Pascal Hartmann

List of Publications by Year
in descending order

62 papers	9,164 citations	66234 42 h-index	114278 63 g-index
64 all docs	64 docs citations	64 times ranked	7796 citing authors

#	Article	IF	Citations
1	Multiâ€Element Surface Coating of Layered Niâ€Rich Oxide Cathode Materials and Their Longâ€Term Cycling Performance in Lithiumâ€Ion Batteries. Advanced Materials Interfaces, 2022, 9, 2101100.	1.9	10
2	Quasi-homogenous photocatalysis of quantum-sized Fe-doped TiO2 in optically transparent aqueous dispersions. Scientific Reports, 2021, 11, 17687.	1.6	22
3	An <i>in situ</i> structural study on the synthesis and decomposition of LiNiO₂. Journal of Materials Chemistry A, 2020, 8, 1808-1820.	5.2	72
4	Influence of electronically conductive additives on the cycling performance of argyrodite-based all-solid-state batteries. RSC Advances, 2020, 10, 1114-1119.	1.7	50
5	A Sodium Polysulfide Battery with Liquid/Solid Electrolyte: Improving Sulfur Utilization Using P₂S₅ as Additive and Tetramethylurea as Catholyte Solvent. Energy Technology, 2020, 8, 1901200.	1.8	10
6	Rational Design of Quasi-Zero-Strain NCM Cathode Materials for Minimizing Volume Change Effects in All-Solid-State Batteries. , 2020, 2, 84-88.		66
7	From LiNiO₂ to Li₂NiO₃: Synthesis, Structures and Electrochemical Mechanisms in Li-Rich Nickel Oxides. Chemistry of Materials, 2020, 32, 9211-9227.	3.2	28
8	The Sound of Batteries: An Operando Acoustic Emission Study of the LiNiO 2 Cathode in Liâ€“Ion Cells. Batteries and Supercaps, 2020, 3, 965-965.	2.4	1
9	The Sound of Batteries: An Operando Acoustic Emission Study of the LiNiO₂ Cathode in Liâ€“Ion Cells. Batteries and Supercaps, 2020, 3, 1021-1027.	2.4	12
10	The effect of gallium substitution on the structure and electrochemical performance of LiNiO₂ in lithium-ion batteries. Materials Advances, 2020, 1, 639-647.	2.6	23
11	Stabilized Behavior of LiNi_{0.85}Co_{0.10}Mn_{0.05}O₂ Cathode Materials Induced by Their Treatment with SO₂. ACS Applied Energy Materials, 2020, 3, 3609-3618.	2.5	25
12	Kinetic Limitations in Cycled Nickel-Rich NCM Cathodes and Their Effect on the Phase Transformation Behavior. ACS Applied Energy Materials, 2020, 3, 2821-2827.	2.5	25
13	Gas Evolution in Lithium-Ion Batteries: Solid versus Liquid Electrolyte. ACS Applied Materials & Interfaces, 2020, 12, 20462-20468.	4.0	62
14	Visualization of Light Elements using 4D STEM: The Layeredâ€toâ€Rock Salt Phase Transition in LiNiO₂ Cathode Material. Advanced Energy Materials, 2020, 10, 2001026.	10.2	43
15	Stabilizing Effect of a Hybrid Surface Coating on a Ni-Rich NCM Cathode Material in All-Solid-State Batteries. Chemistry of Materials, 2019, 31, 9664-9672.	3.2	174
16	Indirect state-of-charge determination of all-solid-state battery cells by X-ray diffraction. Chemical Communications, 2019, 55, 11223-11226.	2.2	25
17	The Role of Intragranular Nanopores in Capacity Fade of Nickel-Rich Layered Li(Ni_{1â€“<i>x</i>â€“<i>y</i>}Co_{<i>x</i>}Mn_{<i>y</i>})O₂ Cathode Materials. ACS Nano, 2019, 13, 10694-10704.	7.3	79
18	An Entropically Stabilized Fast-Ion Conductor: Li_{3.25}[Si_{0.25}P_{0.75}]S₄. Chemistry of Materials, 2019, 31, 7801-7811.	3.2	62

