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1. EDUCATION

1988-1993	Ph.D. University of Cambridge, Institute of Biotechnology (Newnham College), UK <i>Supervisor:</i> Prof. C.R. Lowe
1987-1988	M.Sc. University College London, UK
1982-1987	B.Sc. Chemistry, National and Kapodistrian University of Athens, Greece

2. POST-DOCTORAL EXPERIENCE

1996-2002	BBSRC David Phillips Research Fellow, Univ. of Cambridge, Inst. of Biotechnology, UK
1998	Visiting Research Fellow, Sandia National Laboratory, Albuquerque, New Mexico, USA
1995	Visiting Fellow, Ecole Polytechnique Federal de Lausanne, Switzerland
1994-1996	Senior Research Associate, University of Cambridge, Inst. of Biotechnology, UK

3. ACADEMIC POSITIONS

2015	Full Professor, Dept. of Biology, Univ. of Crete
2010-2015	Associate Professor, Dept. of Biology, Univ. of Crete
2006-2009	Tenured Assistant Professor, Dept. of Biology, Univ. of Crete
2003-2006	Assistant Professor, Dept. of Biology, Univ. of Crete
2004-today	Research Professor, IMBB-FORTH, Greece
2002-2003	Lecturer, Sidney Sussex College, University of Cambridge, Inst. of Biotechnology, UK

4. DISTINCTIONS-FELLOWSHIPS

2017	1 st Award in 2016 "Excellence in Innovation and Entrepreneurship" competition
2016	Fellow of the Royal Society of Chemistry (FRSC)
2016	Lead Guest Editor, Sensors and Bio-Sensors Research Journal, Elsevier
2015	Nokia Open Innovation Challenge Award, Finland- One of top three finalists
2014	Leviner Distinguished Visiting Fellowship, Ben Gurion University
2013-2014	Visiting Professor, Max Planck Institute-Intelligent Systems, Stuttgart, Germany
2013	"Greece Innovates" 2013; Shortlisted in top 10 most Innovative research groups
2008	Adjunct Professor, Dept. Electrical & Computer Engineering, Marquette University, USA
1998	Visiting Fellowship, Sandia National Research Laboratories, USA
1997	Fellowship, Sidney Sussex College, University of Cambridge, UK
1996-2002	David Philips Junior B.B.S.R.C. Research Fellowship, UK
1995	Visiting Research Fellowship (EPFL), Royal Society, UK

5. MEMBER OF SOCIETIES

- The Royal Society of Chemistry (FRSC) (UK)
- Association of Greek Chemists (Greece)
- American Chemical Society (Member) (USA)

6. REFEREE FOR RESEARCH PROGRAMS

- EC Reviewer & Evaluator of FP6/FP7/Horizon2020 research proposals and funded research projects
- NHS, National Institut for Health Research, UK
- Welcome Trust, UK
- Government of the Hong Kong, Innovation and Technology Commission (ITC)
- The Danish Council for Independent Research/Technology and Production Sciences
- Portuguese Foundation for Science and Technology (FCT)
- French National Agency (ANR) and Institut National de la Santé et Recherché Medical (INSERM)
- Human Frontier Science Program (HFSP)
- Biotechnology and Biological Sciences Research Council, UK
- Engineering and Physical Sciences Research Council, UK

7. CONFERENCE ORGANIZATION

- pHealth2016 (<http://www.phealth2016.eu/index.html>), Member of the Scientific Committee; Chairing Local Organizing Committee; Conference Co-Chairperson
- Organizing Workshop on “Acoustic wave sensors for biophysical and Bioanalytical studies”, Crete 2013 (funded by the EC-ICT)
- Member of the Scientific Committee of the 34th International Conference on Micro- and Nano-Engineering 2008, Athens, Greece
- Member of the Scientific Committee of the IEEE International Frequency Control Symposium 2007, Switzerland
- Member of the Scientific Committee of the IEEE International Frequency Control Symposium 2006, USA
- Member of the Scientific Committee of the Chemical Microsensors and Applications, 2000, USA

8. REFEREE FOR SCIENTIFIC JOURNALS

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| • Journal of the American Chemical Society | • Biophysical Journal |
| • Angewandte Chemie Int Edition | • Biomacromolecules |
| • Biosensors and Bioelectronics | • Journal of Physical Chemistry |
| • Analytical Chemistry | • Sensors and Actuators B |
| • Reviews in Analytical Chemistry | • Trends in Biotechnology |
| • IEEE Journal of Sensors | • American Chemical Society (ACS) Nano |
| • IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control | • BioNanoScience |
| • Biochemistry | • Langmuir |
| • Journal of Applied Physics | • Smart Materials and Structures |
| • Current Opinion in Biotechnology | • Journal of Polymer Science |
| | • Colloids and Surfaces B: Biointerfaces |

9. CONSULTING/INNOVATION ACTIVITIES

- Co-Founder of start-up “AWS Dx” (<https://awsensorsdx.com/>), Spain 2017
- Member of the experts’ team on “Advanced micro/nano/bio medical devices” established within the program “Advancement of human capacity 2007-2013 in Greece” (funded by the EC)
- Served/is serving as consultant to:
 - Econous Systems Inc., Canada; spin-off company from Prof. M. Thompson’s research group at Univ. of Toronto, 2015-today; Member of the Scientific Advisory Committee
 - Microtechnology Centre, Australia, 2006-2007; Consulting on product-development for bacteria detection with acoustic biosensors
 - Atonomics, Copenhagen, Denmark, 2004-2005; Development of genetic acoustic-based Point-of-Care system

