32. Uluslararası Ses ve Titreşim Kongresi (ICSV32) ve Akustik ve Titreşim Akademisi (AVA) Duyurusu

32. Uluslararası Ses ve Titreşim Kongresi (ICSV32), 5–10 Temmuz 2026 tarihleri arasında İstanbul'da gerçekleştirilecektir. Akustik ve titreşim alanında dünyanın öncü bilimsel etkinliklerinden biri olan kongrenin bu yılki teması **"Tarihi Alanlardan Geleceğin Kentlerine Akustik"** olarak belirlenmiş olup, sesin toplumsal anlamı ve yeni teknolojilerin akustiğin geleceğine etkileri üzerine kapsamlı bir platform sunulması hedeflenmektedir.

Kongre öncesinde, **4–5 Temmuz 2026** tarihlerinde, **Mimar Sinan Güzel Sanatlar Üniversitesi Yapı Uygulama ve Araştırma Merkezi** iş birliği ile **Akustik ve Titreşim Akademisi (AVA)** uydu etkinliği düzenlenecektir. **"Akustik ve Titreşim Alanındaki Güncel Eğilimler ve İleri Yöntemler"** başlığı altında Üniversitemiz bünyesinde gerçekleştirilecek olan bu eğitim programı; temel bilgiye sahip lisansüstü öğrenciler ve sektör profesyonellerine yönelik ileri düzey bir kapasite geliştirme fırsatıdır.

Program, teorik derslerin yanı sıra yeni yöntem ve sistemlerin sunulacağı aşağıdaki üç ana modülden oluşmaktadır:

1- Future Soundscapes

2- Room acoustics analysis methods and solutions for open plan offices

3- Non-Linear Modal Analysis and Substructuring

Her modül; teorik anlatımlar, uygulamalı oturumlar, firma sunumları ve sertifikasyon süreçlerini kapsayacak şekilde tasarlanmıştır. Katılımcı sayısı **30 kişi ile sınırlı** olup, kriterleri karşılayan öğrenciler için **AVA Katılım Hibesi** imkânı da mevcuttur.

Ülkemizin bu disiplindeki bilimsel birikimini uluslararası standartlarla buluşturmak ve genç araştırmacılarımızın küresel ağlara entegrasyonunu sağlamak amacıyla, ilgili bölümlerinizdeki lisansüstü öğrenciler ile erken kariyer araştırmacılarının programa katılım konusunda teşvik edilmesi büyük önem arz etmektedir.

Kayıt ve hibe başvuruları için güncel tarih: 15 Mayıs 2026

Ayrıntılı Bilgi ve Başvuru: icsv32.org/index.php?va=viewpage&vaid=480

Announcement of the 32nd International Congress on Sound and Vibration (ICSV32) and the Acoustics and Vibration Academy (AVA)

The 32nd International Congress on Sound and Vibration (ICSV32) will be held in Istanbul on 5–10 July 2026. As one of the world's leading scientific events in the field of acoustics and vibration, this year's congress will be held under the theme "Acoustics from Heritage Sites to Future Cities." The congress aims to provide a comprehensive platform for discussions on the meaning of sound for society and the impact of emerging technologies on the future of acoustics.

Prior to the congress, the **Acoustics and Vibration Academy (AVA)** satellite event will be held on **4–5 July 2026**, in cooperation with the **Mimar Sinan Fine Arts University Construction Research Centre**. Organised within our University under the title **"Current Trends and Advanced Methods in Acoustics and Vibration,"** this programme offers an advanced capacity-building opportunity for postgraduate students and industry professionals with a fundamental background in the field.

In addition to theoretical lectures, the programme consists of three main modules presenting new methods and systems:

1- Future Soundscapes

2- Room acoustics analysis methods and solutions for open plan offices

3- Non-Linear Modal Analysis and Substructuring

Modules are limited to 30 participants. Each module includes the following components: Lectures & exercises, hands-on sessions, company presentations, exams (for students upon request for an accredited certificate, otherwise a participation certificate will be granted). Students may apply for AVA participation grants as well. (https://icsv32.org/index.php?va=viewpage&vaid=480)

In order to bring our country's scientific expertise in this discipline together with international standards and to support the integration of our young researchers into global networks, we kindly consider it highly important that postgraduate students and early-career researchers in your relevant departments be encouraged to participate in the programme.

