

# Zhi Sun

## List of Publications by Year in descending order

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107  
papers

6,518  
citations

76294

40  
h-index

66879

78  
g-index

108  
all docs

108  
docs citations

108  
times ranked

3769  
citing authors

#	ARTICLE	IF	CITATIONS
1	Deep understanding of sustainable vanadium recovery from chrome vanadium slag: Promotive action of competitive chromium species for vanadium solvent extraction. <i>Journal of Hazardous Materials</i> , 2022, 422, 126791.	6.5	15
2	Quantitative tuning of ionic metal species for ultra-selective metal solvent extraction toward high-purity vanadium products. <i>Journal of Hazardous Materials</i> , 2022, 425, 127756.	6.5	9
3	Criticality assessment of metal resources for light-emitting diode (LED) production – A case study in China. <i>Cleaner Engineering and Technology</i> , 2022, 6, 100380.	2.1	2
4	Inhibition Role of Solvation on the Selective Extraction of Co(II): Toward Eco-Friendly Separation of Ni and Co. <i>ACS Sustainable Chemistry and Engineering</i> , 2022, 10, 1160-1171.	3.2	4
5	Transformation and migration mechanism of fluorine-containing pollutants in the pyrolysis process of spent lithium-ion battery. <i>Journal of Hazardous Materials</i> , 2022, 435, 128974.	6.5	24
6	Recycling of spent lithium-ion batteries in view of green chemistry. <i>Green Chemistry</i> , 2021, 23, 6139-6171.	4.6	113
7	Synergic Mechanisms on Carbon and Sulfur during the Selective Recovery of Valuable Metals from Spent Lithium-Ion Batteries. <i>ACS Sustainable Chemistry and Engineering</i> , 2021, 9, 2271-2279.	3.2	44
8	Near-to-Stoichiometric Acidic Recovery of Spent Lithium-Ion Batteries through Induced Crystallization. <i>ACS Sustainable Chemistry and Engineering</i> , 2021, 9, 3183-3194.	3.2	22
9	Enhanced leaching of manganese from low-grade pyrolusite using ball milling and electric field. <i>Ecotoxicology and Environmental Safety</i> , 2021, 211, 111893.	2.9	19
10	Highly selective metal recovery from spent lithium-ion batteries through stoichiometric hydrogen ion replacement. <i>Frontiers of Chemical Science and Engineering</i> , 2021, 15, 1243-1256.	2.3	13
11	Criticality assessment of metal resources in China. <i>IScience</i> , 2021, 24, 102524.	1.9	29
12	One-step recovery of valuable metals from spent Lithium-ion batteries and synthesis of persulfate through paired electrolysis. <i>Chemical Engineering Journal</i> , 2021, 421, 129908.	6.6	18
13	Thermochemically driven crystal phase transfer via chlorination roasting toward the selective extraction of lithium from spent LiNi <sub>1/3</sub> Co <sub>1/3</sub> Mn <sub>1/3</sub> O <sub>2</sub> . <i>Resources, Conservation and Recycling</i> , 2021, 174, 105757.	5.3	44
14	Recovery of high purity copper from waste printed circuit boards of mobile phones by slurry electrolysis with ammonia-ammonium system. <i>Separation and Purification Technology</i> , 2021, 275, 119180.	3.9	27
15	Selective Recovery of Lithium from Spent Lithium-ion Batteries Synergized by Carbon and Sulfur Elements. <i>Acta Chimica Sinica</i> , 2021, 79, 1073.	0.5	5
16	Waste Electrical and Electronic Equipment Reutilization in China. <i>Sustainability</i> , 2021, 13, 11433.	1.6	7
17	Investigation of solution chemistry to enable efficient lithium recovery from low-concentration lithium-containing wastewater. <i>Frontiers of Chemical Science and Engineering</i> , 2020, 14, 639-650.	2.3	22
18	Optimization of biohydrogen production using acid pretreated corn stover hydrolysate followed by nickel nanoparticle addition. <i>International Journal of Energy Research</i> , 2020, 44, 1843-1857.	2.2	27

