Wei-Xian Zhang

List of Publications by Year
in descending order

129 papers	17,490 citations	22153 59 h-index	16183 124 g-index
129 all docs	129 docs citations	129 times ranked	11969 citing authors

#	Article	IF	Citations
1	Nanoscale Iron Particles for Environmental Remediation: An Overview. Journal of Nanoparticle Research, 2003, 5, 323-332.	1.9	1,715
2	Synthesizing Nanoscale Iron Particles for Rapid and Complete Dechlorination of TCE and PCBs. Environmental Science & Technology, 1997, 31, 2154-2156.	10.0	1,446
3	Zero-Valent Iron Nanoparticles for Abatement of Environmental Pollutants: Materials and Engineering Aspects. Critical Reviews in Solid State and Materials Sciences, 2006, 31, 111-122.	12.3	878
4	Characterization of zero-valent iron nanoparticles. Advances in Colloid and Interface Science, 2006, 120, 47-56.	14.7	828
5	Field Assessment of Nanoscale Bimetallic Particles for Groundwater Treatment. Environmental Science & Technology, 2001, 35, 4922-4926.	10.0	808
6	Treatment of chlorinated organic contaminants with nanoscale bimetallic particles. Catalysis Today, 1998, 40, 387-395.	4.4	531
7	Sequestration of Metal Cations with Zerovalent Iron NanoparticlesA Study with High Resolution X-ray Photoelectron Spectroscopy (HR-XPS). Journal of Physical Chemistry C, 2007, 111, 6939-6946.	3.1	509
8	Peer Reviewed: Environmental Technologies at the Nanoscale. Environmental Science & Technology, 2003, 37, 102A-108A.	10.0	506
9	Iron Nanoparticles:Â the Coreâ˘'Shell Structure and Unique Properties for Ni(II) Sequestration. Langmuir, 2006, 22, 4638-4642.	3.5	406
10	Uniform yolk-shell iron sulfideâ€“carbon nanospheres for superior sodiumâ€“iron sulfide batteries. Nature Communications, 2015, 6, 8689.	12.8	374
11	A method for the preparation of stable dispersion of zero-valent iron nanoparticles. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2007, 308, 60-66.	4.7	341
12	Electrocatalytic reduction of nitrate â€“ a step towards a sustainable nitrogen cycle. Chemical Society Reviews, 2022, 51, 2710-2758.	38.1	323
13	Iron nanoparticles for environmental clean-up: recent developments and future outlook. Environmental Sciences: Processes and Impacts, 2013, 15, 63-77.	3.5	316
14	Stoichiometry of Cr(VI) Immobilization Using Nanoscale Zerovalent Iron (nZVI):â€‰ A Study with High-Resolution X-Ray Photoelectron Spectroscopy (HR-XPS). Industrial & Engineering Chemistry Research, 2008, 47, 2131-2139.	3.7	309
15	Heavy metal removal using nanoscale zero-valent iron (nZVI): Theory and application. Journal of Hazardous Materials, 2017, 322, 163-171.	12.4	301
16	Nanoscale iron particles for complete reduction of chlorinated ethenes. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2001, 191, 97-105.	4.7	298
17	Nanoscale Pd/Fe bimetallic particles: Catalytic effects of palladium on hydrodechlorination. Applied Catalysis B: Environmental, 2007, 77, 110-116.	20.2	292
18	Nanoscale zero-valent iron (nZVI): Aspects of the core-shell structure and reactions with inorganic species in water. Journal of Contaminant Hydrology, 2010, 118, 96-104.	3.3	281

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19	Yolk-shell silicon-mesoporous carbon anode with compact solid electrolyte interphase film for superior lithium-ion batteries. Nano Energy, 2015, 18, 133-142.	16.0	238
20	Simultaneous Oxidation and Reduction of Arsenic by Zero-Valent Iron Nanoparticles: Understanding the Significance of the Coreâ^'Shell Structure. Journal of Physical Chemistry C, 2009, 113, 14591-14594.	3.1	232
