. S. Gan, Singapore)

T05 SS03 - Sound propagation in curvilinear spacetime
(W. S. Gan, Singapore & Umberto Lemma,)

T05 SS04 - Duct acoustics

T05 SS05 - Acoustic emission

Theme Area T06 Industrial and occupational noise and vibration

This theme involves hearing loss prevention and protection of workers exposed to occupational noise and vibration. It includes, but is not limited to, the identification of risk arising from noise and vibration at work, the development and improvement of measurement and assessment methods, predictive and modelling methods, hearing protection (measurements, advanced technologies, comfort), hand-arm and whole-body vibration, machinery and factory noise, etc.

Dariusz Pleban

Send an email

Within this Theme Area different sessions are already planned.

Others could be proposed by sending an email to the chair of this Theme Area.

Regular Sessions

T06 RS01 - Noise source identification in the workplace
(Jan Radosz, Poland)

Structured Sessions

T06 SS01 - Hearing protection

(Rafal Mlynski, Poland)

T06 SS02 - Hand-arm and whole-body vibration

(Piotr Kowalski, Poland)

T06 SS03 - Noise and vibration in small, medium and large industries

(Dariusz Pleban, Poland)

T06 SS04 - Advances in machinery noise and vibration control

(eleonora carletti, Italy)

T06 SS05 - Vibration-based Condition Monitoring

(Roger SERRA, France)

T06 SS06 - Machine Tool Vibration and Cutting Dynamics

(Roger SERRA, France)

T06 SS08 - Random vibration fatigue

(Roger SERRA, France)

Theme Area T07 Structural dynamics and nonlinear vibration

This theme area covers all the aspects of experimental and computational methods for the characterization, analysis, design and optimization of nonlinear mechanical systems. These topics include, but are not limited to, emerging methods in mechanical system design, optimal design in the framework of nonlinear dynamics, vibration control and damping of nonlinear systems, stochastic analysis and robust design, recent developments in numerical methods (finite volumes, boundary element methods, octree mesh, isogeometric analysis), artificial intelligence and machine learning in structural dynamics, and rotordynamics.

Evangelos Sapountzakis

Send an email

Within this Theme Area different sessions are already planned.

Others could be proposed by sending an email to the chair of this Theme Area.

Regular Sessions

T07 RS01 - Modal analysis

(Evangelos Sapountzakis, Greece & Konstantinos Kapasakalis, Greece)

T07 RS02 - Vibration and control of nonlinear mechanical systems

(Evangelos Sapountzakis, Greece & Konstantinos Kapasakalis, Greece)

T07 RS03 - Structural acoustics and vibration

(Evangelos Sapountzakis, Greece & Konstantinos Kapasakalis, Greece)

T07 RS04 - Rotordynamics

(Evangelos Sapountzakis, Greece & Konstantinos Kapasakalis, Greece)

T07 RS05 - Fatigue, fracture and joint interfaces

(Konstantinos Kapasakalis, Greece & Evangelos Sapountzakis, Greece)

T07 RS06 - Optimal design and uncertainty quantification

(Konstantinos Kapasakalis, Greece & Evangelos Sapountzakis, Greece)

Structured Sessions

T07 SS01 - Rotordynamics

(Evangelos Sapountzakis, Greece & Konstantinos Kapasakalis, Greece)

T07 SS02 - Vibration Energy Harvesting

(Evangelos Sapountzakis, Greece & Konstantinos Kapasakalis, Greece)

T07 SS03 - Modal analysis in practice

(Evangelos Sapountzakis, Greece & Konstantinos Kapasakalis, Greece)

T07 SS04 - Recent advances in vibration absorption

(Konstantinos Kapasakalis, Greece & Evangelos Sapountzakis, Greece)

Theme Area T08 Materials for noise and vibration control

Jorge Arenas

Send an email

francesco Asdrubali

Materials come in a variety of forms to provide sound absorption, isolation and vibration damping. In the last decades, the use and variety of available materials has increased greatly. Recent advances in material science, manufacturing processes, chemistry, and nanotechnologies are producing significant improvements in the design, production, and performance of specialized materials and metamaterials. Papers related (but not limited) to advances, development, analysis and/or optimization of materials or metamaterials that have been produced for the specific purpose of providing high values of sound absorption, vibration damping, and vibration and/or noise isolation are welcome within this Subject Area. The papers can be related to fundamental research, and/or applications, related to design, modelling, testing, and/or manufacturing of noise and vibration control materials or metamaterials. Due to the importance of the subject, this subject area will also welcome studies on environmentally friendly materials that are made of recycled products and/or through less contaminating processes.

