

Alexander Heisterkamp

List of Publications by Year in descending order

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143
papers

3,148
citations

218677

26
h-index

175258

52
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149
all docs

149
docs citations

149
times ranked

3580
citing authors

#	ARTICLE	IF	CITATIONS
1	Balanced Heterodyne Brillouin Spectroscopy Towards Tissue Characterization. IEEE Access, 2022, 10, 24340-24348.	4.2	1
2	Investigation of Colonic Regeneration via Precise Damage Application Using Femtosecond Laser-Based Nanosurgery. Cells, 2022, 11, 1143.	4.1	2
3	Mechanical Stimulation Induces <i>Vasa Vasorum</i> Capillary Alignment in a Fibrin-Based <i>Tunica Adventitia</i> . Tissue Engineering - Part A, 2022, 28, 818-832.	3.1	2
4	Evaluation of laser induced sarcomere micro-damage: Role of damage extent and location in cardiomyocytes. PLoS ONE, 2021, 16, e0252346.	2.5	2
5	Probing interneuronal cell communication via optogenetic stimulation. Translational Biophotonics, 2021, 3, e202100002.	2.7	0
6	3D printed microfluidic lab-on-a-chip device for fiber-based dual beam optical manipulation. Scientific Reports, 2021, 11, 14584.	3.3	15
7	Intracellular Cargo Delivery Induced by Irradiating Polymer Substrates with Nanosecond-Pulsed Lasers. ACS Biomaterials Science and Engineering, 2021, 7, 5129-5134.	5.2	2
8	Anionic fluorophore-assisted fabrication of gold microstructures inside a hydrogel by multi-photon photoreduction. Optical Materials Express, 2021, 11, 48.	3.0	3
9	How Localized Z-Disc Damage Affects Force Generation and Gene Expression in Cardiomyocytes. Bioengineering, 2021, 8, 213.	3.5	2
10	Establishment of a guided, in vivo, multi-channel, abdominal, tissue imaging approach. Scientific Reports, 2020, 10, 9224.	3.3	3
11	Probing Ligand-Receptor Interaction in Living Cells Using Force Measurements With Optical Tweezers. Frontiers in Bioengineering and Biotechnology, 2020, 8, 598459.	4.1	8
12	Longitudinal imaging and femtosecond laser manipulation of the liver: How to generate and trace single-cell-resolved micro-damage in vivo. PLoS ONE, 2020, 15, e0240405.	2.5	1
13	Fabrication of a Monolithic Lab-on-a-Chip Platform with Integrated Hydrogel Waveguides for Chemical Sensing. Sensors, 2019, 19, 4333.	3.8	21
14	Parameters for Optoperforation-Induced Killing of Cancer Cells Using Gold Nanoparticles Functionalized With the C-terminal Fragment of Clostridium Perfringens Enterotoxin. International Journal of Molecular Sciences, 2019, 20, 4248.	4.1	8
15	Femtosecond laser-based nanosurgery reveals the endogenous regeneration of single Z-discs including physiological consequences for cardiomyocytes. Scientific Reports, 2019, 9, 3625.	3.3	10
16	Formation of three-dimensional tubular endothelial cell networks under defined serum-free cell culture conditions in human collagen hydrogels. Scientific Reports, 2019, 9, 5437.	3.3	62
17	Spatially-targeted laser fabrication of multi-metal microstructures inside a hydrogel. Optics Express, 2019, 27, 14657.	3.4	21
18	Effects of cell state and staining on femtosecond laser nanosurgery. Journal of Biophotonics, 2018, 11, e201700344.	2.3	4

