

## Publications list

### *Journal publications*

1. Arina O. Kalganova, Aleksandr V. Averchenko, Igor A. Salimon, Omar A. Abbas, Ekaterina D. Grayfer, Pavlos G. Lagoudakis, Sakellaris Mailis, “Laser printing of 2D transition metal dichalcogenide diffractive optical elements” *Light: Advanced Manufacturing* Accepted, Accepted article preview online 15 April 2026, doi: [10.37188/lam.2026.063](https://doi.org/10.37188/lam.2026.063)
2. Svetlana I. Serebrennikova<sup>1</sup>, Daria S. Kopylova<sup>1</sup>, Yuriy G. Gladush<sup>1</sup>, Sakellaris Mailis<sup>1</sup>, Nikita E. Gordeev<sup>1</sup>, Aliya R. Vildanova<sup>1</sup>, Aleksandr V. Averchenko<sup>1</sup>, Sergey S. Zhukov<sup>2</sup>, Dmitry V. Krasnikov<sup>1</sup>, Albert G. Nasibulin<sup>1</sup>, “Highly Sensitive SWCNT-based Pyroelectric Phototransistors” *Optoelectronic advances*, Accepted for publication April 2026
3. Ekaterina V. Zharkova, Alexandr V. Averchenko, Igor A. Salimon, Omar A. Abbas, Ekaterina D. Grayfer, Pavlos G. Lagoudakis, Sakellaris Mailis, “Persistent photoconductivity in micro-structured 2D-Mo<sub>1-x</sub>W<sub>x</sub>S<sub>2</sub> alloys”, *Results in Surfaces and Interfaces*, Volume 23, 2026, 100793, ISSN 2666-8459, <https://doi.org/10.1016/j.rsurfi.2026.100793>.
4. A. V. Averchenko, O. A. Abbas, I. A. Salimon, E. V. Zharkova, E. D. Grayfer, S. Lipovskikh, P. McNaughten, D. Lewis, T. Hallam, P. G. Lagoudakis, S. Mailis, Laser-Induced Synthesis of Tin Sulfides. *Small* 2024, 2401891, <https://doi.org/10.1002/smll.20240>
5. Aleksandr V. Averchenko, Igor A. Salimon, Ekaterina V. Zharkova, Svetlana Lipovskikh, Pavel Somov, Omar A. Abbas, Pavlos G. Lagoudakis, Sakellaris Mailis, Laser-enabled localized synthesis of Mo<sub>1-x</sub>W<sub>x</sub>S<sub>2</sub> alloys with tunable composition, *Materials Today Advances*, Volume 17, 100351, (2023) <https://doi.org/10.1016/j.mtadv.2023.100351>
6. Salimon, Igor A., Ekaterina V. Zharkova, Aleksandr V. Averchenko, Jatin Kumar, Pavel Somov, Omar A. Abbas, Pavlos G. Lagoudakis, and Sakellaris Mailis.. "Laser-Synthesized 2D-MoS<sub>2</sub> Nanostructured Photoconductors" *Micromachines* 14, no. 5: 1036, (2023), <https://doi.org/10.3390/mi14051036>
7. Svetlana I. Serebrennikova, Daria S. Kopylova, Yuriy G. Gladush, Dmitry V. Krasnikov, Sakellaris Mailis and Albert G. Nasibulin, Photogating interfacial effects in carbon nanotube-based transistors on a Si/SiO<sub>2</sub> substrate toward highly sensitive photodetection, *Nanoscale*,15, 19351-19358 (2023), <https://doi.org/10.1039/D3NR04451C>
8. Jon Gorecki, Adnane Noual, Sakellaris Mailis, Vasilis Apostolopoulos, Nikitas Papisimakis “Optically Defined Reconfigurable THz Metasurfaces using Graphene on Iron-Doped Lithium Niobate” *Advanced Photonics Research*, Volume3, Issue12, December 2022, <https://doi.org/10.1002/adpr.202200233>
9. Omar A. Abbas, Chung-Che Huang, Daniel W. Hewak, Sakellaris Mailis, Pier Sazio, “Opto-electronic properties of solution-synthesized MoS<sub>2</sub> metal-semiconductor-metal photodetector” *Optical Materials: X*, **13**, 100135,(2022), <https://doi.org/10.1016/j.omx.2022.100135>

