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	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. Corrosion Science, 2022, 195, 109962.	6.6	19
2	TXM-Sandbox: an open-source software for transmission X-ray microscopy data analysis. Journal of Synchrotron Radiation, 2022, 29, 266-275.	2.4	9
3	In situ imaging of three dimensional freeze printing process using rapid x-ray synchrotron radiography. Review of Scientific Instruments, 2022, 93, 013703.	1.3	2
4	Investigating Particle Sizeâ€Dependent Redox Kinetics and Charge Distribution in Disordered Rocksalt Cathodes. Advanced Functional Materials, 2022, 32, .	14.9	10
5	Reaction Heterogeneity in LiFePO₄ Agglomerates and the Role of Intercalation-Induced Stress. ACS Energy Letters, 2022, 7, 1648-1656.	17.4	20
6	Rigid registration algorithm based on the minimization of the total variation of the difference map. Journal of Synchrotron Radiation, 2022, 29, 1085-1094.	2.4	2
7	Effect of the grain arrangements on the thermal stability of polycrystalline nickel-rich lithium-based battery cathodes. Nature Communications, 2022, 13, .	12.8	16
8	Probing Dopant Redistribution, Phase Propagation, and Local Chemical Changes in the Synthesis of Layered Oxide Battery Cathodes. Advanced Energy Materials, 2021, 11, .	19.5	28
9	Ultra-high-voltage Ni-rich layered cathodes in practical Li metal batteries enabled by a sulfonamide-based electrolyte. Nature Energy, 2021, 6, 495-505.	39.5	323
10	Deformation and fracture behavior of a laser powder bed fusion processed stainless steel: In situ synchrotron x-ray computed microtomography study. Additive Manufacturing, 2021, 40, 101914.	3.0	5
11	Formation of three-dimensional bicontinuous structures via molten salt dealloying studied in real-time by in situ synchrotron X-ray nano-tomography. Nature Communications, 2021, 12, 3441.	12.8	36
12	Multi-scale and multimodal x-ray microscopy and applications. Microscopy and Microanalysis, 2021, 27, 378-378.	0.4	0
13	Transmission x-ray microscopy and its applications in battery material researchâ€”a short review. Nanotechnology, 2021, 32, 442003.	2.6	24
14	Stabilizing electrodeâ€“electrolyte interfaces to realize high-voltage Li||LiCoO₂ batteries by a sulfonamide-based electrolyte. Energy and Environmental Science, 2021, 14, 6030-6040.	30.8	84
15	Formation of a single quasicrystal upon collision of multiple grains. Nature Communications, 2021, 12, 5790.	12.8	2
16	Rational design of mechanically robust Ni-rich cathode materials via concentration gradient strategy. Nature Communications, 2021, 12, 6024.	12.8	80
17	Emerging X-ray imaging technologies for energy materials. Materials Today, 2020, 34, 132-147.	14.2	70
18	Charge distribution guided by grain crystallographic orientations in polycrystalline battery materials. Nature Communications, 2020, 11, 83.	12.8	129

#	Article	IF	Citations
19	Designing Multiscale Porous Metal by Simple Dealloying with 3D Morphological Evolution Mechanism Revealed via X-ray Nano-tomography. ACS Applied Materials & Interfaces, 2020, 12, 2793-2804.	8.0	23
20	Insights into interfacial effect and local lithium-ion transport in polycrystalline cathodes of solid-state batteries. Nature Communications, 2020, 11, 5700.	12.8	122
21	Charging Reactions Promoted by Geometrically Necessary Dislocations in Battery Materials Revealed by In Situ Singleâ€Particle Synchrotron Measurements. Advanced Materials, 2020, 32, e2003417.	21.0	17
22	Characterization of metals in four dimensions. Materials Research Letters, 2020, 8, 462-476.	8.7	32
23	Depth-dependent valence stratification driven by oxygen redox in lithium-rich layered oxide. Nature Communications, 2020, 11, 6342.	12.8	34
24	Gradient-morph LiCoO₂ single crystals with stabilized energy density above 3400 W h L^{â^'1}. Energy and Environmental Science, 2020, 13, 1865-1878.	30.8	118
25	Synchrotron CT imaging of lattice structures with engineered defects. Journal of Materials Science, 2020, 55, 11353-11366.	3.7	11
26	Versatile compact heater design forin situnano-tomography by transmission X-ray microscopy. Journal of Synchrotron Radiation, 2020, 27, 746-752.	2.4	7
27	Surface regulation enables high stability of single-crystal lithium-ion cathodes at high voltage. Nature Communications, 2020, 11, 3050.	12.8	225
