



SAE 2018 NOISE AND VIBRATION FORUM

September 13, 2018

Crowne Plaza Shanghai Anting Golf, Shanghai, China

www.sae.org/attend/noise-and-vibration-forum



FORUM OVERVIEW

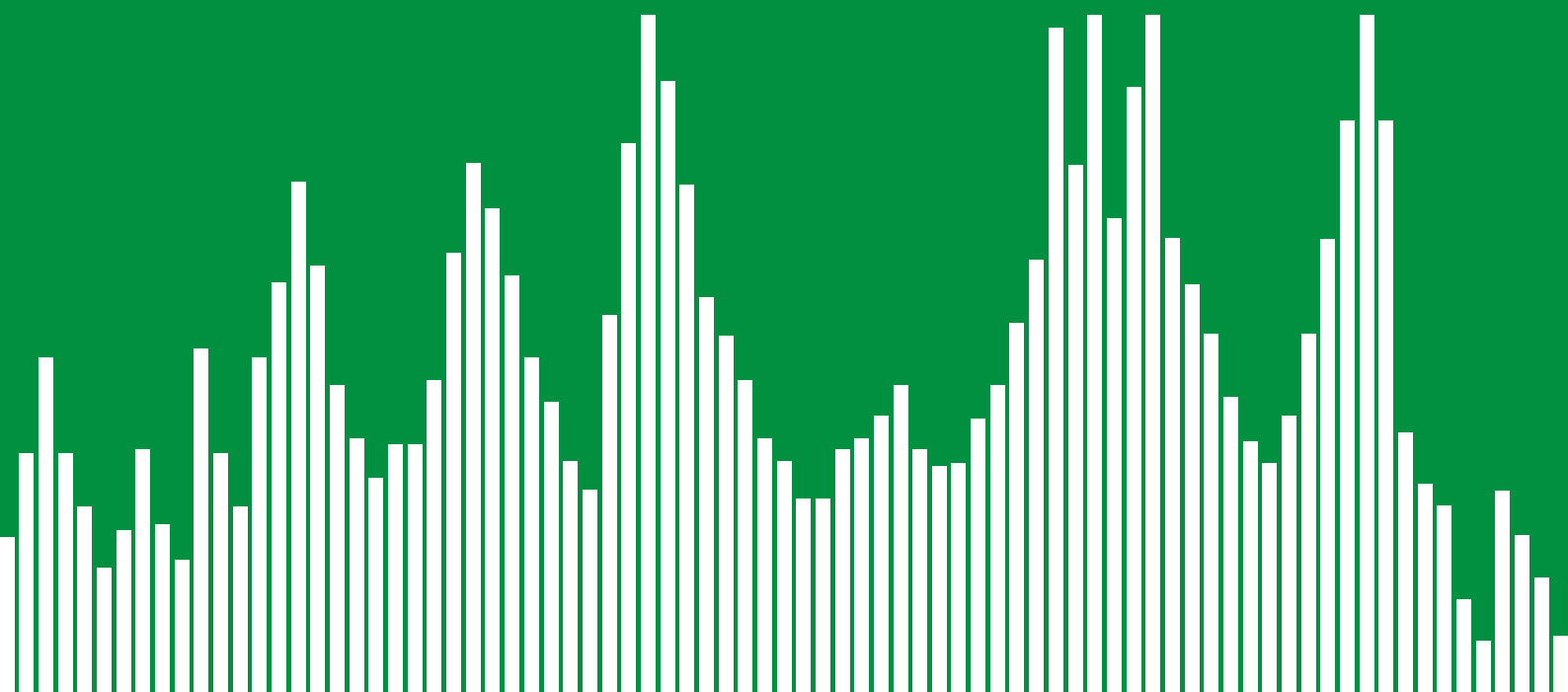
The SAE Noise and Vibration Forum is taking its premier technical program to Shanghai, China. This year's forum is SAE International's first noise and vibration event in the APAC region, and expects to bring value to attendees by hosting experts from the U.S., Europe, and China. This event's technical presentations, professional development offerings, and networking between experts and attendees provides a vital exchange of critical information on this highly technical topic.

Get the latest updates on industry standards and government regulations in both noise and vibration harshness, especially targeted at issues for the New Energy Vehicles. The valuable knowledge obtained from the technical presentations will help engineers and their companies meet and exceed customer satisfaction, product and structural integrity, and compliance with legislation.

This event will also be co-located with SAE's New Energy Vehicle Forum that will allow for a larger networking pool and a more robust listing of exhibitors.

