Sponsored by I-INCE: The 2020 Practice of Noise Control School

For Students and Other Young Professionals Registered at Internoise 2020

By Invitation Only

Sunday August 23, 2020

The three sessions below will be live sessions conducted via Zoom.
Links will be sent to invited participants. Invitees are welcome to attend all 3 sessions, but one will be at a difficult time of day for you!

Overview

Session 1

Sunday 9:45am–12:15pm Seoul Time Zone

[2:45am-5:15am German Time Zone, 8:45pm(Sat)–11:15am East Coast USA Time Zone]

9:45-10:00	Log in and Introductions
10:00-11:00	Li Cheng
11:00-12:00	SangRyul Kim
12:00-12:15	Closing remarks

Session 2

Sunday 9:45am–12:15pm German Time Zone

[3:45am-6:15am East Coast USA Time Zone, 4:45pm-7:15pm Seoul Time Zone]

9:45-10:00	Log in and Introductions
10:00-11:00	Berndt Zeitler
11:00-12:00	Luc Jaouen
12:00-12:15	Closing remarks

Session 3

Sunday 9:45am–12:15pm East Coast USA Time Zone

[3:45pm-6:15pm German Time Zone, 10:45pm-1:15am (Mon) Seoul Time Zone]

9:45-10:00	Sign in and Introductions
10:00-11:00	Raj Singh
11:00-12:00	Stuart Bolton
12:00-12:15	Closing remarks

More details of the one-hour presentations are given on next page.

Presenters and Focus of Each Session

Li Cheng, Chair Professor and Director, Consortium for Sound and Vibration Research, Hong Kong Polytechnic University, Hong Kong.
https://www.polyu.edu.hk/researchgrp/chengli/proflicheng.html

Title: Interacting with aeronautical and aerospace industry: A personal journey and experience

Bio: Dr. Li Cheng is currently serving as the Deputy Editor-in-Chief of Journal of Sound and Vibration and an Associate Editor of the Journal of the Acoustical Society of America. He is an elected fellow of six societies including the Acoustical Society of America, Acoustical Society of China and International Institute of Acoustics and Vibration. He was the President of the Hong Kong Society of Theoretical and Applied Mechanics. He is now a board director of both IIAV (International Institutes of Acoustics and Vibration) and I-INCE (International Institutes of Noise Control Engineering). As the general Co-Chair, he organized the 46th Inter-noise Conference in Hong Kong.

Description: Noise and vibration control is one of the major concerns of increasing importance in aeronautical and aerospace (A&A) industry. Starting from the very early stage of his career as a Ph.D. student, the speaker had opportunities to interact with A&A professionals through his participation in numerous R&D projects. Apart from discussing some of the technical aspects pertinent to noise and vibration control, this talk will also touch upon some personal experiences of the speaker in dealing with industrial people, project management, as well as the advancement of professional career as an educator and noise control professional.

SangRyul Kim, Ph.D., Head of Department of System Dynamics, KIMM (Korean Institute of Machinery and Materials), Daejeon, Korea
https://www.kimm.re.kr/e_main

Title: Prediction and Control of Noise in Ships

Short Bio: SangRyul Kim began his professional career in acoustics in 1995 and has been working at Acoustics Research Group, Korean Institute of Machinery and Materials. He has led numerous projects and group activities on noise & vibration control of ships, trains, vehicles, and machinery. In particular, he has been doing research into prediction and evaluation of ship noise in the defense industry for twenty years. Currently he is serving as Head of Department of System Dynamics.

Description: This presentation will include a number of topics concerning ship noise in terms of analysis, measurement, and reduction of noise. The presentation will touch on the analysis process of ship noise using Statistical Energy Analysis (SEA) technique, cabin noise and underwater radiated noise (URN) of ships, airborne noise (ABN), structure-borne noise (SBN), and shipboard equipment as noise sources. Some examples of noise reduction, based upon years of experience in ship noise, will be also discussed.

Prof. Berndt Zeitler, Professor of Technical and Building Acoustics,
Department of Building Physics, University of Applied Sciences Stuttgart (HFT), Germany
https://www.hft-stuttgart.de/p/berndt-zeitler

Title: How fun with acoustics guided my career from music through transportation to building acoustics.

Bio: Berndt Zeitler is a professor of Technical Acoustics and Building Acoustics in the Building Physics department at the University of Applied Sciences Stuttgart (HFT) since late 2015. Besides lecturing on acoustics at graduate and under-graduate levels, Berndt is the deputy Academic Director of the Institute of Applied Research of the HFT, and leads the acoustics group, which has its main focus on airborne, impact, and structure-borne sound transmission in construction. Berndt studied acoustics at the renown Institute of Technical Acoustics of the Technical University of Berlin where he also completed his PhD on source substitution methods, which he then applied to the radiation of rails. Subsequent thereof, in 2005, he began at Rolls-Royce Germany as a Research Officer. Among other things he was responsible for acoustically optimizing the new two-shaft jet engines. Between 2007 and 2015 Berndt worked at the acclaimed National Research Council Canada in Ottawa, in the Building and Room Acoustics Group which he led starting 2012.

