Vanessa C Wood

List of Publications by Year
in descending order

126 papers	8,941 citations	46918 47 h-index	40881 93 g-index
130 all docs	130 docs citations	130 times ranked	11238 citing authors

#	Article	IF	Citations
1	Colloidal quantum-dot light-emitting diodes with metal-oxide charge transport layers. Nature Photonics, 2008, 2, 247-250.	15.6	855
2	Visualization and Quantification of Electrochemical and Mechanical Degradation in Li Ion Batteries. Science, 2013, 342, 716-720.	6.0	571
3	Semiâ€Solid Lithium Rechargeable Flow Battery. Advanced Energy Materials, 2011, 1, 511-516.	10.2	482
4	Characterization and performance evaluation of lithium-ion battery separators. Nature Energy, 2019, 4, 16-25.	19.8	456
5	Inkjetâ€Printed Quantum Dotâ€"Polymer Composites for Fullâ€Color ACâ€Driven Displays. Advanced Materials, 2009, 21, 2151-2155.	11.1	367
6	Colloidal quantum dot light-emitting devices. Nano Reviews, 2010, 1, 5202.	3.7	350
7	Tortuosity Anisotropy in Lithiumâ€Ion Battery Electrodes. Advanced Energy Materials, 2014, 4, 1301278.	10.2	309
8	Xâ€Ray Tomography of Porous, Transition Metal Oxide Based Lithium Ion Battery Electrodes. Advanced Energy Materials, 2013, 3, 845-850.	10.2	215
9	Selection of Metal Oxide Charge Transport Layers for Colloidal Quantum Dot LEDs. ACS Nano, 2009, 3, 3581-3586.	7.3	199
10	Alternating Current Driven Electroluminescence from ZnSe/ZnS:Mn/ZnS Nanocrystals. Nano Letters, 2009, 9, 2367-2371.	4.5	194
11	Colloidal quantum dot electronics. Nature Electronics, 2021, 4, 548-558.	13.1	192
12	Validity of the Bruggeman relation for porous electrodes. Modelling and Simulation in Materials Science and Engineering, 2013, 21, 074009.	0.8	179
13	X-Ray Tomography for Lithium Ion Battery Research: A Practical Guide. Annual Review of Materials Research, 2017, 47, 451-479.	4.3	156
14	Tuning the Composition of Multicomponent Semiconductor Nanocrystals: The Case of Iâ€"IIIâ€"VI Materials. Chemistry of Materials, 2018, 30, 1446-1461.	3.2	155
15	Air-Stable Operation of Transparent, Colloidal Quantum Dot Based LEDs with a Unipolar Device Architecture. Nano Letters, 2010, 10, 24-29.	4.5	149
16	Origins of Low Quantum Efficiencies in Quantum Dot LEDs. Advanced Functional Materials, 2013, 23, 3024-3029.	7.8	139
17	Tool for Tortuosity Estimation in Lithium Ion Battery Porous Electrodes. Journal of the Electrochemical Society, 2015, 162, A3064-A3070.	1.3	137
18	Soft surfaces of nanomaterials enable strong phonon interactions. Nature, 2016, 531, 618-622.	13.7	133