21	Subcolloidal Fe/Ag Particles for Reductive Dehalogenation of Chlorinated Benzenes. Industrial & Engineering Chemistry Research, 2000, 39, 2238-2244.	3.7	213
22	Applications of iron nanoparticles for groundwater remediation. Remediation, 2006, 16, 7-21.	2.4	210
23	Evolution of nanoscale zero-valent iron (nZVI) in water: Microscopic and spectroscopic evidence on the formation of nano- and micro-structured iron oxides. Journal of Hazardous Materials, 2017, 322, 129-135.	12.4	209
24	Determination of the Oxide Layer Thickness in Coreâ^'Shell Zerovalent Iron Nanoparticles. Langmuir, 2008, 24, 4329-4334.	3.5	204
25	Perchlorate Reduction by Nanoscale Iron Particles. Journal of Nanoparticle Research, 2005, 7, 499-506.	1.9	200
26	Removal of selenium from water with nanoscale zero-valent iron: Mechanisms of intraparticle reduction of Se(IV). Water Research, 2015, 71, 274-281.	11.3	195
27	Transformation of Chlorinated Methanes by Nanoscale Iron Particles. Journal of Environmental Engineering, ASCE, 1999, 125, 1042-1047.	1.4	187
28	Enrichment and Encapsulation of Uranium with Iron Nanoparticle. Journal of the American Chemical Society, 2015, 137, 2788-2791.	13.7	177
29	Enhanced Biological Treatment of Industrial Wastewater With Bimetallic Zero-Valent Iron. Environmental Science & Technology, 2008, 42, 5384-5389.	10.0	175
30	Selective Nitrate Reduction to Dinitrogen by Electrocatalysis on Nanoscale Iron Encapsulated in Mesoporous Carbon. Environmental Science & Technology, 2018, 52, 230-236.	10.0	175
31	Comparison of reductive dechlorination of p-chlorophenol using Fe0 and nanosized Fe0. Journal of Hazardous Materials, 2007, 144, 334-339.	12.4	171
32	Formation of lepidocrocite (Î³-FeOOH) from oxidation of nanoscale zero-valent iron (nZVI) in oxygenated water. RSC Advances, 2014, 4, 57377-57382.	3.6	170
33	Structural Evolution of Pd-Doped Nanoscale Zero-Valent Iron (nZVI) in Aqueous Media and Implications for Particle Aging and Reactivity. Environmental Science & Technology, 2010, 44, 4288-4294.	10.0	162
34	Solvent-free production of nanoscale zero-valent iron (nZVI) with precision milling. Green Chemistry, 2009, 11, 1618.	9.0	159
35	Transformation and composition evolution of nanoscale zero valent iron (nZVI) synthesized by borohydride reduction in static water. Chemosphere, 2015, 119, 1068-1074.	8.2	158
36	Enhanced transport of polyelectrolyte stabilized nanoscale zero-valent iron (nZVI) in porous media. Chemical Engineering Journal, 2011, 170, 482-491.	12.7	156

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37	Stabilization of chromium ore processing residue (COPR) with nanoscale iron particles. Journal of Hazardous Materials, 2006, 132, 213-219.	12.4	154
38	Degradation of Lindane by Zero-Valent Iron Nanoparticles. Journal of Environmental Engineering, ASCE, 2009, 135, 317-324.	1.4	134
39	As(III) Sequestration by Iron Nanoparticles: Study of Solid-Phase Redox Transformations with X-ray Photoelectron Spectroscopy. Journal of Physical Chemistry C, 2012, 116, 5303-5311.	3.1	128
40	Stabilization of biosolids with nanoscale zero-valent iron (nZVI). Journal of Nanoparticle Research, 2007, 9, 233-243.	1.9	120
41	Enrichment of Precious Metals from Wastewater with Coreâ€“Shell Nanoparticles of Iron. Advanced Materials, 2018, 30, e1705703.	21.0	97
42	Fe/Fe₃C nanoparticle-decorated N-doped carbon nanofibers for improving the nitrogen selectivity of electrocatalytic nitrate reduction. Journal of Materials Chemistry A, 2020, 8, 15853-15863.	10.3	96
43	Hydrodechlorination of Chlorinated Ethanes by Nanoscale Pd/Fe Bimetallic Particles. Journal of Environmental Engineering, ASCE, 2005, 131, 4-10.	1.4	93
