Curriculum Vitae

VASILEIOS M. PAPADAKIS, PhD

August 2022

Personal data

Name:	Vasileios Papadakis
Nationality:	Born in Athens, Greece
Marital status:	Married, 2 children
Work address:	Institute of Molecular Biology and Biotechnology, Foundation for Research and Technology – Hellas, N. Plastira 100, 70013, Heraklion Tel: +30 2810391267
Email	Vassilis_Papadakis@imbb.forth.gr

Education and Professional Experience

04/2023 – present	Assistant Professor "NDT and multispectral imaging", Department of Industrial Design and Production, University of West Attica, Greece https://www.et.gr/api/DownloadFeksApi/?fek_pdf=20230300995
01/2015 - present	Co-Founder of XpectralTEK, Porto, Portugal
11/2016 – 04/2023	Research Associate "Spectral imaging microscopy", Institute of Molecular Biology and Biotechnology, Foundation for Research and Technology – Hellas
03/2013 - 02/2019	PhD, Department of Biology, School of Sciences and Engineering, University of Crete, Greece
07/2014 – 10/2016	Researcher of "Spectral Imaging", Lecturer, Faculty Aerospace Engineering, Delft University of Technology
8/2003 – 11/2014	Research Associate "Novel Diagnostic Techniques", Institute of Electronic Structure and Laser, Foundation of Research and Technology, Greece
2008 - 2014	Research Associate "Monitoring fish behavior by means of computer vision systems", Biology Department, University of Crete (project contract based)
2008	Visiting Assistant Professor "LabView" (Π.Δ. 407/1980), Chemistry Department, University of Crete (contract based)
1999-2008	Visiting Assistant Professor "Digital Image Processing and Analysis", Applied Informatics and Multimedia Department, Technological Educational Institute of Crete (contract based)
1998-2002	PhD, Department of Ophthalmology, Vardinoyanion Eye Institute of Crete, School of Medicine, University Crete, Greece
	Title: *"Design and development of a novel diagnostic system based on imaging spectroscopy for the eye fundus diseases",* http://www.didaktorika.gr/eadd/handle/10442/15819
1993-1998	BSc in Physics, Specialization in Microelectronics, Physics Department, School of Sciences and Engineering, University of Crete, Greece
	Specialization Thesis title: "*Design and development of an add-on-card oscilloscope for the computer ISA bus*"

Distinctions

2020 European Innovation Council, "SME Instrument", phase 1, 01/2020, 70KEuros, XpectralTEK, Portugal, with focus on the development of a spectral imaging AI fundus camera.

2018 Innovation Award: "XpeCAM", Exame Informatica, 07/2018, Portugal

2018 European Innovation Council, "SME Instrument", phase 2, 05/2018, 1.2MEuros, Signinum/XpectralTEK, Portugal

10/2017- Postdoctoral Fellowship, under the scheme: "*Niarchos Research Grant*", 10/2017 – 09/2018,
09/2018 Greece

2017 Postdoctoral Fellowship, under the scheme: "*AXA Research Fund*", (03-09)/2017, Greece

2017 European Innovation Council, "SME Instrument", phase 1, 01/2020, 70KEuros, Signinum/XpectralTEK, Portugal

2012 Honorable Mention Paper Award (for an Outstanding paper in the 2012 publication year of Aquacultural Engineering), Aquacultural Engineering Society - AES AWARD COMMITTEE, Seattle, USA, 2014 (Honorable mention paper of 2012, 3rd most cited paper)

2003 Postdoctoral Fellowship, IESL – FORTH under the scheme: "*Scholarship for education and specialization*", Greece, 2003

1998- Doctoral Fellowship, General Secretariat of Research and Technology, Ministry of Development,
2001 Greece under the scheme: "*Program for Scholarships of Oriented Research*", 1998-2001

Research Grants (3.467.331 € / 5.528.052 €)

2020 "A smart hyperspectral system for early, non-invasive diagnosis of retinal diseases - XpecFundus", EIC, "SME Instrument", phase 1, XpectralTEK, Portugal, (70.000), 01/2020 - Scientific and Innovation Coordinator