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19	A novel and efficient ammonia leaching method for recycling waste lithium ion batteries. <i>Journal of Cleaner Production</i> , 2020, 251, 119665.	4.6	56
20	A simple coupled ANNs&RSM approach in modeling product distribution of Fischer&Tropsch synthesis using a microchannel reactor with Ru&promoted Co/Al <sub>2</sub> O <sub>3</sub> catalyst. <i>International Journal of Energy Research</i> , 2020, 44, 1046-1061.	2.2	16
21	Internal failure of anode materials for lithium batteries &” A critical review. <i>Green Energy and Environment</i> , 2020, 5, 22-36.	4.7	67
22	One-step recovery of REE oxalates in electro-leaching of spent NdFeB magnets. <i>Separation and Purification Technology</i> , 2020, 251, 117362.	3.9	20
23	MnO <sub>2</sub> -Functionalized Amorphous Carbon Sorbents from Spent Lithium-Ion Batteries for Highly Efficient Removal of Cadmium from Aqueous Solutions. <i>Industrial &amp; Engineering Chemistry Research</i> , 2020, 59, 10210-10220.	1.8	33
24	Preparation of biochar catalyst from black liquor by spray drying and fluidized bed carbonation for biodiesel synthesis. <i>Chemical Engineering Research and Design</i> , 2020, 141, 333-343.	2.7	16
25	Selective Recovery of Lithium from Spent Lithium-Ion Batteries by Coupling Advanced Oxidation Processes and Chemical Leaching Processes. <i>ACS Sustainable Chemistry and Engineering</i> , 2020, 8, 5165-5174.	3.2	71
26	Rethinking Chinese supply resilience of critical metals in lithium-ion batteries. <i>Journal of Cleaner Production</i> , 2020, 256, 120719.	4.6	39
27	Economic evaluation of typical metal production process: A case study of vanadium oxide production in China. <i>Journal of Cleaner Production</i> , 2020, 256, 120217.	4.6	23
28	Conversion Mechanisms of Selective Extraction of Lithium from Spent Lithium-Ion Batteries by Sulfation Roasting. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 18482-18489.	4.0	115
29	Modified alginate dressing with high thermal stability as a new separator for Li-ion batteries. <i>Chemical Communications</i> , 2020, 56, 6149-6152.	2.2	11
30	Understanding the features of PGMs in spent ternary automobile catalysts for development of cleaner recovery technology. <i>Journal of Cleaner Production</i> , 2019, 239, 118031.	4.6	66
31	Simultaneous Phenol Detoxification and Dilute Metal Recovery in Cyclone Electrochemical Reactor. <i>Industrial &amp; Engineering Chemistry Research</i> , 2019, 58, 12642-12649.	1.8	21
32	Direct preparation of efficient catalyst for oxygen evolution reaction and high-purity Li <sub>2</sub> CO <sub>3</sub> from spent LiNi <sub>0.5</sub> Mn <sub>0.3</sub> Co <sub>0.2</sub> O <sub>2</sub> batteries. <i>Journal of Cleaner Production</i> , 2019, 236, 117576.	4.6	44
33	Effect of electrolyte reuse on metal recovery from waste CPU slots by slurry electrolysis. <i>Waste Management</i> , 2019, 95, 370-376.	3.7	29
34	Effect of ionic liquid [MIm]HSO <sub>4</sub> on WPCB metal-enriched scraps refined by slurry electrolysis. <i>Environmental Science and Pollution Research</i> , 2019, 26, 33260-33268.	2.7	15
35	Dataset of lithium phosphate recovery from a low concentrated lithium-containing solution. <i>Data in Brief</i> , 2019, 25, 104044.	0.5	4
36	A Novel, Solvent-Free Mechanochemistry Approach for Gold Extraction from Anode Slime. <i>ACS Sustainable Chemistry and Engineering</i> , 2019, 7, 11415-11425.	3.2	11

