

www.aachen-acoustics-colloquium.com

AAC 2023

AACHEN ACOUSTICS COLLOQUIUM

November 27th - 29th, 2023



Fact Sheet | Lecture Program | Exhibitor presentation

GENERAL INFO

14TH AACHEN ACOUSTICS COLLOQUIUM

NAME BADGE

On your name badge is your ticket for the banquet evening. Please bring this with you to the town hall.

WIFI ACCESS

WiFi is available in the entire conference area.

CONFERENCE PROCEEDINGS

Download the conference proceedings here:
www.aachen-acoustics-colloquium.com/proceedings2023

Username: AcousticsColloquium

The password is posted at the registration desk and you will receive it via the event app.

EVENT APP

Download our event App „Mobility AC“ via www.swapcard.com/app/mobilityac and plan your individual program

- See the list of participants
- Ask questions for the discussion
- Find out more about the exhibitors
- Chat with fellow participants
- Download the conference proceedings



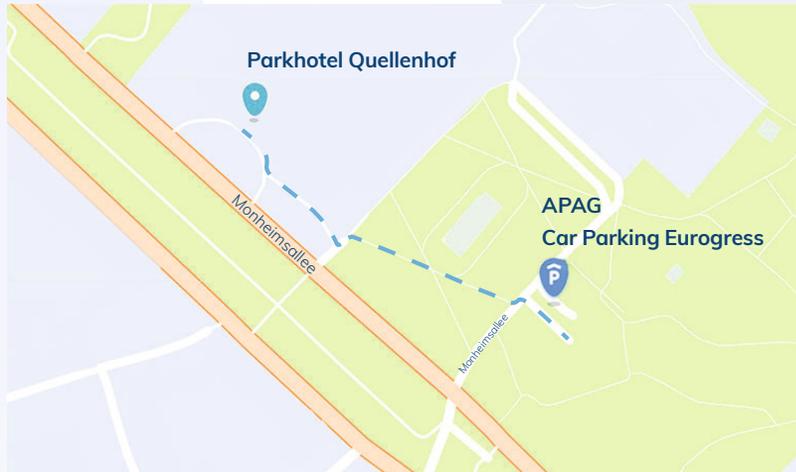
Mobility AC



The app is available in the Apple App Store, Google Play Store and as web app. Please log in with the email address which you used for the event registration.

PARKING INFO

14TH AACHEN ACOUSTICS COLLOQUIUM



APAG CAR PARK EUROGRESS

Monheimsallee 44, 52062 Aachen



A 3-day parking ticket is available upon request at our registration desk. This ticket entitles you to unlimited use of the APAG parking garage Eurogress in the period from 27 to 29.11.2023.

Please note that you have to use only this ticket every time you enter and leave the parking garage and do not pull a new ticket.

SCIENTIFIC COMMITTEE

14TH AACHEN ACOUSTICS COLLOQUIUM



Prof. Uwe Baake
Vice President Product
Engineering
Mercedes-Benz Trucks
Daimler AG



Dr. Michael Fischer
Chief Expert and Head Center
of Competence NVH
Robert Bosch GmbH



Dr. Christian Schuster
Manager Vehicle NVH
Ford-Werke GmbH



Dr. Per-Olof Sturesson
Consultant / Founder / Owner
Cum Scientia Engineering AB
Postdoctoral Researcher
KTH Royal Institute of
Technology, Sweden



Prof. Otto von Estorff
Head of the Institute of
Modelling and Computation
Technische Universität
Hamburg



Thomas Weidlich
Head of Acoustics / Structural
durability and fatigue
AUDI AG

PLENARY SPEAKER

14TH AACHEN ACOUSTICS COLLOQUIUM



Tobias Hillers
Dr. Ing. h.c. F. Porsche AG

Driven by Dreams: Crafting the Porsche Electric Sport Sound, Honoring 75 Years of Sound Heritage

Porsche celebrates its 75th anniversary, reflecting on the challenge of developing a unique sound for fully electric vehicles. Exploring the rich heritage of Porsche's iconic sounds, we examine their historical significance and emotional connection. Amidst this backdrop, we unveil the task of crafting a distinctive sound for electric Porsches, navigating complexities and challenges. Blending tradition and innovation, the sound design process meticulously evokes emotions and defines the vehicle's character. Let us celebrate 75 years of historical sound heritage, experiencing the passion and technical brilliance that brings this dream to life and gaining insights into the future of automotive sound.



