

***BARTZIS VASILEIOS***  
***Dr of Physics***

***CURRICULUM VITAE***

***ATHENS 2023***

**PERSONAL INFORMATION**

**Full Name:** BARTZIS VASILEIOS

**DOB:** 24/04/1964

**Job Position:** Assistant Professor in the field of "Quantum Optics and Ionic Purification of Liquid Solutions using Electromagnetic Fields"  
**Work Address**  
: Department of Food Science and Technology, University of West Attica, 12243, Egaleo, Greece

**Telephones:** 2105385517, 6932344540

**Email:** vbartzis@uniwa.gr

**EDUCATION**

Sept. 1982–Sept. 1986: **B.Sc.**, School of Physics and Mathematics, University of Patras. Department: **Physics**. Degree grade: "Very Good–7.7". Diploma thesis: "Squeezed States of Light", under the supervision of the Full Professor of the University of Patras Mr. A.D. Giannousis.

Apr. 1987–Sept. 1990: **Ph.D.** in Physics, University of Patras, under the supervision of the Full Professor of the University of Patras, Mr. A.D. Giannousis.  
PhD thesis: "Theory of Squeezed States and Applications in Quantum Optics". Grade: "Excellent".

**SCHOLARSHIP**

Oct. 1989–Sep. 1990: University of Manchester Institute of Science and Technology (U.M.I.S.T.) with the Erasmus Fellowship: Research project under the supervision of Professor R.K. Bullough on nonlinear optics and quantum optics.

**FOREIGN LANGUAGES**

English (very good knowledge of TOEIC 810).

**CURRENT POSITION**

Assistant Professor at the Department of Food Science and Technology, School of Food Sciences, University of West Attica

**TEACHING WORK IN HIGHER INSTITUTIONS**

1992–1996 Professor of Applications at the Department of Physics, Chemistry and Materials Technology of the School of Technological Applications at the Technological Educational Institute of Athens.

1994-1996	Assistant Professor (for the academic year (1994-95), Professor (for the academic year 1995-96) at the Department of Physics, Chemistry and Materials Technology of the School of Technological Applications at the Technological Educational Institute of Piraeus
1996-2017	Laboratory associate at the Department of Physics, Chemistry and Materials Technology and at the Department of Energy Technology Engineering of the School of Technological Applications at the Technological Educational Institute of Athens.
2003-2007 2008-2012	Hourly paid professor at Aspropyrgos Merchant Marine Academy Hourly paid professor at Aspropyrgos Merchant Marine Academy
2003-2004	Laboratory associate at the Department of Textile Engineering of the School of Technological Applications at the Technological Educational Institute of Piraeus
2008-2014	Scientific or Laboratory Associate at the Department of Textile Engineering of the School of Technological Applications at the Technological Educational Institute of Piraeus
2007-2008	Laboratory associate at the General Department of Physics, Chemistry and and Materials Technology of the School of Technological Applications at the Technological Educational Institute of Piraeus
2010-2011	Scientific associate at the General Department of Physics, Chemistry and and Materials Technology of the School of Technological Applications at the Technological Educational Institute of Piraeus
2011-2012	Laboratory associate at the General Department of Physics, Chemistry and and Materials Technology of the School of Technological Applications at the Technological Educational Institute of Piraeus
2008-2009 2010-2011	Higher Ecclesiastical Academy of Athens Higher Ecclesiastical Academy of Athens at the rank of Assistant Professor
2013-2018	Academic Scholar at the Department of Textile Engineering of the School of Technological Applications at the Technological Educational Institute of Piraeus
2017-2021	Professor of applications - Lecturer at the Departments of Energy Technology Engineering and Food Science and Technology at the Technological Educational Institute of Athens and University of West Attica

2021-today Assistant Professor at the Department of Food Science and Technology, University of West Attica,

**INDEPENDENT TEACHING OF UNDERGRADUATE COURSES:**

2015-16 Physics (Theory), Department of Civil Engineering and Department of Topography and Geoinformatics Engineering, Fall Semester at the Technological Educational Institute of Athens.