2019 "PANTHEON", MC RISE, IMBB – FORTH, Greece (510.000/1.117.800), 2019, co-coordinator

2019 FREND Platform", PT2020, Signinum, Portugal, (771.701), 03/2019 – Scientific and Innovation Coordinator

2018 "XpeCAM X02", EIC, "SME Instrument", phase 2, Signinum/XpectralTEK, Portugal, (1.267.125), 05/2018 - Scientific and Innovation Coordinator

2017 "Early diagnosis of UV-induced skin cancer, by means of nonlinear spectral imaging microscopy", Niarchos Research Grant - ARCHERS, IMBB – FORTH, Greece, (25.000), 2017, PI

2017 "XpeCAM X02", EIC, "SME Instrument" phase 1, Signinum, Portugal, (71.429), 01/2017 – Scientific and Innovation Coordinator

2016 "Drawing Out Rembrandt: A model for reconstructing the past, analyzing the present and predicting the future condition of Rembrandt's ink drawings." NICAS, NWO, Netherlands – Acquired funding for 1 FTE PhD at TU Delft on spectral imaging and visualization, (500.000), 2016, Partner

2016 "Gilt Leather", NICAS, NWO, Netherlands – Seed project, (25.000), 2016, Partner

2010 "SYstem for Digitization and Diagnosis in ART Applications (SYDDARTA)", FP7-ENV, EU, (197.076/1.649.997), 2010, Partner

2007 "Method of production of third generation optical disc (Blu-ray) stampers, by using an innovative laser setup for engraving nanostructures on advanced photosensitive polymeric materials, and the use of a three degree freedom mechatronic system.", ESPA2007, General Secretariat of Research and Technology of Greece, (30.000), 2007, PI

Development of commercially available diagnostic products

2022   XLoora platform: A state of the art cloud platform dedicated for the management of vineyards. It enables in situ field measurements for stress diagnostics (biotic and abiotic). Currently on beta testing phase. It is going to be commercially released early 2022.

2022   SensIT climatic sensor system: An IoT climatic multi sensor system for monitoring of crop fields. Currently on beta testing phase. It is going to be commercially released early 2022.

2022   BACO multispectral imaging system: A novel multispectral imaging system with focus on the diagnosis of the plant stresses. Currently on beta testing phase. It is going to be commercially released early 2022.

2021   LAMPA broad illumination source: A complete illumination solution that covers all the wavelength sensitivity range of XpeCAM X02 multispectral imaging system. In particular, it has an emission range between 360 nm and up to 1200nm.

2021   XpeCAM platform: A state of the art cloud platform dedicated for the conservation management of cultural heritage objects. Currently commercially available.

2021   XpeCAM X02 multi-spectral imaging system: The state-of-the-art of a multispectral imaging systems with application on cultural heritage objects. Currently commercially available.

2017   XpeCAM X01 multi-spectral imaging system: XpeCam X01 is a multispectral imaging system for cultural heritage objects. It has already sold multiple copies. More information can be found in the link: http://www.xpectraltek.com/xpecam.php

2007 - Multi-Spectral Imaging System (IRIS): A research prototype, described in journal paper "IRIS: a
2010   novel spectral imaging system for the analysis of cultural heritage objects". Currently exists in its second version IRIS II, has sold 1 copy and is requested from 3 academic institutions. More information can be found in the following link:

   http://www.iesl.forth.gr/downloads/projects/general/IRIS.pdf

2006   Ion Imaging System: A research prototype, described in journal paper "Slice imaging and velocity mapping using a single field". More information can be found in the following link: http://scitation.aip.org/content/aip/journal/rsi/77/8/10.1063/1.2222084

Management Activity

- Chief Technology Officer at XpectralTEK (15 staff members)

- Managed groups in 3 different organizations: University of Crete (6 researchers), Technical University of Delft (5 researchers), and IMBB (4 researchers)