Prof. Jesko Verhey
Otto-von-Guericke
University Magdeburg

Vehicle Interior Noise in the Light of Auditory Sensations

The quality of the cabin noise is an important criterion when buying a vehicle. But which perceptual aspects determine this perceived sound quality? These perceptual aspects can be quantified by asking for auditory sensations. For example, the cabin noise of vehicles of electric drives is usually perceived less loud than that of a vehicle with an internal combustion engine, resulting in a higher perception of comfort. On the other hand, electric drives may produce a higher perceived magnitude of tonal content, which can reduce the pleasantness. If tonal components have very low-frequencies, they elicit yet other sensations. This talk will focus on several sensations and their possible role in perceived sound quality of vehicle interior noise and how this may be affected by the hearing abilities of the potential buyers.

PROGRAM

27TH & 28TH NOVEMBER

MEETING VENUE

Parkhotel Quellenhof Aachen
Monheimsallee 52

52062 Aachen, Germany

Phone: +49 241 91320

E-Mail: info@parkhotel-quellenhof.de

Internet: www.parkhotel-quellenhof.de



November 27TH

19:00 Welcome Reception and Opening of the Technical Exhibition

The welcome reception will take place at the exhibition, Parkhotel Quellenhof Aachen, with drinks and food. The reception is free of charge for our participants.

November 28TH

08:30 Welcome and Opening *Prof. Klaus Genuit/ Prof. Michael Vorländer*

ACTIVE SOUND DESIGN AND ACTIVE COMPONENTS I

Session Chair:

Prof. Michael Vorländer

Institute for Hearing

Technology and

Acoustics (IHTA),

RWTH Aachen University

08:45 Driven by Dreams: Craftin the Porsche Electric Spor Sound, Honoring 75 Years o Sound Heritage

Tobias Hillers

Dr. Ing. h.c. F. Porsche AG

09:30 Validation of Active Sound Design Models using Driving Simulator and Test Drive Evaluation

Stefan Hank

HEAD acoustics GmbH

PROGRAM

28TH NOVEMBER

10:00 **QuietComfort Road Noise Control: Helping Carmakers Design Better Cars**
Michael Wirtz
Bose Automotive GmbH

10:00 **Coffee Break & Snacks**

VEHICLE AND DRIVE TRAIN ACOUSTICS

Session Chair:
Prof. Jan-Welm Biermann
fka GmbH

11:00 **Structure-borne Road Noise Target Allocation to Tire-Wheel Subsystem in Autonomous Vehicles**
Daniel Baker
Zoox, Inc.

11:30 **The Sound of Silence – New challenges for BEV development**
Christoph Steffens
FEV Europe GmbH

12:00 **Influence of the Manufacturing Scatter on the Excitation Behavior in Series Production of an E-Motive Cylindrical Gear Stage**
Laurenz Roth
Laboratory of Machine Tools and Production Engineering (WZL),
RWTH Aachen University

12:30 **Lunch**

NUMERICAL METHODS AND MEASUREMENT TECHNOLOGY

Session Chair:
Dr. Matthias Wegerhoff
HEAD acoustics GmbH

13:45 **Numerical Frontloading of an Acoustical End of Line Test Station for a Rearview Camera System**
Dr. Sören Keuchel
Novicos GmbH

14:15 **An Industrial Validation of Automated Modal Analysis using Machine Learning**
Markus Brandstetter
Siemens Digital Industries Software

