

# Zhi Wang

## List of Publications by Year in descending order

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70  
papers

1,473  
citations

331259

21  
h-index

360668

35  
g-index

72  
all docs

72  
docs citations

72  
times ranked

988  
citing authors

#	ARTICLE	IF	CITATIONS
1	Self-Supporting Porous Co-Based Films with Phase-Separation Structure for Ultrastable Overall Water Electrolysis at Large Current Density. <i>Advanced Energy Materials</i> , 2018, 8, 1802445.	10.2	114
2	Hierarchically 3D porous films electrochemically constructed on gas-liquid-solid three-phase interface for energy application. <i>Journal of Materials Chemistry A</i> , 2017, 5, 9488-9513.	5.2	76
3	Removal of Low-Content Impurities from Al By Super-Gravity. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2010, 41, 505-508.	1.0	68
4	Si purification by solidification of Al-Si melt with super gravity. <i>Transactions of Nonferrous Metals Society of China</i> , 2012, 22, 958-963.	1.7	67
5	Thermodynamic analysis and experimental verification for silicon recovery from the diamond wire saw silicon powder by vacuum carbothermal reduction. <i>Separation and Purification Technology</i> , 2019, 228, 115754.	3.9	65
6	Silicon recovery from diamond wire saw silicon powder waste with hydrochloric acid pretreatment: An investigation of Al dissolution behavior. <i>Waste Management</i> , 2021, 120, 820-827.	3.7	62
7	Low-temperature purification process of metallurgical silicon. <i>Transactions of Nonferrous Metals Society of China</i> , 2011, 21, 1185-1192.	1.7	58
8	Impurities Removal from Metallurgical-Grade Silicon by Combined Sn-Si and Al-Si Refining Processes. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , 2013, 44, 828-836.	1.0	53
9	Millisecond Conversion of Photovoltaic Silicon Waste to Binder-Free High Silicon Content Nanowires Electrodes. <i>Advanced Energy Materials</i> , 2021, 11, 2102103.	10.2	48
10	Influences of Super-Gravity Field on Aluminum Grain Refining. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2010, 41, 670-675.	1.1	47
11	Relation between Sticking and Metallic Iron Precipitation on the Surface of Fe <sub>2</sub> O <sub>3</sub> Particles Reduced by CO in the Fluidized Bed. <i>ISIJ International</i> , 2011, 51, 1403-1409.	0.6	42
12	Waste to wealth: Defect-rich Ni-incorporated spent LiFePO <sub>4</sub> for efficient oxygen evolution reaction. <i>Science China Materials</i> , 2021, 64, 2710-2718.	3.5	41
13	Dissolution and mineralization behavior of metallic impurity content in diamond wire saw silicon powder during acid leaching. <i>Journal of Cleaner Production</i> , 2020, 248, 119256.	4.6	40
14	Novel Reaction Media of Na <sub>2</sub> CO <sub>3</sub> -CaO for Silicon Extraction and Aluminum Removal from Diamond Wire Saw Silicon Powder by Roasting-Smelting Process. <i>ACS Sustainable Chemistry and Engineering</i> , 2020, 8, 4146-4157.	3.2	34
15	Formation of Amorphous Calcium Carbonate and Its Transformation Mechanism to Crystalline CaCO <sub>3</sub> in Laminar Microfluidics. <i>Crystal Growth and Design</i> , 2018, 18, 1710-1721.	1.4	30
16	N-Doped gel-structures for construction of long cycling Si anodes at high current densities for high performance lithium-ion batteries. <i>Journal of Materials Chemistry A</i> , 2019, 7, 11347-11354.	5.2	29
17	The mechanism of boron removal from silicon alloy by electric field using slag treatment. <i>Separation and Purification Technology</i> , 2018, 199, 134-139.	3.9	27
18	Application of Modified Coke to NO <sub>x</sub> Reduction with Recycling Flue Gas during Iron Ore Sintering Process. <i>ISIJ International</i> , 2008, 48, 1517-1523.	0.6	26

