Deep eutectic solvents for cathode recycling of Li-ion ba

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Citation Report

#	Article	IF	Citations
1	Sustainable wastewater treatment by deep eutectic solvents and natural silk for radioactive iodine capture. Water Science and Technology, 2019, 80, 1683-1691.	1.2	7
2	Staging Na/K-ion de-/intercalation of graphite retrieved from spent Li-ion batteries: <i>in operando</i> X-ray diffraction studies and an advanced anode material for Na/K-ion batteries. Energy and Environmental Science, 2019, 12, 3575-3584.	15.6	189
3	Advances in sodium secondary batteries utilizing ionic liquid electrolytes. Energy and Environmental Science, 2019, 12, 3247-3287.	15.6	129
4	Membrane technologies for Li+/Mg2+ separation from salt-lake brines and seawater: A comprehensive review. Journal of Industrial and Engineering Chemistry, 2020, 81, 7-23.	2.9	186
5	Recovery Li/Co from spent LiCoO2 electrode based on an aqueous dual-ion lithium-air battery. Electrochimica Acta, 2020, 332, 135529.	2.6	11
6	Highly safe and ionothermal synthesis of Ti3C2 MXene with expanded interlayer spacing for enhanced lithium storage. Journal of Energy Chemistry, 2020, 47, 203-209.	7.1	91
7	Synthesis and Dissolution of Metal Oxides in Ionic Liquids and Deep Eutectic Solvents. Molecules, 2020, 25, 78.	1.7	71
8	Review on Hydrometallurgical Recovery of Metals with Deep Eutectic Solvents. Sustainable Chemistry, 2020, 1, 238-255.	2.2	46
9	Metal-Based Electrocatalysts for High-Performance Lithium-Sulfur Batteries: A Review. Catalysts, 2020, 10, 1137.	1.6	14
10	Deep eutectic solvents in separations: Methods of preparation, polarity, and applications in extractions and capillary electrochromatography. Journal of Chromatography A, 2020, 1633, 461613.	1.8	97
11	Acidic deep eutectic solvents with long carbon chains as catalysts and reaction media for biodiesel production. Renewable Energy, 2020, 162, 1842-1853.	4.3	28
12	Single-Atom Electrocatalysts for Lithium Sulfur Batteries: Progress, Opportunities, and Challenges. , 2020, 2, 1450-1463.		108
13	Efficient Recovery of End-of-Life NdFeB Permanent Magnets by Selective Leaching with Deep Eutectic Solvents. Environmental Science & Technology, 2020, 54, 10370-10379.	4.6	57
14	Partial Viscosity Decoupling of Solute Solvation, Rotation, and Translation Dynamics in Lauric Acid/Menthol Deep Eutectic Solvent: Modulation of Dynamic Heterogeneity with Length Scale. Journal of Physical Chemistry B, 2020, 124, 6875-6884.	1.2	14
15	Eutectic Electrolytes as a Promising Platform for Next-Generation Electrochemical Energy Storage. Accounts of Chemical Research, 2020, 53, 1648-1659.	7.6	143
16	Pyrolysis characteristics of cathode from spent lithium-ion batteries using advanced TG-FTIR-GC/MS analysis. Environmental Science and Pollution Research, 2020, 27, 40205-40209.	2.7	12
17	Efficient Direct Recycling of Lithium-Ion Battery Cathodes by Targeted Healing. Joule, 2020, 4, 2609-2626.	11.7	260
18	A paired electrolysis approach for recycling spent lithium iron phosphate batteries in an undivided molten salt cell. Green Chemistry, 2020, 22, 8633-8641.	4.6	38

#	Article	IF	Citations
19	Integrated Leaching and Separation of Metals Using Mixtures of Organic Acids and Ionic Liquids. Molecules, 2020, 25, 5570.	1.7	8
20	Molten salt-assisted regeneration and characterization of submicron-sized LiNi0.5Co0.2Mn0.3O2 crystals from spent lithium ion batteries. Journal of Alloys and Compounds, 2020, 848, 156591.	2.8	24
21	Enhanced photocatalytic degradation of perfluorooctanoic acid by Ti3C2 MXene-derived heterojunction photocatalyst: Application of intercalation strategy in DESs. Science of the Total Environment, 2020, 746, 141009.	3.9	34
22	Efficient Dissolution of Lithium-Ion Batteries Cathode LiCoO₂ by Polyethylene Glycol-Based Deep Eutectic Solvents at Mild Temperature. ACS Sustainable Chemistry and Engineering, 2020, 8, 11713-11720.	3.2	91
23	Are There Magic Compositions in Deep Eutectic Solvents? Effects of Composition and Water Content in Choline Chloride/Ethylene Glycol from Ab Initio Molecular Dynamics. Journal of Physical Chemistry B, 2020, 124, 7433-7443.	1.2	94
24	The effect of pH and hydrogen bond donor on the dissolution of metal oxides in deep eutectic solvents. Green Chemistry, 2020, 22, 5476-5486.	4.6	92
25	Sustainable Direct Recycling of Lithiumâ€Ion Batteries via Solvent Recovery of Electrode Materials. ChemSusChem, 2020, 13, 5664-5670.	3.6	80
26	Energy and environmental aspects in recycling lithium-ion batteries: Concept of Battery Identity Global Passport. Materials Today, 2020, 41, 304-315.	8.3	181
27	Stepwise Recovery of Valuable Metals from Spent Lithium Ion Batteries by Controllable Reduction and Selective Leaching and Precipitation. ACS Sustainable Chemistry and Engineering, 2020, 8, 15496-15506.	3.2	37
28	Ultrasoundâ€Assisted Natural Deep Eutectic Solvents as Separationâ€Free Extraction Media for Hydroxytyrosol from Olives. ChemistrySelect, 2020, 5, 10939-10944.	0.7	10
29	Sustainable Liâ€Ion Batteries: Chemistry and Recycling. Advanced Energy Materials, 2021, 11, 2003456.	10.2	157
30	Electrochemical oxidation as alternative for dissolution of metal oxides in deep eutectic solvents. Green Chemistry, 2020, 22, 8360-8368.	4.6	34
31	Magnetic field assisted high capacity durable Li-ion battery using magnetic Î±-Fe2O3 nanoparticles decorated expired drug derived N-doped carbon anode. Scientific Reports, 2020, 10, 9945.	1.6	31
32	Solvometallurgical recovery of cobalt from lithium-ion battery cathode materials using deep-eutectic solvents. Green Chemistry, 2020, 22, 4210-4221.	4.6	149
33	Highly Efficient p-Toluenesulfonic Acid-Based Deep-Eutectic Solvents for Cathode Recycling of Li-Ion Batteries. ACS Sustainable Chemistry and Engineering, 2020, 8, 5437-5445.	3.2	83
34	Guidelines for designing highly concentrated electrolytes for low temperature applications. Chemical Communications, 2020, 56, 9830-9833.	2.2	13
35	Deepâ€Eutecticâ€Solventâ€Based Selfâ€Healing Polymer Electrolyte for Safe and Longâ€Life Lithiumâ€Metal Batteries. Angewandte Chemie - International Edition, 2020, 59, 9134-9142.	7.2	292
36	Deepâ€Eutecticâ€Solventâ€Based Selfâ€Healing Polymer Electrolyte for Safe and Longâ€Life Lithiumâ€Metal Batteries. Angewandte Chemie, 2020, 132, 9219-9227.	1.6	42