2018-present Computer Applications (Theory and Laboratory), Department of Food Science and Technology at University of West Attica. Fall Semesters.

2019-present Physics (Theory and Laboratory) Department of Food Science and Technology. Spring Semesters.

2008-14  
2018-20 Management of By-products and Environment (Theory) at the Department of Textile Engineering of the School of Technological Applications at the Technological Educational Institute of Piraeus and later at the Department of Industrial Design and Production of the University of West Attica

2008-09 Elementsof Physics (Theory) C Semester, 2 Semesters  
Instrumental Analysis (Theory and Laboratory) C Semester , 2 Semesters  
Causes and Mechanisms of Material Deterioration (Theory) D Semester, 1 Semester Physicochemical Methods of Diagnosis of Ecclesiastical Relics I (Theory) E Semester, 1 Semester  
Physicochemical Methods of Diagnosis of Ecclesiastical Relics I I (Theory and Laboratory) F Semester 1 semester at the Higher Ecclesiastical Academy of Athens

2010-11 Instrumental Analysis (Theory) C Semester, 1 Semester Elements of Physics C Semester (Theory) ,1 Semester Chemistry of Relics Conservation II (Theory) E Semester, 1 Semester Analytical Chemistry (Theory) B Semester Y, 1 Semester Chemistry of Relics Conservation I (Theory ) D Semester Y, 1 Semester Physicochemical Methods of Diagnosis of Ecclesiastical Relics II (Theory) F Semester, 1 Semester at the Athens Higher Ecclesiastical Academy

2003-07  
2008-12 Physics (Theory) A and C Semester at AEN Aspropyrgos

2020-present Assignment of the course Computer Applications (Theory and Laboratory) to the Department of Food Science and Technology of (Fall Semester) at University of West Attica

- 2020-21 Assignment of the course By-product Management and Environment to the Department of Industrial Design and Production of University of West Attica
- 2021-23 Teaching of the course 'Geometric and Physical Optics' at the Department of Biomedical Sciences of University of West Attica
- 2021-23 Teaching of the course 'Physics' at the Department of Wine, Vine and Beverage Sciences at University of West Attica.

### **TEACHING POSTGRADUATE COURSES**

- 2020-22 Assignment of six hours of instruction to the course Food Quality Management for the Winter Semesters of ak. Years 2020-21, 2021-22 of the Postgraduate Program entitled "Innovation, Quality and Safety "

### **TEACHING LABORATORY EXERCISES**

- 1992-2018 Teaching of Laboratory Exercises in Physics as I belonged to the Departments of Physics, Chemistry and Materials Technology of the Technological Educational Institute of Athens and Piraeus and later to the Department of Energy Technology Engineering of the Technological Educational Institute of Athens
- 2018-today Teaching of Laboratory Exercises in Physics and Computer Applications at the Department of Food Science and Technology of University of West Attica

### **PROFESSIONAL EXPERIENCE OUTSIDE TEACHING**

- 01/01/2004-30/06/2004 EPEAEK II Programme "Archimedes: Strengthening of research teams of the TEI of Piraeus"
- 01/01/2005-31/12/2005 EPEAEK II Program "Archimedes: Strengthening of research teams of the TEI of Piraeus"
- 01/03/2006-31/08/2006 EPEAEK II Program "Archimedes: Strengthening of research teams of the TEI of Piraeus"
- 07/01/2009-31/07/2009 Working as a research physicist at the company "MALLIONTA TECHNICAL SOCIETE ANONYME VAS. KONSTANTINOU 7 MAROUSSI»
- 01/08/2009-30/04/2010 Working as a Research Physicist at the Company «ATHLETICO S.A. G. GIANNOS SA» Sports Instruments and Playgrounds Industry, Thesi LAKKA STAMOU, MAGOULA

### **AUTHORSHIP**

### **PHD THESIS**

PhD thesis entitled: '**Theory of Squeezed States and Applications in Quantum Optics**', Patras 1990

### **RESEARCH ACTIVITY:**

The field of Quantum Optics, the production of squeezed states of light whose importance is becoming greater and greater in the transmission of weak signals. In particular, the production of the above states by the parametric amplifier, the two or three energy stations Rydberg atoms and their mathematical properties were examined.