Current deadline for registration and grant applications: 15 May 2026
Further information and application: icsv32.org/index.php?va=viewpage&vaid=480

ACOUSTICS AND VIBRATION ACADEMY (AVA):

Current trends and advanced methods in acoustics and vibration

04-05 July 2026

Mimar Sinan Fine Arts University, Bomonti Campus

Cumhuriyet Mah. Silahşör Cad. No:71 Bomonti Şişli, Istanbul, Türkiye

This event aims to introduce advanced educational modules combining theoretical foundations with practical applications in three thematic areas.

During the two days program the event will present theory, newly emerging methods and systems to provide advanced-level training designed for both graduate-level students with fundamental knowledge in acoustics and/or vibrations, and professionals working in the field.

Professionals participating in this academy will receive a "certificate of participation". Students, upon request, may obtain a certificate indicating that the training activity has been evaluated as 1 ECTS credit, provided that they complete an additional preparatory assignment and take an examination at the end of the training. (The awarded 1 ECTS credit is recorded in the Diploma. Supplement at the students' home universities within the scope of the Micro- Credential System.)

ORGANISING COMMITTEE

Bilge Şan Özbilen

Ayça Şentop Dümen

Papatya Nur Dökmeci Yörükoğlu

Konca Şaher

Dilara Kelle

Supported by:

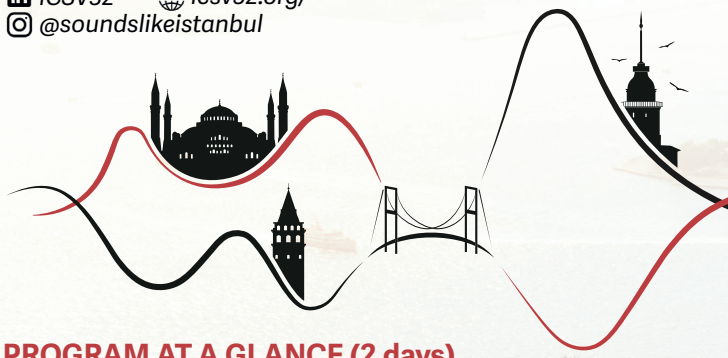
MIMAR SINAN FINE ARTS UNIVERSITY | YUAM

Organised by:

The International Institute of Acoustics and Vibration

TAKDER TURKISH ACOUSTICAL SOCIETY

ICSV32 icsv32.org/
@soundslikeistanbul



ICSV32

32nd International Congress on Sound and Vibration

05 - 10 JULY 2026

ISTANBUL

The annual congress of the International Institute of Acoustics and Vibration (IIAV)

AVA Acoustics & Vibration Academy

04 - 05 JULY 2026

PROGRAM AT A GLANCE (2 days)

- 1,5 days: Lectures & practical exercises
- Half a day: Workshops & hands-on measurements
- 10-30 minutes: Sponsor presentations
- 30-60 minutes: Exam - for students who want to have it as credits

Target Group: 30 participants x 3 topics
Acoustics students and/or mechanical vibrations students with at least basic knowledge + professional development of graduates (special prerequisites can be defined as requested by educators)

Registration (open until April 30, 2026): USD 150

Participants are required to register via congress website **icsv32.org/**

Modules are limited to **30** participants.

Participation Grants (open until April 30, 2026):

Scholarships of **USD 150**, covering the registration fee will be awarded to **10 students each**.

To be eligible for this grant, applicants must be **young acousticians and/or students studying mechanical vibrations**, **currently enrolled in a Master's or PhD program** and **under 35 years of age**. Priority will be given to students from underrepresented groups, including women, and according to the order of registration.

The scholarship recipients will be informed by email, and the amount paid will be refunded to their accounts.