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37	Selective Recovery of Gallium (Indium) from Metal Organic Chemical Vapor Deposition Dust—A Sustainable Process. <i>ACS Sustainable Chemistry and Engineering</i> , 2019, 7, 9646-9654.	3.2	11
38	Recycling of spent lithium-ion batteries in view of lithium recovery: A critical review. <i>Journal of Cleaner Production</i> , 2019, 228, 801-813.	4.6	464
39	Green Fabrication of Carbon Dots upon Photoirradiation and Their Application in Cell Imaging. <i>ACS Applied Nano Materials</i> , 2019, 2, 3404-3413.	2.4	9
40	An environmentally friendly system for high efficient silver recovery from anode slime. <i>Metallurgical Research and Technology</i> , 2019, 116, 208.	0.4	4
41	Comprehensive characterization on Ga (In)-bearing dust generated from semiconductor industry for effective recovery of critical metals. <i>Waste Management</i> , 2019, 89, 212-223.	3.7	9
42	Whole-Process Pollution Control for Cost-Effective and Cleaner Chemical Production—A Case Study of the Tungsten Industry in China. <i>Engineering</i> , 2019, 5, 768-776.	3.2	14
43	A Critical Perspective on CO <sub>2</sub> Conversions into Chemicals and Fuels. <i>Journal of Nanoscience and Nanotechnology</i> , 2019, 19, 3097-3109.	0.9	45
44	Silver dissolution in a novel leaching system: Reaction kinetics study. <i>International Journal of Minerals, Metallurgy and Materials</i> , 2019, 26, 168-177.	2.4	5
45	Environmentally benign process for selective recovery of valuable metals from spent lithium-ion batteries by using conventional sulfation roasting. <i>Green Chemistry</i> , 2019, 21, 5904-5913.	4.6	136
46	Optimization and kinetic modeling of an enhanced bio-hydrogen fermentation with the addition of synergistic biochar and nickel nanoparticle. <i>International Journal of Energy Research</i> , 2019, 43, 983-999.	2.2	29
47	Lithium carbonate recovery from lithium-containing solution by ultrasound assisted precipitation. <i>Ultrasonics Sonochemistry</i> , 2019, 52, 484-492.	3.8	45
48	Copper and gold recovery from CPU sockets by one-step slurry electrolysis. <i>Journal of Cleaner Production</i> , 2019, 213, 673-679.	4.6	60
49	Recycling of LiNi <sub>1/3</sub> Co <sub>1/3</sub> Mn <sub>1/3</sub> O <sub>2</sub> cathode materials from spent lithium-ion batteries using mechanochemical activation and solid-state sintering. <i>Waste Management</i> , 2019, 84, 54-63.	3.7	115
50	Material flow analysis on critical raw materials of lithium-ion batteries in China. <i>Journal of Cleaner Production</i> , 2019, 215, 570-581.	4.6	127
51	Enhanced selective recovery of selenium from anode slime using MnO <sub>2</sub> in dilute H <sub>2</sub> SO <sub>4</sub> solution as oxidant. <i>Journal of Cleaner Production</i> , 2019, 209, 494-504.	4.6	32
52	Biodiesel production using calcium-based catalyst from venus shell: Modeling of startup production in an industrial reactor. <i>Environmental Progress and Sustainable Energy</i> , 2019, 38, e13053.	1.3	8
53	Novel method for characterization of aqueous vanadium species: A perspective for the transition metal chemical speciation studies. <i>Journal of Hazardous Materials</i> , 2019, 364, 91-99.	6.5	19
54	Comprehensive evaluation on effective leaching of critical metals from spent lithium-ion batteries. <i>Waste Management</i> , 2018, 75, 477-485.	3.7	126

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55	A review of application of annular centrifugal contactors in aspects of mass transfer and operational security. <i>Hydrometallurgy</i> , 2018, 177, 41-48.	1.8	7
56	Evaluation on end-of-life LEDs by understanding the criticality and recyclability for metals recycling. <i>Journal of Cleaner Production</i> , 2018, 182, 624-633.	4.6	52
57	Efficient reuse of anode scrap from lithium-ion batteries as cathode for pollutant degradation in electro-Fenton process: Role of different recovery processes. <i>Chemical Engineering Journal</i> , 2018, 337, 256-264.	6.6	77
58	Selective recovery of valuable metals from spent lithium-ion batteries – Process development and kinetics evaluation. <i>Journal of Cleaner Production</i> , 2018, 178, 833-845.	4.6	209
59	Artificial neural networks with response surface methodology for optimization of selective CO <sub>2</sub> hydrogenation using K-promoted iron catalyst in a microchannel reactor. <i>Journal of CO<sub>2</sub> Utilization</i> , 2018, 24, 10-21.	3.3	54
60	Quantitative Study on Dissolution Behavior of Nd <sub>2</sub> O <sub>3</sub> in Fluoride Melts. <i>Industrial &amp; Engineering Chemistry Research</i> , 2018, 57, 1380-1388.	1.8	21
61	Recovery of High-Purity Vanadium from Aqueous Solutions by Reusable Primary Amines N1923 Associated with Semiquantitative Understanding of Vanadium Species. <i>ACS Sustainable Chemistry and Engineering</i> , 2018, 6, 7619-7626.	3.2	21
62	An environmentally friendly process to selectively recover silver from copper anode slime. <i>Journal of Cleaner Production</i> , 2018, 187, 708-716.	4.6	40
63	Sustainable Preparation of LiNi <sub>1/3</sub> Co <sub>1/3</sub> Mn <sub>1/3</sub> O <sub>2</sub> – V <sub>2</sub> O <sub>5</sub> Cathode Materials by Recycling Waste Materials of Spent Lithium-Ion Battery and Vanadium-Bearing Slag. <i>ACS Sustainable Chemistry and Engineering</i> , 2018, 6, 5797-5805.	3.2	61
64	Performance Study of stirred tank slurry reactor and fixed-bed reactor using bimetallic Co-Ni mesoporous silica catalyst for Fischer-Tropsch synthesis. <i>Environmental Progress and Sustainable Energy</i> , 2018, 37, 553-561.	1.3	14
65	An environmentally friendly electro-oxidative approach to recover valuable elements from NdFeB magnet waste. <i>Separation and Purification Technology</i> , 2018, 191, 384-391.	3.9	54
66	A Critical Review and Analysis on the Recycling of Spent Lithium-Ion Batteries. <i>ACS Sustainable Chemistry and Engineering</i> , 2018, 6, 1504-1521.	3.2	754
67	Controllable recovery of ammonium substituted polyoxovanadate acid compound (ASPOVC) from aqueous/leaching solution by primary amines. <i>Journal of Cleaner Production</i> , 2018, 205, 728-737.	4.6	6
68	Selective Extraction of Rare-Earth Elements from NdFeB Magnets by a Room-Temperature Electrolysis Pretreatment Step. <i>ACS Sustainable Chemistry and Engineering</i> , 2018, 6, 9375-9382.	3.2	47
69	A Mini-Review on Metal Recycling from Spent Lithium Ion Batteries. <i>Engineering</i> , 2018, 4, 361-370.	3.2	456
70	A sustainable process for metal recycling from spent lithium-ion batteries using ammonium chloride. <i>Waste Management</i> , 2018, 79, 545-553.	3.7	79
71	Selective recovery of lithium from spent lithium iron phosphate batteries: a sustainable process. <i>Green Chemistry</i> , 2018, 20, 3121-3133.	4.6	257
72	Lithium Carbonate Recovery from Cathode Scrap of Spent Lithium-Ion Battery: A Closed-Loop Process. <i>Environmental Science &amp; Technology</i> , 2017, 51, 1662-1669.	4.6	341

