CURICULLUM VITAE

May 2022

PERSONAL INFORMATION

Surname :	George
Last Name :	Filippidis
Date of Birth :	April 5rd 1972
Nationality :	Greek
Marital Status :	Married (two children)
Address :	Asterousion 26 Str., 71305 Heraklion Crete Greece Tel. ++30-6938-140304 ++30-2810-312749
Business Address :	Laser Interactions and Photonics Division 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. ++30-2810-391320 E-mail: filip@iesl.forth.gr https://www.iesl.forth.gr/en/people/filippidis-george

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EDUCATION

6/1996 – 12/1999	Ph.D. thesis, "*Laser spectroscopic techniques in cardiovascular diseases* " Medical School, University of Crete
9/1990 – 11/1995	B.Sc. in Physics, Department of Physics, University of Crete

EMPLOYMENT - RESEARCH ACTIVITIES

4/2017 - present	Principal Staff Scientist (ELE B - tenured position) at I.E.S.L. - F.O.R.T.H. Crete, Greece

1/2007 – 3/2017	Research Scientist (permanent position) and Group Leader, Non Linear Microscopy Lab, at I.E.S.L. - F.O.R.T.H. Crete, Greece
1/2002 – 12/2006	Research Associate at I.E.S.L. – F.O.R.T.H.
3/2000-12/2001	Compulsory Military Service (Hellenic Navy)
6/1996 – 3/2000	Laboratory Assistant, Biomedical Applications Group, I.E.S.L.-FO.R.T.H.

PERSONAL STATEMENT

I am currently a Principal Staff Scientist at IESL–FORTH, where I lead the Laboratory for Non-Linear Microscopy (NLM). I've received a BSc in Physics in 1995 and a PhD in biophysics in 2000 from the University of Crete. My PhD thesis entitled "Laser spectroscopic techniques in cardiovascular diseases". My main fields of interest are biophotonics, spectroscopy and bio-imaging. I have 68 publications in international peer-reviewed journals (corresponding author in 29 publications), 31 full length articles in edited peer-reviewed volumes, 3 book chapters, 28 conference proceedings and 1 patent, as well as over 1570 citations. I have given 3 invited talks in international conferences, a plenary talk and an invited internet lecture at Max-Born Institute.

I was the co supervisor in 3 PhD, 8 masters and 10 diploma theses from the Physics Department of the University of Crete and the Aristotle University of Thessaloniki. Graduate students of my group have/had positions at Harvard Med. School, Tech. Univ. of Munich and ICFO. In addition, I am/was the teaching personnel in two master programs (Biomedical Engineering MCs program BME, European Master in Molecular Imaging EMMI).

My main research interest concerns the *in vivo* elucidation of molecular mechanisms and biological processes by employing various spectroscopic techniques with emphasis on advanced microscopic modalities. I am focused at developing key enabling technologies, based on the employment of ultrafast lasers as excitation sources, for microscopic imaging and their application for biological and medical studies. The investigation of *in vivo* cellular and sub-cellular activities, by means of non invasive

spectroscopic techniques, can provide valuable information related to fundamental biological problems, leading to the development of innovative methodologies for the early diagnosis and treatment of several diseases. Over my career I have designed and developed methods and prototype systems for the employment of non-linear (MPEF, SHG, PSHG and THG) imaging modalities for the quantitative analysis and probing of specific mechanisms and activities of various biological samples, set-ups for the femtosecond laser assisted nanosurgery, apparatus for photodynamic therapy and devices for the use of Laser Induced Fluorescence Spectroscopy (LIFS) measurements for medical diagnosis. Furthermore, I have employed non-linear image contrast modalities as new diagnostic tools for Cultural Heritage (CH) studies.

Within these fields I have established a wide network of strong collaborators including leading scientists in physics (Univ. of Belgrade, IQFR-CSIC Madrid, IFN-CNR Polyt. of Milano, Nottingham Trent Univ.) biology (IMBB-FORTH, Biology Depart. Univ. of Crete), biophotonics (ICFO), clinical and translational medicine (Medical school Univ. of Crete, Univ. Hospital of Heraklion)

A long term ambition of my research track is the usage of these novel, label free, non invasive, optical tools for the reliable and rapid diagnosis of diseases and inflammations in preclinical and/or clinical studies.