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19	Sulfur removal from ionic liquid-assisted coal water slurry electrolysis in KNO <sub>3</sub> system. Journal of Fuel Chemistry and Technology, 2013, 41, 928-936.	0.9	26
20	Glass-ceramics microstructure formation mechanism for simultaneous solidification of chromium and nickel from disassembled waste battery and chromium slag. Journal of Hazardous Materials, 2021, 403, 123598.	6.5	26
21	Insight of Iron Whisker Sticking Mechanism from Iron Atom Diffusion and Calculation of Solid Bridge Radius. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2014, 45, 2050-2056.	1.0	25
22	Preparation of CaO-containing carbon pellet from recycling of carbide slag: Effects of temperature and H <sub>3</sub> PO <sub>4</sub> . Waste Management, 2019, 84, 64-73.	3.7	22
23	Characterization of Precipitated Carbon by XPS and Its Prevention Mechanism of Sticking during Reduction of Fe <sub>2</sub> O <sub>3</sub> Particles in the Fluidized Bed. ISIJ International, 2013, 53, 411-418.	0.6	20
24	Progress toward Electrochemistry Intensified by using Supergravity Fields. ChemElectroChem, 2015, 2, 1879-1887.	1.7	20
25	Time-Dependent Surface Structure Evolution of NiMo Films Electrodeposited Under Super Gravity Field as Electrocatalyst for Hydrogen Evolution Reaction. Journal of Physical Chemistry C, 2017, 121, 16792-16802.	1.5	20
26	Sulfur removal from bauxite water slurry (BWS) electrolysis intensified by ultrasonic. Ultrasonics Sonochemistry, 2015, 26, 142-148.	3.8	19
27	Occurrence State and Dissolution Mechanism of Metallic Impurities in Diamond Wire Saw Silicon Powder. ACS Sustainable Chemistry and Engineering, 2020, 8, 12577-12587.	3.2	18
28	Novel Application of Electroslag Remelting Refining in the Removal of Boron and Phosphorus from Silicon Alloy for Silicon Recovery. ACS Sustainable Chemistry and Engineering, 2021, 9, 2962-2974.	3.2	18
29	Recovery of Silicon via Using KOH-Ethanol Solution by Separating Different Layers of End-of-Life PV Modules. Jom, 2020, 72, 2624-2632.	0.9	17
30	Alumina Hydrate Polymorphism Control in Al <sup>3+</sup> -Water Reaction Crystallization by Seeding to Change the Metastable Zone Width. Crystal Growth and Design, 2016, 16, 1056-1062.	1.4	16
31	Mechanism Analysis of Carbon Contamination and the Inhibition by an Anode Structure during Soluble K <sub>2</sub> CrO <sub>4</sub> Electrolysis in CaCl <sub>2</sub> -KCl Molten Salt. Journal of the Electrochemical Society, 2017, 164, E360-E366.	1.3	16
32	Insights into the Confined Crystallization in Microfluidics of Amorphous Calcium Carbonate. Crystal Growth and Design, 2018, 18, 6538-6546.	1.4	16
33	Enhancing impurities removal from Si by controlling crystal growth in directional solidification refining with Al <sup>3+</sup> -Si alloy. Journal of Alloys and Compounds, 2020, 820, 153300.	2.8	16
34	Development of calcium coke for CaC <sub>2</sub> production using calcium carbide slag and coking coal. International Journal of Minerals, Metallurgy and Materials, 2021, 28, 76-87.	2.4	16
35	Hollow double-layer carbon nanocage confined Si nanoparticles for high performance lithium-ion batteries. Nanoscale Advances, 2020, 2, 3222-3230.	2.2	16
36	Competition of Oxygen Evolution and Desulfurization for Bauxite Electrolysis. Industrial & Engineering Chemistry Research, 2017, 56, 6136-6144.	1.8	15

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37	Removal of Phosphorus in Silicon by the Formation of CaAl <sub>2</sub> Si <sub>2</sub> Phase at the Solidification Interface. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2017, 48, 420-428.	1.0	15
38	Roles of Electrolyte Characterization on Bauxite Electrolysis Desulfurization with Regeneration and Recycling. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2017, 48, 726-732.	1.0	14
39	The Importance of Slag Structure to Boron Removal from Silicon during the Refining Process: Insights from Raman and Nuclear Magnetic Resonance Spectroscopy Study. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2017, 48, 3239-3250.	1.0	12
40	Influence of Particle Size Distribution on Agglomeration/defluidization of Iron Powders at Elevated Temperature. ISIJ International, 2017, 57, 649-655.	0.6	12
41	Constructing an artificial boundary to regulate solid electrolyte interface formation and synergistically enhance stability of nano-Si anodes. Journal of Colloid and Interface Science, 2022, 619, 158-167.	5.0	12
42	Desulfurization from Bauxite Water Slurry (BWS) Electrolysis. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2016, 47, 649-656.	1.0	10
43	Electrochemical preparation of V <sub>2</sub> O <sub>3</sub> from NaVO <sub>3</sub> and its reduction mechanism. Journal Wuhan University of Technology, Materials Science Edition, 2017, 32, 1019-1024.	0.4	10
44	Effect of B <sub>2</sub> O <sub>3</sub> Addition on Electrical Conductivity and Structural Roles of CaO-SiO <sub>2</sub> -B <sub>2</sub> O <sub>3</sub> Slag. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2019, 50, 304-311.	1.0	10
45	A flexible and conductive connection introduced by cross-linked CNTs between submicron Si@C particles for better performance LIB anode. Nanoscale Advances, 2021, 3, 2287-2294.	2.2	10
46	Effects of gravity on the electrodeposition and characterization of nickel foils. International Journal of Minerals, Metallurgy and Materials, 2011, 18, 59-65.	2.4	9
47	Relationship Between Iron Whisker Growth and Doping Amount of Oxide During Fe <sub>2</sub> O <sub>3</sub> Reduction. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2016, 47, 1137-1146.	1.0	8
48	Design of Refining Slag Based on Raman and NMR Spectroscopy Study for Removing Phosphorus for SoG-Si. Silicon, 2020, 12, 171-183.	1.8	8
49	Modulation of active Cr(III) complexes by bath preparation to adjust Cr(III) electrodeposition. International Journal of Minerals, Metallurgy and Materials, 2013, 20, 902-908.	2.4	7
50	Oxidation behavior of metallurgical silicon slag under non-isothermal and isothermal conditions. Journal of Thermal Analysis and Calorimetry, 2016, 124, 593-599.	2.0	7
51	A new sustainable concept for silicon recovery from diamond wire saw silicon powder waste: Source control and comprehensive conservation. Journal of Cleaner Production, 2022, 358, 131961.	4.6	7
52	The corrosion resistance of Ni anode and Ga electrowinning in alkaline sulfide solutions. Journal of Applied Electrochemistry, 2015, 45, 1255-1263.	1.5	6
53	Improve titanate reduction by electro-deoxidation of Ca <sub>3</sub> Ti <sub>2</sub> O <sub>7</sub> precursor in molten CaCl <sub>2</sub> . International Journal of Minerals, Metallurgy and Materials, 2020, 27, 1618-1625.	2.4	6
54	Fe <sub>3</sub> C doped modified nano-Si/C composites as high-coulombic-efficiency anodes for lithium-ion batteries. Sustainable Energy and Fuels, 2021, 5, 6170-6180.	2.5	5