Grant Application Documents:

- CV and one-page professional biography.
- A brief recommendation letter from the supervisor.
- Student certificate
- Academic transcript

Please combine all the documents listed above into a **single PDF file** and email it to **satellite-event@icsv32.org**. The subject line of the email should be **AVA Student Grants Application_your initials**.

Module 1: Future Soundscapes

Organiser: Assoc. Prof. Dr. Francesco Aletta

1.1. Soundscape
Francesco Aletta, University College London, UK

1.2. Psychoacoustics
Radi Serafimov, HEAD acoustics, Germany

1.3. AI and Digital Methods in Soundscape
Volkan Acun, University of Salford, UK

PBL: Perception-Driven Design in Acoustics
Antonio José Torija Martinez, University of Salford, UK

The Future Soundscapes module is an advanced training course focused on contemporary methods for soundscape assessment and prediction, grounded in the ISO 12913 framework. The course explores soundscape theory, human perception, and psychoacoustics as the basis for structured data collection, analysis, and interpretation across indoor, outdoor, and natural environments.

Participants will engage with current soundscape assessment methodologies, soundscape indicators and descriptors, and the theory behind and application of soundscape prediction models. The training also introduces emerging analytical approaches, including AI-assisted data processing and modelling, and considers how these tools can support evidence-based design, planning, and decision-making within existing regulatory and standards-based contexts.

PBL: Perception-Driven Design in Acoustics

This course introduces perception driven design in acoustics, moving beyond traditional sound level approaches. It aims to explore state of the art methods including auralisation, psychoacoustic testing, and advanced noise and sound quality metrics. Furthermore, the course examines practical applications and success measures to enhance acoustic design aligned with human perception.

Module 2: Room Acoustics Analysis Methods and Solutions for Open Plan Offices

Organiser: Prof. Dr. Peter Svensson

2.1. Room Acoustics Modelling & Theory
Peter Svensson, Norwegian University of Science and Technology, Norway

2.2. Acoustic Design of Open Plan Offices
Valtteri Hongisto, Turku University of Applied Sciences, Finland

PBL: Room Acoustics Characterisation Through Measurements
Peter Svensson, Norwegian University of Science and Technology, Norway

Onur Akaydın, Pro-Plan Ltd., Türkiye

Dilara Kelle, Kadir Has University, Türkiye

Ayça Şentop Dümen, Norwegian University of Science and Technology, Norway

PBL: Screens For Offices
Peter Svensson, Norwegian University of Science and Technology, Norway

This course provides an integrated overview of room acoustics for open-plan offices, combining theoretical foundations, measurement methods, noise control solutions and a case study on acoustic screens.

It gives a short review of fundamental room acoustics theory, with a focus on geometrical acoustics and diffuse-field theory. The concepts of coupled spaces and noise barriers, and their relationship to open landscape offices, will then be discussed in more detail. Possibilities and limitations for geometrical acoustics-based methods and typical room acoustic simulation software will be discussed. Function-specific acoustic criteria, ISO 3382-3 methods, and noise control solutions will be introduced together with case studies.

PBL: Room Acoustics Characterization Through Measurements

This study evaluates a demo room under two conditions. Initial measurements include A-weighted SPL of speech, background noise, STI, and ISO 3382-3 parameters, compared with predictions using an online regression model. In the modified setup, screens are added, and the same procedures are repeated to assess their impact on acoustic performance.

PBL: Screens For Offices

This study presents an analysis of measurement results, simulations, and the overall acoustic performance of the demo room (with and without acoustic screens), and assesses acoustic improvements using an online model.

Module 3: Non-Linear Modal Analysis and Substructuring

Organiser: Prof. Dr. H. Nevzat Özgüven

3.1. Experimental Modal Analysis of Linear Systems
Dario Di Maio, University of Twente, Netherlands

3.2. Frequency Based Substructuring (FBS)
Matt Allen, Brigham Young University, USA

3.3. Analytical and Experimental Modal Analysis of Nonlinear Systems
H. Nevzat Özgüven, Middle East Technical University, Türkiye

PBL: Structural Vibration Measurements
Giancarlo Kosova, Siemens Digital Industries Software, Belgium

The Experimental Linear Modal Analysis module will focus on deriving modal properties from Frequency Response Functions (FRFs). The course is focussed on Single and Multi-Degree of Freedom systems for which many intuitive analysis techniques will be explained and applied. Moreover, examples of FRF visualisations will show how to inspect the linearity of an FRF.

