

Curriculum Vitae

KONSTANTINOS ZACHARIAS

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EDUCATION

- 2005 - 2010 Ph.D. in Acoustics, thesis title “Nonlinear acoustics detection techniques: Theory and applications”, Aristotle University of Thessaloniki, School of Engineering, Department of Mathematical, Physical and Computational Sciences, Physics Division, Greece.
- 2004 - 2005 M.Sc. in “Microwave Engineering and Wireless Subsystems Design”, with Distinction, University of Surrey, School of Physical Sciences and Engineering, UK.
- 1997 - 2002 Diploma in Electrical & Computer Engineering, Department of Electrical & Computer Engineering, School of Engineering, Aristotle University of Thessaloniki, Greece.
- 1993 - 1997 Degree in Electronics Engineering, Electronics Department, Technological Educational Institute of Thessaloniki, Greece.

RESEARCH EXPERIENCE

- 2005 - today Research Assistant in project: Design and implementation of novel sound barriers with improved performance for traffic noise reduction. Electronics Department, Technological Educational Institute of Thessaloniki, Greece. Co-funded by Greek-EU, “ARCHIMEDES II” activity.
- Research Assistant in project: In-Vivo Embolic Detector, Phase II, IIIa, IIIb. Department of Chemistry, Aristotle University of Thessaloniki - ESA.
- Experimental-Technical responsible of the experiment “Mass diffusion-induced bubble growth in supersaturated solutions at temperatures below boiling”, Department of Chemistry, Aristotle University of Thessaloniki, at 49th Zero-g Parabolic Flight Campaign (PFC) of European Space Agency (ESA), Bordeaux, FRANCE.
- Experimental-Technical responsible of the experiment “Mass diffusion-induced bubble growth in supersaturated solutions at temperatures below boiling: The role of g-jitters to heat conduction”, Department of Chemistry, Aristotle University of Thessaloniki, at 50th Zero-g Parabolic Flight Campaign (PFC) of European Space Agency (ESA), Bordeaux, FRANCE.

WORK EXPERIENCE

- 2/2011 – today Hellenic Institute of Metrology / National Quality Infrastructure System, Division of Physical Quantities.
- 5/2010 - 8/2010 Calibration and Quality Services (CQS) S.A., Thessaloniki, Greece

10/1996 - 3/1997 Internship at Electronics III and Digital Circuits labs, Electronics Department, Technological Educational Institute of Thessaloniki, Greece.

TEACHING EXPERIENCE

3/2010 - 6/2010 Teaching Assistant in course “Experimental methods in machine dynamics”. Department of Mathematical, Physical and Computational Sciences, School of Engineering, Aristotle University of Thessaloniki, Greece.

11/2007 - 6/2008 Teaching Assistant in course “Electronics II”. Department of Electrical & Computer Engineering, School of Engineering, Aristotle University of Thessaloniki, Greece.

2/2006 - 9/2007 Teaching Assistant in lab course “Electronics III”. Electronics Department, Technological Educational Institute of Thessaloniki, Greece.

TRAINING

- *Vibration calibration of accelerometers by comparison to a reference transducer according to EN/IEC 16063-21:2003 standard*, Training organization: Hellenic Institute of Metrology, 10 days (70 hrs), 5-17/4/2013
- *Calibration of sound level meters in an anechoic chamber (free field calibration)*, Training organization: Hellenic Institute of Metrology, 10 days (70 hrs), 5-16/11/2012
- *Calibration of sound level meters according to BS 7580:1997 and EN/IEC 61672-3: 2006 standards*, Training organization: Hellenic Institute of Metrology, 5 days (35 hrs), 24-30/5/2012
- *Calibration of sound calibrators according to EN/IEC 60942:1998 standard*, Training organization: Hellenic Institute of Metrology, 5 days (35 hrs), 18-23/5/2012
- *ISO 17025 and the Quality Management System of Hellenic Institute of Metrology*, Training organization: Hellenic Institute of Metrology, 1 day, 14/10/2011
- *Calibration of thermo-hygrometers*, Training organization: Hellenic Institute of Metrology, 5 days (35 hrs), 4-8/04/2011
- *Calibration of liquid-in-glass thermometers*, Training organization: Hellenic Institute of Metrology, 5 days (35 hrs), 14-18/03/2011
- *Calibration of thermocouples*, Training organization: Hellenic Institute of Metrology, 5 days (35 hrs), 7-11/03/2011
- *Calibration of direct reading thermometers*, Training organization: Hellenic Institute of Metrology, 5 days (35 hrs), 21-25/02/2011
- *Calibration of resistance sensors*, Training organization: Hellenic Institute of Metrology, 5 days (35 hrs), 14-18/02/2011