44	Zero-valent iron nanoparticles (nZVI) for the treatment of smelting wastewater: A pilot-scale demonstration. Chemical Engineering Journal, 2014, 254, 115-123.	12.7	88
45	Dechlorination of pentachlorophenol using nanoscale Fe/Ni particles: Role of nano-Ni and its size effect. Journal of Hazardous Materials, 2010, 180, 79-85.	12.4	87
46	How to Build a Microplasticsâ€Free Environment: Strategies for Microplastics Degradation and Plastics Recycling. Advanced Science, 2022, 9, e2103764.	11.2	87
47	Renewable hydrogen generation by bimetallic zero valent iron nanoparticles. Chemical Engineering Journal, 2011, 170, 562-567.	12.7	85
48	Effect of initial solution pH on photo-induced reductive decomposition of perfluorooctanoic acid. Chemosphere, 2014, 107, 218-223.	8.2	83
49	Oxidation of Lindane with Fe(II)-Activated Sodium Persulfate. Environmental Engineering Science, 2008, 25, 221-228.	1.6	82
50	Visualizing Arsenate Reactions and Encapsulation in a Single Zero-Valent Iron Nanoparticle. Environmental Science & Technology, 2017, 51, 2288-2294.	10.0	80
51	Nanoscale zero-valent iron (nZVI) for the treatment of concentrated Cu(<scp>ii</scp>) wastewater: a field demonstration. Environmental Sciences: Processes and Impacts, 2014, 16, 524-533.	3.5	78
52	Removal of Pb(II) and Zn(II) using lime and nanoscale zero-valent iron (nZVI): A comparative study. Chemical Engineering Journal, 2016, 304, 79-88.	12.7	73
53	Mapping the Reactions in a Single Zero-Valent Iron Nanoparticle. Environmental Science & Technology, 2017, 51, 14293-14300.	10.0	71
54	Bioavailability of Hydrophobic Organic Contaminants: Effects and Implications of Sorption-Related Mass Transfer on Bioremediation. Ground Water Monitoring and Remediation, 1998, 18, 126-138.	0.8	69

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55	Nanoencapsulation of hexavalent chromium with nanoscale zero-valent iron: High resolution chemical mapping of the passivation layer. Journal of Environmental Sciences, 2018, 67, 4-13.	6.1	67
56	Mesoporous Silicaâ€Coated Plasmonic Nanostructures for Surfaceâ€Enhanced Raman Scattering Detection and Photothermal Therapy. Advanced Healthcare Materials, 2014, 3, 1620-1628.	7.6	65
57	Nanotechnology and groundwater remediation: A step forward in technology understanding. Remediation, 2006, 16, 23-33.	2.4	64
58	The influence of polyelectrolyte modification on nanoscale zero-valent iron (nZVI): Aggregation, sedimentation, and reactivity with Ni(II) in water. Chemical Engineering Journal, 2016, 303, 268-274.	12.7	62
59	Nanoscale zero-valent iron in mesoporous carbon (nZVI@C): stable nanoparticles for metal extraction and catalysis. Journal of Materials Chemistry A, 2017, 5, 4478-4485.	10.3	62
60	Multi-tiered distributions of arsenic in iron nanoparticles: Observation of dual redox functionality enabled by a coreâ€“shell structure. Chemical Communications, 2010, 46, 6995.	4.1	61
61	Highly Ordered Dual Porosity Mesoporous Cobalt Oxide for Sodiumâ€Ion Batteries. Advanced Materials Interfaces, 2016, 3, 1500464.	3.7	60
62	Fine structural features of nanoscale zero-valent iron characterized by spherical aberration corrected scanning transmission electron microscopy (Cs-STEM). Analyst, The, 2014, 139, 4512-4518.	3.5	58
63	Bimetallic PdCu Nanocrystals Immobilized by Nitrogen-Containing Ordered Mesoporous Carbon for Electrocatalytic Denitrification. ACS Applied Materials & Interfaces, 2019, 11, 3861-3868.	8.0	57
64	Biodegradation of benzene, toluene and naphthalene in soil-water slurry microcosms. Biodegradation, 1997, 8, 167-175.	3.0	53
