Martin Frenz

List of Publications by Year
in descending order

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144	4,176	101384	133063
papers	citations	36 h-index	59 g-index

147	147	147	3553
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Combined ultrasound and optoacoustic system for real-time high-contrast vascular imaging in vivo. IEEE Transactions on Medical Imaging, 2005, 24, 436-440.	5.4	298
2	Temporal backward projection of optoacoustic pressure transients using Fourier transform methods. Physics in Medicine and Biology, 2001, 46, 1863-1872.	1.6	235
3	Microsurgical and laser ablation analysis of interactions between the zones and layers of the tomato shoot apical meristem. Development (Cambridge), 2003, 130, 4073-4083.	1.2	196
4	Microsurgical and laser ablation analysis of leaf positioning and dorsoventral patterning in tomato. Development (Cambridge), 2005, 132, 15-26.	1.2	136
5	Lateral thermal damage along pulsed laser incisions. Lasers in Surgery and Medicine, 1990, 10, 262-274.	1.1	132
6	Effect of pulse duration on bubble formation and laser-induced pressure waves during holmium laser ablation. , 1996, 18, 278-293.		132
7	Computed Ultrasound Tomography in Echo Mode for Imaging Speed of Sound Using Pulse-Echo Sonography: Proof of Principle. Ultrasound in Medicine and Biology, 2015, 41, 235-250.	0.7	99
8	Fourier reconstruction in optoacoustic imaging using truncated regularized inverse k -space interpolation. Inverse Problems, 2007, 23, S51-S63.	1.0	97
9	Optoacoustic imaging using a three-dimensional reconstruction algorithm. IEEE Journal of Selected Topics in Quantum Electronics, 2001, 7, 918-923.	1.9	92
10	Characterization of optical properties of ZnO nanoparticles for quantitative imaging of transdermal transport. Biomedical Optics Express, 2011, 2, 3321.	1.5	89
11	Comparison of the effects of absorption coefficient and pulse duration of 2.12-Î¼m and 2.79-Î¼m radiation on laser ablation of tissue. IEEE Journal of Quantum Electronics, 1996, 32, 2025-2036.	1.0	88
12	Real-time three-dimensional optoacoustic imaging using an acoustic lens system. Applied Physics Letters, 2004, 85, 846-848.	1.5	80
13	In vitro model for the study of necrosis and apoptosis in native cartilage. Journal of Pathology, 2002, 198, 5-13.	2.1	73
14	Laserâ€“Tissue Interaction During Transmyocardial Laser Revascularization. Annals of Thoracic Surgery, 1997, 63, 640-647.	0.7	71
15	Photoacoustic waves excited in liquids by fiber-transmitted laser pulses. Journal of the Acoustical Society of America, 1998, 104, 890-897.	0.5	65
16	Vapor bubble generation around gold nano-particles and its application to damaging of cells. Biomedical Optics Express, 2011, 2, 291.	1.5	64
17	Full correction for spatially distributed speed-of-sound in echo ultrasound based on measuring aberration delays via transmit beam steering. Physics in Medicine and Biology, 2015, 60, 4497-4515.	1.6	61
18	Improved forward model for quantitative pulse-echo speed-of-sound imaging. Ultrasonics, 2020, 108, 106168.	2.1	61

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19	Temperature and pressure effects during erbium laser stapedotomy. , 1996, 18, 100-108.		60
20	Advantages and Dangers of Erbium Laser Application in Stapedotomy. Acta Oto-Laryngologica, 1999, 119, 207-213.	0.3	60
21	Metabolic pathway and distribution of superparamagnetic iron oxide nanoparticles: in vivo study. International Journal of Nanomedicine, 2011, 6, 1793.	3.3	60
22	Compressibility Anomalies in Stretched Water and Their Interplay with Density Anomalies. Journal of Physical Chemistry Letters, 2017, 8, 5519-5522.	2.1	58