14:45 **Coffee Break**

ACOUSTICS OF ELECTRIC DRIVES

Session Chair:
Dr. Christoph Steffens
FEV Europe GmbH

15:15 **NVH Improvement of E-Motors through Optimization of the Control Settings**
Tongfang Fu
Chair of Thermodynamics of Mobile Energy Conversion Systems,
RWTH Aachen University

PROGRAM

28TH NOVEMBER

15:45 Investigation of the Motor-freewheel's Impact on the Structural Dynamics of an E-Bike Drive Unit using Flexible Multi-Body Simulation
Kevin Steinbach
Bosch eBike System

16:15 Coffee Break & Snacks

ACOUSTIC MATERIALS

Session Chair:

Dr. Gottfried Behler

Institute for Hearing Technology and Acoustics (IHTA),
RWTH Aachen University

16:45 Acoustic Metamaterial: Space Saved Broadband Sound Absorption System by using Coupled Quarter Wavelength Side-Branch and Membrane Resonator
Shunji Suzuki
Honda R&D Co., Ltd.

17:15 Application Concepts and Potentials of Vibroacoustic Metamaterials for NVH Comfort
Armin Weber
Institute for Automotive Engineering (ika),
RWTH Aachen University

17:45 FE-Based Inverse Approach to Determine Complex Acoustic Material Parameters in Alpha Cabins
Mark Müller-Giebeler
Institute for Hearing Technology and Acoustics (IHTA),
RWTH Aachen University

19:00 Banquet

19:30 Opening by Prof. Stefan Pischinger

The banquet will take place at the historical city hall of Aachen and is free of charge for attendees. The fee for accompanying persons is € 50.



PROGRAM

29TH NOVEMBER

SOUND QUALITY, TROUBLE-SHOOTING, SOUND DESIGN

Session Chair:
Prof. Klaus Genuit
HEAD acoustics GmbH

08:30 Influence of Tonality on the Annoyance of Tire Exterior Noise

Etienne Parizet
Laboratoire Vibrations
Acoustique, INSA-Lyon

09:00 Large Scale End-User Jury Test on Artificial Enriched Interior Driving Sounds of Electric Vehicles

Rob Opdam
Bosch Engineering GmbH

09:30 Vehicle Interior Noise in the Light of Auditory Sensations

Prof. Jesko L. Verhey
University Magdeburg

10:15 Coffee Break & Snacks

EXTERIOR SOUND - THE BaLSaM PROJECT

Session Chair:
Prof. Lutz Eckstein
fka GmbH

10:45 Holistic Approach for Aurally Accurate Road Traffic Noise Reduction by Adaption of Traffic Routes and Infrastructure Planning

Carolin Schliephake
Institute for Automotive
Engineering (ika),
RWTH Aachen University
Chalotorn Möhlmann
Institute for Hearing
Technology and
Acoustics (IHTA),
RWTH Aachen University

11:15 Urban Noise Protection Measures from the Perspective of Urban Designers - Case Study of the "Gräselberg - Auf den Eichen" Master Plan

Moritz Lippold
REICHER HAASE
ASSOZIIERTE GmbH

11:45 Optimizing the Estimation of Vehicle Sound Radiation Characteristics by Combining Numerical Models and Microphone Array Measurements

Thiago Henrique
Gomes Lobato
HEAD acoustics GmbH

12:15 Lunch



PROGRAM

29TH NOVEMBER

ACTIVE SOUND DESIGN AND ACTIVE COMPONENTS II

Session Chair:

Prof. Stefan Pischinger

FEV Europe GmbH

13:45 **An Audio Architecture for the Software-Defined Vehicles**

Somasundaram Alagappan
BlackBerry QNX

14:15 **Real-time Interaction with Driving Parameters: An AI-based Approach to Sound Design for Electric and Hybrid Vehicles**

Jasper de Kruiff
Impulse Audio Lab

14:45 **Low-Latency MIMO Loudspeaker-Room Compensation for Real Time Driving Sound Enhancement in Electric Vehicles**