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19	Shrinkable silver diffraction grating fabricated inside a hydrogel using 522-nm femtosecond laser. Scientific Reports, 2018, 8, 187.	3.3	23
20	Gold nanoparticle-mediated laser stimulation induces a complex stress response in neuronal cells. Scientific Reports, 2018, 8, 6533.	3.3	21
21	Time resolved 3D live-cell imaging on implants. PLoS ONE, 2018, 13, e0205411.	2.5	1
22	CRISPR/Cas9 Genome Editing Using Gold Nanoparticle-Mediated Laserporation. Advanced Biology, 2018, 2, 1700184.	3.0	16
23	Enabling second harmonic generation as a contrast mechanism for optical projection tomography (OPT) and scanning laser optical tomography (SLOT). Biomedical Optics Express, 2018, 9, 2627.	2.9	7
24	Investigation of second harmonic generation and multispectral imaging as new contrast mechanisms in scanning laser optical tomography. , 2018, , .		1
25	Development of Laser-Structured Liquid-Infused Titanium with Strong Biofilm-Repellent Properties. ACS Applied Materials & Interfaces, 2017, 9, 9359-9368.	8.0	70
26	Intracellular localization and delivery of plasmid DNA by biodegradable microsphere-mediated femtosecond laser optoporation. Journal of Biophotonics, 2017, 10, 1723-1731.	2.3	10
27	Intracellular Delivery Using Nanosecond-Laser Excitation of Large-Area Plasmonic Substrates. ACS Nano, 2017, 11, 3671-3680.	14.6	63
28	Gold nanoparticle-mediated laser stimulation causes a complex stress signal in neuronal cells. Proceedings of SPIE, 2017, , .	0.8	0
29	Holographically generated structured illumination for cell stimulation in optogenetics. Proceedings of SPIE, 2017, , .	0.8	0
30	Structural damage of Bacillus subtilis biofilms using pulsed laser interaction with gold thin films. Journal of Biophotonics, 2017, 10, 1043-1052.	2.3	1
31	Modulation of cardiomyocyte activity using pulsed laser irradiated gold nanoparticles. Biomedical Optics Express, 2017, 8, 177.	2.9	35
32	Analysis of poration-induced changes in cells from laser-activated plasmonic substrates. Biomedical Optics Express, 2017, 8, 4756.	2.9	16
33	Scanning laser optical tomography for in toto imaging of the murine cochlea. PLoS ONE, 2017, 12, e0175431.	2.5	16
34	Three-dimensional hard and soft tissue imaging of the human cochlea by scanning laser optical tomography (SLOT). PLoS ONE, 2017, 12, e0184069.	2.5	14
35	Claudin-1, -3, -4 and -7 gene expression analyses in canine prostate carcinoma and mammary tissue derived cell lines. Neoplasia, 2016, 63, 231-8.	1.6	12
36	Nonlinear laser scanning microscopy of oral multispecies-biofilms: fixative induced fluorescence as a fast and economical in vitro screening method. BioNanoMaterials, 2016, 17, 73-77.	1.4	1