65	Sequestration of Arsenate in Zero-Valent Iron Nanoparticles: Visualization of Intraparticle Reactions at Angstrom Resolution. Environmental Science and Technology Letters, 2014, 1, 305-309.	8.7	52
66	Nitrogen-doped iron for selective catalytic reduction of nitrate to dinitrogen. Science Bulletin, 2020, 65, 926-933.	9.0	47
67	Highly dispersed Feâ€“Ce mixed oxide catalysts confined in mesochannels toward low-temperature oxidation of formaldehyde. Journal of Materials Chemistry A, 2020, 8, 17174-17184.	10.3	43
68	Zerovalent Iron Nanoparticles for Treatment of Ground Water Contaminated by Hexachlorocyclohexanes. Journal of Environmental Quality, 2008, 37, 2192-2201.	2.0	40
69	Large pore mesostructured cellular silica foam coated magnetic oxide composites with multilamellar vesicle shells for adsorption. Chemical Communications, 2014, 50, 713-715.	4.1	40
70	Amino-functionalized ordered mesoporous carbon for the separation of toxic microcystin-LR. Journal of Materials Chemistry A, 2015, 3, 19168-19176.	10.3	40
71	Effect of bicarbonate on aging and reactivity of nanoscale zerovalent iron (nZVI) toward uranium removal. Chemosphere, 2018, 201, 603-611.	8.2	38
72	Nanoencapsulation of arsenate with nanoscale zero-valent iron (nZVI): A 3D perspective. Science Bulletin, 2018, 63, 1641-1648.	9.0	38

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73	Solution and surface chemistry of the Se(IV)-Fe(0) reactions: Effect of initial solution pH. Chemosphere, 2017, 168, 1597-1603.	8.2	37
74	Genesis of pure Se(0) nano- and micro-structures in wastewater with nanoscale zero-valent iron (nZVI). Environmental Science: Nano, 2017, 4, 52-59.	4.3	37
75	Hexachlorocyclohexanes in the Environment: Mechanisms of Dechlorination. Critical Reviews in Environmental Science and Technology, 2011, 41, 1747-1792.	12.8	36
76	Reactions of Nanoscale Zero-Valent Iron with Ni(II): Three-Dimensional Tomography of the â€œHollow Outâ€• Effect in a Single Nanoparticle. Environmental Science and Technology Letters, 2014, 1, 209-213.	8.7	36
77	Feasibility of nanoscale zero-valent iron (nZVI) for enhanced biological treatment of organic dyes. Chemosphere, 2019, 237, 124470.	8.2	36
78	Nano-spatially confined Pdâ€“Cu bimetals in porous N-doped carbon as an electrocatalyst for selective denitrification. Journal of Materials Chemistry A, 2020, 8, 9545-9553.	10.3	35
79	Nanoscale zero-valent iron (nZVI) encapsulated within tubular nitride carbon for highly selective and stable electrocatalytic denitrification. Chemical Engineering Journal, 2021, 417, 129160.	12.7	34
80	Controllable fabrication of dendritic mesoporous silicaâ€“carbon nanospheres for anthracene removal. Journal of Materials Chemistry A, 2014, 2, 11045.	10.3	33
81	Nanocelluloses affixed nanoscale Zero-Valent Iron (nZVI) for nickel removal: Synthesis, characterization and mechanisms. Journal of Environmental Chemical Engineering, 2022, 10, 107466.	6.7	30
82	Enhanced separation of nanoscale zero-valent iron (nZVI) using polyacrylamide: Performance, characterization and implication. Chemical Engineering Journal, 2015, 260, 616-622.	12.7	29
83	Iron-Catalyzed Selective Denitrification over N-Doped Mesoporous Carbon. ACS Applied Materials & Interfaces, 2020, 12, 28091-28099.	8.0	29
84	Ordered mesoporous silica/polyvinylidene fluoride composite membranes for effective removal of water contaminants. Journal of Materials Chemistry A, 2016, 4, 3850-3857.	10.3	28