#	Article	IF	Citations
37	Ultrasonic renovating and coating modifying spent lithium cobalt oxide from the cathode for the recovery and sustainable utilization of lithium-ion battery. Journal of Cleaner Production, 2020, 257, 120510.	4.6	20
38	Recycling of Liâˆ'Niâˆ'Mnâˆ'Co Hydroxide from Spent Batteries to Produce Highâ€Performance Supercapacitors with Exceptional Stability. ChemElectroChem, 2020, 7, 975-982.	1.7	41
39	Conversion Mechanisms of Selective Extraction of Lithium from Spent Lithium-Ion Batteries by Sulfation Roasting. ACS Applied Materials & Interfaces, 2020, 12, 18482-18489.	4.0	115
40	Recovery of LiCoO₂ from Spent Lithium-Ion Batteries through a Low-Temperature Ammonium Chloride Roasting Approach: Thermodynamics and Reaction Mechanisms. ACS Sustainable Chemistry and Engineering, 2020, 8, 6524-6532.	3.2	79
41	Recycle, Recover and Repurpose Strategy of Spent Liâ€ion Batteries and Catalysts: Current Status and Future Opportunities. ChemSusChem, 2020, 13, 3079-3100.	3.6	105
42	Lithium salt/amide-based deep eutectic electrolytes for lithium-ion batteries: electrochemical, thermal and computational study. Physical Chemistry Chemical Physics, 2020, 22, 8853-8863.	1.3	43
43	Thermal behavior, solvatochromic parameters, and metal halide solvation of the novel water-based deep eutectic solvents. Journal of Molecular Liquids, 2021, 324, 114779.	2.3	23
44	The lab-to-fab journey of copper-based electrocatalysts for multi-carbon production: Advances, challenges, and opportunities. Nano Today, 2021, 36, 101028.	6.2	25
45	A green, efficient, closed-loop direct regeneration technology for reconstructing of the LiNi0.5Co0.2Mn0.3O2 cathode material from spent lithium-ion batteries. Journal of Hazardous Materials, 2021, 410, 124610.	6.5	72
46	Recent breakthroughs and perspectives of high-energy layered oxide cathode materials for lithium ion batteries. Materials Today, 2021, 43, 132-165.	8.3	174
47	Sustainable recycling of LiCoO2 cathode scrap on the basis of successive peroxymonosulfate activation and recovery of valuable metals. Science of the Total Environment, 2021, 759, 143478.	3.9	27
48	Analogous Mixed Matrix Membranes with Selfâ€Assembled Interface Pathways. Angewandte Chemie - International Edition, 2021, 60, 5864-5870.	7.2	29
49	Analogous Mixed Matrix Membranes with Selfâ€Assembled Interface Pathways. Angewandte Chemie, 2021, 133, 5928-5934.	1.6	3
50	Utilizing spent Li-ion batteries to regulate the Ï€-conjugated structure of g-C₃N₄: a winâ€"win approach for waste recycling and highly active photocatalyst construction. Journal of Materials Chemistry A, 2021, 9, 472-481.	5.2	21
51	Becoming Sustainable, The New Frontier in Soft Robotics. Advanced Materials, 2021, 33, e2004413.	11.1	107
52	A lithium-ion battery recycling technology based on a controllable product morphology and excellent performance. Journal of Materials Chemistry A, 2021, 9, 18623-18631.	5.2	11
53	Construction of the POMOF@Polypyrrole Composite with Enhanced Ion Diffusion and Capacitive Contribution for High-Performance Lithium-Ion Batteries. ACS Applied Materials & Interfaces, 2021, 13, 6265-6275.	4.0	52
54	Recycling of spent lithium-ion batteries in view of green chemistry. Green Chemistry, 2021, 23, 6139-6171.	4.6	113

#	Article	IF	Citations
55	Glycerol in energy transportation: a state-of-the-art review. Green Chemistry, 2021, 23, 7865-7889.	4.6	29
56	Environmentally Friendly Extraction and Recovery of Cobalt from Simulated Solution of Spent Ternary Lithium Batteries Using the Novel Ionic Liquids of [C₈H₁₇NH₂][Cyanex 272]. ACS Sustainable Chemistry and Engineering, 2021, 9, 2475-2485.	3.2	11
57	A novel three-step approach to separate cathode components for lithium-ion battery recycling. Rare Metals, 2021, 40, 1431-1436.	3.6	42
58	Synergistic recycling and conversion of spent Li-ion battery leachate into highly efficient oxygen evolution catalysts. Green Chemistry, 2021, 23, 6538-6547.	4.6	42
59	Engineering a tandem leaching system for the highly selective recycling of valuable metals from spent Li-ion batteries. Green Chemistry, 2021, 23, 2177-2184.	4.6	91
60	Organosulfideâ€Based Deep Eutectic Electrolyte for Lithium Batteries. Angewandte Chemie, 2021, 133, 9969-9973.	1.6	12
61	Organosulfideâ€Based Deep Eutectic Electrolyte for Lithium Batteries. Angewandte Chemie - International Edition, 2021, 60, 9881-9885.	7.2	42
62	Deep Eutectic Solvents for Boosting Electrochemical Energy Storage and Conversion: A Review and Perspective. Advanced Functional Materials, 2021, 31, 2011102.	7.8	172
63	A review on sustainable recycling technologies for lithium-ion batteries. Emergent Materials, 2021, 4, 725-735.	3.2	33
64	Intermolecular interactions in natural deep eutectic solvents and their effects on the ultrasound-assisted extraction of artemisinin from Artemisia annua. Journal of Molecular Liquids, 2021, 326, 115283.	2.3	30
65	Recent progress on the recycling technology of Li-ion batteries. Journal of Energy Chemistry, 2021, 55, 391-419.	7.1	212
66	Hydrometallurgical Recovery of Spent Lithium Ion Batteries: Environmental Strategies and Sustainability Evaluation. ACS Sustainable Chemistry and Engineering, 2021, 9, 5750-5767.	3.2	101
67	Green separation of lanthanum, cerium and nickel from waste nickel metal hydride battery. Waste Management, 2021, 125, 154-162.	3.7	25
68	Use of Microwave-Assisted Deep Eutectic Solvents to Recycle Lithium Manganese Oxide from Li-Ion Batteries. Jom, 2021, 73, 2104-2110.	0.9	22
69	Progress in the sustainable recycling of spent lithiumâ€ion batteries. SusMat, 2021, 1, 241-254.	7.8	104
70	Circular Economy and the Fate of Lithium Batteries: Second Life and Recycling. Advanced Energy and Sustainability Research, 2021, 2, 2100047.	2.8	16
71	Electrochemical approaches for selective recovery of critical elements in hydrometallurgical processes of complex feedstocks. IScience, 2021, 24, 102374.	1.9	46
72	Recent Developments in Solvent-Based Fluid Separations. Annual Review of Chemical and Biomolecular Engineering, 2021, 12, 573-591.	3.3	2

