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## Li-ion battery materials: present and future

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2268	Effects of Covalency on Anionic Redox Chemistry in Semiquinoid-Based MetalOrganic Frameworks.		
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2098	Controlling interlayer interactions in vanadium pentoxide-poly(ethylene oxide) nanocomposites for enhanced magnesium-ion charge transport and storage. <b>2017</b> , 343, 580-591	33
2097	[Co(salen)] derived Co/ $\text{Co}_3\text{O}_4$ nanoparticle@carbon matrix as high-performance electrode for energy storage applications. <b>2017</b> , 344, 103-110	33
2096	Anisotropic Lattice Strain and Mechanical Degradation of High- and Low-Nickel NCM Cathode Materials for Li-Ion Batteries. <b>2017</b> , 121, 3286-3294	303
2095	Li-ion vs. Na-ion capacitors: A performance evaluation with coconut shell derived mesoporous carbon and natural plant based hard carbon. <b>2017</b> , 316, 506-513	64
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2087	Uniform growth of MoS <sub>2</sub> nanosheets on carbon nanofibers with enhanced electrochemical utilization for Li-ion batteries. <b>2017</b> , 231, 396-402	38
2086	Quadrangular-CNT-Fe <sub>3</sub> O <sub>4</sub> -C composite based on quadrilateral carbon nanotubes as anode materials for high performance lithium-ion batteries. <b>2017</b> , 702, 499-508	15
2085	Enhanced Rate-Capability and Cycling-Stability of 5 V SiO <sub>2</sub> - and Polyimide-Coated Cation Ordered LiNi <sub>0.5</sub> Mn <sub>1.5</sub> O <sub>4</sub> Lithium-Ion Battery Positive Electrodes. <b>2017</b> , 121, 3680-3689	37
2084	In situ X-ray absorption near edge structure studies and charge transfer kinetics of Na[VO] electrodes. <b>2017</b> , 19, 3358-3365	23
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2075	Nano-grained SnO <sub>2</sub> /Li <sub>4</sub> Ti <sub>5</sub> O <sub>12</sub> composite hollow fibers via sol-gel/ electrospinning as anode material for Li-ion batteries. <b>2017</b> , 4, 14-24	13
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2063	The Role of Additives in Improving Performance in High Voltage Lithium-Ion Batteries with Potentiostatic Holds. <b>2017</b> , 164, A6366-A6372	25
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1614	Synthesis and characterization of carbon coated LiCo <sub>1/3</sub> Ni <sub>1/3</sub> Mn <sub>1/3</sub> O <sub>2</sub> and bio-mass derived graphene like porous carbon electrodes for aqueous Li-ion hybrid supercapacitor. <b>2018</b> , 112, 270-279	11
1613	Electrochemical and electronic properties of nitrogen doped fullerene and its derivatives for lithium-ion battery applications. <b>2018</b> , 27, 528-534	27
1612	Nanostructured Host Materials for Trapping Sulfur in Rechargeable LiS Batteries: Structure Design and Interfacial Chemistry. <b>2018</b> , 2, 1700279	159
1611	A Critical Review and Analysis on the Recycling of Spent Lithium-Ion Batteries. <b>2018</b> , 6, 1504-1521	457
1610	Functional interlayer of PVDF-HFP and carbon nanofiber for long-life lithium-sulfur batteries. <b>2018</b> , 11, 3340-3352	45
1609	Review on Challenges and Recent Advances in the Electrochemical Performance of High Capacity Li- and Mn-Rich Cathode Materials for Li-Ion Batteries. <b>2018</b> , 8, 1702397	340
1608	Potassium-Ion Battery Anode Materials Operating through the Alloying/Dealloying Reaction Mechanism. <b>2018</b> , 28, 1703857	252
1607	Effect of electrode charge balance on the energy storage performance of hybrid supercapacitor cells based on LiFePO <sub>4</sub> as Li-ion battery electrode and activated carbon. <b>2018</b> , 22, 1063-1078	23
1606	Chemomechanical fatigue of LiMn <sub>1.95</sub> Al <sub>0.05</sub> O <sub>4</sub> electrodes for lithium-ion batteries. <b>2018</b> , 259, 939-948	19
1605	Electrochemical Properties of Boron-Doped Fullerene Derivatives for Lithium-Ion Battery Applications. <b>2018</b> , 19, 753-758	24
1604	Li <sub>3</sub> V(MoO <sub>4</sub> ) <sub>3</sub> as a novel electrode material with good lithium storage properties and improved initial coulombic efficiency. <b>2018</b> , 44, 272-278	104

