

LIST OF PUBLICATION

(* - corresponding author)

MONOGRAPHS AND BOOK CHAPTERS:

1. **Zyla, G.*** (2020). *Bionische Strukturfarben mittels Zwei-Photonen Polymerisation*. Doctoral Thesis, Ruhr-Universität Bochum, doi.org/10.13154/294-7212
2. Ostendorf, A.*, Köhler, J., Ksouri, S. I., **Zyla, G.**, Esen, C. (2017): Laser-based assembler and microfluidic applications. In: Jesper Glückstad, Darwin Palima (eds.), *Light Robotics – Structure-mediated Nanobiophotonics*, Elsevier, Amsterdam, pp. 33–64.

PUBLICATIONS WITH PEER REVIEW PROCESS:

1. Stavrou, M.*, Pramatioti, E., **Zyla, G.**, Ladika, D., Skentzos, G., Farsari, M., Juodkazis, S., Malinauskas, M.*, Gray, D.*, and Couris, S.* (2025): Nonlinearity matters in light–matter interaction: multi-photon 3D lithography. *Research Square* (preprint).
2. Ladika, D.*, Stavrou, M., **Zyla, G.**, Parkatzidis, K., Androulidaki, M., Dumur, F., Farsari, M., and Gray, D.* (2025): High- and low-fluorescent photoinitiators for multiphoton lithography. *ACS Appl. Polym. Mater.*, 7(15), 10108–10120.
3. **Zyla, G.***, Papamakarios, S., Zografopoulos, D. C., Christoforidou, A., Kenanakis, G., Farsari, M., and Tsilipakos, O.* (2025): Film-Based Multi-Photon Lithography for Efficient Printing of Electromagnetic Surface Structures. *Adv. Mater. Technol.*, 10, 2402137.
4. Meier, T., Korakis, V., Blankenship, B. W., Lu, H., Kyriakou, E., Papamakarios, S., Vangelatos, Z., Yildizdag, M. E., **Zyla, G.**, Xia, X., Zheng, X., Rho, Y., Farsari, M., and Grigoropoulos, C. P.* (2025): Scalable phononic metamaterials: Tunable bandgap design and multi-scale experimental validation. *Materials & Design*, 252, 113778.
5. Blankenship, B. W., Pan, D., Kyriakou, E., **Zyla, G.**, Meier, T., Arvin, S., Seymour, N., De La Torre, N., Farsari, M., Ji, N., and Grigoropoulos, C. P.* (2025): Multiphoton and harmonic imaging of microarchitected materials. *ACS Appl. Mater. Interfaces*, 17(2), 3887–3896.
6. Papamakarios, S., Tsilipakos, O., Katsantonis, I., Koulouklidis, A. D., Manousidaki, M., **Zyla, G.**, Daskalaki, C., Tzortzakis, S., Kafesaki, M., and Farsari, M.* (2024): Cactus-like metamaterial structures for electromagnetically induced transparency at THz frequencies. *ACS Photonics*, 12, 87–97.
7. Barchiesi, E., Mavrikos, S., Giorgio, I., Grigoropoulos, C., Farsari, M., dell’Isola, F., **Zyla, G.*** (2024): Complex mechanical properties of 3D micro-metric pantographic metamaterials fabricated by two-photon polymerization. *Contin. Mech. Thermodyn.*, 36, 1755–1766.
8. Stavrou, M.*, **Zyla, G.**, Ladika, D., Dumur, F., Farsari, M., Gray, D.* (2024): Push-pull carbazole-based dyes: synthesis, strong ultrafast nonlinear optical response, and effective photoinitiation for multiphoton lithography. *ACS Appl. Opt. Mater.*, 2, 1653–1666.
9. **Zyla, G.***, and Farsari, M. (2024): Frontiers of Laser-Based 3D Printing: A Perspective on Multi-Photon Lithography. *Laser Photonics Rev.*, 2301312.
10. **Zyla, G.***, Maconi, G., Nolvi, A., Marx, J., Ladika, D., Salmi, A., Melissinaki, V., Kassamakov, I., Farsari, M. (2024): 3D micro-devices for enhancing the lateral resolution in optical microscopy. *Light: Adv. Manuf.*, 5, 19.