Send an email

Caniato Marco

Send an email

Within this Theme Area different sessions are already planned.

Others could be proposed by sending an email to the chair of this Theme Area.

Structured Sessions

T08 SS01 - Passive sound absorbing and insulating materials
(Marco Caniato, Italy)

T08 SS02 - Vibration damping materials
(W. S. Gan, Singapore)

T08 SS03 - Acoustic metamaterial and phononic crystal: fundamentals & applications
(W. S. Gan, Singapore & Wonju Jeon, South Korea)

T08 SS04 - Characterization of acoustical materials in reverberation rooms and impedance tubes
(Marco Caniato, Italy)

Theme Area T09 Psychological, physiological, and biological acoustics

This theme area covers a range of topics in the fields of psychological, physiological, and biological acoustics. Both theoretical and applied papers are welcomed.

Joseph C. S. Lai

Send an email

Sebastian Oberst

Send an email

Within this Theme Area different sessions are already planned.

Others could be proposed by sending an email to the chair of this Theme Area.

Regular Sessions

T09 RS01 - Psychological and physiological acoustics
(Chen Jer-Ming, Singapore)

Structured Sessions

T09 SS01 - Hearing aids, cochlear implants and other hearing technologies
(Chen Jer-Ming, Singapore)

T09 SS02 - Development of speech tests for clinical and auditory fitness for duty evaluations
(Chen Jer-Ming, Singapore)

T09 SS03 - Integrating personal hearing protectors in safe working routines: use, communication and environmental awareness
(Chen Jer-Ming, Singapore)

Theme Area T10 Signal processing and nonlinear methods

This theme area covers a wide range of topics related to the application of signal processing and nonlinear methods to the analysis of acoustics and vibration systems. This includes linear and nonlinear signal processing, vibro-acoustic imaging, source localization, inverse problems, big data problems, parametric and non-parametric pattern recognition, vibro-acoustical condition monitoring, diagnosis and prognosis.

Md. Tawhidul Islam Khan

Send an email

Within this Theme Area different sessions are already planned.

Others could be proposed by sending an email to the chair of this Theme Area.

Regular Sessions

T10 RS01 - Signal processing techniques for acoustic array systems and inverse problems

T10 RS02 - Fault diagnosis and prognosis

T10 RS03 - Machinery health monitoring

T10 RS04 - Signal processing in acoustics and vibration

Structured Sessions

T10 SS01 - Compressive sensing and sparse signal reconstruction

T10 SS02 - Machinery health monitoring

T10 SS03 - Seismic response of building structures

Theme Area T11 Room and building acoustics

This theme area covers all aspects of building and room acoustics related to the transmission of sound and vibration through building elements, the acoustical qualities of spaces and the architectural acoustic design. The common framework is the noise and vibration control methodology and the evaluation of the perceived quality of sound in rooms.

John Laurence Davy

Send an email

Nicolaas Bernardus Roozen

Send an email

Within this Theme Area different sessions are already planned.

Others could be proposed by sending an email to the chair of this Theme Area.

Regular Sessions

T11 RS01 - Building acoustics

(Linus Yinn Leng Ang, Singapore)

T11 RS02 - Human response to noise and vibration in buildings

(Linus Yinn Leng Ang, Singapore)

Structured Sessions

T11 SS01 - Room acoustics

(Linus Yinn Leng Ang, Singapore)

T11 SS02 - Classroom acoustics

T11 SS03 - Measurement and prediction of sound insulation

T11 SS04 - Structure-borne and impact noise

(Linus Yinn Leng Ang, Singapore)

T11 SS05 - Acoustics of timber buildings

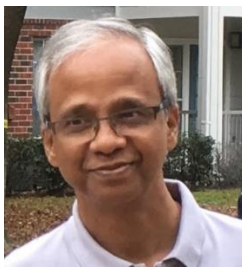
(Marco Caniato, Italy)

Theme Area T12 Marine acoustics

This theme area on marine noise includes ship noise and vibration, harbour and environmental underwater noise, underwater noise from pile driving, marine propeller noise, underwater acoustic communication and signal processing, numerical methods for underwater acoustics and vibro-acoustics of submerged structures.

Davide Borelli

Send an email



Venugopalan Pallayil

Send an email

Within this Theme Area different sessions are already planned.

Others could be proposed by sending an email to the chair of this Theme Area.