1603	Comparative study of imide-based Li salts as electrolyte additives for Li-ion batteries. <b>2018</b> , 375, 43-52	90
1602	Sb <sub>2</sub> S <sub>3</sub> single crystal nanowires with comparable electrochemical properties as an anode for sodium ion batteries. <b>2018</b> , 10, 170-175	15
1601	Carbon nanotubes: A potential material for energy conversion and storage. <b>2018</b> , 64, 219-253	129
1600	Equivalent circuit model parameters extraction for lithium ion batteries using electrochemical impedance spectroscopy. <b>2018</b> , 15, 23-31	44
1599	High capacity binder-free nanocrystalline GeO <sub>2</sub> inverse opal anodes for Li-ion batteries with long cycle life and stable cell voltage. <b>2018</b> , 43, 11-21	65
1598	Facile synthesis of hierarchical porous Li <sub>2</sub> FeSiO <sub>4</sub> /C as highly stable cathode materials for lithium-ion batteries. <b>2018</b> , 22, 877-884	11
1597	Exploiting Biological Systems: Toward Eco-Friendly and High-Efficiency Rechargeable Batteries. <b>2018</b> , 2, 61-75	74
1596	Fabrication and performance of Li <sub>4</sub> Ti <sub>5</sub> O <sub>12</sub> /C Li-ion battery electrodes using combined double flame spray pyrolysis and pressure-based lamination technique. <b>2018</b> , 374, 97-106	50
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1594	Binder-induced surface structure evolution effects on Li-ion battery performance. <b>2018</b> , 435, 1029-1036	22
1593	Graphene modified copper current collector for enhanced electrochemical performance of Li-ion battery. <b>2018</b> , 146, 100-104	26
1592	Enhanced electrochemical performance of LiCoBO <sub>3</sub> cathode material for next generation Lithium-ion batteries. <b>2018</b> , 449, 421-425	8
1591	In <sub>2</sub> O <sub>3</sub> nanocrystalline conjugated molecule hybrid materials for high-capacity anode in lithium ion battery. <b>2018</b> , 57, 22-27	5
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1589	Issues, Challenges and Future Prospects of Electric Vehicles: A Review. <b>2018</b> ,	4
1588	Synthesis and characterization of carboxymethyl cellulose (CMC) from salak-fruit seeds as anode binder for lithium-ion battery. <b>2018</b> , 1080, 012017	4
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1586	How to transform innovative battery opportunities in field operational solutions for Telecom/IT. <b>2018</b> ,	1

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1584	Lithium Iron Phosphate and Lithium Titanate Oxide Cell Performance under High Power Requirements of Electric Bus Applications. <b>2018</b> ,	1
1583	Open and Flexible Li-ion Battery Tester Based on Python Language and Raspberry Pi. <b>2018</b> , 7, 454	5
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1578	Application of DFT-based machine learning for developing molecular electrode materials in Li-ion batteries.. <b>2018</b> , 8, 39414-39420	49
1577	3D plum candy-like NiCoMnO@graphene as anodes for high-performance lithium-ion batteries.. <b>2018</b> , 8, 42438-42445	5
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1575	Metal-based nanostructured materials for advanced lithium-sulfur batteries. <b>2018</b> , 6, 23127-23168	128
1574	Recent developments of phosphorus-based anodes for sodium ion batteries. <b>2018</b> , 6, 24013-24030	55
1573	Reused Lithium-Ion Battery Applied in Water Treatment Plants. <b>2018</b> ,	0
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1571	Redesigning European Public Transport: Impact of New Battery Technologies in the Design of Electric Bus Fleets. <b>2018</b> , 33, 195-202	14
1570	Synthesis and morphological characterization of Li-Ti/PVP fibers as precursors for Li <sub>4</sub> Ti <sub>5</sub> O <sub>12</sub> towards its future use as anode materials in Li-ion fiber batteries by means of Electrospinning. <b>2018</b> , 437, 012016	
1569	5. Applications. <b>2018</b> , 273-332	
1568	Computer Simulation of Cathode Materials for Lithium Ion and Lithium Batteries: A Review. <b>2018</b> , 1, 148-173	32



1567	Optimization of electrolyte and carbon conductor for dilithium terephthalate organic batteries. <b>2018</b> , 35, 2464-2467	10
