

2018 I-INCE Practice School for Young Professionals - Noise Control Case Studies (By Invitation Only)

Co-sponsored by I-INCE and 3M

Sunday, August 26th, 2018. 10:00am – 3:00pm (Check in 9:30am – 10:00am)

Denver-Houston-Kansas Rooms on the 5th Floor

Marriott Magnificent Mile, Chicago, USA (INTER-NOISE 2018 Congress Hotel)

9:30 am – 10:00 am

Check in and Welcome

Patricia Davies, I-INCE Vice President for Technical Activities

10:00 am – 10:45 am

Case Studies from an Acoustic Consulting Practice

Renzo Tonin, Consultant, Renzo Tonin and Associates, Australia.

This presentation involves some interesting case studies that the author has been involved with in his acoustic consulting practice. The author is a consultant with Renzo Tonin & Associates in Sydney, Australia and is now mostly involved in expert witness work which involves the investigation of sound and vibration issues arising from commercial disputes and presenting evidence in court.

This presentation will focus on the following four topics:

1. Wind Farm Noise - measurement and certification including the health effects of infrasound
2. Gas Turbine installation - assessment of noise impact
3. Coal Transfer Station - assessment of damage to the concrete structure caused by vibration during construction
4. Road Pavement Noise - state-of-the-art measurement methods.

11:00 am – 11:45 am

Case Studies in Appliance Noise Control

Sung Jin Kim, Technology Director, Midea Group, China.

Sung Jin Kim has worked on noise and vibration control of appliances for over 30 years. He has worked for LG, GE, Samsung and Midea and is currently the Technology Director at Midea's Corporate Research Center in Foshan, China.

In this presentation he will discuss how he approaches solving appliance noise and vibration problems and the art of working with product design teams to achieve multi-objective optimization including setting and meeting sound targets new appliances. The presentation will focus on the following three topics:

1. Washing Machine Vibration – reduction of imbalance and foot force to the floor
2. Large Axial Fan Noise – Noise source identification and balance between noise and flow rate
3. Vacuum Cleaner Noise – Noise source identification and reduction. Sound quality improvement

Noon – 1 pm

Lunch with INCE-USA Board of Directors and I-INCE Leaders in Chicago ABC, 5th Floor

1:00 pm – 1:45 pm

Vehicle and Product Noise Control – The Development Process and Case Studies
Gabriella Cerrato, Global Engineering Services Manager, Bruel & Kjaer, USA.
Gordon Ebbitt, Principal, Ebbitt Acoustical Consulting, LLC, USA.

Gabriella Cerrato has been working in industry (e.g., MTS, Fiat, Tecumseh Products) and consulting on a wide variety of noise and vibration problems since 1984. In 2005 she co-founded Sound Answers, an acoustics consulting company based in Canton, Michigan, which was acquired in 2015 by Bruel & Kjaer and where she now manages the Global Engineering Services. Gordon Ebbitt has worked on automotive-related noise problems at Bruel & Kjaer, Masland, Lear, Carcoustics and Toyota, also starting his career in the early 1980s. He is a specialist in acoustic materials and acoustic treatments. Gabriella and Gordon also both have an interest in sound quality and product sound design.

In this presentation they will highlight a structured approach to the diagnostic and solution of noise and vibration issues in products and vehicles in general. In the automotive industry, though the noise and vibration control processes are somewhat different among the automotive OEM's, there are many similarities. Those will be explored in an introduction to the general process and concepts used to develop and implement noise control strategies for passenger cars and light trucks. A few case studies will also be presented, some of them related to ground vehicles noise and vibration, others related to the noise and vibration performance of different products, such as consumer products, appliances, medical and construction equipment.

2:00 pm -2:45 pm

Active Noise Control and Sound Design Case Studies
Rolf Schirmacher, Managing Director, Müller-BBM Active Sound Technology GmbH,
Germany

Rolf Schirmacher has been working on Active Noise Control and Active Sound Design on a broad range of applications since the early 1990s. After pursuing his Ph.D. in Physics at the University of Göttingen, he joined the consulting branch of Müller-BBM in 1996 and is Managing Director of its ANC branch since its inception in 2009.

In this presentation, he will discuss the concept of ANC and why a deep understanding of the physics of a specific noise issue is key to applying this advanced noise control technology. This does, unfortunately, also include the related effort and the limitations of its applicability.

The case studies will include coupled structure- & air-borne applications in a high-speed train as well as automotive engine noise control with extensions to sound design / acoustical user interface design.

3:00 pm – 3:15 pm

Closing Remarks and Feedback