85	Synthesis of mesoporous silica-carbon microspheres via self-assembly and in-situ carbonization for efficient adsorption of Di-n-butyl phthalate. Chemical Engineering Journal, 2019, 369, 854-862.	12.7	28
86	Temperature Programmed Reduction for Measurement of Oxygen Content in Nanoscale Zero-Valent Iron. Environmental Science & Technology, 2008, 42, 3780-3785.	10.0	26
87	Nanodenitrification with bimetallic nanoparticles confined in N-doped mesoporous carbon. Environmental Science: Nano, 2020, 7, 1496-1506.	4.3	26
88	Visualization of Silver Nanoparticle Formation on Nanoscale Zero-Valent Iron. Environmental Science and Technology Letters, 2018, 5, 520-525.	8.7	25
89	TiO₂ interpenetrating networks decorated with SnO₂ nanocrystals: enhanced activity of selective catalytic reduction of NO with NH₃. Journal of Materials Chemistry A, 2015, 3, 1405-1409.	10.3	24
90	Iron nanoparticles in capsules: derived from mesoporous silica-protected Prussian blue microcubes for efficient selenium removal. Chemical Communications, 2018, 54, 5887-5890.	4.1	24

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91	Enhanced activity and selectivity of electrocatalytic denitrification by highly dispersed CuPd bimetals on reduced graphene oxide. Chemical Engineering Journal, 2021, 416, 129074.	12.7	24
92	Transformation of nanoscale zero-valent iron with antimony: Effects of the Sb spatial configuration. Chemical Engineering Journal, 2021, 416, 129073.	12.7	24
93	Preparation of a mesoporous Cuâ€“Mn/TiO₂ composite for the degradation of Acid Red 1. Journal of Materials Chemistry A, 2015, 3, 7399-7405.	10.3	23
94	Stabilization of nanoscale zero-valent iron in water with mesoporous carbon (nZVI@MC). Journal of Environmental Sciences, 2019, 81, 28-33.	6.1	23
95	Nanoporous zero-valent iron. Journal of Materials Research, 2005, 20, 3238-3243.	2.6	19
96	Boric acid assisted formation of mesostructured silica: from hollow spheres to hierarchical assembly. RSC Advances, 2014, 4, 20069-20076.	3.6	19
97	Spatially Confined Tuning the Interfacial Synergistic Catalysis in Mesochannels toward Selective Catalytic Reduction. ACS Applied Materials & Interfaces, 2019, 11, 19242-19251.	8.0	19
98	Pb(II) deposition-reduction-growth onto iron nanoparticles induced by graphitic carbon nitride. Chemical Engineering Journal, 2020, 387, 124088.	12.7	19
99	Enrichment of uranium from wastewater with nanoscale zero-valent iron (nZVI). Environmental Science: Nano, 2021, 8, 666-674.	4.3	19
100	Enhanced degradation of micropollutants over iron-based electro-Fenton catalyst: Cobalt as an electron modulator in mesochannels and mechanism insight. Journal of Hazardous Materials, 2022, 427, 127896.	12.4	18
101	Recovery of gold from wastewater using nanoscale zero-valent iron. Environmental Science: Nano, 2019, 6, 519-527.	4.3	17
102	Single iron atom catalysis: An environmental perspective. Nano Today, 2021, 38, 101117.	11.9	17
103	Mapping the reactions of hexavalent chromium [Cr(<scp>vi</scp>)] in iron nanoparticles using spherical aberration corrected scanning transmission electron microscopy (Cs-STEM). Analytical Methods, 2014, 6, 3211-3214.	2.7	16
104	Heavy Metal-nZVI Reactions: the Core-shell Structure and Applications for Heavy Metal Treatment. Acta Chimica Sinica, 2017, 75, 529.	1.4	16
105	A win-win solution to chromate removal by sulfidated nanoscale zero-valent iron in sludge. Journal of Hazardous Materials, 2022, 432, 128683.	12.4	16
106	Porousâ€Carbonâ€Confined Formation of Monodisperse Iron Nanoparticle Yolks toward Versatile Nanoreactors for Metal Extraction. Chemistry - A European Journal, 2018, 24, 15663-15668.	3.3	15