#	Article	IF	Citations
73	Cobalt Electrochemical Recovery from Lithium Cobalt Oxides in Deep Eutectic Choline Chloride+Urea Solvents. ChemSusChem, 2021, 14, 2972-2983.	3.6	33
74	The effect of increasing water content on transition metal speciation in deep eutectic solvents. Journal of Molecular Liquids, 2021, 332, 115845.	2.3	17
75	Revisiting greenness of ionic liquids and deep eutectic solvents. Green Chemical Engineering, 2021, 2, 174-186.	3.3	193
76	Recycling and Direct-Regeneration of Cathode Materials from Spent Ternary Lithium-Ion Batteries by Hydrometallurgy: Status Quo and Recent Developments. Johnson Matthey Technology Review, 2021, 65, 431-452.	0.5	13
77	Recycling Cathodes from Spent Lithium-Ion Batteries Based on the Selective Extraction of Lithium. ACS Sustainable Chemistry and Engineering, 2021, 9, 10196-10204.	3.2	23
78	Novel Recycling Approach to Regenerate a LiNi_{0.6}Co_{0.2}Mn_{0.2}O₂ Cathode Material from Spent Lithium-Ion Batteries. Industrial & Engineering Chemistry Research, 2021, 60, 10303-10311.	1.8	17
79	Selective recovery of cobalt from mixed lithium ion battery wastes using deep eutectic solvent. Chemical Engineering Journal, 2021, 417, 129249.	6.6	108
80	Effects of SnCl2 concentration and Ti source on the phase composition, sinterability, and microwave dielectric properties of Zr0.8Sn0.2TiO4 ceramics by choline chloride-malonic acid deep eutectic solvent. Journal of the European Ceramic Society, 2021, , .	2.8	2
81	Circular economy of Li Batteries: Technologies and trends. Journal of Energy Storage, 2021, 40, 102690.	3.9	65
82	Treatment of copper converter slag with deep eutectic solvent as green chemical. Waste Management, 2021, 132, 64-73.	3.7	15
83	Investigating the Variation in Solvation Interactions of Choline Chloride-Based Deep Eutectic Solvents Formed Using Different Hydrogen Bond Donors. ACS Sustainable Chemistry and Engineering, 2021, 9, 11970-11980.	3.2	19
84	Significant Improvement in Dissolving Lithium-Ion Battery Cathodes Using Novel Deep Eutectic Solvents at Low Temperature. ACS Sustainable Chemistry and Engineering, 2021, 9, 12940-12948.	3.2	45
85	Mechanistic Insights into the Intercalation and Interfacial Chemistry of Mesocarbon Microbeads Anode for Potassium Ion Batteries. Small, 2021, 17, e2103557.	5.2	16
86	Ammoniacal leaching process for the selective recovery of value metals from waste lithium-ion batteries. Environmental Technology (United Kingdom), 2023, 44, 211-225.	1.2	4
87	Redox-Active Polymers Designed for the Circular Economy of Energy Storage Devices. ACS Energy Letters, 2021, 6, 3450-3457.	8.8	18
88	Progresses in Sustainable Recycling Technology of Spent Lithiumâ€Ion Batteries. Energy and Environmental Materials, 2022, 5, 1012-1036.	7.3	131
89	Ammonia Reduction System for the Diversity of Cathode Processing of Li-Ion Batteries. ACS Sustainable Chemistry and Engineering, 2021, 9, 12091-12099.	3.2	7
90	Recovery valuable metals from spent lithium-ion batteries via a low-temperature roasting approach: Thermodynamics and conversion mechanism. Journal of Hazardous Materials Advances, 2021, 1, 100003.	1.2	11

#	Article	IF	Citations
91	Deep eutectics and analogues as electrolytes in batteries. Journal of Molecular Liquids, 2021, 338, 116597.	2.3	48
92	A unique co-recovery strategy of cathode and anode from spent LiFePO4 battery. Science China Materials, 2022, 65, 637-645.	3.5	46
93	Recycling-oriented cathode materials design for lithium-ion batteries: Elegant structures versus complicated compositions. Energy Storage Materials, 2021, 41, 380-394.	9.5	46
94	Organic batteries based on just redox polymers. Progress in Polymer Science, 2021, 122, 101449.	11.8	66
95	Higher 2nd life Lithium Titanate battery content in hybrid energy storage systems lowers environmental-economic impact and balances eco-efficiency. Renewable and Sustainable Energy Reviews, 2021, 152, 111704.	8.2	22
96	Liquification of 2,2,4-trimethyl-1,3-pentanediol into hydrophobic eutectic mixtures: A multi-criteria design for eco-efficient boron recovery. Chemical Engineering Journal, 2021, 426, 131342.	6.6	24
97	Concurrent recycling chemistry for cathode/anode in spent graphite/LiFePO4 batteries: Designing a unique cation/anion-co-workable dual-ion battery. Journal of Energy Chemistry, 2022, 64, 166-171.	7.1	92
98	Organic acid-based linear free energy relationship models for green leaching of strategic metals from spent lithium-ion batteries and improvement of leaching performance. Journal of Hazardous Materials, 2022, 423, 127214.	6.5	19
99	Gradient-Regeneration of Li(Ni_{0.9}Co_{0.05}Mn_{0.05})O₂ from Spent LiCoO₂ lithium-Ion Battery. Journal of the Electrochemical Society, 2020, 167, 160557.	1.3	5
100	Electrodeposition of Sn powders with pyramid chain and dendrite structures in deep eutectic solvent: roles of current density and SnCl2 concentration. Journal of Solid State Electrochemistry, 2021, 25, 1111-1120.	1.2	11
101	Eutectics: formation, properties, and applications. Chemical Society Reviews, 2021, 50, 8596-8638.	18.7	184
102	A facile freezeâ€“thaw ultrasonic assisted circulation method of graphite flakes prepared by anode graphite from spent lithium-ion batteries for application in nanofluids. Sustainable Energy and Fuels, 2021, 5, 4882-4894.	2.5	5
103	Significance of a Solid Electrolyte Interphase on Separation of Anode and Cathode Materials from Spent Li-Ion Batteries by Froth Flotation. ACS Sustainable Chemistry and Engineering, 2021, 9, 531-540.	3.2	38
104	A novel method for screening deep eutectic solvent to recycle the cathode of Li-ion batteries. Green Chemistry, 2020, 22, 4473-4482.	4.6	158
105	High-efficiency method for recycling lithium from spent LiFePO₄ cathode. Nanotechnology Reviews, 2020, 9, 1586-1593.	2.6	20
106	Dissolution of Metal Oxides in a Choline Chlorideâ€“Sulphosalicylic Acid Deep Eutectic Solvent. Theoretical Foundations of Chemical Engineering, 2021, 55, 663-670.	0.2	11
107	Green Recycling Methods to Treat Lithiumâ€Ion Batteries Eâ€Waste: A Circular Approach to Sustainability. Advanced Materials, 2022, 34, e2103346.	11.1	148
108	Deep Eutectic Solvents: Green Approach for Cathode Recycling of Liâ€Ion Batteries. Advanced Energy and Sustainability Research, 2022, 3, 2100133.	2.8	47