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73	Separation of V(V) and Cr(VI) in leaching solution using annular centrifugal contactors. Chemical Engineering Journal, 2017, 315, 373-381.	6.6	37
74	High-Performance Recovery of Vanadium(V) in Leaching/Aqueous Solution by a Reusable Reagent-Primary Amine N1519. ACS Sustainable Chemistry and Engineering, 2017, 5, 3096-3102.	3.2	28
75	Diffusion-limited dissolution of spherical particles: A critical evaluation and applications of approximate solutions. AIChE Journal, 2017, 63, 2926-2934.	1.8	8
76	Fischer-Tropsch synthesis in a microchannel reactor using mesoporous silica supported bimetallic Co-Ni catalyst: Process optimization and kinetic modeling. Chemical Engineering and Processing: Process Intensification, 2017, 119, 44-61.	1.8	41
77	Spent lead-acid battery recycling in China – A review and sustainable analyses on mass flow of lead. Waste Management, 2017, 64, 190-201.	3.7	154
78	Effective treatment for electronic waste - Selective recovery of copper by combining electrochemical dissolution and deposition. Journal of Cleaner Production, 2017, 152, 150-156.	4.6	59
79	Preparation of hybrid porous carbon using black liquor lignin impregnated with steelmaking slag and its performance in SO <sub>2</sub> removal. Environmental Progress and Sustainable Energy, 2017, 36, 1417-1427.	1.3	7
80	Spent lithium-ion battery recycling – Reductive ammonia leaching of metals from cathode scrap by sodium sulphite. Waste Management, 2017, 60, 680-688.	3.7	285
81	A Closed-Loop Process for Selective Metal Recovery from Spent Lithium Iron Phosphate Batteries through Mechanochemical Activation. ACS Sustainable Chemistry and Engineering, 2017, 5, 9972-9980.	3.2	195
82	Fischer-Tropsch synthesis using iron-based catalyst in a microchannel reactor: Hybrid lump kinetic with ANNs/RSM. Chemical Engineering and Processing: Process Intensification, 2017, 122, 181-189.	1.8	17
83	W-doped MoS <sub>2</sub> nanosheets as a highly-efficient catalyst for hydrogen peroxide electroreduction in alkaline media. Catalysis Science and Technology, 2017, 7, 5733-5740.	2.1	12
84	Effect of CO conversion upon product distribution using bimetallic Co-Ni mesoporous silica catalyst for Fischer-Tropsch synthesis: a comparative study of fixed-bed reactor and slurry continuous stirred tank reactor. Asia-Pacific Journal of Chemical Engineering, 2017, 12, 518-526.	0.8	3
85	Comparison of Two Solvent Extraction Systems for the Separation of V(V) and Cr(VI) from an Industrial Leaching Solution. Solvent Extraction and Ion Exchange, 2017, 35, 519-530.	0.8	4
86	Fischer-Tropsch synthesis using iron based catalyst in a microchannel reactor: Performance evaluation and kinetic modeling. International Journal of Hydrogen Energy, 2017, 42, 29222-29235.	3.8	41
87	Alkaline electrochemical advanced oxidation process for chromium oxidation at graphitized multi-walled carbon nanotubes. Chemosphere, 2017, 183, 156-163.	4.2	62
88	Electrochemistry during efficient copper recovery from complex electronic waste using ammonia based solutions. Frontiers of Chemical Science and Engineering, 2017, 11, 308-316.	2.3	23
89	Semiempirical Model for the Solubility of Rare Earth Oxides in Molten Fluorides. Industrial & Engineering Chemistry Research, 2016, 55, 4773-4781.	1.8	16
90	Recycling of metals from urban mines – a strategic evaluation. Journal of Cleaner Production, 2016, 112, 2977-2987.	4.6	117