28	Systems-level investigation of aqueous batteries for understanding the benefit of water-in-salt electrolyte by synchrotron nanoimaging. Science Advances, 2020, 6, eaay7129.	10.3	35
29	Quantitative probing of the fast particle motion during the solidification of battery electrodes. Applied Physics Letters, 2020, 116, .	3.3	6
30	Revealing 3D Morphological and Chemical Evolution Mechanisms of Metals in Molten Salt by Multimodal Microscopy. ACS Applied Materials & Interfaces, 2020, 12, 17321-17333.	8.0	20
31	X-ray methods to observe and quantify adhesive penetration into wood. Journal of Materials Science, 2019, 54, 705-718.	3.7	28
32	Real-time visualization of dynamic fractures in porcine bones and the loading-rate effect on their fracture toughness. Journal of the Mechanics and Physics of Solids, 2019, 131, 358-371.	4.8	21
33	Pore elimination mechanisms during 3D printing of metals. Nature Communications, 2019, 10, 3088.	12.8	158
34	Quantification of Heterogeneous Degradation in Liâ€Ion Batteries. Advanced Energy Materials, 2019, 9, 1900674.	19.5	176
35	Phase Field Modeling of Coupled Phase Separation and Diffusion-Induced Stress in Lithium Iron Phosphate Particles Reconstructed From Synchrotron Nano X-ray Tomography. Journal of Electrochemical Energy Conversion and Storage, 2019, 16, .	2.1	6
36	The mechanism of eutectic modification by trace impurities. Scientific Reports, 2019, 9, 3381.	3.3	14

#	Article	IF	Citations
37	Multi-scale observations of structure and chemical composition changes of portland cement systems during hydration. Construction and Building Materials, 2019, 212, 486-499.	7.2	19
38	High-speed X-ray visualization of dynamic crack initiation and propagation in bone. Acta Biomaterialia, 2019, 90, 278-286.	8.3	11
39	Tracerâ€Guided Characterization of Dominant Pore Networks and Implications for Permeability and Wettability in Shale. Journal of Geophysical Research: Solid Earth, 2019, 124, 1459-1479.	3.4	10
40	Tortuosity Effects in Garnet-Type Li₇La₃Zr₂O₁₂ Solid Electrolytes. ACS Applied Materials & Interfaces, 2019, 11, 2022-2030.	8.0	75
41	Effect of laser power on defect, texture, and microstructure of a laser powder bed fusion processed 316L stainless steel. Materials and Design, 2019, 164, 107534.	7.0	193
42	A side-by-side comparison of the solidification dynamics of quasicrystalline and approximant phases in the Alâ€“Coâ€“Ni system. Acta Crystallographica Section A: Foundations and Advances, 2019, 75, 281-296.	0.1	12
43	Freezeâ€cast yttriaâ€stabilized zirconia pore networks: Effects of alcohol additives. International Journal of Applied Ceramic Technology, 2018, 15, 296-306.	2.1	12
44	Capacity Fading Mechanism of the Commercial 18650 LiFePO₄-Based Lithium-Ion Batteries: An in Situ Time-Resolved High-Energy Synchrotron XRD Study. ACS Applied Materials & Interfaces, 2018, 10, 4622-4629.	8.0	40
45	Operando X-ray tomography and sub-second radiography for characterizing transport in polymer electrolyte membrane electrolyzer. Electrochimica Acta, 2018, 276, 424-433.	5.2	60
46	Effect of Pore Connectivity on Li Dendrite Propagation within LLZO Electrolytes Observed with Synchrotron X-ray Tomography. ACS Energy Letters, 2018, 3, 1056-1061.	17.4	275
47	Data Challenges of In Situ X-Ray Tomography for Materials Discovery and Characterization. Springer Series in Materials Science, 2018, , 129-165.	0.6	6
48	Direct observations of liquid water formation at nano- and micro-scale in platinum group metal-free electrodes by operando X-ray computed tomography. Materials Today Energy, 2018, 9, 187-197.	4.7	55
49	Empowering multicomponent cathode materials for sodium ion batteries by exploring three-dimensional compositional heterogeneities. Energy and Environmental Science, 2018, 11, 2496-2508.	30.8	45
50	In situ Imaging of Materials using X-ray Tomography. Microscopy and Microanalysis, 2018, 24, 1002-1003.	0.4	2
51	Revealing mechanism responsible for structural reversibility of single-crystal VO2 nanorods upon lithiation/delithiation. Nano Energy, 2017, 36, 197-205.	16.0	65
52	Investigation of multiphase fluid imbibition in shale through synchrotronâ€based dynamic microâ€CT imaging. Journal of Geophysical Research: Solid Earth, 2017, 122, 4475-4491.	3.4	57