#	Article	IF	Citations
109	Coupling regeneration strategy of lithium-ion electrode materials turned with naphthalenedisulfonic acid. Waste Management, 2021, 136, 1-10.	3.7	3
110	Ionization potential-based design of deep eutectic solvent for recycling of spent lithium ion batteries. Chemical Engineering Journal, 2022, 436, 133200.	6.6	38
111	A sodium salt-assisted roasting approach followed by leaching for recovering spent LiFePO4 batteries. Journal of Hazardous Materials, 2022, 424, 127586.	6.5	49
112	Simple, green organic acid-based hydrometallurgy for waste-to-energy storage devices: Recovery of NiMnCoC2O4 as an electrode material for pseudocapacitor from spent LiNiMnCoO2 batteries. Journal of Hazardous Materials, 2022, 424, 127481.	6.5	24
113	Recent Advances in the Application of Greener Solvents for Extraction, Recovery and Dissolution of Precious Metals and Rare Earth Elements from Different Matrices. Nanotechnology in the Life Sciences, 2020, , 299-309.	0.4	1
114	Separation of Li(I), Co(II), Ni(II), Mn(II), and Fe(III) from hydrochloric acid solution using a menthol-based hydrophobic deep eutectic solvent. Hydrometallurgy, 2022, 207, 105777.	1.8	30
115	Direct Regeneration of Spent Li-Ion Battery Cathodes via Chemical Relithiation Reaction. ACS Sustainable Chemistry and Engineering, 2021, 9, 16384-16393.	3.2	42
116	Recycling Spent LiCoO₂ Battery as a Highâ€efficient Lithiumâ€doped Graphitic Carbon Nitride/Co₃O₄ Composite Photocatalyst and Its Synergistic Photocatalytic Mechanism. Energy and Environmental Materials, 2023, 6, .	7.3	16
117	Epitaxial Regeneration of Spent Graphite Anode Material by an Eco-friendly In-Depth Purification Route. ACS Sustainable Chemistry and Engineering, 2021, 9, 16192-16202.	3.2	27
118	An overview of global power lithium-ion batteries and associated critical metal recycling. Journal of Hazardous Materials, 2022, 425, 127900.	6.5	141
119	Cathode Active Material Recycling from Spent Lithium Batteries: A Green (Circular) Approach Based on Deep Eutectic Solvents. ChemSusChem, 2022, 15, .	3.6	44
120	Closed-loop selective recycling process of spent LiNi Co Mn O2 batteries by thermal-driven conversion. Journal of Hazardous Materials, 2022, 424, 127757.	6.5	17
121	Advanced cathode for dual-ion batteries: Waste-to-wealth reuse of spent graphite from lithium-ion batteries. EScience, 2022, 2, 95-101.	25.0	64
122	Selective cobalt and nickel electrodeposition for lithium-ion battery recycling through integrated electrolyte and interface control. Nature Communications, 2021, 12, 6554.	5.8	56
123	Simultaneous Recycling of Critical Metals and Aluminum Foil from Waste LiNi_{1/3}Co_{1/3}Mn_{1/3}O₂ Cathode via Ethylene Glycolâ€“Citric Acid System. ACS Sustainable Chemistry and Engineering, 2021, 9, 16133-16142.	3.2	24
124	Ultrafast Regenerating Spent LiCoO₂ Lithiumâ€Ion Batteries into Bifunctional Electrodes for Rechargeable Znâ€Air Batteries. ChemElectroChem, 2022, 9, .	1.7	3
125	Efficient Recovery of Value Metals from Spent Lithium-Ion Batteries by Combining Deep Eutectic Solvents and Coextraction. ACS Sustainable Chemistry and Engineering, 2022, 10, 1149-1159.	3.2	55
126	Preparation of electrochemically stable choline chloride-sugar based sustainable electrolytes and study of effect of water on their electrochemical behaviour. Materials Today: Proceedings, 2022, 53, 179-184.	0.9	2

#	Article	IF	Citations
127	A Novel Deep-Eutectic Solvent with Strong Coordination Ability and Low Viscosity for Efficient Extraction of Valuable Metals from Spent Lithium-Ion Batteries. ACS Sustainable Chemistry and Engineering, 2022, 10, 975-985.	3.2	65
128	A review of the life cycle assessment of electric vehicles: Considering the influence of batteries. Science of the Total Environment, 2022, 814, 152870.	3.9	82
129	Application of Ionic Liquids for the Recycling and Recovery of Technologically Critical and Valuable Metals. Energies, 2022, 15, 628.	1.6	23
130	Deep eutectic solvents composed of bio-phenol-derived superbase ionic liquids and ethylene glycol for CO₂ capture. Chemical Communications, 2022, 58, 2160-2163.	2.2	27
131	A Sustainable Process for the Recovery of Valuable Metals from Spent Lithium Ion Batteries by Deep Eutectic Solvents Leaching. Materials Proceedings, 2022, 5, .	0.2	2
132	Regeneration of well-performed anode material for sodium ion battery from waste lithium cobalt oxide via a facile sulfuration process. Materials Today Energy, 2022, , 100957.	2.5	5
133	Synthesis and application of single-atom catalysts in sulfur cathode for high-performance lithiumâ€“sulfur batteries. Chinese Chemical Letters, 2023, 34, 107121.	4.8	18
134	Recycling of Lithiumâ€Ion Batteriesâ€"Current State of the Art, Circular Economy, and Next Generation Recycling. Advanced Energy Materials, 2022, 12, .	10.2	268
135	Insights on choline chlorideâ€“based deep eutectic solvent (reline)â€‰+â€‰primary alcohol mixtures: a molecular dynamics simulation study. Journal of Molecular Modeling, 2022, 28, 30.	0.8	3
136	Commercialization of Electric Vehicles in Hong Kong. Energies, 2022, 15, 942.	1.6	11
137	Strategies of regulating Zn²⁺solvation structures for dendrite-free and side reaction-suppressed zinc-ion batteries. Energy and Environmental Science, 2022, 15, 499-528.	15.6	313
138	CO₂ treatment enables non-hazardous, reliable, and efficacious recovery of spent Li(Ni_{0.5}Co_{0.2}Mn_{0.3})O₂ cathodes. Green Chemistry, 2022, 24, 779-789.	4.6	22
139	The possibility of using DES based on polypropylene glycol 425 and tetrabuthylammonium bromide in the extraction processes of transition metals. IOP Conference Series: Materials Science and Engineering, 2022, 1212, 012024.	0.3	1
140	Boosting Charge Transport in BiVO₄ Photoanode for Solar Water Oxidation. Advanced Materials, 2022, 34, e2108178.	11.1	111
141	Sustainable regenerating of high-voltage performance LiCoO2 from spent lithium-ion batteries by interface engineering. Electrochimica Acta, 2022, 407, 139863.	2.6	18
142	Exploring recycling potential of rare, scarce, and scattered metals: Present status and future directions. Sustainable Production and Consumption, 2022, 30, 988-1000.	5.7	9
143	A novel approach to recovery of lithium element and production of holey graphene based on the lithiated graphite of spent lithium ion batteries. Chemical Engineering Journal, 2022, 436, 135011.	6.6	29
144	Status and advances of deep eutectic solvents for metal separation and recovery. Green Chemistry, 2022, 24, 1895-1929.	4.6	79