CONTRIBUTION TO FUNDED RESEARCH PROGRAMS

PAVE-94: "Development of a prototype infrared laser based device for optical tomography" 1996-1998

BIOMED II: "Laser Aided Investigations in Cardiology (LAIC)" 1996-1999

YPER '98: "Optical Tomography of human breast by ultrafast laser sources" 1998-2000

PENED 99: "Myocardial tissue identification via LIFS" 1999-2000

Quality of Life: "Thematic network MEDPHOT: Photonics in Medicine" 2001-2003

Quality of Life: "RTD Project OPTIMAMM: Optical mammography" 2001-2003

Molecular Imaging: "Integrated Project MI: Integrated Technologies for in vivo molecular imaging" 2004-2009

Early Stage Training - MOLEC IMAG: "EST Project: Early Stage Training for molecular imaging techniques" 2004-2009

LASERLAB II 2009-2012

JRA: Advanced Optical Techniques in Bio-imaging and Bio-processing (**OPTBIO**)

Advanced Microscopy

Two-photon, second and third harmonic generation microscopy techniques applied to living cells and animals

ESPA, CRIPIS – "ΒΙΟΣΥΣ" 2013-2015

Καινοτόμες Διεπιστημονικές Εφαρμογές & Τεχνολογίες

Βιοφωτονική Απεικόνιση

ESPA, CRIPIS – "POLITEIA" 2013-2015

Καινοτόμες τεχνικές στην ανάλυση, διάγνωση, συντήρηση αντικειμένων πολιτισμικής κληρονομιάς

Εξελιγμένες απεικονιστικές τεχνικές που βασίζονται στην χρήση λέιζερ στενών παλμών για την διαστρωματική μελέτη ζωγραφικών επιφανειών

LASERLAB III 2012-2015

JRA: Laser and Photonics for Biology and Health (**BIOPTICHAL**)

Advanced Microscopy

Application of Two-Photon, Second and Third Harmonic Generation (TP, SHG and THG) microscopy to investigate living cells and animals

LASERLAB IV 2015-2019

JRA: Biomedical Optics for Life Science Applications (**BIOAPP**)

Bioimaging and biosensing

Advanced microscopy of biological samples at the micro(cell)-scale

IPERION CH "Integrated Platform for the European Research Infrastructure ON Cultural Heritage" 2015-2019

Innovative instruments and methods for integrated approaches to CH analysis and diagnostics

Advanced non-linear imaging microscopy for Cultural Heritage

HERACLES "HEritage Remediation After CLimate Events on Site" Research and Innovation Action 2016-2019

Site diagnosis and design/development of new eco-sustainable methodologies, technologies and materials for monitoring, restoration and remediation

New materials design and development and Test Lab for restoration and remediation

ESPA, CRIPIS – "POLITEIA II" 2018-2020

Προηγμένες τεχνολογίες λέιζερ στην μελέτη, διάγνωση και συντήρηση μνημείων και αντικειμένων ΠΚ

Καινοτόμοι μέθοδοι λέιζερ για την ανάλυση των υλικών και τη διάγνωση προβλημάτων στην ΠΚ. Μη γραμμική απεικονιστική μικροσκοπία

Προσδιορισμός ασφαλών ορίων για την χρήση πηγών λέιζερ στην ανάλυση, διάγνωση και συντήρηση έργων τέχνης και μνημείων. Μη γραμμική απεικονιστική μικροσκοπία ως διαγνωστικό εργαλείο για τη μελέτη φαινομένων αποδόμησης σε σχέση με εφαρμογές συντήρησης με λέιζερ.

ESPA, CRIPIS – "ΒΙΤΑΔ" Advanced Research Activities in Biomedical and Agro alimentary Technologies 2018-2020

Απεικονιστικές Τεχνολογίες

Εφαρμογή της μη-γραμμικής απεικονιστικής μικροσκοπίας ως διαγνωστικού εργαλείου για την διάκριση διαφορετικών υποτύπων κυτταρικών σειρών καρκίνου του μαστού

ESPA, Research Infrastructure "HELLAS-CH" A Greek interdisciplinary Research Infrastructure for advanced laser experimental facilities and integrated technologies for Cultural Heritage studies 2018-2020

Διατάξεις και υποσυστήματα φασματοσκοπικών μεθόδων προσαρμοσμένες για τις πηγές ακτινοβολίας υπερβραχέων παλμών

ESPA, Research Infrastructure "BIOIMAGING-GR" A Greek Research Infrastructure for Visualizing and Monitoring Fundamental Biological Processes 2018-2021

Development and testing of a novel microscope

LASERLAB V 2019-2023

JRA: Advanced laser-based techniques for imaging and spectroscopy in material science and biomedicine (**ALTIS**)

