

CURICULLUM VITAE

September 2024

PERSONAL INFORMATION

Surname : Aggelos
Last Name : Philippidis
Date of Birth : December 2nd 1976
Nationality : Greek
Marital Status : Single
Address : Ntaliani 5 Str., 71306 Heraklion Crete Greece
Tel. ++30-6974-820741
Business
Address : Institute of Electronic Structure and Laser (I.E.S.L.)
Foundation for Research and Technology Hellas (F.O.R.T.H.)
Heraklion 711 10
Tel. ++30-2810-391129
e-mail : filagg@iesl.forth.gr
<https://www.iesl.forth.gr/en/people/filippidis-aggelos>

EDUCATION

6/2005 – 9/2009 Ph.D. thesis, “*Molecular compounds metal chalcogenides: synthesis, characterization and study of their solution chemistry*”
Chemistry Department, University of Crete

9/2001 -11/2003 M.Sc., “*Geographical and botanical classification of Greek virgin olive oils by using NMR spectroscopy and multivariate statistical analysis*”
Chemistry Department, University of Crete

9/1996 – 3/2001 B.Sc. in Chemistry, Department of Chemistry,
University of Crete

EMPLOYMENT - RESEARCH ACTIVITIES

- 11/2009 – present Associate Researcher (Post-doc) at I.E.S.L. – F.O.R.T.H.
Crete, Greece
- 1/2004-1/2005 Compulsory National Service (Greek Navy)

PARTICIPATION IN RESEARCH PROGRAMS

PENED 03: "Synthesis, Characterization and Study of the Optoelectronic and Catalytic Properties of Novel Semiconducting Nanostructured Materials Based on Metal-Chalcogenides" 2005-2008

CHARISMA 2010-2012 "Cultural heritage Advanced Research Infrastructures: Synergy for a Multidisciplinary Approach to Conservation/Restoration"

THALES: "Evaluation and optimization of the quality factors during wine maturation produced from Cretan red and white grape varieties" 2012-2015

IPERION CH "Integrated Platform for the European Research Infrastructure ON Cultural Heritage" 2015-2017 "Innovative instruments and methods for integrated approaches to CH analysis and diagnostics" and "Advancing diagnostics for intervention in conservation"

HERACLES "HERitage Remediation After CLimate Events on Site" Research and Innovation Action 2017-2019 "Design/development of methodologies for wide area surveillance and site diagnosis and monitoring"

SpArch/HFRI-FM17-3542 2020-2021

Spectrochemical analysis of archaeological bio-organic residues

Fotomelo/ESPA 2014-2020

Comparative study using classical chemical analytical techniques combined with innovative spectroscopic methods based on photonics and machine learning for the authenticity and origin detection of Greek honey

RESEARCH EXPERIENCE

- Experience in analytical spectroscopic techniques in the field of cultural heritage materials.
- Experience in food analysis (olive oils, wines) with synchronous analytical instrumentation.
- Synthesis and characterization of organic compounds, carbon nanodots (C-dots).
- Synthesis and characterization of molecular compounds metal chalcogenides.
- Raman micro-spectroscopy.
- Surface Enhanced Raman Spectroscopy (SERS).
- Nuclear Magnetic Resonance (NMR) spectroscopy.
- Ultraviolet-Visible and near Infrared spectroscopy.
- Fluorescence Spectroscopy.
- Laser Induced Fluorescence Spectroscopy (L.I.F.).
- X-Ray Diffraction (XRD).
- Fourier Transform Infrared Spectroscopy (FT-IR).
- Electrospray Ionization Mass Spectrometry (ESI-MS).
- Scanning Electron Microscope – Energy Dispersive Spectroscopy (SEM - EDS).
- Development of portable instrumentation (Raman, LIF) for in-situ measurements for Cultural Heritage studies and Food analysis.
- Experience in multivariate statistical methods (chemometrics), PCA, PLS, OPLS-DA.

