

CURRICULUM VITAE

N.B. Roozen

PERSONAL DATA

Name: N.B. (Bert) Roozen
Nationality: Dutch
Address: Burg.Strijbosstraat 1, 5591EL Heeze, The Netherlands
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SCIENTIFIC AND INDUSTRIAL EXPERIENCE

- 9.2015 – now **Guest professor at the KU Leuven**
Laboratory of Acoustics, Division Soft Matter and Biophysics
Department of Physics and Astronomy – University of Leuven (KU Leuven)
- 1.2015 – 9.2015 **Senior researcher at the KU Leuven**
Laboratory of Acoustics, Division Soft Matter and Biophysics
Department of Physics and Astronomy – University of Leuven (KU Leuven)
- 7.2012 – 12.2014 **Marie-Curie Intra-European Fellowships (IEF) research fellow at the KU Leuven**
Laboratory for Acoustics and Thermal Physics (ATF), Department of Physics and Astronomy and at Division Production engineering, Machine design and Automation, Department of Mechanical Engineering– University of Leuven (KU Leuven)
- 2010 – 2012 **Senior researcher at the Delft University of Technology (TU Delft)**
Department Design and Production of Composite Structures, Faculty of Aerospace Engineering.
- 2010 – now **Consultant / Owner at NOVIC Noise and Vibration Control**
NOVIC Noise and Vibration Control is a sole trader start-up company providing consultancy and contract-research in the field of structural acoustics and vibration of machinery. NOVIC also provides dedicated in-house courses in this field of expertise.
- 2003 – 2011 **Part-time professor “Acoustics and Control” at the Eindhoven University of Technology (TU/e)**
Group Dynamics and Control, Faculty of Mechanical Engineering.
- 1998 – 2010 **Senior scientist Acoustics and Vibration at Philips Applied Technologies**
Department of Mechatronics.
- 1995 – 1998 **Research scientist Acoustics at Philips Research Laboratories**
Department of Mechanics and acoustics.
- 1986 – 1995 **Specialist Acoustics at Fokker Aircraft BV, Schiphol**

EDUCATION

- 1992 **PhD at the Eindhoven University of Technology (TU/e)**
Research subject: structural vibration and sound transmission through aircraft structures, numerical reduction techniques, multi-physics coupling of structural and acoustic domains. Thesis title: “Quiet by design”.
- 1984 –1986 **Mechanical Engineering, Eindhoven University of Technology (TU/e)**
With honours (Cum Laude).
- 1983 –1984 **Mechanical Engineering, Twente University (UT)**
Propaedeutics.

SABATICALS AT OTHER INSTITUTES

- 07.2017, Short term scientific mission (1 month stay) at University of Ferrara, Italy. Subject: Characterization of elastic parameters of acoustical porous materials using Lamb-waves. Financed by COST action CA15125.
- 09.2015–12.2015, Professeur invité auprès de l'INSA de Lyon (invited professor at INSA Lyon, France). Financed by "Le Centre Lyonnais d'Acoustique (CeLyA)".
- 19.08.2013–06.09.2013, Short-Term Scientific Mission on "The influence of planking fastening on the sound transmission through light-weight structures", at the Federal Institute of Technology TGM, Department of Acoustics and Building Physics, Vienna, Austria. Financed by Marie Curie COST action TU0901.
- Université de Bourgogne, Nevers, France, financed by Tournesol, "Gemeenschappelijke activiteiten met Frankrijk in het kader van de gemengde subcommissie voor wetenschappelijke uitwisselingen" 2013.
- Acoustics Laboratory of the Université du Maine, Le Mans, France, financed by Tournesol, "Gemeenschappelijke activiteiten met Frankrijk in het kader van de gemengde subcommissie voor wetenschappelijke uitwisselingen" 2012.
- 09.2011–12.2011, Professeur invité auprès de l'INSA de Lyon (invited professor at INSA Lyon, France). Financed by INSA Lyon. <http://va.insa-lyon.fr/en/content/invited-professors>

COACHING OF MSc-STUDENTS

- Supervisor of approximately 20 MSc students.