- Cambridge PA Consulting, UK, 2001-2002; Consulting on liposomes for drug-encapsulation
- Unipath, UK, 2001-2003; Consulting on acoustic sensors capability to detect low Mw analytes
- Cambridge Environmental Company, UK, 1995; Acoustic sensors for monitoring humidity

10. ADMINISTRATION

- Member of the General Assembly of the Hellenic Foundation for Research and Innovation (HFRI); Representative (Deputy) of the University of Crete
- Deputy Director, IMBB-FORTH (2018-2020)
- Elected member of the Scientific Advisory Board of IMBB-FORTH (2010-2015)
- Coordinator of seven scientific consortia carrying out multidisciplinary research (funded by the EC, HFSP, BBSRC and GSRT-Greece)
- Undergraduate Students Tutor, Dept. of Biology, Univ. of Crete (2008-today)
- Member of the Committee for Undergraduate Studies, Dept. of Biology, Univ. of Crete (2008-2013)
- Member of the Evaluation Committee, Dept. of Biology, Univ. of Crete (2008-today)
- Coordinator of “Nano/biotechnology” module, M.Sc. on Protein Biotechnology, Dept. of Biology, Univ. of Crete (2005-today)
- Member of the Steering Committee of M.Sc. programs on “Protein Biotechnology” and “Molecular Biology and Biotechnology”, Dept. of Biology, Univ. of Crete (2005-today)
- Member of the Management Committee, Inst. of Biotechnology, Univ. of Cambridge, UK (1996-2002)
- Students' Tutor, Sydney Sussex College, Univ. of Cambridge, UK (2001-2002)
- Member of the Governing Body, Sydney Sussex College, Univ. of Cambridge, UK (1997-2002)

11. CONFERENCE PRESENTATIONS

Conferences (last 6 years)

1. 5th International Conference on Bio-sensing Technology: Grammoustianou et al., “A liquid biopsy platform combining a High Fundamental Frequency QCM device with “dynamic chemistry” for detecting mutations in circulating tumor DNA”, Riva del Garda, Italy, May 7th-10th, 2017 (poster)
2. ISOCS-MiNaB-ICT-MNBS joint event on “Sensing for smart anything anywhere: materials, technologies, applications” Gizeli et al., Otranto June 2016, (oral)
3. BIOSENSORS 2016: Grammoustianou et al., “On-chip DNA isothermal amplification and detection using a Quartz Crystal Microbalance (QCM) device”, Gothenburg, Sweden, May 25th-27th, 2016 (poster)
1. 4th International Conference on Biosensing Technology, Gizeli et al., Lisbon 2015 (oral)
2. Microfluidics Congress 2015, G. Kaprou, E. Gizeli et al., London October 2015 (poster)
3. SPIE Microtechnologies BioMEMS and Medical Microdevices, Kaprou, E. Gizeli et al., Barcelona, May 2015 (oral)
4. 10th PanHellenic Conference of Chemical Engineering, G. Kaprou, E. Gizeli et al., Patras, Greece, June 2015 (poster)
5. 6th International Conference Micro&Nano, Kaprou, Gizeli et al., (oral), Athens, October 2015 (oral)
6. 41st Micro and Nano Engineering, Kastania, Gizeli et al. The Netherlands, September 2015 (oral)
7. Lab on Chip Conference, Tsougeni, Gizeli et al., Berlin, March 2015 (oral)
8. AVS 61st International Symposium, Gizeli, Tsortos et al., Baltimore 2014 (oral)
9. 39th International Conference on Micro and Nano Engineering, Papadopoulos, Gizeli et al., London 2013 (poster)
10. 5th International Conference on Micro-Nanoelectronics, Nanotechnologies and MEMS devices, A.K. Pantazis, G. Konstantinidis, E. Gizeli, Greece, 2012 (oral)
11. 63rd Congress of the Hellenic Society of Biochemistry and Molecular Biology, K. Bakela, E. Gizeli et al., Crete 2012 (poster)
12. PITCON 2012, G. Papadakis, A. Tsortos, E. Gizeli, Orlando USA 2012 (oral)
13. Biophysical Society Meeting 2012, P. Mateos-Gil, A. Tsortos, G. Rivas, E. Gizeli, M. Velez USA 2012 (poster)
14. Euroensors XXV, K. Mitsakakis, A. Tserepi, E. Gizeli, Greece 2011 (poster)
15. NanobioEurope, E. Gizeli, K. Mitsakakis, Cork, Ireland, 2011 (oral)

16. NanobioEurope, A.Tsortos, G. Papadakis, E. Gizeli, Ireland, 2010 (poster)
17. FACSS 2010, L. Steller, M. Laugh, H. Schmidt, R. Jessberger, E. Gizeli, 2010, USA (poster)
18. NanobioEurope, E. Gizeli, A.Tsortos, G. Papadakis, Germany 2010 (oral)
19. 2nd International Conference on Drug Discovery and Therapy, A.K. Pantazis, E. Gizeli and G. Konstantinidis, Dubai, 2010 (oral)

