

Manuel Guizar-Sicairos

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/6364158/publications.pdf>

Version: 2024-02-01

156
papers

9,127
citations

50276

46
h-index

42399

92
g-index

162
all docs

162
docs citations

162
times ranked

7963
citing authors

#	ARTICLE	IF	CITATIONS
1	Efficient subpixel image registration algorithms. <i>Optics Letters</i> , 2008, 33, 156.	3.3	1,611
2	Phase retrieval with transverse translation diversity: a nonlinear optimization approach. <i>Optics Express</i> , 2008, 16, 7264.	3.4	464
3	High-resolution non-destructive three-dimensional imaging of integrated circuits. <i>Nature</i> , 2017, 543, 402-406.	27.8	316
4	X-ray ptychographic computed tomography at 16â€...nm isotropic 3D resolution. <i>Scientific Reports</i> , 2014, 4, 3857.	3.3	281
5	Maximum-likelihood refinement for coherent diffractive imaging. <i>New Journal of Physics</i> , 2012, 14, 063004.	2.9	276
6	Three-dimensional magnetization structures revealed with X-ray vector nanotomography. <i>Nature</i> , 2017, 547, 328-331.	27.8	221
7	Computation of quasi-discrete Hankel transforms of integer order for propagating optical wave fields. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2004, 21, 53.	1.5	208
8	Advanced glycation end-products: Mechanics of aged collagen from molecule to tissue. <i>Matrix Biology</i> , 2017, 59, 95-108.	3.6	186
9	Phase tomography from x-ray coherent diffractive imaging projections. <i>Optics Express</i> , 2011, 19, 21345.	3.4	183
10	Nanostructure surveys of macroscopic specimens by small-angle scattering tensor tomography. <i>Nature</i> , 2015, 527, 349-352.	27.8	170
11	Characterization of high-resolution diffractive X-ray optics by ptychographic coherent diffractive imaging. <i>Optics Express</i> , 2011, 19, 21333.	3.4	166
12	Electron ptychography achieves atomic-resolution limits set by lattice vibrations. <i>Science</i> , 2021, 372, 826-831.	12.6	154
13	Six-dimensional real and reciprocal space small-angle X-ray scattering tomography. <i>Nature</i> , 2015, 527, 353-356.	27.8	149
14	Quantitative x-ray phase nanotomography. <i>Physical Review B</i> , 2012, 85, .	3.2	147
15	High-throughput ptychography using Eiger-scanning X-ray nano-imaging of extended regions. <i>Optics Express</i> , 2014, 22, 14859.	3.4	136
16	Holography with extended reference by autocorrelation linear differential operation. <i>Optics Express</i> , 2007, 15, 17592.	3.4	128
17	Phase retrieval by coherent modulation imaging. <i>Nature Communications</i> , 2016, 7, 13367.	12.8	125
18	Reconstruction of an astigmatic hard X-ray beam and alignment of K-B mirrors from ptychographic coherent diffraction data. <i>Optics Express</i> , 2010, 18, 23420.	3.4	120

