

Xianghui Xiao

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/5813857/publications.pdf>

Version: 2024-02-01

78
papers

4,398
citations

136950

32
h-index

110387

64
g-index

79
all docs

79
docs citations

79
times ranked

5159
citing authors

#	ARTICLE	IF	CITATIONS
1	TomoPy: a framework for the analysis of synchrotron tomographic data. <i>Journal of Synchrotron Radiation</i> , 2014, 21, 1188-1193.	2.4	695
2	Ultra-high-voltage Ni-rich layered cathodes in practical Li metal batteries enabled by a sulfonamide-based electrolyte. <i>Nature Energy</i> , 2021, 6, 495-505.	39.5	323
3	Effect of Pore Connectivity on Li Dendrite Propagation within LLZO Electrolytes Observed with Synchrotron X-ray Tomography. <i>ACS Energy Letters</i> , 2018, 3, 1056-1061.	17.4	275
4	Surface regulation enables high stability of single-crystal lithium-ion cathodes at high voltage. <i>Nature Communications</i> , 2020, 11, 3050.	12.8	225
5	Effect of laser power on defect, texture, and microstructure of a laser powder bed fusion processed 316L stainless steel. <i>Materials and Design</i> , 2019, 164, 107534.	7.0	193
6	Quantification of Heterogeneous Degradation in Li-ion Batteries. <i>Advanced Energy Materials</i> , 2019, 9, 1900674.	19.5	176
7	Pore elimination mechanisms during 3D printing of metals. <i>Nature Communications</i> , 2019, 10, 3088.	12.8	158
8	Charge distribution guided by grain crystallographic orientations in polycrystalline battery materials. <i>Nature Communications</i> , 2020, 11, 83.	12.8	129
9	Insights into interfacial effect and local lithium-ion transport in polycrystalline cathodes of solid-state batteries. <i>Nature Communications</i> , 2020, 11, 5700.	12.8	122
10	Gradient-morph LiCoO_2 single crystals with stabilized energy density above 3400 Wh L^{-1} . <i>Energy and Environmental Science</i> , 2020, 13, 1865-1878.	30.8	118
11	Stabilizing electrode-electrolyte interfaces to realize high-voltage $\text{Li} \parallel \text{LiCoO}_2$ batteries by a sulfonamide-based electrolyte. <i>Energy and Environmental Science</i> , 2021, 14, 6030-6040.	30.8	84
12	TIMBIR: A Method for Time-Space Reconstruction From Interlaced Views. <i>IEEE Transactions on Computational Imaging</i> , 2015, 1, 96-111.	4.4	80
13	Rational design of mechanically robust Ni-rich cathode materials via concentration gradient strategy. <i>Nature Communications</i> , 2021, 12, 6024.	12.8	80
14	Tortuosity Effects in Garnet-Type $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ Solid Electrolytes. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 2022-2030.	8.0	75
15	Experimental assessment of fracture of individual sand particles at different loading rates. <i>International Journal of Impact Engineering</i> , 2014, 68, 8-14.	5.0	70
16	Emerging X-ray imaging technologies for energy materials. <i>Materials Today</i> , 2020, 34, 132-147.	14.2	70
17	In situ X-ray synchrotron tomographic imaging during the compression of hyper-elastic polymeric materials. <i>Journal of Materials Science</i> , 2016, 51, 171-187.	3.7	66
18	Revealing mechanism responsible for structural reversibility of single-crystal VO_2 nanorods upon lithiation/delithiation. <i>Nano Energy</i> , 2017, 36, 197-205.	16.0	65