Advanced Nano, Microscopic Imaging and Spectroscopy

Label-free spectroscopy and imaging

Hellenic Foundation for Research & Innovation (HFRI), 2021-2024

Research Projects to Support Faculty Members & Researchers and Procure High-Value Research Equipment

Mitochondrial autophagy in neuron quality control and survival during ageing (NeuroMitophagy)

Construction of a super resolution imaging facility

RESEARCH GRANTS – PROGRAMS

Transfer of Knowledge Marie Curie project NOLIMBA "Non Linear imaging at microscopic level for biological applications"

January 2006 – January 2010 **€ 645.000**

Scientific Responsible: C. Fotakis, G. Filippidis

Large scale Integrated project (IP) FAST-DOT "Compact Ultrafast laser sources based on novel quantum dot structure"

June 2008-June 2012 **€ 597.000**

Scientific Responsible: C. Kalpouzos, C. Fotakis, G. Filippidis

Heraklitus program for supporting PhD students

February 2008-February 2012 **€50.000**

Scientific Responsible: C. Fotakis, G. Filippidis

Hellenic Foundation for Research & Innovation (HFRI),

Scholarship for PhD candidates (*V. Tsafas*) 2017-2020 **€36.000**

Scientific Team: V Tsafas, G. Filippidis

Hellenic Foundation for Research & Innovation (HFRI), Synaptic Engram of Flexible Behavior (SpinDeFun)
Scholarship for post-doctoral researchers, (*Dr. M Mari*) 2018-2021 **€180.000**
Scientific Team: A. Papoutsi, M. Mari, P. Poirazi, G. Filippidis

Φορέας εξωτερικού για την πρόταση "The NanoMechanical Profile of Sarcoma" του κυπριακού προγράμματος "RESTART", 2021-2022 **€3.000**
Scientific Responsible: A. Stylianoy, Research Team: G. Filippidis

Submitted projects

FORTH synergy grants (4th call)
'Mechanistic Understanding of behavioral flexibility.
Scientific Responsible: G. Filippidis, A. Papoutsi

RESEARCH EXPERIENCE

- Laser Induced Fluorescence Spectroscopy (L.I.F.S.) for medical diagnostics.
- Optical Biopsy with Visible and Infrared Laser Light.
- Optical characterization of tissue
- Time Resolved Fluorescence Spectroscopy.
- Photodynamic Therapy.
- Random Lasers
- Time Resolved Photon Statistics
- Optical trapping and manipulation of particles and biological samples
- Non-linear imaging (Second and Third Harmonic Generation, Multi Photon Excitation Fluorescence) at microscopic level for biological applications
- Polarization dependent SHG measurements for tissue analysis
- Nanosurgery
- Fabrication of three-dimensional (3D) microstructures by employing multi-photon polymerization.
- Development of non-linear imaging diagnostic techniques (Multi-photon Excitation Fluorescence, optical higher harmonic generation) for Cultural Heritage studies

SUPERVISION OF MASTER AND DIPLOMA THESIS

1. "**Photodynamic Therapy in HL-60 cells with Hypericum Perforatum L extracts"**, D. Kapsokalyvas, MSc Thesis, Physics Dept, University of Crete, completed and defended 10/2004
2. "**Imaging of *Caenorhabditis elegans* neurons by Second Harmonic Generation and Two-Photon Excitation Fluorescence"**, C. Kouloumentas, MSc Thesis, Physics Dept, University of Crete, completed and defended 06/2004
3. "**Imaging of the nematode *Caenorhabditis elegans* at microscopic level by using non-linear phenomena"**, F. Zacharopoulou, Diploma Thesis, Physics Dept, University of Crete, 11/2004
4. "**In vivo imaging of structural features and processes of C. elegans using non-linear microscopy (TPEF,SHG,THG)"**, M. Mari, MSc Thesis, Physics Dept, University of Crete, completed and defended 12/2007
5. "**Photodynamic Therapy in HL-60 leukemic cells with Hypericum Perforatum L extracts and fractions"**, M. Tsontou Diploma Thesis, Physics Dept, University of Crete, 02/2010
6. **"Femtosecond laser nanosurgery of subcellular structures in HeLa cells by employing Third Harmonic Generation imaging modality as diagnostic tool",** E. Gavgiotaki Diploma Thesis, Physics Dept, University of Crete, 09/2011
7. **"Third Harmonic Generation imaging as a diagnostic tool for the pre-implantation mouse embryo development",** A. Kleovoulou Diploma Thesis, Physics Dept, University of Crete, 09/2011
8. **"Localization of sub-cellular structures of the nematode *Caenorhabditis elegans* that produce high third harmonic generation signal",** B. Petanidou Diploma Thesis, Physics Dept, University of Crete, 04/2013
9. **"Determination of lipid depositions via the realization of nonlinear imaging measurements and correlation of the data with specific biological processes of various samples",** E. Gavgiotaki MSc Thesis, Physics Dept, University of Crete, completed and defended 02/2014

