Johanna Nelson Weker

List of Publications by Year
in descending order

75 papers	5,411 citations	101384 36 h-index	79541 73 g-index
78 all docs	78 docs citations	78 times ranked	7776 citing authors

#	Article	IF	Citations
1	High-Capacity Micrometer-Sized Li₂S Particles as Cathode Materials for Advanced Rechargeable Lithium-Ion Batteries. Journal of the American Chemical Society, 2012, 134, 15387-15394.	6.6	624
2	In Operando X-ray Diffraction and Transmission X-ray Microscopy of Lithium Sulfur Batteries. Journal of the American Chemical Society, 2012, 134, 6337-6343.	6.6	475
3	Full open-framework batteries for stationary energy storage. Nature Communications, 2014, 5, 3007.	5.8	440
4	Dynamics of pore formation during laser powder bed fusion additive manufacturing. Nature Communications, 2019, 10, 1987.	5.8	408
5	Reversible Multivalent (Monovalent, Divalent, Trivalent) Ion Insertion in Open Framework Materials. Advanced Energy Materials, 2015, 5, 1401869.	10.2	185
6	Effect of Al₂O₃ Coating on Stabilizing LiNi_{0.4}Mn_{0.4}Co_{0.2}O₂ Cathodes. Chemistry of Materials, 2015, 27, 6146-6154.	3.2	185
7	Electrochemical trapping of metastable Mn ³⁺ ions for activation of MnO ₂ oxygen evolution catalysts. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E5261-E5268.	3.3	173
8	In Situ X-ray Diffraction Studies of (De)lithiation Mechanism in Silicon Nanowire Anodes. ACS Nano, 2012, 6, 5465-5473.	7.3	156
9	P2â€“Na_xCo_yMn_{1â€“y}O₂ (y = 0,) Tj ETQq1 1 0.7843 Cycling Stability. Chemistry of Materials, 2016, 28, 2041-2051.	3.2	154
10	Persistent Stateâ€ofâ€Charge Heterogeneity in Relaxed, Partially Charged Li_{1â^'x}_xNi_{1/3}Co_{1/3}Mn_{1/3}O₂ Secondary Particles. Advanced Materials, 2016, 28, 6631-6638.	11.1	142
11	Soft X-Ray Diffraction Microscopy of a Frozen Hydrated Yeast Cell. Physical Review Letters, 2009, 103, 198101.	2.9	137
12	An instrument for in situ time-resolved X-ray imaging and diffraction of laser powder bed fusion additive manufacturing processes. Review of Scientific Instruments, 2018, 89, 055101.	0.6	123
13	High-resolution x-ray diffraction microscopy of specifically labeled yeast cells. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 7235-7239.	3.3	121
14	Insitu nanotomography and operando transmission X-ray microscopy of micron-sized Ge particles. Energy and Environmental Science, 2014, 7, 2771-2777.	15.6	117
15	A Review of Existing and Emerging Methods for Lithium Detection and Characterization in Liâ€Ion and Liâ€Metal Batteries. Advanced Energy Materials, 2021, 11, 2100372.	10.2	114
16	Hard Xâ€ray Nanotomography of Catalytic Solids at Work. Angewandte Chemie - International Edition, 2012, 51, 11986-11990.	7.2	96
17	Emerging In Situ and Operando Nanoscale Xâ€Ray Imaging Techniques for Energy Storage Materials. Advanced Functional Materials, 2015, 25, 1622-1637.	7.8	95
18	Direct Observation of Localized Radial Oxygen Migration in Functioning Tantalum Oxide Memristors. Advanced Materials, 2016, 28, 2772-2776.	11.1	92