23	Clutter elimination for deep clinical optoacoustic imaging using localised vibration tagging (LOVIT). Photoacoustics, 2013, 1, 19-29.	4.4	54
24	Starting mechanisms and dynamics of bubble formation induced by a Ho:Yttrium aluminum garnet laser in water. Journal of Applied Physics, 1998, 84, 5905-5912.	1.1	52
25	Optoacoustic tomography: time-gated measurement of pressure distributions and image reconstruction. Applied Optics, 2001, 40, 3800.	2.1	52
26	Polypyrrole-Coated Perfluorocarbon Nanoemulsions as a Sono-Photoacoustic Contrast Agent. Nano Letters, 2017, 17, 6184-6194.	4.5	51
27	Laser solder welding of articular cartilage: Tensile strength and chondrocyte viability. Lasers in Surgery and Medicine, 2001, 28, 427-434.	1.1	50
28	Glacialâ€“interglacial temperature change in the tropical West Pacific: AÂcomparison of stalagmite-based paleo-thermometers. Quaternary Science Reviews, 2015, 127, 90-116.	1.4	50
29	Real-time optoacoustic imaging using a Schlieren transducer. Applied Physics Letters, 2002, 81, 571-573.	1.5	48
30	Effect of irradiation distance on image contrast in epi-optoacoustic imaging of human volunteers. Biomedical Optics Express, 2014, 5, 3765.	1.5	45
31	Mechanisms of nanoparticle-mediated photomechanical cell damage. Biomedical Optics Express, 2012, 3, 435.	1.5	44
32	In vivo demonstration of reflection artifact reduction in photoacoustic imaging using synthetic aperture photoacoustic-guided focused ultrasound (PAFUSion). Biomedical Optics Express, 2016, 7, 2955.	1.5	42
33	Reduction of background in optoacoustic image sequences obtained under tissue deformation. Journal of Biomedical Optics, 2009, 14, 054011.	1.4	41
34	Liquidâ€“vapour homogenisation of fluid inclusions in stalagmites: Evaluation of a new thermometer for palaeoclimate research. Chemical Geology, 2011, 289, 39-47.	1.4	41
35	Femtosecond lasers in fluid-inclusion analysis: overcoming metastable phase states. European Journal of Mineralogy, 2007, 19, 693-706.	0.4	40
36	Transparent ITO coated PVDF transducer for optoacoustic depth profiling. Optics Communications, 2005, 253, 401-406.	1.0	39

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37	Optoacoustic infrared spectroscopy of soft tissue. Journal of Applied Physics, 2000, 88, 1632-1637.	1.1	38
38	Absolute measurement of molecular two-photon absorption cross-sections using a fluorescence saturation technique. Optics Express, 2006, 14, 8434.	1.7	37
39	Determining the optical properties of a gelatinâ€TiO_2 phantom at 780 nm. Biomedical Optics Express, 2012, 3, 418.	1.5	34
40	The effect of surface tension on liquidâ€“gas equilibria in isochoric systems and its application to fluid inclusions. Fluid Phase Equilibria, 2012, 314, 13-21.	1.4	34
41	Comment on â€œMaxima in the thermodynamic response and correlation functions of deeply supercooled waterâ€. Science, 2018, 360, .	6.0	32
42	Functional imaging of mucociliary phenomena. European Biophysics Journal, 2007, 37, 35-54.	1.2	31
43	Development of light-responsive porous polycarbonate membranes for controlled caffeine delivery. RSC Advances, 2013, 3, 23317.	1.7	31
44	Uptake of silica nanoparticles in the brain and effects on neuronal differentiation using different in vitro models. Nanomedicine: Nanotechnology, Biology, and Medicine, 2017, 13, 1195-1204.	1.7	31
45	Combination of fiber-guided pulsed erbium and holmium laser radiation for tissue ablation under water. Applied Optics, 1996, 35, 3328.	2.1	30
46	Quantitative comparison of frequency-domain and delay-and-sum optoacoustic image reconstruction including the effect of coherence factor weighting. Photoacoustics, 2020, 17, 100149.	4.4	30