- Co-Organized 12 topic specific workshops

- Worked in more than 30 EU and National funded scientific projects

- Collaborated with more than 22 research institutions and 12 companies

Academic Activity - Teaching

2021- 2022	Invited Lecturer for the course "Special topics in cell biology and plant biotechnology", Dept of Biology, University of Crete https://pmoschoulab.wordpress.com/special-topics-in-cell-biology-and-plant-biotechnology/ - 20220525
2017 - Today	Lecturer for the course "Imaging systems in Biology – Image processing and analysis", MSc in Bioinformatics, University of Crete
2014 – 2016	Lecturer/Instructor/Tutor for the courses (AE4ASM108 "Experimental Techniques – NDT", AE2223-I "Spectral Imaging", AE2223-II "Image Processing", AE1222-I "Strain Gauges"), Faculty of Aerospace Engineering, TU Delft
2008	Lecturer for "Computational Chemistry" and "Chemical Physics Lab I" (Π.Δ. 407/1980), Department of Chemistry, University of Crete (contract based)
1999 - 2008	Lecturer for "Digital Image Processing and Analysis", Applied Informatics and Multimedia Department, Technological Educational Institute of Crete (contract based)

Scientific Activity - Summary

- 47 papers in refereed international journals and in 8 papers in conference proceedings
- 1 international patent
- Presented in more than 60 international scientific conferences and workshops (Invited: 8, co-organized 12, Oral: 30, Poster: 10).
- Co-supervised 2 PhD, 3 Master and 3 BSc students
- Supervised 8 BSc students

Research Activity - Patents

- **Papadakis V**, Aguiar Campos C, "Spectral camera having interchangeable filters", WO 2017/221203, (28 Dec 2017)

RTD Activities

The main activity of my work is the design, development and testing of novel opto-electronic systems and methods in multiple scientific fields (physics, biology, medicine, cultural heritage, etc). Particularly, my main activity areas were:

Institute of Molecular Biology and Biotechnology, Foundation for Research and Technology, Greece

- Research on biological materials (DNA, RNA, live cells, fixed cells, tissue).
- Preparation of European project proposals and project reports.
- Preparation of scientific journals and conference presentations.

Faculty of Aerospace Engineering, Delft University of Technology, Netherlands

- Research on NDT of aerospace engineering materials.
- Preparation of European project proposals and project reports.
- Preparation of scientific journals and conference presentations.
- Design, development and testing of novel imaging diagnostic systems and methods.

Institute of Electronic Structure and Lasers, Foundation of Research and Technology, Greece

- Design and development of novel opto-electronic and information systems.
- Analysis of Pigments (selective imaging through their spectral characteristics).

Department of Biology, University of Crete, Greece

- Research of fish behavioral traits
- Design and development of novel multi-camera computer vision systems for the documentation of fish behavior.
- Design and development of algorithms for the analysis of fish movement, characterization and quantification of specific fish behavioral traits.

Department of Ophthalmology, School of Medicine, University of Crete, Greece

- Design and development of a novel Hyper-Spectral imaging diagnostic system for the human retina.
- Research, Analysis, characterization of human retinal tissues and diagnosis of malignancies .

Scientific interests

- In-vivo optical, spectroscopic, diagnostic imaging techniques (spectral imaging, molecular imaging, Raman spectroscopy, FTIR spectroscopy, fluorescence imaging, interferometry).

- Analysis, differentiation and characterization of materials spectral characteristics.
- Design, analysis and development of optoelectronic information systems and computer vision techniques.
- Design and development of novel optical Computer Vision systems and methods to study the behavior of animals.
- Dynamic study of surface morphology of varying surfaces with high roughness by the use of non-destructive optical techniques.