COACHING OF PhD-STUDENTS

- Co-supervisor of PhD student Ludovic Labelle, KU Leuven, Department of Physics and Astronomy. Title PhD thesis: "Development of new methods for acoustic and elastic characterization for complex materials and structures". Defence planned in 2018.
- Co-supervisor of PhD student Daniel Urbán, PhD defence on August 27, 2015, Slovak University of Technology, Bratislava, Faculty of civil engineering.
- Second promoter of PhD student Chongxin Yuan, PhD defence on July 8, 2013, Delft University of Technology. Title PhD thesis: "Mechanical and vibro-acoustic aspects of composite sandwich cylinders".
- First promoter of PhD student R. Scholte, PhD defence on December 18, 2008, Eindhoven University of Technology. Title PhD thesis: "Fourier based high-resolution near-field acoustic imaging".

PARTICIPATION IN SCIENTIFIC COMMITTEES

- PhD defence Liang Yu, title PhD thesis: "Acoustical source reconstruction from non synchronous sequential measurements", Laboratoire Vibrations Acoustique, INSA de Lyon, France, 23 March 2015
- Chair of the IIAV/NAG Student Travel Award 2013
- Member of the Honours and Awards Committee of the IIAV, 2012 – 2014
- Member of the judging panel for the "Sir James Lighthill Award" for the best paper submitted to the IIAV International Conference on Sound and Vibration, ICSV
- Jury member of the "Gouden Decibel Award" (www.goudendecibel.nl), 2013
- PhD defence Vojtecha Chmelíka, title PhD thesis: "Principles of inclusive design in architecture and room acoustics", Slovak University of Technology in Bratislava, August 28, 2013
- PhD defence Dorian Vigoureux, title PhD thesis: "Déconfinement de sources acoustiques par utilisation d'une méthode holographique à double information", INSA Lyon, July 3, 2012
- PhD defence Artur Pozarlik, title PhD thesis: "Vibro-acoustical instabilities induced by combustion dynamics in gas turbines", Universiteit Twente, December, 2010
- PhD defence Peter Kindt, title PhD thesis: "Structure-borne tyre/road noise due to road surface discontinuities", KU Leuven, June 1, 2009
- PhD defence Francois Debiesme, title PhD thesis: "Averaged velocity boundary element method for sound radiation from vibrating structures", Eindhoven University of Technology, May14, 2009

- PhD defence Leopoldo de Oliveira, title PhD thesis: "Active Sound Quality Control: Design tools and automotive applications", KU Leuven, January 1, 2009
- PhD defence Carlos Rizzo, title PhD thesis: "Magnetic Resonance Imaging (MRI) acoustic noise : estimation, characterization, reduction", Universiteit Groningen, December 12, 2008
- PhD defence Stephan Schoenwald, title PhD thesis: "Flanking sound transmission through lightweight framed double leaf walls", Eindhoven University of Technology, September 16, 2008
- PhD defence Pieter Nuij, title PhD thesis: "Higher order sinusoidal input describing functions", Eindhoven University of Technology, August 29, 2007
- PhD defence Marieke Hannink, title PhD thesis: "Acoustic resonators for the reduction of sound radiation and transmission", Universiteit Twente, May 16, 2007
- PhD defence Vicor Kornilov, title PhD thesis: "Experimental research of acoustically perturbed Bunsen flames", Eindhoven University of Technology, December 13, 2006
- PhD defence Rob Huls, title PhD thesis: "Acousto-elastic interactions in combustion chambers", Universiteit Twente, May 17, 2006
- PhD defence Ron Raangs, title PhD thesis: "Exploring the use of the microflown", Universiteit Twente, December 9, 2005
- PhD defence Gerke Hoiting, title PhD thesis: "Measuring MRI noise", Universiteit Groningen, May 27, 2005
- PhD defence Rene Visser, title PhD thesis: "A Boundary Element Approach to Acoustic Radiation and Source Identification", Universiteit Twente, Sept 9, 2004
- PhD defence Peter Kessels, title PhD thesis: "Engineering toolbox for structural-acoustic design", Eindhoven University of Technology, January 31, 2001