47	Solder doped polycaprolactone scaffold enables reproducible laser tissue soldering. Lasers in Surgery and Medicine, 2008, 40, 716-725.	1.1	29
48	Nanoshell assisted laser soldering of vascular tissue. Lasers in Surgery and Medicine, 2011, 43, 975-983.	1.1	29
49	An in vitro toxicity evaluation of gold-, PLLA- and PCL-coated silica nanoparticles in neuronal cells for nanoparticle-assisted laser-tissue soldering. Toxicology in Vitro, 2014, 28, 990-998.	1.1	29
50	Multiple irradiation sensing of the optical effective attenuation coefficient for spectral correction in handheld OA imaging. Photoacoustics, 2016, 4, 70-80.	4.4	29
51	Comparision of laser-induced and classical ultasound. , 2003, , .		28
52	Intraluminal laser light source and external solder: In vivo evaluation of a new technique for microvascular anastomosis. Lasers in Surgery and Medicine, 2004, 35, 312-316.	1.1	28
53	Vessel orientation-dependent sensitivity of optoacoustic imaging using a linear array transducer. Journal of Biomedical Optics, 2013, 18, 1.	1.4	26
54	Indocyanine green loaded biocompatible nanoparticles: Stabilization of indocyanine green (ICG) using biocompatible silica-poly(Îµ-caprolactone) grafted nanocomposites. Journal of Photochemistry and Photobiology A: Chemistry, 2013, 261, 12-19.	2.0	26

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55	Towards clinical computed ultrasound tomography in echo-mode: Dynamic range artefact reduction. Ultrasonics, 2015, 62, 299-304.	2.1	26
56	Effect of laser soldering irradiation on covalent bonds of pure collagen. Lasers in Medical Science, 2007, 22, 10-14.	1.0	25
57	Phyllotaxis involves auxin drainage through leaf primordia. Development (Cambridge), 2015, 142, 1992-2001.	1.2	22
58	Study of clutter origin inin-vivoepi-optoacoustic imaging of human forearms. Journal of Optics (United Kingdom), 2016, 18, 094003.	1.0	22
59	Effects of silica nanoparticle exposure on mitochondrial function during neuronal differentiation. Journal of Nanobiotechnology, 2017, 15, 49.	4.2	22
60	Structural insights into semicrystalline states of electrospun nanofibers: a multiscale analytical approach. Nanoscale, 2019, 11, 7176-7187.	2.8	21
61	Determining gypsum growth temperatures using monophase fluid inclusionsâ€"Application to the giant gypsum crystals of Naica, Mexico. Geology, 2013, 41, 119-122.	2.0	20
62	Progress in biomedical photoacoustic imaging instrumentation toward clinical application. Journal of Applied Physics, 2020, 128, .	1.1	20
63	<title>Thermal and mechanical damage of corneal tissue after free-running and Q-switched mid-infrared laser ablation</title>. , 1994, 2077, 78.		19
64	Acute and chronic effects of transmyocardial laser revascularization in the nonischemic pig myocardium by using three laser systems. Lasers in Surgery and Medicine, 2000, 27, 438-450.	1.1	19
65	Plastic hollow waveguides: Properties and possibilities as a flexible radiation delivery system for CO2-laser radiation. Lasers in Surgery and Medicine, 1995, 16, 66-75.	1.1	18
66	Diffraction-free acoustic detection for optoacoustic depth profiling of tissue using an optically transparent polyvinylidene fluoride pressure transducer operated in backward and forward mode. Journal of Biomedical Optics, 2005, 10, 024035.	1.4	18
67	Bayesian Approach for a Robust Speed-of-Sound Reconstruction Using Pulse-Echo Ultrasound. IEEE Transactions on Medical Imaging, 2021, 40, 457-467.	5.4	18
68	Mineralisation of amethyst-bearing geodes in Ametista do Sul (Brazil) from low-temperature sedimentary brines: evidence from monophase liquid inclusions and stable isotopes. Mineralium Deposita, 2014, 49, 861-877.	1.7	17