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19	Improving Ionic Conductivity and Lithium-Ion Transference Number in Lithium-Ion Battery Separators. ACS Applied Materials & Interfaces, 2016, 8, 32637-32642.	4.0	127
20	Probing Solventâ€“Ligand Interactions in Colloidal Nanocrystals by the NMR Line Broadening. Chemistry of Materials, 2018, 30, 5485-5492.	3.2	117
21	Enabling 6C Fast Charging of Liâ€Ion Batteries with Graphite/Hard Carbon Hybrid Anodes. Advanced Energy Materials, 2021, 11, 2003336.	10.2	116
22	Tortuosity of Battery Electrodes: Validation of Impedance-Derived Values and Critical Comparison with 3D Tomography. Journal of the Electrochemical Society, 2018, 165, A469-A476.	1.3	114
23	On the use of electrochemical impedance spectroscopy to characterize and model the aging phenomena of lithium-ion batteries: a critical review. Journal of Power Sources, 2021, 505, 229860.	4.0	114
24	Highly Luminescent, Size- and Shape-Tunable Copper Indium Selenide Based Colloidal Nanocrystals. Chemistry of Materials, 2013, 25, 3753-3757.	3.2	113
25	A quantitative model for charge carrier transport, trapping and recombination in nanocrystal-based solar cells. Nature Communications, 2015, 6, 6180.	5.8	113
26	Quantifying microstructural dynamics and electrochemical activity of graphite and silicon-graphite lithium ion battery anodes. Nature Communications, 2016, 7, 12909.	5.8	109
27	Quantification of Deep Traps in Nanocrystal Solids, Their Electronic Properties, and Their Influence on Device Behavior. Nano Letters, 2013, 13, 5284-5288.	4.5	103
28	Quantification and modeling of mechanical degradation in lithium-ion batteries based on nanoscale imaging. Nature Communications, 2018, 9, 2340.	5.8	103
29	Quantifying Inhomogeneity of Lithium Ion Battery Electrodes and Its Influence on Electrochemical Performance. Journal of the Electrochemical Society, 2018, 165, A339-A344.	1.3	97
30	Gas-sieving zeolitic membranes fabricated by condensation of precursor nanosheets. Nature Materials, 2021, 20, 362-369.	13.3	86
31	Compact Mid-Infrared Gas Sensing Enabled by an All-Metamaterial Design. Nano Letters, 2020, 20, 4169-4176.	4.5	83
32	Epitaxial growth of Pb(Zr0.2Ti0.8)O3 on Si and its nanoscale piezoelectric properties. Applied Physics Letters, 2001, 78, 2034-2036.	1.5	79
33	X-ray tomography for battery research and development. Nature Reviews Materials, 2018, 3, 293-295.	23.3	78
34	Extensive investigation of0+states in rare earth region nuclei. Physical Review C, 2006, 74, .	1.1	75
35	Challenges and solutions for high-efficiency quantum dot-based LEDs. MRS Bulletin, 2013, 38, 731-736.	1.7	70
36	Independent Composition and Size Control for Highly Luminescent Indium-Rich Silver Indium Selenide Nanocrystals. ACS Nano, 2015, 9, 11134-11142.	7.3	70

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37	Tuning Electronâ€"Phonon Interactions in Nanocrystals through Surface Termination. Nano Letters, 2018, 18, 2233-2242.	4.5	68
38	Spontaneous and reversible hollowing of alloy anode nanocrystals for stable battery cycling. Nature Nanotechnology, 2020, 15, 475-481.	15.6	68
39	Ultra-narrow room-temperature emission from single CsPbBr3 perovskite quantum dots. Nature Communications, 2022, 13, 2587.	5.8	66
40	Designing Polyolefin Separators to Minimize the Impact of Local Compressive Stresses on Lithium Ion Battery Performance. Journal of the Electrochemical Society, 2018, 165, A1829-A1836.	1.3	64
41	High-Quality Transparent Electrodes Spin-Cast from Preformed Antimony-Doped Tin Oxide Nanocrystals for Thin Film Optoelectronics. Chemistry of Materials, 2013, 25, 4901-4907.	3.2	61
42	Communicationâ€"Technique for Visualization and Quantification of Lithium-Ion Battery Separator Microstructure. Journal of the Electrochemical Society, 2016, 163, A992-A994.	1.3	56
43	Topological and network analysis of lithium ion battery components: the importance of pore space connectivity for cell operation. Energy and Environmental Science, 2018, 11, 3194-3200.	15.6	56
44	Combining operando synchrotron X-ray tomographic microscopy and scanning X-ray diffraction to study lithium ion batteries. Scientific Reports, 2016, 6, 27994.	1.6	53
45	Enhanced density of low-lying 0+ states: A corroboration of shape phase transitional behavior. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2006, 638, 44-49.	1.5	52
46	Electroluminescence from Nanoscale Materials via Field-Driven Ionization. Nano Letters, 2011, 11, 2927-2932.	4.5	51
47	Upscaling Colloidal Nanocrystal Hot-Injection Syntheses via Reactor Underpressure. Chemistry of Materials, 2017, 29, 796-803.	3.2	51
48	Understanding Electrolyte Infilling of Lithium Ion Batteries. Journal of the Electrochemical Society, 2020, 167, 100546.	1.3	51
49	Charge transport in semiconductors assembled from nanocrystal quantum dots. Nature Communications, 2020, 11, 2852.	5.8	51
50	Influence of Conversion Material Morphology on Electrochemistry Studied with Operando Xâ€Ray Tomography and Diffraction. Advanced Materials, 2015, 27, 1676-1681.	11.1	48
51	Rapid Mapping of Lithiation Dynamics in Transition Metal Oxide Particles with Operando X-ray Absorption Spectroscopy. Scientific Reports, 2016, 6, 21479.	1.6	47
52	Deep learning-based segmentation of lithium-ion battery microstructures enhanced by artificially generated electrodes. Nature Communications, 2021, 12, 6205.	5.8	44
53	Bulk and Nanocrystalline Cesium Lead-Halide Perovskites as Seen by Halide Magnetic Resonance. ACS Central Science, 2020, 6, 1138-1149.	5.3	43
54	Measuring charge trap occupation and energy level in CdSe/ZnS quantum dots using a scanning tunneling microscope. Physical Review B, 2010, 81, .	1.1	42

