

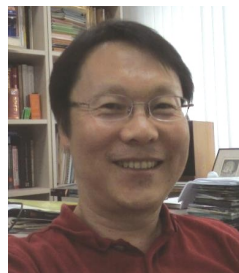
Sponsored by I-INCE: The 2021 Practice of Noise Control School
For Students and Other Young Professionals Registered at Internoise 2021
By Invitation Only
Saturday July 31st, 2021

The three sessions below will be live sessions conducted **via Zoom**. Links will be sent to participants who sign up. Invitees are welcome to attend all 3 sessions, but one might not be so time-friendly!

Session 1

Saturday 10:45am–1:15pm Japan/Korean Time Zone

[3:45am-6:15am German Time Zone, 9:45pm(Fri)–12:15am East Coast USA Time Zone]



10:45-11:00 Log in and Introductions
11:00-12:00 Jeong-Guon Ih
12:00-13:00 Yangfan Liu
13:00-13:15 Closing remarks



Session 2

Sunday 10:45am–1:15pm German Time Zone

[4:45am-7:15am East Coast USA Time Zone, 5:45pm-8:15pm Japan/Korea Time Zone]



10:45-11:00 Log in and Introductions
11:00-12:00 Etienne Parizet
12:00-13:00 Dick Bowdler
13:00-13:15 Closing remarks



Session 3

Sunday 10:45am–1:15pm East Coast USA Time Zone

[4:45pm-7:15pm German Time Zone, 11:45pm-2:15am (Mon) Japan/Korea Time Zone]



10:45-11:00 Log in and Introductions
11:00-12:00 Joe Cuschieri
12:00-13:00 Judith (Judy) Rochat
13:00-13:15 Closing remarks



More details of the one-hour sessions are given on the following pages

Presenters and Focus Session 1

Jeong-Guon Ih, Ph.D., Professor, Center for Noise and Vibration Control

Dept. of Mechanical Eng., Korea Advanced Institute of Science and Technology, Daejeon, Korea

<http://aclab.kaist.ac.kr>

Title: Industry 4.0 and Noise Control Engineering

Short Bio: J.-G. Ih has been a Professor in the Dept. of Mechanical Eng. at KAIST since 1990. 101 of his students have graduated (69MS/32 PhD). He is an Adjunct Professor of Electrical Eng. at DTU (Denmark) and of Industrial Physics at ITB (Indonesia). Before joining KAIST, he worked for 11 years at the Tech Center of Daewoo Motor Co. where he was in charge of the Noise, Vibration, and Harshness Group working on many car refinement and development projects. He holds about 40 national and international patents, and he has conducted 130 projects in collaboration with industries in automotive, electronics, heavy machines, soundproofing materials, etc. Recently, he is very much interested in electro-acoustic sensor/actuators, vibro-acoustic inverse problems, and the design of quiet machinery considering optimal auditory perception.

Description: Recent social change, called the Industry 4.0 era, has driven the craze of automation and artificial intelligence in all sectors of global societies. Automation has now been extended to all machines, instruments, and systems used in society, raising expectations and concerns about future social change. In early stages of Ind. 4.0, 'methodological' features were highlighted in engineering developments, but now the most important aspect is how humans and machines can interact with each other. A fundamental expectation is that the quality of human life and happiness will be improved by the innovations. Most factors that determine human happiness are related to human emotional satisfaction. So, the most critical aspects of Post Industry 4.0 is the understanding of expressions related to human emotions and representing the level of human emotions well. Noise control engineering can play an important role in creating new technologies that boost the emotional transmission in human-machine interaction and machine-to-machine communication, contributing to the fundamental goal of creating a more human-centered society. The basic concept, explanation, and end target of Ind. 4.0 will be introduced, and the potential of noise control and vibro-acoustic activities related to these will be described.

Yangfan Liu, Ph.D., Assistant Professor

Ray W. Herrick Laboratories, School of Mechanical Engineering, Purdue University, Indiana, U.S.A.

<https://engineering.purdue.edu/Herrick/research>

Title: Acoustic Source Localization Techniques and the Applications

Short Bio: Yangfan Liu completed his M.S. (2011) and Ph.D. (2016) at Purdue University. His research interests include sound field visualization, acoustic source modeling and sound field reconstruction, active noise control, room acoustics, noise control treatments, perception of noise and computational engineering. He is very interested in the challenges associated with application of his research, and much of his research is sponsored by industry. Applications include noise characterization in diesel engines, fans noise, high performance buildings, electric vehicles and compressors. He currently serves as Social Media Editor for Applied Acoustics.

Description: There are many techniques available for visualization of sound fields and identification of acoustic sources based on measurements. Some of these techniques can also be used to predict the sound field at other points in the environment in which measurements were taken. While these techniques can be powerful, application and interpretation of results can be challenging, due to the many parameters that need to be considered when setting up the measurements and analyzing the data. An overview of visualization techniques will be given along with some examples of their application to engineering noise problems.