A frequency based substructuring (FBS) framework is used to cover linear substructuring fundamentals such as compatibility, equilibrium and primal/dual assembly. Interface considerations are reviewed including virtual point transformations and the transmission simulator method. Modal substructuring methods, such as the Hurty/Craig-Bampton method, are also briefly introduced and related to these concepts.

Analytical and experimental modal analysis of nonlinear systems will be investigated based on the quasi-linear property of nonlinear systems. Response-controlled harmonic testing provides quasi-linear FRFs from which a response-dependent modal model of a nonlinear system can be derived. Applications of the method on benchmark structures and complex engineering systems will be presented.

PBL: Structural Vibration Measurements

This workshop offers a live demonstration of structural vibration measurements. Learn practical techniques like FRF acquisition using impact or shaker testing, and perform experimental modal analysis with commercial software. Discover pre-test optimization, model correlation with FEA, and how to leverage experimental data for advanced research. This workshop complements the theory sessions.

Ek-3

SATELLITE EVENTS
IN 32ND INTERNATIONAL CONGRESS ON SOUND AND VIBRATION (ICSV32)

ACOUSTICS & VIBRATION ACADEMY (AVA)

Current Trends and Advanced Methods in Acoustics and Vibration

MODULE 1

"Future Soundscapes"

Organiser: Assoc. Prof. Dr. Francesco Aletta

AVA Acoustics & Vibration Academy

ICSV32
32nd International Congress on Sound and Vibration
05 - 10 JULY 2026
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TAKDER

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Current Trends and Advanced Methods in Acoustics and Vibration

04-05 July 2026

Mimar Sinan Fine Arts University, Bomonti Campus
Cumhuriyet Mah. Silahşör Cad. No:71 Bomonti Şişli, Istanbul, Türkiye

Registration (open until April 30, 2026): **$150**

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MODULE 1

"Future Soundscapes"

Organiser: Assoc. Prof. Dr. Francesco Aletta

1.1. Soundscape
Francesco Aletta, University College London, UK

1.2. Psychoacoustics
Radi Serafimov, HEAD Acoustics, Germany

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Volkan Acun, University of Salford, UK

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EDUCATORS

Francesco Aletta
University College London, UK

Dr Francesco Aletta is an Associate Professor in Building Physics and Soundscape at Institute for Environmental Design and Engineering, University College London (UCL). His research focuses on environmental acoustics and soundscape studies. Francesco is committed to advancing soundscape research through his contribution to the ISO 12913 series on soundscapes, which provides a comprehensive framework for assessing and managing urban sound environments. Francesco's research has informed international policy discussions. He authored a United Nations Environment Programme report in 2022, addressing emerging environmental concerns related to noise and its impact on public health and urban environments. His work is frequently referred in policy documents and guidelines aimed at promoting healthier and more sustainable sound environments globally. As part of his standardization efforts, Francesco coordinated the Soundscape Attributes Translation Project, an international collaboration of more than 100 scholars worldwide.
He is also an active member of editorial boards for leading journals, including the Journal of the Acoustical Society of America (Coordinating Editor for TC Noise), and member of the organizing committee of several international conferences, including the Urban Sound Symposium, and the Lancet UK Public Health Science Conference. Francesco is a member of the Italian Acoustical Society (AIA), the Acoustical Society of America (ASA), and serves as Chair of the Technical Committee Noise of the European Acoustics Association (EAA). With over 200 publications, 6,000 citations and multiple awards, including the ASA Science Communication Award in 2023, Francesco aims to contribute to the global discourse on soundscape design, urban acoustics, and public health.