SUPERVISION OF DIPLOMA THESIS

1. “Application of Raman spectroscopy in inorganic pigments analysis”, K. Diamanti, Physics Department, University of Crete, 2/2015

2. “Analysis of Archaeological Bio-Organic Residues by the spectroscopic methods of UV-Vis Absorption and Fluorescence”, E. Sarafi, Chemistry Department, University of Crete, 7/2021
3. “In search of spectral indicators, indicative of the presence of genetic material in archaeological teeth, based on data obtained via Raman or fluorescence emission spectroscopy, applied in situ”, A. Mamali, Master Thesis, Chemistry Department, University of Crete, 3/2023

TEACHING EXPERIENCE

University level lecturing

Teaching assistant in Inorganic Chemistry (4th year) Undergraduate Laboratories, Dept. of Chemistry, Univ. of Crete, 2002-2003

Teaching assistant in Physical Chemistry (3th year) Undergraduate Laboratories, Dept. of Chemistry, Univ. of Crete, 2006-2007

Applications of Raman scattering in cultural heritage materials, Dept. of Physics, Univ. of Crete, 2012-today (Laser and Modern Optics Laboratories)

Teaching personnel under contract, “Structural and Chemical Analysis of Materials”, Dept. of Materials Science and Technology, Univ. of Crete, 2018-2020

Teaching personnel under contract, “Spectroscopy”, Dept. of Materials Science and Technology, Univ. of Crete, 2018-2020

Master level lecturing

Teaching personnel, “Bio-Medical Imaging Module (Bio-spectroscopy and Hyperspectral Imaging, BME 13)”, Biomedical Engineering MSc Program, University of Crete, Technical University of Crete, Foundation for Research and Technology-Hellas, 2020-2021

PEER-REVIEWED JOURNALS PUBLICATIONS (total: 43)

Selected Publications

1. G. Vigli, A. Philippidis, A. Spyros, P. Dais «Classification of edible oils by employing ³¹P and ¹H NMR Spectroscopy in combination with multivariate

- statistical analysis. A proposal for the detection of seed oil adulteration in virgin olive oils», *J. Agric. Food Chem.*, **2003**, 51, 5715-5722.
2. **A. Philippidis**, T. Bakas, P. Trikalitis « $(\text{H}_2\text{NC}_4\text{H}_8\text{NCH}_2\text{CH}_2\text{NH}_2)_2\text{Zn}_2\text{Sn}_2\text{Se}_7$: A Hybrid Ternary Semiconductor Stabilized by Amine Molecules Acting Simultaneously as Ligands and Counterions», *Chem. Commun.*, **2009**, 1556-1558.
 3. P. Westlake, P. Siozos, **A. Philippidis**, C. Apostolaki, B. Derham, A. Terlix, V. Perdikatsis, R. Jones, D. Anglos «Studying pigments on painted plaster in Minoan, Roman and Early Byzantine Crete. A multi-analytical technique approach», *Analytical and Bioanalytical Chemistry*, **2012**, 402, 1413-1432.
 4. **A. Philippidis**, Z. E. Papiaka, D. Anglos, “SERS and 2D-Fluorescence for the investigation of aminoacids and egg proteins”, *Microchemical Journal*, **2016**, 126, 230-236.
 5. A. Brysbaert, P. Siozos, M. Veters, **A. Philippidis**, D. Anglos, “Materials analyses of pyrotechnological objects from LBA Tiryns, Greece, by means of Laser-Induced Breakdown Spectroscopy (LIBS): Results and a critical assessment of the method”, *Journal of Archaeological Science*, **2017**, 83, 49-61.
 6. G. Flouda, **A. Philippidis**, A. Mikallou, D. Anglos, “Materials analyses of stone artifacts from the EBA to MBA Minoan Tholos tomb P at Porti, Greece (Crete), by means of Raman spectroscopy: Results and a critical assessment of the method”, *Journal of Archaeological Science: Reports*, **2020**, 32, 102436.
 7. **A. Philippidis**, E. Poulakis, R. Kontzedaki, E. Orfanakis, A. Symianaki, A. Zoumi, M. Velegrakis, “Application of Ultraviolet-Visible Absorption Spectroscopy with Machine Learning Techniques for the Classification of Cretan Wines”, *Foods*, **2021**, 10, 9.
 8. G. Stavrakakis, **A. Philippidis**, Michalis Velegrakis, “Application of optical spectroscopic techniques and multivariate statistical analysis as a method of determining the percentage and type of adulteration of extra virgin olive oil”, *Food Analytical Methods*, <https://doi.org/10.1007/s12161-021-02055-8>, **2021**.
 9. **A. Philippidis**, A. Mikallou, D. Anglos, “Determining optimum irradiation conditions for the analysis of vermilion by Raman spectroscopy”, *The European Physical Journal Plus*, **2021**, 136, 1194.
 10. **A. Philippidis**, R. Kontzedaki, E. Orfanakis, N. Fragkoulis, A. Zoumi, E. Germanaki, P. C. Samartzis, M. Velegrakis, “Classification of Greek extra virgin

olive oils by Raman spectroscopy in conjunction with sensory and cultivation characteristics, and multivariate analysis”, *JSFA Reports*, **2023**, <https://doi.org/10.1002/jsf2.156>.

