

Curriculum Vitae

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Personal Data

Name: Vasileia
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Education

2018 – Today Postdoctoral scholar, Institute of Electronic Structure and Laser,
Foundation of Research and Technology-Hellas.
Research advisor: Dr Stavros Pissadakis (April 2025-Today), Dr. Maria
Farsari (2018-March 2025).

2012-2017 Ph.D in Physics, Department of Physics, University of Crete, Greece.
Thesis Title: "Sensing resonating devices fabricated on optical fibers
using multiphoton polymerization technique".

2009 - 2011 M.Sc. in Microelectronics and Optoelectronics, Department of Physics,
University of Crete, Greece
Thesis Title: "Biomedical applications of nonlinear lithography".

2003 - 2009 B.S. in Physics, University of Crete, Greece,
Graduation grade 7.01/10 "Very good"
Thesis Title: "Two - photon polymerization process for tissue
engineering and medical applications".

Publications

"X-photon 3D lithography by fs-oscillators: wavelength-independent and photoinitiator-free.",
D. Ladika, A. Butkus, **V. Melissinaki**, E. Skliutas, E. Kabouraki, S. Juodkazis, M. Farsari, M.
Malinauskas, *Light: Advanced Manufacturing*, Vol. 5, Issue 4, Pages 567-579 (December
2024), doi: <https://doi.org/10.37188/lam.2024.048>.

"3D micro-devices for enhancing the lateral resolution in optical microscopy.", G. Zyla, G.
Maconi, A. Nolvi, J. Marx, D. Ladika, A. Salmi, **V. Melissinaki**, I. Kassamakov, M. Farsari,
Light: Advanced Manufacturing, Vol. 2, Issue 5, Pages 204-217 (May 2024), doi:
<https://doi.org/10.37188/lam.2024.019>.

"High laser induced damage threshold photoresists for nano-imprint and 3D multi-photon lithography.", E. Kabouraki, **V. Melissinaki**, A. Yadav, A. Melninkaitis, K. Turlouki, T. Tachtsidis, N. Kehagias, G. D. Barmparis, D. G. Papazoglou, E. Rafailov, M. Farsari, *Nanophotonics*, Vol. 10, Issue 14, Pages 3759–3768 (July 2021), doi: 10.1515/nanoph-2021-0263.

"Micro-ring resonator devices prototyped on optical fiber tapers by multi-photon lithography", **V. Melissinaki**, O. Tsilipakos, M. Kafesaki, M. Farsari, S. Pissadakis, *IEEE Journal of Selected Topics in Quantum Electronics*, Vol. 27, Issue 6, Pages 1–7, Art no. 5900107, (Nov.-Dec. 2021), doi: 10.1109/JSTQE.2021.3062716.

"Advances in Pantographic Structures: Design, Manufacturing, Models, Experiments and Image Analyses", F. Dell'Isola, P. Seppacher, M. Spagnuolo, E. Barchiesi, F. Hild, T. Lekszycki, I. Giorgio, L. Placidi, U. Andreaus, M. Cuomo, S. R. Eugster, A. Pfaff, K. Hoschke, R. Langkemper, E. Turco, R. Sarikaya, A. Misra, M. De Angelo, F. D'Annibale, A. Bouterf, X. Pinelli, A. Misra, B. Desmorat, M. Pawlikowski, C. Dupuy, D. Scerrato, P. Peyre, M. Laudato, L. Manzari, P. Göransson, C. Hesch, S. Hesch, P. Franciosi, J. Dirrenberger, F. Maurin, Z. Vangelatos, C. Grigoropoulos, **V. Melissinaki**, M. Farsari, W. Muller, B. E. Abali, C. Liebold, G. Ganzosch, P. Harrison, R. Drobnicki, L. Igumnov, F. Alzahrani, T. Hayat, *Continuum Mechanics and Thermodynamics*, Vol. 31, Issue 4, Pages 1231–1282 (July 2019), doi.org/10.1007/s00161-019-00806-x.

"Intertwined microlattices greatly enhance the performance of mechanical metamaterials", Z. Vangelatos, **V. Melissinaki**, M. Farsari, K. Komvopoulos, C. Grigoropoulos, *Mathematics and Mechanics of Solids*, Vol. 24, Issue 8, Pages 2636-2648 (August 2019), doi: 10.1177/1081286519848041

"Force–displacement relationship in micro-metric pantographs: Experiments and numerical simulations", F. Dell' Isola, E. Turco, A. Misra, Z. Vangelatos, C. Grigoropoulos, **V. Melissinaki**, M. Farsari, C. R. Mecanique, (March 2019), <https://doi.org/10.1016/j.crme.2019.03.015>

"3D laser nano-printing on fiber paves the way for super-focusing of multimode laser radiation", G. S. Sokolovskii, **V. Melissinaki**, K. A. Fedorova, V. V. Dudelev, S. N. Losev, W. Sibbett, M. Farsari, E. U. Rafailov, *Scientific Reports*, Vol. 8, Article number: 14618, (2018).

