

Europass Curriculum Vitae



Personal information

Surname / First name

Andrea Santoni

Home page

Nationality

Gender

Education

2014–2017

PhD degree in Engineering Science - University of Ferrara

Thesis Title: Sound Radiation and Sound Transmission in Building Structures: Numerical Modelling and Experimental Validation

2009–2013

Master's degree in Civil Engineering - University of Ferrara

Thesis Title: Structure-borne sound: Metodologie di caratterizzazione delle sorgenti sonore strutturali e implementazione dei modelli UNI EN 12354 alle tipologie edilizie italiane

2005–2009

Bachelor's degree in Building Engineering - University of Ferrara

Thesis Title: Evoluzione delle tecniche di misura dell'acustica architettonica. "Casa della musica di San Marino"

Courses and Training

2017

DENORMS Training school: Experimental techniques for acoustic porous materials and meta-materials

2016

Symposium on building acoustics: Towards a better understanding: ratings and predictions

2016

AA - Summer school in acoustics: Numerical methods in acoustics

2016

EAA - Summer school in acoustics: 3D Virtual Acoustics

2016

CISM - Marie Curie Graduated School: Smart structures for vibro-acoustic control

2014

eLiquid - Marie Curie Public Technical course: Best engineering training in electric, lightweight and quiet driving

Research Activity

Andrea Santoni currently works as postdoc researcher at the Department of Engineering, University of Ferrara. Andrea does research in the fields of vibro-acoustic and noise control engineering, within the Acoustic Research Group. He is involved in projects regarding sound radiation and sound transmission of building elements, product optimisation and the experimental characterisation of the elastic and acoustic properties of solid, porous and viscoelastic materials. He collaborates on regular basis with industrial partners, companies and professionals.

Qualifications

2017 **ENTECA** accreditation as expert in acoustics
National accreditation in the national register of expert technicians in acoustics, on March 8th 2018: **RER/00994**
<https://agentifisici.isprambiente.it/enteca/home.php>

2009 Assessor of Energy Performance of Buildings
Region: Emilia-Romagna

Work experience

Jan. 2017 – Present

University of Ferrara: Post-doc Researcher

<https://de.unife.it/en/research/research-1/civil/acoustics>

Acoustics and Vibration Research Group – Engineering Department – main activities:

Fluid-structure interaction interaction in sound transmission and sound radiation: experimental vibro-acoustic measurement and numerical analysis.

Sound prediction models : development and implementation of codes to compute sound transmission and sound radiation in different kinds of structures;

Materials characterisation : experimental evaluation of the physical, mechanical and acoustic properties of materials used in building construction.

Sound sources characterisation : experimental characterisation of sound power and sound pressure levels radiated by a specific machine.

2013 – Present

Independent Consultancy and Collaborations

MATERIACUSTICA s.r.l. www.materiacustica.it

Via C. Ravera 15/A, 44122 Ferrara (FE)

Building Acoustics - Evaluation of the acoustic performance of buildings, either using prediction models or by means of in-situ measurements: in-situ and laboratory measurements to assess the acoustic performance of building partitions; in-situ experimental investigation of flanking sound transmission paths; optimisation design of building partition to enhance their acoustic performance.

Environmental Acoustics - Environmental noise assessment, either using numerical prediction tools or through in-field measurements: assessment of noise generated by road and railways traffic; assessment of noise arose from construction site and evaluation of the impact on protected natural areas; assessment of noise generated by vessels; assessment of noise service equipment.

Room Acoustics: Experimental measurements to assess the room acoustic quality and acoustic design: acoustic measurements in theatres, offices and school rooms; acoustic design of open-offices.

Other Activities: Experimental measurements and predictions by using either commercial software or specifically implemented codes: assessment of building vibration induced by road traffic; experimental investigation of sound power emitted by electronic appliances and machines; material characterisation and acoustic product optimisation.

STUDIO TECNICO MASSARI www.studiotecnicomassari.it

Via Due Martiri 2, 47030 San Mauro Pascoli (FC)

Environmental Acoustics - Environmental noise assessment, either using numerical prediction tools or through in-field measurements. Main activities: assessment of noise impact arose from general construction sites; assessment of noise impact arose hydroelectric power plants; assessment of noise impact generated from different production activities; evaluation of environmental noise for new housing developments.

Building Acoustics - Evaluation of the acoustic performance of buildings, either using prediction models or by means of in-situ measurements.

ARCHACUSTICA www.archacustica.it

Zona Artigianale 56, 3905,0 Collalbo/Renon (BZ)

Building and Room Acoustics: set-up optimisation and characterisation of a sound transmission test facility for building elements, and a reverberant chamber for sound absorption measurements; experimental measurements of the sound transmission loss of walls; experimental measurements of diffuse field sound absorption of materials and absorbers.