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19	Nanoscale Chemical Imaging of an Individual Catalyst Particle with Soft X-ray Ptychography. ACS Catalysis, 2016, 6, 2178-2181.	5.5	91
20	Signal-to-noise and radiation exposure considerations in conventional and diffraction x-ray microscopy. Optics Express, 2009, 17, 13541.	1.7	80
21	NASICON Na₃V₂(PO₄)₃ Enables Quasi-Two-Stage Na⁺ and Zn²⁺ Intercalation for Multivalent Zinc Batteries. Chemistry of Materials, 2020, 32, 3028-3035.	3.2	75
22	Dichotomy in the Lithiation Pathway of Ellipsoidal and Platelet LiFePO₄ Particles Revealed through Nanoscale Operando Stateâ€ofâ€Charge Imaging. Advanced Functional Materials, 2015, 25, 3677-3687.	7.8	72
23	X-ray nanoscopy of cobalt Fischerâ€“Tropsch catalysts at work. Chemical Communications, 2013, 49, 4622.	2.2	71
24	Differentiating Double-Layer, Psuedocapacitance, and Battery-like Mechanisms by Analyzing Impedance Measurements in Three Dimensions. ACS Applied Materials & Interfaces, 2020, 12, 14071-14078.	4.0	64
25	Subsurface Cooling Rates and Microstructural Response during Laser Based Metal Additive Manufacturing. Scientific Reports, 2020, 10, 1981.	1.6	64
26	3D elemental sensitive imaging using transmission X-ray microscopy. Analytical and Bioanalytical Chemistry, 2012, 404, 1297-1301.	1.9	63
27	Quantification of heterogeneous, irreversible lithium plating in extreme fast charging of lithium-ion batteries. Energy and Environmental Science, 2021, 14, 4979-4988.	15.6	58
28	Recent advances in synchrotron-based hard x-ray phase contrast imaging. Journal Physics D: Applied Physics, 2013, 46, 494001.	1.3	54
29	Exceptional Oxygen Reduction Reaction Activity and Durability of Platinumâ€“Nickel Nanowires through Synthesis and Post-Treatment Optimization. ACS Omega, 2017, 2, 1408-1418.	1.6	53
30	Heterogeneous Behavior of Lithium Plating during Extreme Fast Charging. Cell Reports Physical Science, 2020, 1, 100114.	2.8	49
31	Using X-ray Microscopy To Understand How Nanoporous Materials Can Be Used To Reduce the Large Volume Change in Alloy Anodes. Nano Letters, 2017, 17, 870-877.	4.5	48
32	Multielectron, Cation and Anion Redox in Lithium-Rich Iron Sulfide Cathodes. Journal of the American Chemical Society, 2020, 142, 6737-6749.	6.6	46
33	Laserâ€Induced Keyhole Defect Dynamics during Metal Additive Manufacturing. Advanced Engineering Materials, 2019, 21, 1900455.	1.6	45
34	Incorrect support and missing center tolerances of phasing algorithms. Optics Express, 2010, 18, 26441.	1.7	44
35	Agglutination of single catalyst particles during fluid catalytic cracking as observed by X-ray nanotomography. Chemical Communications, 2015, 51, 8097-8100.	2.2	44
36	Data preparation and evaluation techniques for x-ray diffraction microscopy. Optics Express, 2010, 18, 18598.	1.7	40

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37	Interfaces in all solid state Li-metal batteries: A review on instabilities, stabilization strategies, and scalability. Energy Storage Materials, 2022, 45, 969-1001.	9.5	36
38	In situ X-ray-based imaging of nano materials. Current Opinion in Chemical Engineering, 2016, 12, 14-21.	3.8	29
39	Operando Spectroscopic Microscopy of LiCoO2 Cathodes Outside Standard Operating Potentials. Electrochimica Acta, 2017, 247, 977-982.	2.6	29
40	Zinc Blende Magnesium Sulfide in Rechargeable Magnesium-Sulfur Batteries. Chemistry of Materials, 2018, 30, 6318-6324.	3.2	29
41	Identifying and managing radiation damage during in situ transmission x-ray microscopy of Li-ion batteries. Proceedings of SPIE, 2013, , .	0.8	28
42	Mechanism of Na⁺ Insertion in Alkali Vanadates and Its Influence on Battery Performance. Advanced Energy Materials, 2016, 6, 1502336.	10.2	26
43	Understanding additive controlled lithium morphology in lithium metal batteries. Journal of Materials Chemistry A, 2020, 8, 16960-16972.	5.2	26
44	Cooling dynamics of two titanium alloys during laser powder bed fusion probed with in situ X-ray imaging and diffraction. Materials and Design, 2020, 195, 108987.	3.3	25
45	Structural Transformations in High-Capacity Li₂Cu_{0.5}Ni_{0.5}O₂ Cathodes. Chemistry of Materials, 2017, 29, 2997-3005.	3.2	21
46	Direct Measure of Electrode Spatial Heterogeneity: Influence of Processing Conditions on Anode Architecture and Performance. ACS Applied Materials & Interfaces, 2020, 12, 55954-55970.	4.0	21
47	Controlling Covalency and Anion Redox Potentials through Anion Substitution in Li-Rich Chalcogenides. Chemistry of Materials, 2021, 33, 378-391.	3.2	20
48	Anti-contamination device for cryogenic soft X-ray diffraction microscopy. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2011, 638, 171-175.	0.7	19
49	Lensless imaging of nanoporous glass with soft X-rays. Physics Letters, Section A: General, Atomic and Solid State Physics, 2013, 377, 1150-1153.	0.9	18
50	Quantification of Efficiency in Lithium Metal Negative Electrodes via Operando X-ray Diffraction. Chemistry of Materials, 2021, 33, 7537-7545.	3.2	17
51	Using In Situ High-Energy X-ray Diffraction to Quantify Electrode Behavior of Li-Ion Batteries from Extreme Fast Charging. ACS Applied Energy Materials, 2021, 4, 11590-11598.	2.5	17
52	Highly Reversible Plating/Stripping of Porous Zinc Anodes for Multivalent Zinc Batteries. Journal of the Electrochemical Society, 2020, 167, 140520.	1.3	14
53	Direct in situ observation of ZnO nucleation and growth via transmission X-ray microscopy. Nanoscale, 2016, 8, 1849-1853.	2.8	13
54	High-Rate Lithium Cycling and Structure Evolution in Mo₄O₁₁. Chemistry of Materials, 2022, 34, 4122-4133.	3.2	13