"A fiber optic Fabry-Perot cavity sensor for the probing of oily samples", **V. Melissinaki**, M. Farsari and S. Pissadakis, *Fibers*, Vol: 5, Pages: 1 - 10, (January, 2017), doi:10.3390/fib5010001.

"Fiber Endface Fabry–Perot Microsensor With Distinct Response to Vapors of Different Chlorinated Organic Solvents", **V. Melissinaki**, I. Konidakis, M. Farsari and S. Pissadakis, *IEEE Sensors Journal*, Vol: 16, Issue: 19, Pages: 7094 – 7100, (October 1, 2016), doi: 10.1109/JSEN.2016.2596139.

"A fiber-endface, Fabry-Perot vapor microsensor fabricated by multiphoton polymerization", **V. Melissinaki**, M. Farsari and S. Pissadakis, *IEEE Journal of Selected Topics in Quantum Electronics*, Vol. 21, No. 04, 5600110, (2015); DOI: 10.1109/JSTQE.2014.2381463.

"Design, Fabrication and Computational Characterization of a 3D Micro-Valve Built by Multi-Photon Polymerization", S. Galanopoulos, N. Chatzidai, **V. Melissinaki**, A. Selimis, C. Schizas, M. Farsari and D. Karalekas, *Micromachines*, Volume 5, Pages 505-514, (2014).

"Improvement of the Fabrication Accuracy of Fiber Tip Microoptical Components via Mode Field Expansion", A. Žukauskas, **V. Melissinaki**, D. Kaskelyte, M. Farsari and M. Malinauskas, *Journal of Laser Micro/Nanoengineering*, Volume 9, No. 1, Pages 68-72, (2014).

"Direct laser writing of 3D scaffolds for neural tissue engineering", **V. Melissinaki**, A. A. Gill, I. Ortega, M. Vamvakaki, A. Ranella, J. W. Haycock, C. Fotakis, M. Farsari and F. Claeysens, *Biofabrication*, Volume 3, 045005, (2011).

"Tailor-made three-dimensional hybrid scaffolds for cell cultures", S. Psycharakis, A. Tosca, **V. Melissinaki**, A. Giakoumaki and A. Ranella, *Biomedical Materials*, Volume 6, 045008, (2011).

"On the design and fabrication by two-photon polymerization of a readily assembled micro-valve", C. Schizas, **V. Melissinaki**, A. Gaidukeviciute, C. Reinhardt, C. Ohrt, V. Dedoussis, B. N. Chichkov, C. Fotakis, M. Farsari & D. Karalekas, *The International Journal of Advanced Manufacturing Technology*, Volume 48, Issue 5, Pages 435-441, (2010).

Book Chapters

"3D Printing and Additive Manufacturing", **V. Melissinaki**, M. Farsari, *Handbook of Laser Technology and Application*, 89-104, CRC Press, (June 2021), ISBN 9781315310855

"Direct fs Laser writing of 3D Nanostructures", E. Kabouraki, K. Terzaki, **V. Melissinaki**, M. Manousidaki, M. Vamvakaki, M. Farsari, *Progress in Nonlinear Nano-optics*, 137-154, Springer, 2015, (December 2014), ISBN 978-3-319-12216-8

Patent

"Fabrication of micro-optical elements of high laser induced damage threshold photoresists for nano-imprint and 3D multi-photon lithography", M. Farsari, A. Mourka, **V. Melissinaki**, A. E. Kampouraki, No 1010227, (May 2022).

Conference Proceedings

"Light resonators imprinted onto optical fibers using multi-photon lithography", **V. Melissinaki**, O. Tsilipakos, M. Kafesaki, M. Farsari, S. Pissadakis, *Nanoscale and Quantum Materials: From Synthesis and Laser Processing to Applications 2022*, Vol. 11990, Pages 33-39, SPIE, (April 2022).

"A High Sensitivity Ethanol Sensor Based on Photo-imprinted, Micro-ring Resonators on Optical-Fiber Tapers", **V. Melissinaki**, O. Tsilipakos, M. Kafesaki, M. Farsari, S. Pissadakis, *2021 Conference on Lasers and Electro-Optics Europe & European Quantum Electronics Conference (CLEO/Europe-EQEC)*, paper ch_4_2 (June 2021).