In addition, for the last years I have been active in the ionic purification of liquid solutions and desalination of sea water with the help of electromagnetic fields.

### **PUBLICATIONS**

- Δ1. A. Jannussis and V. Bartzis  
"General Properties of the Squeezed States".  
New Cim. 100b (1987), 633
- Δ2. A. Jannussis and V. Bartzis  
"Exact Calculation of the Squeezed States in the Q-Representation"  
Phys.Lett.A.132 (1988), 324
- Δ3. A. Jannussis and V. Bartzis  
"Coherent States for the Harmonic Oscillator with Time-Dependent Mass and Frequency"  
Phys. Lett. A129(1988),263
- Δ4. A. Jannussis and V. Bartzis  
"Coherent and Squeezed States in Quantum Optics"  
New Cim. 102B (1988), 33rd
- Δ5. V. Bartzis, E. Vlahos and A. Jannussis  
"Some Remarks of the Squeezed States"  
New Cim. 103B (1989), 537
- Δ6. A.Jannussis, V. Bartzis and E. Vlahos  
"Coherent and Squeezed States in Phase Space"  
New Cim.105B(1990), 489
- Δ7. A. Jannussis, V. Bartzis and E. Vlahos  
"Coherent and Squeezed States in Phase Space"  
Presented in the 4<sup>th</sup> Workshop on Hadronic Mechanics, Skopje, 22-27 August 1988.
- Δ8. A.Jannussis, E. Vlahos, D. Skaltas, G.Kliros and V.Bartzis  
"Squeezed States in the Presence of a Time-Dependent Magnetic Field"  
New Cim.104B(1989), 53
- Δ9. A. Jannussis, E.Vlahos,D.Skaltsas.G.Kliros and V.Bartzis  
"Coherent and Squeezed States in the Presence of Magnetic Field"  
Hadronic Journal 13 (1990), 435
- Δ10. V. Bartzis  
"Intensity Dependent, Two-Photon Jaynes-Cummings Model"  
Physica A 166 (1990), 347
- Δ11. V. Bartzis  
"Generalized Jaynes-Cummings Model with Atomic Motion".  
Physica A 180 (1992), 428