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19	Investigation into Mechanical Degradation and Fatigue of High-Ni NCM Cathode Material: A Long-Term Cycling Study of Full Cells. ACS Applied Energy Materials, 2019, 2, 7375-7384.	2.5	106
20	Room temperature, liquid-phase Al₂O₃ surface coating approach for Ni-rich layered oxide cathode material. Chemical Communications, 2019, 55, 2174-2177.	2.2	79
21	SiO₂-Modified Separators: Stability in LiPF₆-Containing Electrolyte Solutions and Effect on Cycling Performance of Li Batteries. Journal of the Electrochemical Society, 2019, 166, A1685-A1691.	1.3	10
22	Chemical, Structural, and Electronic Aspects of Formation and Degradation Behavior on Different Length Scales of Niâ€Rich NCM and Liâ€Rich HEâ€NCM Cathode Materials in Liâ€Ion Batteries. Advanced Materials, 2019, 31, e1900985.	11.1	319
23	Phase Transformation Behavior and Stability of LiNiO₂ Cathode Material for Liâ€Ion Batteries Obtained from Inâ€…Situ Gas Analysis and Operando Xâ€Ray Diffraction. ChemSusChem, 2019, 12, 2240-2250.	3.6	146
24	Effect of Low-Temperature Al2O3 ALD Coating on Ni-Rich Layered Oxide Composite Cathode on the Long-Term Cycling Performance of Lithium-Ion Batteries. Scientific Reports, 2019, 9, 5328.	1.6	91
25	Editors' Choiceâ€”Washing of Nickel-Rich Cathode Materials for Lithium-Ion Batteries: Towards a Mechanistic Understanding. Journal of the Electrochemical Society, 2019, 166, A4056-A4066.	1.3	137
26	Solvent-Engineered Design of Argyrodite Li₆PS₅X (X = Cl, Br, I) Solid Electrolytes with High Ionic Conductivity. ACS Energy Letters, 2019, 4, 265-270.	8.8	207
27	New Insights Related to Rechargeable Lithium Batteries: Li Metal Anodes, Ni Rich LiNi_xCo_yMn_zO₂ Cathodes and Beyond Them. Journal of the Electrochemical Society, 2019, 166, A5265-A5274.	1.3	38
28	Hin und zurÃ¼ck â€“ die Entwicklung von LiNiO₂ als Kathodenaktivmaterial. Angewandte Chemie, 2019, 131, 10542-10569.	1.6	25
29	There and Back Againâ€”The Journey of LiNiO₂ as a Cathode Active Material. Angewandte Chemie - International Edition, 2019, 58, 10434-10458.	7.2	400
30	Volume Changes of Graphite Anodes Revisited: A Combined <i>Operando</i> X-ray Diffraction and <i>In Situ</i> Pressure Analysis Study. Journal of Physical Chemistry C, 2018, 122, 8829-8835.	1.5	256
31	Impact of Cathode Material Particle Size on the Capacity of Bulk-Type All-Solid-State Batteries. ACS Energy Letters, 2018, 3, 992-996.	8.8	201
32	Gas Evolution in All-Solid-State Battery Cells. ACS Energy Letters, 2018, 3, 2539-2543.	8.8	100
33	Origin of Carbon Dioxide Evolved during Cycling of Nickel-Rich Layered NCM Cathodes. ACS Applied Materials & Interfaces, 2018, 10, 38892-38899.	4.0	193
34	Molecular Surface Modification of NCM622 Cathode Material Using Organophosphates for Improved Li-Ion Battery Full-Cells. ACS Applied Materials & Interfaces, 2018, 10, 20487-20498.	4.0	76
35	Chemo-mechanical expansion of lithium electrode materials â€“ on the route to mechanically optimized all-solid-state batteries. Energy and Environmental Science, 2018, 11, 2142-2158.	15.6	512
36	High-Performance Cells Containing Lithium Metal Anodes, LiNi_{0.6}Co_{0.2}Mn_{0.2}O₂ (NCM 622) Cathodes, and Fluoroethylene Carbonate-Based Electrolyte Solution with Practical Loading. ACS Applied Materials & Interfaces, 2018, 10, 19773-19782.	4.0	77