"Fiber endface Fabry-Perot vapor microsensors fabricated by multiphoton polymerization technique", **V. Melissinaki**, I. Konidakis, M. Farsari and S. Pissadakis, *Proc. SPIE* 9374, Advanced Fabrication Technologies for Micro/Nano Optics and Photonics VIII, 93740D (March 13, 2015); doi:10.1117/12.2079439.

"Optical trapping with superfocused high-M² laser diode beam", G. S. Sokolovskii, V. V. Dudelev, **V. Melissinaki**, S. N. Losev, K. K. Soboleva, A. G. Deryagin, V. I. Kuchinskii, M. Farsari, W. Sibbett, E. U. Rafailov, *Proc. SPIE* 9343, Laser Resonators, Microresonators, and Beam Control XVII, 93430Q (March 3, 2015); doi:10.1117/12.2078957.

"Superfocusing of high-M² semiconductor laser beams: experimental demonstration", G.S.Sokolovskii, **V. Melissinaki**, V.V.Dudelev, S.N.Losev, K.K.Soboleva, E.D.Kolykhalova, A.G.Deryagin, V.I.Kuchinskii, E.A.Viktorov, M.Farsari, W.Sibbett and E.U.Rafailov, *Proc. SPIE* 9134, Semiconductor Lasers and Laser Dynamics VI, 91341N (May 2, 2014); doi:10.1117/12.2052483.

"3D biomedical implants fabricated using direct laser writing", C. Schizas, **V. Melissinaki**, A. Gaidukeviciute, C. Reinhardt, C. Ohrt, V. Dedoussis, B. N. Chichkov, C. Fotakis, D. Karalekas, M. Farsari, *Proc. SPIE MOEMS-MEMS 7591*, Advanced Fabrication Technologies for Micro/Nano Optics and Photonics III; 759105 (2010); doi: 10.1117/12.840695

Conference Presentations

Poster Presentation: "Gas sensing using micro-ring resonators fabricated onto tapered standard telecom fibers using non-linear lithography", PHOS 2025, Heraklion, Crete, Greece, (10-11 October 2025).

Poster Presentation: "Micro-optical elements fabricated by multiphoton lithography on various substrates", COLA 2024, Hersonissos, Crete, Greece, (29 September – 04 October 2023).

Poster Presentation: "3D micro-optical elements by multiphoton lithography and nano-imprinted patterns using high laser induced damage threshold photoresists", CLEO/EUROPE - EQEC 2023, Munich, Germany, (26-30 June 2023).

Poster Presentation: "Photonic nanojets fabricated by multiphoton polymerization technique", XXXVI Pan-Hellenic conference on Solid-State Physics and Materials Science, Heraklion, Greece, (26-28 September 2022)

Poster Presentation: "Nonlinear Lithography by multi-photon polymerization in Photonics, Sensors & Tissue Engineering", Nonlinear Localization in Lattices, Spetses, Greece, (18 - 22 June 2018).

Oral Presentation: "Whispering Gallery Mode microbarrel resonators fabricated by multiphoton polymerization technique onto tapered standard telecom fibers", DPG-Frühjahrstagung (DPG Spring Meeting), Mainz, Germany, (6 - 10 March 2017).

Poster Presentation: "Fiber endface Fabry-Perot microsensors for gaseous and liquid species fabricated by multiphoton polymerization technique", Merging Micro- and Nano-Optics: 3D Printing for Advanced and Functional Optics, Bad Honnef, Bonn/Germany, (9 – 11 January 2017).

Oral Presentation: "Fiber endface Fabry-Perot vapour microsensors fabricated by multiphoton polymerization technique", at "Advanced Fabrication Technologies for Micro/Nano Optics and Photonics VIII", Photonics West, SPIE, San Francisco, California, USA, (07-12 February 2015).

Oral Presentation: "Fabry-Perot Vapor Microsensor onto Fibre Endface Fabricated by Multiphoton Polymerization Technique", 30th Panhellenic Conference on Solid-State Physics and Materials Science, Heraklion, Crete, Greece, (21-24 September 2014).

Oral Presentation: "Fabry-Perot Vapor Microsensor onto Fibre Endface Fabricated by Multiphoton Polymerization Technique", COST Action TD1003: Bio-inspired nanotechnologies: from concepts to applications, Thematic Workshop: Integrated approaches for biomolecular detection: nanostructures, biosensors and lab-on-chip devices, Catania, Sicily, Italy, (28-30 April 2014).

Oral Presentation: "Fabry-Perot Vapor Microsensor onto Fibre Endface Fabricated by Multiphoton Polymerization Technique", Photonics Meets Biology Workshop, Hersonissos, Crete, Greece, (3 - 4 October 2013).

Poster Presentation: "Fabry-Perot Vapor Microsensor onto Fibre Endface Fabricated by Multiphoton Polymerization Technique", Photonics Meets Biology Summer School, Hersonissos, Crete, Greece, (30 September – 3 October 2013).

