

LIST OF PUBLICATIONS

2025

1. **“Assessment of aqueous graphene as a cancer therapeutics delivery system”** A. Kaur, E. Babaliari, V. M. Bolanos-Garcia, M. Kefalogianni, S. Psilodimitrakopoulos, P. Kavatzikidou, A. Ranella, M. Ghorbani, E. Stratakis, D. G. Eskin, I. Tzanakis, **Scientific Reports** 15, 15396, 2025,
<https://doi.org/10.1038/s41598-025-98406-0>
2. **“Flow-Induced Shear Stress Combined with Microtopography Inhibits the Differentiation of Neuro-2a Cells”** E Babaliari, P Kavatzikidou, D Xydias, S Psilodimitrakopoulos, A Ranella, E Stratakis, **Micromachines**, 16;16(3):341. 2025,
<https://doi.org/10.3390/mi16030341>
3. **“Miniaturized Iontronic Micropipettes for Precise and Dynamic Ionic Modulation of Neuronal and Astrocytic Activity”** T A Sjöström, A I. Ivanov, N Kiani, I Bernacka-Wojcik, J Samuelsson, H S Unemo, D Xydias, L-E Vagiaki, S Psilodimitrakopoulos, I Konidakis, K Sidiropoulou, E Stratakis, M Berggren, C Bernard, D T. Simon, **Small**, 21(16), 2410906, 2025,
<https://doi.org/10.1002/sml.202410906>
4. **“Silicon nanoantennas for tailoring the optical properties of MoS₂ monolayers”** D Katrisioti, P R Wiecha, A Cuhe, S Psilodimitrakopoulos, G Larrieu, J Müller, V Larrey, B Urbaszek, X Marie, E Stratakis, G Kioseoglou, V Paillard, J-M Poumirol, I Paradisanos - **arXiv preprint** arXiv:2504.03264, 2025,
<https://doi.org/10.48550/arXiv.2504.03264> 57 **arXiv2** 2025.pdf
5. **“Polarization-dependent third harmonic generation in starch”** M Kefalogianni, L Mouchliadis, E Stratakis, S. Psilodimitrakopoulos - **arXiv preprint** arXiv:2503.21292, 2025,
<https://doi.org/10.48550/arXiv.2503.21292>

2024

6. **“Up-Conversion Photoluminescence Reconfiguration in Silicon by Inner Microstructure Control of Hybrid Plasmonic-Semiconductor Nanoparticles”** A. Larin, S. Bruyere, A. Nomine, G. M. Maragkakis, S. Psilodimitrakopoulos, D. Permyakov, T. Belmonte, E. Stratakis, D. Zuev, **The Journal of Physical Chemistry Letters**, 15, 51, 12663–12672, 2024.

