

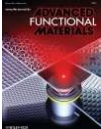
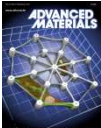
SCIENTIFIC ARTICLES

Version: 01/2012

Below you will find a list of scientific articles published by means of our laser lithography systems "Photonic Professional" as well as their forerunner models (*) in the group of Prof. Dr. Martin Wegener at the Karlsruhe Institute of Technology (KIT), Germany. Furthermore, articles additionally related to casting and/or coating are marked by a tilde (~). Please note that Nanoscribe's website provides this list with corresponding links to the abstracts/full text:

www.nanoscribe.de/en/publications/scientific-articles.

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|------|---|-----------------|
| 42) | <i>Magnetic Helical Micromachines: Fabrication, Controlled Swimming, and Cargo Transport</i>
Soichiro Tottori , Li Zhang , * Famin Qiu , Krzysztof K. Krawczyk , Alfredo Franco-Obregón, and Bradley J. Nelson
<i>Advanced Materials</i> , doi: 10.1002/adma.201103818 (2012) | SU-8
IP-L |
| 41) | <i>Photonic Wire Bonds for Terabit/s Chip-to-Chip Interconnects</i>
N. Lindenmann, G. Balthasar, D. Hillerkuss, R. Schmogrow, M. Jordan, J. Leuthold, W. Freude, and C. Koos
<i>arXiv:1111.0651v1</i> (2011) | SU-8 |
| 40) | <i>Microphotonic parabolic light directors fabricated by two-photon lithography</i>
J. H. Atwater, P. Spinelli, E. Kosten, J. Parsons, C. Van Lare et al.
<i>Appl. Phys. Lett.</i> 99 , 151113, doi: 10.1063/1.3648115 (2011) | IP-L/G |
| 39) | <i>Photonic Waveguide Bonds – A Novel Concept for Chip-to-Chip Interconnects</i>
N. Lindenmann, I. Kaiser, G. Balthasar, R. Bonk, D. Hillerkuss, W. Freude, J. Leuthold, and C. Koos
<i>Optical Fiber Communication Conference (OFC), OSA Technical Digest</i> (2011), paper PDP1 | SU-8 |
| 38)~ | <i>Spectroscopic characterization of highly doped ZnO films grown by atomic-layer deposition for three-dimensional infrared metamaterials [Invited]</i>
A. Frölich and M. Wegener
<i>Optical Materials Express</i> 1 , 883 (2011) | IP-L/G |
| 37) | <i>Past achievements and future challenges in the development of three-dimensional photonic metamaterials</i>
C.M. Soukoulis and M. Wegener
<i>Nature Photonics</i> , doi:10.1038/nphoton.2011.154 (2011) | |
| 36) | <i>Direct laser writing for active and passive high-Q polymer microdisks on silicon</i>
T. Grossmann, S. Schleede, M. Hauser, T. Beck, M. Thiel, G. von Freymann, T. Mappes, and H. Kalt
<i>Optics Express</i> 19 , 11451 (2011) | ORMOCERE |
| 35) | <i>Chirale Photonische Strukturen</i>
M. Thiel, J.K. Gansel, M. Wegener, and G. von Freymann
<i>Physik in unserer Zeit</i> 42 , 70 (2011) | SU-8 |
| 34) | <i>Two-Component Polymer Scaffolds for Controlled Three-Dimensional Cell Culture</i>
F. Klein , B. Richter , T. Striebel , C. M. Franz , G. von Freymann , M. Wegener , and M. Bastmeyer
<i>Advanced Materials</i> 23 , 1341 (2011) | PEG-DA/
PETA |
| 33)~ | <i>Waveguides in three-dimensional photonic-bandgap materials by direct laser writing and silicon double inversion</i>
I. Staude, G. von Freymann, S. Essig, K. Busch, and M. Wegener
<i>Optics Letters</i> 36 , 67 (2011) | IP-L/G |
| 32) | <i>Direct laser writing of three-dimensional nanostructures using a continuous-wave laser at 532nm</i>
M. Thiel, J. Fischer, G. von Freymann, and M. Wegener
<i>Applied Physics Letters</i> 97 , 221102 (2010) | IP-L/G |