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55	Short-Process Multiscale Core-Shell Structure Buffer Control of a Ni/N Codoped Si@C Composite Using Waste Silicon Powder for Lithium-Ion Batteries. ACS Applied Energy Materials, 2022, 5, 178-185.	2.5	5
56	Decomposition Kinetics of Titania Slag in Eutectic NaOH-NaNO <sub>3</sub> System. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2016, 47, 666-674.	1.0	4
57	Experimental Study on Electrical Conductivity of MnO-CaO-SiO <sub>2</sub> Slags at 1723ÅK to 1823ÅK (1450ÅÅ°C to 1550ÅÅ°C). Metallurgical and Materials Processing Science, 2017, 48, 3359-3363.	1.0	4
58	Boehmite Preparation via Alditols-Interacting Transformation of Metastable Intermediates in Al-H <sub>2</sub> O Reaction Crystallization. Crystal Growth and Design, 2017, 17, 183-190.	1.4	4
59	Enhanced In Situ Separation of Boron at the Silicon Alloy Solidification Interface through Innovating the Impurity Chemical Reconstruction Approach for SoG-Si. ACS Sustainable Chemistry and Engineering, 2021, 9, 11179-11193.	3.2	4
60	Direct Electrodeposition of Ga and the Simultaneous Production of NaOH and NaHCO <sub>3</sub> from Carbonated Spent Liquor by Membrane Electrolysis. Industrial & Engineering Chemistry Research, 2018, 57, 12583-12589.	1.8	3
61	CO <sub>2</sub> Absorption of Powdered Ba <sub>2</sub> Fe <sub>2</sub> O <sub>5</sub> with Different Particle Size. High Temperature Materials and Processes, 2018, 37, 1001-1006.	0.6	2
62	Role of Oxygen Potential and Oxygen Ions on Phosphorus Removal from Silicon via Addition of FeO into Slag. Silicon, 2020, 12, 1145-1156.	1.8	2
63	Study on hydrocyclone separation enhancement of micro Si/SiC from silicon-sawing waste by selective comminution. Separation Science and Technology, 2021, 56, 991-999.	1.3	2
64	Joint caching and computing resource allocation for task offloading in vehicular networks. IET Communications, 2020, 14, 3820-3827.	1.5	2
65	Design of Refining Slag Based on Structural Modifications Associated with the Boron Removal for SoG-Si. Materials, 2022, 15, 3107.	1.3	2
66	Effect of gas-solid interface on pore wall microstructure evolution during thermal melting of foamed ceramics. Journal of Thermal Analysis and Calorimetry, 2022, 147, 2035-2046.	2.0	1
67	Numerical Simulation of Flow Field Optimizing the Rotating Segregation Purification of Silicon for SoG-Si. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2022, 53, 2657-2674.	1.0	1
68	Millisecond Conversion of Photovoltaic Silicon Waste to Binder-Free High Silicon Content Nanowires Electrodes (Adv. Energy Mater. 40/2021). Advanced Energy Materials, 2021, 11, .	10.2	0
69	Rationally designed high-conductivity Hydrangea macrophylla-like Si@NiO@Ni/C composites as a high-performance anode material for lithium-ion batteries. Electrochemical Science Advances, 0, .	1.2	0
70	Innovative separation model for boron removal from silicon during slag refining based on ion and molecule coexistence theory. Metallurgical Research and Technology, 2022, 119, 304.	0.4	0