1566	Recent Advances in Energy Chemical Engineering of Next-Generation Lithium Batteries. <b>2018</b> , 4, 831-847	116
1565	Optimizing Anode Performance Using Silicon Nanoparticle to Li <sub>4</sub> Ti <sub>5</sub> O <sub>12</sub> as Prepared by Hydrothermal Mechanochemical Process with Li <sub>2</sub> CO <sub>3</sub> as Lithium Ion Source. <b>2018</b> , 929, 225-233	
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1563	Impact of lithiated cobalt oxide and phosphate nanoparticles on rainbow trout gill epithelial cells. <b>2018</b> , 12, 1166-1181	15
1562	High-Conductivity Argyrodite LiPSCl Solid Electrolytes Prepared via Optimized Sintering Processes for All-Solid-State Lithium-Sulfur Batteries. <b>2018</b> , 10, 42279-42285	94
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1558	Enhanced Lithium Transport by Control of Crystal Orientation in Spinel LiMnO Thin Film Cathodes. <b>2018</b> , 1, 7046-7051	28
1557	Unraveling the Redox Couples of VIII/VIV Mixed-Valent Na <sub>3</sub> V <sub>2</sub> (PO <sub>4</sub> ) <sub>2</sub> O <sub>1.6</sub> F <sub>1.4</sub> Cathode by Parallel-Mode EPR and In Situ/Ex Situ NMR. <b>2018</b> , 122, 27224-27232	24
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1539	Surface-Functionalized Silicon Nanoparticles as Anode Material for Lithium-Ion Battery. <b>2018, 10, 44924-44931</b>	39
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1534	Correlating Electronic Structure of Metal Oxide Nanomaterials to Device Performance Using Synchrotron-Excited X-Ray Spectroscopy. <b>2018,</b>	
1533	Fast Microwave-Assisted Hydrothermal Synthesis of Pure Layered MnO <sub>2</sub> for Multivalent Ion Intercalation. <b>2018, 11,</b>	17
1532	Burgeoning Prospects of Spent Lithium-Ion Batteries in Multifarious Applications. <b>2018, 8, 1802303</b>	100

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1521	Advances in Green Energy Systems and Smart Grid. <b>2018</b> ,	1
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1515	Advanced development of chemical sources of current (CSC) and ultra high-volume capacitor structures (UCS) for energy storage devices. <b>2018</b> , 387, 012072	
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1483	Fabrication and characterization of plate-like Li <sub>3</sub> V <sub>2</sub> (PO <sub>4</sub> ) <sub>3</sub> @C as cathode material for energy storage. <b>2018</b> , 325, 128-132	5
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1469	A review of state of health and remaining useful life estimation methods for lithium-ion battery in electric vehicles: Challenges and recommendations. <b>2018</b> , 205, 115-133	246
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1453	Mesoporous Manganese Phosphonate Nanorods as a Prospective Anode for Lithium-Ion Batteries. <b>2018, 10, 19739-19745</b>	31
1452	Incorporation of Alloy-de-Alloy Phase with Conversion Based Manganese Oxide to Enable High and Stable Capacity and Density Functional Theory Study of CdMn <sub>2</sub> O <sub>4</sub> . <b>2018, 165, A1610-A1620</b>	4
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1450	Plug-In Hybrid Vehicle and Second-Life Applications of Lithium-Ion Batteries at Elevated Temperature. <b>2018, 1, 75-82</b>	9
1449	Fe <sub>2</sub> O <sub>3</sub> /SnO <sub>2</sub> heterostructure composites: A high stability anode for lithium-ion battery. <b>2018, 106, 7-13</b>	14
1448	Strain-Driven Mn-Reorganization in Overlithiated Li <sub>x</sub> Mn <sub>2</sub> O <sub>4</sub> Epitaxial Thin-Film Electrodes. <b>2018, 1, 2526-2535</b>	10
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1446	VPO <sub>4</sub> @C/graphene microsphere as a potential anode material for lithium-ion batteries. <b>2018, 44, 14432-14438</b>	34
1445	Vertically aligned and tree-like carbon nanostructures as anode of lithium ion battery. <b>2018, 87, 56-60</b>	1
1444	Analysis of the effects of different carbon coating strategies on structure and electrochemical behavior of LiCoPO <sub>4</sub> material as a high-voltage cathode electrode for lithium ion batteries. <b>2018, 279, 108-117</b>	11
1443	Site energy distribution of ions in the potential energy landscape of amorphous solids. <b>2018, 5, 12-19</b>	12