10. **“Imaging of pre-implantation mouse embryos via the detection of Third Harmonic Generation signals”,** M. Tsagkaraki, Diploma Thesis, Physics Dept, University of Crete, 06/2014

11. **“Imaging and comparative study of microglia cells in microscopic level using non linear techniques”,** A.A. Tsouko, Diploma Thesis, Physics Dept, University of Crete, 06/2014

12. Supervisor and member of the threefold examine committee for the defense of the master thesis of Lambrini Kelegkouri entitled **“Study of the aging of various varnishes using non-linear imaging microscopy techniques ”,** Aristotle University of Thessaloniki, Architecture Department, Interdisciplinary Postgraduate program of Faculty of Engineering, 11/2014, Thessaloniki, Grade 10

13. **“Study of aging in muscles in-vivo, using Polarization sensitive Second Harmonic Generation microscopy”**, Vassilis Tsafas, MSc Thesis, Physics Dept, University of Crete, completed and defended 06/2016

14. **“Imaging and quantification of lipid stores in adipose and muscular tissue in *Caenorhabditis elegans* samples via nonlinear microscopy”**, B. Petanidou MSc Thesis, Physics Dept, University of Crete, 09/2016

15. **“Filterless separation of nonlinear images, based on their polarization response; demonstration in C. elegans muscles”**, D. Tsirantonakis, Diploma Thesis, Physics Dept, University of Crete, 02/2017

16. **“Non-linear microscopy applications for imaging of sub-cellular structures and tissue samples”**, E. Archontakis, MSc Thesis, Physics Dept, University of Crete, 09/2017

17. **“Imaging and differentiation of tissue samples via nonlinear optical microscopy”**, S. Bovasianos, Diploma Thesis, Physics Dept, University of Crete, 06/2019

18. **"Monitoring structural modifications in striated muscles of *Caenorhabditis elegans* samples, due to aging, via PSHG measurements"** K. Giouroukou, Diploma Thesis, Physics Dept, University of Crete, 05/2021

SUPERVISION OF PhD THESIS

1. Member of the fivefold examine committee for the defense of the doctoral thesis of Manoj V Mathew entitled **"Neuron guidance and nano-neurosurgery using optical tools",** Universitat Politecnica de Catalunya (UPC) and Insitut de Ciences Fotoniques (ICFO) Barcelona Spain 27-11-2009
2. "**Nonlinear optical procedures for the diagnostics and processing of biological samples by using ultra-short laser pulses"**, G.J Tserevelakis, PhD Thesis, Physics Dept, University of Crete, 04/2013 Grade: Excellent
3. **"Discrimination of cancer cells and tissues by applying advanced nonlinear microscopy techniques"**, E. Gavgiotaki, PhD Thesis, Medical School, University of Crete, 04/2019 Grade: Excellent
4. **"Advances in non-linear imaging microscopy for tissue and *in vivo* biological samples characterization"**, V. Tsafas , PhD Thesis, Physics Dept, University of Crete, 06/2021 Grade: Excellent

TEACHING EXPERIENCE

University level lecturing

Lecturer at the Lasers and Modern Optics Laboratories (Physics Department, University of Crete) for the following classes:

Fiber Optics	1996-2000
Laser Induced Fluorescence Spectroscopy for biological applications	2002-2005
Imaging of biological samples by using non-linear phenomena	2005-today

Master level lecturing

Lecturer at the European Master in Molecular Imaging (EMMI)

Class: Non-linear imaging applications	2008-2010

Lecturer at the Biomedical Engineering MCs program (University of Crete)

Class: Bio-Medical Imaging Module (Bio-Spectroscopy)	2020-today

PATENTS

I. Athanassakis, **G. Filippidis,** G.J. Tserevelakis, C. Kyvelidou, A. Ranela, C. Fotakis
"Use of nonlinear imaging techniques to evaluate pre-implantation embryo health and promote pregnancy outcome"
Application Number 20110100030 (Greek patent)

