

# Alexander Heisterkamp

## List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/1806452/publications.pdf>

Version: 2024-02-01

143  
papers

3,148  
citations

218677

26  
h-index

175258

52  
g-index

149  
all docs

149  
docs citations

149  
times ranked

3580  
citing authors

#	ARTICLE	IF	CITATIONS
1	Viscoelastic Retraction of Single Living Stress Fibers and Its Impact on Cell Shape, Cytoskeletal Organization, and Extracellular Matrix Mechanics. <i>Biophysical Journal</i> , 2006, 90, 3762-3773.	0.5	601
2	Application of ultrashort laser pulses for intrastromal refractive surgery. <i>Graefe's Archive for Clinical and Experimental Ophthalmology</i> , 2000, 238, 33-39.	1.9	201
3	Pulse energy dependence of subcellular dissection by femtosecond laser pulses. <i>Optics Express</i> , 2005, 13, 3690.	3.4	169
4	Quantified femtosecond laser based opto-perforation of living GFSHR-17 and MTH53 a cells. <i>Optics Express</i> , 2008, 16, 3021.	3.4	111
5	A Novel Miniaturized Multimodal Bioreactor for Continuous <i>In Situ</i> Assessment of Bioartificial Cardiac Tissue During Stimulation and Maturation. <i>Tissue Engineering - Part C: Methods</i> , 2011, 17, 463-473.	2.1	97
6	Gold Nanoparticle Mediated Laser Transfection for Efficient siRNA Mediated Gene Knock Down. <i>PLoS ONE</i> , 2013, 8, e58604.	2.5	94
7	Nonlinear side effects of fs pulses inside corneal tissue during photodisruption. <i>Applied Physics B: Lasers and Optics</i> , 2002, 74, 419-425.	2.2	82
8	Highly efficient 3D fluorescence microscopy with a scanning laser optical tomograph. <i>Optics Express</i> , 2011, 19, 5419.	3.4	72
9	Chemical and physical side effects at application of ultrashort laser pulses for intrastromal refractive surgery. <i>Journal of Optics</i> , 2000, 2, 59-64.	1.5	71
10	First safety study of femtosecond laser photodisruption in animal lenses: Tissue morphology and cataractogenesis. <i>Journal of Cataract and Refractive Surgery</i> , 2005, 31, 2386-2394.	1.5	70
11	Development of Laser-Structured Liquid-Infused Titanium with Strong Biofilm-Repellent Properties. <i>ACS Applied Materials &amp; Interfaces</i> , 2017, 9, 9359-9368.	8.0	70
12	Intrastromal refractive surgery with ultrashort laser pulses: in vivo study on the rabbit eye. <i>Graefe's Archive for Clinical and Experimental Ophthalmology</i> , 2003, 241, 511-517.	1.9	68
13	Intracellular Delivery Using Nanosecond-Laser Excitation of Large-Area Plasmonic Substrates. <i>ACS Nano</i> , 2017, 11, 3671-3680.	14.6	63
14	Formation of three-dimensional tubular endothelial cell networks under defined serum-free cell culture conditions in human collagen hydrogels. <i>Scientific Reports</i> , 2019, 9, 5437.	3.3	62
15	Computational model for nonlinear plasma formation in high NA micromachining of transparent materials and biological cells. <i>Optics Express</i> , 2007, 15, 10303.	3.4	61
16	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
17	Charge Balancing of Model Gold-Nanoparticle-Peptide Conjugates Controlled by the Peptide's Net Charge and the Ligand to Nanoparticle Ratio. <i>Journal of Physical Chemistry C</i> , 2014, 118, 10302-10313.	3.1	37
18	Comparison of Corneal Riboflavin Gradients Using Dextran and HPMC Solutions. <i>Journal of Refractive Surgery</i> , 2016, 32, 798-802.	2.3	37