MEMBERSHIPS

- Management committee member COST action CA15125 "Designs for Noise Reducing Materials and Structures", DENORMS (2016-now)
- President of the Acoustical Society of the Netherlands, 2008 – 2012
- Board member of the Acoustical Society of the Netherlands, 1996-2005, 2012-2015
- Member of the Belgium Acoustical Society ABAV since 2013
- Director of the International Institute of Acoustics and Vibration, **IIAV 2019 - 2023**
- Past Director of the International Institute of Acoustics and Vibration IIAV, 2007-'11, 2013-'17
- Management committee member COST action TU0901 "Integrating and Harmonizing Sound Insulation Aspects in Sustainable Urban Housing Constructions" (2009-2013)

ORGANIZING ACTIVITIES / Pro bono work

- Session organizer at
 - o ICSV26 Montreal
 - o Euronoise 2018 Hersonissos
 - o Forum Acusticum 2017 Boston
 - o ICA2016 Buenos Aires
 - o Euronoise 2015 Maastricht
 - o Forum Acusticum 2011 Aalborg
 - o ICSV13 Vienna (2006), ICSV14 Cairns (2007), ICSV15 Daejeon (2008), ICSV16 Krakow (2009) , ICSV17 Cairo (2010), ICSV21 Beijing (2014), ICSV23 Athens (2016).
 - o NAG/DAGA 2009, Rotterdam
 - o ISMA29, 2004 Leuven
- Scientific committee member of
 - o Euronoise 2012 Prague, Euronoise 2015 Maastricht
 - o ICSV16, ICSV17, ICSV18, ICSV19, ICSV20, ICSV21, ICSV22, ICSV23
 - o ATF 2013 and 2016, 2nd and 4th Conference on Acoustics, Light and Thermal Physics, Leuven, Belgium
- Organizing committee member of
 - o symposium "Tyre-road noise (not) in Eindhoven", 28 September, 2007
- Reviewer of the journals
 - o Journal of Sound and Vibration (recognized Reviewer Status since August 2016)
 - o Applied Acoustics (recognized Reviewer Status since September 2016)
 - o Acta Acustica united with Acustica (Hirzel)
 - o Physica Status Solidi A (Wiley-VCH Verlag GmbH)

PATENTS

- 22 patents filed in the field of structural dynamics and acoustics of, amongst others:
 - o Magnetic Resonance Imaging (MRI) systems.
 - o Wafer steppers.
 - o Loudspeakers.

PUBLICATIONS

- 43 refereed journal articles (see separate list of journal articles).
- 69 refereed proceeding articles.

REVIEWER OF THE JOURNALS

- Journal of Sound and Vibration (Elsevier) (recognized Reviewer Status since Aug.16)
- Applied Acoustics (Elsevier) (recognized Reviewer Status since September 2016)
- Composite Structures (Elsevier) (recognized Reviewer Status since July 2018)
- Journal of the Acoustical Society of America (ASA)
- Acta Acustica united with Acustica (Hirzel)
- Construction & Building Materials (Elsevier)
- Physica Status Solidi A (Wiley-VCH Verlag GmbH)

Journal publications N.B. Roozen

Scopus-generated overview (generated on February 18, 2019):