PEER-REVIEWED JOURNALS PUBLICATIONS

1. **G. Filippidis**, G. Zacharakis, A. Katsamouris, A. Giannoukas, M. Kouktzela, T. G. Papazoglou, "*Effect of liquid nitrogen and formalin -based conservation in the in-vitro measurements of laser-induced fluorescence of peripheral vascular tissue"*, Journal of Photochemistry and Photobiology B: Biology **47**, 109-114 (1998)
2. O. Panou-Diamanti, N. K. Uzunoglou, G. Zacharakis, **G. Filippidis**, T. Papazoglou, D. Koutsouris, *"A one layer tissue fluorescence model based on electromagnetic theory"*, Journal of Electromagnetic Waves and Applications **12**, 1101-1121, (1998)
3. G. Zacharakis, A. Zolindaki, V. Sakkalis, **G. Filippidis**, E. Koumantakis, T. G. Papazoglou, "*Nonparametric characterization of human breast tissue by the Laguerre expansion of the kernels technique applied on propagating femtosecond laser pulses through biopsy samples*", Applied Physics Letters **74**, 771-772 (1999)
4. G. Zacharakis, G. Heliotis, **G. Filippidis**, D. Anglos, T.G. Papazoglou, *"Investigation of the laserlike behavior of polymeric scattering gain media under subpicosecond laser excitation"*, Applied Optics **38,** 6087-6092 (1999)
5. **G. Filippidis**, G. Zacharakis, A. Katsamouris, A. Giannoukas, T. G. Papazoglou, *"Single and double wavelength excitation in laser induced fluorescence of normal and atherosclerotic peripheral vascular tissue"*, Journal of Photochemistry and Photobiology B: Biology **56**, 163-171 (2000)
6. G. Zacharakis, N. Papadogiannis, **G. Filippidis**, T.G. Papazoglou, "*Photon statistics of the laser-like emission from polymeric scattering gain media*", Optics Letters **25**, 923-925 (2000)

7. G.A. Rovithakis, M. Maniadakis, M. Zervakis, **G. Filippidis**, G. Zacharakis, A. Katsamouris, T.G. Papazoglou, "*Artificial neural networks for discriminating pathologic from normal peripheral vascular tissue*", IEEE Transactions on Biomedical Engineering **48**, 1088-1097 (2001)

8. G. E. Kochiadakis, S. I. Chrysostomakis, M. D, Kalebubas, **G. M. Filippidis**, I. G. Zacharakis, T. G. Papazoglou, P. E. Vardas, *"The role of laser-induced fluorescence in myocardial characterization: An experimental in vitro study"*, Chest **120**, 233-239 (2001)

9. G. Zacharakis, A. Zolindaki, V. Sakkalis, **G. Filippidis**, T.G. Papazoglou, D.D. Tsiftsis, E. Koumantakis, *"In vitro optical characterization and discrimination of female breast tissue during near infrared femtosecond laser pulses propagation"*, Journal of Biomedical Optics **6**, 446-449 (2001)

10. **G. Filippidis**, G. Zacharakis, G. E. Kochiadakis, S. I. Chrysostomakis, P. E. Vardas, C. Fotakis T. G. Papazoglou, "*Ex vivo laser-induced fluorescence measurements of lamb and human heart tissue"*, (INVITED) Laser Physics **13,** 769-772 (2003)

11. A. Garofalakis, G. Zacharakis, **G. Filippidis,** E. Sanidas, D. Tsiftsis, V. Ntziachristos, T. Papazoglou, J. Ripoll, "*Characterization of the reduced scattering coefficient for optically thin samples: theory and experiments"*, Journal of Optics A: Pure and Applied Optics **6,** 725-735 (2004)

12. **G. Filippidis**, C. Kouloumentas, G. Voglis, F. Zacharopoulou, T. G. Papazoglou, N. Tavernarakis "*Imaging of Caenorhabditis elegans neurons by Second Harmonic Generation and Two-Photon Excitation Fluorescence*.'' Journal of Biomedical Optics **10**, 024015 (2005)

13. **G. Filippidis,** C. Kouloumentas, D. Kapsokalyvas, G. Voglis, N. Tavernarakis, T. G. Papazoglou "*Imaging of Caenorhabditis elegans samples and sub-cellular localization of new generation photosensitizers for Photodynamic Therapy, using non-linear microscopy.*" Journal of Physics D: Applied Physics **38,** 2625-2632 (2005)

14. D. Kapsokalyvas, H. Dimitriou, D. Skalkos, G. Konstantoudakis, **G. Filippidis**, E. Stiakaki, Th Papazoglou, M. Kalmanti "*Does Hypericum Perforatum L extract show any specificity as photosensitizer for HL-60 leukemic cells and cord blood*

hemopoietic progenitors during photodynamic therapy?'' Journal of Photochemistry and Photobiology B: Biology **80,** 208-216 (2005)