Invited Speaker

(a) Conferences-Workshops

1. 12th RME2018 (Rapid Methods Europe Conference), Amsterdam, the Netherlands, 5-7 Nov. 2018
2. 1st International Conference on Nanotechnologies and Bionanosciences, Heraklion, Crete, 24-28 Sept. 2018
3. 10th International Conference of Instrumental Methods of Analysis (IMA)-2017, Heraklion, Greece, September 2017 (**Plenary lecture**)
4. Nanoscience and Nanotechnology at Interfaces, April 2017, The Hebrew Univ. of Jerusalem, Israel (Invited)
5. 67th Panhellenic Conference of the Hellenic Society for Biochemistry and Molecular Biology, Nov. 2016, Ioannina, Greece (Invited)
6. Israel-Greece Meeting on Nanotechnology and Bioscience, Heraklion, Greece, October 2016 (Invited)
7. Micro- and NanoEngineering (MNE) 2016, September 2016 Vienna (Invited)
8. Hellenic Forum 2016, Workshop on Lab on Chip for diagnostics and food analysis, July 2016, Athens (Invited)
9. International Workshop "Acoustic and electrochemical methods in the study of affinity interactions at surfaces", Bratislava 2016 (**Keynote**)
10. SAW Symposium 2014, The role of SAW devices in clinical; and diagnostic platforms, E. Gizeli, Viena, 2014 (**Keynote**)
11. 11th International Conference on Nanosciences & Nanotechnologies, Thessaloniki, Greece, 2014
12. MinaSens Workshop on "Miniaturized biochemical sensing devices and systems for health/food/environmental monitoring", EC-funded, Athens, 2013 (Invited)
13. 4th ANKA/KNMF Joint Users Meeting, Karlsruhe, Germany 2012 (Invited)
14. Workshop on "QCM-D as a tool to study cells at an interface", organized by Chalmers University of Technology, Dept. of Applied Physics, Gothenburg, and Q-Sense, Sweden, 2012 (Invited)
15. 1st International Workshop on Novel Developments & Applications in Sensor Technology, Coburg, Germany 2009 (Invited)
16. "Research activities on Nanobiotechnology in Greece", Organized by Nano2Life EC-funded Consortium, Greece (Invited)
17. IEEE International Ultrasonics Symposium, 2006, Vancouver, Canada (Invited)
18. EuroNanoForum 2005, Nanotechnology and the Health of the EU Citizen in 2020, European Commission, 2005, Edinburgh, UK (Invited)
19. Gordon Research Conference, Chemical Sensors and Interfacial Design, 2000, New Hampshire, USA,
20. Immunoassays of the '90s, The Royal Society of Chemistry, 1993, London, UK (Invited)

12. RESEARCH GRANTS

GRANTS OBTAINED IN THE PERIOD 2003-2016, UNIV. OF CRETE/IMBB-FORTH

(i) Competitive research grants

Period	Funding Body/ Type of Grant	Title	No of Partici- pants	Role	Total Funding (€)	Biosensors Funding (€)
2017-2020	EC- HORIZON2020 (FET-OPEN- 2015)	Capturing non-amplified tumor circulating DNA with ultrasound hydrodynamics	7	<u>Project Coordinator</u>	3.412M	682,500
2016 (3-months)	Institut Français	Study of membrane permeabilization with acoustic biosensors	2	<u>Principal Investigator</u> Greek team	12,000	6,000

2016-2019	EC-HORIZON2020 (KET-2015)	A portable MicroNanoBioSystem and Instrument for ultra-fast analysis of pathogens in food: Innovation from LOVE-FOOD prototype to pre-commercial instrument	7	<u>Project Coordinator</u>	3.152M	809,791
2016-2019	EC-HORIZON2020 (KET-2015)	Reliable Novel Liquid Biopsy technology for early detection of colorectal cancer	6	Participating Member	2.307M	450,000
2013-2015	EC/GSRT (KRIPIS)	Development of interdisciplinary research actions for systems biology	1	Participating Member	2.517M	25,000
2013-2015	EC-FP7 REGPOT-2011-1 (Coordination & Support Action)	Unlocking the innovative capacity of multidisciplinary structural biology-driven research in Crete	1	Participating Member	3M	92,000
2013-2015	GSRT (Synergasia 2011)	Converging Lamb wave sensors with microtechnologies towards an integrated Lab-on-chip for clinical diagnostics	4	<u>Project Coordinator</u>	299,032	80,480
2012-2015	EC FP7-ICT: Micro-Nano-Bio	Love wave fully integrated Lab-on-chip platform for food pathogen detection	7	<u>Project Coordinator</u>	2.997M	652,965
2011-2013	Ministry of Education (Heraclitus II)	Study of the mechanism of interaction of antimicrobial peptides α -defensins using biosensors	1	<u>Principal Investigator</u>		45,000
2009-2011	GSRT/DAAD (Bilateral)	Biosurfaces and devices for the study of cancerous cells and the specific activation of T-lymphocytes	2	<u>Principal Investigator</u> Greek team	20,000	10,000
2008	ELKE Univ. of Crete	Acoustic study of the mechanism of action of the anti-microbial peptide Crp4	1	<u>Principal Investigator</u>		3,500
2007-2009	EC-FP6 Marie Curie Research Training Network	European network on selection and analysis of protein-protein interactions	10	Participating Member	2.207M	147,139
2006-2008	GSRT (ENTER)	Study of the elusion profile of immobilized BMP-2 and VEGF proteins from implants using biosensors	1	<u>Principal Investigator</u>		80,000
2006-2009	GSRT (PENED)	Biosensor for probing protein interactions	3	<u>Project Coordinator</u>	139,450	46,483
2005-2006	Ministry of Education (Pythagoras II)	Development of polymer surfaces for the formation of membrane arrays	1	<u>Principal Investigator</u>		37,250
2004-2007	Human Frontier Science Program	Mechanism of antimicrobial peptide interactions with the target cell membrane	4	<u>Project Coordinator</u>	1.107 M	377,100

2004-2006	GSRT/British Council	Polymer patterns for the formation of membrane arrays	2	Principal Investigator Greek team	23,000	11,500
Total						3.556M