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55	Nanoscale state-of-charge heterogeneities within polycrystalline nickel-rich layered oxide cathode materials. Cell Reports Physical Science, 2021, 2, 100647.	2.8	12
56	Understanding the reactivity of CoCrMo-implant wear particles. Npj Materials Degradation, 2018, 2, .	2.6	11
57	2D and 3D Characterization of PtNi Nanowire Electrode Composition and Structure. ACS Applied Nano Materials, 2019, 2, 525-534.	2.4	10
58	Tracking the evolution of processes occurring in silicon anodes in lithium ion batteries by 3D visualization of relaxation times. Journal of Electroanalytical Chemistry, 2021, 892, 115309.	1.9	10
59	Understanding Stabilization in Nanoporous Intermetallic Alloy Anodes for Li-Ion Batteries Using Operando Transmission X-ray Microscopy. ACS Nano, 2020, 14, 14820-14830.	7.3	9
60	Conformal Pressure and Fast-Charging Li-Ion Batteries. Journal of the Electrochemical Society, 2022, 169, 040540.	1.3	8
61	High Speed In-situ X-ray Imaging of 3D Freeze Printing of Aerogels. Additive Manufacturing, 2020, 36, 101513.	1.7	6
62	A laser powder bed fusion system for operando synchrotron x-ray imaging and correlative diagnostic experiments at the Stanford Synchrotron Radiation Lightsource. Review of Scientific Instruments, 2022, 93, 043702.	0.6	6
63	Chemical Evolution of CoCrMo Wear Particles: An in Situ Characterization Study. Journal of Physical Chemistry C, 2019, 123, 9894-9901.	1.5	4
64	Hybrid Nanostructured Ni(OH)2/NiO for High-Capacity Lithium-Ion Battery Anodes. Journal of Electrochemical Energy Conversion and Storage, 2020, 17, .	1.1	4
65	Thermodynamics-driven interfacial engineering of alloy-type anode materials. Cell Reports Physical Science, 2022, 3, 100694.	2.8	4
66	Cryo diffraction microscopy: Ice conditions and finite supports. Journal of Physics: Conference Series, 2009, 186, 012055.	0.3	3
67	Room-Temperature Electrochemical Fluoride (De)insertion into CsMnFeF₆. ACS Energy Letters, 2022, 7, 2340-2348.	8.8	3
68	Operando Transmission X-ray Microscopy Studies on Li-Ion Batteries. Microscopy and Microanalysis, 2014, 20, 1526-1527.	0.2	2
69	Memristors: Direct Observation of Localized Radial Oxygen Migration in Functioning Tantalum Oxide Memristors (Adv. Mater. 14/2016). Advanced Materials, 2016, 28, 2771-2771.	11.1	2
70	In situ imaging of three dimensional freeze printing process using rapid x-ray synchrotron radiography. Review of Scientific Instruments, 2022, 93, 013703.	0.6	2
71	Data-processing strategies for nano-tomography with elemental specification. Proceedings of SPIE, 2013, , .	0.8	1
72	Development of a soft x-ray ptychography beamline at SSRL and its application in the study of energy storage materials. , 2015, , .		1

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73	Promoting Reversibility of Multielectron Redox in Alkali-Rich Sulfide Cathodes through Cryomilling. Chemistry of Materials, 2022, 34, 3236-3245.	3.2	1
74	Fluorescence: Dichotomy in the Lithiation Pathway of Ellipsoidal and Platelet LiFePO4Particles Revealed through Nanoscale Operando State-of-Charge Imaging (Adv. Funct. Mater. 24/2015). Advanced Functional Materials, 2015, 25, 3676-3676.	7.8	0
75	Low dose, limited energy spectroscopic x-ray microscopy. , 2015, , .		0