- 31) *Shaping Optical Space with Metamaterials*
 M. Wegener and S. Linden
Physics Today **63**, 32 (2010)
- 30) *Dreidimensionale optische Tarnkappe realisiert* IP-L/G
 N. Stenger, T. Ergin, and M. Wegener
Physik in unserer Zeit **41**, 218 (2010)
- 29)* *Rhombicuboctahedral three-dimensional photonic quasicrystals* SU-8
 A. Ledermann, M. Wegener, and G. von Freymann
Advanced Materials **22**, 2363 (2010)
- 28)~ *Three-Dimensional Photonic Metamaterials by Direct Laser Writing and Advanced Metallization Techniques* SU-8
 M. S. Rill
 PhD Thesis at the Karlsruhe Institute of Technology, urn:nbn:de:swb:90-186141
- 27) *Three-dimensional invisibility cloak at optical wavelengths* self-made resist
 T. Ergin, N. Stenger, P. Brenner, J. B. Pendry, and M. Wegener
Science **328**, 337 (2010)
- 26)  *Three-dimensional nanostructures for photonics* SU-8
 G. von Freymann, A. Ledermann, M. Thiel, I. Staude, S. Essig, K. Busch, and M. Wegener
Advanced Functional Materials **20**, 1038 (2010)
- 25)~ *Fabrication and characterization of silicon woodpile photonic crystals with a complete bandgap at telecom wavelengths* IP-L/G
 I. Staude, M. Thiel, S. Essig, C. Wolff, K. Busch, G. von Freymann, and M. Wegener
Optics Letters **35**, 1094 (2010)
- 24)  *Elastic fully three-dimensional microstructure scaffolds for cell force measurements* ORMOCERE
 F. Klein, T. Striebel, J. Fischer, Z. Jiang, C. M. Franz, G. von Freymann, M. Wegener, and M. Bastmeyer
Advanced Materials **22**, 868 (2010)
- 23) *Design, fabrication and characterization of three-dimensional chiral photonic crystals*
 M. Thiel
 PhD Thesis at the Karlsruhe Institute of Technology, urn:nbn:de:swb:90-157752
- 22)* *Design, Fabrication, and Characterisation of Three-Dimensional Photonic Quasicrystals* SU-8
 A. Ledermann
 PhD Thesis at the Karlsruhe Institute of Technology, urn:nbn:de:swb:90-156080
- 21) *Three-dimensional chiral photonic superlattices* SU-8
 M. Thiel, H. Fischer, G. von Freymann, and M. Wegener
Optics Letters **35**, 166 (2010)
- 20)~ *Transition between corrugated metal films and split-ring-resonator arrays* SU-8
 C. E. Kriegler, M. S. Rill, M. Thiel, E. Müller, S. Essig, A. Frölich, G. von Freymann, S. Linden, D. Gerthsen, H. Hahn, K. Busch, and M. Wegener
Applied Physics Letters B **96**, 749 (2009)