Radi Serafimov
HEAD Acoustics, Germany

Radi Serafimov has been working in acoustics for more than 15 years, covering different areas such as voice, audio, noise and vibration quality and optimization. Graduated University of Kiel in 2011, obtaining MSc in Digital Communications.
Thanks to his work for HEAD acoustics, first as Consulting Engineer in Voice and Audio Quality and since 2018 as Sales NVH Engineer has obtained expertise not only in research and development with various publications and participations in forums such as DAGA, ITG, ETSI, but also practical and project-oriented experience in all fields of the company portfolio – psychoacoustics, vibration, speech, audio and sound quality. One of the few, that has worked in both company areas – Sound, Vibration, Perception and Voice and Audio Quality.
Since changing to Sales NVH team, has been responsible for representing the company products and values in Austria, Central and Eastern Europe, including Türkiye!

Volkan Acun
University of Salford Manchester, UK

Volkan Acun is a Research Fellow at the Acoustics Research Centre, University of Salford. He holds a Bachelor's, Master's, and a PhD in Interior Architecture and Environmental Design from Bilkent University. His research focuses on human perception of soundscapes and community responses to environmental noise, with a particular emphasis on sound emissions from low-carbon technologies, such as air source heat pumps. His work integrates controlled listening experiments, field measurements, psychoacoustic analysis, and advanced statistical modelling to investigate annoyance, valence, and arousal responses to complex acoustic environments. A central focus of his work involves applying machine learning methods to model and predict human responses to sound, thereby enabling a deeper understanding of how auditory environments affect psychological well-being. His research aims to inform evidence-based noise assessment frameworks and support the sustainable deployment of emerging technologies.

Antonio José Torija Martinez
University of Salford Manchester, UK

Prof. Antonio José Torija Martinez is a world-leading expert in environmental acoustics and pioneer of Perception-Driven Engineering, placing human noise perception at the centre of design for sustainable mobility and decarbonisation. His expertise has earned him international recognition and invitations such as providing evidence to the UK House of Lords on noise and health. He has led major EU, UKRI, and industry-funded projects, following a prestigious Marie Skłodowska - Curie Fellowship, and received multiple awards for excellence in acoustics. Widely published in top journals including Nature and Scientific Reports, he contributes to key international groups on aircraft and UAS noise (NASA, NATO, ISO, IEA). He serves as the UK's Responsible National Expert on heat pump acoustics and chairs the Quiet Drones international conference series, being recognised as the world's most influential author on drone noise.

PROGRAM

<table>
<tr><th colspan="4">MODULE 1:
FUTURE SOUNDSCAPES</th></tr>
<tr><td colspan="2">04.07.2026 - Saturday</td><td colspan="2">05.07.2026 - Sunday</td></tr>
<tr><td>TIME</td><td>TOPIC</td><td>TIME</td><td>TOPIC</td></tr>
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Radi Serafimov</td></tr>
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</table>

ORGANISING COMMITTEE

Bilge Şan Özbilen

Ayça Şentop Dümen

Papatya Nur Dökmeci Yörükoğlu

Konca Şaher

Dilara Kelle

**The program is subject to change until the event date.*

Ek-4

SATELLITE EVENTS
IN 32ND INTERNATIONAL CONGRESS ON SOUND AND VIBRATION (ICSV32)

ACOUSTICS & VIBRATION ACADEMY (AVA)

Current Trends and Advanced Methods in Acoustics and Vibration

MODULE 2

"Room Acoustics Analysis Methods and Solutions for Open Plan Offices"

Organiser: Prof. Dr. Peter Svensson

AVA Acoustics & Vibration Academy

ICSV32
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MODULE 2

"Room Acoustics Analysis Methods and Solutions for Open Plan Offices"

Organiser: Prof. Dr. Peter Svensson

2.1. Room Acoustics Modelling & Theory
Peter Svensson, Norwegian University of Science and Technology, Norway

2.2. Acoustic Design of Open Plan Offices
Valtteri Hongisto, Turku University of Applied Sciences, Finland

PBL: Room acoustics characterisation through measurements
Peter Svensson, Norwegian University of Science and Technology, Norway
Onur Akaydın, Pro-Plan Ltd., Türkiye
Dilara Kelle, Kadir Has University, Türkiye
Ayça Şentop Dümen, Norwegian University of Science and Technology, Norway

PBL: Screens For Offices
Peter Svensson, Norwegian University of Science and Technology, Norway

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PBL: Screens For Offices

This study presents an analysis of measurement results, simulations, and the overall acoustic performance of the demo room (with and without acoustic screens), and assesses acoustic improvements using an online model.