#	ARTICLE	IF	CITATIONS
19	Modulation of cardiomyocyte activity using pulsed laser irradiated gold nanoparticles. Biomedical Optics Express, 2017, 8, 177.	2.9	35
20	Mechanisms of high-order photobleaching and its relationship to intracellular ablation. Biomedical Optics Express, 2011, 2, 805.	2.9	34
21	Imaging of the mouse lung with scanning laser optical tomography (SLOT). Journal of Applied Physiology, 2012, 113, 975-983.	2.5	34
22	Enhancement of extracellular molecule uptake in plasmonic laser perforation. Journal of Biophotonics, 2014, 7, 474-482.	2.3	34
23	High-throughput optical injection of mammalian cells using a Bessel light beam. Lab on A Chip, 2012, 12, 4816.	6.0	33
24	Influence of laser parameters and staining on femtosecond laser-based intracellular nanosurgery. Biomedical Optics Express, 2010, 1, 587.	2.9	32
25	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
26	Femtosecond laser direct writing of metal microstructure in a stretchable poly(ethylene glycol) diacrylate (PEGDA) hydrogel. Optics Letters, 2016, 41, 1392.	3.3	28
27	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
28	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
29	Combined Nonlinear and Femtosecond Confocal Laser-Scanning Microscopy of Rabbit Corneas after Photochemical Cross-Linking. , 2011, 52, 4247.		27
30	Combined multiphoton imaging and automated functional enucleation of porcine oocytes using femtosecond laser pulses. Journal of Biomedical Optics, 2010, 15, 046006.	2.6	25
31	Two-photon induced collagen cross-linking in bioartificial cardiac tissue. Optics Express, 2011, 19, 15996.	3.4	24
32	Molecular orientation sensitive second harmonic microscopy by radially and azimuthally polarized light. Biomedical Optics Express, 2014, 5, 2231.	2.9	24
33	Repetition rate dependency of reactive oxygen species formation during femtosecond laser-based cell surgery. Journal of Biomedical Optics, 2009, 14, 054040.	2.6	23
34	TNF- $\alpha$ induced secretion of HMGB1 from non-immune canine mammary epithelial cells (MTH53A). Cytokine, 2012, 57, 210-220.	3.2	23
35	Biophysical effects in off-resonant gold nanoparticle mediated (GNOME) laser transfection of cell lines, primary- and stem cells using fs laser pulses. Journal of Biophotonics, 2015, 8, 646-658.	2.3	23
36	Shrinkable silver diffraction grating fabricated inside a hydrogel using 522-nm femtosecond laser. Scientific Reports, 2018, 8, 187.	3.3	23

#	ARTICLE	IF	CITATIONS
37	Gold nanoparticle-mediated laser stimulation induces a complex stress response in neuronal cells. <i>Scientific Reports</i> , 2018, 8, 6533.	3.3	21
38	Fabrication of a Monolithic Lab-on-a-Chip Platform with Integrated Hydrogel Waveguides for Chemical Sensing. <i>Sensors</i> , 2019, 19, 4333.	3.8	21
39	Spatially-targeted laser fabrication of multi-metal microstructures inside a hydrogel. <i>Optics Express</i> , 2019, 27, 14657.	3.4	21
40	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
41	Femtosecond laser-induced fusion of nonadherent cells and two-cell porcine embryos. <i>Journal of Biomedical Optics</i> , 2011, 16, 088001.	2.6	19
42	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
43	Ultrafast laser pulses for medical applications. , 2002, , .		18
44	Plasmonic laser treatment for Morpholino oligomer delivery in antisense applications. <i>Journal of Biophotonics</i> , 2014, 7, 825-833.	2.3	17
45	Repetition rate dependency of low-density plasma effects during femtosecond-laser-based surgery of biological tissue. <i>Applied Physics B: Lasers and Optics</i> , 2009, 97, 695-699.	2.2	16
46	Action potentials in primary osteoblasts and in the MG-63 osteoblast-like cell line. <i>Journal of Bioenergetics and Biomembranes</i> , 2011, 43, 311-322.	2.3	16
47	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
48	Analysis of poration-induced changes in cells from laser-activated plasmonic substrates. <i>Biomedical Optics Express</i> , 2017, 8, 4756.	2.9	16
49	CRISPR/Cas9 Genome Editing Using Gold Nanoparticle-Mediated Laserporation. <i>Advanced Biology</i> , 2018, 2, 1700184.	3.0	16
50	Scanning laser optical tomography for in toto imaging of the murine cochlea. <i>PLoS ONE</i> , 2017, 12, e0175431.	2.5	16
51	3D printed microfluidic lab-on-a-chip device for fiber-based dual beam optical manipulation. <i>Scientific Reports</i> , 2021, 11, 14584.	3.3	15
52	Visualization of femtosecond laser pulse-induced microincisions inside crystalline lens tissue. <i>Journal of Cataract and Refractive Surgery</i> , 2009, 35, 1979-1983.	1.5	14
53	Three-dimensional hard and soft tissue imaging of the human cochlea by scanning laser optical tomography (SLOT). <i>PLoS ONE</i> , 2017, 12, e0184069.	2.5	14
54	Cataract-associated D3Y mutation of human connexin46 (hCx46) increases the dye coupling of gap junction channels and suppresses the voltage sensitivity of hemichannels. <i>Journal of Bioenergetics and Biomembranes</i> , 2012, 44, 607-614.	2.3	13