53	In Situ X-ray Microtomography of Stress Corrosion Cracking and Corrosion Fatigue in Aluminum Alloys. Jom, 2017, 69, 1404-1414.	1.9	26
54	In situ observation of fracture processes in high-strength concretes and limestone using high-speed X-ray phase-contrast imaging. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20160178.	3.4	13

#	Article	IF	Citations
55	Direct observation of void evolution during cement hydration. Materials and Design, 2017, 136, 137-149.	7.0	31
56	Investigating Phaseâ€Changeâ€Induced Flow in Gas Diffusion Layers in Fuel Cells with Xâ€ray Computed Tomography. Electrochimica Acta, 2017, 256, 279-290.	5.2	51
57	X-ray CT characterization and fracture simulation of ASR damage of glass particles in alkaline solution and mortar. Theoretical and Applied Fracture Mechanics, 2017, 92, 76-88.	4.7	15
58	Probing the growth and melting pathways of a decagonal quasicrystal in real-time. Scientific Reports, 2017, 7, 17407.	3.3	16
59	Twin-mediated crystal growth: an enigma resolved. Scientific Reports, 2016, 6, 28651.	3.3	29
60	A microstructure-guided constitutive modeling approach for random heterogeneous materials: Application to structural binders. Computational Materials Science, 2016, 119, 52-64.	3.0	31
61	The mechanism of eutectic growth in highly anisotropic materials. Nature Communications, 2016, 7, 12953.	12.8	41
62	Three-dimensional finite element study on stress generation in synchrotron X-ray tomography reconstructed nickel-manganese-cobalt based half cell. Journal of Power Sources, 2016, 336, 8-18.	7.8	55
63	In situ X-ray synchrotron tomographic imaging during the compression of hyper-elastic polymeric materials. Journal of Materials Science, 2016, 51, 171-187.	3.7	66
64	Synchrotron-Based X-ray Computed Tomography During Compression Loading of Cellular Materials. Microscopy Today, 2015, 23, 12-19.	0.3	9
65	X-ray computed tomography of wood-adhesive bondlines: attenuation and phase-contrast effects. Wood Science and Technology, 2015, 49, 1185-1208.	3.2	28
66	An Integrated Method for Upscaling Pore-Network Characterization and Permeability Estimation: Example from the Mississippian Barnett Shale. Transport in Porous Media, 2015, 109, 359-376.	2.6	56
67	TIMBIR: A Method for Time-Space Reconstruction From Interlaced Views. IEEE Transactions on Computational Imaging, 2015, 1, 96-111.	4.4	80
68	TomoPy: a framework for the analysis of synchrotronÂtomographic data. Journal of Synchrotron Radiation, 2014, 21, 1188-1193.	2.4	695
69	In situ experimental techniques to study the mechanical behavior of materials using X-ray synchrotron tomography. Integrating Materials and Manufacturing Innovation, 2014, 3, 109-122.	2.6	41
70	Experimental assessment of fracture of individual sand particles at different loading rates. International Journal of Impact Engineering, 2014, 68, 8-14.	5.0	70
71	Fatigue crack growth in SiC particle reinforced Al alloy matrix composites at high and low R-ratios by in situ X-ray synchrotron tomography. International Journal of Fatigue, 2014, 68, 136-143.	5.7	46
72	3D morphological evolution of porous titanium by x-ray micro- and nano-tomography. Journal of Materials Research, 2013, 28, 2444-2452.	2.6	39

#	Article	IF	Citations
73	A scolopocryptopid centipede (Chilopoda: Scolopendromorpha) from Mexican amber: synchrotron microtomography and phylogenetic placement using a combined morphological and molecular data set. Zoological Journal of the Linnean Society, 2012, 166, 768-786.	2.3	22
74	Sea urchin tooth mineralization: Calcite present early in the aboral plumula. Journal of Structural Biology, 2012, 180, 280-289.	2.8	17
75	Density measurement of samples under high pressure using synchrotron microtomography and diamond anvil cell techniques. Journal of Synchrotron Radiation, 2010, 17, 360-366.	2.4	10
76	Practical error estimation in zoom-in and truncated tomography reconstructions. Review of Scientific Instruments, 2007, 78, 063705.	1.3	24
77	Crystal optics as guard apertures for coherent x-ray diffraction imaging. Optics Letters, 2006, 31, 3194.	3.3	4
78	Wave propagation and phase retrieval in Fresnel diffraction by a distorted-object approach. Physical Review B, 2005, 72, .	3.2	32