10. Igor A. Salimon, Aleksandr V. Averchenko, Svetlava A. Lipovskikh, Elena A. Skryleva, Artyom V. Novikov, Pavlos G. Lagoudakis, Sakellaris Mailis, “UV laser-induced nanostructured porous oxide in GaAs crystals”, *Solid State Sciences*, **128**, 106887, (2022), <https://doi.org/10.1016/j.solidstatesciences.2022.106887>
11. Mailis, S. “On-chip non-magnetic optical isolator”, *Nat. Photon.* **15**, 794–795 (2021), <https://doi.org/10.1038/s41566-021-00895-8>
12. Abbas, O.A., Lewis, A.H., Aspiotis, N. Huang C. C., Zeimpekis I., Hewak D. H., Sazio P. & Mailis S., “Laser printed two-dimensional transition metal dichalcogenides” *Sci Rep* **11**, 5211 (2021), <https://doi.org/10.1038/s41598-021-81829-w>.
13. Abbas, O.A., Zeimpekis, I., Wang, H. *et al.* Solution-Based Synthesis of Few-Layer WS<sub>2</sub> Large Area Continuous Films for Electronic Applications. *Sci Rep* **10**, 1696 (2020), <https://doi.org/10.1038/s41598-020-58694-0>
14. Jon Gorecki, Lewis Piper, Adnane Noual, Sakellaris Mailis, Nikitas Papisimakis, and Vasilis Apostolopoulos, “Optically Reconfigurable Graphene/Metal Metasurface on Fe:LiNbO<sub>3</sub> for Adaptive THz Optics” *ACS Applied Nano Materials* **3** (9), 9494-9501, (2020), DOI: 10.1021/acsnm.5c04665
15. Jon Gorecki, Nicholas Klokou, Lewis Piper, Sakellaris Mailis, Nikitas Papisimakis, and Vasilis Apostolopoulos, "High-precision THz-TDS via self-referenced transmission echo method," *Appl. Opt.* **59**, 6744-6750 (2020), <https://doi.org/10.1364/AO.391103>
16. Xia Chen, Milan M. Milosevic, Antoine F. J. Runge, Xingshi Yu, Ali Z. Khokhar, Sakellaris Mailis, David J. Thomson, Anna C. Peacock, Shinichi Saito, and Graham T. Reed, "Silicon erasable waveguides and directional couplers by germanium ion implantation for configurable photonic circuits," *Opt. Express* **28**, 17630-17642 (2020), <https://doi.org/10.1364/OE.394871>
17. Salimon, I.A.; Mailis, S.; Salimon, A.I.; Skupnevskiy, E.; Lipovskikh, S.A.; Shakhova, I.; Novikov, A.V.; Yagafarov, T.F.; Korsunsky, A.M. “FIB-SEM Investigation of Laser-Induced Periodic Surface Structures and Conical Surface Microstructures on D16T (AA2024-T4) Alloy” *Metals*, **10**, 144, (2020), <https://doi.org/10.3390/met10010144>
18. G Martinez-Jimenez, Y Franz, AFJ Runge, M Ceschia, N Healy, SZ Oo, A Tarazona, H.M.H. Chong, AC Peacock, S Mailis, “Photonic microstructures produced by selective etching of laser-crystallized amorphous silicon”, *Opt Mater Express*, **9**, 6, pp 2573-2581 (2019), <https://doi.org/10.1364/OME.9.002573>
19. J. Guo, X. Liao, M.-Hsien Lee, G. Hyett, C.-Che Huang, D. W Hewak, S. Mailis, W. Zhou, Z. Jiang, “Experimental and DFT insights of the Zn-doping effects on the visible-light photocatalytic water splitting and dye decomposition over Zn-doped BiOBr photocatalysts”, *Appl Catal B.*, **243**, pp 502-512, (2019), <https://doi.org/10.1016/j.apcatb.2018.09.089>
20. Y. Franz, A. FJ Runge, S. Z Oo, G. Jimenez-Martinez, N. Healy, A. Khokhar, A. Tarazona, H. MH Chong, S. Mailis, A. C. Peacock, “Laser crystallized low-loss polycrystalline silicon waveguides”, *Opt. Ex.*, **27**, **4**,

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21. M. M Milosevic, X. Chen, W. Cao, A. FJ Runge, Y. Franz, C. G Littlejohns, S. *Mailis*, A. C. Peacock, D. J. Thomson, G. T. Reed, "Ion implantation in silicon for trimming the operating wavelength of ring resonators", *IEEE J. Sel. Top. Quantum Electron.*, **24**, 4, pp 1-7 (2018), Digital Object Identifier 10.1109/JSTQE.2018.2799660
22. J. Gorecki, V. Apostolopoulos, J.Y. Ou, S. *Mailis*, N. Papasimakis, "Optical Gating of Graphene on Photoconductive Fe:LiNbO<sub>3</sub>" *ACS-Nano*, **12**, 6, pp 5940-5945 (2018), DOI: 10.1021/acsnano.8b02161
23. E. Mavrona, N. Podoliak, G. D'Alessandro, N. Tabiryran, M. Trapatseli, J. F. Blach, M. Kaczmarek, V. Apostolopoulos, "Intrinsic and photo-induced properties of high refractive index azobenzene based thin films" *Opt. Mat. Exp.* **8**, 2, pp 420-430 (2018), DOI: 10.1364/OME.8.000420
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25. T. J. Sono, C. Riziotis, S. *Mailis*, and R. W. Eason, "Design considerations for quasi-phase-matching in doubly resonant lithium niobate hexagonal micro-resonators" *Journal of Optics*, **19**, 9, No: 095505, (2017), DOI: 10.1088/2040-8986/aa7e2e
26. G. Zisis, G. Martinez-Jimenez, Y. Franz, N. Healy, T. Masaud, H.M.H. Chong, E. Soergel, A. C. Peacock, and S. *Mailis*, "Laser-induced ferroelectric domain engineering in LiNbO<sub>3</sub> crystals using an amorphous silicon overlayer", *Journal of Optics*, **19**, 8 No: 084010 (2017), **DOI:** 10.1088/2040-8986/aa7bd5
27. G Zisis, M Manzo, K Gallo, E Soergel, S. *Mailis*, "UV laser-induced poling inhibition in proton exchanged LiNbO<sub>3</sub> crystals", *Applied Physics B*, Vol 123, pp158 (2017), DOI: [10.1007/s00340-017-6734-7](https://doi.org/10.1007/s00340-017-6734-7)
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31. Noel Healy, *Sakellaris Mailis*, Nadezhda M. Bulgakova, Pier J. A. Sazio, Todd D. Day, Justin R. Sparks, Hiu Y. Cheng, John V. Badding, and Anna C. Peacock, "Extreme Electronic Band-Gap Modification in Laser

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