#	ARTICLE	IF	CITATIONS
19	Advanced Glycation End-Products Reduce Collagen Molecular Sliding to Affect Collagen Fibril Damage Mechanisms but Not Stiffness. PLoS ONE, 2014, 9, e110948.	2.5	113
20	Iterative least-squares solver for generalized maximum-likelihood ptychography. Optics Express, 2018, 26, 3108.	3.4	111
21	Optical wavefront measurement using phase retrieval with transverse translation diversity. Optics Express, 2009, 17, 624.	3.4	109
22	On-the-fly scans for X-ray ptychography. Applied Physics Letters, 2014, 105, .	3.3	106
23	Interlaced zone plate optics for hard X-ray imaging in the 10â€%nm range. Scientific Reports, 2017, 7, .	3.3	103
24	An instrument for 3D x-ray nano-imaging. Review of Scientific Instruments, 2012, 83, 073703.	1.3	98
25	Three-dimensional imaging of integrated circuits with macro- to nanoscale zoom. Nature Electronics, 2019, 2, 464-470.	26.0	96
26	Evolutionaryâ€Optimized Photonic Network Structure in White Beetle Wing Scales. Advanced Materials, 2018, 30, e1702057.	21.0	95
27	X-ray ptychography with extended depth of field. Optics Express, 2016, 24, 29089.	3.4	94
28	Role of the illumination spatial-frequency spectrum for ptychography. Physical Review B, 2012, 86, .	3.2	93
29	Quantitative interior x-ray nanotomography by a hybrid imaging technique. Optica, 2015, 2, 259.	9.3	82
30	Single-shot Femtosecond X-Ray Holography Using Extended References. Physical Review Letters, 2010, 105, 093901.	7.8	81
31	Element-Specific X-Ray Phase Tomography of 3D Structures at the Nanoscale. Physical Review Letters, 2015, 114, 115501.	7.8	80
32	Density mapping of hardened cement paste using ptychographic X-ray computed tomography. Cement and Concrete Composites, 2013, 36, 71-77.	10.7	79
33	High-Resolution X-Ray Lensless Imaging by Differential Holographic Encoding. Physical Review Letters, 2010, 105, 043901.	7.8	77
34	Understanding the twin-image problem in phase retrieval. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2012, 29, 2367.	1.5	73
35	Three-dimensional mass density mapping of cellular ultrastructure by ptychographic X-ray nanotomography. Journal of Structural Biology, 2015, 192, 461-469.	2.8	72
36	A three-dimensional view of structural changes caused by deactivation of fluid catalytic cracking catalysts. Nature Communications, 2017, 8, 809.	12.8	72

#	ARTICLE	IF	CITATIONS
37	Time-resolved imaging of three-dimensional nanoscale magnetization dynamics. Nature Nanotechnology, 2020, 15, 356-360.	31.5	67
38	Eiger: a single-photon counting x-ray detector. Journal of Instrumentation, 2014, 9, C05032-C05032.	1.2	65
39	Assessment of the 3D Pore Structure and Individual Components of Preshaped Catalyst Bodies by X-Ray Imaging. ChemCatChem, 2015, 7, 413-416.	3.7	64
40	3D scanning SAXS: A novel method for the assessment of bone ultrastructure orientation. Bone, 2015, 71, 42-52.	2.9	61
41	Direct image reconstruction from a Fourier intensity pattern using HERALDO. Optics Letters, 2008, 33, 2668.	3.3	58
42	Coherent imaging at the diffraction limit. Journal of Synchrotron Radiation, 2014, 21, 1011-1018.	2.4	56
43	<i>PtychoShelves</i> , a versatile high-level framework for high-performance analysis of ptychographic data. Journal of Applied Crystallography, 2020, 53, 574-586.	4.5	54
44	Three-Dimensional Structure Analysis and Percolation Properties of a Barrier Marine Coating. Scientific Reports, 2013, 3, 1177.	3.3	51
45	Mapping the 3D orientation of nanocrystals and nanostructures in human bone: Indications of novel structural features. Science Advances, 2020, 6, eaba4171.	10.3	51
46	Measurement of hard x-ray lens wavefront aberrations using phase retrieval. Applied Physics Letters, 2011, 98, 111108.	3.3	50
47	Three-Dimensional Imaging of Biological Tissue by Cryo X-Ray Ptychography. Scientific Reports, 2017, 7, 6291.	3.3	49
48	OMNY™ A tOMography Nano crYo stage. Review of Scientific Instruments, 2018, 89, 043706.	1.3	48
49	Towards optimized illumination for high-resolution ptychography. Optics Express, 2019, 27, 14981.	3.4	48
50	Measurement of coherent x-ray focused beams by phase retrieval with transverse translation diversity. Optics Express, 2009, 17, 2670.	3.4	47
51	High resolution double-sided diffractive optics for hard X-ray microscopy. Optics Express, 2015, 23, 776.	3.4	46
52	Bone mineral crystal size and organization vary across mature rat bone cortex. Journal of Structural Biology, 2016, 195, 337-344.	2.8	46
53	Small-angle X-ray scattering tensor tomography: model of the three-dimensional reciprocal-space map, reconstruction algorithm and angular sampling requirements. Acta Crystallographica Section A: Foundations and Advances, 2018, 74, 12-24.	0.1	46
54	Cryo-scanning x-ray diffraction microscopy of frozen-hydrated yeast. Journal of Microscopy, 2013, 249, 1-7.	1.8	44