15. A. Garofalakis, G. Zacharakis, **G. Filippidis**, E. Sanidas, D. D. Tsiftsis, E. Stathopoulos, M. Kafousi, J. Ripoll, T. G. Papazoglou "*Optical characterization of thin female breast biopsies based on the reduced scattering coefficient*'' Physics in Medicine and Biology **50,** 2583-2596 (2005)
16. M. Farsari, **G. Filippidis**, S. Zoppel, G. A. Reider, C. Fotakis *"Efficient femtosecond laser micromachining of bulk 3C-SiC''* Journal of Micromechanics and Microengineering **15,** 1786-1789 (2005)
17. M. Farsari, **G. Filippidis**, C. Fotakis *"Fabrication of 3D structures by three-photon polymerization''* Optics Letters **30,** 3180-3182 (2005)
18. D. Skalkos, E. Gioti, C.G. Stalikas, H. Meyer, T.G. Papazoglou, **G. Filippidis** "*Photophysical Properties of Hypericum Perforatum L. Extracts - Novel Photosensitizers for PDT* '' Journal of Photochemistry and Photobiology B: Biology **82,** 146-151 (2006)
19. M. Farsari, **G. Filippidis**, K Sambani, T. S. Drakakis, C. Fotakis "*Two photon polymerization of an Eosin Y-sensitized acrylate composite*'' Journal of Photochemistry and Photobiology A: Chemistry **181**, 132-135 (2006)
20. E. Mele, D. Pisignano, M. Varda, M. Farsari, **G. Filippidis**, C. Fotakis, A. Athanassiou, R. Cingolani *"Smart photochromic gratings with switchable wettability realized by green-light interferometry''* Applied Physics Letters **88,** 203124 (2006)
21. T. S. 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 **89,** 144108 (2006)
22. **G. Filippidis,** J. Catherine, M. Farsari, V. Zorba, C. Fotakis *"Construction of micron three-dimensional structures employing multi-photon polymerization''* Proceedings of the Institution of Mechanical Engineers, Part N, Journal of Nanoengineering and Nanosystems **220,** 165-168 (2006)
23. M. Farsari, **G. Filippidis,** T. S. Drakakis, K. Sambani, S. Georgiou, G. Papadakis, E. Gizeli, C. Fotakis *"Three-dimensional biomolecule patterning''* Applied Surface Science **253,** 8115-8118 (2007)

24. E.J. Gualda, **G. Filippidis,** G. Voglis, M. Mari, C. Fotakis, N. Tavernarakis *"In vivo imaging of cellular structures in Caenorhabditis elegans by combined TPEF, SHG and THG microscopy"* Journal of Microscopy **229**, 141-150 (2008)
25. **G. Filippidis**, E. J. Gualda, K. Melessanaki, C. Fotakis *"Non-linear imaging microscopy techniques as diagnostic tools for art conservation studies"* Optics Letters **33,** 240-242 (2008)
26. E.J. Gualda, **G. Filippidis**, M. Mari, G. Voglis, M. Vlachos, C. Fotakis N. Tavernarakis ***"****In vivo imaging of neurodegeneration in Caenorhabditis elegans by Third Harmonic Generation microscopy****"*** Journal of Microscopy **232,** 270-275 (2008)
27. E.J. Gualda, **G. Filippidis**, K. Melessanaki, C. Fotakis *"THG and MPEF imaging microscopy techniques for the online art conservation diagnosis"* Applied Spectroscopy **63,** 280-285 (2009)
28. **G. Filippidis**, K. Troulinaki, C. Fotakis, N. Tavernarakis, "*In vivo polarization dependant Second and Third harmonic generation imaging of Caenorhabditis elegans pharyngeal muscles*" Laser Physics **19,** 1475-1479 (2009)
29. **G. Filippidis**, E.J. Gualda, M. Mari, K. Troulinaki, C. Fotakis, N. Tavernarakis, *"In vivo imaging of cell morphology and cellular processes in Caenorhabditis elegans, using non-linear phenomena"* Micron **40,** 876-880 (2009)
30. **G. Filippidis**, K. Melessanaki, C. Fotakis *"Second and third harmonic generation measurements of glues used for lining of painted artworks"* Analytical and Bioanalytical Chemistry **395,** 2161-2166 (2009)
31. A. Nevin, D. Comelli, I. Osticioli, **G. Filippidis**, K. Melessanaki, G. Valentini, R. Cubeddu, C. Fotakis *"Multiphoton excitation fluorescence and Third Harmonic generation microscopy measurements combined with Confocal Raman Microscopy for the analysis of layered samples of varnished oil films"* Applied Physics A: Materials Science & Processing **100**, 599-606 (2010)
32. P. Vounisiou, A. Selimis, G.J. Tserevelakis, K. Melessanaki, P. Pouli, **G. Filippidis**, C. Beltsios, S. Georgiou, C. Fotakis *"The use of model probes for assessing in depth modifications induced during laser cleaning of modern paintings"* Applied Physics A: Materials Science & Processing **100**, 647-652 (2010)

