

# Max Langer

## List of Publications by Year in descending order

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84  
papers

2,482  
citations

201674

27  
h-index

206112

48  
g-index

86  
all docs

86  
docs citations

86  
times ranked

2756  
citing authors

#	ARTICLE	IF	CITATIONS
1	Mixed transfer function and transport of intensity approach for phase retrieval in the Fresnel region. <i>Optics Letters</i> , 2007, 32, 1617.	3.3	166
2	Three Years After Transplants in Human Mandibles, Histological and In-Line Holotomography Revealed That Stem Cells Regenerated a Compact Rather Than a Spongy Bone: Biological and Clinical Implications. <i>Stem Cells Translational Medicine</i> , 2013, 2, 316-324.	3.3	149
3	Quantitative comparison of direct phase retrieval algorithms in in-line phase tomography. <i>Medical Physics</i> , 2008, 35, 4556-4566.	3.0	143
4	X-Ray Phase Nanotomography Resolves the 3D Human Bone Ultrastructure. <i>PLoS ONE</i> , 2012, 7, e35691.	2.5	140
5	Canalicular Network Morphology Is the Major Determinant of the Spatial Distribution of Mass Density in Human Bone Tissue: Evidence by Means of Synchrotron Radiation Phase-Contrast nano-CT. <i>Journal of Bone and Mineral Research</i> , 2015, 30, 346-356.	2.8	108
6	3D osteocyte lacunar morphometric properties and distributions in human femoral cortical bone using synchrotron radiation micro-CT images. <i>Bone</i> , 2014, 60, 172-185.	2.9	105
7	Assessment of bone vascularization and its role in bone remodeling. <i>BoneKEy Reports</i> , 2015, 4, 662.	2.7	98
8	Intermittent PTH(1-84) is osteoanabolic but not osteoangiogenic and relocates bone marrow blood vessels closer to bone-forming sites. <i>Journal of Bone and Mineral Research</i> , 2011, 26, 2583-2596.	2.8	96
9	Investigation of the three-dimensional orientation of mineralized collagen fibrils in human lamellar bone using synchrotron X-ray phase nano-tomography. <i>Acta Biomaterialia</i> , 2013, 9, 8118-8127.	8.3	95
10	Micro- and Nano-CT for the Study of Bone Ultrastructure. <i>Current Osteoporosis Reports</i> , 2014, 12, 465-474.	3.6	87
11	Nanoscale imaging of the bone cell network with synchrotron X-ray tomography: optimization of acquisition setup. <i>Medical Physics</i> , 2012, 39, 2229-2238.	3.0	84
12	Synchrotron X-ray phase nano-tomography-based analysis of the lacunar-canalicular network morphology and its relation to the strains experienced by osteocytes in situ as predicted by case-specific finite element analysis. <i>Biomechanics and Modeling in Mechanobiology</i> , 2015, 14, 267-282.	2.8	83
13	Skull and brain of a 300-million-year-old chimaeroid fish revealed by synchrotron holotomography. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 5224-5228.	7.1	81
14	Regularization of Phase Retrieval With Phase-Attenuation Duality Prior for 3-D Holotomography. <i>IEEE Transactions on Image Processing</i> , 2010, 19, 2428-2436.	9.8	71
15	Analytical and experimental determination of signal-to-noise ratio and figure of merit in three phase-contrast imaging techniques. <i>Optics Express</i> , 2012, 20, 27670.	3.4	50
16	Fast virtual histology using X-ray in-line phase tomography: application to the 3D anatomy of maize developing seeds. <i>Plant Methods</i> , 2015, 11, 55.	4.3	49
17	Alterations of Mass Density and 3D Osteocyte Lacunar Properties in Bisphosphonate-Related Osteonecrotic Human Jaw Bone, a Synchrotron $\mu$ CT Study. <i>PLoS ONE</i> , 2014, 9, e88481.	2.5	47
18	Experimental comparison of grating- and propagation-based hard X-ray phase tomography of soft tissue. <i>Journal of Applied Physics</i> , 2014, 116, .	2.5	46