OTHER QUALIFICATIONS

- Expert of Hellenic Accreditation System in the fields of Acoustics, Temperature & Humidity
- Licensed amateur radio service operator (higher class) SV2CBA, (awarded 1992)

PUBLICATIONS

1. Analysis of Vibroacoustic Modulations for Crack Detection: A Time-Frequency Approach Based on Zhao-Atlas-Marks Distribution, A. Trochidis, L. Hadjileontiadis, and K. Zacharias, Shock and Vibration, vol. 2014, 2014
2. Heat transfer from small object in microgravity: experiments and analysis, M. Kostoglou, S. P. Evgenidis, K. A. Zacharias, T. D. Karapantsios, International Journal of Heat and Mass Transfer, 2011.

3. Non-linear vibration technique for crack detection in beam structures using frequency mixing, E. Douka, K. A. Zacharias, L. J. Hadjileontiadis, A. Trochidis, Acta Acustica united with Acustica, 2010.
4. Effect of Liquid Properties on Heat Transfer from Miniature Heaters at Different Gravity Conditions, S. P. Evgenidis, K. A. Zacharias, T. D. Karapantsios, M. Kostoglou, Microgravity Science and Technology, 2010.
5. Microdamage Evaluation in Human Trabecular Bone Based on Nonlinear Ultrasound Vibromodulation, K. Zacharias, E. Balabanidou, I. Hatzokos, I. T. Rekanos and A. Trochidis, Journal of Biomechanics, 2009.

CONFERENCES AND WORKSHOPS

1. Crack Identification and Localization in Beam Structures using Time-Frequency Analysis of Vibro-Acoustic Modulation Responses, A. Trochidis, L. Hadjileontiadis and K. Zaharias, The Twelfth International Conference on Computational Structures Technology CST2014, 2-5 September 2014, Naples, Italy.
2. CRACK DETECTION USING VIBRO-MODULATION: A TIME-FREQUENCY APPROACH BASED ON ZHAO-ATLAS-MARKS (ZAM) DISTRIBUTION, Trochidis, A., Hadjileontiadis, L., Zacharias, K., International Conference on Structural Engineering Dynamics ICEDyn 2013, June 17-19, 2013, Sesimbra, Portugal.
3. An electrical technique for detection of microbubbles in living subjects with invitro validation, Sotiris P. Evgenidis, Konstantinos Zacharias, Thodoris D. Karapantsios, Ioannis Savvas, Kiriaki Pavlidou, Lysimachos Papazoglou, Michail Patsikas, Workshop "Smart and Green Interfaces 2013 (Prague)" COST Action MP1106 "Smart and green interfaces - from single bubbles and drops to industrial, environmental and biomedical applications (SGI)", Prague, Czech Republic March 21 – 22, 2013.
4. Characterization of bubble clouds in steady and pulsatile bubbly flows, Sotiris P. Evgenidis, Konstantinos Zacharias and Thodoris D. Karapantsios, 4th International Workshop "Bubble and Drop Interfaces" jointly organized with COST P21 Action "Physics of Droplets" 8th Management Committee + Working Groups Meetings, Thessaloniki, Greece, September 23 - 25, 2009.
5. Non-linear vibration technique for crack detection in beam structures using frequency mixing, K. Zacharias, E. Douka, L. J. Hadjileontiadis and A. Trochidis, The Ninth International Conference on Computational Structures Technology & The Sixth International Conference on Engineering Computational Technology, Athens, Greece, September 2-5, 2009.
6. Microdamage Evaluation in Human Trabecular Bone Using Non-Linear Ultrasound, K. Zacharias, , L.J. Hadjileontiadis, E. Douka, I. Rekanos and A. Trochidis, The Ninth International Conference on Computational Structures Technology & The Sixth International Conference on Engineering Computational Technology, Athens, Greece, September 2-5, 2009.
7. Effect of gravity level on heat transfer from small spheroids, Sotiris P. Evgenidis, Konstantinos Zacharias, Margaritis Kostoglou & Thodoris D. Karapantsios, ELGRA Biennial Symposium and General Assembly "In the Footsteps of Columbus", Bonn, Germany, September 1 - 4, 2009.
8. An advanced acoustical technique for measuring bubbles in stagnant and flowing liquids, K. A. Zacharias, S. P. Evgenidis, T. D. Karapantsios, 2nd International Conference on Environmental Management, Engineering, Planning and Economics (CEMEPE) & SECOTOX Conference, Elia, Mykonos, Greece, June 21 - 26, 2009.
9. Design and evaluation of novel barriers, G. Bamnios, I. Rekanos, K. Zacharias and A. Trochidis, European Acoustics Association Acoustics'08, Paris, France, June 29-July 4, 2008.

