

ZAFIROPOULOU VASSILIKI



Civil Engineer
UTH, PhD on the field of materials
NTUA, MSc in Analysis and Design
of Earthquake Resistant Structures

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Date & Place of Birth: 09/04/1985, Athens

- *Civil Engineer – Noise & Environmental Expert*
- *Designated Lecturer (P.D. 407/80) in Department of Civil Engineering, Spring Semester 2018-19*
- *Scientific Collaborator of the Laboratory of Transportation Environmental Acoustics (L.T.E.A).*
- *PhD Candidate in the Department of Civil Engineering in University of Thessaly, in the field of Ground borne noise and vibration from the operation of rail transit systems.*

EDUCATION

- Diploma in the Department of Civil Engineering of the University of Thessaly, October 2003-June 2008.
- Postgraduate Diploma (MSc) in the Department of Structural Engineering of National Technical University of Athens (NTUA). Title of Postgraduate Diploma «Analysis & Design of Earthquake Resistant Structures», October 2008-February 2010.
- PhD in the Department of Civil Engineering in University of Thessaly in the field of Contact Mechanics and Biomechanics, (supervisor Professor Giannakopoulos A.), April 2010-May 2013.

PARTICIPATION IN PROFESSIONAL ORGANIZATIONS

Technical Chamber of Greece (TEE-TCG).

FOREIGN LANGUAGES

Excellent knowledge of English.

ADDITIONAL KNOWLEDGE

- Excellent handling of Microsoft Office
- Very Good handling of dB Trait (acoustic analysis software)
- Very Good handling of CadnaA (noise prediction software)
- Good Use of Programs SAP 2000 (static program), AutoCAD (design program)
- Internet.

CONFERENCES & SEMINARS - TRAINING

- “23rd International Congress on Sound and Vibration (ICSV23)”, 10-14 July 2016, Athens (Greece).
- “Prospects for Further Education and Occupation of the New Civil Engineer”, 1st June 2004, Pedion Areos, Volos.

RESEARCH INTERESTS

- Environmental acoustics, noise prediction models within the framework of the implementation of Directive 2002/49/EC, Recording - analysis and evaluation of noise measurements of airborne and ground borne noise measurements in traffic networks and industrial installations.
- Environmental Noise Protection (noise mapping, action planning, environmental noise measurements).
- Climate Change, air pollution & air quality monitoring, modelling, risk Identification, waste management, energy consumption and wildlife hazard, etc.
- Static Isostatic Agents, Material Engineering, Biomechanics, Resistance of materials, Measurement of mechanical properties of materials, Development of advanced materials, Technology of advanced materials, Elastomers, Biomaterials, Design of Micro-devices for conducting experiments of measuring mechanical properties of elastomeric layers on small scales, Mathematical models of hyper-elasticity, Analytical Methodologies for the characterization of mechanical properties of elastomers.

POSITION IN SCIENTIFIC LABORATORIES

- June 2016-today: Scientific Collaborator in the LABORATORY OF TRANSPORTATION ENVIRONMENTAL ACOUSTICS (L.T.E.A.) in the Department of Civil Engineers of the University of Thessaly (Laboratory director Professor Konstantinos Vogiatzis)
- April 2010-December 2016: Scientific Collaborator in the Laboratory of Material Resistance and Micromechanics of the University of Thessaly (laboratory director Prof. Giannakopoulos Antonios)

RESEARCH EXPERIENCE

Selected research projects in which I participated

1. Research Program: "Metrological data compatibility evaluation with theoretical results of acoustic model in Urban Agglomeration of Pafos and Airport", E.E. 6131 University of Thessaly - Department of Civil Engineering, TT&E Consultants SA, 06/2019.
2. Research Program: "Research Program for the update of SNM AC_FP database according to Cnossos EU methodology", E.E. 6112 University of Thessaly - Department of Civil Engineering, AIA SA, 05/2019.
3. Research Program: "Evaluation of Noise Measurements and Atmospheric Pollution Measurement in 2 toll stations of Attiki Odos Highway", E.E. 5942, University of Thessaly - Department of Civil Engineering, TT&E Consultants SA, 02/2019.
4. Research Program: "Climate Change Adaptation Study for Athens International Airport "El. Venizelos"", E.E. 5872 University of Thessaly - Department of Civil Engineering, AIA SA, 10/2018.
5. Research Program: "Evaluation of Noise Measurements and Atmospheric Pollution Measurement in 2 toll stations of Attiki Odos Highway", E.E. 5618, University of Thessaly - Department of Civil Engineering, TT&E Consultants SA, 01/2018.
6. Research Program: "Metrological data compatibility evaluation with theoretical results of acoustic model in Urban Agglomeration of Nicosia & Limasol", E.E. 5616, University of Thessaly - Department of Civil Engineering, TT&E Consultants SA, 01/2018.
7. Research Program: "Metrological data compatibility evaluation with theoretical

