

### Wissenschaftliche Publikationen | Scientific Publications

#### Zeitschriften | Journals

Abass, A.; M. Zilk, S. Nanz, S. Fasold, S. Ehrhardt, T. Pertsch, C. Rockstuhl

**A Green's function based analytical method for forward and inverse modeling of quasi-periodic nanostructured surfaces**

Journal of Applied Physics 122 (18) (2017) p. 183103, ISSN 0021-8979

Alvarez-Rodriguez, U.; A. Perez-Leija, I.L. Egusquiza, M. Gräfe, M. Sanz, L. Lamata, A. Szameit, E. Solano

**Advanced-Retarded Differential Equations in Quantum Photonic Systems** Scientific Reports 7 (2017) p. 42933, ISSN 20145-2322

Arslan, D.; K.E. Chong, A.E. Miroshnichenko, D.Y. Choi, D.N. Neshev, T. Pertsch, Y.S. Kivshar, I. Staude

**Angle-selective all-dielectric Huygens' metasurfaces**

Journal of Physics D-applied Physics 50 (43) (2017) p. 434002, ISSN 0022-3727

Bartels, B.; P. Kulkarni, N. Danz, S. Böcker, H.P. Saluz, A. Svatoš

**Mapping metabolites from rough terrain: laser ablation electrospray ionization on non-flat samples**

Rsc Advances 7 (2017) p. 9045-9050, ISSN 2046-2069

Becker, N.C.; S. Hädrich, T. Eidam, F. Just, K. Osvay, Z. Varallyay, J. Limpert, A. Tünnermann, T. Pertsch, F. Eilenberger

**Adaptive pre-amplification pulse shaping in a high-power, coherently combined fiber laser system**

Optics Letters 42 (19) (2017) p. 3916-3919, ISSN 0146-9592

Beier, F.; C. Hupel, S. Kuhn, S. Hein, J. Nold, F. Proske, B.

Sattler, A. Liem, C. Jauregui, J. Limpert, N. Haarlammert, T. Schreiber, R. Eberhardt, A. Tünnermann

**Single mode 4.3 kW output power from a diode-pumped Yb-doped fiber amplifier**

Optics Express 25 (13) (2017) p. 14892-14899, ISSN 1094-4087

Beier, F.; M. Plötner, B. Sattler, F. Stutzki, T. Walbaum, A. Liem, N. Haarlammert, T. Schreiber, R. Eberhardt, A. Tünnermann

**Measuring thermal load in fiber amplifiers in the presence of transversal mode instabilities**

Optics Letters 42 (21) (2017) p. 4311-4314, ISSN 0146-9592

Berner, A.; T. Nobis, H. Gross

**Induced axial and lateral color surface contributions**

Journal of the Optical Society of America A-Optics Image Science and Vision 34 (5) (2017) p. 685-695, ISSN 1084-7529

Blumröder, U.; H. Hempel, K. Füchsel, P. Hoyer, A. Bingel, R. Eichberger, T. Unold, S. Nolte

**Investigating subsurface damages in semiconductor-insulator-semiconductor solar cells with THz spectroscopy**

Physica Status Solidi A-applications and Materials Science 214 (5) (2017) p. 1600590, ISSN 1862-6300

Blumröder, U.; M. Zilk, H. Hempel, P. Hoyer, T. Pertsch, R. Eichberger, T. Unold, S. Nolte

**Influence of structure geometry on THz emission from Black Silicon surfaces fabricated by reactive ion etching** Optics Express 25 (6) (2017) p. 6604-6620, ISSN 1094-4087

Bock, V.; M. Plötner, O. De Vries, J. Nold, N. Haarlammert, T. Schreiber, R. Eberhardt, A. Tünnermann

**Light scattering in poly(vinyl alcohol) hydrogels reinforced with nanocellulose for ophthalmic use**

Optical Materials Express 7 (8) (2017) p. 2824-2837, ISSN 2159-3930

Bock, V.; M. Plötner, O. De Vries, J. Nold, N. Haarlammert, T. Schreiber, R. Eberhardt, A. Tünnermann

**Modal content measurements (S-2) of negative curvature hollow-core photonic crystal fibers**

Optics Express 25 (4) (2017) p. 3006-3012, ISSN 1094-4087

Bösel, C.; H. Gross

**Single freeform surface design for prescribed input wavefront and target irradiance**

Journal of the Optical Society of America A-Optics Image Science and Vision 34 (9) (2017) p. 1490-1499, ISSN 1084-7529

Bösel, C.; N. Worku, H. Gross

**Ray mapping approach in double freeform surface design for collimated beam shaping beyond the paraxial approximation**

Applied Optics 56 (13) (2017) p. pp. 3679-3688, ISSN 1559-128X

Bourgin, Y.; D. Voigt, T. Käsebier, T. Siefke, E.-B. Kley, U. D. Zeitner

**175 nm period grating fabricated by i-line proximity mask-aligner lithography**

Optics Letters 42 (19) (2017) p. 3816-3819, ISSN 0146-9592

Brady, A.; R. Berlich, N. Leonhard, T. Kopf, P. Böttner, R. Eberhardt, C. Reinlein  
**Experimental validation of phase-only pre-compensation over 494 m free-space propagation**  
Optics Letters 42 (14) (2017) p. 2679-2682, ISSN 0146-9592