<https://doi.org/10.1021/acs.jpcllett.4c02969>

7. **"Water-Soluble Bimodal Magnetic-Fluorescent Radical Dendrimers as potential MRI-FI imaging probes"** Y. Wu, V. Lloveras, A. Morgado, E. Perez-Inestrosa, E. Babaliari, S. Psilodimitrakopoulos, Y. Vida, J. Vidal-Gancedo, **ACS Applied Materials & Interfaces**, 16, 47, 65295–65306, 2024.
<https://doi.org/10.1021/acsami.4c13578>
8. **"Anisotropic Third Harmonic Generation in Two-Dimensional Tin Sulfide"** G. M. Maragkakis, S. Psilodimitrakopoulos, L. Mouchliadis, A. S. Sarkar, A. Lemonis, G. Kioseoglou, E. Stratakis. **Advanced Optical Materials**, 12(29), 2401321 2024.
<https://doi.org/10.1002/adom.202401321>
9. **"Tailoring of the polarization-resolved second harmonic generation in two-dimensional semiconductors"** S. Psilodimitrakopoulos, S. Ilin, L. E. Zelenkov, S. Makarov, E. Stratakis, **Nanophotonics**, 13 (18), 3181 2024.
<https://doi.org/10.1515/nanoph-2024-0267>
10. **"Identification of non-uniform strain in WS₂ monolayers using polarization-resolved second harmonic generation"** G. Kourmoulakis, S. Psilodimitrakopoulos, G. M. Maragkakis, L. Mouchliadis, A. Michail, J. A. Christodoulides, J. Parthenios, K. Papagelis, E. Stratakis, G. Kioseoglou, **Scientific Reports**, 14, 15159 2024.
<https://doi.org/10.1038/s41598-024-66065-2>
11. **"Lead-free halide perovskite nanoparticles for up-conversion lasing and efficient second harmonic generation"** S. Ilin, D. Khmelevskaia, A. Nikolaeva, G. M. Maragkakis, S. Psilodimitrakopoulos, L. Mouchliadis, P. M. Talianov, S. A. Khubezhov, E. Stratakis, L. E. Zelenkov, S. V. Makarov. **Advanced Optical Materials**, 12, (22), 2400170, 2024.
<https://doi.org/10.1002/adom.202400170>
12. **"Microglia-derived extracellular vesicles trigger age-related neurodegeneration upon DNA damage"** E.S. Arvanitaki, E. Goulielmaki, K. Gkirtzimanaki, G. Niotis, E. Tsakani, E. Nenedaki, I. Rouska, M. Kefalogianni, D. Xydias, I. Kalafatakis, S. Psilodimitrakopoulos, D. Karagogeos, B. Schumacher, E. Stratakis, G.A. Garinis. **PNAS**, 121(17), e2317402121, 2024.
<https://doi.org/10.1073/pnas.2317402121>
13. **"Properties and predictive potential of the pre-ictal oscillatory dynamics in an ex vivo model of epileptic form activity in the different hippocampal subregions"** L-E Vagiaki, D Xydias, M Kefalogianni, S Psilodimitrakopoulos, E Stratakis, K

2023

14. "Liquid Phase Isolation of SnS Monolayers with Enhanced Optoelectronic Properties." Sarkar, A. S., Konidakis, I., Gagaoudakis, E., Maragkakis, G.M., Psilodimitrakopoulos, S., Katerinopoulou, D., Sygellou, L., Deligeorgis, G., Binas, V., Oikonomou, I. M., Komninou, P., Kiriakidis, G., Kioseoglou, G., Stratakis, E., **Advanced Science**, 10, 2201842. 2023, <https://doi.org/10.1002/advs.202201842>
15. "Upside-Down Preference in the Forskolin-Induced In Vitro Differentiation of 50B11 Sensory Neurons: A Morphological Investigation by Label-Free Non-Linear Microscopy" Luisa Zupin, Sotiris Psilodimitrakopoulos, Fulvio Celsi, Lina Papadimitriou, Anthi Ranella, Sergio Crovella, Giuseppe Ricci, Emmanuel Stratakis, Lorella Pascolo, **International Journal of Molecular Sciences**, 24(9), 8354; 2023. <https://doi.org/10.3390/ijms24098354>

2022

16. "Nonlinear Optical Imaging of In-Plane Anisotropy in Two-Dimensional SnS" G. M. Maragkakis, S. Psilodimitrakopoulos, L. Mouchliadis, A. S. Sarkar, A. Lemonis, G. Kioseoglou and E. Stratakis, **Advanced Optical Materials**, 2102776, 2022, <https://doi.org/10.1002/adom.202102776>

2021

17. "Optical versus electron diffraction imaging of Twist-angle in 2D transition metal dichalcogenide bilayer superlattices," S. Psilodimitrakopoulos, A. Orekhov, L. Mouchliadis, D. Jannis, G.M. Maragkakis, G. Kourmoulakis, N. Gauquelin, G. Kioseoglou, J. Verbeeck, E. Stratakis, **npj 2D Materials and Applications**, 5:77, 2021, <https://doi.org/10.1038/s41699-021-00258-5>
18. "Self-Assembled Dichroic Plasmonic Nitride Nanostructures with Broken Centrosymmetry for Second-Harmonic Generation," D. Babonneau, S. Camelio, G. Abadias, D. Christofilos, I. Arvanitidis, S. Psilodimitrakopoulos, G. M. Maragkakis, E. Stratakis, N. Kalfagiannis, and P. Patsalas, **ACS Applied Nano Materials**, 4, 9, 8789–8800, 2021, <https://doi.org/10.1021/acsanm.1c01442>