#	ARTICLE	IF	CITATIONS
55	Ptychographic X-ray Tomography of Silk Fiber Hydration. <i>Macromolecules</i> , 2013, 46, 434-439.	4.8	44
56	Generalized Helmholtz-Gauss beam and its transformation by paraxial optical systems. <i>Optics Letters</i> , 2006, 31, 2912.	3.3	43
57	Propagation of generalized vector Helmholtz-Gauss beams through paraxial optical systems. <i>Optics Express</i> , 2006, 14, 8974.	3.4	42
58	Two-dimensional structure from random multiparticle X-ray scattering images using cross-correlations. <i>Nature Communications</i> , 2013, 4, 1647.	12.8	42
59	Experimental observation of vortex rings in a bulk magnet. <i>Nature Physics</i> , 2021, 17, 316-321.	16.7	42
60	Characterization of x-ray phase vortices by ptychographic coherent diffractive imaging. <i>Optics Letters</i> , 2014, 39, 5281.	3.3	40
61	Mass Density and Water Content of Saturated Never-Dried Calcium Silicate Hydrates. <i>Langmuir</i> , 2015, 31, 3779-3783.	3.5	40
62	Arbitrary-path fly-scan ptychography. <i>Optics Express</i> , 2018, 26, 12585.	3.4	40
63	X-ray Fourier ptychography. <i>Science Advances</i> , 2019, 5, eaav0282.	10.3	40
64	From 2D STXM to 3D Imaging: Soft X-ray Laminography of Thin Specimens. <i>Nano Letters</i> , 2020, 20, 1305-1314.	9.1	40
65	Angular spectrum simulation of X-ray focusing by Fresnel zone plates. <i>Journal of Synchrotron Radiation</i> , 2013, 20, 397-404.	2.4	38
66	Paraxial group. <i>Optics Letters</i> , 2009, 34, 13.	3.3	37
67	Alignment methods for nanotomography with deep subpixel accuracy. <i>Optics Express</i> , 2019, 27, 36637.	3.4	36
68	Tomographic reconstruction of a three-dimensional magnetization vector field. <i>New Journal of Physics</i> , 2018, 20, 083009.	2.9	35
69	Ptychographic X-ray nanotomography quantifies mineral distributions in human dentine. <i>Scientific Reports</i> , 2015, 5, 9210.	3.3	34
70	Effects of tissue fixation and dehydration on tendon collagen nanostructure. <i>Journal of Structural Biology</i> , 2017, 199, 209-215.	2.8	34
71	Nanostructure-specific X-ray tomography reveals myelin levels, integrity and axon orientations in mouse and human nervous tissue. <i>Nature Communications</i> , 2021, 12, 2941.	12.8	33
72	Achilles tendon compositional and structural properties are altered after unloading by botox. <i>Scientific Reports</i> , 2017, 7, 13067.	3.3	31