#	ARTICLE	IF	CITATIONS
55	Scanning Laser Optical Tomography Resolves Structural Plasticity during Regeneration in an Insect Brain. PLoS ONE, 2012, 7, e41236.	2.5	13
56	InÂvivo nonlinear imaging of corneal structures with special focus on BALB/c and streptozotocin-diabetic Thy1-YFP mice. Experimental Eye Research, 2016, 146, 137-144.	2.6	13
57	Plasmonic perforation of living cells using ultrashort laser pulses and gold nanoparticles. Proceedings of SPIE, 2009, , .	0.8	12
58	Claudin-1, -3, -4 and -7 gene expression analyses in canine prostate carcinoma and mammary tissue derived cell lines. Neoplasma, 2016, 63, 231-8.	1.6	12
59	HD DVD substrates for surface enhanced Raman spectroscopy analysis: fabrication, theoretical predictions and practical performance. RSC Advances, 2016, 6, 44163-44169.	3.6	12
60	Femtosecond Optoinjection of Intact Tobacco BY-2 Cells Using a Reconfigurable Photoporation Platform. PLoS ONE, 2013, 8, e79235.	2.5	11
61	Two-Photon Fluorescence Microscopy for Determination of the Riboflavin Concentration in the Anterior Corneal Stroma When Using the Dresden Protocol. , 2015, 56, 6740.		10
62	Intracellular localization and delivery of plasmid DNA by biodegradable microsphereâ€mediated femtosecond laser optoporation. Journal of Biophotonics, 2017, 10, 1723-1731.	2.3	10
63	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
64	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
65	Purinergic 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
66	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
67	Development of Implantable Autologous Small-Calibre Vascular Grafts from Peripheral Blood Samples. Zentralblatt Fur Chirurgie, 2013, 138, 173-179.	0.3	9
68	Fs-laser-induced Ca <sup>2+</sup> concentration change during membrane perforation for cell transfection. Optics Express, 2010, 18, 2219.	3.4	8
69	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
70	Probing Ligand-Receptor Interaction in Living Cells Using Force Measurements With Optical Tweezers. Frontiers in Bioengineering and Biotechnology, 2020, 8, 598459.	4.1	8
71	Fs-laser cell perforation using gold nanoparticles of different shapes. , 2010, , .		7
72	Gold Nanoparticle-Mediated Delivery of Molecules into Primary Human Gingival Fibroblasts Using ns-Laser Pulses: A Pilot Study. Materials, 2016, 9, 397.	2.9	7