19. "Three-dimensional characterization of collagen remodeling in cell-seeded collagen scaffolds via polarization second harmonic generation," D. Xydias, G. Ziakas, S. Psilodimitrakopoulos, A. Lemonis, E. Bagli, T. Fotsis, A. Gravanis, D. S. Tzeranis, E. Stratakis, **Biomedical Optics Express** 12, 1136-1153, 2021, <https://doi.org/10.1364/BOE.411501>
20. "Probing valley population imbalance in transition metal dichalcogenides via temperature-dependent second harmonic generation imaging," L. Mouchliadis, S. Psilodimitrakopoulos, G. M. Maragkakis, I. Demeridou, G. Kourmoulakis, A. Lemonis, G. Kioseoglou, E. Stratakis, **npj 2D Materials and Applications** 5, 6, 2021, <https://doi.org/10.1038/s41699-020-00183-z>
21. "Real-time spatially resolved determination of twist angle in transition metal dichalcogenide heterobilayers," S. Psilodimitrakopoulos, L. Mouchliadis, G. M. Maragkakis, G. Kourmoulakis, A. Lemonis, G. Kioseoglou E. Stratakis, **2D Materials**, 8, 015015, 2021, <https://doi.org/10.1088/2053-1583/abbf88>

2020

22. "Use of Cotton Textiles Coated by Ir(III) Tetrazole Complexes within Ceramic Silica Nanophases for Photo-Induced Self-Marker and Antibacterial Application" I. Zandoni, M. Blosi, V. Fiorini, M. Crosera, S. Orrelli, S. Stagni, A. Stefan, S. Psilodimitrakopoulos, E. Stratakis, F. Larese, A. L Costa, **Nanomaterials** 10(6):1020, 2020, <https://doi.org/10.3390/nano10061020>
23. "In-depth analysis of egg-tempera paint layers by multiphoton excitation fluorescence microscopy" A. D. Fovo, M. Sanz, M. Oujja, R. Fontana, S. Mattana, R. Cicchi, P. Targowski, M. Sylwestrzak, A. Romani, C. Grazia, G. Filippidis, S. Psilodimitrakopoulos, A. Lemonis, M. Castillejo, **Sustainability** 12:3831 2020, <https://doi.org/10.3390/su12093831>
24. "Neural Stem Cell Delivery via Porous Collagen Scaffolds Promotes Neuronal Differentiation and Locomotion Recovery in Spinal Cord Injury", A. Kourgiantaki, D. Tzeranis, K. Karali, S. Psilodimitrakopoulos, K. Georgelou, I. Yannas, E. Stratakis, K. Sidiropoulou, I. Charalampopoulos, E. Bampoula, A. Gravanis, **Nature Regenerative Medicine**, 5, 12 2020, <https://doi.org/10.1038/s41536-020-0097-0>

2019

25. **"Imaging the crystal orientation of 2D transition metal dichalcogenides using polarization-resolved second-harmonic generation,"** G. M. Maragkakis, S. Psilodimitrakopoulos, L. Mouchliadis, I. Paradisanos, A. Lemonis, G. Kioseoglou, E. Stratakis, **Optoelectronic Advances**, 2, 190026 2019, **(Inside Front Cover)**
<https://doi.org/10.29026/oea.2019.190026>
26. **"Twist Angle mapping in layered WS₂ by Polarization-Resolved Second Harmonic Generation,"** S. Psilodimitrakopoulos, L. Mouchliadis, I. Paradisanos, G. Kourmoulakis, A. Lemonis, G. Kioseoglou, E. Stratakis, **Scientific Reports**, 9, 14285 2019.
<https://doi.org/10.1038/s41598-019-50534-0>