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37	Gold Nanoparticle-Mediated Delivery of Molecules into Primary Human Gingival Fibroblasts Using ns-Laser Pulses: A Pilot Study. <i>Materials</i> , 2016, 9, 397.	2.9	7
38	Biodegradable microsphere-mediated cell perforation in microfluidic channel using femtosecond laser. <i>Journal of Biomedical Optics</i> , 2016, 21, 055001.	2.6	6
39	HD DVD substrates for surface enhanced Raman spectroscopy analysis: fabrication, theoretical predictions and practical performance. <i>RSC Advances</i> , 2016, 6, 44163-44169.	3.6	12
40	Optical and electron microscopy study of laser-based intracellular molecule delivery using peptide-conjugated photodispersible gold nanoparticle agglomerates. <i>Journal of Nanobiotechnology</i> , 2016, 14, 2.	9.1	19
41	Femtosecond laser direct writing of metal microstructure in a stretchable poly(ethylene glycol) diacrylate (PEGDA) hydrogel. <i>Optics Letters</i> , 2016, 41, 1392.	3.3	28
42	Three-dimensional imaging of intracochlear tissue by scanning laser optical tomography (SLOT). , 2016, , .		1
43	Data of the molecular dynamics simulations of mutations in the human connexin46 docking interface. <i>Data in Brief</i> , 2016, 7, 93-99.	1.0	6
44	InÂvivo nonlinear imaging of corneal structures with special focus on BALB/c and streptozotocin-diabetic Thy1-YFP mice. <i>Experimental Eye Research</i> , 2016, 146, 137-144.	2.6	13
45	Signal and response properties indicate an optoacoustic effect underlying the intra-cochlear laser-optical stimulation. , 2016, , .		1
46	The cataract related mutation N188T in human connexin46 (hCx46) revealed a critical role for residue N188 in the docking process of gap junction channels. <i>Biochimica Et Biophysica Acta - Biomembranes</i> , 2016, 1858, 57-66.	2.6	20
47	Comparison of Corneal Riboflavin Gradients Using Dextran and HPMC Solutions. <i>Journal of Refractive Surgery</i> , 2016, 32, 798-802.	2.3	37
48	Two-Photon Fluorescence Microscopy for Determination of the Riboflavin Concentration in the Anterior Corneal Stroma When Using the Dresden Protocol. , 2015, 56, 6740.		10
49	Tile-Based Two-Dimensional Phase Unwrapping for Digital Holography Using a Modular Framework. <i>PLoS ONE</i> , 2015, 10, e0143186.	2.5	4
50	Characterization of nanoparticle mediated laser transfection by femtosecond laser pulses for applications in molecular medicine. <i>Journal of Nanobiotechnology</i> , 2015, 13, 10.	9.1	50
51	Four-wave mixing microscopy: a high potential nonlinear imaging method. , 2015, , .		0
52	Spectral behavior of second harmonic signals from organic and non-organic materials in multiphoton microscopy. <i>AIP Advances</i> , 2015, 5, 084903.	1.3	16
53	Biophysical effects in off-resonant gold nanoparticle mediated (GNOME) laser transfection of cell lines, primary- and stem cells using fs laser pulses. <i>Journal of Biophotonics</i> , 2015, 8, 646-658.	2.3	23
54	Molecular orientation sensitive second harmonic microscopy by radially and azimuthally polarized light. <i>Biomedical Optics Express</i> , 2014, 5, 2231.	2.9	24

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55	Plasmonic laser treatment for Morpholino oligomer delivery in antisense applications. Journal of Biophotonics, 2014, 7, 825-833.	2.3	17
56	Femtosecond optical injection of intact plant cells using a reconfigurable platform. , 2014, , .		1
57	Noninvasive in vivo imaging by confocal laser scanning microscopy of gingival tissues following natural plaque deposition. Journal of Clinical Periodontology, 2014, 41, 321-326.	4.9	4
58	Charge Balancing of Model Gold-Nanoparticle-Peptide Conjugates Controlled by the Peptide's Net Charge and the Ligand to Nanoparticle Ratio. Journal of Physical Chemistry C, 2014, 118, 10302-10313.	3.1	37
59	Enhancement of extracellular molecule uptake in plasmonic laser perforation. Journal of Biophotonics, 2014, 7, 474-482.	2.3	34
60	The role of the C-terminus in functional expression and internalization of rat connexin46 (rCx46). Journal of Bioenergetics and Biomembranes, 2013, 45, 59-70.	2.3	9
61	Breakthroughs in Photonics 2012: Femtosecond-Laser Nanomachining. IEEE Photonics Journal, 2013, 5, 0700506-0700506.	2.0	2
62	Application of Plasmonics in Biophotonics: Laser and Nanostructures for Cell Manipulation. NATO Science for Peace and Security Series B: Physics and Biophysics, 2013, , 305-313.	0.3	0
63	Imaging of the mouse lung with scanning laser optical tomography (SLOT). Proceedings of SPIE, 2013, , .	0.8	0
64	Development of Implantable Autologous Small-Calibre Vascular Grafts from Peripheral Blood Samples. Zentralblatt Fur Chirurgie, 2013, 138, 173-179.	0.3	9
65	High-throughput optical injection of mammalian cells using a non-diffracting beam in a microfluidic platform. , 2013, , .		0
66	In situ optical coherence tomography of percutaneous implant-tissue interfaces in a murine model. Biomedizinische Technik, 2013, 58, 359-67.	0.8	2
67	Femtosecond Optoinjection of Intact Tobacco BY-2 Cells Using a Reconfigurable Photoporation Platform. PLoS ONE, 2013, 8, e79235.	2.5	11
68	Gold Nanoparticle Mediated Laser Transfection for Efficient siRNA Mediated Gene Knock Down. PLoS ONE, 2013, 8, e58604.	2.5	94
69	Imaging of the mouse lung with scanning laser optical tomography (SLOT). Journal of Applied Physiology, 2012, 113, 975-983.	2.5	34
70	Cataract-associated D3Y mutation of human connexin46 (hCx46) increases the dye coupling of gap junction channels and suppresses the voltage sensitivity of hemichannels. Journal of Bioenergetics and Biomembranes, 2012, 44, 607-614.	2.3	13
71	TNF- α induced secretion of HMGB1 from non-immune canine mammary epithelial cells (MTH53A). Cytokine, 2012, 57, 210-220.	3.2	23
72	High-throughput optical injection of mammalian cells using a Bessel light beam. Lab on A Chip, 2012, 12, 4816.	6.0	33