(ii) *Marie Curie Fellowships (Biosensors Lab, IMBB-FORTH: Host)*

Year	Type of Fellowship	Title	Budget (€)
2012	Intra European Fellowship (IEF)	Cellular Analyses of APCs and T-cells on SAW-based Platform for Early and Multiplex Disease Diagnosis	(Fellow took up permanent position)
2011	Marie Curie Career Integration Grant (CIG)	Nanoparticle-Cell Interactions, a Pathway for Understanding Nanotoxicity: from a Model System to in vitro Systems	(Fellow took up permanent position)
2005	Marie Curie European Return and Reintegration Grant	Mechanism of interaction of antimicrobial peptides with the cell membrane using biosensors	40,000
Total			40,000

(iii) *Other*

Year	Type of Grant	Title	Budget (€)
2012 (6 months)	Collaboration IMDEA Nanociencias, Madrid, Spain	Study of the interaction of ZipA with a model membrane using acoustic techniques	5,000
2006 (3 months)	Industrial Microtechnology Centre Ltd, Australia	Evaluation of Love wave sensor towards the detection of <i>Legionella</i> bacteria	30,000
Total			35,000

GRANTS OBTAINED IN THE PERIOD 1995-2002, UNIV. OF CAMBRIDGE, UK

(i) *Competitive research grants*

Period	Funding Body	Title	No of Participants	Role	Total Funding (€)	Biosensors Funding (€)
1999-2002	BBSRC UK	Development of acoustic wave sensors for biochemical analysis	2	Project Coordinator	315,000	239,450
1999	Nuffield Foundation, UK	Equipment Grant	1	Principal Investigator		5,000
1998-1999	Royal Society, UK	Equipment Grant	1	Principal Investigator		8,000
1997-1999	British Council UK	Research Grant (Bilateral)	1	UK Principal Investigator		6,300
1996-2002	BBSRC UK	Novel acoustic wave geometries for clinical diagnosis	1	Principal Investigator		323,900
1995	Research Council (UK/Switzerland)	Study of lipid bilayers using acoustic and optical biosensors	1	UK Principal Investigator		15,800
Total						598,450

(ii) *Other*

Period	Funding Body	Type of grant	No of Participants	Role	Total Funding (€)	Biosensors Lab Funding (€)
1999-2000	Sandia National Laboratory, USA	Research Grant	1	Principal Investigator		67,940

1999	Unilever Research Colworth, UK	Industrial Grant	1	Principal Investigator		47,400
<i>Total</i>						115,340

13. TEACHING EXPERIENCE

UNIV. OF CRETE, DEPT. OF BIOLOGY 2003-today

Undergraduate courses

- 2014-today Elective course on *"Use of new technologies in biology"*
 2005-today Elective course on *"Micro/nanotechnology in biology and molecular diagnostics"*
 2004-today Compulsory course on *"Organic chemistry"*

Graduate Courses

- 2004-today *"Technologies for characterizing proteins at surfaces and nanobiotechnology"*
 Module BIO 1504 M.Sc. courses on Protein Biotechnology & Molecular Biology and Biotechnology
 2004-today *"Application of AFM in biological studies"* and *"Sensors and integrated systems for diagnostic purposes"*, MSc courses on Protein Biotechnology & Molecular Biology and Biotechnology

Summer Schools

- 2006-2008 *"Methods in micro-nanotechnology and nanobiotechnology"*, EC-funded course within Nano2Life programme, NCSR-D, Athens
 2004 *"Biosensors; Application in Biology and Biotechnology"*, Dept. of Physics, Univ. of Crete

Students' supervision

- Ph.D.: 11 M.Sc. thesis: 20
M.Sc. rotation >20 Undergraduate thesis ("Ptychiaki") >25

INTERNATIONAL

- 2009 *"Biosensors"* M.Sc. course on *"Analytical Instruments, Measurement & Sensor Technology"*, School of Optical, Electrical & Computer Engineering, University of Shanghai for Science & Technology/CHINA & Coburg University/Germany

UNIVERSITY OF CAMBRIDGE, 1997-2003

Undergraduate courses

- 2001-2003 *Biology of Cells*, Trinity Hall and Sidney Sussex College, Natural Sciences, University of Cambridge, UK
 1997-1998 *Inorganic Chemistry*, Sidney Sussex College, Natural Sciences, University of Cambridge, UK

Graduate Courses

- 1997 *"Molecular Sensor Technology"*, Univ. of Cambridge, UK, Graduate Erasmus course

Students' supervision

- Ph.D.: 2; M.Sc.: 3; Rotation: 1

14. PUBLICATIONS

Editor

- Biomolecular Sensors**
Eds E. Gizeli, C.R. Lowe, Taylor & Francis, UK, 2002
- pHealth 2016**
Eds N. Maglaveras, E. Gizeli, IOS Press, 2016



Book Chapters

- Handbook of Immunoassay technologies: Approaches, Performances and Applications**
Ed. SK. Vashist and J. Luong

A. Grammoustianou, E. Gizeli, Chapter on “Acoustic wave based immunoassays”, pp. 203-216, Elsevier, Academic Press, London, UK, 2018

2. Handbook of Biosensors and Biochips

Eds C.R. Lowe, D. Cullen, H.W. Weetall and I. Karube

K. Melzak, E. Gizeli “Love Wave Biosensors”, John Wiley & Sons, 2007

3. High frequency acoustic wave devices for analyses of planar lipid bilayers

Eds H.T. Tien & A. Ottava

K. Melzak, E. Gizeli “Advances in planar lipid bilayers and liposomes”, Elsevier Academic Press, 2005

4. Biomolecular Sensors

Eds E. Gizeli, C.R. Lowe

E. Gizeli “Acoustic Immunosensors”, Taylor & Francis, UK, 2002

Guest Editor

1. **Sensing and Bio-Sensing Research**, Elsevier, Special issue on “Acoustic wave sensor technology for biophysical and bioanalytical studies”, 2016, in preparation