2018

27. **"Ultrahigh-resolution non-linear optical imaging of the armchair orientation in 2D transition metal dichalcogenides"**, S. Psilodimitrakopoulos, L. Mouchliadis, I. Paradisanos, A. Lemonis, G. Kioseoglou, E. Stratakis, **Light: Science & Applications**, 7, 18005, 2018,
<https://doi.org/10.1038/lsa.2018.5>
28. **"Effect of composition and temperature on the second harmonic generation in silver phosphate glasses"**, I. Konidakis, S. Psilodimitrakopoulos, K. Kosma, A. Lemonis, and E. Stratakis, **Optical Materials**, 75, 796-801, 2018,
<https://doi.org/10.1016/j.optmat.2017.11.045>

2017

29. **"Nonlinear imaging microscopy for assessing structural and photochemical modifications upon laser removal of dammar varnish on photosensitive substrates"**, M. Oujja, S. Psilodimitrakopoulos, E. Carrasco, M. Sanz, A. Philippidis, A. Selimis, P. Pouli, G. Filippidis, M. Castillejo, **Physical Chemistry Chemical Physics**, 19, 22836-22843, 2017,
<https://doi.org/10.1039/c7cp02509b>
30. **"How aging impacts skin biomechanics: a multiscale study"**, B. Lynch, C. Bonod-Bidaud, G. Ducourthial, J.-S. Affagard, S. Bancelin, S. Psilodimitrakopoulos, F. Ruggiero, J.-M. Allain and M.-C. Schanne-Klein, **Scientific Reports**, 7, 13750, 2017,
<https://doi.org/10.1038/s41598-017-13150-4>

2016

31. **“Polarization second harmonic generation discriminates between fresh and aged, starch-based adhesives used in cultural heritage”**, S. Psilodimitrakopoulos, E. Gavgiotaki, K. Melessanaki, V. Tsafas, G. Filippidis, **Microscopy and Microanalysis**, 22, 1072 2016,
<https://doi.org/10.1017/S1431927616011570>

2015

32. **“Ex vivo multiscale quantitation of skin biomechanics in wild-type and genetically-modified mice using multiphoton microscopy”**, S. Bancelin, B. Lynch, C. Bonod-Bidaud, G. Ducourthial, S. Psilodimitrakopoulos, P. Dokladal, J.-M. Allain, M.-C. Schanne-Klein and F. Ruggiero, **Scientific Reports**, 5, 17635, 2015,
<https://doi.org/10.1038/srep17635>

2014

33. **“Monitoring myosin conformational fast changes *in-vivo* with instantaneous single scan polarization – SHG microscopy”**, S. Psilodimitrakopoulos, D. Artigas, P. Loza-Alvarez, **Biomedical Optics Express**, 5, 4362, 2014,
<https://doi.org/10.1364/BOE.5.004362>

2013

34. **“Quantitative imaging of microtubule alteration as an early marker of axonal degeneration after ischemia in neurons”**, S. Psilodimitrakopoulos, V. Petegnief, N. de Vera, O. Hernandez, D. Artigas, A. M. Planas, P. Loza-Alvarez, **Biophysical Journal**, 104, 968, 2013,
<https://doi.org/10.1016/j.bpj.2013.01.020>

35. **“Femtosecond laser axotomy in *Caenorhabditis elegans*, and collateral damage assessment using a combination of linear and nonlinear imaging techniques”**, S. I.C.O. Santos, M. Mathew, O. E. Olarte, S. Psilodimitrakopoulos, and Pablo Loza-Alvarez, **PLoS ONE**, 8, e58600, 2013,
<https://doi.org/10.1371/journal.pone.0058600>