Work experience in funded research projects

Task Assigned	Project Title and Info
Research	"BioImaging-GR, (MIS 5002755) implemented under "Action for Strengthening Research and Innovation Infrastructures," funded by the Operational Programme "Competitiveness, Entrepreneurship and Innovation" (NSRF 2014–2020) and co-financed by Greece and the European Union (European Regional Development Fund)
RTD	"A smart hyperspectral system for early, non-invasive diagnosis of retinal diseases - XpecFundus", EIC, "SME Instrument", phase 1, XpectralTEK, Portugal, 01/2020
co-Coordinator	"Novel approaches for plant health monitoring - Pantheon", MC RISE, IMBB – FORTH, Greece
RTD	«Καινοτομα υλικα για δικτυα ιχθυοκαλλιεργειας με περιβαλλοντικα φιλικη αντιρρυπαντικη δραση», Υπουργειο Αγροτικης Αναπτυξης και Τροφιμων, ΕΣΠΑ 2018, FORTH
RTD	«Προηγμένες Ερευνητικές Δραστηριότητες στη Βιοϊατρική Τεχνολογία και Αγροδιατροφή – ΒΙΤΑΔ», GSRT 2018, IMBB - FORTH
Research	"Early diagnosis of UV-induced skin cancer, by means of nonlinear spectral imaging microscopy", Niarchos Research Grant – ARCHERS 2017, IMBB – FORTH
Scientific and Innovation Coordinator	"FREND", PT2020, Signinum/XpectralTEK, Portugal, 03/2019
Scientific and Innovation Coordinator	"XpeCAM X02", EIC, "SME Instrument", phase 2, Signinum/XpectralTEK, Portugal, 05/2018
Scientific and Innovation Coordinator	"XpeCAM X02", EIC, "SME Instrument", phase 1, Signinum/XpectralTEK, Portugal, 01/2017
RTD	"Extreme", H2020-MG-2014, Faculty of Aerospace Engineering, TU Delft, (2015-2016)

Design, Development and Testing	"World Class Composite Solutions", HTSM, Faculty of Aerospace Engineering, TU Delft, (2015-2016)
Design, Development and Testing	"*Construction of a pre-commercial, microsecond-resolved evanescent-wave cavity ring-down ellipsometer. (BIOCARDE)*", European Research Council (ERC), Proof-of-Concept (PoC) Grant, FORTH - IESL, (2011-2012)
Design, Development and Testing	"*Time-resolved Ring-Cavity-Enhanced Polarization Spectroscopy (TRICEPS)*", European Research Council (ERC) Grant, FORTH - IESL, (2009-2013)
Design, Development and Testing	"*SYstem for Digitization and Diagnosis in ART Applications (SYDDARTA)*", FP7-ENV, EU, 2010, FORTH - IESL
Research	"*A new integrative framework for the study of fish welfare based on the concepts of allostasis, appraisal and coping styles (COPEWELL)*", FP7-KBBE, EU, 2010, Biology Dept., Univ. of Crete
RTD	"*Biotechnology for the exploitation of microalgae (BIOEXPLORE)*", NSRF 2007, National Action: "Cooperation", Biology Dept., Univ. of Crete.
RTD	"*Networking European Spectrometric diagnosis Techniques for ART assets (NESTART)*", COST Action, EU, 2010, FORTH - IESL
Design, Development and Testing	"*Development of a microsecond and spatially resolved ellipsometer*", Marie Curie Industry - Academia Partnerships and Pathways (IAPP) , EU, 2010, SOPRALAB-FORTH partnership (SOFORT)
Design, Development and Testing	"*Imaging and Control in Chemistry (ICONIC)*", Marie Curie Initial Training Network, Grant, EU, 2009, FORTH - IESL
Design, Development and Testing	"*Assessing the causes and developing measures to prevent the escape of fish from sea-case aquaculture (Prevent Escape)*", Seventh Research Framework Program. Food, Agriculture and Fisheries and Biotechnology. Area 2.1.2, EU, 2009, Biology Dept. Univ. of Crete
Research	General Secretariat of Research and Technology of Greece, Program for Scientific collaboration between Greece and the USA (2006-2008),. Collaboration IESL - FORTH – Stanford University, GSRT, 2006
Video and Image Analysis	"Environmentally *controlled sex determination in Zebra fish Danio Rerio (Hamilton, 1822). Diversification of the reproductive and central nervous system*", ΕΥΔ ΕΠΕΑΕΚ ΙΙ 2004, ΕΚΤ, Biology Dept. Univ. of Crete.
Video and Image Analysis	"*Estimation of Genetic Parameters for Seabass (Heritabolum)*", Coordis, EU, 2003, Biology Dept, Univ. Crete
RTD	"*Mechanized Ship Maintenance (MESHMAIN)*", Competitive and Sustainable Growth, EU, 2003, FORTH - IESL
Research	"*Laser Multitask nondestructive technology in conservation diagnostic procedures (LASERACT)*", Energy Environment and sustainable development, EU, 2003, FORTH - IESL