EDUCATORS

Peter Svensson
Norwegian University of Science and Technology, Norway,

Peter Svensson has been professor at the Department of Electronic Systems at Norwegian University of Science and Technology (NTNU) since 1999, in the acoustics group. He has an MSc in eng. phys. (1988) and a PhD in acoustics (1994) from Chalmers University of Technology in Gothenburg. He has had research visits at Kobe University (1997-98), Rensselaer Polytech Institute (2007), University of Reading (2012-13), University College London (2017), Chalmers University of Technology (2023), KTH, Stockholm (2023), and Aalto University (2023). Previously he has been vice president of the European Acoustics Association (2007-13), president of the Norwegian Acoustical Society (2004-06), and board member of the Swedish Acoustical Society (1996-99). Currently he is vice president of Initiative for Science in Europe (2024-). His research interests are room acoustics and electroacoustics, in particular computational methods and measurement techniques, but also auralization techniques (virtual acoustics), and psychoacoustics - the perception of speech and music in rooms.

Valtteri Hongisto
Turku University of Applied Sciences, Finland

Valtteri Hongisto is a research group leader in Turku University of Applied Sciences in Finland. Hongisto received master level in 1993 (physics, University of Turku) and doctor level in 2000 (acoustics, Aalto University). Hongisto has docent position both in Aalto University (noise control, 2006-) and in University of Turku (environmental psychology, 2018-). His research in engineering covers architectural acoustics and noise control in workplaces, buildings, ships, environment, and underwater. Research in environmental psychology and psychoacoustics complements engineering research by proving the human benefits of noise control. Hongisto is the convener of ISO TC 43 SC 2 WG34 (speech privacy) being responsible for three international measurement standards. Current work focuses on research project ideation, networking, research supervision, teaching, and scientific writing. Hongisto has been the PI of 18 public research projects, authored or co-authored in 88 peer-reviewed papers, and supervised six doctoral dissertations. His most cited research area is office noise.

Onur Akaydın
Pro-Plan Ltd., Türkiye

He received his B.Sc. in Mechanical Engineering in 2010 and his M.Sc. in Mechanical Dynamics, Vibration, and Acoustics in 2013 from Istanbul Technical University. Since 2010, he has been working at Pro-Plan Ltd. as a Sales and Application Engineer, specializing in acoustic and vibration measurement and analysis systems. He has extensive hands-on experience delivering training and consultancy services to a wide range of organizations in areas such as sound power measurement, environmental noise assessment, room and building acoustics, experimental modal analysis, and noise source identification. His work primarily focuses on practical, application-oriented solutions using advanced engineering tools, particularly Hottinger Brüel & Kjaer systems.

Dilara Kelle
Kadir Has University, Türkiye

Dilara Kelle is an academic and researcher in the field of Building Science. She received her B.Sc. degree in Interior Architecture from Istanbul Technical University (ITU) in 2007. She subsequently pursued an M.Sc. degree in Environmental Control and Building Technologies at ITU. She continued her academic career with a Ph.D. degree in Building Science at Istanbul Technical University and received her Ph.D. in 2023. During her doctoral studies, her research focused on room modes, wave-based simulations, modal decay time perception, and the acoustical design of small rooms. Following the completion of her Ph.D., she joined Kadir Has University as an Assistant Professor, where she has been actively involved in interior architectural design studios, building technology courses, and interdisciplinary research projects. She is currently involved in a research project focusing on the acoustic performance and user perception in open-plan offices and collective workspaces.