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55	Deep Level Transient Spectroscopy (DLTS) on Colloidal-Synthesized Nanocrystal Solids. ACS Applied Materials & Interfaces, 2013, 5, 2915-2919.	4.0	41
56	Hole Mobility in Nanocrystal Solids as a Function of Constituent Nanocrystal Size. Journal of Physical Chemistry Letters, 2014, 5, 3522-3527.	2.1	41
57	Phonon-Mediated and Weakly Size-Dependent Electron and Hole Cooling in CsPbBr₃ Nanocrystals Revealed by Atomistic Simulations and Ultrafast Spectroscopy. Nano Letters, 2020, 20, 1819-1829.	4.5	41
58	Study of field driven electroluminescence in colloidal quantum dot solids. Journal of Applied Physics, 2012, 111, .	1.1	38
59	Determining the uncertainty in microstructural parameters extracted from tomographic data. Sustainable Energy and Fuels, 2018, 2, 598-605.	2.5	33
60	Size, Ligand, and Defect-Dependent Electronâ€"Phonon Coupling in Chalcogenide and Perovskite Nanocrystals and Its Impact on Luminescence Line Widths. ACS Photonics, 2020, 7, 1088-1095.	3.2	31
61	Size- and composition-controlled intermetallic nanocrystals via amalgamation seeded growth. Science Advances, 2021, 7, .	4.7	30
62	Machine Learning for Analysis of Time-Resolved Luminescence Data. ACS Photonics, 2018, 5, 4888-4895.	3.2	29
63	Modeling and optimization of atomic layer deposition processes on vertically aligned carbon nanotubes. Beilstein Journal of Nanotechnology, 2014, 5, 234-244.	1.5	27
64	Transient Photovoltage Measurements in Nanocrystal-Based Solar Cells. Journal of Physical Chemistry C, 2016, 120, 12900-12908.	1.5	26
65	Femtosecond laser pulses distinguish bacteria from background urban aerosols. Applied Physics Letters, 2005, 87, 063901.	1.5	25
66	Nanocrystal superlattices as phonon-engineered solids and acoustic metamaterials. Nature Communications, 2019, 10, 4236.	5.8	25
67	Transport in Lithium Ion Batteries: Reconciling Impedance and Structural Analysis. ACS Energy Letters, 2017, 2, 2452-2453.	8.8	24
68	A â€œtechnology-smartâ€• battery policy strategy for Europe. Science, 2018, 361, 1075-1077.	6.0	24
69	Colloidal Phase-Change Materials: Synthesis of Monodisperse GeTe Nanoparticles and Quantification of Their Size-Dependent Crystallization. Chemistry of Materials, 2018, 30, 6134-6143.	3.2	24
70	Tunable Infrared Emission From Printed Colloidal Quantum Dot/Polymer Composite Films on Flexible Substrates. Journal of Display Technology, 2010, 6, 90-93.	1.3	22
71	Electrical characterization of nanocrystal solids. Journal of Materials Chemistry C, 2014, 2, 3172-3184.	2.7	22
72	Cuâ€"Inâ€"Te and Agâ€"Inâ€"Te colloidal nanocrystals with tunable composition and size. Chemical Communications, 2016, 52, 10878-10881.	2.2	22