Marius Lambacher
Müller-BBM Active Sound
Technology GmbH

15:15 **Advancing Active Sound Design Systems for AVAS and Emotionalization: A Holistic Approach to Enhance Active Sound Design Systems**

Lukas Lübbert

Department of Mechanical
Engineering,
University of Applied
Sciences and Arts Dortmund

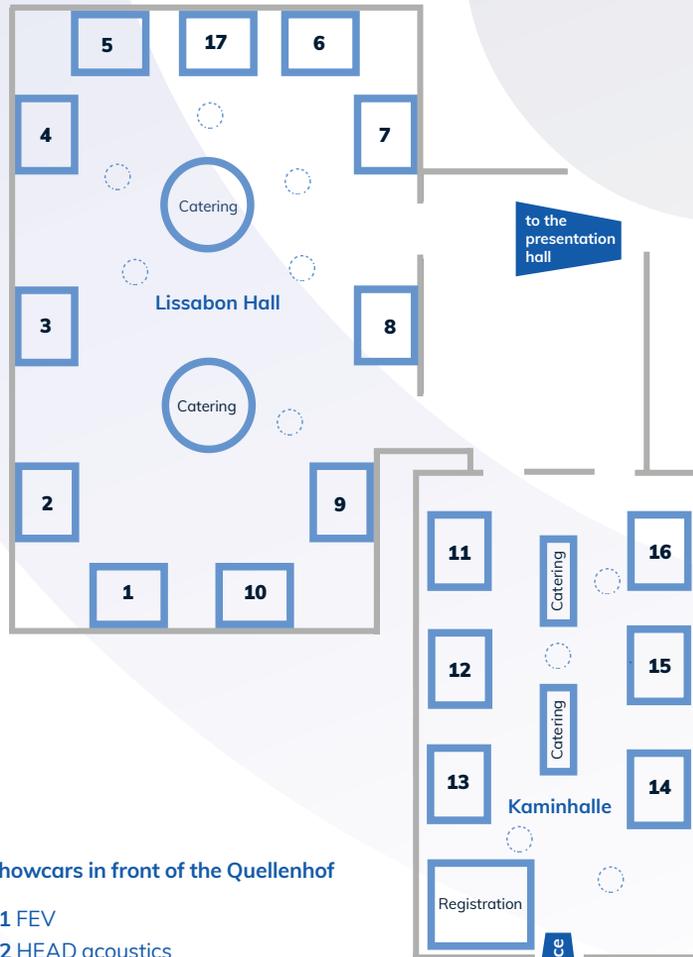
15:45 **Final Remarks**

*Prof. Lutz Eckstein/
Prof. Stefan Pischinger*



EXHIBITION

- 11 Bertrandt AG
- 9 BETA CAE Systems
- 7 Blackberry QNX
- 3 FEV Group GmbH
- 6 fka GmbH
- 5 HEAD acoustics GmbH
- 4 Hexagon
- 12 IHTA, RWTH Aachen University
- 2 Kendrion Automotive Group
- 17 MECALC Technologies
- 14 Microflown Technologies
- 13 Novicos GmbH
- 10 POLYTEC GmbH
- 1 Seven Bel GmbH
- 15 Siemens
- 16 Soundingsight
- 8 VI-grade



Showcars in front of the Quellenhof

- C1 FEV
- C2 HEAD acoustics
- C3 Kendrion



LIST OF EXHIBITORS

Bertrandt AG

Ehningen, Germany

bertrandt

BOOTH 11

Acoustics: Designing Mobility

Acoustics and sound design have a powerful influence on customers' purchase decisions. As a result, vehicle acoustics plays a central role in the interaction between traditional mechanical systems during the development of future mobility.

At Aachener Acoustics Colloquium 2023, Bertrandt is presenting its Center of Competence Testing with focus on vehicle acoustics. From tyre, engine and wind noise, combination of materials in electric transport to the individual perception of sounds – Bertrandt combines virtual simulations and physical test methods to offer the ideal solutions as part of the product development process.

