

Wolfgang Ludwig

List of Publications by Year in descending order

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54
papers

2,619
citations

186265

28
h-index

197818

49
g-index

56
all docs

56
docs citations

56
times ranked

2166
citing authors

#	ARTICLE	IF	CITATIONS
1	X-ray diffraction contrast tomography: a novel technique for three-dimensional grain mapping of polycrystals. I. Direct beam case. <i>Journal of Applied Crystallography</i> , 2008, 41, 302-309.	4.5	221
2	Advances in synchrotron radiation microtomography. <i>Scripta Materialia</i> , 2006, 55, 41-46.	5.2	166
3	3-D growth of a short fatigue crack within a polycrystalline microstructure studied using combined diffraction and phase-contrast X-ray tomography. <i>Acta Materialia</i> , 2011, 59, 590-601.	7.9	166
4	X-ray diffraction contrast tomography: a novel technique for three-dimensional grain mapping of polycrystals. II. The combined case. <i>Journal of Applied Crystallography</i> , 2008, 41, 310-318.	4.5	159
5	Hard x-ray phase imaging using simple propagation of a coherent synchrotron radiation beam. <i>Journal Physics D: Applied Physics</i> , 1999, 32, A145-A151.	2.8	138
6	Three dimensional experimental and numerical multiscale analysis of a fatigue crack. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2010, 199, 1307-1325.	6.6	132
7	Fatigue crack propagation: In situ visualization using X-ray microtomography and 3D simulation using the extended finite element method. <i>Acta Materialia</i> , 2006, 54, 1111-1122.	7.9	124
8	Using machine learning and a data-driven approach to identify the small fatigue crack driving force in polycrystalline materials. <i>Npj Computational Materials</i> , 2018, 4, .	8.7	120
9	Advances in X-ray diffraction contrast tomography: flexibility in the setup geometry and application to multiphase materials. <i>Journal of Applied Crystallography</i> , 2013, 46, 297-311.	4.5	108
10	Three-dimensional snow images by X-ray microtomography. <i>Annals of Glaciology</i> , 2001, 32, 75-81.	1.4	107
11	Predicting the 3D fatigue crack growth rate of small cracks using multimodal data via Bayesian networks: In-situ experiments and crystal plasticity simulations. <i>Journal of the Mechanics and Physics of Solids</i> , 2018, 115, 208-229.	4.8	80
12	Fast X-ray tomography and acoustic emission study of damage in metals during continuous tensile tests. <i>Acta Materialia</i> , 2007, 55, 6806-6815.	7.9	75
13	Influence of closure on the 3D propagation of fatigue cracks in a nodular cast iron investigated by X-ray tomography and 3D volume correlation. <i>Acta Materialia</i> , 2010, 58, 2957-2967.	7.9	70
14	Grain boundary mobilities in polycrystals. <i>Acta Materialia</i> , 2020, 191, 211-220.	7.9	61
15	Advances in synchrotron hard X-ray based imaging. <i>Comptes Rendus Physique</i> , 2008, 9, 624-641.	0.9	60
16	Phase imaging using highly coherent X-rays: radiography, tomography, diffraction topography. <i>Journal of Synchrotron Radiation</i> , 2000, 7, 196-201.	2.4	58
17	A study of deformation twinning in a titanium alloy by X-ray diffraction contrast tomography. <i>Acta Materialia</i> , 2016, 105, 417-428.	7.9	56
18	On the Use of Laguerre Tessellations for Representations of 3D Grain Structures. <i>Advanced Engineering Materials</i> , 2011, 13, 165-170.	3.5	54