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37	Li⁺-Ion Dynamics in Î²-Li₃PS₄ Observed by NMR: Local Hopping and Long-Range Transport. Journal of Physical Chemistry C, 2018, 122, 15954-15965.	1.5	76
38	Na-ion battery cathode materials prepared by electrochemical ion exchange from alumina-coated Li_{1+x}Mn_{0.54}Co_{0.13}Ni_{0.1+y}O₂. Journal of Materials Chemistry A, 2018, 6, 14816-14827.	5.2	19
39	Anisotropic Lattice Strain and Mechanical Degradation of High- and Low-Nickel NCM Cathode Materials for Li-Ion Batteries. Journal of Physical Chemistry C, 2017, 121, 3286-3294.	1.5	472
40	Electrochemical performance of Na_{0.6}[Li_{0.2}Ni_{0.2}Mn_{0.6}]O₂ cathodes with high-working average voltage for Na-ion batteries. Journal of Materials Chemistry A, 2017, 5, 5858-5864.	5.2	35
41	Interfacial Processes and Influence of Composite Cathode Microstructure Controlling the Performance of All-Solid-State Lithium Batteries. ACS Applied Materials & Interfaces, 2017, 9, 17835-17845.	4.0	353
42	Capacity Fade in Solid-State Batteries: Interphase Formation and Chemomechanical Processes in Nickel-Rich Layered Oxide Cathodes and Lithium Thiophosphate Solid Electrolytes. Chemistry of Materials, 2017, 29, 5574-5582.	3.2	655
43	Between Scylla and Charybdis: Balancing Among Structural Stability and Energy Density of Layered NCM Cathode Materials for Advanced Lithium-Ion Batteries. Journal of Physical Chemistry C, 2017, 121, 26163-26171.	1.5	233
44	Charge-Transfer-Induced Lattice Collapse in Ni-Rich NCM Cathode Materials during Delithiation. Journal of Physical Chemistry C, 2017, 121, 24381-24388.	1.5	242
45	The Critical Role of Fluoroethylene Carbonate in the Gassing of Silicon Anodes for Lithium-Ion Batteries. ACS Energy Letters, 2017, 2, 2228-2233.	8.8	97
46	High-Throughput in Situ Pressure Analysis of Lithium-Ion Batteries. Analytical Chemistry, 2017, 89, 8122-8128.	3.2	42
47	Improving Energy Density and Structural Stability of Manganese Oxide Cathodes for Na-Ion Batteries by Structural Lithium Substitution. Chemistry of Materials, 2016, 28, 9064-9076.	3.2	191
48	Comparison between Na-Ion and Li-Ion Cells: Understanding the Critical Role of the Cathodes Stability and the Anodes Pretreatment on the Cells Behavior. ACS Applied Materials & Interfaces, 2016, 8, 1867-1875.	4.0	138
49	Study of the Most Relevant Aspects Related to Hard Carbons as Anode Materials for Naâ€ion Batteries, Compared with Liâ€ion Systems. Israel Journal of Chemistry, 2015, 55, 1260-1274.	1.0	32
50	From lithium to sodium: cell chemistry of room temperature sodiumâ€“air and sodiumâ€“sulfur batteries. Beilstein Journal of Nanotechnology, 2015, 6, 1016-1055.	1.5	368
51	Discharge and Charge Reaction Paths in Sodiumâ€“Oxygen Batteries: Does NaO₂ Form by Direct Electrochemical Growth or by Precipitation from Solution?. Journal of Physical Chemistry C, 2015, 119, 22778-22786.	1.5	91
52	A gamma fluorinated ether as an additive for enhanced oxygen activity in Liâ€“O₂ batteries. Journal of Materials Chemistry A, 2015, 3, 19061-19067.	5.2	46
53	Polymer-templated ordered large-pore mesoporous anataseâ€“rutile TiO2:Ta nanocomposite films: Microstructure, electrical conductivity, and photocatalytic and photoelectrochemical properties. Catalysis Today, 2014, 225, 55-63.	2.2	16
54	On the Thermodynamics, the Role of the Carbon Cathode, and the Cycle Life of the Sodium Superoxide (NaO₂) Battery. Advanced Energy Materials, 2014, 4, 1301863.	10.2	184

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55	Pressure Dynamics in Metalâ€“Oxygen (Metalâ€“Air) Batteries: A Case Study on Sodium Superoxide Cells. Journal of Physical Chemistry C, 2014, 118, 1461-1471.	1.5	99
56	A comprehensive study on the cell chemistry of the sodium superoxide (NaO2) battery. Physical Chemistry Chemical Physics, 2013, 15, 11661.	1.3	253
57	Degradation of NASICON-Type Materials in Contact with Lithium Metal: Formation of Mixed Conducting Interphases (MCI) on Solid Electrolytes. Journal of Physical Chemistry C, 2013, 117, 21064-21074.	1.5	411
58	A rechargeable room-temperature sodium superoxide (NaO2) battery. Nature Materials, 2013, 12, 228-232.	13.3	706
59	Mesoporous tin-doped indium oxide thin films: effect of mesostructure on electrical conductivity. Science and Technology of Advanced Materials, 2011, 12, 025005.	2.8	61
60	Ordered Large-Pore Mesoporous Li₄Ti₅O₁₂ Spinel Thin Film Electrodes with Nanocrystalline Framework for High Rate Rechargeable Lithium Batteries: Relationships among Charge Storage, Electrical Conductivity, and Nanoscale Structure. Chemistry of Materials, 2011, 23, 4384-4393.	3.2	171
61	Exceptional Photocatalytic Activity of Ordered Mesoporous Î²-Bi₂O₃ Thin Films and Electrospun Nanofiber Mats. Chemistry of Materials, 2010, 22, 3079-3085.	3.2	197
62	Mesoporous TiO₂: Comparison of Classical Solâˆ’Gel and Nanoparticle Based Photoelectrodes for the Water Splitting Reaction. ACS Nano, 2010, 4, 3147-3154.	7.3	212