#	ARTICLE	IF	CITATIONS
19	Operando X-ray tomography and sub-second radiography for characterizing transport in polymer electrolyte membrane electrolyzer. <i>Electrochimica Acta</i> , 2018, 276, 424-433.	5.2	60
20	Investigation of multiphase fluid imbibition in shale through synchrotron-based dynamic micro-CT imaging. <i>Journal of Geophysical Research: Solid Earth</i> , 2017, 122, 4475-4491.	3.4	57
21	An Integrated Method for Upscaling Pore-Network Characterization and Permeability Estimation: Example from the Mississippian Barnett Shale. <i>Transport in Porous Media</i> , 2015, 109, 359-376.	2.6	56
22	Three-dimensional finite element study on stress generation in synchrotron X-ray tomography reconstructed nickel-manganese-cobalt based half cell. <i>Journal of Power Sources</i> , 2016, 336, 8-18.	7.8	55
23	Direct observations of liquid water formation at nano- and micro-scale in platinum group metal-free electrodes by operando X-ray computed tomography. <i>Materials Today Energy</i> , 2018, 9, 187-197.	4.7	55
24	Investigating Phase-Change-Induced Flow in Gas Diffusion Layers in Fuel Cells with X-ray Computed Tomography. <i>Electrochimica Acta</i> , 2017, 256, 279-290.	5.2	51
25	Fatigue crack growth in SiC particle reinforced Al alloy matrix composites at high and low R-ratios by in situ X-ray synchrotron tomography. <i>International Journal of Fatigue</i> , 2014, 68, 136-143.	5.7	46
26	Empowering multicomponent cathode materials for sodium ion batteries by exploring three-dimensional compositional heterogeneities. <i>Energy and Environmental Science</i> , 2018, 11, 2496-2508.	30.8	45
27	In situ experimental techniques to study the mechanical behavior of materials using X-ray synchrotron tomography. <i>Integrating Materials and Manufacturing Innovation</i> , 2014, 3, 109-122.	2.6	41
28	The mechanism of eutectic growth in highly anisotropic materials. <i>Nature Communications</i> , 2016, 7, 12953.	12.8	41
29	Capacity Fading Mechanism of the Commercial 18650 LiFePO ₄ -Based Lithium-Ion Batteries: An in Situ Time-Resolved High-Energy Synchrotron XRD Study. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 4622-4629.	8.0	40
30	3D morphological evolution of porous titanium by x-ray micro- and nano-tomography. <i>Journal of Materials Research</i> , 2013, 28, 2444-2452.	2.6	39
31	Formation of three-dimensional bicontinuous structures via molten salt dealloying studied in real-time by in situ synchrotron X-ray nano-tomography. <i>Nature Communications</i> , 2021, 12, 3441.	12.8	36
32	Systems-level investigation of aqueous batteries for understanding the benefit of water-in-salt electrolyte by synchrotron nanoimaging. <i>Science Advances</i> , 2020, 6, eaay7129.	10.3	35
33	Depth-dependent valence stratification driven by oxygen redox in lithium-rich layered oxide. <i>Nature Communications</i> , 2020, 11, 6342.	12.8	34
34	Wave propagation and phase retrieval in Fresnel diffraction by a distorted-object approach. <i>Physical Review B</i> , 2005, 72, .	3.2	32
35	Characterization of metals in four dimensions. <i>Materials Research Letters</i> , 2020, 8, 462-476.	8.7	32
36	A microstructure-guided constitutive modeling approach for random heterogeneous materials: Application to structural binders. <i>Computational Materials Science</i> , 2016, 119, 52-64.	3.0	31

#	ARTICLE	IF	CITATIONS
37	Direct observation of void evolution during cement hydration. <i>Materials and Design</i> , 2017, 136, 137-149.	7.0	31
38	Twin-mediated crystal growth: an enigma resolved. <i>Scientific Reports</i> , 2016, 6, 28651.	3.3	29
39	X-ray computed tomography of wood-adhesive bondlines: attenuation and phase-contrast effects. <i>Wood Science and Technology</i> , 2015, 49, 1185-1208.	3.2	28
40	X-ray methods to observe and quantify adhesive penetration into wood. <i>Journal of Materials Science</i> , 2019, 54, 705-718.	3.7	28
41	Probing Dopant Redistribution, Phase Propagation, and Local Chemical Changes in the Synthesis of Layered Oxide Battery Cathodes. <i>Advanced Energy Materials</i> , 2021, 11, .	19.5	28
42	In Situ X-ray Microtomography of Stress Corrosion Cracking and Corrosion Fatigue in Aluminum Alloys. <i>Jom</i> , 2017, 69, 1404-1414.	1.9	26
43	Practical error estimation in zoom-in and truncated tomography reconstructions. <i>Review of Scientific Instruments</i> , 2007, 78, 063705.	1.3	24
44	Transmission x-ray microscopy and its applications in battery material research—a short review. <i>Nanotechnology</i> , 2021, 32, 442003.	2.6	24
45	Designing Multiscale Porous Metal by Simple Dealloying with 3D Morphological Evolution Mechanism Revealed via X-ray Nano-tomography. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 2793-2804.	8.0	23
46	A scolopocryptopid centipede (Chilopoda: Scolopendromorpha) from Mexican amber: synchrotron microtomography and phylogenetic placement using a combined morphological and molecular data set. <i>Zoological Journal of the Linnean Society</i> , 2012, 166, 768-786.	2.3	22
47	Real-time visualization of dynamic fractures in porcine bones and the loading-rate effect on their fracture toughness. <i>Journal of the Mechanics and Physics of Solids</i> , 2019, 131, 358-371.	4.8	21
48	Revealing 3D Morphological and Chemical Evolution Mechanisms of Metals in Molten Salt by Multimodal Microscopy. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 17321-17333.	8.0	20
49	Reaction Heterogeneity in LiFePO_4 Agglomerates and the Role of Intercalation-Induced Stress. <i>ACS Energy Letters</i> , 2022, 7, 1648-1656.	17.4	20
50	Multi-scale observations of structure and chemical composition changes of portland cement systems during hydration. <i>Construction and Building Materials</i> , 2019, 212, 486-499.	7.2	19
51	Visualizing time-dependent microstructural and chemical evolution during molten salt corrosion of Ni-20Cr model alloy using correlative quasi in situ TEM and in situ synchrotron X-ray nano-tomography. <i>Corrosion Science</i> , 2022, 195, 109962.	6.6	19
52	Sea urchin tooth mineralization: Calcite present early in the aboral plumula. <i>Journal of Structural Biology</i> , 2012, 180, 280-289.	2.8	17
53	Charging Reactions Promoted by Geometrically Necessary Dislocations in Battery Materials Revealed by In Situ Single-Particle Synchrotron Measurements. <i>Advanced Materials</i> , 2020, 32, e2003417.	21.0	17
54	Probing the growth and melting pathways of a decagonal quasicrystal in real-time. <i>Scientific Reports</i> , 2017, 7, 17407.	3.3	16