HOST

SAE International





ORGANIZERS

NOISE AND VIBRATION FORUM



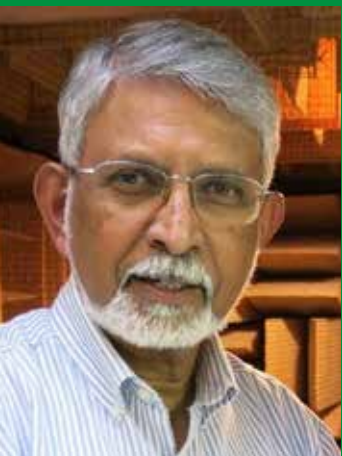
Pengyun GU

Chief NVH Engineer and Vice President
Geely Automobile Research Institute



Jian PANG

Vice President and Chief Engineer
Changan Auto Global R&D Centre



Pranab Saha

Co-founder and a Principal Consultant
Kolano and Saha Engineers, Inc.



Quan WAN

NVH expert at Automotive and
Aerospace Solutions Division
3M China Limited

INDUSTRY EXPERTS SPEECH



Alexandre Nunes

Associated Director for
Vehicle Attributes
NIO



Greg Goetchius

Engineering Manager, NVH
Lucid Motors



Jennifer Goforth

Chief Engineer, China Electrification
GM Global Electric Vehicle Programs
General Motors



Zhiming LUO

System Engineering Manager for
Aerospace Business
Aearo Technologies LLC,
a 3M Company



Jian PAN

Director System Development,
Product Testing and Simulation
Autoneum North America



Zhidong CHEN

Sr. Chief Engineer
Geely

INDUSTRY EXPERTS SPEECH



Robert Powell

Director, Structural Acoustics
Simulia,
a Dassault Systèmes Brand



Jian PANG

Vice President and Chief Engineer
Changan Auto Global R&D Centre



Wei HUANG

Deputy General Manager
Gissing Tech



Wei DU

NVH Engineer
AVL



Haitao Gao

NVH Engineer
ZF



Kiran Govindswamy

Vice President, Powertrain,
Vehicle Engineering & NVH
FEV North America, Inc.

- 8:45 **WELCOME AND INTRODUCTIONS**
Billy XU, General Manager, China - SAE International

KEYNOTE PRESENTATION

- 9:00 NVH and Attributes Balancing on Electrical Vehicles
Alexandre Nunes, Associated Director for Vehicle Attributes - NIO
- 9:30 The Importance of Tire/Road Noise Mitigation for Electric Vehicles
Greg Goetchius, Engineering Manager, NVH - Lucid Motors
- 10:00 Challenges and Opportunities for NVH Performance Development in Electric Vehicles
Jennifer Goforth, Chief Engineer, China Electrification GM Global Electric Vehicle Programs - General Motors
- 10:30 Tea Break

ROAD NOISE NVH CONSIDERATIONS FOR HYBRID AND ELECTRIC VEHICLES

This session discusses the road noise control strategy, and NVH technology unique to New Energy Vehicles. It is intended to bring a greater awareness of the NVH characteristics of these new vehicles to all NVH practitioners. At the same time, it will provide a forum to discuss the new demands for test facilities, testing, design, content, as well as safety benefits and environmental consequences of minimum sound regulatory requirements.

- 11:00 Acoustically Absorbing Lightweight Thermoplastic Honeycomb
Zhiming LUO, System Engineering Manager for Aerospace Business - Aearo Technologies LLC, a 3M Company
- 11:30 Acoustic Materials and Treatments for Electric Vehicles
Jian PAN, Director System Development, Product Testing and Simulation - Autoneum North America
- 12:00 The Challenge of Road Noise Control in Electric Vehicle Development
Zhidong CHEN, Sr. Chief Engineer - Geely
- 12:30 Lunch & Networking Break

ROAD NOISE NVH CONSIDERATIONS FOR HYBRID AND ELECTRIC VEHICLES (CONTINUED)

- 14:00 Aeroacoustic Sources of Noise for New Energy Vehicles
Robert Powell, Director, Structural Acoustics - Exa Corporation, a Dassault Systèmes Company
- 14:30 Strategy of Road Noise Control for Hybrid and Electric Vehicles
Jian Pang, Vice President and Chief Engineer - Changan Auto Global R&D Center
- 15:00 Interior Noise Contribution Analysis of New Energy Vehicle Based on SEA Modeling
Wei HUANG, Deputy General Manager - Gissing Tech
- 15:30 Tea Break

TRANSMISSIONS AND DRIVELINE NOISE FROM ELECTRIC DRIVE SYSTEMS

This session deals with analytical, computational and experimental studies of the dynamic response including noise and vibration of electric driveline system and components. Typical topics of interests include, but not limited to, electric motors, gearboxes, batteries, and generators.