#	ARTICLE	IF	CITATIONS
73	Improving organic tandem solar cells based on water-processed nanoparticles by quantitative 3D nanoimaging. <i>Nanoscale</i> , 2015, 7, 13765-13774.	5.6	30
74	High-resolution hard x-ray magnetic imaging with dichroic ptychography. <i>Physical Review B</i> , 2016, 94, .	3.2	30
75	Correlations between lignin content and structural robustness in plants revealed by X-ray ptychography. <i>Scientific Reports</i> , 2020, 10, 6023.	3.3	29
76	Signal-to-noise criterion for free-propagation imaging techniques at free-electron lasers and synchrotrons. <i>Optics Express</i> , 2016, 24, 3189.	3.4	28
77	Correlated X-Ray 3D Ptychography and Diffraction Microscopy Visualize Links between Morphology and Crystal Structure of Lithium-Rich Cathode Materials. <i>IScience</i> , 2019, 11, 356-365.	4.1	27
78	Characterization of carbon fibers using X-ray phase nanotomography. <i>Carbon</i> , 2014, 67, 98-103.	10.3	26
79	Ab initio nonrigid X-ray nanotomography. <i>Nature Communications</i> , 2019, 10, 2600.	12.8	25
80	Resonant Ptychographic Tomography Facilitates Three-Dimensional Quantitative Colocalization of Catalyst Components and Chemical Elements. <i>Journal of Physical Chemistry C</i> , 2018, 122, 22920-22929.	3.1	24
81	Kinoform diffractive lenses for efficient nano-focusing of hard X-rays. <i>Optics Express</i> , 2014, 22, 16676.	3.4	23
82	Gridrec-MS: an algorithm for multi-slice tomography. <i>Optics Letters</i> , 2019, 44, 2181.	3.3	23
83	One-dimensional hard x-ray field retrieval using a moveable structure. <i>Optics Express</i> , 2010, 18, 18374.	3.4	21
84	Critical appraisal of tubular putative eumetazoans from the Ediacaran Weng'an Doushantuo biota. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2015, 282, 20151169.	2.6	21
85	Ultrastructure Organization of Human Trabeculae Assessed by 3D sSAXS and Relation to Bone Microarchitecture. <i>PLoS ONE</i> , 2016, 11, e0159838.	2.5	21
86	Fabrication and characterization of high-efficiency double-sided blazed x-ray optics. <i>Optics Letters</i> , 2016, 41, 281.	3.3	20
87	Retrieving neuronal orientations using 3D scanning SAXS and comparison with diffusion MRI. <i>NeuroImage</i> , 2020, 204, 116214.	4.2	20
88	Ptychography: A solution to the phase problem. <i>Physics Today</i> , 2021, 74, 42-48.	0.3	20
89	High-speed tensor tomography: iterative reconstruction tensor tomography (IRTT) algorithm. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2019, 75, 223-238.	0.1	20
90	Phase retrieval with Fourier-weighted projections. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2008, 25, 701.	1.5	19

#	ARTICLE	IF	CITATIONS
91	Quantitative 3D X-ray Imaging of Densification, Delamination and Fracture in a Micro-Composite under Compression. <i>Advanced Engineering Materials</i> , 2015, 17, 545-553.	3.5	19
92	Ptychographic X-ray CT characterization of the osteocyte lacuno-canalicular network in a male rat's glucocorticoid induced osteoporosis model. <i>Bone Reports</i> , 2018, 9, 122-131.	0.4	19
93	Live cell X-ray imaging of autophagic vacuoles formation and chromatin dynamics in fission yeast. <i>Scientific Reports</i> , 2017, 7, 13775.	3.3	18
94	Hierarchical Structure of NiMo Hydrodesulfurization Catalysts Determined by Ptychographic X-ray Computed Tomography. <i>Angewandte Chemie - International Edition</i> , 2020, 59, 17266-17271.	13.8	17
95	Highly Permeable Fluorinated Polymer Nanocomposites for Plasmonic Hydrogen Sensing. <i>ACS Applied Materials & Interfaces</i> , 2021, 13, 21724-21732.	8.0	17
96	Sparse ab initio x-ray transmission spectrotomography for nanoscopic compositional analysis of functional materials. <i>Science Advances</i> , 2021, 7, .	10.3	16
97	Validation study of small-angle X-ray scattering tensor tomography. <i>Journal of Synchrotron Radiation</i> , 2020, 27, 779-787.	2.4	16
98	The compositional and nano-structural basis of fracture healing in healthy and osteoporotic bone. <i>Scientific Reports</i> , 2018, 8, 1591.	3.3	15
99	Phase Retrieval with Transverse Translations for X-ray and Optical Wavefront Sensing. <i>Optics and Photonics News</i> , 2009, 20, 20.	0.5	14
100	3D nanoscale analysis of bone healing around degrading Mg implants evaluated by X-ray scattering tensor tomography. <i>Acta Biomaterialia</i> , 2021, 134, 804-817.	8.3	14
101	Diminishing effects of mechanical loading over time during rat Achilles tendon healing. <i>PLoS ONE</i> , 2020, 15, e0236681.	2.5	14
102	Internal structure of sponge glass fiber revealed by ptychographic nanotomography. <i>Journal of Structural Biology</i> , 2016, 194, 124-128.	2.8	12
103	pH-responsive aminolipid nanocarriers for antimicrobial peptide delivery. <i>Journal of Colloid and Interface Science</i> , 2021, 603, 398-407.	9.4	11
104	Model-free classification of X-ray scattering signals applied to image segmentation. <i>Journal of Applied Crystallography</i> , 2018, 51, 1378-1386.	4.5	11
105	Probing the bulk heterojunction morphology in thermally annealed active layers for polymer solar cells. <i>Organic Electronics</i> , 2017, 41, 319-326.	2.6	10
106	Quantitative region-of-interest tomography using variable field of view. <i>Optics Express</i> , 2018, 26, 16752.	3.4	10
107	Nanoscale crystal grain characterization via linear polarization X-ray ptychography. <i>Chemical Communications</i> , 2020, 56, 13373-13376.	4.1	10
108	Propagation of Helmholtz-Gauss beams in absorbing and gain media. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2006, 23, 1994.	1.5	9