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19	Spatial distribution of tissue level properties in a human femoral cortical bone. <i>Journal of Biomechanics</i> , 2012, 45, 2264-2270.	2.1	42
20	Synchrotron Radiation X-Ray Phase Micro-computed Tomography as a New Method to Detect Iron Oxide Nanoparticles in the Brain. <i>Molecular Imaging and Biology</i> , 2013, 15, 552-559.	2.6	39
21	X-ray in-line phase tomography of multimaterial objects. <i>Optics Letters</i> , 2012, 37, 2151.	3.3	38
22	Quantitative phase and absorption tomography with an X-ray grating interferometer and synchrotron radiation. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2011, 208, 2526-2532.	1.8	36
23	Holotomography versus X-ray grating interferometry: A comparative study. <i>Applied Physics Letters</i> , 2013, 103, .	3.3	36
24	Anisotropic elastic properties of human femoral cortical bone and relationships with composition and microstructure in elderly. <i>Acta Biomaterialia</i> , 2019, 90, 254-266.	8.3	31
25	Whispering to the Deaf: Communication by a Frog without External Vocal Sac or Tympanum in Noisy Environments. <i>PLoS ONE</i> , 2011, 6, e22080.	2.5	30
26	3D X-ray ultra-microscopy of bone tissue. <i>Osteoporosis International</i> , 2016, 27, 441-455.	3.1	29
27	Extraction of the 3D local orientation of myocytes in human cardiac tissue using X-ray phase-contrast micro-tomography and multi-scale analysis. <i>Medical Image Analysis</i> , 2017, 38, 117-132.	11.6	29
28	Non-linear iterative phase retrieval based on Frechet derivative. <i>Optics Express</i> , 2011, 19, 22809.	3.4	27
29	Strain rate influence on human cortical bone toughness: A comparative study of four paired anatomical sites. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2017, 71, 223-230.	3.1	26
30	Evaluation of phase retrieval approaches in magnified X-ray phase nano computerized tomography applied to bone tissue. <i>Optics Express</i> , 2018, 26, 11110.	3.4	23
31	Regularized phase tomography enables study of mineralized and unmineralized tissue in porous bone scaffold. <i>Journal of Microscopy</i> , 2010, 238, 230-239.	1.8	22
32	Accessing osteocyte lacunar geometrical properties in human jaw bone on the submicron length scale using synchrotron radiation $\mu$ CT. <i>Journal of Microscopy</i> , 2014, 255, 158-168.	1.8	22
33	Priors for X-ray in-line phase tomography of heterogeneous objects. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2014, 372, 20130129.	3.4	22
34	Synchrotron Phase Tomography: An Emerging Imaging Method for Microvessel Detection in Engineered Bone of Craniofacial Districts. <i>Frontiers in Physiology</i> , 2017, 8, 769.	2.8	20
35	Relationships between human cortical bone toughness and collagen cross-links on paired anatomical locations. <i>Bone</i> , 2018, 112, 202-211.	2.9	20
36	3D micro structural analysis of human cortical bone in paired femoral diaphysis, femoral neck and radial diaphysis. <i>Journal of Structural Biology</i> , 2018, 204, 182-190.	2.8	20

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37	Towards Monte Carlo simulation of X-ray phase contrast using GATE. Optics Express, 2020, 28, 14522.	3.4	18
38	Fourier-wavelet regularization of phase retrieval in x-ray in-line phase tomography. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2009, 26, 1876.	1.5	17
39	Simultaneous 3D Imaging of Bone and Vessel Microstructure in a Rat Model. IEEE Transactions on Nuclear Science, 2011, 58, 139-145.	2.0	17
40	Absorption and phase retrieval with Tikhonov and joint sparsity regularizations. Inverse Problems and Imaging, 2013, 7, 267-282.	1.1	14
41	Nonlinear approaches for the single-distance phase retrieval problem involving regularizations with sparsity constraints. Applied Optics, 2013, 52, 3977.	1.8	12
42	Adaptive filtering for enhancement of the osteocyte cell network in 3D microtomography images. Irbm, 2013, 34, 48-52.	5.6	11
43	Distribution of mesoscale elastic properties and mass density in the human femoral shaft. Connective Tissue Research, 2015, 56, 120-132.	2.3	11
44	Computer vision tools to optimize reconstruction parameters in x-ray in-line phase tomography. Physics in Medicine and Biology, 2014, 59, 7767-7775.	3.0	10
45	<i>PyPhase</i> a Python package for X-ray phase imaging. Journal of Synchrotron Radiation, 2021, 28, 1261-1266.	2.4	10
46	Very High-Resolution Imaging of Post-Mortem Human Cardiac Tissue Using X-Ray Phase Contrast Tomography. Lecture Notes in Computer Science, 2015, , 172-179.	1.3	10
47	Quantitative investigation of bone microvascularization from 3D synchrotron micro-computed tomography in a rat model. , 2009, 2009, 1004-7.		9
48	Information-based analysis of X-ray in-line phase tomography with application to the detection of iron oxide nanoparticles in the brain. Optics Express, 2013, 21, 27185.	3.4	8
49	Interconnectivity Explains High Canalicular Network Robustness between Neighboring Osteocyte Lacunae in Human Bone. Advanced NanoBiomed Research, 2022, 2, .	3.6	8
50	Evaluation of imaging setups for quantitative phase contrast nanoCT of mineralized biomaterials. Journal of Synchrotron Radiation, 2022, 29, 843-852.	2.4	8
51	Nonlinear Phase Retrieval Using Projection Operator and Iterative Wavelet Thresholding. IEEE Signal Processing Letters, 2012, 19, 579-582.	3.6	7
52	Quantitative evaluation of regularized phase retrieval algorithms on bone scaffolds seeded with bone cells. Physics in Medicine and Biology, 2016, 61, N215-N231.	3.0	7
53	Registration of phase-contrast images in propagation-based X-ray phase tomography. Journal of Microscopy, 2018, 269, 36-47.	1.8	7
54	Influence of loading condition and anatomical location on human cortical bone linear micro-cracks. Journal of Biomechanics, 2019, 85, 59-66.	2.1	7