- results of acoustic model in Urban Agglomeration of Larnaca & Larnaca Airport”, E.E. 5479, University of Thessaly - Department of Civil Engineering, TT&E Consultants SA, 10/2017.
8. Research Program: “Strategic Noise Mapping 2017 Athens International Airport Eleftherios Venizelos, Traffic Data 2016”, E.E. 5406, University of Thessaly - Department of Civil Engineering, AIA SA, 06/2017.
 9. Research Program: “Evaluation of Noise Measurements and Atmospheric Pollution Measurement in 2 toll stations of Attiki Odos Highway”, E.E. 5365, University of Thessaly - Department of Civil Engineering, TT&E Consultants SA , 03/2017.
 10. Research Program: “Detection of Harmful Chemical Factors and Noise from the Attica Road Toll Station by the Transmission of Passive Vehicles for the Year 2016”, E.E. 5259, University of Thessaly - Department of Civil Engineering, ATTIKES DIADROMES SA, 6/2016.
 11. Research Program: “Recording of noise emissions of the project's installations: Megalopolis II B - Unit 5”, E.E. 5258, University of Thessaly - Department of Civil Engineering, TERNA SA, 7/2016.
 12. Research Program: “Organization of the 23rd International Congress on Sound & Vibration – From Ancient to Modern Acoustics (10-14/7/2016)”, E.E. 5130, University of Thessaly - Department of Civil Engineering, TRIAENA SA.
 13. Civil Engineer - Support staff in the course "Technical Engineering II" in the project "Development of digital courses, Support to the foundation platform and other actions" implemented in the framework of the project "Open Academic Courses of the University of Thessaly", in collaboration with Prof. Giannakopoulos A. and scientific director Prof. Bourdakis Vassilios, writing the course "Technical Mechanics II" in electronic form (Power Point) with the addition of pictures and exercises to be included in the e-class website of University of Thessaly, 2015
 14. Researcher in the technology of the materials in the project "Characterization of Contrast Agents for Applications of Medical Imaging and Transfer of Drugs through Ultrasounds using the Theoretical and Computational Analysis of their Static and Dynamic Response" in the Department of Mechanical Engineers of the University of Thessaly with scientific responsible Prof. Pelekasis Nikolaos, implementation of sclerometer experiments in combination with analytical methodologies for the characterization (elastic modulus) of elastomeric bubbles, 2013-14
 15. Practical internship in the company ETAL SA (scientific director A. Giannakopoulos and scientific representative of the company Periers d 'Auxion) with subject the development of a new shear experiment for the control of fiber reinforced concrete behavior in relation to conventional concrete, 2007

PARTICIPATION IN SCIENTIFIC CONGRESSES & FORUMS

- Aircraft Noise Forum 2019, EMS, September 15-18, 2019.
- EURONOISE 2018, Heraklion, Crete Greece, 27-31 May 2018.
- 9th International Workshop on Mathematical Methods in Scattering Theory and Biomedical Engineering, 9-11 October 2009, Patra, Greece.
- 8th European Solid Mechanics Conference, 9-13 July 2012, Graz, Austria.
- 4th Educational course on thrombosis and antithrombotic treatment, October 3-4 2013, Volos, Greece.
- 12th International Conference on Computational Methods and Experiments in Surface and Contact Mechanics including Tribology, 21-23 April 2015, València, Spain.

- 2^o Congress in Material Fatigue used in Vascular Surgery (Mechanic Behavior of Artery Walls, 28-29 April 2015, Thessaloniki, Greece.
- 4th International Conference on Bio-Sensing Technology, 10-13 May 2015, Lisbon, Portugal (Poster).
- 8th GRACM International Congress on Computational Mechanics, 12 July 2015, Volos, Greece.
- 7^o Panhellenic Congress in Biomechanics, (Mechanical Behavior of Human Arteries), 24- 26 June 2016, Athens, Greece (with invitation).