Roozen, Nicolaas
Bernardus

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KU Leuven, Department of Physics and
Astronomy, 3000 Leuven, Belgium
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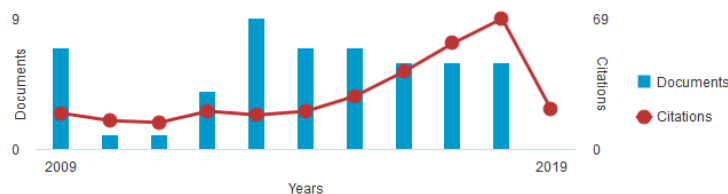
 <http://orcid.org/0000-0001-6637-3190>

Other name formats: Bert Roozen, N. Roozen, Bert Roozen, Nicolaas Roozen, N. B. Roozen, N. Bert

Subject area: Physics and Astronomy Engineering Materials Science Computer Science Mathematics
Arts and Humanities Chemical Engineering Medicine Social Sciences Environmental Science

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Roozen, Nicolaas Bernardus


KU Leuven, Department of Physics
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Journal publications from 2013 – June 2018 (from recent to old)

Roozen, N.B., Leclère, Q., D. Urbán, T. Méndez, P. Block, M. Rychtáriková, C. Glorieux (2018). Assessment of the airborne sound insulation from mobility vibration measurements; a hybrid experimental numerical approach, **Journal of Sound and Vibration**, Volume 432, 2018. <https://doi.org/10.1016/j.jsv.2018.06.058>

Roozen, N.B., Leclère, Q., D. Urbán, L. Kritly, Glorieux, C. (2018). Assessment of the sound reduction index of building elements by near field excitation through an array of loudspeakers and structural response measurements by laser Doppler vibrometry. **Applied Acoustics**, Vol. 140, 225–235. <https://doi.org/10.1016/j.apacoust.2018.06.002>