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73	Measuring the Electronic Structure of Nanocrystal Thin Films Using Energy-Resolved Electrochemical Impedance Spectroscopy. Journal of Physical Chemistry Letters, 2018, 9, 1384-1392.	2.1	22
74	Low temperature hydrothermal synthesis of battery grade lithium iron phosphate. RSC Advances, 2017, 7, 17763-17767.	1.7	21
75	Measuring the Vibrational Density of States of Nanocrystal-Based Thin Films with Inelastic X-ray Scattering. Journal of Physical Chemistry Letters, 2018, 9, 1561-1567.	2.1	20
76	Optical Properties of Amorphous and Crystalline GeTe Nanoparticle Thin Films: A Phase-Change Material for Tunable Photonics. ACS Applied Nano Materials, 2020, 3, 4314-4320.	2.4	20
77	Nonequilibrium Thermodynamics of Colloidal Gold Nanocrystals Monitored by Ultrafast Electron Diffraction and Optical Scattering Microscopy. ACS Nano, 2020, 14, 4792-4804.	7.3	20
78	Quantifying Diffusion through Interfaces of Lithium-Ion Battery Active Materials. ACS Applied Materials & Interfaces, 2020, 12, 16243-16249.	4.0	19
79	Dynamic lattice distortions driven by surface trapping in semiconductor nanocrystals. Nature Communications, 2021, 12, 1860.	5.8	19
80	Surface phonons of lithium ion battery active materials. Sustainable Energy and Fuels, 2019, 3, 508-513.	2.5	18
81	Multimodal Nanoscale Tomographic Imaging for Battery Electrodes. Advanced Energy Materials, 2020, 10, 1904119.	10.2	18
82	Composition- and Size-Controlled Iâ€“Vâ€“VI Semiconductor Nanocrystals. Chemistry of Materials, 2020, 32, 2078-2085.	3.2	16
83	In Situ Measurement and Control of the Fermi Level in Colloidal Nanocrystal Thin Films during Their Fabrication. Journal of Physical Chemistry Letters, 2018, 9, 7165-7172.	2.1	14
84	Rapid, microwave-assisted synthesis of battery-grade lithium titanate (LTO). RSC Advances, 2013, 3, 15618.	1.7	13
85	Dopants and Traps in Nanocrystal-Based Semiconductor Thin Films: Origins and Measurement of Electronic Midgap States. ACS Applied Electronic Materials, 2020, 2, 398-404.	2.0	13
86	Nanocrystal Quantum Dot Devices: How the Lead Sulfide (PbS) System Teaches Us the Importance of Surfaces. Chimia, 2021, 75, 398.	0.3	13
87	In Situ Monitoring of Cation-Exchange Reaction Shell Growth on Nanocrystals. Journal of Physical Chemistry C, 2017, 121, 24345-24351.	1.5	12
88	Simulating nanocrystal-based solar cells: A lead sulfide case study. Journal of Chemical Physics, 2019, 151, 241104.	1.2	12
89	Metasurface Colloidal Quantum Dot Photodetectors. ACS Photonics, 2022, 9, 482-492.	3.2	11
90	Enhanced Charge Transport Kinetics in Anisotropic, Stratified Photoanodes. ACS Applied Materials & Interfaces, 2014, 6, 1389-1393.	4.0	10

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91	Mapping the Atomistic Structure of Graded Core/Shell Colloidal Nanocrystals. Scientific Reports, 2017, 7, 11718.	1.6	10
92	EIS2MOD: A DRT-Based Modeling Framework for Li-Ion Cells. IEEE Transactions on Industry Applications, 2022, 58, 1429-1439.	3.3	10
93	Design and Fabrication of Microspheres with Hierarchical Internal Structure for Tuning Battery Performance. Advanced Science, 2015, 2, 1500078.	5.6	9
94	Research Update: Comparison of salt- and molecular-based iodine treatments of PbS nanocrystal solids for solar cells. APL Materials, 2015, 3, .	2.2	9
95	Manipulating Electronic Structure from the Bottom-Up: Colloidal Nanocrystal-Based Semiconductors. Journal of Physical Chemistry Letters, 2020, 11, 9255-9264.	2.1	9
96	Ultra-high throughput manufacturing method for composite solid-state electrolytes. IScience, 2021, 24, 102055.	1.9	8
97	Recombination Dynamics in PbS Nanocrystal Quantum Dot Solar Cells Studied through Driftâ€"Diffusion Simulations. ACS Applied Electronic Materials, 2021, 3, 4977-4989.	2.0	8
98	Effect of Positional Disorders on Charge Transport in Nanocrystal Quantum Dot Thin Films. ACS Applied Electronic Materials, 2022, 4, 631-642.	2.0	8
99	Nanophotonic luminescent solar concentrators. Applied Physics Letters, 2013, 103, 131113.	1.5	7
100	Phonon-engineered solids constructed from nanocrystals. APL Materials, 2019, 7, 081124.	2.2	7
101	Self-assembled materials for electrochemical energy storage. MRS Bulletin, 2020, 45, 815-822.	1.7	7
102	Applying the Macroscopic Kinetic Approach to Plasma Polymerization to the Plasma Surface Modification of Micropowders: Attempt of Correlating Powder Flowability and Plasma Process Parameters. Plasma Processes and Polymers, 2016, 13, 334-340.	1.6	6
103	Rapid, Non-Invasive Method for Quantifying Particle Orientation Distributions in Graphite Anodes. Journal of the Electrochemical Society, 2017, 164, E348-E351.	1.3	6
104	Synthesis of small Agâ€"Sbâ€"Te nanocrystals with composition control. Journal of Materials Chemistry C, 2020, 8, 15985-15989.	2.7	5
105	Efficient All-Inorganic Colloidal Quantum Dot LEDs. , 2007, , .		4
106	Colloidal quantum dot light emitting devices. , 2013, , 148-172.		4
107	Electrodes: Tortuosity Anisotropy in Lithium-Ion Battery Electrodes (Adv. Energy Mater. 5/2014). Advanced Energy Materials, 2014, 4, .	10.2	4
108	Flow Batteries: Semiâ€Solid Lithium Rechargeable Flow Battery (Adv. Energy Mater. 4/2011). Advanced Energy Materials, 2011, 1, 458-458.	10.2	3