10. Design of novel sound barriers with improved performance, G. Bamnios, I. Rekanos, K. Zacharias, and A. Trochidis, ELINA Acoustics Conference, Xanthi, Greece, September 29-October 1, 2008.
11. Bone quality assessment using Nonlinear Ultrasound, K. Zacharias, et al., ELINA Acoustics Conference, Xanthi, Greece, September 29-October 1, 2008.
12. Detection of bubbles in two-phase flows with optical and electrical measurements, Sotiris P. Evgenidis, Konstantinos Zacharias, Thodoris D. Karapantsios, Workshop: COST P21: The Physics of droplets, Twente, Netherlands, October 08, 2007.
13. An advanced Acoustical Technique for measuring bubbles in stagnant and flowing liquids, Konstantinos A. Zacharias, Sotiris P. Evgenidis, Thodoris D. Karapantsios, Workshop: COST P21: The Physics of droplets, Capri, Italy, May 15, 2008.
14. Detection of bubbles in liquids with acoustical and electrical measurements, Konstantinos Zacharias, Sotiris P. Evgenidis, Thodoris D. Karapantsios, Workshop: COST P21: The Physics of droplets, Twente, Netherlands, October 08, 2007.
15. Nonlinear acoustic spectroscopy for damage detection, K. Zacharias, A. Trochidis, ELINA Acoustics Conference, Iraklio, Greece, September 18-19, 2006.
16. A Multi-Shaped UTD Solution for Irregular Terrain Propagation Modelling, G. Koutitas, K. Zacharias, C. Tzaras, IEEE Antennas and Propagation Society International Symposium 2006, Albuquerque, New Mexico, USA, July 9-14, 2006.

ATTENDED SEMINARS/MEETINGS, WORKSHOPS

1. Medical Diagnostics and Advanced Therapies & Sustainable Food Science and Technology, COST Action MP1106, Joint Cluster Meeting, Naples, November 6-7, 2014
2. 4th International Workshop “Bubble and Drop Interfaces” jointly organized with COST P21 Action “Physics of Droplets”, Thessaloniki, Greece, September 23 – 25, 2009.
3. Workshop: COST P21: The Physics of droplets, Capri, Italy, May 15, 2008.
4. Workshop: COST P21: The Physics of droplets, Twente, Netherlands, October 08, 2007
5. Cisco Certified Networking Academy Program (CNAP): Cisco Certified Network Associate (CCNA), Thessaloniki, Greece, August-September, 2004.

PERSONAL SKILLS

- Financial management and Technical co-ordination of European research projects
- Writing and submission of European research projects and patents (Intellectual Property Rights-IPR)
- Implementation and management of ISO 17025
- Research, design and development of electrical-electronic measurements systems, biomedical devices, automation and telecommunication systems, signal processing and algorithms, wireless link design and commissioning
- Acoustical measurements, sound engineering and recordings, room acoustical design and measurements
- Software: Adobe Audition, Wavelab, SpectraLAB, SpectraPLUS, EASERA, MLS, WinMLS, SONY ACID, Autocad, Windows, MS Office, Matlab, Mathematica, OriginPro, Agilent ADS, NEC Win Plus+, Satellite ToolKit (STK), Labview, Multisim

INTERESTS AND ACTIVITIES

Sound recording, music production, radio telecommunications, photography.