- 19)  Three-dimensional bi-chiral photonic crystals
 M. Thiel, M. S. Rill, G. von Freymann, and M. Wegener
Advanced Materials **21**, 4680 (2009) SU-8
- 18)* Multiple scattering of light in three-dimensional photonic quasicrystals
 A. Ledermann, D. S. Wiersma, M. Wegener, and G. von Freymann
Optics Express **17**, 1844 (2009) SU-8
- 17)~ Negative-index bi-anisotropic photonic metamaterial fabricated by direct laser writing and silver shadow evaporation
 M. S. Rill, C. E. Kriegler, M. Thiel, G. von Freymann, S. Linden, and M. Wegener
Optics Letters **34**, 19 (2009) SU-8
- 16) Structure-activity relationship in D- π -A- π -D-based photoinitiators for the two-photon-induced photopolymerization process
 N. Pucher, A. Rosspeintner, V. Satzinger, V. Schmidt, G. Gescheidt, J. Stampfl, and R. Liska
Macromolecules **42**, 6519 (2009) self-made resist
- 15)~  Gold helix photonic metamaterial as broadband circular polarizer
 J. K. Gansel, M. Thiel, M. S. Rill, M. Decker, K. Bade, V. Saile, G. von Freymann, S. Linden, and M. Wegener
Science **325**, 1513 (2009) AZ-9260
- 14)*  Spatially localized photoluminescence at 1.5 micrometers wavelength in direct laser written 3D structures
 S. Wong, O. Kiowski, M. Kappes, J. K. Lindner, N. Mandal, F. C. Peiris, G. A. Ozin, M. Thiel, M. Braun, M. Wegener, and G. von Freymann
Advanced Materials **20**, 4097 (2008) As₂S₃
- 13)~ Photonic metamaterials by direct laser writing and silver chemical vapour deposition
 M. S. Rill, C. Plet, M. Thiel, I. Staude, G. von Freymann, S. Linden, and M. Wegener
Nature Materials **7**, 543 (2008) SU-8
- 12) Layer-by-layer three-dimensional chiral photonic crystals
 M. Thiel, G. von Freymann, and M. Wegener
Optics Letters **32**, 2547 (2007) SU-8
- 11)* Highly selective wet etch for high-resolution three-dimensional nanostructures in arsenic sulfide all-inorganic photoresist
 S. H. Wong, M. Thiel, P. Brodersen, D. Fenske, G. A. Ozin, M. Wegener, and G. von Freymann
Chemistry of Materials **19**, 4213 (2007) As₂S₃
- 10)*~ Fabrication of silicon inverse woodpile photonic crystals
 M. Hermatschweiler, A. Ledermann, G. A. Ozin, M. Wegener, and G. von Freymann
Advanced Functional Materials **17**, 2273 (2007) SU-8
- 9)* Thin-film polarizer based on a one-dimensional–three-dimensional–one-dimensional photonic crystal heterostructure
 M. Thiel, M. Hermatschweiler, M. Wegener, and G. von Freymann
Applied Physics Letters **91**, 123515 (2007) SU-8

- 8)*~ *Polarization stop bands in chiral polymeric three-dimensional photonic crystals*
 M. Thiel, M. Decker, M. Deubel, M. Wegener, S. Linden, and G. von Freymann
Advanced Materials **19**, 207 (2007) SU-8
- 7)*~ *Three-dimensional silicon inverse photonic quasicrystals for infrared wavelengths*
 A. Ledermann, L. Cademartiri, M. Hermatschweiler, C. Toninelli, G. A. Ozin, D. S. Wiersma, M. Wegener, and G. von Freymann
Nature Materials **5**, 942 (2006) SU-8
- 6)* *3D-2D-3D photonic crystal heterostructures fabricated by direct laser writing*
 M. Deubel, M. Wegener, S. Linden, G. von Freymann, and S. John
Optics Letters **31**, 805 (2006) SU-8
- 5)* *Direct laser writing of three-dimensional photonic crystals with a complete photonic bandgap in chalcogenide glasses*
 S. Wong, M. Deubel, F. Pérez-Willard, S. John, G. A. Ozin, M. Wegener, and G. von Freymann
Advanced Materials **18**, 265 (2006) As₂S₃
- 4)*~ *New route to three-dimensional photonic bandgap materials: Silicon double inversion of polymer templates*
 N. Tétreault, G. von Freymann, M. Deubel, M. Hermatschweiler, F. Pérez-Willard, S. John, M. Wegener, and G. A. Ozin
Advanced Materials **18**, 457 (2006) SU-8
- 3)* *Angle-resolved transmission spectroscopy of three-dimensional photonic crystals fabricated by direct laser writing*
 M. Deubel, M. Wegener, S. Linden, and G. von Freymann
Applied Physics Letters **87**, 221104 (2005) SU-8
- 2)* *Direct laser writing and characterization of “slanted pore” photonic crystals*
 M. Deubel, M. Wegener, A. Kaso, and S. John
Applied Physics Letters **85**, 1895 (2004) SU-8
- 1)* *Direct laser writing of three-dimensional photonic crystal templates for telecommunications*
 M. Deubel, G. von Freymann, M. Wegener, S. Pereira, K. Busch, and C. M. Soukoulis
Nature Materials **3**, 444 (2004) SU-8