Young Acousticians Network Newsletter #100 May 2021

Newsletter's Summary

Help us improve!

Hey everyone! We thought we'd get to know you, our members, a little bit better so we can improve our content and get it where you want it, there's even some space for you to suggest ideas! Just click here or scan the QR Code!

Upcoming Events

May 2021

3rd May - 5th May — BNAM 2021 — Baltic-Nordic Acoustics Meeting 2021. **Online.**

18th May - 21st May — WTN 2021 — Wind Turbine Noise 2021. **Online.**

24th May - 28th May — AIA 2021 — 47th National Conference of the Acoustic Society of Italy. **Online.**

June 2021

6th June - 9th June — ISTU 2021 — 20th Annual International Symposium for Therapeutic Ultrasound. **Online.**

14th June - 17th June — ICBEN 2021 — International Congress on Noise as a Public Health Problem. **Online.**

23rd June - 27th June — IV Ecoacoustics Congress. **Online.**

July 2021

11th July- 16th July— ICSV27— International Congress on Sound and Vibration. **Online**

Upcoming Deadlines

May 2021

14th — InterNoise 2021 — International Congress and Exposition on Noise Control Engineering. **Online. Paper submission**

15th — EuroNoise 2021 — European Conference and Exhibition on Noise Control. **Online. Abstract submission**

15th — The Acoustics of Ancient Theatres. Verona, Italy. **Online. Paper submission**

June 2021

15th — I3DA 2021 — International Conference on Immersive and 3D Audio 2021. **Online. Paper submission**

July 2021

15th — EuroNoise 2021 — European Conference and Exhibition on Noise Control. **Online. Paper submission**

Our Discord is here to stay!

Join the server through the QR Code or just click here

https://buff.ly/3wfvgzg

News

Belgian Young Acousticians Network (B-YAN) News!

This past month, B-YAN gathered for the first time in a while. The currently growing community met online due to ongoing pandemic restrictions, and did so on the gather.town platform. During this talk the foundations were layed for a series of talks about architectural acoustics and vibro-acoustics in the future.

https://www.abav.be/b-yan.php

Stay tuned while we update this during the coming months!

Call for German Student Helpers!

Every-German-speaking-one! The Acoustics Research Institute is looking for student helpers helping at the DAGA2021:

https://www.oeaw.ac.at/isf/das-institut/news/das-institut-fuer-schallforschung-isf-an-der-oesterreichischen-akademie-der-wissenschaften-oeaw

Job Announcements

Environmental Monitoring Technician. Hann Tucker Associates. Woking, Surrey, UK.

Acoustic Testing Technician/Engineer/Consultant. Cambridge Acoustic Laboratory. Ltd.Cambridge, UK.

Consultant Opportunities. Environoise Consulting. Wirral, UK.

Acoustic Vacancies. MSA Careers & Consulting Ltd. UK.

Acoustic Vacancies. Penguin Recruitment. UK.

PhD Scholarship in Ecological Protocols for Inclusive Hearing. PoliTo. Turin, Italy.

Acoustics Researcher – Audio/Acoustics/Algorithm/Active Control/Haptic. European Recruitment Company. Flemish Region, Belgium.

Electro-Acoustic Engineer. WSAudiology. Copenhagen, Denmark.

Post-doctoral Position - Analytical modelling of the noise of a rotor-stator stage in the presence of stationary inflow distortion. Ecole Centrale de Lyon. Auvergne-Rhône-Alpes, France.

Post-doctoral Position - Multi-band Shared Aperture Antenna Arrays for MIMO Systems. Aalborg University. North Jutland, Denmark.

PhD in Bioacoustics. Department of Information Technology. Ghent University. Ghent, Belgium

Publications

(PhD Thesis) Acoustic study, model and characterization of new solutions based on textile fabrics

This thesis work focuses on the study, modelling and acoustic characterization of new solutions based on textile fabrics, starting from conditions of sustainability. For this, four lines of research have been carried out in order to analyse the acoustic behaviour of new solutions based on textile fabrics from the textile industry, based on modifications or structural combinations thereof.