#	ARTICLE	IF	CITATIONS
55	Effect of the grain arrangements on the thermal stability of polycrystalline nickel-rich lithium-based battery cathodes. <i>Nature Communications</i> , 2022, 13, .	12.8	16
56	X-ray CT characterization and fracture simulation of ASR damage of glass particles in alkaline solution and mortar. <i>Theoretical and Applied Fracture Mechanics</i> , 2017, 92, 76-88.	4.7	15
57	The mechanism of eutectic modification by trace impurities. <i>Scientific Reports</i> , 2019, 9, 3381.	3.3	14
58	<i>In situ</i> observation of fracture processes in high-strength concretes and limestone using high-speed X-ray phase-contrast imaging. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2017, 375, 20160178.	3.4	13
59	Freeze-cast yttria-stabilized zirconia pore networks: Effects of alcohol additives. <i>International Journal of Applied Ceramic Technology</i> , 2018, 15, 296-306.	2.1	12
60	A side-by-side comparison of the solidification dynamics of quasicrystalline and approximant phases in the Al-Co-Ni system. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2019, 75, 281-296.	0.1	12
61	High-speed X-ray visualization of dynamic crack initiation and propagation in bone. <i>Acta Biomaterialia</i> , 2019, 90, 278-286.	8.3	11
62	Synchrotron CT imaging of lattice structures with engineered defects. <i>Journal of Materials Science</i> , 2020, 55, 11353-11366.	3.7	11
63	Density measurement of samples under high pressure using synchrotron microtomography and diamond anvil cell techniques. <i>Journal of Synchrotron Radiation</i> , 2010, 17, 360-366.	2.4	10
64	Tracer-Guided Characterization of Dominant Pore Networks and Implications for Permeability and Wettability in Shale. <i>Journal of Geophysical Research: Solid Earth</i> , 2019, 124, 1459-1479.	3.4	10
65	Investigating Particle Size-Dependent Redox Kinetics and Charge Distribution in Disordered Rocksalt Cathodes. <i>Advanced Functional Materials</i> , 2022, 32, .	14.9	10
66	Synchrotron-Based X-ray Computed Tomography During Compression Loading of Cellular Materials. <i>Microscopy Today</i> , 2015, 23, 12-19.	0.3	9
67	<i>TXM-Sandbox</i> : an open-source software for transmission X-ray microscopy data analysis. <i>Journal of Synchrotron Radiation</i> , 2022, 29, 266-275.	2.4	9
68	Versatile compact heater design for <i>in situ</i> nano-tomography by transmission X-ray microscopy. <i>Journal of Synchrotron Radiation</i> , 2020, 27, 746-752.	2.4	7
69	Data Challenges of In Situ X-Ray Tomography for Materials Discovery and Characterization. <i>Springer Series in Materials Science</i> , 2018, , 129-165.	0.6	6
70	Phase Field Modeling of Coupled Phase Separation and Diffusion-Induced Stress in Lithium Iron Phosphate Particles Reconstructed From Synchrotron Nano X-ray Tomography. <i>Journal of Electrochemical Energy Conversion and Storage</i> , 2019, 16, .	2.1	6
71	Quantitative probing of the fast particle motion during the solidification of battery electrodes. <i>Applied Physics Letters</i> , 2020, 116, .	3.3	6
72	Deformation and fracture behavior of a laser powder bed fusion processed stainless steel: In situ synchrotron x-ray computed microtomography study. <i>Additive Manufacturing</i> , 2021, 40, 101914.	3.0	5

#	ARTICLE	IF	CITATIONS
73	Crystal optics as guard apertures for coherent x-ray diffraction imaging. <i>Optics Letters</i> , 2006, 31, 3194.	3.3	4
74	In situ Imaging of Materials using X-ray Tomography. <i>Microscopy and Microanalysis</i> , 2018, 24, 1002-1003.	0.4	2
75	Formation of a single quasicrystal upon collision of multiple grains. <i>Nature Communications</i> , 2021, 12, 5790.	12.8	2
76	In situ imaging of three dimensional freeze printing process using rapid x-ray synchrotron radiography. <i>Review of Scientific Instruments</i> , 2022, 93, 013703.	1.3	2
77	Rigid registration algorithm based on the minimization of the total variation of the difference map. <i>Journal of Synchrotron Radiation</i> , 2022, 29, 1085-1094.	2.4	2
78	Multi-scale and multimodal x-ray microscopy and applications. <i>Microscopy and Microanalysis</i> , 2021, 27, 378-378.	0.4	0