May–Dec. 2015

Academic Guest at EMPA - Swiss Federal Laboratories

Occupational skills: experimental and numerical evaluation of the sound power radiated from cross-laminated timber (CLT) plates and material characterisation.

Aug.–Dec. 2013

Post-Grad Internship at the Engineering Department Unife

Occupational skills: environmental acoustic monitoring of noise emissions generated by the construction activities in the lagoon of Venice.

Relevant Projects

2018 – 2019

Project BRIC/INAIL ID26 - Unife

Topic analysis of regulations and standards regarding the noise and vibration exposure of workers

2013 – 2016

CORILA Studio B.6.72 B9–B11 - Unife

Topic: Environmental monitoring of the effects arose from construction activities at the lagoon inlets

2013 – 2016

VENICE PORT AUTHORITY Noise from Vessels - Unife

Topic: Acoustic characterisation of cruise and industrial vessels. Experimental noise monitoring; assessment of the actual condition and acoustic simulation for an alternative route of cruise vessels in the lagoon of Venice.

2013 – 2016

AIRIS s.r.l. Urban Noise Mapping - Unife

Topic: Strategic noise mapping of the municipality of Ferrara according to D.Lgs. 194/2005

Awards and Recognitions

2018

IUSS Best PhD Thesis

Best PhD thesis of XXIX Doctoral course in Engineering Science - University Institute for Higher Studies, IUSS – Ferrara 1391

2018

G. Sacerdote AIA Award

Best PhD thesis on topics concerning acoustics, Acoustical Society of Italy (AIA)

2017

Best Paper Award for Young Researchers

Best paper and presentation at Acoustics'17 in Boston, European Acoustics Association (EAA)

2017

I. Barducci AIA Award

Best poster communication for young researcher: presented at AIA national conference, Acoustical Society of Italy (AIA)

Languages

Mother tongue

Italian

*Self-assessment
European level^(*)*

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
C2 Proficient user	C1 Proficient user	C1 Proficient user	C1 Proficient user	C1 Proficient user

English

() Common European Framework of Reference (CEF) level*

Lectures and Tutoring

2018

AIA Symposium, Ascoli, Italy - Acoustics in buildings renovation and urban regeneration

Lecture: *The influence of acoustic and mechanical properties of building elements in prediction models.*

2014 – 2018

Engineering courses tutoring - Unife:

Courses: *Building and environmental acoustics, Service equipment in buildings, Noise control techniques, Fluid-structure interaction.*

2017 | **AIA Symposium**, Bozen, Italy - International Symposium on Advanced Research in Timber Construction: Acoustics Quality, Environment and Safety
Lecture: *Modelling sound radiation in cross-laminated timber plates.*

2016 | **Engineering Council of Bozen Course** - Acoustic design of timber buildings: theoretical models and practical applications
Lecture: *Material properties of innovative building elements.*

2014 – 2016 | **Tutoring at School of Acoustics** - Ferrara

International Conferences

2019 | 23rd International Congress on Acoustics (ICA), Aachen, Germany
2019 | Building Simulation (IBPSA), Rome, Italy
2019 | Building Simulation Application (IBPSA), Bozen, Italy
2019 | 26th International Congress on Sound and Vibration (IIAV), Mottréal, Canada
2018 | 25th International Congress on Sound and Vibration (IIAV), Hiroshima, Japan
2018 | 11th European Congress and Exposition on Noise Control Engineering (EAA), Heraklion, Crete - Grece
2017 | Acoustics'17, ASA meeting jointed with 8th Forum Acusticum (EAA), Boston, MA - USA
2016 | 45th International Congress and Exposition of Noise Control Engineering, Hamburg, Germany
2016 | EuroRegio2016, Porto, Portugal
2015 | 22th International Congress on Sound and Vibration (IIAV), Florence, Italy
2015 | 10th European Congress and Exposition on Noise Control Engineering (EAA), Maastricht, Netherlands
2014 | 7th Forum Acusticum, Krakow, Poland
2013 | 42th International Congress and Exposition of Noise Control Engineering, Innsbruck, Austria