Patents


1. G. Papadakis, E. Gizeli, **Detecting nucleic acids in impure samples with an acoustic wave sensor**, UK Patent Application No. 1709659.5, 2017
2. G. Papadakis, E. Gizeli, **Measurement of analyte with an acoustic wave sensor**, PCT/EP2016/065612
3. A. Tsortos, G. Papadakis, E. Gizeli, **Molecular conformation biosensing**, WO 2008/155692, EC2171083
4. E. Gizeli and A.C. Stevenson “**Chemical sensor for detecting binding reactions**” WO9201931


Peer reviewed articles (*corresponding author)

1. G. Papadakis, P. Murasova, A. Hamiot, K. Tsougeni, G. Kaprou, M. Eck, D. Rabus, Z. Bilkova, B. Dupuy, G. Jobst, A. Tserepi, E. Gogolides, E. Gizeli*
Micro-nano-bio acoustic system for the detection of foodborne pathogens in real samples
Biosensors Bioelectronics, 2018, 111, 52-58.
2. A. Grammoustianou, G. Papadakis, E. Gizeli*
Solid-Phase Isothermal DNA Amplification and Detection on Quartz Crystal Microbalance Using Liposomes and Dissipation Monitoring
IEEE Sensors Letters, 2017, DOI: [10.1109/LENS.2017.2739803](https://doi.org/10.1109/LENS.2017.2739803)
3. G. Papadakis, P. Palladino, D. Chronaki, A. Tsortos, E. Gizeli*
Sample-to-answer acoustic detection of DNA in complex samples;
Chemical Communications, 2017, 53, 8058-8061
4. D. Million, M. Velez, A. Tsortos, E. Gizeli*
Extracting the shape and size of biomolecules attached to a surface as suspended discrete nano-particles;
Analytical Chemistry, 2017, 89, 4198-4203
5. G. Papadakis, JM. Friedt, M. Eck, D. Rabuc, G. Jobst, E. Gizeli*
Optimized acoustic biochip integrated with microfluidics for biomarkers detection in molecular diagnostics;
Biomedical Microdevices, 2017, 19, 16.
6. D. Chronaki, D.I. Stratiotis, A. Tsortos, E. Anastasiadou, E. Gizeli*
Screening between normal and cancer human thyroid cells through comparative adhesion studies using Quartz Crystal Microbalance technology;
Sensing and Bio-Sensing Research, 2016, 11, 99-106
7. A. Kordas, G. Papadakis, J. Champ, S. Descroix, E. Gizeli*
Rapid Salmonella detection using an acoustic wave device combined with the RCA isothermal DNA amplification method;
Sensing and Bio-Sensing Research, 2016, 11, 121-127
8. A.S. Kastania, K. Tsougeni, G. Papadakis, E. Gizeli, G. Kokkoris, A. Tserepi, E. Gogolides
Plasma micro-nanotextured polymeric micromixer for DNA purification with high efficiency and dynamic range;
Analytical Chimica Acta, 2016, 942, 58-67
9. A.K. Pantazis, G. Konstantinidis, E. Gizeli*
Study of the effect of the operating frequency of a GaN Lamb wave device to viscosity and protein Sensing;
IEEE Sensors Journal, 2016, 16 (19), 7028-7036

10. M. Gianneli, K. Tsougeni, A. Grammoustianou, A. Tserepi, E. Gogolides, E. Gizeli*
Nanostructured PMMA-coated Love wave device as a platform for protein adsorption studies; **Sensors and Actuators B**, 2016, 236, 583-590
 11. A. Tsortos, G. Papadakis, E. Gizeli
On the hydrodynamic nature of DMA acoustic sensing; **Analytical Chemistry**, 2016, 88 (12), 6472-6478
 12. P. Mateos-Gil, A. Tsortos, M. Velez, E. Gizeli*
Monitoring structural changes in intrinsically disordered proteins with QCM-D: Application to the bacterial cell division protein ZipA; **Chemical Communications**, 2016, 52, 6541-6544
 13. K. Tsougeni, G. Papadakis, M. Gianneli, A. Grammoustianou, V. Constantoudis, B. Dupuy, P. N. Petrou, S. E. Kakabakos, A. Tserepi, E. Gizeli, E. Gogolides
Plasma nanotextured polymeric lab-on-a-chip for highly efficient bacteria capture and lysis; **Lab on a Chip**, 2016, 16, 120-131
 14. G. Kaprou, G. Papadakis, D. P. Papageorgiou, G. Kokkoris, V. Papadopoulos, I. Kefala, E. Gizeli, A. Tserepi
Miniaturized devices for isothermal DNA amplification addressing DNA diagnostics; **Microsystem Technologies** 2015, DOI 10.1007/s00542-015-2750-x
 15. A. Tsortos, A. Grammoustianou, R. Lymbouridou, G. Papadakis, E. Gizeli*
The detection of multiple DNA targets with a single probe using a conformation-sensitive acoustic sensor; **Chemical Communications**, 2015, 51, 11504-11507
 16. T. Tsiavos, NE Ioannidis, A. Tsortos, E. Gizeli, K. Kotzabasis
Spermine is a potent modulator of proton transport through LHCII; **J Plant Physiology** 2015, 177, 44-50
 17. G. Papadakis, N. Skandalis, A. Dimopoulou, P. Glynos, E. Gizeli*
Bacteria Murmur: Application of an acoustic biosensor for plant pathogen detection; **PLOS ONE**, 2015, 10 (7): e0132773
 18. K. Mitsakakis, A. Tsortos*, Electra Gizeli*
Quantitative determination of protein molecular weight with an acoustic sensor; significance of specific versus non-specific binding; **Analyst**, 2014, 139, 3918-3925
 19. V. Papadopoulos, I. Kefala, G. Kokkoris, G. Kaprou, D. Moschou, G. Papadakis, E. Gizeli, A. Tserepi
A passive micromixer for enzymatic digestion of DNA; **Microelectronic Engineering**, 2014, 124, 42-46
 20. G. Papadakis*, E. Gizeli*,
Screening for mutations in BRCA1 and BRCA2 genes by measuring the acoustic ratio with QCM
Analytical Methods 2014, 6 (2) 363-371 ([Inside cover page](#))
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21. A.K. Pantazis, G. Konstantinidis, E. Gizeli*
Characterization of a GaN Lamb-Wave Sensor for Liquid-Based Mass Sensing Applications; **IEEE Sensors Journal** 2014, 14 (3), 908-911
 22. G. Papadakis, A. Tsortos, A. Kordas, I. Tiniakou, E. Morou, J. Vontas, D. Kardassis, E. Gizeli*
Acoustic detection of DNA conformation in genetic assays combined with PCR; **Scientific Reports** 2013, 3:2033, DOI: 10.1038 ([Press report](#))
 23. K.A. Melzak, S.A. Melzak, E. Gizeli, J.L. Toca-Herrera,
Cholesterol ordering in phosphatidylcholine liposomes: a surface plasmon resonance study
Materials 2012, 5 (11), 2306-2325 ([Invited](#), Special Issue on Supported Lipid Membranes)
 24. G. Papadakis, E. Gizeli
In silico search of DNA drugs targeting oncogenes
IEEE/ACM Transactions on Computational Biology and Bioinformatics 2012, 9 (6), 1826-1830
 25. K. Mitsakakis, S. Sekula-Neuner, S. Lenhert, H. Fucks, E. Gizeli*
Convergence of Dip-Pen Lithography and acoustic biosensors towards a rapid-analysis multi-sample microsystem; **Analyst**, 2012, 137, 3076-3082
 26. G. Papadakis, A. Tsortos, F. Bender, E. Ferapontova, E. Gizeli*
Direct detection of DNA conformation in hybridization processes
Analytical Chemistry 2012, 84, 1854-1861
 27. M. Saitakis, E. Gizeli*