Brömel, A.; U. Lippmann, H. Gross  
**Freeform surface descriptions. Part I: Mathematical representations**  
Advanced Optical Technologies 6 (5) (2017) p. 327-336, ISSN 2192-8576

Brömel, A.; C. Liu, Y. Zhong, H. Gross  
**Freeform surface descriptions. Part II: Application benchmark**  
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Buldt, J.; M. Müller, R. Klas, T. Eidam, J. Limpert, A. Tünnermann  
**Temporal contrast enhancement of energetic laser pulses by filtered self-phase-modulation-broadened spectra**  
Optics Letters 42 (19) (2017) p. 3761-3764, ISSN 0146-9592

Chemnitz, M.; M. Gebhardt, C. Gaida, F. Stutzki, J. Kobelke, J. Limpert, A. Tünnermann, M.A. Schmidt  
**Hybrid soliton dynamics in liquid-core fibres**  
Nature Communications 8 (2017) p. 42, ISSN 2041-1723

Decker, M.; T. Pertsch, I. Staude  
**Strong coupling in hybrid metal-dielectric nanoresonators**  
Philosophical Transactions of the Royal Society A-mathematical Physical and Engineering Sciences 375 (2090) (2017) p. 20160312, ISSN 1364-503X

Diener, R.; J. Tepper, L. Labadie, T. Pertsch, S. Nolte, S. Minardi  
**Towards 3D-photonics, multi-telescope beam combiners for mid-infrared astrointerferometry**  
Optics Express 25 (16) (2017) p. 19262-19274, ISSN 1094-4087

Fasel, J.; A.S. Knoepfli, D. Millan, R. Ramm, P. Kühmstedt  
**Quantitative Evaluation of 3D Printed Anatomical Objects: A Comparison of Optical Surface Scanning and Micro-Computed Tomography**  
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Felde, N.; L. Coriand, S. Schröder, A. Duparre, A. Tünnermann  
**Defined wetting properties of optical surfaces**  
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Finck, A.v.; S. Wilbrandt, O. Stenzel, S. Schröder  
**Reducing light scattering from surface contaminations by thin film design**  
Advanced Optical Technologies 6 (5) (2017) p. 371-378, ISSN 2192-8576

Franke, C.; O. Stenzel, S. Wilbrandt, S. Schröder, L. Coriand, N. Felde, A. Tünnermann  
**Porosity and optical properties of zirconia films prepared by plasma ion assisted deposition**  
Applied Optics 56 (13) (2017) p. 3913-3922, ISSN 1559-128X

Gebhardt, M.; C. Gaida, F. Stutzki, S. Hadrich, C. Jauregui, J. Limpert, A. Tünnermann  
**High average power nonlinear compression to 4 GW, sub-50 fs pulses at 2  $\mu$  m wavelength**  
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Gebhardt, M.; C. Gaida, T. Heuermann, F. Stutzki, C. Jauregui, J. Antonio-Lopez, A. Schulzgen, R. Amezcua-Correa, J. Limpert, A. Tünnermann  
**Nonlinear pulse compression to 43 W GW-class few-cycle pulses at 2  $\mu$  m wavelength**  
Optics Letters 42 (20) (2017) p. 4179-4182, ISSN 0146-9592

Goebel, T.A.; C. Voigtländer, R.G. Kramer, D. Richter, M. Heck, M.P. Siems, C. Matzdorf, C. Reinlein, M. Appelfelder, T. Schreiber, J.U. Thomas, A. Tünnermann, S. Nolte  
**Flexible femtosecond inscription of fiber Bragg gratings by an optimized deformable mirror**  
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Gottschall, T.; J. Limpert, A. Tünnermann  
**Ultra-short pulse fiber optical parametric oscillator**  
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**Optical emulation of photon-pair generation in nonlinear lossy waveguides**  
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**High-bit rate ultra-compact light routing with mode-selective on-chip nanoantennas**  
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**Fused silica GRISMs manufactured by hydrophilic direct bonding at moderate heating**  
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- Kemper, F.; E. Beckert, R. Eberhardt, A. Tünnermann  
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**Two-beam femtosecond coherent anti-Stokes Raman scattering for thermometry on CO<sub>2</sub>**  
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- Klein, A.; N. Janunts, S. Schmidt, S. Bin Hasan, C. Etrich, S. Fasold, T. Kaiser, C. Rockstuhl, T. Pertsch  
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**Dual-focus coherent anti-Stokes Raman scattering microscopy using a compact two-beam fiber laser source**  
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- Liu, C.; C. Straif, T. Flügel-Paul, U.D. Zeitner, H. Gross  
**Comparison of hyperspectral imaging spectrometer designs and the improvement of system performance with freeform surfaces**  
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*Organic Electronics* 44 (2017) p. 115-119, ISSN 1566-1199
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**Chip-on-the-tip compact flexible endoscopic epifluorescence video-microscope for in-vivo imaging in medicine and biomedicine**  
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**Method to simulate and analyse induced stresses for laser crystal packaging technologies**  
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**High Average Power Near-Infrared Few-Cycle Lasers**  
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