#	Article	IF	Citations
145	A Ternary Molten Salt Approach for Direct Regeneration of LiNi_{0.5}Co_{0.2}Mn_{0.3}O₂ Cathode. Small, 2022, 18, e2106719.	5.2	41
146	Lithium metal recycling from spent lithium-ion batteries by cathode overcharging process. Rare Metals, 2022, 41, 1843-1850.	3.6	24
147	Are molecular solvents, aqueous biphasic systems and deep eutectic solvents meaningful categories for liquidâ€“liquid extraction?. Comptes Rendus Chimie, 2022, 25, 67-81.	0.2	0
148	Sustainable Recycling of Electrode Materials in Spent Li-Ion Batteries through Direct Regeneration Processes. ACS ES&T Engineering, 2022, 2, 586-605.	3.7	37
149	A Green Approach for Selective Ionometallurgical Separation of Lithium from Spent Li-Ion Batteries by Deep Eutectic Solvent (DES): Process Optimization and Kinetics Modeling. Mineral Processing and Extractive Metallurgy Review, 2023, 44, 218-230.	2.6	11
150	Selective Extraction of Transition Metals from Spent LiNi_{<i>x</i>}Co_yMn_{1âˆ’<i>x</i>âˆ’<i>y</i>}O₂ Cathode via Regulation of Coordination Environment. Angewandte Chemie - International Edition, 2022, 61, .	7.2	72
151	Study on the Extraction of Acetamiprid and Imidacloprid from an Aqueous Environment Using Menthol-Based Hydrophobic Eutectic Solvents: Quantum Chemical and Molecular Dynamics Insights. ACS Sustainable Chemistry and Engineering, 2022, 10, 4227-4246.	3.2	11
153	Direct Regeneration of Spent Lithium Iron Phosphate via a Low-Temperature Molten Salt Process Coupled with a Reductive Environment. Industrial & Engineering Chemistry Research, 2022, 61, 3831-3839.	1.8	31
154	Ternary Deep Eutectic Solvent (DES) with a Regulated Rate-Determining Step for Efficient Recycling of Lithium Cobalt Oxide. ACS Omega, 2022, 7, 11452-11459.	1.6	32
155	Selective Extraction of Transition Metals from Spent LiNi_{<i>x</i>}Co_yMn_{1âˆ’<i>x</i>âˆ’<i>y</i>}O₂ Cathode via Regulation of Coordination Environment. Angewandte Chemie, 2022, 134, .	1.6	6
156	Nonâ€Electrode Components for Rechargeable Aqueous Zinc Batteries: Electrolytes, Solidâ€Electrolyteâ€Interphase, Current Collectors, Binders, and Separators. Advanced Materials, 2022, 34, e2108206.	11.1	58
157	Improving Extraction Performance of D2EHPA for Impurities Removal from Spent Lithium-Ion Batteries Leaching Solution by TPC[4]. ACS Sustainable Chemistry and Engineering, 2022, 10, 4312-4322.	3.2	10
158	Solubility of Gases in Choline Chloride-Based Deep Eutectic Solvents from Molecular Dynamics Simulation. Industrial & Engineering Chemistry Research, 2022, 61, 4659-4671.	1.8	9
159	Battery technology and recycling alone will not save the electric mobility transition from future cobalt shortages. Nature Communications, 2022, 13, 1341.	5.8	107
160	Concealed Cathode Degradation in Lithium-Ion Cells with a Ni-Rich Oxide. Journal of the Electrochemical Society, 2022, 169, 040539.	1.3	9
161	Recycling cathode materials of spent lithium-ion batteries for advanced catalysts production. Journal of Power Sources, 2022, 528, 231220.	4.0	41
162	Current challenges and future opportunities toward recycling of spent lithium-ion batteries. Renewable and Sustainable Energy Reviews, 2022, 159, 112202.	8.2	57
163	Effective regeneration of mixed composition of spent lithium-ion batteries electrodes towards building supercapacitor. Journal of Hazardous Materials, 2022, 430, 128496.	6.5	23

#	Article	IF	Citations
164	Smart interfaces in Li-ion batteries: Near-future key challenges. Electrochimica Acta, 2022, 415, 140258.	2.6	8
165	One-step reconstruction of acid treated spent graphite for high capacity and fast charging lithium-ion batteries. Electrochimica Acta, 2022, 415, 140198.	2.6	23
166	Extraction of rare earth elements via electric field assisted mining applying deep eutectic solvents. Sustainable Chemistry and Pharmacy, 2022, 26, 100638.	1.6	0
167	Co-precipitation preparation of Ni-Co-Mn ternary cathode materials by using the sources extracting directly from spent lithium-ion batteries. Journal of Alloys and Compounds, 2022, 909, 164691.	2.8	26
168	Cobalt Recovery from Li-Ion Battery Recycling: A Critical Review. Metals, 2021, 11, 1999.	1.0	37
169	Eutectic Electrolytes in Advanced Metal-Ion Batteries. ACS Energy Letters, 2022, 7, 247-260.	8.8	61
170	Spectroscopic Study into Lanthanide Speciation in Deep Eutectic Solvents. ACS Omega, 2022, 7, 921-932.	1.6	5
171	Unexpected Selective Absorption of Lithium in Thermally Reduced Graphene Oxide Membranes. Chinese Physics Letters, 2021, 38, 116802.	1.3	5
172	Extraction and Separation of Co2+ from Ni2+ Using the Novel Task-Specific Ionic Liquids of [C4H9NH3][P507]. Russian Journal of Applied Chemistry, 2022, 95, 143-153.	0.1	0
173	Regeneration of spent cathodes of Li-ion batteries into multifunctional electrodes for overall water splitting and rechargeable Zn-air batteries by ultrafast carbothermal shock. Science China Materials, 2022, 65, 2393-2400.	3.5	6
174	A Sustainable Strategy for Solid-Phase Extraction of Antiviral Drug from Environmental Waters by Immobilized Hydrogen Bond Acceptor. Nanomaterials, 2022, 12, 1287.	1.9	3
175	Highly conductive ZrO2â€“x spheres as bifunctional framework stabilizers and gas evolution relievers in nickel-rich layered cathodes for lithium-ion batteries. Composites Part B: Engineering, 2022, 238, 109911.	5.9	11
176	High-efficiency leaching of valuable metals from waste Li-ion batteries using deep eutectic solvents. Environmental Research, 2022, 212, 113286.	3.7	25
177	A New Route for the Recycling of Spent Lithium-Ion Batteries Towards Advanced Energy Storage, Conversion and Harvesting Systems. SSRN Electronic Journal, 0, , .	0.4	0
178	Recyclability and recycling technologies for lithiumâ€“sulfur batteries. , 2022, , 627-651.		0
179	Effective extraction of parabens from toothpaste by vortex-assisted liquid-phase microextraction based on low viscosity deep eutectic solvent. Microchemical Journal, 2022, 179, 107590.	2.3	6
180	Recycling spent LiNi _{1-x-y} Mn _x Co _y O ₂ cathodes to bifunctional NiMnCo catalysts for zinc-air batteries. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2202202119.	3.3	89
181	Closed-loop cobalt recycling from spent lithium-ion batteries based on a deep eutectic solvent (DES) with easy solvent recovery. Journal of Energy Chemistry, 2022, 72, 532-538.	7.1	40