#	ARTICLE	IF	CITATIONS
109	Holographic x-ray image reconstruction through the application of differential and integral operators. Optics Letters, 2010, 35, 928.	3.3	9
110	X-ray ptychography using a distant analyzer. Optics Express, 2016, 24, 6441.	3.4	9
111	Spatio-temporal evolution of hydroxyapatite crystal thickness at the bone-implant interface. Acta Biomaterialia, 2020, 116, 391-399.	8.3	8
112	X-Ray Nanoscopy of a Bulk Heterojunction. PLoS ONE, 2016, 11, e0158345.	2.5	7
113	LamNI " an instrument for X-ray scanning microscopy in laminography geometry. Journal of Synchrotron Radiation, 2020, 27, 730-736.	2.4	7
114	Automated Analysis of Spatially Resolved X-ray Scattering and Micro Computed Tomography of Artificial and Natural Enamel Carious Lesions. Journal of Imaging, 2018, 4, 81.	3.0	6
115	Fingerprinting soft material nanostructure response to complex flow histories. Physical Review Materials, 2022, 6, .	2.4	6
116	Construction and characterization of a CO ₂ axicon-based Bessel-Gauss resonator. , 2005, 5708, 323.		5
117	Validation of quantitative Ronchi test through numerical propagation. Optics Express, 2010, 18, 18525.	3.4	5
118	Ptychographic Imaging at the Swiss Light Source. Synchrotron Radiation News, 2013, 26, 26-31.	0.8	5
119	High-acceptance versatile microfocus module based on elliptical Fresnel zone plates for small-angle X-ray scattering. Optics Express, 2017, 25, 21145.	3.4	5
120	X-ray nanotomography and electron backscatter diffraction demonstrate the crystalline, heterogeneous and impermeable nature of conodont white matter. Royal Society Open Science, 2021, 8, 202013.	2.4	5
121	Nanostructure and anisotropy of 3D printed lyotropic liquid crystals studied by scattering and birefringence imaging. Additive Manufacturing, 2021, 47, 102289.	3.0	5
122	Segmentation of nanotomographic cortical bone images for quantitative characterization of the osteocyte lacuno-canalicular network. AIP Conference Proceedings, 2016, , .	0.4	4
123	Development of a New Soft X-ray Ptychography Spectro-Microscope at the Swiss Light Source (SLS). Microscopy and Microanalysis, 2018, 24, 56-57.	0.4	4
124	Boundaryless finite-difference method for three-dimensional beam propagation. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2006, 23, 866.	1.5	3
125	Image reconstruction by phase retrieval with transverse translation diversity. Proceedings of SPIE, 2008, , .	0.8	3
126	Zernike x-ray ptychography. Optics Letters, 2016, 41, 721.	3.3	3