33. G.J. Tserervelakis, **G. Filippidis,** A.J. Krmpot, M. Vlachos, C. Fotakis, N. Tavernarakis *"Imaging Caenorhabditis elegans embryogenesis by Third-Harmonic generation microscopy"* Micron **41**, 444-447 (2010)

34. G.J. Tserevelakis, **G. Filippidis**, E.V. Megalou, C. Fotakis, N. Tavernarakis *"Cell tracking in live Caenorhabditis elegans embryos via Third Harmonic Generation imaging microscopy measurements"* Journal of Biomedical Optics **16**, 046019 (2011)

35. R. Aviles-Espinosa, **G. Filippidis,** C. Hamilton, G. Malcolm, K.J. Weingarten, T. Südmeyer, Y. Barbarin, U. Keller, S.I.C.O Santos, D. Artigas, P. Loza-Alvarez *"Compact ultrafast semiconductor disk laser: targeting GFP based nonlinear applications in living organisms"* Biomedical Optics Express **2,** 739-747 (2011)

36. C. Kyvelidou, G.J. Tserevelakis, **G. Filippidis**, A. Ranela, A. Kleovoulou, C. Fotakis, I. Athanassakis "*Following the course of pre-implantation embryo patterning by non-linear microscopy*" Journal of Structural Biology **176,** 379-386 (2011)

37. G.J Tserevelakis, S. Psycharakis, B. Resan, F. Brunner, E. Gavgiotaki, K. Weingarten, **G. Filippidis** "*Femtosecond laser nanosurgery of sub-cellular structures in HeLa cells by employing Third Harmonic Generation imaging modality as diagnostic too*l" Journal of Biophotonics **5,** 200-207 (2012)

38 A. Selimis, G.J Tserevelakis, S. Kogou, P. Pouli, **G. Filippidis**, N. Sapogova, N. Bityurin, C. Fotakis *"Nonlinear microscopy techniques for assessing the UV laser polymer interactions"* Optics Express **20**, 3990-3996 (2012)

39. **G. Filippidis,** M. Massaouti, A. Selimis, E.J. Gualda, J.M. Manceau, S. Tzortzakis *"Nonlinear imaging and THz diagnostic tools in the service of Cultural Heritage"* (INVITED) Applied Physics A: Materials Science & Processing **106**, 257-263 (2012)

40. F. Faraldi, G.J Tserevelakis, **G. Filippidis**, G.M. Ingo, C. Riccucci, C. Fotakis, *"Multi Photon Excitation Fluorescence imaging microscopy for the precise characterization of corrosion layers in silver-based artifacts"* Applied Physics A: Materials Science & Processing, **111,** 177-181 (2013)