#	ARTICLE	IF	CITATIONS
73	Enabling second harmonic generation as a contrast mechanism for optical projection tomography (OPT) and scanning laser optical tomography (SLOT). <i>Biomedical Optics Express</i> , 2018, 9, 2627.	2.9	7
74	First in-vivo studies of presbyopia treatment with ultrashort laser pulses. , 2003, , .		6
75	Investigations for the correction of presbyopia by fs-laser-induced cuts. , 2004, , .		6
76	Biodegradable microsphere-mediated cell perforation in microfluidic channel using femtosecond laser. <i>Journal of Biomedical Optics</i> , 2016, 21, 055001.	2.6	6
77	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
78	Medical and biological applications for ultrafast laser pulses. , 2003, , .		5
79	Superresolved femtosecond laser nanosurgery of cells. <i>Biomedical Optics Express</i> , 2011, 2, 264.	2.9	5
80	Mechanisms of gold nanoparticle mediated ultrashort laser cell membrane perforation. , 2011, , .		5
81	<title>Intrastromal refractive surgery by ultrashort laser pulses: side effects and mechanisms</title>. , 2000, , .		4
82	Ultrashort laser pulse cell manipulation using nano- and micro- materials. , 2010, , .		4
83	Nonâ€invasive in vivo imaging by confocal laser scanning microscopy of gingival tissues following natural plaque deposition. <i>Journal of Clinical Periodontology</i> , 2014, 41, 321-326.	4.9	4
84	Tile-Based Two-Dimensional Phase Unwrapping for Digital Holography Using a Modular Framework. <i>PLoS ONE</i> , 2015, 10, e0143186.	2.5	4
85	Effects of cell state and staining on femtosecond laser nanosurgery. <i>Journal of Biophotonics</i> , 2018, 11, e201700344.	2.3	4
86	Intrastromal cutting effects in rabbit cornea using femtosecond laser pulses. , 2000, 4161, 52.		3
87	Numerical calculation of nonlinear ultrashort laser pulse propagation in transparent Kerr media. , 2005, , .		3
88	Establishment of a guided, in vivo, multi-channel, abdominal, tissue imaging approach. <i>Scientific Reports</i> , 2020, 10, 9224.	3.3	3
89	Model Based 3D Segmentation and OCT Image Undistortion of Percutaneous Implants. <i>Lecture Notes in Computer Science</i> , 2011, 14, 454-462.	1.3	3
90	Anionic fluorophore-assisted fabrication of gold microstructures inside a hydrogel by multi-photon photoreduction. <i>Optical Materials Express</i> , 2021, 11, 48.	3.0	3

#	ARTICLE	IF	CITATIONS
91	Nonlinear effects inside corneal tissue after fs-photodisruption. , 2001, , .		2
92	Applications of ultrafast lasers in ophthalmology. , 2003, 5142, 146.		2
93	Live cell opto-injection by femtosecond laser pulses. , 2007, , .		2
94	Applying optical Fourier filtering to standard optical projection tomography. , 2010, , .		2
95	Ultrashort laser pulses in regenerative medicine. <i>Optik &amp; Photonik</i> , 2010, 5, 38-40.	0.2	2
96	Breakthroughs in Photonics 2012: Femtosecond-Laser Nanomachining. <i>IEEE Photonics Journal</i> , 2013, 5, 0700506-0700506.	2.0	2
97	In situ optical coherence tomography of percutaneous implant-tissue interfaces in a murine model. <i>Biomedizinische Technik</i> , 2013, 58, 359-67.	0.8	2
98	Evaluation of laser induced sarcomere micro-damage: Role of damage extent and location in cardiomyocytes. <i>PLoS ONE</i> , 2021, 16, e0252346.	2.5	2
99	Intracellular Cargo Delivery Induced by Irradiating Polymer Substrates with Nanosecond-Pulsed Lasers. <i>ACS Biomaterials Science and Engineering</i> , 2021, 7, 5129-5134.	5.2	2
100	Investigation of Colonic Regeneration via Precise Damage Application Using Femtosecond Laser-Based Nanosurgery. <i>Cells</i> , 2022, 11, 1143.	4.1	2
101	How Localized Z-Disc Damage Affects Force Generation and Gene Expression in Cardiomyocytes. <i>Bioengineering</i> , 2021, 8, 213.	3.5	2
102	Mechanical Stimulation Induces <i>Vasa Vasorum</i> Capillary Alignment in a Fibrin-Based <i>Tunica Adventitia</i> . <i>Tissue Engineering - Part A</i> , 2022, 28, 818-832.	3.1	2
103	<i>Optimization of the parameters for intrastromal refractive surgery with ultrashort laser pulses</i> . , 2001, , .		1
104	<i>Intrastromal refractive sugery with ultrashort laser pulses in living animals</i> . , 2002, , .		1
105	Intrastromal Refractive Surgery Using Ultrashort Laser Pulses. <i>Medical Laser Application: International Journal for Laser Treatment and Research</i> , 2002, 17, 4-8.	0.3	1
106	Numerical calculation of nonlinear ultrashort laser pulse propagation in water. , 2004, , .		1
107	Nanosurgery in live cells using ultrashort laser pulses. , 2005, 5695, 230.		1
108	Numerical modeling of nonlinear plasma formation in high-NA micromachining of transparent materials and biological cells using ultrashort laser pulses. , 2008, , .		1