1442	Investigation of 2, 3-epoxypropyl methanesulfonate (OMS) as an electrolyte additive for lithium ion batteries. <b>2018, 281, 405-409</b>	7

1441	The quest for manganese-rich electrodes for lithium batteries: strategic design and electrochemical behavior. <b>2018</b> , 2, 1375-1397	42
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1439	Identifying the Origin and Contribution of Surface Storage in TiO (B) Nanotube Electrode by In Situ Dynamic Valence State Monitoring. <b>2018</b> , 30, e1802200	72
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1437	Useful life characteristics of a LiFePO <sub>4</sub> battery for estimating state of battery health. <b>2018</b> ,	2
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1435	Chemical assembly of the heteronuclear pivalate complex with the LiI and FeIII ions. <b>2018</b> , 67, 449-454	9
1434	Enhancing the lithium storage capabilities of TiO <sub>2</sub> nanoparticles using delaminated MXene supports. <b>2018</b> , 44, 17660-17666	13
1433	Separation of Li and Co from the active mass of spent Li-ion batteries by selective sulfating roasting with sodium bisulfate and water leaching. <b>2018</b> , 126, 28-35	43
1432	Elucidation of Li <sub>x</sub> Ni <sub>0.8</sub> Co <sub>0.15</sub> Al <sub>0.05</sub> O <sub>2</sub> Redox Chemistry by Operando Raman Spectroscopy. <b>2018</b> , 30, 4694-4703	49
1431	High Power Sodium-Ion Batteries and Hybrid Electrochemical Capacitors Using Mo or Nb-Doped Nano-Titania Anodes. <b>2018</b> , 165, A1662-A1670	16
1430	Electrochemical Mechanism and Structure Simulation of 2D Lithium-Ion Battery. <b>2018</b> , 1, 1800023	9
1429	MnO@Al <sub>2</sub> O <sub>3</sub> with high cycle performance via depressing solution of Mn for lithium-ion batteries anode. <b>2018</b> , 457, 831-837	6
1428	Electrodeposited MnCO <sub>3</sub> as a High Performance Electrode Material for Supercapacitor. <b>2018</b> , 3, 6775-6778	13
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1426	Reviving lithium cobalt oxide-based lithium secondary batteries-toward a higher energy density. <b>2018</b> , 47, 6505-6602	219
1425	Comparative study of various cathodes for lithium ion batteries using an enhanced Peukert capacity model. <b>2018</b> , 396, 621-631	24
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1410	Ultrathin HfO <sub>2</sub> -modified carbon nanotube films as efficient polysulfide barriers for Li-S batteries. <b>2018</b> , 139, 896-905	18
1409	In situ and Operando Raman Spectroscopy of Layered Transition Metal Oxides for Li-ion Battery Cathodes. <b>2018</b> , 6,	45
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1403	Utilizing Room Temperature Liquid Metals for Mechanically Robust Silicon Anodes in Lithium-Ion Batteries. <b>2018</b> , 1, 122-128	13
1402	Electrical Conductivity and Electrochemical Characteristics of Na <sub>3</sub> V <sub>2</sub> (PO <sub>4</sub> ) <sub>3</sub> -Based NASICON-Type Materials. <b>2018</b> , 54, 794-804	17
1401	Sandwich-like graphene-Bi <sub>2</sub> S <sub>3</sub> hybrid derived from (BiO) <sub>2</sub> CO <sub>3</sub> nanosheets as advanced anode materials for lithium/sodium ion batteries. <b>2018</b> , 768, 426-432	16
1400	Reduced graphene oxide decorated with SnO <sub>2</sub> nanoparticles as negative electrode for lithium ion capacitors. <b>2018</b> , 284, 542-550	56
1399	Synthesis of 2-[1H-indol-2-yl(1H-indol-3-yl)methyl]phenol and Its Application in Aqueous Rechargeable Lithium-Ion Batteries. <b>2018</b> , 3, 8363-8372	2
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1397	Ten years left to redesign lithium-ion batteries. <b>2018</b> , 559, 467-470	223
1396	Vertically oriented TiS <sub>2</sub> nanobelt arrays as binder- and carbon-free intercalation electrodes for Li- and Na-based energy storage devices. <b>2018</b> , 6, 21949-21960	18
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412	Molybdenum-Doped Li/Mn-Rich Layered Transition Metal Oxide Cathode Material Li <sub>1.2</sub> Mn <sub>0.6</sub> Ni <sub>0.1</sub> Co <sub>0.1</sub> O <sub>2</sub> with High Specific Capacity and Improved Cyclic Stability for Rechargeable Li-Batteries.	1
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