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16. S. Kogou, A. Selimis, G. J. Tserevelakis, P. Pouli, **G. Filippidis**, C. Fotakis *"The use of non-linear microscopy techniques to assess the affected region in the laser cleaning of polymeric coatings"* Lasers in the Conservation of Artworks - LACONA IX proceedings, eds D. Saunders, M. Strlic, C. Korenberg, N. Luxford and K. Birkholzer, Archetype publications Ltd, London, 103-107 (2013)
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18. S. Psilodimitrakopoulos, M. Oujja, A. Selimis, E. Carrasco, A. Philippidis, M. Sanz, M. Castillejo, P. Pouli, **G. Filippidis** *"Non-linear imaging as a diagnostic tool for the assessment of the in-depth photochemical modifications upon laser removal of varnishes in painted artworks"* 16th International Conference on Polymers and Organic Chemistry (POC-16) PS 145 p. 157 Crete Greece (June 2016)
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22. H. Liang, M. Mari, **G. Filippidis**, C.S. Cheung, K. Kogou, M. Hine *"An examination of the complementary use of optical coherence tomography (OCT) and non linear microscopy"* Lasers in the Conservation of Artworks, LACONA XI, 62, Krakow, Poland (Sep 2016)
23. M. Mari, S. Psilodimitrakopoulos, K. Melessanaki, **G. Filippidis**, *"Applications of non-linear imaging microscopy techniques for Cultural Heritage studies"* Non-destructive and Microanalytical Techniques in Art and Cultural Heritage (TECHNART 2017) Bilbao, Spain P 58-59 (May 2017)
24. M. Castillejo, M. Oujja, S. Psilodimitrakopoulos, E. Carrasco, M. Sanz, A. Selimis, A. Philippidis, P. Pouli, **G Filippidis** *"Non-linear microscopy imaging for studying the process of laser removal of varnishes used in paintings"* 3rd International Congress Science and Technology for the Conservation of Cultural Heritage (TechnoHeritage), S2, p.9 Cadiz, Spain (May 2017)
25. A. del Fovo, J. Striova, M. Barucci, R. Fontana, C. Grazia, A. Romani, S. Psilodimitrakopulos, D. Anglos, **G. Filippidis,** M. Iwanicka, P. Targovsky, G. Karagiannis, M. Oujja, E. Carrasco, M. Sanz, M. Castillejo *"Nonlinear optical microscopy imaging for non-destructive analysis of paintings"* Proceedings of the Society of Photo-optical Instrumentation Engineers (SPIE), O3A: Optics fos Arts, Architecture and Archaelogy, Munich, Germany (June 2017).
26. M. Castillejo, M. Oujja, S. Psilodimitrakopoulos, E. Carrasco, M. Sanz, A. Selimis, A. Philippidis, P. Pouli, **G. Filippidis** *"Nonlinear microscopy imaging for studying ultraviolet laser ablation of polymer layers"* International Conference on Laser Ablation, (COLA), Oral S3, Marseille, France (Sep 2017)
27. M. Mari, V. Tsafas, E. Gavgiotaki, K. Melessanaki, **G. Filippidis** *"Non-linear imaging techniques as diagnostic tools for Cultural heritage studies"* 10th International Conference on Instrumental Methods and Analysis: Modern trends and Applications (IMA) P2-20 Heraklion, Greece (Sep. 2017)
28. E. Gavgiotaki, V. Tsafas, M. Mari, **G. Filippidis** *"Applications of nonlinear imaging microscopy in biology"* 1st International Conference on Nanotechnologies and Bionanoscience (NanoBio 2018) 228, Heraklion, Greece (Sep. 2018)

INVITED CONTRIBUTIONS IN INTERNATIONAL CONFERENCES

Invited Lectures

"In vivo imaging of cellular structures and processes in Caenorhabditis elegans using non-linear microscopy" IEEE International Workshop on Imaging Systems and Techniques (**IST**) Chania, Greece (2008)

"Non-linear imaging microscopy techniques as diagnostic tools for Cultural Heritage studies" European Materials Research Society (**E-MRS**) Spring Conference Strasburg, France (2013)

"Imaging Caenorhabditis elegans lipid stores with Third Harmonic Generation microscopy" European Materials Research Society (**E-MRS**) Fall Conference Warsaw, Poland (2014)

Plenary Lecture

"Applications of non-linear imaging microscopy techniques for Cultural Heritage studies" Non-destructive and Microanalytical Techniques in Art and Cultural Heritage **(TECHNART)** Bilbao, Spain (2017)

Invited Internet Lecture

"Non linear imaging of biological structures by employing femtosecond lasers" **Max-Born Institute** Germany – European Virtual University on Lasers (EVU)
http://www.mitr.p.lodz.pl/evu/lectures/Filippidis.pdf

REVIEWER IN:

Journal of Biomedical Optics
Applied Optics
Journal of Microscopy
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BMC Cell Biology

Applied Physics A

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La Rivista del Nuovo Cimento

Journal of Biophotonics

Scientific Reports

ACHIEVEMENTS

Progress reports **evaluator** of the Greek post doctoral program «Ενίσχυσης Μεταδιδακτορικών Ερευνητών», General Secretariat for Research and Technology, (GSRT)

Cover page and article "Lasers and Cancer" in **Laserlab Newsletter**, Issue **29** (2020)
https://www.laserlab-europe.eu/news-and-press/newsletter-archive

Guest Editor in *Sustainability* journal (IF 3.2)
Special Issue "*Applications of Minimally Invasive Imaging Techniques in Cultural Heritage*"
https://www.mdpi.com/journal/sustainability/special_issues/itch_sus

CITATIONS

The author has more than **one thousand five hundred seventy** (**1570**) citations of his research work (Google scholar). **H-Index: 23** (Google scholar), **20** (Web of Science) and **21** (Scopus).

Google scholar: https://scholar.google.fr/citations?user=Fp73yz4AAAAJ&hl=en

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