Journal Publications

- 1 A. Santoni, J. L. Davy, P. Fausti, and P. Bonfiglio. A review of the different approaches to predict the sound transmission loss of building partitions. *Building Acoustics*, Online First:(In press), 2020
- 2 Andrea Santoni, Paolo Bonfiglio, Patrizio Fausti, Cristina Marescotti, Valentina Mazzanti, and Francesco Pompoli. Characterization and vibro-acoustic modeling of wood composite panels. *Materials*, 13(8):1897, 2020
- 3 A. Santoni, S. Schoenwald, P. Fausti, and H. M. Tröbs. Modelling the radiation efficiency of orthotropic cross-laminated timber plates with simply-supported boundaries. *Applied Acoustics*, 143:112–124, 2019
- 4 A. Santoni, P. Bonfiglio, P. Fausti, C. Marescotti, V. Mazzanti, F. Mollica, and F. Pompoli. Improving the sound absorption performance of sustainable thermal insulation materials: Natural hemp fibres. *Applied Acoustics*, 150:279–289, 2019
- 5 A. Santoni, P. Bonfiglio, P. Fausti, and F. Pompoli. Alternative method to the Oberst technique to measure the complex elastic modulus of visco-elastic materials. *Noise Control Engineering Journal*, 67(1):1–10, 2019
- 6 A. Santoni, P. Bonfiglio, F. Mollica, P. Fausti, F. Pompoli, and V. Mazzanti. Vibro-acoustic optimisation of wood plastic composite systems. *Construction and Building Materials*, 174:730–740, 2018
- 7 A. Santoni, P. Fausti, and P. Bonfiglio. Building materials: Influence of physical, mechanical and acoustic properties in sound prediction models. *Building Acoustics*, 26(1):3–20, 2019
- 8 A. Santoni, S. Schoenwald, B. Van Damme, and P. Fausti. Determination of the elastic and stiffness characteristics of cross-laminated timber plates from flexural wave velocity measurements. *Journal of Sound and Vibration*, 400:387–401, 2017
- 9 A. Santoni, P. Bonfiglio, J. L. Davy, P. Fausti, F. Pompoli, and L. Pagnoncelli. Sound transmission loss of *ETICS* cladding systems considering the structure-borne transmission via the mechanical fixings: Numerical prediction model and experimental evaluation. *Applied Acoustics*, 122:88–97, 2017
- 10 S. Secchi, G. Cellai, P. Fausti, A. Santoni, and N. Zuccherini Martello. Sound transmission between rooms with curtain wall facades. A case study. *Building Acoustics*, 3-4(22):193–207, 2015
- 11 N. Zuccherini Martello, S. Secchi, P. Fausti, G. Cellai, and A. Santoni. Analysis of direct and flanking sound transmission between rooms with curtain wall facades. *Energy Procedia*, 78:164–169, 2015
- 12 N. Zuccherini Martello, P. Fausti, A. Santoni, and S. Secchi. The use of sound absorbing shading systems for the attenuation of noise on building façades. An experimental investigation. *Buildings*, 5(4):1346–1360, 2015

Conference Proceedings

- 1 A. Santoni, P. Fausti, and P. Bonfiglio. Using near-field acoustic measurements to characterise mechanical and acoustic properties of lightweight building structures. In *Proceedings of the 23rd International Congress on Acoustics*, pages 1302–1309, Aachen, Germany, 2019. ICA