RTD	"*Laser VIbrometry Network: sYstems and Applications (LAVINIA)*", Growth, EU, 2002, FORTH - IESL
RTD	"*Development of a Sensor for NO based on a Hybrid Organic-Semiconductor Device for Detection of Asthma (SENTIMENTS)*", Growth, EU, 2001, FORTH - IESL
Research	"*Paper Restoration using Lasers (PARELA)*", Craft, EU, 2001, FORTH - IESL
Design, Development and Testing	"*Design and development of a novel Hyper-Spectral imaging diagnostic system for the human retina study*", ΥΠΕΡ 1997, School of Medicine, Univ. of Crete, GSRT
Design, Development and Testing	*"Computer control electronic system for the digital imaging in various spectral bands from UV to IR"* , FORTH - IESL with ΈΨΙΛΟΝ com, 1997, GSRT
Testing, Research	*"Evaluation of transportable multispectral imaging system for the in situ analysis of wall paintings"*, FORTH - IESL and Courtauld Institute of Art (C.I.A.), GR-UK Bilateral Collaboration (British Council-GSRT)

Academic Activity – Student works

<u>Internship</u>

Eleni Apostolaki, «Βελτιστοποίηση αλγορίθμων επεξεργασίας βιοϊατρικών σημάτων στην γλώσσα προγραμματισμού Python. Ειδικότερα η πρακτική άσκηση θα εστιαστεί σε δεδομένα που προέρχονται από βιολογικά δείγματα με τη χρήση τεχνικών φασματικής απεικόνισης.», IMBB – FORTH, 2021

Vaggelis Psillakis, "Βελτιστοποίηση αλγορίθμων επεξεργασίας βιοιατρικών σημάτων στην γλώσσα προγραμματισμού Python. Ειδικότερα η πρακτική άσκηση θα εστιαστεί σε δεδομένα που προέρχονται από κύτταρα και τομές ιστών με τη χρήση μικροσκοπίου Ράμαν.», IMBB – FORTH, 2020

Giorgos Manios, "Βελτιστοποίηση αλγορίθμων επεξεργασίας βιοιατρικών σημάτων στην γλώσσα προγραμματισμού Python. Ειδικότερα η πρακτική άσκηση θα εστιαστεί σε δεδομένα που προέρχονται από κύτταρα και τομές ιστών με τη χρήση μικροσκοπίου Ράμαν.», IMBB – FORTH, 2020

Elvira Timothera, "3D Hyper-Spectral Imaging System", Faculty of Aerospace Engineering, TU Delft, 2016 (supervisor)

Tigran Mkhoyan, "Development of a 3D scanner for large object imaging", Faculty of Aerospace Engineering, TU Delft,2016 (supervisor)

Rogier Colijn, "TIPP – TU Delft Image Processing Platform", Faculty of Aerospace Engineering, TU Delft, 2015 (supervisor)

Jonne Goedhart, "TIPP – TU Delft Image Processing Platform", Faculty of Aerospace Engineering, TU Delft, 2015 (supervisor)

<u>Bachelor thesis</u>

Vaggelis Psillakis, "Καταγραφή των μεταβολών της αιμάτωσης της κάτω ρινικής κόγχης, με τη χρήση τεχνικών υπολογιστικής όρασης- Documentation of nasal mucosa blood supply alterations by means of a computer vision system», University of Thessaly - IMBB-FORTH, in progress

Jonne Goedhart, "Application of autoencoders on the analysis of Raman Hyperspectral Imagery with splitting Raman and photoluminescence signal components", Faculty of Aerospace Engineering, Faculty of science, University of Amsterdam, 2020 (supervisor)

Angeliki Antonakaki, "Sea bream larvae foraging behavior under different rearing mediums:, Biology Dept, University of Crete, 2014 (co-supervisor)

Marsela Alvanopoulou, "Establishment of dominance on juvenile sea bream (*Sparus aurata, L. 1758*) due to food supply; an experimental approach", Biology Dept., University of Crete, 2014 (co-supervisor)