In this Thesis, the structure of the textile fibre has been studied from the analysis of the macrostructural parameters of the fibre, such as fineness, length, and cross section. Furthermore, the degree of influence of these parameters on acoustic absorption has been investigated. It could be shown that the fineness of the fibre has a significant influence on the acoustic absorption compared to the length of the fibre. In addition, hollow fibres have a better acoustic behaviour, compared to solid fibres. Once the structure and composition of the fibre had been analysed, microcapsules were adhered to the surface of the textile fabrics to increase their acoustic absorption. For this, different design possibilities have been considered according to the type of base fabric used, the homogeneity of the doped base fabrics and the concentration of microcapsules. In addition, a membrane model has been used to predict the acoustic behaviour of textile fabrics doped with microcapsules. In this study it was found that acoustic absorption is influenced by fabric doping with MCCs. Then, textile fabrics were combined with other materials in order to have selective absorption or to increase acoustic absorption in the range of working frequencies. In the same way, it has been tried to observe the acoustic effect of traditional foams perforated with different technologies. In addition, double porosity models and numerical methods have been used to validate the results obtained experimentally. It was found that the acoustic absorption of the perforated fabric-foam system depends slightly on the textile used. In addition, great agreement was obtained between the predicted and experimental values. Finally, the influence of the fabric structure has been analysed. The acoustic effect produced by the geometric parameters used in the design of folded fabrics, such as the length of the fold, the number of folds, the distance between consecutive folds or the height of the fold has been investigated. It has been tried to obtain typical absorption values of an acoustic material through changes in the structure of the textile fabric. Furthermore, a folded permeable membrane model has been used to predict the acoustic absorption coefficient in diffuse field. In this study, it was found that folded fabrics have a higher acoustic absorption coefficient in medium and high

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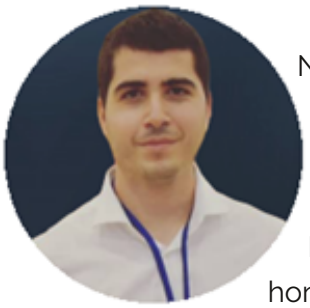
frequencies, both in normal incidence and in random incidence. Furthermore, the fewer the folds, the higher the acoustic absorption values are achieved throughout the frequency range.

About the author



Dr. Roberto Atiénzar-Navarro was born in Oliva (València). He graduated in Telecommunications Systems, Sound and Image Engineering with honours by the Polytechnic University of Valencia in Gandia, and he also specialized in acoustics after completing the Master's Degree in Acoustic Engineering by the UPV in Gandia (València). He has participated in the research project funded by the Generalitat Valenciana with reference AICO/2016/060 and entitled "Metamaterials and periodic elastic media for the control of plates vibration" and in the National Project BIA2013-41537-R (BIAEFIREMAT "Development of new eco-materials and sustainable construction solutions for building based on the use of waste and renewable raw materials") which is funded by the Spanish Ministry of Economy and Competitiveness and co-funded with ERDF funds. He currently has the title of doctor in the program Design, Manufacturing and Management of Industrial Projects by the UPV. In his thesis, titled "Estudio, modelado y caracterización acústica de nuevas soluciones en base a tejidos textiles" and supervised by doctors Rubén Picó and Romina del Rey, focuses on the modification of fibers or fabrics in order to obtain new textiles with improved acoustic properties. This thesis was funded by project ACIF/2017/073 by Regional Ministry of Education, Culture and Sport of the Generalitat Valenciana and with the support of European Structural Investment Funds (ESIF-European Union). He was one of the winners of the 2018/2019 Andres Lara Award for Young Researchers granted by the Spanish Society of Acoustics (SEA) and he has recently been a finalist in the 32nd AEQCT awards for the best textile or textile chemical study applied to the industry.

INFOS

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Publications?!

Do you have a new publication in the field of acoustics?

Publish here and introduce your publication to other young acousticians all over Europe! Contact us through:

yan@euracoustics.org