Description: In this discussion I would like to share with you some viewpoints that helped me make decisions regarding my research approaches and my career choices. These include among others: “enjoy what you do”, “who you work with is more important than what you work on”, “have a backup plan”, “challenge and question results”, “find simple solutions to complex problems”, etc. I will give examples of when I learned and applied these viewpoints in the different stages of my career (PhD Student, Postdoc, Assistant, Research Officer, Group Leader, Professor, Director), while working on different acoustic disciplines (theoretical and technical acoustics, vehicle acoustics, aero acoustics, and building acoustics). During this discussion I hope to hear from you and your fellow students if you have encountered similar challenges and have come to similar conclusions what influences your choices.

Luc Jaouen, Ph. D. in Acoustics & Mechanical Engineering.
Managing co-director at Matelys, France. https://www.matelys.com/

Title : Porous media for noise control

Bio : Luc is working at and managing Matelys, a small company acting as an independent research laboratory. After a joint PhD in Acoustics & Mechanical Engineering between France & Canada, Luc has founded the company Matelys with 2 colleagues. His main research activities in the company are focused on porous media for vibration and noise control. Luc is also involved in different initiatives for the dissemination of knowledge like the SAPEM conferences which he founded and cognitive tools which he develops at http://apmr.matelys.com

Description : This talk introduces acoustical porous materials used for noise and vibration control. The dissipation mechanisms in these materials used for absorption as well as some basic knowledge related to insulation are discussed. New materials with multiple dynamics are also briefly presented. This part of the talk makes use of multiple interactive and free webpages for the audience to actively participate. A second part of the talk focuses on how Matelys is working with the industry. A few pieces of advice to found a company in a scientific domain are presented.

Prof. Raj Singh
Academy (Emeritus) Professor, Dept. of Mechanical and Aerospace Engineering, The Ohio State University, Columbus, Ohio, USA. Web: https://adl.osu.edu/

Title: Product Noise Control Considerations with Gear Rattle as an Example

Bio: Professor Raj Singh is well recognized for research in machinery noise sources, vibration isolation and nonlinear dynamics, with applications to vehicles, appliances and geared systems. Dr. Singh is a fellow of four professional societies (ASA, ASME, SAE, and INCE/USA), and has received major national (USA) awards for both teaching and research. He has published 240+ journal articles and advised over 170 thesis students.

Description: This tutorial lecture will outline the role of mechanical system design parameters and constraints in addressing challenging product or equipment noise problems. Through the illustrative example of gear rattle in vehicle transmission, clearance-induced sources and structural paths will be discussed along with sample results, possible noise & vibration control strategies, product requirements (including costs), historical trends and some future R&D directions.

Prof. J. Stuart Bolton
Ray W. Herrick Laboratories, School of Mechanical Engineering
Purdue University, West Lafayette Indiana, USA. Web: https://engineering.purdue.edu/Herrick

Title: Noise Control: Putting Theory into Practice

Bio: Dr. J. Stuart Bolton received his BASc in Mechanical Engineering from the University of Toronto and his MSc and Ph.D. degrees from Southampton University's Institute of Sound and Vibration Research (I.S.V.R.). In 1984, Professor Bolton joined the Faculty of the School of Mechanical Engineering at Purdue University as an Assistant Professor. He is now a Full Professor and performs his research at Purdue University's Ray W. Herrick Laboratories. Dr. Bolton maintains an active research program in Noise Control and related disciplines, has published more than 100 archival journal articles, has made more than 200 conference presentations, and has supervised more than 100 graduate students. He is a Fellow of the Acoustical Society of America and the Institute of Noise Control Engineering (INCE). From INCE, he has received both the Outstanding Educator and Distinguished Noise Control Engineer awards. Most recently he was awarded the Per Bruel Gold Medal in Acoustics and Noise Control from the American Society of Mechanical Engineers.

Description: It is often the case that a clear understanding of acoustical fundamentals can point towards effective and efficient noise control solutions. That principle will be illustrated through a description of two examples. The first example involves the design of a sidewall treatment for a business jet, and involved the use of a thin layer of fibrous material that reduced the frequency at which the sound transmission loss began a steeply rising trend, resulting in a large increase in transmission loss in the frequency range of interest. The second example involved recognizing that a small fan mounted to the exterior surface of a computer radiates like a monopole, and that when it is allowed to radiate like a dipole, the sound power radiated by the fan can be significantly reduced. The talk will conclude with a discussion of future trends in Noise Control.