#	ARTICLE	IF	CITATIONS
127	High resolution 3D imaging of integrated circuits by x-ray ptychography. , 2018, , .		3
128	X-ray phase nanotomography through ptychographic coherent lensless imaging. , 2011, , .		2
129	A novel concept for actinic EUV mask review tool using a scanning lensless imaging method at the Swiss Light Source (Withdrawal Notice). , 2014, , .		2
130	Ptychographic nanotomography at the Swiss Light Source. Proceedings of SPIE, 2015, , .	0.8	2
131	Addendum to "Three-dimensional mass density mapping of cellular ultrastructure by ptychographic X-ray nanotomography" [J. Struct. Biol. 192 (2015) 461-469]. Journal of Structural Biology, 2016, 193, 83.	2.8	2
132	Probing Organic Thin Films by Coherent X-ray Imaging and X-ray Scattering. ACS Applied Polymer Materials, 2019, 1, 1787-1797.	4.4	2
133	Alterations in Sub-Axonal Architecture Between Normal Aging and Parkinson's Diseased Human Brains Using Label-Free Cryogenic X-ray Nanotomography. Frontiers in Neuroscience, 2020, 14, 570019.	2.8	2
134	Imaging of retina cellular and subcellular structures using ptychographic hard X-ray tomography. Journal of Cell Science, 2021, 134, .	2.0	2
135	High-Resolution Ptychographic Tomography with Extended Depth of Field. , 2017, , .		2
136	Two-dimensional Fourier transform of scaled Dirac delta curves. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2004, 21, 1682.	1.5	1
137	Coupled mode competition in unstable resonators using the exact cavity equations of motion with dynamic gain. Journal of Optics B: Quantum and Semiclassical Optics, 2005, 7, 253-263.	1.4	1
138	Differentially Encoded Holography for X-Ray Coherent Imaging. Optics and Photonics News, 2010, 21, 31.	0.5	1
139	Publisher's Note: High-resolution hard x-ray magnetic imaging with dichroic ptychography [Phys. Rev. B 94, 064421 (2016)]. Physical Review B, 2016, 94, .	3.2	1
140	High-resolution 3D scanning X-ray microscopes at the Swiss Light Source. Microscopy and Microanalysis, 2018, 24, 172-175.	0.4	1
141	Lignin Deposition In Arabidopsis thaliana Cell Walls Unveiled By Ptychographic X-Ray Computed Tomography (PXCT). Microscopy and Microanalysis, 2018, 24, 386-387.	0.4	1
142	Path toward fast, high-resolution and more photon-efficient X-ray ptychography. , 2017, , .		1
143	Quasi-discrete Hankel transform of integer order for wave propagation. , 2004, , .		0
144	Two-dimensional boundary-less optical field propagation. , 2005, 5867, 369.		0

#	ARTICLE	IF	CITATIONS
145	Modeling of transverse-mode competition in unstable resonators with large discharge current using the exact cavity equations of motion with dynamic gain. , 2005, 5708, 32.		0
146	Application of the two-dimensional Fourier transform scaling theorem to Dirac delta curves. , 2005, , .		0
147	Numerical analysis of the mode competition in high-gain unstable resonators using the exact cavity equations of motion with dynamic gain. , 2005, , .		0
148	Characterization of a 20-nm hard x-ray focus by ptychographic coherent diffractive imaging. Proceedings of SPIE, 2011, , .	0.8	0
149	Hard X-ray Magnetic Tomography: A New Technique For The Visualization Of Three Dimensional Magnetic Structures. Microscopy and Microanalysis, 2018, 24, 82-83.	0.4	0
150	High-resolution, Non-destructive X-ray Tomography. Chimia, 2018, 72, 339.	0.6	0
151	Hierarchical Structure of NiMo Hydrodesulfurization Catalysts Determined by Ptychographic X-ray Computed Tomography. Angewandte Chemie, 2020, 132, 17419-17424.	2.0	0
152	Multislice electron ptychography enables lattice vibration-limited resolution and linear phase-contrast imaging in thick samples. Microscopy and Microanalysis, 2021, 27, 754-756.	0.4	0
153	Morphological segmentation and digital image processing to retrieve geometric characteristics of fabric filaments. , 2005, , .		0
154	Focused X-ray Beam Characterization by Phase Retrieval with a Moveable Phase-shifting Structure. , 2008, , .		0
155	Holographic Image Reconstruction Using a Reference of a Pair of Crossed Wires. , 2009, , .		0
156	Sparse X-ray hyperspectral tomography for nanoscopic compositional analysis of VPO catalysts. , 2021, , .		0