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109	Optical Transitions in Silver Indium Selenide Nanocrystals: Implications for Light-Emitting and Light-Imaging Applications. ACS Applied Nano Materials, 2021, 4, 11239-11248.	2.4	3
110	Searching for better X-ray and Î³-ray photodetectors: structureâ€“composition properties of the TlPb₂Br_{5âˆ’<i>x</i>}I_{<i>x</i>} quaternary system. Materials Advances, 0, , .	2.6	3
111	Ligand Dynamics in Nanocrystal Solids Studied with Quasi-Elastic Neutron Scattering. ACS Nano, 2021, 15, 20517-20526.	7.3	3
112	In Situ Formation of Lithium Polyacrylate Binder for Aqueous Manufacturing and Recycling of Ni-Rich Cathodes. Journal of the Electrochemical Society, 0, , .	1.3	3
113	Engineering of Oxide Protected Gold Nanoparticles. Journal of Physical Chemistry Letters, 2022, 13, 5824-5830.	2.1	3
114	Characterization of contact resistances in ceramic-coated vertically aligned carbon nanotube arrays. RSC Advances, 2019, 9, 7266-7275.	1.7	2
115	Phase transitions in germanium telluride nanoparticle phase-change materials studied by temperature-resolved x-ray diffraction. Journal of Applied Physics, 2021, 129, 095102.	1.1	2
116	Deposition of Organosilicon-Plasma Coating onto Fine Graphite Micropowder with a Downstream Tubular PECVD Reactor. Silicon, 2019, 11, 2185-2192.	1.8	1
117	Spectroscopie pompe-sonde pour la dÃ©tection de bioaÃ©rosols. European Physical Journal Special Topics, 2006, 135, 185-186.	0.2	0
118	Battery Performance: Design and Fabrication of Microspheres with Hierarchical Internal Structure for Tuning Battery Performance (Adv. Sci. 6/2015). Advanced Science, 2015, 2, .	5.6	0
119	Seed Amalgamation Reaction as Generalizable Approach for Size and Composition Uniform Intermetallic Nanocrystals. , 0, , .		0
120	In Situ TEM Investigation of the Spontaneous Hollowing of Alloy Anode Nanocrystals. Microscopy and Microanalysis, 2021, 27, 1972-1973.	0.2	0
121	Vibrations and Electron-Phonon Coupling in Lead Halide Perovskite Nanocrystals. , 0, , .		0
122	Phonon-Mediated and Weakly Size-Dependent Electron and Hole Cooling in CsPbBr3 Nanocrystals Revealed by Atomistic Simulations and Ultrafast Spectroscopy. , 0, , .		0
123	TBC. , 0, , .		0
124	Vibrations and Electron-Phonon Coupling in Lead Halide Perovskite Nanocrystals. , 0, , .		0
125	Measuring Electron-Phonon Coupling induced Lattice Reorganization in Lead Halide Perovskite Nanocrystals through Femto-Second Resolved Optical-pump Diffraction-probe experiments. , 0, , .		0
126	Size and Compositon Controlled Intermetallic Nanocrystals via Amalgamation Seeded Growth. , 0, , .		0