2012

36. **“Effect of molecular organization on the image histograms of polarization SHG microscopy”**, S. Psilodimitrakopoulos, I. Amat-Roldan, P. Loza-Alvarez, and David Artigas, **Biomedical Optics Express**, 3, 2681 2012,
<https://doi.org/10.1364/BOE.3.002681>

37. **“Molecular engineering of chromophores for combined second-harmonic and two-photon fluorescence in cellular imaging”**, E. Meulenaere, W.-Q. Chen, S. V. Cleuvenbergen, M.-L. Zheng, S. Psilodimitrakopoulos, R. Paesen, J.-M. Taymans, M. Ameloot, J. Vanderleyden, P. Loza-Alvarez, X.-M. Duan, and K. Clays, **Chemical Science**, 3, 984 2012,
<https://doi.org/10.1039/C2SC00771A>

2011

38. **"Ultrastructural analysis of myocardiocyte sarcomeric changes in relation with cardiac dysfunction in human fetuses with intrauterine growth restriction,"** J. I. Iruretagoyena, I. Torre, I. Amat-Roldan, S. Psilodimitrakopoulos, F. Crispi, P. Garcia-Canadilla, A. Gonzalez-Tendero, A. Nadal, E. Eixarch, P. Loza-Alvarez, D. Artigas, and E. Gratacos, , **American Journal of Obstetrics and Gynecology** 204, S34, 2011,
<https://doi.org/10.1016/j.ajog.2010.10.071>

2010

39. **“Estimating the helical pitch angle of amylopectin in starch using polarization second harmonic generation microscopy”**, S. Psilodimitrakopoulos, I. Amat-Roldan, P. Loza-Alvarez, and David Artigas, **Journal of Optics**, 12, 084007, 2010,
<https://doi.org/10.1088/2040-8978/12/8/084007>
40. **“Fast image analysis in polarization SHG microscopy”**, I. Amat-Roldan, S. Psilodimitrakopoulos, P. Loza-Alvarez, and D. Artigas, **Optics Express**, 17, 17209, 2010,
<https://doi.org/10.1364/OE.18.017209>

2009

41. **“Estimation of the effective orientation of the SHG source in primary cortical neurons”**, S. Psilodimitrakopoulos, V. Petegnief, G. Soria, I. Amat-Roldan, D. Artigas, A. M. Planas, and P. Loza-Alvarez, **Optics Express**, 17, 14418, 2009,
<https://doi.org/10.1364/OE.17.014418>
42. **“Quantitative discrimination between endogenous SHG sources in mammalian tissue, based on their polarization response”**, S. Psilodimitrakopoulos, D. Artigas, G. Soria, I. Amat-Roldan, A. M. Planas, and P. Loza-Alvarez, **Optics Express**, 17, 10168, 2009,
<https://doi.org/10.1364/OE.17.010168>

43. “In vivo, pixel resolution mapping of thick Filaments’ orientation in non-fibrillar muscle using polarization sensitive second harmonic generation microscopy”, S. Psilodimitrakopoulos, S. Santos, I. Amat-Roldan, A. Thayil K. N, D. Artigas, and P. Loza-Alvarez, **Journal of Biomedical Optics**, 14, 014001, 2009., <https://doi.org/10.1117/1.3059627>

2008

44. “Starch-based backwards SHG for in- situ MEFISTO pulse characterization in multiphoton microscopy”, A. K. N. Thayil, E. J. Gualda, S. Psilodimitrakopoulos, I. G. Cormack, I. Amat-Roldan, M. Mathew, D. Artigas, and P. Loza-Alvarez, **Journal of Microscopy**, 230, 70, 2008, <https://doi.org/10.1111/j.1365-2818.2008.01956.x>
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PATTENT

- PCT/GR2018/000014, Emmanuel Stratakis, **Sotiris Psilodimitrakopoulos**, Leonidas Mouchliadis, Ioannis Paradisanos, Andreas Lemonis, George Kioseoglou, “Measuring crystal quality in low dimensional 2D materials based on polarization-resolved second harmonic generation”.