- 16:00 Transmission and Driveline Noise and Vibration from Electric Drive Systems
Wei DU, NVH Engineer - AVL
- 16:30 Systems Engineering Approach for NVH Development of Electric Drivelines
Haitao Gao, NVH Engineer - ZF
- 17:00 NVH Considerations for Electrified Powertrains
Kiran Govindswamy, Ph.D., Vice President, Powertrain, Vehicle Engineering & NVH - FEV North America, Inc.

VENUE INFORMATION

Crowne Plaza Shanghai Anting Golf

Address: No.6555 BoYuan Road, JiaDing District, Shanghai, China

Phone: +86-21-6056-8888



Registration Fee: CNY 2,000 (Only Noise and Vibration Forum)

Co-location Event

New Energy Vehicle Forum (September 11-12)

Register 2 Events (September 11-13)

Registration Fee: CNY 3,200

Registration Fee: CNY 4,000

More Information and Registration, Please Visit:

www.sae.org/attend/noise-and-vibration-forum



Registration & Exhibit & Sponsorship Contact (China):

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Exhibit & Sponsorship Contact (Global):

Ms. Megan McCoy

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CO-LOCATION SEMINAR

Attend the Forum & 1 Seminar: CNY 5,040 (Original: CNY 5,600)

Automotive NVH Analysis and Control

Date: September 11-12, 2018 (2 days)

Address: Crowne Plaza Shanghai Anting Golf, Shanghai, China

Fees: CNY 3,600

OVERVIEW

The course introduces the basic knowledge of vehicle noise and vibration, provides the analysis and control methods for noise and vibration sources, and transfer paths, and describes the occupants' responses and control.

The course is specially designed for NVH engineer and related graduate students. The course combines the NVH theory and engineering practices. After finishing the course, the students will deeply understand the mechanism of NVH and promote their capacity to solve engineering problems.

OBJECTIVES

By attending this training program you will be able to:

- Understanding the NVH knowledge for vehicle development
- Mastering the NVH knowledge for vehicle development and learning engineering experience
- Mastering the analysis and control methods of "Source-Transfer Path-Occupant" needed for vehicle NVH development

WHO SHOULD ATTEND

Vehicle NVH engineers/ Vehicle product development engineers/ Vehicle attribute integration engineers/ Graduate students in sound and vibration/ Engineering experience is not needed, but helpful, especially experience in NVH/ Bachelor degree in mechanical engineering or electrical engineering or related engineering disciplines. Engineering experience is not required, but helpful.

OUTLINE

DAY ONE

Part One: Introduction

- Problems and challenges of vehicle NVH
- Source-Transfer Path-Occupant Model
- Principles of NVH control

Part Two: Analysis and Control of Vehicle Noise and Vibration Sources

- Analysis and Control of Engine Noise and Vibration
- Analysis and Control of Drivetrain Noise and Vibration
- Analysis and Control of Intake and Exhaust Noise and Vibration
- Wind Noise

DAY TWO

Part Three: Analysis and Control of Noise and Vibration Transfer Paths

- Analysis and Control of Engine Noise and Vibration
- Analysis and Control of Drivetrain Noise and Vibration
- Analysis and Control of Intake and Exhaust Noise and Vibration
- Wind Noise

DAY TWO

Part Three: Analysis and Control of Noise and Vibration Transfer Paths

- Structural Vibration and Sound Radiation of Vehicle Body
- Sound Package
- Noise and Vibration Analysis and Control of Suspension System
- Design of powerplant mounting system



CO-LOCATION SEMINAR

Part Four: Human Response Analysis and Control

- Subjective Evaluation and Objective Evaluation
- Automotive Sound Quality
- Active Control of Vehicle Noise and Vibration

INSTRUCTOR: Jian Pang, Ph.D.

Dr. Jian Pang is a vice president and chief engineer of Changan Auto Global R&D Centre (Chongqing, China) since 2008. He used to be a technical specialist in Stewart & Steven Service, Inc. (1997-1999, Houston, Texas) and a senior engineer in Ford Motor Company (1999-2008, Dearborn, Michigan).