Acoustic sensors as a biophysical tool for probing cell attachment and cell/surface interactions, **Cellular and Molecular Life Sciences** 2012, 69, 357-371 ([Invited review](#))

28. A. Tsortos, G. Papadakis, [E. Gizeli*](#)
The intrinsic viscosity of linear DNA; **Biopolymers** 2011, 95, 12, 824-832
29. K. Mitsakakis, [E. Gizeli*](#)
Multi-sample acoustic biosensing microsystem for protein interaction analysis; **Biosensors and Bioelectronic** 2011, 26, 4579-4584
30. K. Mitsakakis, [E. Gizeli*](#)
Detection of multiple cardiac markers with an integrated acoustic platform for cardiovascular risk assessment
Analytical Chimica Acta 2011, 699, 1-5 ([Feature article](#))
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31. M. Saitakis, [E. Gizeli*](#),
Quantification of the effect of glycocalyx condition on membrane receptor interactions using an acoustic wave sensor; **European Biophysics Journal** 2011, 40, 209-215
32. G. Papadakis, A. Tsortos, [E. Gizeli*](#)
Acoustic characterization of nanoswitch structures; application to the DNA Holliday Junction; **Nano Letters** 2010, 10, 5093-5097
33. A. Pantazis, [E. Gizeli*](#), G. Kostantinidis*
A high frequency GaN Lamb-wave sensor device; **Applied Physics Letters** 2010, 96, 194103
34. G. Papadakis, A. Tsortos, K. Mitsakakis, [E. Gizeli*](#)
Characterization of DNA-Hv1 histone interactions; discrimination of DNA size and shape; **FEBS Letters** 2010, 584, 935-940
35. M. Saitakis, A. Tsortos, [E. Gizeli*](#)
Probing the interaction of a membrane receptor with a surface-attached ligand using whole cells on acoustic biosensors; **Biosensors Bioelectronics** 2010, 25, 1688-1693
36. K. Melzak, A. Tsortos, [E. Gizeli*](#)
Use of Acoustic Sensors to probe the mechanical properties of liposomes
Methods in Enzymology 2009, 465, 21-41 ([Invited](#))
37. F. Bender, P. Roach, A. Tsortos, G. Papadakis, M.I. Newton, G. McHale, [E. Gizeli*](#)
Development of a combined surface plasmon resonance/surface acoustic wave device for the characterization of biomolecules; **Measurement Science and Technology** 2009, 20, Art. No: 124011
38. G. Papadakis, A. Tsortos, [E. Gizeli*](#)
Triple-helix DNA structural studies using a Love wave acoustic biosensor; **Biosensors & Bioelectronics** 2009, 25, 702-707 ([Press report](#))
39. K. Mitsakakis, A. Tserepi, [E. Gizeli*](#)
SAW device integrated with microfluidics for array-type biosensing; **Microelectronic Engineering** 2009, 86, 1416-1418
40. K. Mitsakakis, A. Tsortos, J. Kondoh, [E. Gizeli*](#)
Parametric study of SH-SAW device response to various types of surface perturbations; **Sensors Actuators B: Chemical** 2009, 138, 408-416
41. K.A. Melzak, [E. Gizeli*](#)
Relative activity of cholesterol in OPPC/cholesterol/sphingomyelin mixtures measured with an acoustic sensor; **Analyst** 2009, 134, 609-614
42. C. Hadjicharalambous, T. Sheynis, R. Jelinek, M. Shanahan, A. Ouellette, [E. Gizeli*](#)
Mechanism of α -defensin bactericidal action: comparative membrane disruption by Cryptidin-4 and its disulfide-null analogue; **Biochemistry** 2008, 47, 12626-12634
43. M. Saitakis, A. Dellaporta, [E. Gizeli*](#)
Measurement of 2D binding constants between cell bound MHC and immobilized antibodies with an acoustic biosensor; **Biophysical Journal** 2008, 95, 4963-4971 ([Press report](#))
44. A. Tsortos, G. Papadakis, [E. Gizeli*](#)
Shear acoustic wave biosensor for detecting DNA intrinsic viscosity & conformation: A study with QCM-D; **Biosensors Bioelectronics** 2008, 24, 836-841