- Δ12. V. Bartzis  
 “Off-Resonance Two-Mode Squeezed States”.  
 Quantum Opt. 2 (1990), 97
- Δ13. N. Nayak and V. Bartzis  
 “Quantum Electrodynamics of a Three-level and a Two-level Rydberg Atom in a Bimodal Ideal Cavity”  
 Phys. Rev. A 42 (1990), 2953
- Δ14. V. Bartzis and N. Nayak  
 “Two-Photon Jaynes-Cummings Model”  
 J. Eight. Soc, Am B 8 (1991), 1779
- Δ15. A. Jannussis, E. Vlahos and V. Bartzis  
 “Simple and Discrete Squeezed States”  
 Nuovo Cimento 108 B(1993), 57
- Δ16. V. Bartzis and N. Parargias  
 “Electrodynamics of a Three-level Jaynes-Cummings Model in a Kerr-like Medium”  
 Physica A 206 (1994), 207
- Δ17. N. Patargias, V. Bartzis and A. Jannussis  
 “Two-Photon Jaynes-Cummings Model in Kerr-like Media”  
 Physica Scripta 52 (1995), 554
- Δ18. N. Nayak A.S. Majumdar and V. Bartzis  
 “Micromaser Dynamics with three level Atom Systems”  
 Molecular Crystals and Liquid Crystals Science and Technology Section B: Nonlinear Optics 24(4),(2000), 319
- Δ19. N. Nayak A.S. Majumdar and V. Bartzis  
 ‘‘Effects of dicke superradiance in the context of the one-atom maser’’  
 arXiv:quant-ph 1,(2000),0001013
- Δ20. I Vamvakas, V Bartzis and G Kompocholis "Determination of the spherical aberration and the focal length of a concave mirror" e-JST 1,(2014), 83
- Δ21. V. Bartzis, I. Vamvakas, N. Merlemis & E. Zekou “Spherical aberration experimental apparatus for undergraduate optics courses “World Transactions on Engineering and Technology Education 172019(2019), 409
- Δ22. V. Bartzis, I.E. Sarris  
 “A theoretical model for salt ion drift due to electric field suitable to sea water desalination, Desalination 473 (2020) 114163
- Δ23. E. Zekou, I. Vamvakas, V. Bartzis and N. Merlemis  
 “Calculation of the focal length of a two-lens system – an educational experiment”, e JST 1(2020),41
- Δ24. V. Bartzis, I. Sarris, “ Electric field distribution and diffuse layer thickness study due to salt ion movement in water desalination” Desalination 490(2020),114549
- Δ25. V. Bartzis, N. Merlemis, M. Serris and G. Ninos  
 “Generalized intensitydependent multiphoton Jaynes – Cummings model”  
 έγινε δεκτό για δημοσίευση στο Springer volume entitled “Aproximation and computation in Science and Engineering”
- Δ26. G. Ninos , V. Bartzis , N. Merlemis , I. E. Sarris“  
 Uncertainty quantification implementations in human hemodynamic flows”,  
 Computer Methods and Programs in Biomedicine 203(2021),106021

- Δ27 V. Bartzis and I. E. Sarris  
 “ Time Evolution Study of the Electric Field Distribution and Charge Density Due to Ion Movement in SaltyWater”, Water 13(2021), 2185
- Δ28. I. Strati , P. Tataridis , A. Shehadeh , A. Chatzilazarou , V. Bartzis , A. Batrinou , V. Sinanoglou “ Impact of tannin addition on the antioxidant activity and sensory character of Malagousia white wine” Current Research in Food Science 4 (2021) 937
- Δ29. V. Bartzis , G. Ninos and I.Sarris “Water Purification from Heavy Metals Due to Electric Field Ion Drift”, Water 14(2022), 2372
- Δ30. V. Bartzis , A. Batrinou , I. Sarris , S. Konteles , I. Strati and D.Houhoula, “Electric Field Induced Drift of Bacterial Protein Toxins of Foodborne Pathogens Staphylococcus aureus and Escherichia coli from Water”, Appl. Sci. 12(2022), 12739
- Δ31 V.Bartzis , I. Strati, I. E. Sarris ,T.Tsiaka, A. Batrinou, S. Konteles and V. Sinanoglou “Application of Electric Field Force for the Accumulation of Anthocyanins from Winery Wastewater” Water, 15(2023), 2450
- Δ32 F. Sofos, V. Bartzis, T. Karakasidis and I. Sarris, “Electric field-driven water desalination across scales, 10th International Conference on Micro-Nanoelectronics, Micro-Nanosciences & Nanotechnologies”,November 2-5,(2023), 195-196
- Δ33 V. Bartzis and I. Sarris, “Advanced Technology for Desalination and Water Purification” Water, 16(2024), 1094

**PARTICIPATION IN THREE-MEMBER ADVISORY COMMITTEES FOR THE PREPARATION OF DOCTORAL DISSERTATIONS**

**Ninos Georgios** : PhD Thesis "Development of Fluid Mechanical Simulation Models & Algorithms for the Quantification of Uncertainties for Hemodynamic Flows of the Human Eye", Department of Mechanical Engineering, University of West Attica , **10/18-07-2019**