BOOKS

- A. Giannakopoulos and V. Zafiropoulou, translation and editing of the book «Continuum Mechanics, Concise Theory and Problems», P. Chadwick, Dover/Simmetria Publications.

MONOGRAPHS

- Diploma Essay (2008), «New methods of measuring elastomeric materials on a small scale», Supervisor Professor Antonios Giannakopoulos.
- Postgraduate Essay (2010), «Assessment of structural behavior of stone-built constructions using the finite element method and proposals for reinforcement-repair with addition of tractors and pre-tensioning and alternatively with the addition of viscous dampers and mantles», Supervisor Professor K. Sirmakezis.
- PhD Essay (2013) «Contacts Mechanics for Elastomers: Experimental Analysis and Applications to Human Arteries», Supervisor Professor Antonios Giannakopoulos

PUBLICATIONS IN INTERNATIONAL SCIENTIFIC JOURNALS WITH REVIEW

- P. Kopelias, E. Demiridi, K. Vogiatzis, A. Skabardonis, V. Zafiropoulou (2020), “A review of Environmental Impacts of Connected & Autonomous Vehicles”, Science of the Total Environment, vol 712, <https://doi.org/10.1016/j.scitotenv.2019.135237>
- K. Vogiatzis, V. Zafiropoulou, G. Gerolymatou, D. Dimitriou, B. Halkias, A. Papadimitriou & A. Konstantinidis, “The noise climate at the time of SARS-COV-2 VIRUS/ COVID-19 disease in Athens - Greece: The case of Athens International Airport and the Athens Ring Road (Attiki Odos)”, Noise Mapping, 7: 154-170, 2020
- G. Gerolymatou, N. Rémy, K. Vogiatzis, V. Zafiropoulou, “Assessing Health Effects and Soundscape Analysis as New Mitigation Actions Concerning the Aircraft Noise Impact in Small- and Middle-Size Urban Areas in Greece”, MDPI: Environments 2019, 6, 4, <http://dx.doi.org/10.3390/environments6010004>.
- Ch. Mouzakis, K. Vogiatzis, V. Zafiropoulou, “Assessing subway network ground borne noise and vibration using transfer function from tunnel wall to soil surface measured by muck train operation”, Science of the Total Environment 650(2019), 2888-2896, <https://doi.org/10.1016/j.scitotenv.2018.10.039>.
- K. Vogiatzis, V. Zafiropoulou, H. Mouzakis, “Monitoring and assessing the effects from Metro networks construction on the urban acoustic environment The Athens Metro Line 3 Extension” Science of the Total Environment 639(2018), 1360-1380, <https://doi.org/10.1016/j.scitotenv.2018.05.143>.
- Th. Zisis, V.I. Zafiropoulou, A.E. Giannakopoulos (2011), “The adhesive contact of a flat punch on a hyperelastic substrate subject to a pull-out force or a bending moment”, Mechanics of Materials, vol. 43 , p.p. 1-24.

- Th. Zisis, V.I. Zafiropoulou and A.E. Giannakopoulos (2015), “Evaluation of material properties of incompressible hyperelastic materials based on instrumented indentation of an equal-biaxial prestretched substrate”, *Int. J. Solids and Structures*, vol. 64- 65, p.p. 132- 144.
- V.I. Zafiropoulou, Th. Zisis, and A.E. Giannakopoulos (2016), “Instrumented indentation of a non-equal biaxial prestretched hyperelastic substrate”, *European Journal of Mechanics A/ Solids*, vol. 58, p.p. 221- 232.