45. T. Shahal, K.A. Melzak, C.R. Lowe, E. Gizeli*
*Poly(dimethylsiloxane)-coated sensor devices for the formation of supported lipid bilayers and the subsequent study of membrane interactions; **Langmuir** 2008, 24, 11268-11275*
46. K.A. Melzak, F. Bender, A. Tsortos, E. Gizeli*
*Probing mechanical properties of liposomes using acoustic sensors; **Langmuir** 2008, 24, 9172-9180*
47. K. Mitsakakis, A. Tserepi, E. Gizeli*
*Integration of microfluidics with a Love wave sensor for the fabrication of a multisample analytical microdevice; **Journal of Microelectromechanical Systems** 2008, 17, 1010-1019*
48. Tsortos, G. Papadakis, K. Mitsakakis, K.A. Melzak, E. Gizeli*
Quantitative determination of size and shape of surface-bound DNA using an acoustic wave sensor
Biophysical Journal 2008, 94, 2706-2715 ([3 Press reports](#))
- 
49. M. Farsari, G. Filippidis, T. Drakakis, K. Sambani, S. Georgiou, G. Papadakis, E. Gizeli, C. Fotakis
Three-dimensional biomolecule patterning
Applied Surface Science 2007, 253, 8115-8118
50. T. Drakakis, G. Papadakis, K. Sambani, G. Filippidis, S. Georgiou, E. Gizeli, C. Fotakis, M. Farsari
Construction of three-dimensional biomolecule structures employing femtosecond lasers
Applied Physics Letters 2006, 89, 144108
51. E. Gizeli*, J. Glad
Single-step formation of a biorecognition layer for assaying histidine-tagged proteins
Analytical Chemistry 2004, 76 (14), 3995-4001.
52. K.A. Melzak, D.J. Ellar, E. Gizeli*
Interaction of cytolytic toxin CytB with a supported lipid bilayer; study using an acoustic wave device
Langmuir 2004, 20 (4), 1386-1392
53. F. Martin, G. McHale, K. Melzak, E. Gizeli, M. Newton
*Pulse mode shear-horizontal surface acoustic wave (SH-SAW) system for liquid-based sensing applications; **Biosensors Bioelectronics** 2004, 19, 627-632*
54. E. Gizeli*, F. Bender, A. Rasmusson, K. Saha, F. Josse, R. Cernosek
*Sensitivity of the acoustic waveguide biosensor to protein binding as a function of the waveguide properties; **Biosensors Bioelectronics** 2003, 18, 1399-1406*
55. K. Saha, F. Bender, A. Rasmusson, E. Gizeli*
Probing the viscoelasticity and mass of a surface-bound protein layer with an acoustic waveguide device
Langmuir 2003, 19, 1304-1311
56. K. Saha, F. Bender, E. Gizeli*
*Comparative study of IgG binding to proteins G and A: non-equilibrium kinetic and binding constant determination with the acoustic waveguide device; **Analytical Chemistry** 2003, 75, 835-842*
57. M.I. Newton, G. McHale, F. Martin, E. Gizeli, K. Melzak
*Generalized Love waves; **Europhysics Letters** 2002, 58, 818-822*
58. K.A. Melzak, F. Martin, M.I. Newton, G. McHale, E. Gizeli*
*Acoustic determination of polymer molecular weights and rotation times; **Journal of Polymer Science B: Physics** 2002, 40, 1490-1495*
59. K.A. Melzak, E. Gizeli*
*A silicate gel promoting deposition of lipid bilayers; **Journal of Colloid and Interface Science** 2002, 246, 21-28*
60. A. Rasmusson, E. Gizeli*
*Comparison of poly(methylmethacrylate) and Novolak waveguide coatings for an acoustic biosensor; **Journal of Applied Physics** 2001, 90, 5911-5914*
61. G. McHale, M. Newton, F. Martin, K. Melzak, E. Gizeli
*Resonant conditions for Love wave guiding layer thickness; **Applied Physics Letters** 2001, 79, 3542-3543*
62. M.I. Newton, F. Martin, K.A. Melzak, E. Gizeli, G. McHale
*Harmonic Love wave devices for biosensing applications; **Electronics Letters** 2001, 37, 340-341*
63. K.A. Melzak, E. Ralph, E. Gizeli*

*Effect of the surface hydrophilicity on the formation of a membrane-type interface; Study using an acoustic wave device; **Langmuir** 2001, **17**, 1594*