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91	Complex electronic waste treatment – An effective process to selectively recover copper with solutions containing different ammonium salts. Waste Management, 2016, 57, 140-148.	3.7	27
92	Selective copper recovery from complex mixtures of end-of-life electronic products with ammonia-based solution. Hydrometallurgy, 2015, 152, 91-99.	1.8	68
93	A Cleaner Process for Selective Recovery of Valuable Metals from Electronic Waste of Complex Mixtures of End-of-Life Electronic Products. Environmental Science & Technology, 2015, 49, 7981-7988.	4.6	91
94	Numerical simulation on magnetic assembled structures of iron-based metallic particles within MMCs by a homogeneous strong magnetic field. Journal Physics D: Applied Physics, 2015, 48, 365501.	1.3	4
95	Characterisation of metals in the electronic waste of complex mixtures of end-of-life ICT products for development of cleaner recovery technology. Waste Management, 2015, 35, 227-235.	3.7	35
96	Phase evolution and nature of oxide dissolution in metallurgical slags. AIChE Journal, 2013, 59, 2907-2916.	1.8	12
97	Alignment of weakly magnetic metals during solidification in a strong magnetic field. Journal of Alloys and Compounds, 2013, 551, 568-577.	2.8	21
98	Processing of non-ferromagnetic materials in strong static magnetic field. Current Opinion in Solid State and Materials Science, 2013, 17, 193-201.	5.6	18
99	Strong static magnetic field processing of metallic materials: A review. Current Opinion in Solid State and Materials Science, 2012, 16, 254-267.	5.6	65
100	Strong Magnetic Field Effect on Surface Tension Associated with an Interfacial Magnetic Pressure. Journal of Physical Chemistry C, 2012, 116, 17676-17681.	1.5	39
101	Non-metallic Particles Manipulation in Liquid Metals During Electromagnetic Processing. Journal of Powder Metallurgy and Mining, 2012, 01, .	0.2	1
102	Strong magnetic field effects on solid–liquid and particle–particle interactions during the processing of a conducting liquid containing non-conducting particles. Journal of Colloid and Interface Science, 2012, 375, 203-212.	5.0	12
103	STRONG MAGNETIC FIELD INDUCED SEGREGATION AND SELF-ASSEMBLY OF MICROMETER SIZED NON-MAGNETIC PARTICLES. Progress in Electromagnetics Research B, 2010, 23, 199-214.	0.7	8
104	MAGNETIC INTERACTION BETWEEN TWO NON-MAGNETIC PARTICLES MIGRATING IN A CONDUCTIVE FLUID INDUCED BY A STRONG MAGNETIC FIELD-AN ANALYTICAL APPROACH. Progress in Electromagnetics Research, 2010, 103, 1-16.	1.6	13
105	NUMERICAL CALCULATIONS ON INCLUSION REMOVAL FROM LIQUID METALS UNDER STRONG MAGNETIC FIELDS. Progress in Electromagnetics Research, 2009, 98, 359-373.	1.6	16
106	A new method of potassium chromate production from chromite and $\text{KOH} \text{--} \text{KNO}_3 \text{--} \text{H}_2\text{O}$ binary submolten salt system. AIChE Journal, 2009, 55, 2646-2656.	1.8	60
107	Investigation of Efficient Conditions for Oxidative Roasting of Chromite Ore to Produce Potassium Chromate with KOH Additive. Steel Research International, 2007, 78, 574-576.	1.0	1