#	ARTICLE	IF	CITATIONS
109	Three dimensional numerical simulation of complex optical systems using the coherent transfer function. , 2009, , .		1
110	Functional enucleation of porcine oocytes for somatic cell nuclear transfer using femtosecond laser pulses. , 2010, , .		1
111	In vivo optical coherence tomography of percutaneous implants in hairless mice. , 2010, , .		1
112	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
113	Superresolved femtosecond laser nanosurgery of cells. , 2011, , .		1
114	Gold nanoparticle mediated cell manipulation using fs and ps laser pulses for cell perforation and transfection. Proceedings of SPIE, 2011, , .	0.8	1
115	Femtosecond optical injection of intact plant cells using a reconfigurable platform. , 2014, , .		1
116	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
117	Three-dimensional imaging of intracochlear tissue by scanning laser optical tomography (SLOT). , 2016, , .		1
118	Signal and response properties indicate an optoacoustic effect underlying the intra-cochlear laser-optical stimulation. , 2016, , .		1
119	Structural damage of Bacillus subtilis biofilms using pulsed laser interaction with gold thin films. Journal of Biophotonics, 2017, 10, 1043-1052.	2.3	1
120	Time resolved 3D live-cell imaging on implants. PLoS ONE, 2018, 13, e0205411.	2.5	1
121	Investigation of second harmonic generation and multispectral imaging as new contrast mechanisms in scanning laser optical tomography. , 2018, , .		1
122	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
123	Balanced Heterodyne Brillouin Spectroscopy Towards Tissue Characterization. IEEE Access, 2022, 10, 24340-24348.	4.2	1
124	Multiphoton microscopy for cell surgery. , 2006, , .		0
125	Investigation of reactive oxygen species formation in living cells during femtosecond laser based cell surgery. , 2008, , .		0
126	Femtosecond laser based enucleation of porcine oocytes for somatic cell nuclear transfer. Proceedings of SPIE, 2009, , .	0.8	0



#	ARTICLE	IF	CITATIONS
127	Reflective confocal laser scanning microscopy and nonlinear microscopy of cross-linked rabbit cornea. , 2009, , .		0
128	Nanoparticle mediated laser cell perforation. , 2009, , .		0
129	Optical forces in biophotonics: transfection and cell sorting. , 2010, , .		0
130	Visualizing of fs laser pulse induced micro-incisions inside crystalline lens tissue. Proceedings of SPIE, 2010, , .	0.8	0
131	Three-dimensional multimodal microscopy of rabbit cornea after cross-linking treatment. , 2010, , .		0
132	Mechanisms of femtosecond laser cell surgery in the low-density plasma regime. , 2011, , .		0
133	Focal spot shaping for femtosecond laser pulse photodisruption through turbid media. Proceedings of SPIE, 2011, , .	0.8	0
134	Spatial beam shaping for lowering the threshold energy for femtosecond laser pulse photodisruption. , 2011, , .		0
135	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
136	Imaging of the mouse lung with scanning laser optical tomography (SLOT). Proceedings of SPIE, 2013, , .	0.8	0
137	High-throughput optical injection of mammalian cells using a non-diffracting beam in a microfluidic platform. , 2013, , .		0
138	Four-wave mixing microscopy: a high potential nonlinear imaging method. , 2015, , .		0
139	Gold nanoparticle-mediated laser stimulation causes a complex stress signal in neuronal cells. Proceedings of SPIE, 2017, , .	0.8	0
140	Holographically generated structured illumination for cell stimulation in optogenetics. Proceedings of SPIE, 2017, , .	0.8	0
141	Probing interneuronal cell communication via optogenetic stimulation. Translational Biophotonics, 2021, 3, e202100002.	2.7	0
142	Three dimensional numerical simulation of complex optical systems using the coherent transfer function. , 2009, , .		0
143	Nanoparticle mediated laser cell perforation. , 2009, , .		0