Presenters and Focus of Session 2

Etienne Parizet, Ph.D., Professor

Laboratoire de Vibrations et Acoustique (LVA), INSA-Lyon, France

<http://lva.insa-lyon.fr/>

Title: Discomfort Due to Noise and Vibration in Vehicles

Short Bio: Etienne Parizet received his Ph.D. in 1992, with a thesis dealing with speech intelligibility in cars. He worked for 13 years for a French car manufacturer, mainly in the field of sound quality - his job consisted of introducing new methods of sound quality assessment and optimisation. In 2000, he was appointed full professor at Insa Lyon (an engineering school in France). His work focuses on sound and vibration perception, product sound quality, noise annoyance in open plan offices.

Description: In a vehicle, sources can produce noise and vibration, especially in the low frequency range (combustion engines in cars or airplanes, passing blades in helicopters...). It may be difficult for passengers to clearly distinguish noise and vibration from these sources. Interactions can therefore occur: the evaluation of noise is modified by the presence of vibrations (or vice-versa) and both sensations contribute to the overall discomfort. This presentation will give some examples of these interactions and present models to evaluate this discomfort from physical measurements.

Dick Bowdler, CEng, Noise Consultant

Scotland, UK

www.dickbowdler.co.uk

Title: Deafness, Nuisance and Other Brushes with the Law

Short Bio: Dick Bowdler has been an acoustic and noise consultant for fifty years. He was one of the original members of the Institute of Acoustics, the professional body in the UK, when it was founded in 1974. He is also a Chartered Engineer, a Chartered Physicist, and a Member of the Chartered Institute of Arbitrators. Over all this time and particularly over the last 12 years he has been involved as an expert witness in courts and in environmental inquiries with particular interest in noise induced hearing loss and noise nuisance. He is a director of INCE Europe and chair of the biennial conferences on wind turbine noise.

Description: The law is with us wherever we go and whatever we do. It gets involved in noise guidelines and their interpretation, in the liability of employers for damage to their employees through noise and vibration and cases of noise nuisance. If consultants do not do their job properly they can face charges of negligence. This presentation will look at some of the ways noise consultants and others can become involved in the law how that can be a fascinating part of acoustic work.

Presenters and Focus of Session 3

Joe Cuschieri, Ph.D., LM Fellow, Acoustic Signature Control and Acoustic Sensors Engineer

Lockheed Martin RMS, West Palm Beach, Florida, USA

<https://www.lockheedmartin.com/en-us/news/features/2015/rising-to-the-surface-of-undersea-systems-manufacturing.html>

Title: Underwater Noise Control

Short Bio: Joe Cushchieri is an LM Fellow with Lockheed Martin RMS Undersea Systems, with expertise/experience in Structural Acoustics, Acoustic Signature analysis and control, Undersea Sensors and Sonar Systems and underwater sound propagation, Machine Deep Learning applications to underwater image recognition and Advanced UUV concepts. Received his BS in Mechanical Engineering from University of Malta and a Ph.D from the Institute of Sound and Vibration Research (ISVR), University of Southampton, England. Before joining Lockheed Martin RMS C6ISR in West Palm Beach in 2003, Joe was a Professor of Ocean Engineering and Associate Dean Of Engineering at Florida Atlantic University. He also serves as Executive Director of INCE-USA and serves on the I-INCE Board of Directors.

Description: The concepts considered for underwater noise control, while similar to those for airborne noise control have differences, which if not taken into account may lead to limited noise reductions. Noise Control as applied to typical underwater structures will be discussed, with a case study presented for noise control of a cooling water pump. Methods for predicting the acoustic signature for an underwater structure will also be discussed.

Judith (Judy) Rochat, Ph.D., Acoustician/Consultant

Cross-Spectrum Acoustics, California, USA

<https://csacoustics.com/about/team/>

Title: Transportation Noise: Case Studies and Considerations.

Short Bio: Judy Rochat is a noise consultant at Cross-Spectrum Acoustics. She holds a doctorate in acoustics and has over 25 years of experience in transportation noise and vibration, including highway, rail, and aircraft projects. She worked as a Physical Scientist at the U.S. Department of Transportation / Volpe National Transportation Systems Center for over 15 years prior to becoming a consultant. Judy served as Chair of the Transportation Research Board Noise and Vibration Committee and Vice President – Technical Activities for INCE-USA. She is currently serving as the President Elect of INCE-USA.

Description: Transportation-related noise and vibration affects millions of people every day. As noise professionals, we strive to minimize effects from highway, rail, and aircraft noise following regulatory processes. We also conduct research to help improve our understanding of sound sources, how the sound propagates, measurement and modeling practices, and mitigation strategies.

This presentation will provide a review of environmental noise studies and the steps taken to meet regulatory requirements. Highway and rail case studies will be described with information on how research studies and related guidance can help to achieve the best results in determining environmental noise and vibration impacts and mitigation design. The related research and guidance includes: consideration of multi-modal noise sources, determining building insertion loss, reflections from highway overpass understructures, and effects from sound absorptive ground.