BOOK CHAPTER

1. **Philippidis A.**, Siozos P., Papiiaka Z.E., Melessanaki K., Hatzigiannakis K., Vakondiou M., Manganas G., Diamanti K., Giakoumaki A., Anglos D. “*Laser tools in archaeology and conservation how far can we get?*” (p. 261-269) Best practices of geoinformatic technologies for the mapping of archaeolandscapes. Archaeopress, Oxford, **2015**.
2. **A. Philippidis**, E. Poulakis, R. Kontzedaki, E. Orfanakis, A. Symianaki, A. Zoumi, Michalis Velegrakis, “Application of Ultraviolet-Visible Absorption Spectroscopy with Machine Learning Techniques for the Classification of Cretan Wines” *Advances in Food Science*. Hyderabad, India: Vide Leaf. **2021**.

CONFERENCE CONTRIBUTIONS (total: 29)

Selected Conference

1. **A. Philippidis**, T. Bakas, P. Trikalitis, «A Hybrid Layered Semiconductor Stabilized by Amine Molecules Acting Simultaneously as Ligand and Counter-Ion». Gordon Research Conference on Solid State Chemistry, Magdalene College Oxford, UK (September 2007)
2. **A. Philippidis**, D. Stefanakis, J. Chrysoulakis, D. Anglos, D. Ghanotakis, «One-step microwave synthesis of fluorescent carbon dots using arginine as a single precursor». 31st European congress on molecular spectroscopy, Cluj-Napoca, Romania (August 2012)
3. **A. Philippidis**, E. Kalokairinou, K. Melessanaki, K. Hatzigiannakis, O. Kokkinaki, P. Siozos, P. Pouli, E. Kavoulaki, E. Politaki, A. Psaroudaki, «In-situ analysis & monitoring of environmental deterioration products on stone monuments using advanced laser-based technologies». European Materials Research Society, E-MRS, 2018 Spring Meeting, Symposium CC: “Cultural heritage-materials, techniques and knowledge perspectives on a common identity”, Strasbourg, France (June 2018)

4. M. Orfanakis, N. Fragkoulis, R. Kontzedaki, G. Stavrakakis, K. Simianaki, **A. Philippidis**, M. Velegrakis, «Analysis of Greek extra virgin olive oil by spectroscopic methods. Quality control, classification and adulteration studies». 11th Aegean Analytical Chemistry Days (AACD 2018), Chania, Crete, Greece (September 2018) (*Poster Award*)
5. **A. Philippidis**, A. Mikallou, G. Kampouropoulos and D. Anglos «Determining optimum irradiation conditions for analysis of heritage materials by Raman microscopy». TechnArt 2019, Bruges, Belgium (May 2019)
6. **A. Philippidis**, G. Kampouropoulos, D. Anglos, «Observation and mitigation of light-induced alterations of lead pigments in their study via Raman microscopy». Lasers in the Conservation of Artworks, LACONA XIII 2022, Florence, Italy (September 2022)
7. **A. Philippidis**, A. Mamali, N. Psonis, D. Vassou, A. Nafplioti, E. Tabakaki, P. Pavlidis, A. Stamatakis, N. Poulakakis, D. Anglos, «Investigation of spectral markers appropriate for optimized archaeogenetic analysis of ancient teeth and bones based on Raman scattering and fluorescence spectroscopy techniques». 8th Symposium of Archaeometry, Hellenic Society for Archaeometry Athens, October 17 – 20, 2023

Reviewer in:

Microchemical Journal (Elsevier)

Beverages (MDPI)

PROFESSIONAL AFFILIATIONS

Member of the “Chemistry Union of Greece”

Researcher ID: <http://www.researcherid.com/rid/G-3824-2014>

ORCID: 0000-0002-6418-1512, Scopus: 26321919300