Arnau Panisello Rosello, "Establishment of dominance of sea bream due to food supply", Biology Dept, University of Crete, 2011 (co-supervisor)

Albanis Agorastos, "Database development for the recoding of the acquisition parameters and results of works of art with holographic methods", Department of Informatics Engineering, TEIC, Crete, 2007 (supervisor)

Saridakis Manousos, "Morphometric Analysis of the myocardium nuclei for the diagnosis of early myocardial in unfiltered incidents (pilot measurements)" , PSE, TEIC, 2006 (supervisor)

Giannakopoulos Pavlos, "Colour Image analysis of important works of art – paintings" , PSE, TEIC, 2006 (supervisor)

Keramitsis George, Vlastaris Vangelis, Kostaras Charis, "Development of Multicast & Video On Demand technologies on Education", Department of Informatics Engineering, TEIC, 2005 (supervisor)

Kafousi Maria, "Image Analysis and Processing of objects of historic importance – Marbles", Department of Informatics Engineering, TEIC, 2005 (supervisor)

<u>Master thesis</u>

Kristiani Thimo, "Methodology development for tissue characterization by means of spectral imaging techniques = Ανάπτυξη μεθοδολογίας χαρακτηρισμού ιστών με χρήση τεχνικών απεικονιστικής φασματοσκοπίας", Bioinformatics, University of Crete – FORTH, in progress (co-supervisor)

Jonne Goedhart, "Unsupervised learning for Raman hyperspectral imaging", University of Amsterdam, MSc Thesis, in progress, (supervisor)

Ali Sadi Kamalabadi, "Design and development of a calibration method to transform the pixel dimensions in physical dimensions in a camera system.", Master of Mechatronic Engineering, University of Minho, on going, (supervisor)

Klytaimnistra Katsara, "Study of lymphoma cell lines before and after Nutlin-3a induced wild type (wt) p53-activation by Raman spectroscopy", Chemistry Dept, University of Crete, 2018 (co-supervisor)

João André Lopes Dias, "XpecEye X01: Desenvolvimento de ferramentas de processamento e análise de imagem multispectral", Escola Superior de Tecnologia, IPCA, Portugal, 2017 (co-supervisor) http://ciencipca.ipca.pt/jspui/handle/11110/1322

Liesbeth Dingemans, "Spectral Analysis and Imaging of Paint Layers", Imaging Physics, Applied Sciences, TU Delft, <u>2015</u> (co-supervisor)

Spyros Iasonas Petroutsos, "Behavioural studies of European sea bass in laboratory scale experiments", Biology Dept., University of Crete, 2012 (co-supervisor)

Angelos Kalitzeos, "The use of contrast agents for the visualization of ocular blood flow by means of dopler ultrasound ", Medical School, University of Crete, 2003 (co-supervisor)

<u>PhD thesis</u>

Klytaimnistra Katsara, "Occurrence of microplastics in foodstuffs and the factors that affect their migration", Department of Agriculture, Hellenic Mediterranean University, 2022 ongoing (co-supervisor)

Alexios Glaropoulos, "Behavioural pattern of the main Mediterranean farmed species – Gilthead sea bream (Sparus aurata) and European sea bass (Dicentrarchus labrax), with specialization on the escape-related behaviour", Biology Dept., University of Crete, 2013 (co-supervisor)

Vazgiouraki Eleftheria, "Development and comparative study of methods for the non-invasive characterization and analysis of normal and diseased neural tissues", School of Medicine, University of Crete, Greece, 2016 (grade 10) (co-supervisor)

Personal Skills and Competences

Languages	Greek (Native),
	English (Fluent)
Computer Skills	CorelDraw (Master)
	MS Office (Word, Excel, Access, PowerPoint) Proficient
	LabView Programming Language - Proficient
	Originlab (Experienced)
Social skills	Management skills – as evident from the successful completed EU projects and the three groups managed (TUD – 2 researchers and 3 students, FORTH – 4 scientific staff and 6 technical staff, UoC – 5 students, XpectralTEK – 10 technical developers, 1 communication, 1 marketing, 2 application scientists)
	Team work - as evidenced from the multiple collaborative projects
	Teaching / mentoring skills – as evidenced from supervised students (2 phd, 6 masters, 10 undergraduate students)
	Reviewing Scientific Papers – as evidenced by the multiple published papers reviewed.