Bertrandt offers the entire value chain of product development for the international automotive industry: from the initial idea and the development and validation of components, modules and systems right through to complete vehicles. Visit us at booth 11!

Our specialists will be available to inform you in a personal dialog. About 14.000 employees secure profound knowledge at more than 50 locations worldwide.

www.bertrandt.com

+49 7034 656-0

12



LIST OF EXHIBITORS

BETA CAE Systems

Root, Switzerland

BOOTH 9

BETA CAE Systems transformed CAE by introducing revolutionary automation software tools and practices into Simulation and Analysis processes almost 30 years ago.

Committed to our mission to enable engineers to deliver results of high value, we continue to offer state-of-the-art, high-performance software and best-in-class services. Our simulation solutions liberate low risk and high Return-On-Investment innovation.

The ground-breaking technology, the excellent services and our high standards of business ethics are the three pillars on which BETA was founded and grows since then.

Our passion for engineering, our drive for excellence, and our loyalty to customers and partners, are the key ingredients of our success. We first established our reputation in the Automotive sector and now we are proud of the deployment of our software also in the Aerospace, Defence, Biomechanics, Electronics, Energy, and other industries. Our solutions exceed their requirements in all the simulation disciplines, and allow for the development of the right product, for the right market, at the right time.

www.beta-cae.com

+41 415453650



LIST OF EXHIBITORS

BlackBerry QNX

Hannover, Germany



BOOTH 7

BlackBerry® QNX® is a trusted supplier of safe and secure operating systems, hypervisors, frameworks and development tools, and provides expert support and services for building the world's most critical embedded systems. The company's technology is trusted in more than 235 million vehicles and is deployed in embedded systems around the world, across a range of industries including automotive, medical devices, industrial controls, transportation, heavy machinery and robotics. Founded in 1980, BlackBerry QNX is headquartered in Ottawa, Canada and was acquired by BlackBerry in 2010.

BlackBerry QNX software and development tools are standards-based and enable companies to adopt a scalable software platform strategy across product lines and business units. The BlackBerry QNX software portfolio, including our safety pre-certified product versions, is purpose built for embedded systems and scales to support everything from single-purpose devices to highly complex, mixed-criticality platforms. Because we believe we are not successful until you are, you can rely on our support and professional services teams to provide the expertise you need, when you need it – throughout the entire product development lifecycle.

blackberry.qnx.com

twitter.com/QNX_News

+49 511 940 910

14



LIST OF EXHIBITORS

FEV Group GmbH

Aachen, Germany

BOOTH 3

FEV has always pushed the limits.

FEV is an internationally recognized leader of innovation across different sectors and industries. Professor Franz Pischinger laid the foundations by combining his background in academia and engineering with a great vision for continual progress. The company has supplied solutions and strategy consulting to the world's largest automotive OEMs and has supported customers through the entire transportation and mobility ecosystem.

As the world continues to evolve, so does FEV.

That's why FEV is unleashing its technological and strategic expertise into other areas. It applies its forward thinking to the energy sector. And its software and system know-how will enable the company to lead the way making intelligent solutions available to everyone. FEV brings together the brightest minds from different backgrounds and specialties to find new solutions for both current and future challenges.

But FEV won't stop there.

Looking ahead, FEV continues to push the limits of innovation. With its highly qualified 7,000 employees at more than 40 locations globally, FEV imagines solutions that don't just meet today's needs but tomorrow's. Ultimately, FEV keeps evolving – to a better, cleaner future built on sustainable mobility, energy and software that drives everything. For the companies' partners, its people and the world. #FeelEvolution

www.fev.com

twitter.com/FEV_Europe_GmbH

+49 241 56890



LIST OF EXHIBITORS

fka GmbH

Aachen, Germany

BOOTH 6

For 40 years, fka has been internationally known as an innovative engineering service for the mobility industry. Driving the world by developing ideas and creating innovations is the mission statement that fka's 160-strong team is committed to.