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73	Scanning Laser Optical Tomography Resolves Structural Plasticity during Regeneration in an Insect Brain. PLoS ONE, 2012, 7, e41236.	2.5	13
74	Mechanisms of femtosecond laser cell surgery in the low-density plasma regime. , 2011, , .		0
75	Interaction dynamics of fs-laser induced cavitation bubbles and their impact on the laser-tissue-interaction of modern ophthalmic laser systems. Proceedings of SPIE, 2011, , .	0.8	1
76	Focal spot shaping for femtosecond laser pulse photodisruption through turbid media. Proceedings of SPIE, 2011, , .	0.8	0
77	Superresolved femtosecond laser nanosurgery of cells. Biomedical Optics Express, 2011, 2, 264.	2.9	5
78	Mechanisms of high-order photobleaching and its relationship to intracellular ablation. Biomedical Optics Express, 2011, 2, 805.	2.9	34
79	3D imaging of biofilms on implants by detection of scattered light with a scanning laser optical tomograph. Biomedical Optics Express, 2011, 2, 2982.	2.9	27
80	Highly efficient 3D fluorescence microscopy with a scanning laser optical tomograph. Optics Express, 2011, 19, 5419.	3.4	72
81	Two-photon induced collagen cross-linking in bioartificial cardiac tissue. Optics Express, 2011, 19, 15996.	3.4	24
82	Spatial beam shaping for lowering the threshold energy for femtosecond laser pulse photodisruption. , 2011, , .		0
83	Short-Term Corneal Response to Cross-Linking in Rabbit Eyes Assessed by In Vivo Confocal Laser Scanning Microscopy and Histology. Cornea, 2011, 30, 196-203.	1.7	27
84	Action potentials in primary osteoblasts and in the MG-63 osteoblast-like cell line. Journal of Bioenergetics and Biomembranes, 2011, 43, 311-322.	2.3	16
85	Mechanisms of gold nanoparticle mediated ultrashort laser cell membrane perforation. , 2011, , .		5
86	Superresolved femtosecond laser nanosurgery of cells. , 2011, , .		1
87	Combined Nonlinear and Femtosecond Confocal Laser-Scanning Microscopy of Rabbit Corneas after Photochemical Cross-Linking. , 2011, 52, 4247.		27
88	A Novel Miniaturized Multimodal Bioreactor for Continuous <i>In Situ</i> Assessment of Bioartificial Cardiac Tissue During Stimulation and Maturation. Tissue Engineering - Part C: Methods, 2011, 17, 463-473.	2.1	97
89	Gold nanoparticle mediated cell manipulation using fs and ps laser pulses for cell perforation and transfection. Proceedings of SPIE, 2011, , .	0.8	1
90	Femtosecond laser-induced fusion of nonadherent cells and two-cell porcine embryos. Journal of Biomedical Optics, 2011, 16, 088001.	2.6	19