PUBLICATIONS IN INTERNATIONAL SCIENTIFIC CONFERENCES WITH REVIEW

- T. Evagelou, G. Gerolymatou, K. Vogiatzis and V. Zafiropoulou, “Environmental Road Traffic Noise Evaluation in selected locations, at “PATHE Section: Maliakos-Kleidi” Motorway: A comprehensive Environmental Noise Monitoring Program”, *Euronoise 2018*, May 27-31 2018, Crete, Greece
- K. Vogiatzis and V. Zafiropoulou “Implementation of Noise Barriers in Attiki Odos Motorway based on the relevant Strategic Noise Mapping and Noise Action Plan”, *Euronoise 2018*, May 27-31 2018, Crete, Greece
- V. Zafiropoulou, K. Vogiatzis and H. Mouzakis, “A Methodology for Assessing Ground Borne Noise and Vibration Transfer Functions “Tunnel wall-Soil surface” for Metropolitan Rail Networks using the TBM Muck Train as a linear source: Measurements Campaign in the extension of Athens Metro Line 3 towards Piraeus”, *Euronoise 2018*, May 27-31 2018, Crete, Greece
- A.E. Giannakopoulos, V.I. Zafiropoulou “The use of strain gradient elasticity in modeling tissues: The case of the human heart “, 9th International Workshop on Mathematical Methods in Scattering Theory and Biomedical Engineering, 9- 11 October 2009, Patra, Greece.
- V.I. Zafiropoulou and A.E. Giannakopoulos, “Evaluation of hyperelastic material properties based on instrumented indentation”, 12th International Conference on Computational Methods and Experiments in Surface and Contact Mechanics including Tribology, April 21-23 2015, Valencia, Spain.
- “Contact Mechanics including Tribology”, pp. 153-160, vol. *Surface Effects*, WIT press, editors J. Th. M. Dehossou, M. Hadfield, C.A. Brebbia.
- V. Zafiropoulou, K. Vogiatzis and H. Mouzakis, “A Methodology for Assessing Ground Borne Noise and Vibration Transfer Functions “Tunnel wall-Soil surface” for Metropolitan Rail Networks using the TBM Muck Train as a linear source: Measurements Campaign in the extension of Athens Metro Line 3 towards Piraeus”, *Euronoise 2018*, May 27-31 2018, Crete, Greece
- K. Vogiatzis and V. Zafiropoulou “Implementation of Noise Barriers in Attiki Odos Motorway based on the relevant Strategic Noise Mapping and Noise Action Plan”, *Euronoise 2018*, May 27-31 2018, Crete, Greece
- T. Evagelou, G. Gerolymatou, K. Vogiatzis and V. Zafiropoulou, “Environmental Road Traffic Noise Evaluation in selected locations, at “PATHE Section: Maliakos-Kleidi” Motorway: A comprehensive Environmental Noise Monitoring Program”, *Euronoise 2018*, May 27-31 2018, Crete, Greece

ABSTRACTS IN INTERNATIONAL SCIENTIFIC CONFERENCES WITH REVIEW

- A.E. Giannakopoulos, V.I. Zafiropoulou “Indentation of Pre-stressed Rubber-like Incompressible Materials”, 8th European Solid Mechanics Conference, 9- 13 July 2012, Graz, Austria.

- A. Giannakopoulos, V. Zafiropoulou, A. Athanasoulas, A. Giannoukas “The use of Instrumented Indentation in the Assessment of the Mechanical Properties of Vascular Walls”, 4th Educational course on thrombosis and antithrombotic treatment, 3-4 October 2013, Greece. Also presented in 2o Conference in Material Fatigue used in Vascular Surgery (Mechanic Behavior of Artery Walls), 28-29 April 2015, Thessaloniki, Greece).
- A.E. Giannakopoulos, V.I. Zafiropoulou, Th. Zisis, A. Lytra and N. Pelekasis, “Probing of micro and nanocapsules propertied with instrumented indentation”, 4th International Conference on Bio-Sensing Technology, 10-13 May 2015, Lisbon, Portugal (Poster).
- A. Lytra, N. Pelekasis, V. Zafiropoulou, Th. Zisis, A. Giannakopoulos, V. Sboros, E. Glynos and V. Koutsos, “Static response of coated microbubbles: modeling simulations and parameter estimation”, 12 July 2015, Volos, Greece.
- Giannakopoulos A., Zafiropoulou V., “Mechanical Behavior of Human Arteries”, 24-26 June 2016, Athens, Greece.

PRESENTATIONS IN EUROPEAN FORUMS

- Dr. V. Zafiropoulou, A. Konstantinidis, “Aircraft Noise Assessment & Mitigation Measures”, Aircraft Noise Forum 2019, EMS, September 15-18, 2019.