69	Combined endoscopic erbium:YAG laser goniopuncture and cataract surgery. Journal of Cataract and Refractive Surgery, 2003, 29, 2155-2162.	0.7	16
70	Simultaneous triple-modality imaging of diffuse reflectance, optoacoustic pressure and ultrasonic scattering using an acoustic-resolution photoacoustic microscope: feasibility study. Laser Physics Letters, 2016, 13, 025605.	0.6	16
71	Physical Characteristics of Various Lasers Used in Stapes Surgery. , 2007, 65, 237-249.		15
72	Evaluation of endocytosis of silica particles used in biodegradable implants in the brain. Nanomedicine: Nanotechnology, Biology, and Medicine, 2016, 12, 1603-1613.	1.7	15

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73	Photoacoustic reflection artifact reduction using photoacoustic-guided focused ultrasound: comparison between plane-wave and element-by-element synthetic backpropagation approach. Biomedical Optics Express, 2017, 8, 2245.	1.5	15
74	<title>Spectral optoacoustic imaging using a scanning transducer</title>. , 2001, , .		14
75	Femtosecond lasers in fluid inclusion analysis: Three-dimensional imaging and determination of inclusion volume in quartz using second harmonic generation microscopy. Earth and Planetary Science Letters, 2007, 253, 359-368.	1.8	14
76	Multi-scale alignment of respiratory cilia and its relation to mucociliary function. Journal of Structural Biology, 2021, 213, 107680.	1.3	14
77	Monte Carlo modeling of polarized light propagation: Stokes vs Jones Part I. Applied Optics, 2014, 53, 7576.	2.1	13
78	Spectral correction for handheld optoacoustic imaging by means of nearâ€infrared optical tomography in reflection mode. Journal of Biophotonics, 2019, 12, e201800112.	1.1	13
79	Optimization of tissue irradiation in optoacoustic imaging using a linear transducer: theory and experiments. Proceedings of SPIE, 2008, , .	0.8	12
80	Toolbox for In Vivo Imaging of Hostâ€“Parasite Interactions at Multiple Scales. Trends in Parasitology, 2019, 35, 193-212.	1.5	12
81	Polarimetric imaging of the human brain to determine the orientation and degree of alignment of nerve fiber bundles. Biomedical Optics Express, 2021, 12, 4452-4466.	1.5	12
82	Effects of various laser types and beam transmission methods on female organ tissue in the pig: An in vitro study. Lasers in Surgery and Medicine, 1994, 14, 269-277.	1.1	11
83	Thermal model for optimization of vascular laser tissue soldering. Journal of Biophotonics, 2010, 3, 284-295.	1.1	11
84	Monte Carlo modeling of polarized light propagation: Stokes vs Jones Part II. Applied Optics, 2014, 53, 7586.	2.1	11
85	Iterative reconstruction algorithm for reduction of echo background in optoacoustic images. , 2008, , .		10
86	Rapid scanning wide-field clutter elimination in epi-optoacoustic imaging using comb LOVIT. Photoacoustics, 2018, 10, 20-30.	4.4	10
87	Binding of indocyanine green in polycaprolactone fibers using blend electrospinning for in vivo laserâ€assisted vascular anastomosis. Lasers in Surgery and Medicine, 2017, 49, 928-939.	1.1	9
88	Tissue Fusion, a New Opportunity for Sutureless Bypass Surgery. Acta Neurochirurgica Supplementum, 2011, 112, 45-53.	0.5	9
89	A quantitative interspecies comparison of the respiratory mucociliary clearance mechanism. European Biophysics Journal, 2022, 51, 51-65.	1.2	9
90	New laser soldering-based closures: a promising method in natural orifice transluminal endoscopic surgery. Gastrointestinal Endoscopy, 2012, 76, 151-158.	0.5	8

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91	Real-time clinical clutter reduction in combined epi-optoacoustic and ultrasound imaging. Photonics & Lasers in Medicine, 2014, 3, .	0.3	8
