

CURRICULUM VITAE

SOTIRIS PSILODIMITRAKOPOULOS, PHD

ORCID ID: <https://orcid.org/0000-0001-6617-0369>

Google scholar: https://scholar.google.gr/citations?user=oOt3_J0AAAAJ&hl=en

CURRENT POSITION

Leader of the Imaging sub-group of ULMNP-IESL-FORTH.

The research of the Imaging sub-group has 2 directions:

1. Applications of Non-Linear Imaging in Materials Science

<http://stratakislab.iesl.forth.gr/research/applications-of-non-linear-imaging-in-materials-science/>

2. Live Cell Imaging

<http://stratakislab.iesl.forth.gr/research/live-cell-imaging/>

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 Cucho, 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.jpcl.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 Sidiropoulou. **arXiv preprint bioRxiv** 2024.08.23.609340, 2024

<https://doi.org/10.1101/2024.08.23.609340>

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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,

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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>

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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>
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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/abfb88>

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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,
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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,
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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)
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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.
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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”.