Prasant Kumar Nayak

List of Publications by Year
in descending order

49 papers	4,275 citations	172207 29 h-index	197535 49 g-index
51 all docs	51 docs citations	51 times ranked	5340 citing authors

#	Article	IF	Citations
1	From Lithiumâ€Ion to Sodiumâ€Ion Batteries: Advantages, Challenges, and Surprises. Angewandte Chemie - International Edition, 2018, 57, 102-120.	7.2	1,547
2	Review on Challenges and Recent Advances in the Electrochemical Performance of High Capacity Liâ€• and Mnâ€Rich Cathode Materials for Liâ€Ion Batteries. Advanced Energy Materials, 2018, 8, 1702397.	10.2	475
3	Al Doping for Mitigating the Capacity Fading and Voltage Decay of Layered Li and Mnâ€Rich Cathodes for Liâ€Ion Batteries. Advanced Energy Materials, 2016, 6, 1502398.	10.2	360
4	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
5	Von Lithiumâ€•zu Natriumionenbatterien: Vorteile, Herausforderungen und Ãœberraschendes. Angewandte Chemie, 2018, 130, 106-126.	1.6	125
6	Understanding the Role of Minor Molybdenum Doping in LiNi_{0.5}Co_{0.2}Mn_{0.3}O₂ Electrodes: from Structural and Surface Analyses and Theoretical Modeling to Practical Electrochemical Cells. ACS Applied Materials & Interfaces, 2018, 10, 29608-29621.	4.0	97
7	Structural and Electrochemical Evidence of Layered to Spinel Phase Transformation of Li and Mn Rich Layered Cathode Materials of the Formulae xLi[Li_{1/3}Mn_{2/3}]O₂.(1-x)LiMn_{1/3}Ni_{1/3}Co_{1/3}O<sub>2</su	1.3	93
8	Electrochemical and structural characterization of carbon coated Li1.2Mn0.56Ni0.16Co0.08O2 and Li1.2Mn0.6Ni0.2O2 as cathode materials for Li-ion batteries. Electrochimica Acta, 2014, 137, 546-556.	2.6	91
9	A Coâ€•and Niâ€Free P2/O3 Biphasic Lithium Stabilized Layered Oxide for Sodiumâ€Ion Batteries and its Cycling Behavior. Advanced Functional Materials, 2020, 30, 2003364.	7.8	80
10	Effect of Fe in suppressing the discharge voltage decay of high capacity Li-rich cathodes for Li-ion batteries. Journal of Solid State Electrochemistry, 2015, 19, 2781-2792.	1.2	71
11	In situ real-time gravimetric and viscoelastic probing of surface films formation on lithium batteries electrodes. Nature Communications, 2017, 8, 1389.	5.8	69
12	Study of Cathode Materials for Lithium-Ion Batteries: Recent Progress and New Challenges. Inorganics, 2017, 5, 32.	1.2	68
13	Understanding the influence of Mg doping for the stabilization of capacity and higher discharge voltage of Li- and Mn-rich cathodes for Li-ion batteries. Physical Chemistry Chemical Physics, 2017, 19, 6142-6152.	1.3	65
14	Exfoliated MoS₂ as Electrode for All-Solid-State Rechargeable Lithium-Ion Batteries. Journal of Physical Chemistry C, 2019, 123, 12126-12134.	1.5	57
15	In Situ Monitoring of Gravimetric and Viscoelastic Changes in 2D Intercalation Electrodes. ACS Energy Letters, 2017, 2, 1407-1415.	8.8	56
16	Electrochemical Performance of Li- and Mn-Rich Cathodes in Full Cells with Prelithiated Graphite Negative Electrodes. ACS Energy Letters, 2017, 2, 544-548.	8.8	49
17	Understanding the Effect of Lithium Bis(oxalato) Borate (LiBOB) on the Structural and Electrochemical Aging of Li and Mn Rich High Capacity Li_{1.2}Ni_{0.16}Mn_{0.56}Co_{0.08}O₂Cathodes. Journal of the Electrochemical Society, 2015, 162, A596-A602.	1.3	47
18	Effect of cycling conditions on the electrochemical performance of high capacity Li and Mn-rich cathodes for Li-ion batteries. Journal of Power Sources, 2016, 318, 9-17.	4.0	47