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91	Model Based 3D Segmentation and OCT Image Undistortion of Percutaneous Implants. Lecture Notes in Computer Science, 2011, 14, 454-462.	1.3	3
92	Functional enucleation of porcine oocytes for somatic cell nuclear transfer using femtosecond laser pulses. , 2010, , .		1
93	Applying optical Fourier filtering to standard optical projection tomography. , 2010, , .		2
94	Optical forces in biophotonics: transfection and cell sorting. , 2010, , .		0
95	Visualizing of fs laser pulse induced micro-incisions inside crystalline lens tissue. Proceedings of SPIE, 2010, , .	0.8	0
96	Three-dimensional multimodal microscopy of rabbit cornea after cross-linking treatment. , 2010, , .		0
97	Ultrashort laser pulses in regenerative medicine. Optik & Photonik, 2010, 5, 38-40.	0.2	2
98	In vivo optical coherence tomography of percutaneous implants in hairless mice. , 2010, , .		1
99	Ultrashort laser pulse cell manipulation using nano- and micro- materials. , 2010, , .		4
100	Influence of laser parameters and staining on femtosecond laser-based intracellular nanosurgery. Biomedical Optics Express, 2010, 1, 587.	2.9	32
101	Fs-laser-induced Ca ²⁺ concentration change during membrane perforation for cell transfection. Optics Express, 2010, 18, 2219.	3.4	8
102	Combined multiphoton imaging and automated functional enucleation of porcine oocytes using femtosecond laser pulses. Journal of Biomedical Optics, 2010, 15, 046006.	2.6	25
103	Fs-laser cell perforation using gold nanoparticles of different shapes. , 2010, , .		7
104	Plasmonic perforation of living cells using ultrashort laser pulses and gold nanoparticles. Proceedings of SPIE, 2009, , .	0.8	12
105	Purinergetic signalling in rat GFSHR-17 granulosa cells: an in vitro model of granulosa cells in maturing follicles. Journal of Bioenergetics and Biomembranes, 2009, 41, 85-94.	2.3	9
106	Repetition rate dependency of low-density plasma effects during femtosecond-laser-based surgery of biological tissue. Applied Physics B: Lasers and Optics, 2009, 97, 695-699.	2.2	16
107	Visualization of femtosecond laser pulseâ€“induced microincisions inside crystalline lens tissue. Journal of Cataract and Refractive Surgery, 2009, 35, 1979-1983.	1.5	14
108	Repetition rate dependency of reactive oxygen species formation during femtosecond laserâ€“based cell surgery. Journal of Biomedical Optics, 2009, 14, 054040.	2.6	23