92	Interpretation of backscattering polarimetric images recorded from multiply scattering systems: a study on colloidal suspensions. Optics Express, 2019, 27, 6210.	1.7	8
93	Silica nanoparticle-exposure during neuronal differentiation modulates dopaminergic and cholinergic phenotypes in SH-SY5Y cells. Journal of Nanobiotechnology, 2019, 17, 46.	4.2	7
94	Fluorescence-based temperature measurement in laser-induced vapor bubbles. , 1998, , .		6
95	Multiple illumination learned spectral decoloring for quantitative optoacoustic oximetry imaging. Journal of Biomedical Optics, 2021, 26, .	1.4	6
96	<title>Measurement of temperature distributions after pulsed IR radiation impact in biological tissue models with fluorescent thin films</title>. , 1991, , .		5
97	Endoluminal laser-assisted vascular anastomosisâ€"an in vivo study in a pig model. Lasers in Medical Science, 2017, 32, 1343-1348.	1.0	5
98	Electrospinning of highly concentrated albumin patches by using auxiliary polymers for laser-assisted vascular anastomosis. Biomedical Materials (Bristol), 2018, 13, 055001.	1.7	5
99	Self-organization of self-clearing beating patterns in an array of locally interacting ciliated cells formulated as an adaptive Boolean network. Theory in Biosciences, 2020, 139, 21-45.	0.6	5
100	Selective Large-Area Retinal Pigment Epithelial Removal by Microsecond Laser in Preparation for Cell Therapy. Translational Vision Science and Technology, 2021, 10, 17.	1.1	5
101	Toward Real-Time Giga-Voxel Optoacoustic/Photoacoustic Microscopy: GPU-Accelerated Fourier Reconstruction with Quasi-3D Implementation. Photonics, 2022, 9, 15.	0.9	5
102	Threshold of the skull injury for blunt force impacts under free and constraint boundary conditions. International Journal of Legal Medicine, 2020, 134, 553-563.	1.2	4
103	Polarimetric imaging in backscattering for the structural characterization of strongly scattering birefringent fibrous media. Optics Express, 2020, 28, 16673.	1.7	4
104	Characterization and preparation of focused laser beams. Optical Engineering, 2008, 47, 014201.	0.5	3
105	Novel heating/cooling stage designed for fluid inclusion microthermometry of large stalagmite sections. Chemical Geology, 2014, 386, 59-65.	1.4	3
106	Receive Beam-Steering and Clutter Reduction for Imaging the Speed-of-Sound Inside the Carotid Artery. Journal of Imaging, 2018, 4, 145.	1.7	3
107	Reliability assessment for blood oxygen saturation levels measured with optoacoustic imaging. Journal of Biomedical Optics, 2020, 25, 1.	1.4	3
108	Er:YAG laser ablation of epiretinal membranes in perfluorocarbon fluid-filled eyeballs: a preliminary report. , 1998, 3246, 199.		2

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109	Laser balloon vascular welding using a dye-enhanced albumin solder. , 2001, , .		2
110	Combined scattering confocal and multiphoton luminescence imaging of gold nanospheres. , 2008, , .		2
111	Computed Ultrasound Tomography in Echo mode (CUTE) of speed of sound for diagnosis and for aberration correction in pulse-echo sonography. Proceedings of SPIE, 2014, , .	0.8	2
112	Influence of a soft tissue layer covering the kidney upon blunt impact. International Journal of Legal Medicine, 2020, 134, 1007-1013.	1.2	2
113	Grafting of calcium chelating functionalities onto PLA monofilament fiber surfaces. Biointerphases, 2020, 15, 011006.	0.6	2
114	<title>Optoacoustic tomography using a two-dimensional optical pressure transducer and two different reconstruction algorithms</title>. , 2001, 4434, 74.		1
115	Reconstruction techniques for optoacoustic imaging. , 2001, , .		1
116	Multiphoton imaging of ultrashort pulse laser ablation in the intracellular parasite Theileria. Journal of Biomedical Optics, 2008, 13, 044021.	1.4	1