Ayça Şentop Dümen
Norwegian University of Science and Technology, Norway

Ayça Şentop Dümen is an Associate Professor at the Department of Civil and Environmental Engineering at the Norwegian University of Science and Technology (NTNU). She completed her bachelor's, MSc, and PhD degrees at Istanbul Technical University. She worked at Istanbul Bilgi University (2013–2023) including two years as Vice Head of Department. She was a guest researcher at Aalborg University (2019–2020) and a board member of the Turkish Acoustical Society (2018–2024). Alongside academia, she has worked as an acoustic consultant and co-founded Acoustic-HUB. Her research interests are building acoustics, measurements, subjective perception, regulations and construction detailing. She contributed to the preparation of national regulation on noise control in buildings for the Republic of Turkiye. She currently serves as the Scientific Chair for ICSV32 and AVA, working to build an engaging program.

PROGRAM

MODULE 2: ROOM ACOUSTICS ANALYSIS METHODS AND SOLUTIONS FOR OPEN PLAN OFFICES			
04.07.2026 - Saturday		05.07.2026 - Sunday	
TIME	TOPIC	TIME	TOPIC
09.00-13.00	1- Room Acoustics Modelling and Theory Peter Svensson	09.00-13.00	PBL: Room Acoustics Characterization Through Measurements Peter Svensson Onur Akaydın Dilara Kelle Ayca Şentop Dümen
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ORGANISING COMMITTEE

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Papatya Nur Dökmeci Yörükoğlu

Konca Şaher

Dilara Kelle

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Ek-5

SATELLITE EVENTS
IN 32ND INTERNATIONAL CONGRESS ON SOUND AND VIBRATION (ICSV32)

ACOUSTICS & VIBRATION ACADEMY (AVA)

Current Trends and Advanced Methods in Acoustics and Vibration

MODULE 3

"Non-Linear Modal Analysis and Substructuring"

Organiser: Prof. Dr. H. Nevzat Özgüven

AVA Acoustics & Vibration Academy

ICSV32
32nd International Congress on Sound and Vibration
05 - 10 JULY 2026
ISTANBUL
The annual congress of the International Institute of Acoustics and Vibration (IIAV)

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Current Trends and Advanced Methods in Acoustics and Vibration

04-05 July 2026

Mimar Sinan Fine Arts University, Bomonti Campus
Cumhuriyet Mah. Silahşör Cad. No:71 Bomonti Şişli, Istanbul, Türkiye

Registration (open until April 30, 2026): **$150**

Participation Grants (open until April 30, 2026): Scholarships of **$150**, covering the registration fee will be awarded to **10 students each**.

MODULE 3

"Non-Linear Modal Analysis and Substructuring"

Organiser: Prof. Dr. H. Nevzat Özgüven

3.1. Experimental Modal Analysis of Linear Systems
Dario Di Maio, University of Twente, Netherlands

3.2. Frequency Based Substructuring (FBS)
Matt Allen, Brigham Young University, USA

3.3. Analytical and Experimental Modal Analysis of Nonlinear Systems
H. Nevzat Özgüven, Middle East Technical University, Türkiye

PBL: Structural Vibration Measurements
Giancarlo Kosova, Siemens Digital Industries Software, Belgium

The Experimental Linear Modal Analysis module will focus on deriving modal properties from Frequency Response Functions (FRFs). The course is focussed on Single and Multi-Degree of Freedom systems for which many intuitive analysis techniques will be explained and applied. Moreover, examples of FRF visualisations will show how to inspect the linearity of an FRF.

A frequency based substructuring (FBS) framework is used to cover linear substructuring fundamentals such as compatibility, equilibrium and primal/dual assembly. Interface considerations are reviewed including virtual point transformations and the transmission simulator method. Modal substructuring methods, such as the Hurty/Craig-Bampton method, are also briefly introduced and related to these concepts.

Analytical and experimental modal analysis of nonlinear systems will be investigated based on the quasi-linear property of nonlinear systems. Response-controlled harmonic testing provides quasi-linear FRFs from which a response-dependent modal model of a nonlinear system can be derived. Applications of the method on benchmark structures and complex engineering systems will be presented.

PBL: Structural Vibration Measurements

This workshop offers a live demonstration of structural vibration measurements. Learn practical techniques like FRF acquisition using impact or shaker testing, and perform experimental modal analysis with commercial software. Discover pre-test optimization, model correlation with FEA, and how to leverage experimental data for advanced research. This workshop complements the theory sessions.