Organization skills

Organization of knowledge forums:

1. "Spectral Imaging theory and applications on cultural heritage objects", Workshop at the Arc'Antique, Nantes, France (7 May 2019)

2. "Spectral Imaging in Art conservation", SHAKE in conservation, Liege, Belgium (8 Oct 2018)

3. "Spectral Imaging theory and applications on easel paintings", Workshop at the The Courtauld Institute of Art, London (7 Jan 2018)

4. "Spectal Imaging theory and applications on painted surfaces", Workshop at the École de Condé – Patrimoine, Paris (25 Jan 2018)

5. "Spectral Imaging application on cultural heritage objects", Workshop at the Cultural Heritage Conservation and Restoration Centre "La Venaria Reale,, Turim, Italy (14 Nov 2017)

6. "Spectral Imaging application on cultural heritage objects", Risorgimento Museum, Milan, Italy (13 Nov 2017)

7. "Spectral Imaging application on cultural heritage objects", Gothenburg Museum of Art, Gothenburg, Sweden (05 Oct 2017)

8. "Spectral Imaging application on cultural heritage objects", Institut de papyrologie de la Sorbonne, Paris, France (15 Sept 2017)

9. "Spectral Imaging application on cultural heritage objects", National museum, Stockholm, Sweden (09 May 2017)

10. "Spectral Imaging application on cultural heritage objects", Northumbria University, Newcastle, UK (29 Mar 2017)

11. "Symposium improved conservation strategies for gilt leather", Maastricht, Netherlands, (2016)

12. "Spectral Imaging", Bom Jesus, Braga, Portugal, (2016)

13. "Spectral Imaging", Universidade Nova, Portugal, (2014);

14. "Spectral Imaging", IPTomar, Portugal, (2014);

15. "Spectral Imaging", Uni Católica, Portugal, (2014);

16. "Charisma", FORTH, Greece, (2012);

17. "Athena", FORTH, Greece, (2005);

(http://www.iesl.forth.gr/research/courses.aspx)

Laboratory Setups:

1. Laboratory on hyperspectral imaging for biological samples (IMBB-FORTH)

2. Laboratory on NDT for aerospace engineering materials. (TU Delft)

3. Laboratory on optical diagnostics, IESL-FORTH

4. Laboratory for the analysis of fish behavior, Biology Department, University of Crete

a) AE4ASM108 "Experimental Techniques – NDT"

b) AE2223-I "Spectral Imaging"

c) AE2223-II "Image Processing"

d) AE1222-I "Strain Gauges"), Faculty of Aerospace Engineering, TU Delft

e) LabView Programming Language – Chemistry Department, University of Crete

f) Digital Image Analysis and Processing– TEI of Crete

g) Digital Image Analysis and Processing in Medicine – TEI of Crete

Services   Spectral Imaging Diagnostics

Services provided to private collectors to study objects of historic value with the IRIS and XpeCAM system. A significant number of objects have been studied and reports have been completed.

Academic Activity – Book Chapters

2022   Papadakis, V.M., Machado, M., dos Santos, J. (2023). XpeCAM: The Complete Solution for Artwork Documentation and Analysis. In: Furferi, R., Governi, L., Volpe, Y., Gherardini, F., Seymour, K. (eds) The Future of Heritage Science and Technologies. Florence Heri-Tech 2022. Lecture Notes in Mechanical Engineering. Springer, Cham. https://doi.org/10.1007/978-3-031-17594-7_2

2022   Seymour, K. et al. (2023). Visualising Artworks: Translating the Invisible into Diagnostic Data for Identifying and Quantifying Paint Surfaces. In: Furferi, R., Governi, L., Volpe, Y., Gherardini, F., Seymour, K. (eds) The Future of Heritage Science and Technologies. Florence Heri-Tech 2022. Lecture Notes in Mechanical Engineering. Springer, Cham. https://doi.org/10.1007/978-3-031-17594-7_3

2022   Katsara, K.; Kenanakis, G.; Alissandrakis, E.; **Papadakis, V.M**. Honey Properties and Postharvest Handling.

Encyclopedia. Available online: https://encyclopedia.pub/entry/26399 (accessed on 28 August 2022).