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19	Mesoporous MnO2 synthesized by using a tri-block copolymer for electrochemical supercapacitor studies. Microporous and Mesoporous Materials, 2011, 143, 206-214.	2.2	46
20	TEM and Raman spectroscopy evidence of layered to spinel phase transformation in layered LiNi1/3Mn1/3Co1/3O2 upon cycling to higher voltages. Journal of Electroanalytical Chemistry, 2014, 733, 6-19.	1.9	46
21	Electrochemical Performance of a Layered-Spinel Integrated Li[Ni_{1/3}Mn_{2/3}]O₂ as a High Capacity Cathode Material for Li-Ion Batteries. Chemistry of Materials, 2015, 27, 2600-2611.	3.2	46
22	Remarkably Improved Electrochemical Performance of Li- and Mn-Rich Cathodes upon Substitution of Mn with Ni. ACS Applied Materials & Interfaces, 2017, 9, 4309-4319.	4.0	39
23	Cobalt Hydroxide as a Capacitor Material: Tuning Its Potential Window. Journal of the Electrochemical Society, 2008, 155, A855.	1.3	37
24	Rapid sonochemical synthesis of mesoporous MnO2 for supercapacitor applications. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2012, 177, 849-854.	1.7	36
25	Collective Phase Transition Dynamics in Microarray Composite Li_{<i>x</i>}FePO₄ Electrodes Tracked by in Situ Electrochemical Quartz Crystal Admittance. Journal of Physical Chemistry C, 2013, 117, 15505-15514.	1.5	35
26	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
27	Structural Aspects of P2â€Type Na_{0.67}Mn_{0.6}Ni_{0.2}Li_{0.2}O₂ (MNL) Stabilization by Lithium Defects as a Cathode Material for Sodiumâ€Ion Batteries. Advanced Functional Materials, 2021, 31, 2102939.	7.8	35
28	Simultaneous Electrodeposition of MnO[sub 2] and Mn(OH)[sub 2] for Supercapacitor Studies. Electrochemical and Solid-State Letters, 2009, 12, A115.	2.2	33
29	Improved capacity and stability of integrated Li and Mn rich layered-spinel Li_{1.17}Ni_{0.25}Mn_{1.08}O₃ cathodes for Li-ion batteries. Journal of Materials Chemistry A, 2015, 3, 14598-14608.	5.2	29
30	Electrochemical and Diffusional Investigation of Na₂Fe^{II}PO₄F Fluorophosphate Sodium Insertion Material Obtained from Fe^{III} Precursor. ACS Applied Materials & Interfaces, 2017, 9, 34961-34969.	4.0	28
31	Mesoporous MnO2 synthesized by hydrothermal route for electrochemical supercapacitor studies. Journal of Solid State Electrochemistry, 2012, 16, 2739-2749.	1.2	24
32	Sonochemical synthesis of LiNi0.5Mn1.5O4 and its electrochemical performance as a cathode material for 5 V Li-ion batteries. Ultrasonics Sonochemistry, 2015, 26, 332-339.	3.8	23
33	Reaching Highly Stable Specific Capacity with Integrated 0.6Li₂MnO₃â€‰:â€‰0.4LiNi_{0.6}Co_{0.2}Mn_{0.2}O₂ Cathode Materials. ChemElectroChem, 2018, 5, 1137-1146.	1.7	22
34	Reversible Insertion of a Trivalent Cation onto MnO2 Leading to Enhanced Capacitance. Journal of the Electrochemical Society, 2011, 158, A585.	1.3	21
35	Highâ€Capacity Layeredâ€Spinel Cathodes for Liâ€Ion Batteries. ChemSusChem, 2016, 9, 2404-2413.	3.6	17
36	An EQCM Investigation of Electrochemical Precipitation of Mn(OH)[sub 2] and Its Capacitance Behavior. Electrochemical and Solid-State Letters, 2010, 13, F29.	2.2	16

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37	Multiphase LiNi_{0.33}Mn_{0.54}Co_{0.13}O₂ Cathode Material with High Capacity Retention for Liâ€Ion Batteries. ChemElectroChem, 2015, 2, 1957-1965.	1.7	16
38	Investigation of Li 1.17 Ni 0.20 Mn 0.53 Co 0.10 O 2 as an Interesting Liâ€•and Mnâ€Rich Layered Oxide Cathode Material through Electrochemistry, Microscopy, and Inâ€…Situ Electrochemical Dilatometry. ChemElectroChem, 2019, 6, 2812-2819.	1.7	16
39	The effect of synthesis and zirconium doping on the performance of nickel-rich NCM622 cathode materials for Li-ion batteries. Journal of Solid State Electrochemistry, 2021, 25, 1513-1530.	1.2	14
40	Porous, hollow Li1.2Mn0.53Ni0.13Co0.13O2 microspheres as a positive electrode material for Li-ion batteries. Journal of Solid State Electrochemistry, 2017, 21, 437-445.	1.2	12
41	Studies of a layered-spinel Li[Ni1/3Mn2/3]O2 cathode material for Li-ion batteries synthesized by a hydrothermal precipitation. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2016, 213, 131-139.	1.7	11
42	Electrochemical Performance and Ageing Mechanisms of Solâ€Gel Synthesized Na_{2/3}[Mn_{3/5}Fe_{2/5}]O₂ for Sodiumâ€Ion Batteries. Batteries and Supercaps, 2019, 2, 104-111.	2.4	11
43	Synergistic-effect of high Ni content and Na dopant towards developing a highly stable Li-Rich cathode in Li-ion batteries. Chemical Engineering Journal, 2022, 444, 136503.	6.6	11
44	High Li storage capacity of poorly crystalline porous Î´-MnO2 prepared by hydrothermal route. Journal of Electroanalytical Chemistry, 2013, 703, 126-134.	1.9	8
45	An EQCM investigation of capacitance of MnO2 in electrolytes containing multivalent cations. Journal of Electroanalytical Chemistry, 2012, 685, 37-40.	1.9	7
46	Temperature and potential dependence electrochemical impedance studies of LiMn2O4. Journal of Applied Electrochemistry, 2014, 44, 61-71.	1.5	4
47	Effect of sonochemistry: Li- and Mn-rich layered high specific capacity cathode materials for Li-ion batteries. Journal of Solid State Electrochemistry, 2016, 20, 1683-1695.	1.2	4
48	Al-Doped Co-Free Layered-Spinel Mn/Ni Oxides as High-Capacity Cathode Materials for Advanced Li-Ion Batteries. ACS Applied Energy Materials, 2022, 5, 4279-4287.	2.5	3
49	Electrochemical insertion of Sr2+ ions onto nano Î´-MnO2 particles. Materials Letters, 2010, 64, 1319-1321.	1.3	0