The team is inspired by a passion for efficient, safe and fascinating mobility. As one of the first companies on the Aachen campus, the spin-off of the Institute for Automotive Engineering of the RWTH Aachen University demonstrated entrepreneurial foresight. Interdisciplinary expertise in all aspects of mobility and technological visions, combined with the advantages of the inspiring creative location, are fka's fuel. Ideas, innovations and unique methodological expertise are shaped into well-founded and secured solutions that give fka's customers the necessary edge in a wide range of issues. A complete spectrum of services, ranging from consulting and conception to simulation and design, prototype construction and experimental testing, forms the basis for this.

With the credo „creating ideas & driving innovations“, the team constantly has the mobility of the future in mind.

www.fka.de/en/

twitter.com/fka_de

+49 241 8861 0



LIST OF EXHIBITORS

HEAD acoustics GmbH

Herzogenrath, Germany

BOOTH 5

HEAD acoustics GmbH is one of the world's leading companies offering holistic solutions for sound and vibration analysis. In the telecom sector, the company enjoys global recognition due to the expertise and pioneering role in the development of hardware and software for the measurement, analysis and optimization of voice and audio quality as well as customer-specific solutions and services. HEAD acoustics' range of services covers sound engineering for technical products, investigation of environmental noise, speech quality engineering as well as consulting, training and support. The medium-sized company from Herzogenrath near Aachen has subsidiaries in China, France, Italy, Japan, South Korea, the UK and the USA as well as numerous sales partners worldwide.

www.head-acoustics.com

[linkedin.com/company/head-acoustics-gmbh](https://www.linkedin.com/company/head-acoustics-gmbh)

+49 2407 577-0



LIST OF EXHIBITORS

Hexagon

BOOTH 4

Hexagon is a global leader in digital reality solutions, combining sensor, software and autonomous technologies. We are putting data to work to boost efficiency, productivity, quality and safety across industrial, manufacturing, infrastructure, public sector, and mobility applications.

Our technologies are shaping production and people related ecosystems to become increasingly connected and autonomous – ensuring a scalable, sustainable future. Hexagon's Manufacturing Intelligence division provides solutions that use data from design and engineering, production and metrology to make manufacturing smarter. For more information, visit hexagon.com/mi.

Hexagon (Nasdaq Stockholm: HEXA B) has approximately 23,000 employees in 50 countries and net sales of approximately 4.3bn EUR. Learn more at hexagon.com and follow us @HexagonAB.



www.hexagon.com

LIST OF EXHIBITORS

IHTA, RWTH Aachen University

Aachen, Germany



BOOTH 12

The Institute for Hearing Technology and Acoustics (IHTA) at RWTH Aachen University is led by Prof. Michael Vorländer and Prof. Janina Fels. It deals with the physical and technical questions of sound as well as the effects on humans. With numerous contributions to acoustic measurement and simulation technology, IHTA plays a significant role in research in Europe and abroad. This applies in particular to work on acoustic sound propagation, signal processing and spatial audio reproduction with the goal to auralize all kinds of acoustic indoor and outdoor scenarios.

www.akustik.rwth-aachen.de

[linkedin.com/company/institute-for-hearing-technology-and-acoustics](https://www.linkedin.com/company/institute-for-hearing-technology-and-acoustics)

LIST OF EXHIBITORS

Kendrion Automotive Group

KENDRION

BOOTH 2

KENDRION designs, manufactures, and delivers intelligent actuators that help advance the global push towards electrification and sustainable energy.

The AUTOMOTIVE GROUP stands for smart innovative power and excellent service, which we consistently apply for the benefit of our customers. With our strong know-how, our specialists develop the leading-edge vehicle sound system. They use the combined know-how of the team and foster dialog with customers in order to keep up with trends and requirements at all times.