#	Article	IF	Citations
182	Cathode recycling of lithium-ion batteries based on reusable hydrophobic eutectic solvents. Green Chemistry, 2022, 24, 5107-5115.	4.6	20
183	Promising technologies under development for recycling, remanufacturing, and reusing batteries: an introduction. , 2022, , 79-103.		4
184	Toward practical lithium-ion battery recycling: adding value, tackling circularity and recycling-oriented design. Energy and Environmental Science, 2022, 15, 2732-2752.	15.6	110
185	Separation of nickel from cobalt and manganese in lithium ion batteries using deep eutectic solvents. Green Chemistry, 2022, 24, 4877-4886.	4.6	39
186	Direct and green repairing of degraded LiCoO2 for reuse in lithium-ion batteries. National Science Review, 2022, 9, .	4.6	85
187	A Novel Ternary Deep Eutectic Solvent for Efficient Recovery of Critical Metals from Spent Lithium-Ion Batteries Under Mild Conditions. SSRN Electronic Journal, 0, , .	0.4	0
188	Extraction of Cu(II), Ni(II), and Al(III) with the Deep Eutectic Solvent D2EHPA/Menthol. Theoretical Foundations of Chemical Engineering, 2022, 56, 221-229.	0.2	11
189	Si-induced insertion of Li into SiC to form Li-rich SiC twin crystal. Particuology, 2023, 74, 56-63.	2.0	2
190	Liquid Metal/Wood Anisotropic Conductors for Flexible and Recyclable Electronics. Advanced Materials Interfaces, 2022, 9, .	1.9	1
191	Electrochemical lithium extraction from aqueous sources. Matter, 2022, 5, 1760-1791.	5.0	27
192	Perspectives of Using DES-Based Systems for Solidâ€“Liquid and Liquidâ€“Liquid Extraction of Metals from E-Waste. Minerals (Basel, Switzerland), 2022, 12, 710.	0.8	6
193	Room-temperature dissolution of PbI₂ by a PEGylated deep eutectic solvent with high efficiency. New Journal of Chemistry, 0, , .	1.4	0
194	Progress, Key Issues, and Future Prospects for Liâ€Ion Battery Recycling. Global Challenges, 2022, 6, .	1.8	56
195	Mild and efficient recovery of lithium-ion battery cathode material by deep eutectic solvents with natural and cheap components. Green Chemical Engineering, 2023, 4, 303-311.	3.3	20
196	Prospects for managing endâ€ofâ€life lithiumâ€ion batteries: Present and future. , 2022, 1, 417-433.		66
197	New Bifunctional Deep-Eutectic Solvent for In Situ Selective Extraction of Valuable Metals from Spent Lithium Batteries. ACS Sustainable Chemistry and Engineering, 2022, 10, 8423-8432.	3.2	27
198	Development of deep eutectic solvents for sustainable chemistry. Journal of Molecular Liquids, 2022, 362, 119654.	2.3	29
199	Recycling lithium and cobalt from LIBs using microwave-assisted deep eutectic solvent leaching technology at low-temperature. Materials Chemistry and Physics, 2022, 289, 126466.	2.0	15

#	Article	IF	Citations
200	Solvent Extraction and Separation of Cobalt from Spent Lithium-Ion Batteries Cathodes with N263 in a Nitrite System. SSRN Electronic Journal, 0, , .	0.4	0
201	A Weak Acidic and Strong Coordinated Deep Eutectic Solvent for Recycling of Cathode from Spent Lithiumâ€Ion Batteries. ChemSusChem, 2022, 15, .	3.6	22
202	Environmental benefits of circular economy approach to use of cobalt. Global Environmental Change, 2022, 76, 102568.	3.6	5
203	A new route for the recycling of spent lithium-ion batteries towards advanced energy storage, conversion, and harvesting systems. Nano Energy, 2022, 101, 107595.	8.2	18
204	Deep Eutectic Solventâ€Based Ultraâ€Stretchable, Antiâ€Freezing, and Ambientâ€Stable Supramolecular Ionogel for Wearable Sensor. Macromolecular Materials and Engineering, 2022, 307, .	1.7	8
205	Decomposition of Deep Eutectic Solvent Aids Metals Extraction in Lithiumâ€Ion Batteries Recycling. ChemSusChem, 2022, 15, .	3.6	28
206	Deep Eutectic Solvents (DESs) for Green Recycling of Wasted Lithium-Ion Batteries (LIBs): Progress on Pushing the Overall Efficiency. Mining, Metallurgy and Exploration, 2022, 39, 2149-2165.	0.4	6
207	A novel property enhancer of clean fracturing fluids: Deep eutectic solvents. Journal of Molecular Liquids, 2022, 366, 120153.	2.3	2
208	Citric acid-based deep eutectic solvent (CA-DES) as a new soil detergent for the removal of cadmium from coking sites. Environmental Science and Pollution Research, 2023, 30, 2118-2127.	2.7	5
209	Recycling of spent lithium-ion batteries as a sustainable solution to obtain raw materials for different applications. Journal of Energy Chemistry, 2023, 79, 118-134.	7.1	36
210	Recovery of rare earth elements from coal flyash using deep eutectic solvents as leachants and precipitating as oxalate or fluoride. Hydrometallurgy, 2022, 214, 105952.	1.8	17
211	An account on the deep eutectic solvents-based electrolytes for rechargeable batteries and supercapacitors. Sustainable Materials and Technologies, 2022, 33, e00477.	1.7	10
212	Acetate acid and glucose assisted subcritical reaction for metal recovery from spent lithium ion batteries. Journal of Cleaner Production, 2022, 369, 133281.	4.6	19
213	Recycling cathode material LiCo1/3Ni1/3Mn1/3O2 by leaching with a deep eutectic solvent and metal recovery with antisolvent crystallization. Resources, Conservation and Recycling, 2022, 186, 106579.	5.3	16
214	An emission-free controlled potassium pyrosulfate roasting-assisted leaching process for selective lithium recycling from spent Li-ion batteries. Waste Management, 2022, 153, 52-60.	3.7	26
215	Molecular-based artificial neural network for predicting the electrical conductivity of deep eutectic solvents. Journal of Molecular Liquids, 2022, 366, 120225.	2.3	28
216	Performance of toluene oxidation on different morphologies of Î±-MnO2 prepared using manganese-based compound high-selectively recovered from spent lithium-ion batteries. Environmental Research, 2022, 215, 114299.	3.7	6
217	Selective lithium extraction and regeneration of LiCoO2 cathode materials from the spent lithium-ion battery. Chemical Engineering Journal, 2023, 452, 139258.	6.6	31