11. **Zyla, G.***, Kovalev, A., Esen, C., Ostendorf, A., Gorb, S. (2022): Two-photon polymerization as a potential manufacturing tool for biomimetic engineering of complex structures found in nature. *J. Opt. Microsyst.*, 2, 031203.
12. **Zyla, G.***, Kovalev, A., Gurevich, E. L., Esen, C., Liu, Y., Lu, Y., Gorb, S., Ostendorf, A. (2020): Structural colors with angle-insensitive optical properties generated by Morpho-inspired 2PP structures. *Appl. Phys. A*, 126, 740.
13. **Zyla, G.***, Surkamp, N., Gurevich, E. L., Esen, C., Klehr, A., Knigge, A., Hofmann, M. R., Ostendorf, A. (2020): Two-photon polymerization with diode lasers emitting ultrashort pulses with high repetition rate. *Opt. Lett.*, 45, 4827–4830.
14. Surkamp, N.*, **Zyla, G.**, Gurevich, E. L., Klehr, A., Knigge, A., Ostendorf, A., Hofmann, M. R. (2020): Mode-locked diode laser-based two-photon polymerisation. *Electron. Lett.*, 56.
15. **Zyla, G.***, Kovalev, A., Heisterkamp, S., Esen, C., Gurevich, E. L., Gorb, S., Ostendorf, A. (2019): Biomimetic structural coloration with tunable degree of angle-independence generated by two-photon polymerization. *Opt. Mater. Express*, 9, 2630–2639.
16. **Zyla, G.***, Kovalev, A., Grafen, M., Gurevich, E. L., Esen, C., Ostendorf, A., Gorb, S. (2017): Generation of bioinspired structural colors via two-photon polymerization. *Sci. Rep.*, 7, 17622.
17. Staudinger, U.*, **Zyla, G.**, Krause, B., Janke, A., Fischer, D., Esen, C., Voit, B., Ostendorf, A. (2017): Development of electrically conductive microstructures based on polymer/CNT nanocomposites via two-photon polymerization. *Microelectron. Eng.*, 179, 48–55.
18. Köhler, J.*, Kutlu, Y., **Zyla, G.**, Ksouri, S. I., Esen, C., Gurevich, E. L., Ostendorf, A. (2017): Optical assembly of microsnap-fits fabricated by two-photon polymerization. *Opt. Eng.*, 56(10), 105105.

PUBLICATIONS WITHOUT PEER REVIEW PROCESS:

1. **Zyla, G.***, Solak, M., Gurevich, E. L., Esen, C., Ostendorf, A. (2016): Direct fabrication of microstructures with holographic Two-Photon-Lithography. Proceeding of the 17th International Symposium on Laser Precision Microfabrication, 1–5.
2. **Zyla, G.***, Ksouri, S. I., Köhler, J., Esen, C., Ostendorf, A. (2016): Building with light fabrication and assembly of micro structures. Laser & Photonics, AT-Fachverlag GmbH, 2016.
3. **Zyla, G.***, Ksouri, S. I., Köhler, J., Esen, C., Ostendorf, A. (2015): Bauen mit Licht - Herstellung und Montage von Mikrostrukturen. Photonik 6.2015, AT-Fachverlag GmbH, 2015.

PATENTS:

1. DE 10 2020 115 869 A1, Herstellung eines Objekts mittels Zwei-Photonen-Polymerisation. Ruhr-University Bochum. Zyla, G., Surkamp, N., Gurevich, E. L., Esen, C., Hofmann, R. M., 2021. Share of the invention: 40%.
2. WO 2021/254777 A1, Herstellung eines Objekts mittels Zwei-PhotonenPolymerisation/Production of an object by way of two-photon polymerization. Ruhr-University Bochum. Zyla, G., Surkamp, N., Gurevich, E. L., Esen, C., Hofmann, R. M., 2021. Share of the invention: 40%.