Oral Presentation: “Fabry-Perot Vapor Microsensor onto Fibre Endface Fabricated by Multiphoton Polymerization Technique”, CLEO/EUROPE - IQEC 2013, Munich, Germany, (12-16 May 2013).

Oral Presentation: “Fabry-Perot Vapour Microsensors Fabricated onto Fibre Endface by Multiphoton Polymerization Technique”, PULMM Workshop, Cargese, Corsica, France, (14-19 April 2013).

Poster Presentation: “Direct Laser Writing of Fabry-Perot microsensor for Vapor Pressure measurements”, 5th International Conference on Micro - Nanoelectronics, Nanotechnologies and MEMS, Kokkini Hani, Heraklion, Crete, Greece, (7-10 October 2012).

Poster Presentation: “Direct Laser writing of Polylactide 3D scaffolds for neural tissue engineering applications”, P4L Annual Meeting, Heraklion, Crete, Greece, (27-29 April 2011).

Poster Presentation: “Complex micro-valves fabricated via Direct Laser Writing”, P4L Annual Meeting, Heraklion, Crete, Greece, (27-29 April 2011).

Poster Presentation: “Two photon polymerization of a complex geometry micro-valve”, LASERLAB Foresight Workshop & Users Meeting - "Trends of Laser Applications in Biology & Biomedicine", Hersonissos, Crete, Greece, (23-24 October 2008).

Poster Presentation: “Skin engineering fibroblast culture on 3D scaffolds” στο LASERLAB Foresight Workshop & Users Meeting - "Trends of Laser Applications in Biology & Biomedicine", Hersonissos, Crete, Greece, (23-24 October 2008).

Poster Presentation: “Hybrid materials for tissue engineering”, 6th European Symposium on Biomedical Engineering, Xania, Crete, Greece, (19-21 June 2008).

Summer School

Summer School: “Optical fiber sensors: from research to real world”, Organizer: COST Action TD1001 “OFSeSa”, Chandolin in the Swiss Alps, Switzerland, (1-3 September 2014).

Summer School: “Photonics meets Biology”, Organizers: FAST-DOT and Institute of Electronic Structures and Laser, (IESL- FORTH), Hersonissos, Crete, Greece, (30 September – 3 October 2013).

Onassis Foundation Summer School: “Nanoscience and Nanotechnology”, Heraklion, Crete Greece, (15-19 July 2007).

ORAMA Summer School: “Oxide materials for electronic applications-II”, Hersonissos, Crete, Greece, (20-21 October 2012).

Summer School: “Photonics meets Biology”, Organizers: FAST-DOT and Institute of Electronic Structures and Laser, (IESL- FORTH), Hersonissos, Crete, Greece, (15-18 September 2011).

Summer School: “Optical Imaging Intensive Programme”, Organizers: Department of Biology, University of Crete, Greece , Institute of Molecular Biology and Biotechnology (IMBB-FORTH) and Institute of Electronic Structures and Laser, (IESL- FORTH), Heraklion, Crete Greece, (4-15 July 2011).

Onassis Foundation Summer School: “Bose – Einstein Condensation”, Heraklion, Crete Greece, (23-27 July 2007).

Foreign Languages

English: First Certificate in English, University of Cambridge (2001)

German: Zertifikat Deutsch, Goethe Institut (2005)

Computer Skills

- Operating Systems: Microsoft Windows and Linux
- Origin, Word, Excel, PowerPoint.
- Solidworks 2007, SAMlight, VisCAM
- FDTD-Optiwave

Teaching Activities

Teaching Assistant in Physics Department, University of Crete

- Spring Semesters 2016 - 2017, Laboratory of Laser and Modern Physics
- Winter & Spring Semesters 2009 –2015, Laboratory of Laser and Modern Physics
- Spring Semester 2014 - 2015, Physics Laboratory II – Electricity
- Spring Semester 2012 - 2013, Physics Laboratory II – Electricity
- Winter Semester 2012 - 2013, Physics Laboratory II – Electricity
- Spring Semester 2009 - 2010, Advanced Physics Laboratory I
- Winter Semester 2009 - 2010, Advanced Physics Laboratory I

Scientific Experience

- Experiments on "AFM investigation of neural cells under synchronized electrical stimulation", funded by the Short Term Exchange of European Network of Excellence, Photonics 4 life, (9-23 October 2011 University of Twente).
- Practical Work on "Designing and fabrication of 3D microstructures for medical applications of nonlinear lithography", NonLinear Lithography Group, Institute of Electronic Structure and Laser (IESL), Foundation for Research & Technology Hellas (FORTH), (6 Julie 2007 – 7 October 2007).