107	Enhanced aggregation and sedimentation of nanoscale zero-valent iron (nZVI) with polyacrylamide modification. Chemosphere, 2021, 263, 127875.	8.2	14
108	Structures of Pdâ€“Fe(0) bimetallic nanoparticles near 0.1 nm resolution. RSC Advances, 2014, 4, 33861.	3.6	13

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109	Site-selective exposure of iron nanoparticles to achieve rapid interface enrichment for heavy metals. Chemical Communications, 2020, 56, 2795-2798.	4.1	13
110	Biofilm Community Structures and Opportunistic Pathogen Gene Markers in Drinking Water Mains and the Role of Pipe Materials. ACS ES&T Water, 2021, 1, 630-640.	4.6	11
111	Probing the performance and mechanisms of Congo red wastewater decolorization with nanoscale zero-valent iron in the continuing flow reactor. Journal of Cleaner Production, 2022, 346, 131201.	9.3	11
112	Probing pollutant reactions at the iron surface: a case study on selenite reactions with nanoscale zero-valent iron. Environmental Science: Nano, 2021, 8, 2650-2659.	4.3	10
113	Wet Milling of Zerovalent Iron in Sulfide Solution: Preserving and Securing the Metallic Iron. ACS ES&T Engineering, 2022, 2, 703-712.	7.6	7
114	Reply to â€œComments on â€˜Stoichiometry of Cr(VI) Immobilization Using Nanoscale Zerovalent Iron (nZVI): A Study with High-Resolution X-ray Photoelectron Spectroscopy (HR-XPS)â€™â€ Industrial & Engineering Chemistry Research, 2009, 48, 2298-2298.	3.7	6
115	The colorful chemistry of nanoscale zero-valent iron (nZVI). Journal of Environmental Sciences, 2018, 67, 1-3.	6.1	6
116	Microbes team with nanoscale zero-valent iron: A robust route for degradation of recalcitrant pollutants. Journal of Environmental Sciences, 2022, 118, 140-146.	6.1	6
117	Enhanced sequestration of large-sized dissolved organic micropollutants in polymeric membranes incorporated with mesoporous carbon. RSC Advances, 2016, 6, 81477-81484.	3.6	5
118	Architectural Genesis of Metal(loid)s with Iron Nanoparticle in Water. Environmental Science & Technology, 2021, 55, 12801-12808.	10.0	5
119	A triblock-copolymer-templating route to carbon spheres@SBA-15 large mesopore coreâ€“shell and hollow structures. RSC Advances, 2014, 4, 48676-48681.	3.6	4
120	Enrichment of Uranium from Aqueous Solutions with Nanoscale Zero-valent Iron: Surface Chemistry and Application Prospect. Acta Chimica Sinica, 2021, 79, 1008.	1.4	4
121	Nanoscale Zero-Valent Iron (nZVI) for Site Remediation. , 2007, , 25-48.		3
122	<i>In situ</i> characterization of aggregates of nanoscale zero-valent iron (nZVI) in water: an engineering aspect. Environmental Science: Nano, 2022, 9, 3331-3342.	4.3	3
123	Reduction of Cr(VI) by Nanoscale Zero Valent Iron (nZVI): The Reaction Kinetics. International Conference on Bioinformatics and Biomedical Engineering: [proceedings] International Conference on Bioinformatics and Biomedical Engineering, 2010, , .	0.0	2
124	Visualizing Trace Pollutants in Solids at Nanoscale via Electron Tomography. Environmental Science & Technology, 2021, 55, 11533-11537.	10.0	2
125	Iron Nanoparticles for Site Remediation. ACS Symposium Series, 2004, , 248-255.	0.5	1
126	Nanoscale Bimetallic Pd/Fe Particles for Remediation of Halogenated Methanes. , 2006, , 187-205.		1

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127	Pollutants Transformation by Metal Nanoparticles in Confined Nanospaces. Environmental Science: Nano, 0, , .	4.3	1
128	Environmental Technologies at the Nanometer-Scale. ACS Symposium Series, 2004, , 7-12.	0.5	0
129	Nanoscale Zero-Valent Iron (nZVI) for Site Remediation. , 2012, , 25-48.		0