2018   Michel Le Nobletz, Mystique et société en Bretagne au XVIIe siècle, 10/2018, ISBN 979-10-92331-39-4

2016   Martine Posthuma de Boer, GILT LEATHER ARTEFACTS White Paper on Material Characterization and Improved Conservation Strategies within NICAS, TU Delft, 2016

2016   R. M. Groves, Experimental Research and Data Analysis, AE2223-II, TU Delft, 2016

Research Activity – Publications in peer-review scientific journals
(Corresponding author is underlined)

56   Tomas Zelenka , Petros Tzerpos , George Panagopoulos , Konstantinos C. Tsolis , Dionysios-Alexandros Papamatheakis , **Vassilis M. Papadakis** , David Stanek, <u>Charalampos Spilianakis</u>, "SATB1 undergoes isoform-specific phase transitions in T cells", Nature Cell Biology, submitted https://www.biorxiv.org/content/10.1101/2021.08.11.455932v1

57   Vidakis, N.; Petousis, M.; Papadakis, V.M.; Mountakis, N. Multifunctional Medical Grade Resin with Enhanced Mechanical and Antibacterial Properties: The Effect of Copper Nano-Inclusions in Vat Polymerization (VPP) Additive Manufacturing. J. Funct. Biomater. 2022, 13, 258. https://doi.org/10.3390/jfb13040258

56   Vidakis, N.; Petousis, M.; Maniadi, A.; Papadakis, V.; Moutsopoulou, A. The Impact of Zinc Oxide Micro-Powder Filler on the Physical and Mechanical Response of High-Density Polyethylene Composites in Material Extrusion 3D Printing. J. Compos. Sci. 2022, 6, 315. https://doi.org/10.3390/jcs6100315

55   Erna Karalija; María Carbó; Andrea Coppi; Ilaria Colzi; Marco Dainelli; Mateo Gašparović; Tine Grebenc; Cristina Gonnelli; Vassilis Papadakis; Selma Pilić; Nataša Šibanc; Luis Valledor; Anna Poma; Federico Martinelli. Interplay of plastic pollution with algae and plants: hidden danger or a blessing?. Journal of Hazardous Materials 2022, 438, 129450 https://doi.org/10.1016/j.jhazmat.2022.129450

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Academic Activity – Invited Presentations

2016   **Vassilis Papadakis** and Martine Posthuma de Boer "Spectral Imaging of gilt leather.", 03/2016, Bonnefanten Museum and Stichting Restauratie Atelier Limburg (SRAL), Maastricht, Netherlands

2015   **Vassilis Papadakis**, "Spectral Imaging theory and applications", 11/2015, Real Academia de Bellas Artes de San Fernando, Madrid, Spain

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2013   Stylianos Velegrakis, **Vassilios Papadakis**, Heinrich Iro, Emmanuel Prokopakis, "Documentation of nasal mucosa blood supply alterations by means of a computer vision system", 13th Greek Seminar in Rhinology, 19-21 April 2013, Greece. (**AWARD**)

2011   **V.M. Papadakis**, M.A.Everest, K. Stamataki, S. Tzortzakis, B. Loppinet, T.P.Rakitzis, "Development of Cavity Ring-down Ellipsometry with spectral and sub-microsecond time resolution", SPIE Optics and Photonics, 2011, San Diego, USA

2005   **V.M. Papadakis**, "Spectral Imaging of the Retina", 4th summer school in Visual Optics, 01 July 2005, Crete, Greece

2002   **V. M. Papadakis,** M.P. Karavella, M. Tsilimbaris, C. Balas, I.G Pallikaris, "Hyper-spectral imaging of the retina", 1st Aegean Summer School in Visual Optics, June 1-5 2002, Chalkidiki, Greece

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Research Activity - Presentations in International Conferences

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