#	Article	IF	Citations
218	Boosting efficient and low-energy solid phase regeneration for single crystal LiNi0.6Co0.2Mn0.2O2 via highly selective leaching and its industrial application. Chemical Engineering Journal, 2023, 451, 139039.	6.6	20
219	Choline chlorideâ€"ethylene glycol based deep-eutectic solvents as lixiviants for cobalt recovery from lithium-ion battery cathode materials: are these solvents really green in high-temperature processes?. Green Chemistry, 2022, 24, 6685-6695.	4.6	27
220	Cathode electrolysis for the comprehensive recycling of spent lithium-ion batteries. Green Chemistry, 2022, 24, 6179-6188.	4.6	11
221	Highly efficient dissolution of the cathode materials of spent Niâ€"Coâ€"Mn lithium batteries using deep eutectic solvents. Green Chemistry, 2022, 24, 6562-6570.	4.6	31
222	Separation and recovery of graphite from spent lithiumâ€"ion batteries for synthesizing micro-expanded sorbents. New Journal of Chemistry, 2022, 46, 20250-20259.	1.4	2
223	Critical analysis of green solvent credentials of eutectic solvents. , 2022, , 77-104.		1
224	Efficient separation of electrode active materials and current collector metal foils from spent lithium-ion batteries by a green deep eutectic solvent. Green Chemistry, 2022, 24, 8131-8141.	4.6	12
225	Advances and Challenges on Recycling the Electrode and Electrolyte Materials in Spent Lithium-Ion Batteries. , 0, 1, .		4
226	Emerging green technologies for recovery and reuse of spent lithium-ion batteries â€" a review. Journal of Materials Chemistry A, 2022, 10, 17053-17076.	5.2	28
227	DES-mediated synthesis of ZnO nanostructures with exposed {0001} facets: photoluminescence and photocatalytic properties. New Journal of Chemistry, 2022, 46, 18865-18873.	1.4	3
228	Recovery of cobalt from spent lithium-ion battery cathode materials by using choline chloride-based deep eutectic solvent. Green Processing and Synthesis, 2022, 11, 868-874.	1.3	10
229	Thermal, chemical, electrochemical, radiolytic and biological stability of ionic liquids and deep eutectic solvents. New Journal of Chemistry, 2022, 46, 17640-17668.	1.4	23
230	Electrodeposition of polyfunctional Ni coatings from deep eutectic solvent based on choline chloride and lactic acid. Journal of Electrochemical Science and Engineering, 0, , .	1.6	0
231	A novel ternary deep eutectic solvent for efficient recovery of critical metals from spent lithium-ion batteries under mild conditions. Journal of Environmental Chemical Engineering, 2022, 10, 108627.	3.3	7
232	Natural Deep Eutectic Solvent-Based Microwave-Assisted Extraction of Total Flavonoid Compounds from Spent Sweet Potato (Ipomoea batatas L.) Leaves: Optimization and Antioxidant and Bacteriostatic Activity. Molecules, 2022, 27, 5985.	1.7	8
233	A green and sustainable strategy toward lithium resources recycling from spent batteries. Science Advances, 2022, 8, .	4.7	26
234	A high-capacity 1,2:3,4-dibenzophenazine anode integrated into carbon felt for an aqueous organic flow battery in alkaline media. Green Chemistry, 2022, 24, 8783-8790.	4.6	2
235	The application of deep eutectic solvents in lithium-ion battery recycling: A comprehensive review. Resources, Conservation and Recycling, 2023, 188, 106690.	5.3	55

#	Article	IF	Citations
236	A Shuttleâ€Free Solidâ€State Cuâ˜Li Battery Based on a Sandwichâ€Structured Electrolyte. Angewandte Chemie, 2023, 135, .	1.6	2
237	Surplus energy utilization of spent lithiumâ€ion batteries for highâ€profit organolithiums. , 2023, 5, .		7
238	A Shuttleâ€Free Solidâ€State Cuâ˜Li Battery Based on a Sandwichâ€Structured Electrolyte. Angewandte Chemie - International Edition, 2023, 62, .	7.2	8
239	Recycling methods for different cathode chemistries â€" A critical review. Journal of Energy Storage, 2022, 56, 106053.	3.9	7
240	Kinetics of Znâ€"C Battery Leaching with Choline Chloride/Urea Natural Deep Eutectic Solvents. Recycling, 2022, 7, 86.	2.3	2
241	High toxicity of amino acid-based deep eutectic solvents. Journal of Molecular Liquids, 2023, 370, 121044.	2.3	14
242	Zinc vacancy mediated electronâ€"hole separation in ZnO nanorod arrays for high-sensitivity organic photoelectrochemical transistor aptasensor. Chemical Communications, 2022, 59, 75-78.	2.2	2
243	Efficient recovery of valuable metals from spent Lithium-ion batteries by pyrite method with hydrometallurgy process. Chemical Engineering Journal, 2023, 455, 140914.	6.6	10
244	Proof-of-Concept study of ion-exchange method for the recycling of LiFePO4 cathode. Waste Management, 2023, 157, 1-7.	3.7	11
245	Large-scale direct regeneration of LiFePO₄@C based on spray drying. , 2023, 1, 254-261.		7
246	Leaching NCM cathode materials of spent lithium-ion batteries with phosphate acid-based deep eutectic solvent. Waste Management, 2023, 157, 8-16.	3.7	11
247	Microwave-ultra-fast recovery of valuable metals from spent lithium-ion batteries by deep eutectic solvents. Waste Management, 2023, 156, 139-147.	3.7	8
248	Facial construction of high rate Na3V2(PO4)2F3/C microspheres with fluorocarbon layer by deep-eutectic solvent synthesis. Electrochimica Acta, 2023, 440, 141718.	2.6	2
249	Electrification and decarbonization of spent Li-ion batteries purification by using an electrochemical membrane reactor. Separation and Purification Technology, 2023, 307, 122828.	3.9	4
250	Methods and Technologies for Recycling Batteries. , 2022, , 1-34.		0
251	High Adsorption Graphene Oxide Prepared by Graphite Anode from Spent Lithium-Ion Batteries for Methylene Blue Removal. Batteries, 2022, 8, 249.	2.1	0
252	Investigation of Hydrogen Reduction of LiCoO₂ Cathode Material for the Recovery of Li and Co Values. Energy & Fuels, 2022, 36, 15188-15198.	2.5	12
253	Experimental Study on a Superstable Nano-TiO₂ Deep Eutectic Solvent Nanofluid for Solar Energy Harvesting. ACS Sustainable Chemistry and Engineering, 2022, 10, 16985-16994.	3.2	9

#	Article	IF	Citations
254	An Efficient and Precipitant-Free Approach to Selectively Recover Lithium Cobalt Oxide Made for Cathode Materials Using a Microwave-Assisted Deep Eutectic Solvent. Energy & Fuels, 2023, 37, 724-734.	2.5	5
255	Mechanism of Friedelâ€“Crafts Acylation Using Metal Triflate in Deep Eutectic Solvents: An Experimental and Computational Study. ACS Omega, 2023, 8, 271-278.	1.6	1
256	Green recycling of spent Li-ion batteries by deep eutectic solvents (DESs): Leaching mechanism and effect of ternary DES. Journal of Environmental Chemical Engineering, 2022, 10, 109014.	3.3	11
257	Electric Field-Driven Ultraefficient Li⁺/Mg²⁺ Separation through Graphyne Membrane. Industrial & Engineering Chemistry Research, 2022, 61, 18080-18089.	1.8	5
258	Roadmap for a sustainable circular economy in lithium-ion and future battery technologies. JPhys Energy, 2023, 5, 021501.	2.3	16
259	Lithium and Cobalt Recovery from Lithiumâ€Ion Battery Waste via Functional Ionic Liquid Extraction for Effective Battery Recycling. ChemElectroChem, 2023, 10, .	1.7	7
260	On the Solvometallurgical Extraction of Lithium and Cobalt from Secondary Resources. , 2023, , 675-679.		1
261	Carbon neutrality strategies for sustainable batteries: from structure, recycling, and properties to applications. Energy and Environmental Science, 2023, 16, 745-791.	15.6	48
262	Highly efficient lithium-ion battery cathode material recycling using deep eutectic solvent based nanofluids. , 2023, 1, 270-281.		7
263	Green Leaching of Lithium-Ion Battery Cathodes by Ascorbic Acid Modified Guanidine-Based Deep Eutectic Solvents. Energy & Fuels, 2023, 37, 1216-1224.	2.5	11
264	ASSESSING METAL RECOVERY OPPORTUNITIES THROUGH BIOLEACHING FROM PAST METALLURGICAL SITES AND WASTE DEPOSITS: UK CASE STUDY. Detritus, 2022, , 62-71.	0.4	2
265	Solvent extraction and separation of cobalt from leachate of spent lithium-ion battery cathodes with N263 in nitrite media. International Journal of Minerals, Metallurgy and Materials, 2023, 30, 897-907.	2.4	4
267	Energy efficiency to improve sustainability. , 2023, , 359-386.		0
268	Industrial pathways to lithium extraction from seawater: Challenges and perspectives. , 2023, 2, e9120059.		10
269	Highly Efficient Recovery and Recycling of Cobalt from Spent Lithium-Ion Batteries Using an <i>N</i>-Methylureaâ€“Acetamide Nonionic Deep Eutectic Solvent. ACS Omega, 2023, 8, 6959-6967.	1.6	5
270	An overview of deep eutectic solvents: Alternative for organic electrolytes, aqueous systems & ionic liquids for electrochemical energy storage. Journal of Energy Chemistry, 2023, 82, 592-626.	7.1	17
271	High separation efficiency of ternary cathode materials from spent lithium-ion batteries by ternary molten Li-salt method. Sustainable Materials and Technologies, 2023, 35, e00575.	1.7	1
272	Green extraction of pure ferromagnetic nickel from spent hydroprocessing catalysts via deep eutectic solvents. Separation and Purification Technology, 2023, 313, 123461.	3.9	6