64. M.I. Newton, G. McHale, F. Martin, [E. Gizeli](#), K.A. Melzak
*Pulse mode operation of Love wave devices for biosensing applications; **Analyst** 2001, **126**, 2107-2109*
65. [E. Gizeli](#)*
*Study of the sensitivity of the acoustic waveguide sensor; **Analytical Chemistry** 2000, **72**, 5967-5972*
66. C. MacMullen, H. Mehta, [E. Gizeli](#)*, C. Lowe
*Modelling of the mass sensitivity of the Love wave device in the presence of a viscous liquid
Journal of Physics: D Applied Physics 2000, **33**, 3053-3059*
67. [E. Gizeli](#)*, M. Liley, C.R. Lowe, H. Vogel
*Antibody binding to a functionalized supported lipid layer: A direct acoustic immunosensor; **Analytical Chemistry** 1997, **69**, 4808-4813*
68. [E. Gizeli](#)*
*Design considerations for acoustic wave biosensors; **Smart Materials and Structures** 1997, **6**, 700-706, [\(Invited\)](#)*
69. [E. Gizeli](#), M. Liley, C.R. Lowe, H. Vogel
*Detection of supported lipid layers with the acoustic Love waveguide device: Application to biosensors; **Sensors and Actuators B Chemical** 1996, **34**, 295-300*
70. [E. Gizeli](#)*, C.R. Lowe
*Immunosensors; **Current Opinion in Biotechnology** 1996, **7**, 66-79 [\(Invited Review\)](#)*
71. A.C. Stevenson, [E. Gizeli](#), N.J. Goddard, C.R. Lowe
*Acoustic Love plate sensors: a theoretical model for the optimization of the surface mass sensitivity; **Sensors and Actuators B-Chemical** 1993, **14**, 635-637*
72. [E. Gizeli](#), A.C. Stevenson, N.J. Goddard, C.R. Lowe
*Acoustic Love plate sensors: comparison with other acoustic devices utilising surface SH waves; **Sensors and Actuators B-Chemical** 1993, **14**, 638-639*
73. [E. Gizeli](#), A.C. Stevenson, N.J. Goddard, C.R. Lowe
*A Love plate biosensor utilizing a polymer layer; **Sensors and Actuators B-Chemical** 1992, **6**, 131-137*
74. [E. Gizeli](#), A.C. Stevenson, N.J. Goddard, C.R. Lowe
*A novel Love-plate acoustic sensor utilizing polymer overlayers; **IEEE Transactions on Ultrasonics Ferroelectric and Frequency Control** 1992, **39** (5), 657-659*

Peer-reviewed articles in conference proceedings

1. E. Gogolides, A. Tserepi, G. Jobst, J-M. Friedt, D. Rabus, B. Dupuy, Z. Bilkova, S. Descroix, J-L. Viovy, G. Papadakis, [E. Gizeli](#)
*Micro-Nano-Bio Diagnostic System for Food Pathogen Detection Revolutionizes Food Safety Management & Protects Consumers Health, **pHealth 2016, Proc. 13th International Conference on Wearable Micro and Nano Technologies for Personalised Health**, 67-73
Eds N. Maglaveras and E. Gizeli, IOS Press, The Netherlands, 2016*
3. G. Kaprou, G. Papadakis, G. Kokkoris, V. Papadopoulos, I. Kefala, D. Papageorgiou, [E. Gizeli](#), A. Tserepi
*Miniaturized devices towards an Integrated Lab-on-a-chip Platform for DNA diagnostics
Proc. SPIE 9518, Bio-MEMS and Medical Microdevices II, 95180G (2015); doi:10.1117/12.2181953*
4. G. Kaprou, K. Tsougeni, A. Kastania, G. Kokkoris, G. Papadakis, S. Chatzandroulis, [E. Gizeli](#), P. Petrou, S. Kakabakos, E. Gogolides, and A. Tserepi
*Lab-on-a-chip for food-pathogen detection,
Proc. of 10th Panhellenic Conference of Chemical Engineering (2015)*
5. K. Mitsakakis, A. Tserepi, [E. Gizeli](#)*
*An integrated microfluidics-on-SAW setup for multi-sample sensing
IEEE International Frequency Control Symposium Proceedings, 2008, 337-340*
6. *Acoustic wave biosensor for detecting DNA conformation; a study with QCM-D*
A. Tsortos, G. Papadakis, [E. Gizeli](#)*, ***IEEE International Frequency Control Symposium Proceedings**, 2008, 346-349*
7. M. Saitakis, A. Dellaporta, E. Gizeli*

A surface acoustic wave sensor for the study of membrane-protein/ligand interactions using whole cells
IEEE International Frequency Control Symposium Proceedings, 2008, 356-359

8. E.Gizeli*, H. Mehta, C.R. Lowe

Novel calibration of the Love wave sensor utilising phospholipid bilayers

Chemical and Biological Sensors and Analytical Electrochemical Methods Proceedings, 97 (19),
Symposium of Electrochemical Society and International Society of Electrochemistry, 1997, 155-164.

Press release

1. EC-funded project LOVE-FOOD: distinction by the Council of European Research and Innovation Ministers (<https://ec.europa.eu/digital-single-market/en/news/project-food-safety-gets-recognition-eu-council>) (January 2016)
2. For the article Scientific Reports (Papadakis et al., 2013): **Report** on GenomeWeb.com “Researchers pair acoustic measurements with PCR for label free SNP genotyping-gene expression assays” (June 27, 2013)
3. For the article in Biophysical Journal (Tsortos et al. 2008):
 - **Commentary** in HFSP Journal (vol. 2(4), pp. 171-177, 2008)
 - **Hot-off-the-press** report by the Human Frontier Science Program: «Acoustic waves can ‘see’ the conformation of surface-attached DNA molecules»
 - **Report** in “Biotech Business Week” (NewsRx, p.796, 16/6/2008)
4. For the article in Biophysical Journal (Saitakis et al. 2008): **Report** in “Biotech Business Week” (NewsRx, 08/01/2009)
5. For the article in Biosensors & Bioelectronics (Papadakis et al. 2009): **Hot-off-the-press** report by the Human Frontier Science Program: “Novel biophysical method to characterize drug candidates for anti-gene therapy”