He received his Ph.D. degree in mechanical engineering from the University of Oklahoma (Norman, Oklahoma, USA) in 1996. He received his BS (1985) and MS (1991) in mechanical engineering from Wuhan University of Technology (Wuhan, China) and Shanghai Jiao Tong University (Shanghai, China), respectively.

Dr. Pang has over 30 years experience in noise and vibration control engineering, especially in vehicle engineering. He published 4 technical books and 2 literature books. "Automotive Noise and Vibration - Principle and Application" (in Chinese) and "Vehicle Body Noise and Vibration Control" (in Chinese) are regarded as the most influence books in the NVH field in China. He is working on the English version of the book "Vehicle Body Noise and Vibration Control". He published over 70 papers on international and national journals and conferences.

He serves as the vice director of China National Key Lab of Vehicle NVH and Safety, the leader of OICA (Organisation Internationale des Constructeurs d'Automobiles) China Noise Group, vice chairman of China NVH society, guest professor of Tong Ji University and Chongqing University. He used to be the chairman of NVH Technical Committee of 2012 FISITA (World Automotive Engineer Congress).

He serves as the editor of International Journal of Vehicle Noise and Vibration, and the guest editor of International Journal of Vehicle Design.

CONTACT US

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CO-LOCATION SEMINAR

Attend the Forum & 1 Seminar: CNY 5,040 (Original: CNY 5,600)

Sound Package Materials for Vehicle Noise Control

Date: September 11-12, 2018 (2 days)

Address: Crowne Plaza Shanghai Anting Golf, Shanghai, China

Fees: CNY 3,600

OVERVIEW

The sound package materials for vehicle noise control seminar provides a detail and thorough analysis of three different classes of acoustical materials – namely absorbers, barriers, and dampers, how they are different from each other, and acoustical properties that materials should possess for optimum vehicle noise control. The seminar addresses new advances in acoustical materials, primarily in absorption materials that impact the vehicle acoustics. The seminar covers ways to evaluate the acoustical performance of these materials using different test methods, including material, component, and vehicle level measurements. The two day seminar starts with the fundamentals of NVH and sound quality related to sound package materials and discusses the importance of various noise sources that impact the development of sound package treatments in a vehicle.

OBJECTIVES

By attending this training program you will be able to:

- Identify various descriptors that are used in NVH and sound quality while working with sound package materials
- Recognize various noise sources and paths in a vehicle
- Identify three different classes of acoustical materials
- Describe ways that acoustical materials work and how they differ from each other
- Road map for vehicle sound package development
- Distinguish test methods used to evaluate the acoustical performance of material

WHO SHOULD ATTEND

Designed for OEM or supplier employees responsible for various noise activities, such as design, evaluation, trouble-shooting, procuring, supplying, and/or manufacturing noise control treatments and parts, this seminar will also benefit those with responsibilities including the areas of manufacturing, design, engineering, process, noise and release engineering, supervision or management. Attendees should have an undergraduate engineering degree and/or a working knowledge of noise control and automotive acoustics.

OUTLINE

DAY ONE

- Fundamentals of NVH and Sound Quality
- Vehicles Noise Sources and Solutions

DAY TWO

- Materials for Vehicle Noise Control
- Different Automotive Measurements

INSTRUCTOR: Pranab Saha

Pranab Saha is the principal consultant and co-founder of Kolano and Saha Engineers, Inc., an independent professional engineering and consulting company in acoustics, noise and vibration control. A well-known authority on automotive noise control and body interior systems, Dr. Saha has directed and participated nationally and internationally in numerous advanced noise





CO-LOCATION SEMINAR

control engineering programs and training seminars for various OEMs and suppliers in India, Mexico, and USA.

Dr. Saha is currently the Chair of the SAE Engineering Meetings Board, a Professional Development Instructor, and the Lead Faculty Member of the SAE Vehicle Interior Noise Academy. He is also the past-chairman of the SAE Acoustical Materials Committee and has helped develop several standards in acoustics. Dr. Saha is an active member of ASA, ASME, ESD, INCE, NSPE, SAE International, and a contributing editor of Sound and Vibration publication. He has presented technical papers, organized and chaired numerous technical sessions sponsored by SAE and other professional organizations. Dr. Saha has also won several awards presented by the SAE International and the Michigan Society of Professional Engineers (MSPE) and has been named an SAE Master Instructor. Dr. Saha holds a B.S. in Mechanical Engineering from the University of Calcutta, a M.S. in Engineering Sciences from the University of Florida and a Ph.D. in Mechanical Engineering (Acoustics Specialty) from the Georgia Institute of Technology.

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