EDUCATORS

Dario Di Maio
University of Twente, Netherlands

Dr Di Maio graduated in Mechanical Engineering from the University of Politechnic of Marche. He obtained his PhD at Imperial College London. After a short postdoctoral position, he moved to the University of Bristol as a postdoctoral researcher and was later appointed a lecturer in the Mechanical Engineering department.He joined the MS3 department at the University of Twente in late 2017, where he is an Associate Professor of Structural Dynamics.
He is currently leading the Chair in Applied Mechanics and Data Analysis. He founded XCTE startup in January 2026, a company focused on accelerated fatigue testing and nonlinear structural dynamics.

Matt Allen
Brigham Young University, USA

Matt Allen is a Professor in Mechanical Engineering at Brigham Young University. Prior to that he taught for 15 years in the Department of Engineering Physics at the University of Wisconsin-Madison. He received a B.S. in Mechanical Engineering from BYU, M. S. and PhD degrees from the Georgia Tech in 2005 and was a post-doc at Sandia National Laboratories. He has developed robust experimental/analytical substructuring methods, a new framework for identifying linear time-periodic systems, continuous-scan laser vibrometry methods, and model updating techniques for geometrically nonlinear systems based on nonlinear normal modes. Recently his work is concerned with reduced order models for structures with energy dissipation due to friction such as bolted joints and improved methods for dynamic environment testing employing multiple shakers simultaneously. He enjoys skiing, hiking, biking or almost anything to do with mountains.

H. Nevzat Özgüven
Middle East Technical University, Türkiye

H. Nevzat Özgüven is a Professor Emeritus in the Mechanical Engineering Department at METU. He received his Ph.D. from The University of Manchester. He served as a Visiting Professor at The Ohio State University and at the Technical University of Munich. Over the course of his career, he has held several high-level administrative positions, including serving as a Vice President of Scientific and Technological Research Council of Turkey for over five years and Vice President of METU for eight years. He has represented Türkiye on numerous international platforms, and has served on the boards of various national and international organizations. His recent research focuses on nonlinear structural dynamics. He has published over 200 scientific papers, authored a book, supervised more than 80 graduate students, and received several awards from prestigious national and international institutions. He is a Fellow of the American Society of Mechanical Engineers and a full member of the Science Academy (Türkiye).

Giancarlo Kosova
Siemens Digital Industries Software, Belgium

Giancarlo Kosova is a Research Engineer at Siemens Digital Industries Software in Leuven, Belgium. He earned his MSc in Aerospace Engineering from the University of Naples Federico II in 2015, with a thesis in operational modal analysis of rotating wind turbines through a collaboration with Siemens. Before joining Siemens again in 2018, he spent over three years as a Stress Engineer, contributing to aerostructure development for Airbus. His extensive research interests span structural dynamics testing and analysis, including nonlinear system identification, nonlinear localization (the focus of his PhD studies), nondestructive testing, both linear and nonlinear Finite Element Model updating, fixed-base decoupling, and aeroelasticity.

PROGRAM

MODULE 3: NON-LINEAR MODAL ANALYSIS AND SUBSTRUCTURING			
04.07.2026 - Saturday		05.07.2026 - Sunday	
TIME	TOPIC	TIME	TOPIC
09.00-13.00	1- Experimental Modal Analysis of Linear Systems Dario Di Maio	09.00-13.00	3- Analytical and Experimental Modal Analysis of Nonlinear Systems H.Nevzat Özgüven
13.00-14.00	Lunch	13.00-14.00	Lunch
14.00-18.00	Technology meet 2- Frequency Based Substructuring (FBS) Matt Allen	14.00-18.00	Technology meet PBL: Structural Vibration Measurements Giancarlo Kosova
		18.00-18.30	Exam (optional – for students)

ORGANISING COMMITTEE

Bilge Şan Özbilen

Ayça Şentop Dümen

Papatya Nur Dökmeci Yörükoğlu

Konca Şaher

Dilara Kelle

**The program is subject to change until the event date.*