- Pires, F., Muyshondt, P.G.G., Keustermans, W., Vanlanduit, S., Roozen, N.B., Dirckx, J.J.J. (2018). Structural intensity analysis of flat plates based on digital stroboscopic holography measurements, *Journal of Sound and Vibration*, Vol 428, pp. 168-178. <https://doi.org/10.1016/j.jsv.2018.05.010>
- Bonfiglio, P., Pompoli, F., Horoshenkov, K.V., Rahim, M.I.B.S.A., Jaouen, L., Rodenas, J., Bécot, F.-X., Gourdon, E., Jaeger, D., Kursch, V., Tarello, M., Roozen, N.B., Glorieux, C., Ferrian, F., Leroy, P., Vangosa, F.B., Dauchez, N., Foucart, F., Lei, L., Carillo, K., Doutres, O., Sgard, F., Panneton, R., Verdier, K., Bertolini, C., Bär, R., Groby, J.-P., Geslain, A., Poulain, N., Rouleau, L., Guinault, A., Ahmadi, H., Forge, C. (2018). How reproducible are methods to measure the dynamic viscoelastic properties of poroelastic media? *Journal of Sound and Vibration*, Vol 428, pp. 26-43. <https://doi.org/10.1016/j.jsv.2018.05.006>
- Ege, K., Roozen, N.B., Leclère, Q., Rinaldi, R.G. (2018). Assessment of the apparent bending stiffness and damping of multilayer plates; modelling and experiment, *Journal of Sound and Vibration*, Vol 426, pp. 129-149, 2018. <https://doi.org/10.1016/j.jsv.2018.04.013>
- Urbán, D., Roozen, N.B., Muellner, H., (...), Rychtáriková, M., Glorieux, C. (2018). Vibrometry assessment of the external thermal composite insulation systems influence on the façade airborne sound insulation, *Applied Sciences*, 8(5),703. <https://doi.org/10.3390/app8050703>
- Labelle, L., Roozen, N.B., Vandenbroeck, J. Akasaka, S., Glorieux, C. (2017). Elastic characterization of polymer fibers by laser Doppler vibrometry, Labelle, *Optics and Lasers in Engineering*, Vol. 99, pp 88-97 <http://dx.doi.org/10.1016/j.optlaseng.2016.11.020>
- Roozen, N.B., Labelle, L., Leclère, Q., Ege, K. (2017). Alvarado, S. Non-contact experimental assessment of apparent dynamic stiffness of constrained-layer damping sandwich plates in a broad frequency range using a Nd:YAG pump laser and a laser Doppler vibrometer. *Journal of Sound and Vibration*, 392. <https://doi.org/10.1016/j.jsv.2017.02.012>
- Roozen, N.B., Leclère, Q., Ege, K., Gerges, Y. (2017). Estimation of plate material properties by means of a complex wavenumber fit using Hankel's functions and the image source method, *Journal of Sound and Vibration*, Volume 390, 3, Pages 257-271, ISSN 0022-460X, <http://dx.doi.org/10.1016/j.jsv.2016.11.037>
- Urbán, D., Roozen, N., Zatko, P., Rychtáriková, M., Tomašovič, P., Glorieux, C. , Acoustics of naturally ventilated double transparent facades Architectural Acoustics. 173rd Meeting of Acoustical Society of America, Acoustics 2017 and 8th Forum Acusticum; Boston; United States. Proceedings of Meetings on Acoustics 30(1),015004
- Cehelová, D., Urbán, D., Bielek, B., Chmelík, V., Rychtáriková, M., Roozen, N.B. (2017). Literature review on wind induced sound on buildings, *Akustika 2017*, Vol. 27(1), pp. 42-47
- Buytaert, A., Vanhooreweder, B., Clairbois, J.-P., Houtave, P., Glorieux, C., Roozen, N.B.(2017), In-situ measurements according en 1793-5 and en 1793-6 - First results and impressions, INTER-NOISE 2017 - 46th International Congress and Exposition on Noise Control Engineering: Taming Noise and Moving Quiet.
- Roozen, N.B., Glorieux, C., Lui, L., Rychtarikova, M., Van der Donck, T., Jacobs, A. (2016). Converting sunlight into audible sound by means of the photoacoustic effect: The Heliophone. *Journal of the Acoustical Society of America*, 140 (3), 1697–1706. <http://dx.doi.org/10.1121/1.4962493>
- D. Urbán, N.B. Roozen, P. Zafko, M. Rychtáriková, P. Tomašovič, C. Glorieux. (2016). Assessment of sound insulation of naturally ventilated double skin facades, *Building and Environment*, Volume 110, Pages 148–160. <http://dx.doi.org/10.1016/j.buildenv.2016.10.004>
- Xu, X., Cuautle, J.J.A.F., Kouyate M., Roozen, N.B., Goossens, J., Menon, P., Malayil, M.K., Salenbien, R., Rajesh, R.N., Glorieux, C., Griesmar, P., Martinez, L., Serfaty, S. (2016). Evolution of elastic and thermal properties during TMOS gel formation determined by ringing bottle acoustic resonance spectroscopy, impulsive stimulated scattering, photopyroelectric spectroscopy and the hot ball method, *Journal of Physics D: applied physics*, 49(8), pp 085502 (14pp). <http://dx.doi.org/10.1088/0022-3727/49/8/085502>
- Rychtarikova, M., Muellner, H., Chmelik, V., Roozen, B., Urban, D., Pelegrin Garcia, D., Glorieux, C. (2016). Perceived Loudness of Neighbour Sounds Heard Through Heavy and Light-Weight Walls with Equal $R_w + C_{50-5000}$. *Acta Acustica United with Acustica*, 102, 58-66. <http://dx.doi.org/10.3813/AAA.918924>
- Liu, L., Zhong, K., Munro, T., Alvarado, S., Cote, R., Creten, S., Fron, E., Ban, H., Van der Auweraer, M., Roozen, N.B., Matsuda, O., Glorieux, C. (2015). Wideband fluorescence-based thermometry by neural network recognition: Photothermal application with 10 ns time resolution.. *Journal of Applied Physics*, 118 (18), <https://doi.org/10.1063/1.4935277>