Our PHANTONE sound enhancement solutions generate a unique VEHICLE SOUND IDENTITY that's exclusive to your brand and increases the perception of quality. We convince with comprehensive vehicle sound by combining individual components which are ready for the future E/E architecture. You benefit from our modular, freely configurable design options with our detailed understanding of your needs, whether for the interior or the AVAS conform exterior sound needs.

PHANTONEXT expands our existing 'Phantone' platform. With PHANTONEXT, our team has innovatively created algorithms that can be integrated directly into domain controllers, zone computers or into the headunit, replacing individual control units in the future. This concept will be demonstrated at the AAC 2023 in Aachen along with our other products.

www.kendrion.com/en/

20



LIST OF EXHIBITORS

MECALC Technologies

Berlin, Germany

BOOTH 17

MECALC is an engineering hub which designs, develops, and manufactures advanced data acquisition and control systems. Our systems are used globally in applications where accuracy and the quality of signal conditioning are paramount. For 40 years, leading manufacturers in automotive, aerospace and defense have been trusting MECALC with the development and quality control of their most important projects and applications.

www.MECALC.com

+49-30-555-795-760

MECALC

LIST OF EXHIBITORS

Microflown Technologies

Arnhem, The Netherlands



BOOTH 14

Microflown Technologies, located in the Netherlands, is known for its innovative Microflown sensor, the first to directly measure acoustic particle velocity. Our sensor has transformed vibroacoustic testing, offering new methods for sound and vibration analysis in industries such as automotive and aerospace. With more than 25 years of experience, our journey in acoustic innovation has led to unparalleled acoustic testing solutions. We invite you to visit our booth to explore our unique solutions and discover the exceptional benefits of our technology, contributing to a quieter world.

www.microflown.com

info@microflown.com



LIST OF EXHIBITORS

Novicos GmbH

Hamburg, Germany



BOOTH 13

As a leading expert in the fields of vibration, flow, electromagnetics and especially acoustics, Novicos GmbH offers a broad range of technical services and consulting. According to our customers' needs we develop multi-physical concepts and models for minimizing vibrations, conduct extensive measurements and design computer-based simulations of even the most complex processes.

As a Siemens Smart Expert Partner we provide you with state-of-the-art testing equipment and software solutions from Siemens Digital Industries Software's simulation portfolio. Our experience with the tools we use every day in our projects enables us to support our customers not only in choosing the best numeric tools for their application, but also in the operation of these tools.

We maintain a close relationship with Hamburg University of Technology (TUHH) as well as numerous other scientific institutions, which gives us insight on the latest developments and most progressive practices in the fields of vibration and acoustics. Our unique combination of expertise in research, science and practical application gives our customers the edge they need in optimizing their product developments and innovations - faster, more reliable and cost-effective.

www.novicos.de

LIST OF EXHIBITORS

POLYTEC GmbH

Waldbronn, Germany

BOOTH 10

For more than 50 years and with almost 500 employees worldwide, the high-tech company Polytec has been developing, producing and selling optical measurement technology for research and industry. This includes systems for vibration measurement, surface characterization, length and velocity measurement, process analytics, and optical systems. Polytec operates subsidiaries in Europe, North America and Asia and offers a worldwide service network. The innovative quality products enjoy an excellent reputation in the international professional community.

www.polytec.com

+4972436040



LIST OF EXHIBITORS

Seven Bel GmbH

Linz, Austria

BOOTH 1

Seven Bel is a manufacturer of acoustic camera systems for the localization and visualisation of sound sources in products and processes.

Our patented technology helps users to quickly identify acoustic problems and define on-target solutions.