- 2 A. Santoni, P. Fausti, P. Bonfiglio, and M. Caniato. On the use of the transfer matrix method to evaluate sound insulation in complex building partitions. In *Proceedings of the 16th IBPSA International Conference and Exhibition*, pages 55–62, Rome, Italy, 2019. IBPSA
- 3 A. Santoni, M. Caniato, A. Gasparella, and P. Fausti. Acoustic simulation of timber floors using numerical models. In *Proceedings of the 26th International Congress on Sound and Vibration*, Montréal, Canada, 2019. International Institute of Acoustics and Vibration
- 4 P. Fausti, A. Santoni, A. Brighenti, M. Caniato, L. Barbaresi, F. Morandi, and G. Semprini. Evaluation of the impact noise reduction by using thin flooring solution. In *Proceedings of the 26th International Congress on Sound and Vibration*, Montréal, Canada, 2019. International Institute of Acoustics and Vibration
- 5 A. Peretti, E. Carletti, F. Pedrielli, J. Griguolo, F. Pompoli, C. Visentin, C. Marescotti, A. Santoni, P. Fausti, and P. Nataletti. . In *Proceedings of the 26th International Congress on Sound and Vibration*, Montréal, Canada, 2019. International Institute of Acoustics and Vibration
- 6 A. Santoni, P. Fausti, and P. Bonfiglio. Determination of the structural response of lightweight structures by means of sound pressure measurements. In *Proceedings of the 25th International Congress on Sound and Vibration*, Hiroshima, Japan, 2018. International Institute of Acoustics and Vibration
- 7 A. Santoni, P. Fausti, and P. Bonfiglio. Experimental setup for acoustic and mechanical characterisation of lightweight building elements. In *Proceedings of the 11th European Congress and Exposition on Noise Control Engineering*, Crete, Greece, 2018. EAA-ELINA
- 8 A. Santoni, P. Bonfiglio, P. Fausti, and S. Schoenwald. Predicting sound radiation efficiency and sound transmission loss of orthotropic cross-laminated timber panels. *Proceedings of Meetings on Acoustics*, 173EAA, 30:015013, 2017
- 9 A. Di Bella, P. Fausti, A. Santoni, N. Zuccherini Martello, and M. C. Guerra. Evaluation of airborne noise due to navigation and manoeuvring of large vessels. In *Proceedings of the 24th International Congress on Sound and Vibration*, London, UK, 2017. International Institute of Acoustics and Vibration
- 10 P. Fausti, M. C. Guerra, A. Santoni, N. Zuccherini Martello, R. Cremonini, G. Scalpelli Quiqueto, P. Campostrini, C. Dabalà, and M. Caniato. Noise generated from large construction sites: Measurements and possible mitigations. *Proceedings of Meetings on Acoustics*, 22ICA, 28:040004, 2016
- 11 A. Santoni, P. Bonfiglio, P. Fausti, S. Schoenwald, and H. M. Tröbs. Sound radiation efficiency measurements on cross laminated timber plates. In *Proceedings of the 45th International Congress and Exposition on Noise Control Engineering*, pages 3697–3707, Hamburg, Germany, 2016. Institute of Noise Control Engineering
- 12 A. Santoni, S. Schoenwald, B. Van Damme, H. M. Trobs, and P. Fausti. Average sound radiation model for orthotropic cross laminated timber plates. In *Proceedings of Euroregio 2016*, Porto, Portugal, 2016. EAA-SPA-SEA
- 13 P. Fausti, P. Campostrini, C. Dabalà, M. Caniato, M. C. Guerra, A. Santoni, and N. Zuccherini Martello. Noise generated from large construction sites: Measurements and possible mitigations. In *Proceedings of the 22nd International Congress on Acoustics*, Buenos Aires, Argentina, 2016. ICA

- 14 P. Bonfiglio, F. Pompoli, A. Santoni, and C. Marescotti. Determination of dynamic storage modulus of viscoelastic and poroelastic materials using a simplified time of flight approach. In *Proceedings of the 22nd International Congress on Sound and Vibration*, Florence, Italy, 2015. International Institute of Acoustics and Vibration
- 15 N. Zuccherini Martello, P. Fausti, and A. Santoni. Experimental analysis of sound absorbing shading systems for the acoustic protection of facades. In *Proceedings of the 22nd International Congress on Sound and Vibration*, Florence, Italy, 2015. International Institute of Acoustics and Vibration
- 16 A. Santoni, P. Bonfiglio, P. Fausti, and N. Zuccherini Martello. Sound insulation of heavyweight walls with linings and additional layers: Numerical investigation. In *Proceedings of the 10th European Congress and Exposition on Noise Control Engineering*, Maastricht, Netherlands, 2015. EAA-NAG-ABAV
- 17 A. Santoni and P. Fausti. Field measurements to analyse flanking transmission in buildings. In *Proceedings of Forum Acusticum 2014*, Krakow, Poland, 2014. EAA
- 18 S. Secchi, P. Fausti, T. Carrascal Garcia, M. Machimbarrena, C. Monteiro, and A. Santoni. How building technology in Italy and Spain can be improved after the experience of COST Action TU0901 and the discussion on going on the new descriptors. In *Proceedings of Forum Acusticum 2014*, Krakow, Poland, 2014
- 19 E. Baldaccini, P. Campostrini, F. Coccon, C. Dabalà, P. Fausti, A. Santoni, and C. Soldatini. Birds and noise: The MOse yards case (Lagoon of Venice, Italy). In *Proceedings of the 5th International Symposium: Monitoring of Mediterranean coastal areas: problems and measurements techniques*, pages 807–816, Livorno, Italy, 2014
- 20 A. Santoni and P. Fausti. Case studies on the application of EN 12354-5 in Italy. In *Proceedings of the 42nd International Congress and Exposition on Noise Control Engineering*, volume 247, pages 6211–6220, Innsbruck, Austria, 2013. Institute of Noise Control Engineering

15/09/2019

ANDREA SANTONI

- Non viene apposta la firma, a tutela dei dati della persona interessata, ai sensi del Regolamento UE 2016/679 e del d.lgs. 196/2003 aggiornato al d.lgs. n. 101/2018.

- La Dichiarazione sostitutiva di certificazioni/dell'atto di notorietà (D.P.R. 28 dicembre 2000, n. 445 - artt. 46 e 47) relativa al presente CV è conservata presso l'Ufficio competente indicato nell'allegato al PTPC vigente dell'Università degli Studi di Ferrara.