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55	X-ray in-line holography and holotomography at the NanoMAX beamline. Journal of Synchrotron Radiation, 2022, 29, 224-229.	2.4	7
56	Combining Coherent Hard X-Ray Tomographies with Phase Retrieval to Generate Three-Dimensional Models of Forming Bone. Frontiers in Materials, 2017, 4, .	2.4	5
57	Mixed scale dense convolutional networks for x-ray phase contrast imaging. Applied Optics, 2022, 61, 2497.	1.8	5
58	Experimental characterisation of damage in SiC/SiC minicomposites. EPJ Web of Conferences, 2010, 6, 20002.	0.3	4
59	Segmentation of 3D cellular networks from SR-micro-CT images. , 2011, , .		4
60	Synchrotron radiation CT from the micro to nanoscale for the investigation of bone tissue. Proceedings of SPIE, 2012, , .	0.8	4
61	Dose fractionation in synchrotron radiation x-ray phase micro-tomography. Physics in Medicine and Biology, 2015, 60, 7543-7566.	3.0	4
62	Evaluation of simulators for x-ray speckle-based phase contrast imaging. Physics in Medicine and Biology, 2021, 66, 175027.	3.0	4
63	Histogram Feature-Based Classification Improves Differentiability of Early Bone Healing Stages From Micro-Computed Tomographic Data. Journal of Computer Assisted Tomography, 2012, 36, 469-476.	0.9	3
64	Phase retrieval in 3D X-ray magnified phase nano CT: Imaging bone tissue at the nanoscale. , 2017, , .		3
65	Quantitative analysis of bone microvasculature in a mouse model using the monogenic signal phase asymmetry and marker-controlled watershed. Physics in Medicine and Biology, 2021, 66, 125005.	3.0	3
66	Synchrotron X-Ray Phase Nanotomography for Bone Tissue Characterization. , 2016, , 1-42.		3
67	A wavelet algorithm for zoom-in tomography. , 2010, , .		2
68	3D microscopic imaging by synchrotron radiation micro/nano-CT. , 2011, , .		2
69	3D X-ray CT imaging of the bone Lacuno-Canalicular Network. , 2012, , .		2
70	Non-linear iterative phase retrieval based on Frechet derivative and projection operators. , 2012, , .		2
71	What is the influence of two strain rates on the relationship between human cortical bone toughness and micro-structure?. Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine, 2020, 234, 247-254.	1.8	2
72	Assessment of imaging quality in magnified phase CT of human bone tissue at the nanoscale. , 2017, , .		2

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73	Impact of Anti-Angiogenic Treatment on Bone Vascularization in a Murine Model of Breast Cancer Bone Metastasis Using Synchrotron Radiation Micro-CT. <i>Cancers</i> , 2022, 14, 3443.	3.7	2
74	Design of Fast Multidimensional Filters Using Genetic Algorithms. <i>Lecture Notes in Computer Science</i> , 2005, , 366-375.	1.3	1
75	QUANTITATIVE EVALUATION OF PHASE RETRIEVAL ALGORITHMS IN PROPAGATION BASED PHASE TOMOGRAPHY. , 2007, , .		1
76	Non linear phase retrieval from fresnel diffraction patterns using the frechet derivative. , 2011, , .		1
77	Level set regularization for nonlinear absorption and phase retrieval in X-ray phase contrast tomography. , 2013, , .		1
78	Segmentation of Bone Vessels in 3D Micro-CT Images Using the Monogenic Signal Phase and Watershed. , 2020, , .		1
79	Dose-efficient multimodal microscopy of human tissue at a hard X-ray nanoprobe beamline. <i>Journal of Synchrotron Radiation</i> , 2022, 29, 807-815.	2.4	1
80	Simultaneous 3D imaging of bone and vessel microstructure in a rat model: Measurement of vascular-trabecular interdistance. , 2009, , .		0
81	Absorption and phase retrieval in phase contrast imaging with non linear Tikhonov regularization. <i>Journal of Physics: Conference Series</i> , 2012, 386, 012012.	0.4	0
82	Propagation based X-ray phase microtomography of multi-material objects for simultaneous bone and soft tissue visualisation. , 2012, , .		0
83	In-Line X-Ray Phase Tomography of Bone and Biomaterials for Regenerative Medicine. <i>Fundamental Biomedical Technologies</i> , 2018, , 91-109.	0.2	0
84	Low-dose synchrotron nano-CT via compressed sensing. , 2018, , .		0