#	Article	IF	Citations
273	Extraction of precious metals from used lithium-ion batteries by a natural deep eutectic solvent with synergistic effects. Waste Management, 2023, 164, 1-8.	3.7	13
274	High-efficiency recycling of spent lithium-ion batteries: A double closed-loop process. Science of the Total Environment, 2023, 875, 162567.	3.9	12
275	The closed-loop recycling strategy of Li and Co metal ions based on aqueous Zn-air desalination battery. Journal of Colloid and Interface Science, 2023, 642, 182-192.	5.0	1
276	Review on comprehensive recycling of spent lithium-ion batteries: A full component utilization process for green and sustainable production. Separation and Purification Technology, 2023, 315, 123684.	3.9	17
277	Aromatic volatile organic compounds absorption with phenylâ€based deep eutectic solvents: A molecular thermodynamics and dynamics study. AIChE Journal, 2023, 69, .	1.8	11
278	Aluminum Impurity from Current Collectors Reactivates Degraded NCM Cathode Materials toward Superior Electrochemical Performance. ACS Nano, 2023, 17, 3194-3203.	7.3	19
279	Opportunity for eutectic mixtures in metal-ion batteries. Trends in Chemistry, 2023, 5, 214-224.	4.4	10
280	Revealing Lithium Configuration in Aged Layered Oxides for Effective Regeneration. ACS Applied Materials & Interfaces, 0, , .	4.0	0
281	Stability Mechanism of Menthol and Fatty Acid Based Hydrophobic Eutectic Solvents: Insights from Nonbonded Interactions. ACS Sustainable Chemistry and Engineering, 2023, 11, 3539-3556.	3.2	7
282	Selective Extraction of Critical Metals from Spent Lithium-Ion Batteries. Environmental Science & Technology, 2023, 57, 3940-3950.	4.6	32
283	A green and efficient combination process for recycling spent lithium-ion batteries. Journal of Cleaner Production, 2023, 396, 136552.	4.6	9
284	Insights into the Solvation Characteristics of Zwitterionic Deep Eutectic Solvents Using Multiple Polarity Scales. Industrial & Engineering Chemistry Research, 2023, 62, 4084-4094.	1.8	1
285	Development and challenges of deep eutectic solvents for cathode recycling of end-of-life lithium-ion batteries. Chemical Engineering Journal, 2023, 463, 142278.	6.6	14
286	Cobalt Deposition from Ionothermally Dissolved Cobalt Oxides. ChemSusChem, 2023, 16, .	3.6	4
287	Li-Ion Battery Cathode Recycling: An Emerging Response to Growing Metal Demand and Accumulating Battery Waste. Electronics (Switzerland), 2023, 12, 1152.	1.8	6
288	Development of environmentally and economically sustainable delamination process for spent lithium-ion batteries. Energy Sources, Part A: Recovery, Utilization and Environmental Effects, 2023, 45, 2572-2586.	1.2	2
289	Ionic liquids and deep eutectic solvents in wastewater treatment: recent endeavours. International Journal of Environmental Science and Technology, 2024, 21, 977-996.	1.8	0
290	Green closed-loop regeneration of ternary cathode materials from spent lithium-ion batteries through deep eutectic solvent. Ionics, 2023, 29, 1721-1729.	1.2	0

#	Article	IF	Citations
291	Efficient Recovery of Valuable Metals from Lithium-Ion Battery Cathodes Using Phytic Acid-Based Deep Eutectic Solvents at a Mild Temperature. Energy & Fuels, 2023, 37, 5361-5369.	2.5	13
293	A method for using the residual energy in waste Li-ion batteries by regulating potential with the aid of overvoltage response. Proceedings of the National Academy of Sciences of the United States of America, 2023, 120, .	3.3	1
294	Process intensification for sustainable extraction of metals from e-waste: challenges and opportunities. Environmental Science and Pollution Research, 2024, 31, 9886-9919.	2.7	3
295	Mechanochemical upcycling of spent LiCoO ₂ to new LiNi _{0.80} Co _{0.15} Al _{0.05} O ₂ battery: An atom economy strategy. Proceedings of the National Academy of Sciences of the United States of America, 2023, 120, .	3.3	11
296	Enabling Future Closedâ€Loop Recycling of Spent Lithiumâ€Ion Batteries: Direct Cathode Regeneration. Advanced Materials, 2023, 35, .	11.1	28
297	An environmentally friendly method for extraction of cobalt and molybdenum from spent catalysts using deep eutectic solvents (DESs). Environmental Science and Pollution Research, 2023, 30, 90243-90255.	2.7	5
298	A novel recycling process of LiFePO4 cathodes for spent lithium-ion batteries by deep eutectic solvents. Journal of Material Cycles and Waste Management, 2023, 25, 2077-2086.	1.6	3
299	A novel electrochemical redox method for the simultaneous recovery of spent lithium-ion battery cathodes and anodes. Green Chemistry, 2023, 25, 3956-3965.	4.6	1
300	Ionic Liquids and Deep-Eutectic Solvents in Extractive Metallurgy: Mismatch Between Academic Research and Industrial Applicability. Journal of Sustainable Metallurgy, 2023, 9, 423-438.	1.1	22
301	A Universal Molten Salt Method for Direct Upcycling of Spent Niâ€rich Cathode towards Singleâ€crystalline Liâ€rich Cathode. Angewandte Chemie - International Edition, 2023, 62, .	7.2	24
302	A Universal Molten Salt Method for Direct Upcycling of Spent Niâ€rich Cathode towards Singleâ€crystalline Liâ€rich Cathode. Angewandte Chemie, 2023, 135, .	1.6	5
328	The Most Potent Natural Pharmaceuticals, Cosmetics, and Food Ingredients Isolated from Plants with Deep Eutectic Solvents. Journal of Agricultural and Food Chemistry, 2023, 71, 10877-10900.	2.4	9
370	Fundamentals, status and challenges of direct recycling technologies for lithium ion batteries. Chemical Society Reviews, 2023, 52, 8194-8244.	18.7	8
389	A systematic review of efficient recycling for the cathode materials of spent lithium-ion batteries: process intensification technologies beyond traditional methods. Green Chemistry, 2024, 26, 1170-1193.	4.6	0
396	Green recycling of spent Li-ion battery cathodes <i>via</i> deep-eutectic solvents. Energy and Environmental Science, 2024, 17, 867-884.	15.6	2