117	Reduction of background in optoacoustic image sequences obtained under tissue deformation. , 2009, , .		1
118	Improved contrast optoacoustic imaging of deep breast tumors using displacement-compensated averaging: phantom studies. , 2010, , .		1
119	Single transducer LOVIT-enabled photoacoustic imaging: A feasibility study. , 2016, , .		1
120	Spectral correction of OA signals based on multiple irradiation sensing: experimental validation. , 2016, , .		1
121	Notice of Removal: Fast scanning wide-field clutter elimination in epi-optoacoustic imaging using comb-LOVIT. , 2017, , .		1
122	Absorbable mineral nanocomposite for biomedical applications: Influence of homogenous fiber dispersity on mechanical properties. Journal of Biomedical Materials Research - Part A, 2018, 106, 850-857.	2.1	1
123	Reflection-mode speed-of-sound imaging using soft-prior limits. , 2019, , .		1
124	Deformation-Compensated Averaging for Deep-Tissue LED and Laser Diode-Based Photoacoustic Imaging Integrated with Handheld Echo Ultrasound. Progress in Optical Science and Photonics, 2020, , 47-78.	0.3	1
125	Polarized Light: Electrodynamic Fundamentals. , 2010, , 65-108.		1
126	Machine learning enabled multiple illumination quantitative optoacoustic oximetry imaging in humans. Biomedical Optics Express, 2022, 13, 2655.	1.5	1

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127	Transmyocardial Laser Revascularization: Established Procedure, Acupuncture of the Heart or Placebo Effect?. Cardiology, 2001, 1, 268-280.	0.3	0
128	Laser soldering of articular cartilage. , 2001, 4244, 198.		0
129	<title>Laser applications in middle ear surgery: advantages and possible side-effects</title>. , 2002, 4609, 295.		0
130	Absolute measurement of molecular two-photon absorption cross-sections using a fluorescence saturation technique. , 2006, , .		0
131	Ultra-short pulse lasers in geological fluid inclusion analysis. , 2007, , .		0
132	Dependence of the multiphoton luminescence spectrum of single gold nanoparticles on the refractive index of the surrounding medium. , 2008, , .		0
133	Determining gypsum growth temperatures using monophase fluid inclusionsâ€"Application to the giant gypsum crystals of Naica, Mexico: REPLY. Geology, 2013, 41, e306-e306.	2.0	0
134	Real-time clutter reduction in epi-optoacoustic imaging of human volunteers. , 2014, , .		0
135	Increase of penetration depth in real-time clinical epi-optoacoustic imaging: clutter reduction and aberration correction. Proceedings of SPIE, 2014, , .	0.8	0
136	Influence of illumination position on image contrast in epi-optoacoustic imaging of human volunteers. Proceedings of SPIE, 2014, , .	0.8	0
137	Influence of illumination position on image contrast in epioptoacoustic imaging of human volunteers. , 2014, , .		0
138	In situ fiberâ€optical monitoring of cytosolic calcium in tissue explant cultures. Journal of Biophotonics, 2015, 8, 183-195.	1.1	0
139	Reflection-artifact-free photoacoustic imaging using PAFUSion (photoacoustic-guided focused) Tj ETQq1 1 0.784314 rgBT /Overlock		0
140	Notice of Removal: New model of echo-phase relating to speed-of-sound for quantitative reflection-mode ultrasound tomography. , 2017, , .		0
141	Notice of Removal: Sono-photoacoustic imaging using polypyrrole coated phase-change contrast agents. , 2017, , .		0
142	Diffraction-limited spatial resolution using synthetic focus time-of-flight ultrasound tomography. , 2019, , .		0
143	A novel technique for laser-assisted revascularization: an in vitro pilot study. Lasers in Medical Science, 2021, 36, 855-862.	1.0	0
144	From Electrodynamics to Monte Carlo Simulations. , 2010, , 203-266.		0