Roozen, N.B., Guyader, J.L., Glorieux, C. (2015). Measurement-based determination of the irrotational part of the structural intensity. *Journal of Sound and Vibration*, 356, 168–180. <http://dx.doi.org/10.1016/j.jsv.2015.06.040>

Roozen, N.B., Labelle, L., Rychtarikova, M., Glorieux, C. (2015). Determining radiated sound power of building structures by means of Laser Doppler vibrometry. *Journal of Sound and Vibration*, 346, 81-99. <http://dx.doi.org/10.1016/j.jsv.2015.02.029>

Roozen, N.B., Muellner, H., Labelle, L., Rychtarikova, M., Glorieux, C. (2015). Influence of panel fastening on the acoustic performance of light-weight building elements: study by sound transmission and laser scanning vibrometry. *Journal of Sound and Vibration*, 346, 100-116. <http://dx.doi.org/10.1016/j.jsv.2015.02.027>

Rychtáriková, M., Chmelík, V., Roozen, N.B., Glorieux, C. (2015). Front–back localization in simulated rectangular rooms. *Applied Acoustics*, 90 (1), 143–152. <https://doi.org/10.1016/j.apacoust.2014.11.012>

Roozen, N.B., Leclere, Q., Rychtarikova, M., Glorieux, C. (2014). A global error estimator for the uncertainty of a multi-channel spectral analysis. *Applied Acoustics*, 87 (1), 57-63. <https://doi.org/10.1016/j.apacoust.2014.06.007>

Glorieux, C., Descheemaeker, J., Vandenbroeck, J., Groby, J., Boeckx, L., Roozen, N.B. (2014). Temperature and frequency dependence of the visco-elasticity of a poro-elastic layer. *Applied Acoustics*, 83, 123-126. <https://doi.org/10.1016/j.apacoust.2014.03.010>

Roozen, N.B., Tazelaar, K., Koussios, S., Beukers, A. (2014). A new method to measure critical strain in composite materials - combining the Euler-Fresnel spiral with acoustic emission to assess crack positions. *Composites Science and Technology*, 100, 228-236. <https://doi.org/10.1016/j.compscitech.2014.06.007>

Leclère, Q., Roozen, N.B., Sandier, C. (2014). On the use of the H_s estimator for the experimental assessment of transmissibility matrices. *Mechanical Systems and Signal Processing*, 43 (1-2), 237-245. <https://doi.org/10.1016/j.ymsp.2013.09.008>

Rychtarikova, M., Roozen, N.B., Muellner, H., Stani, M., Chmelik, V., Glorieux, C., Roozen, N.B. (2013). Perceived loudness of sound transmitted through light weight and heavy weight walls. *Advanced Materials Research*, 649 (101), 101-104. <https://doi.org/10.4028/www.scientific.net/AMR.649.101>

Roozen, N.B., Leclère, Q. (2013). On the use of artificial excitation in operational transfer path analysis. *Applied Acoustics*, 74, 1167-1174. <https://doi.org/10.1016/j.apacoust.2013.04.011>

Yuan, C., Roozen, N.B., Bergsma, O., Beukers, A. (2013). Experimental-numerical study and optimization of sound insulation of a finite composite cylinder. *Engineering Analysis with Boundary Elements*, 37 (2), 250-259. <https://doi.org/10.1016/j.enganabound.2012.09.013>

Yuan, C., Roozen, N.B., Bergsma, O., Beukers, A. (2013). Multi-discipline optimization of sandwich cylinders under a point force excitation. *Aerospace Science and Technology*, 30 (1), 183 – 191. <https://doi.org/10.1016/j.ast.2013.08.002>

Yuan, C., Roozen, N.B., Bergsma, O., Beukers, A. (2013). Experimental-numerical study and optimization of sound insulation of a finite composite cylinder. *Engineering Analysis with Boundary Elements*, 37(2), 250–259. <https://doi.org/10.1016/j.enganabound.2012.09.013>