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109	Three dimensional numerical simulation of complex optical systems using the coherent transfer function. , 2009, , .		1
110	Femtosecond laser based enucleation of porcine oocytes for somatic cell nuclear transfer. Proceedings of SPIE, 2009, , .	0.8	0
111	Reflective confocal laser scanning microscopy and nonlinear microscopy of cross-linked rabbit cornea. , 2009, , .		0
112	Nanoparticle mediated laser cell perforation. , 2009, , .		0
113	Three dimensional numerical simulation of complex optical systems using the coherent transfer function. , 2009, , .		0
114	Nanoparticle mediated laser cell perforation. , 2009, , .		0
115	Numerical modeling of nonlinear plasma formation in high-NA micromachining of transparent materials and biological cells using ultrashort laser pulses. , 2008, , .		1
116	Quantified femtosecond laser based opto-perforation of living GFSHR-17 and MTH53 a cells. Optics Express, 2008, 16, 3021.	3.4	111
117	Investigation of reactive oxygen species formation in living cells during femtosecond laser based cell surgery. , 2008, , .		0
118	Live cell opto-injection by femtosecond laser pulses. , 2007, , .		2
119	Computational model for nonlinear plasma formation in high NA micromachining of transparent materials and biological cells. Optics Express, 2007, 15, 10303.	3.4	61
120	Fsâ€ Laser Scissors for Photobleaching, Ablation in Fixed Samples and Living Cells, and Studies of Cell Mechanics. Methods in Cell Biology, 2007, 82, 293-307.	1.1	9
121	Viscoelastic Retraction of Single Living Stress Fibers and Its Impact on Cell Shape, Cytoskeletal Organization, and Extracellular Matrix Mechanics. Biophysical Journal, 2006, 90, 3762-3773.	0.5	601
122	Multiphoton microscopy for cell surgery. , 2006, , .		0
123	Streak formation as side effect of optical breakdown during processing the bulk of transparent Kerr media with ultra-short laser pulses. Applied Physics B: Lasers and Optics, 2005, 80, 247-253.	2.2	29
124	Numerical calculation of nonlinear ultrashort laser pulse propagation in transparent Kerr media. , 2005, , .		3
125	Pulse energy dependence of subcellular dissection by femtosecond laser pulses. Optics Express, 2005, 13, 3690.	3.4	169
126	First safety study of femtosecond laser photodisruption in animal lenses: Tissue morphology and cataractogenesis. Journal of Cataract and Refractive Surgery, 2005, 31, 2386-2394.	1.5	70

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127	Nanosurgery in live cells using ultrashort laser pulses. , 2005, 5695, 230.		1
128	Numerical calculation of nonlinear ultrashort laser pulse propagation in water. , 2004, , .		1
129	Investigations for the correction of presbyopia by fs-laser-induced cuts. , 2004, , .		6
130	Intrastromal refractive surgery with ultrashort laser pulses: in vivo study on the rabbit eye. Graefe's Archive for Clinical and Experimental Ophthalmology, 2003, 241, 511-517.	1.9	68
131	Medical and biological applications for ultrafast laser pulses. , 2003, , .		5
132	First in-vivo studies of presbyopia treatment with ultrashort laser pulses. , 2003, , .		6
133	Applications of ultrafast lasers in ophthalmology. , 2003, 5142, 146.		2
134	Ultrafast laser pulses for medical applications. , 2002, , .		18
135	<title>Intrastromal refractive surgery with ultrashort laser pulses in living animals</title>. , 2002, , .		1
136	Nonlinear side effects of fs pulses inside corneal tissue during photodisruption. Applied Physics B: Lasers and Optics, 2002, 74, 419-425.	2.2	82
137	Intrastromal Refractive Surgery Using Ultrashort Laser Pulses. Medical Laser Application: International Journal for Laser Treatment and Research, 2002, 17, 4-8.	0.3	1
138	<title>Optimization of the parameters for intrastromal refractive surgery with ultrashort laser pulses</title>. , 2001, , .		1
139	Nonlinear effects inside corneal tissue after fs-photodisruption. , 2001, , .		2
140	<title>Intrastromal refractive surgery by ultrashort laser pulses: side effects and mechanisms</title>. , 2000, , .		4
141	Intrastromal cutting effects in rabbit cornea using femtosecond laser pulses. , 2000, 4161, 52.		3
142	Application of ultrashort laser pulses for intrastromal refractive surgery. Graefe's Archive for Clinical and Experimental Ophthalmology, 2000, 238, 33-39.	1.9	201
143	Chemical and physical side effects at application of ultrashort laser pulses for intrastromal refractive surgery. Journal of Optics, 2000, 2, 59-64.	1.5	71