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19	Combining operando synchrotron X-ray tomographic microscopy and scanning X-ray diffraction to study lithium ion batteries. <i>Scientific Reports</i> , 2016, 6, 27994.	3.3	53
20	Three-dimensional grain growth in pure iron. Part I. statistics on the grain level. <i>Acta Materialia</i> , 2018, 156, 76-85.	7.9	48
21	High-resolution three-dimensional mapping of individual grains in polycrystals by topotomography. <i>Journal of Applied Crystallography</i> , 2007, 40, 905-911.	4.5	42
22	Assessing reliability of fatigue indicator parameters for small crack growth via a probabilistic framework. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2017, 25, 045010.	2.0	40
23	Nanovoid morphology and distribution in deformed HDPE studied by magnified synchrotron radiation holotomography. <i>Polymer</i> , 2014, 55, 6439-6443.	3.8	36
24	Three dimensional quantification of anisotropic void evolution in deformed semi-crystalline polyamide 6. <i>International Journal of Plasticity</i> , 2016, 83, 19-36.	8.8	34
25	Comparison between diffraction contrast tomography and high-energy diffraction microscopy on a slightly deformed aluminium alloy. <i>IUCr</i> , 2016, 3, 32-42.	2.2	34
26	Three-dimensional full-field X-ray orientation microscopy. <i>Scientific Reports</i> , 2016, 6, 20618.	3.3	33
27	Analysis of Snow Microstructure by Means of X-ray Diffraction Contrast Tomography. <i>Advanced Engineering Materials</i> , 2011, 13, 128-135.	3.5	30
28	Quantifying microscale drivers for fatigue failure via coupled synchrotron X-ray characterization and simulations. <i>Nature Communications</i> , 2020, 11, 3189.	12.8	30
29	Reconstruction of local orientation in grains using a discrete representation of orientation space. <i>Journal of Applied Crystallography</i> , 2014, 47, 1826-1840.	4.5	29
30	Simulation of Short Fatigue Crack Propagation in a 3D Experimental Microstructure. <i>Advanced Engineering Materials</i> , 2017, 19, 1600721.	3.5	25
31	Direct Observation of Grain Boundary Migration during Recrystallization within the Bulk of a Moderately Deformed Aluminium Single Crystal. <i>Materials Transactions</i> , 2014, 55, 128-136.	1.2	24
32	Coupling Diffraction Contrast Tomography with the Finite Element Method. <i>Advanced Engineering Materials</i> , 2016, 18, 903-912.	3.5	24
33	Three-dimensional reconstruction of intragranular strain and orientation in polycrystals by near-field X-ray diffraction. <i>Current Opinion in Solid State and Materials Science</i> , 2020, 24, 100851.	11.5	21
34	Validation of three-dimensional diffraction contrast tomography reconstructions by means of electron backscatter diffraction characterization. <i>Journal of Applied Crystallography</i> , 2013, 46, 1145-1150.	4.5	18
35	Incipient Bulk Polycrystal Plasticity Observed by Synchrotron In-Situ Topotomography. <i>Materials</i> , 2018, 11, 2018.	2.9	18
36	Comparison between a near-field and a far-field indexing approach for characterization of a polycrystalline sample volume containing more than 1500 grains. <i>Journal of Applied Crystallography</i> , 2014, 47, 1402-1416.	4.5	17

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37	Comparison of voiding mechanisms in semi-crystalline polyamide 6 during tensile and creep tests. <i>Polymer Testing</i> , 2016, 49, 137-146.	4.8	17
38	3D characterization of partially recrystallized Al using high resolution diffraction contrast tomography. <i>Scripta Materialia</i> , 2018, 157, 72-75.	5.2	17
39	3D X-ray Microtomography Volume Correlation to Study Fatigue Crack Growth. <i>Advanced Engineering Materials</i> , 2011, 13, 186-193.	3.5	15
40	A feasibility study of full-field X-ray orientation microscopy at the onset of deformation twinning. <i>Journal of Applied Crystallography</i> , 2016, 49, 544-555.	4.5	11
41	In situ 4D mechanical testing of structural materials: The data challenge. <i>Current Opinion in Solid State and Materials Science</i> , 2020, 24, 100834.	11.5	10
42	An accurate projection model for diffraction image formation and inversion using a polychromatic cone beam. <i>Journal of Applied Crystallography</i> , 2015, 48, 334-343.	4.5	8
43	X-ray orientation microscopy using topo-tomography and multi-mode diffraction contrast tomography. <i>Current Opinion in Solid State and Materials Science</i> , 2020, 24, 100832.	11.5	8
44	Box-Scan: A Novel 3DXRD Method for Studies of Recrystallization and Grain Growth. <i>Materials Science Forum</i> , 2012, 715-716, 518-520.	0.3	5
45	Orientation selective grain sublimation“deposition in snow under temperature gradient metamorphism observed with diffraction contrast tomography. <i>Cryosphere</i> , 2021, 15, 4381-4398.	3.9	5
46	X-Ray Micro-Tomography Coupled to the Extended Finite Element Method to Investigate Microstructurally Short Fatigue Cracks. <i>Materials Science Forum</i> , 2008, 567-568, 301-304.	0.3	3
47	Grain Tracking at the High Energy Materials Science Beamline of the Petra III Synchrotron Radiation Source. <i>Materials Science Forum</i> , 0, 652, 70-73.	0.3	2
48	Reconstructing grains in 3D through 4D Scanning Precession Electron Diffraction. <i>Microscopy and Microanalysis</i> , 2021, 27, 2494-2495.	0.4	2
49	Discrete representation of local orientation in grains using diffraction contrast tomography. , 2013, , .		1
50	Three-Dimensional X-ray Diffraction (3DXRD) Imaging Techniques. , 2014, , 280-321.		1
51	3D X-RAY DIFFRACTION MICROSCOPY. , 2014, , 205-253.		1
52	Cyclic Deformation Induced Residual Stress Evolution and 3D Short Fatigue Crack Growth Investigated by Advanced Synchrotron Tomography Techniques. <i>Materials</i> , 2021, 14, 1562.	2.9	1
53	Imposing equilibrium on experimental 3-D stress fields using Hodge decomposition and FFT-based optimization. <i>Mechanics of Materials</i> , 2022, 164, 104109.	3.2	1
54	Interface Orientation Distribution during Grain Growth in Bulk SrTiO ₃ Measured by Means of 3D X-Ray Diffraction Contrast Tomography. <i>Materials Research Society Symposia Proceedings</i> , 2012, 1421, 58.	0.1	0