Industries: Automotive, Aerospace, Rail, Machinery construction, Energy

Fields of application:

Product engineering (noise reduction, sound-design), Quality control, Maintenance, Trouble-shooting (detection of leaks and dominant/significant sources of noise)

www.sevenbel.com/en/

twitter.com/Seven_Bel

+43 664 204 2710



LIST OF EXHIBITORS

Siemens Digital Industries Software

Cologne, Germany

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BOOTH 15

Siemens Digital Industries Software is driving transformation to enable a digital enterprise where engineering, manufacturing and electronics design meet tomorrow. The Xcelerator portfolio helps companies of all sizes create and leverage digital twins that provide organizations with new insights, opportunities and levels of automation to drive innovation. For more information on Siemens Digital Industries Software products and services, visit [siemens.com/software](https://www.siemens.com/software) or follow us on LinkedIn, Twitter, Facebook and Instagram. Siemens Digital Industries Software – Where today meets tomorrow.

www.siemens.com/software

twitter.com/siemenssoftware

LIST OF EXHIBITORS

Soundingsight

Enschede, The Netherlands

BOOTH 16

Soundingsight offers a hardware and software solution called Sonocat that enables its customers to easily localize and identify their acoustic issues.

- In-situ sound absorption without artificial sound source in real time
- Quick and easy source localization while driving because the active intensity can be separated into incident and reflected intensity

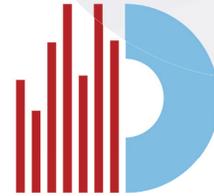
Our team of skilled professionals brings a wealth of experience in NVH and Acoustics. Soundingsight has had the privilege of serving a diverse range of clients, including Automotive Supplier, OEM and universities. Our commitment to excellence has earned us a reputation for reliability and customer satisfaction.

www.soundingsight.nl

mirco@soundingsight.nl

www.linkedin.com/company/soundingsightbv/

+31 53 303 4888



LIST OF EXHIBITORS

VI-grade

Darmstadt, Germany



BOOTH 8

VI-grade is the global provider of disruptive vehicle development solutions that are paving the way to developing vehicles with Zero Prototypes. Its human-centric solutions comprise industry-leading real-time simulation software, professional driving simulators and Hardware-in-the-Loop solutions that accelerate product development across the transportation industry.

The company's suite of scalable driving simulators covers a wide performance range to assess the multi-disciplinary driving experience. These proven solutions enable OEMs, suppliers, research centers, motorsport teams and universities to reduce physical prototypes while accelerating innovation in their quest to get ever nearer to achieving the ultimate development goal of Zero Prototypes.

VI-grade is part of HBK's Virtual Test Division, which focuses on providing real-time software, simulator, and hardware-in-the-loop solutions to virtually test products throughout the development cycle, helping companies accelerate innovation and reduce time-to-market, and improve their competitive advantage.

Since September 2018, VI-grade has been part of Spectris plc. The firm conducts business in four major segments - materials analysis, testing & measurement, in-line instrumentation and industrial controls - and serves a broad range of industries ranging from automotive and aerospace to electronics, energy, mining and pharmaceuticals.

For more information on VI-grade, please visit our website:

www.vi-grade.com

28



CONTACT

Aachen Acoustics Colloquium GbR

E-Mail: info@aachen-acoustics-colloquium.com

Internet: www.aachen-acoustics-colloquium.com

General questions / Attendees

Sara Portz

fka GmbH

Phone: +49 241 8861-205

E-Mail: portz@aachen-acoustics-colloquium.com

Exhibitors

Dr. Marco Günther

tme, RWTH Aachen University

Phone: +49 241 80-48080

E-Mail: guenther@aachen-acoustics-colloquium.com

Authors

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IHTA, RWTH Aachen University

Phone: +49 241 80-97987

E-mail: behler@aachen-acoustics-colloquium.com

www.aachen-acoustics-colloquium.com

**SAVE THE
DATE 2024
25. - 27.11.**



AAC 2024

AACHEN ACOUSTICS COLLOQUIUM

November 25th - 27th, 2024



Aachener Akustik Kolloquium GbR
info@aachen-acoustics-colloquium.com
www.aachen-acoustics-colloquium.com

FEV fka 

 **HEAD** acoustics

IHTA

RWTHAACHEN
UNIVERSITY