Regular Sessions

T12 RS01 - Underwater sound – measurement and modelling

(VENUGOPALAN PALLAYIL, Singapore & Johan Bocanegra, Italy)

Structured Sessions

T12 SS01 - Ship underwater radiated noise

(VENUGOPALAN PALLAYIL, Singapore & Adrian Brown, United Kingdom)

T12 SS02 - Propulsion system vibration and noise

(Claudio Testa, Italy)

T12 SS04 - Ship and harbour noise and vibration

(Davide Borelli, Italy)

T12 SS05 - EU Projects on noise reduction in harbors

(Corrado Schenone, Italy)

Theme Area T13 Musical acoustics

This theme covers all aspects related to advancements in musical acoustics, including but not limited to the following topics: modelling and analysis of musical instruments and the singing voice, analysis and synthesis of musical sounds, experimental techniques for sound and instrument characterization, psychoacoustics, music cognition, performance and pedagogy, new devices for music performance and interaction.

Bor-Tsuen Wang

Send an email

Within this Theme Area different sessions are already planned.

Others could be proposed by sending an email to the chair of this Theme Area.

Regular Sessions

T13 RS01 - Musical and virtual acoustics

(Chen Jer-Ming, Singapore)

Structured Sessions

T13 SS01 - Vibroacoustics of musical instruments

(Chen Jer-Ming, Singapore)

T13 SS02 - Tools for musical instruments design and making

T13 SS03 - Biomechanical control of musical instruments

T13 SS04 - Physical modelling of musical instruments and singing voice

T13 SS05 - Psychoacoustics in music

Theme Area T14 Road and railway noise and vibration

Joseph C. S. Lai
Send an email

Sifa Zheng
Send an email

The theme area on road and rail transportation noise and vibration covers the broad issue of generation and propagation of sound and ground borne vibration from road and rail transport. Structured sessions will be dedicated partly to the urban environment, with low speed rail bound transport and road transport. In addition, novel mitigation measures against noise from main roads, such as low noise pavements, will be highlighted. Recent developments such as the revision of EU type approval standards and the gradual increase of electric and hybrid vehicles will be treated. Rail induced vibration has gained more attention in recent years and structured sessions will be organized for this topic. Airborne and Ground borne Noise from Urban LRT Networks is considered a major parameter of possible degradation of the urban acoustic environment. Important adverse effects consist of increased levels of annoyance due to the vibration transmitted to buildings. Recent - state of the art - research developments have led to significant advances in the subject of railway-induced building vibrations over the past twenty years. Problems related to vibrations in buildings represent an important environmental issue in network designs, especially for nearby structures in densely populated cities.

Within this Theme Area different sessions are already planned.

Others could be proposed by sending an email to the chair of this Theme Area.

Regular Sessions

T14 RS01 - Railway noise and vibration

Structured Sessions

T14 SS01 - Noise and vibration from transportation

T14 SS02 - Noise and vibration from railway transportation

T14 SS03 - Vehicle noise, vibration and harshness (NVH)

陸、參考文獻

1. 第 28 屆聲音與振動國際研討會官網(The 28th International Congress on Sound and Vibration, ICSV28)。
   https://icsv28.org/index.php
2. Reinhilde Lanoye 等，“LABORATORY MEASUREMENTS ON REPLACEABLE JACKUP SYSTEMS”, The 28th International Congress on Sound and Vibration, 2022.
3. Christian Nocke 等, “MICRO-PERFORATION REVISITED”, The 28th International Congress on Sound and Vibration, 2022.
4. Piana Edoardo Alessio 等, “DESIGN OF SOUND INSULATING SANDWICH STRUCTURES BASED ON MULTIPLE CRITERIA”, The 28th International Congress on Sound and Vibration, 2022.
5. Dariusz Pleban 等，“ASSESSMENT OF NOISE ANNOYANCE IN WORKPLACES LOCATED NEAR WIND FARMS”, The 28th International Congress on Sound and Vibration, 2022.
6. Dora CHAN 等, “LATEST DEVELOPMENT OF LOW NOISE ROAD SURFACING APPLICATION ON LOCAL ROADS IN HONG KONG”, The 28th International Congress on Sound and Vibration, 2022.
7. Jihwan Yoon 等, “A STUDY ON THE EFFECT OF ENVIRONMENTAL NOISE ON THE LEARNING ABILITY OF MIDDLE AND HIGH SCHOOL STUDENTS”, The 28th International Congress on Sound and Vibration, 2022.
8. Marina Rodrigues 等, “CONSTRAINED LAYER DAMPING CONCEPT USED ON ISOLATED GYM FLOORS”, The 28th International Congress on Sound and Vibration, 2022.