Paul G Tratnyek

List of Publications by Year
in descending order

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Version: 2024-02-01

125 papers	13,856 citations	28736 57 h-index	23173 116 g-index
126 all docs	126 docs citations	126 times ranked	9182 citing authors

#	ARTICLE	IF	CITATIONS
1	Reductive Dehalogenation of Chlorinated Methanes by Iron Metal. Environmental Science & Technology, 1994, 28, 2045-2053.	4.6	1,257
2	Characterization and Properties of Metallic Iron Nanoparticles:Â Spectroscopy, Electrochemistry, and Kinetics. Environmental Science & Technology, 2005, 39, 1221-1230.	4.6	865
3	Reduction of Nitro Aromatic Compounds by Zero-Valent Iron Metal. Environmental Science & Technology, 1996, 30, 153-160.	4.6	672
4	Nanotechnologies for environmental cleanup. Nano Today, 2006, 1, 44-48.	6.2	665
5	Oxidation of Chlorinated Ethenes by Heat-Activated Persulfate:Â Kinetics and Products. Environmental Science & Technology, 2007, 41, 1010-1015.	4.6	650
6	Kinetics of Halogenated Organic Compound Degradation by Iron Metal. Environmental Science & Technology, 1996, 30, 2634-2640.	4.6	639
7	Persulfate Persistence under Thermal Activation Conditions. Environmental Science & Technology, 2008, 42, 9350-9356.	4.6	401
8	Reduction of azo dyes with zero-valent iron. Water Research, 2000, 34, 1837-1845.	5.3	380
9	Sulfidation of Iron-Based Materials: A Review of Processes and Implications for Water Treatment and Remediation. Environmental Science & Technology, 2017, 51, 13070-13085.	4.6	321
10	Kinetics of Contaminant Degradation by Permanganate. Environmental Science & Technology, 2006, 40, 1055-1061.	4.6	302
11	Oxidation of substituted phenols in the environment: a QSAR analysis of rate constants for reaction with singlet oxygen. Environmental Science & Technology, 1991, 25, 1596-1604.	4.6	289
12	Mechanochemically Sulfidated Microscale Zero Valent Iron: Pathways, Kinetics, Mechanism, and Efficiency of Trichloroethylene Dechlorination. Environmental Science & Technology, 2017, 51, 12653-12662.	4.6	262
13	Sulfidation of Nano Zerovalent Iron (nZVI) for Improved Selectivity During In-Situ Chemical Reduction (ISCR). Environmental Science & Technology, 2016, 50, 9558-9565.	4.6	242
14	Fe(II) Redox Chemistry in the Environment. Chemical Reviews, 2021, 121, 8161-8233.	23.0	242
15	Activation of Manganese Oxidants with Bisulfite for Enhanced Oxidation of Organic Contaminants: The Involvement of Mn(III). Environmental Science & Technology, 2015, 49, 12414-12421.	4.6	238
16	Natural Organic Matter Enhanced Mobility of Nano Zerovalent Iron. Environmental Science & Technology, 2009, 43, 5455-5460.	4.6	222
17	Aging of Iron Nanoparticles in Aqueous Solution:â€‰ Effects on Structure and Reactivity. Journal of Physical Chemistry C, 2008, 112, 2286-2293.	1.5	209
18	Electrochemical Properties of Natural Organic Matter (NOM), Fractions of NOM, and Model Biogeochemical Electron Shuttles. Environmental Science & Technology, 2002, 36, 617-624.	4.6	199

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19	Redox Behavior of Magnetite: Implications for Contaminant Reduction. Environmental Science & Technology, 2010, 44, 55-60.	4.6	195
20	Effects of Natural Organic Matter, Anthropogenic Surfactants, and Model Quinones on the Reduction of Contaminants by Zero-Valent Iron. Water Research, 2001, 35, 4435-4443.	5.3	192
21	Field-Scale Transport and Transformation of Carboxymethylcellulose-Stabilized Nano Zero-Valent Iron. Environmental Science & Technology, 2013, 47, 1573-1580.	4.6	182
22	Degradation of carbon tetrachloride by iron metal: Complexation effects on the oxide surface. Journal of Contaminant Hydrology, 1998, 29, 379-398.	1.6	176
23	Diversity of Contaminant Reduction Reactions by Zerovalent Iron:Â Role of the Reductate. Environmental Science & Technology, 2004, 38, 139-147.	4.6	175
24	Reductive Sequestration of Pertechnetate (⁹⁹TcO₄^{â€“}) by Nano Zerovalent Iron (nZVI) Transformed by Abiotic Sulfide. Environmental Science & Technology, 2013, 47, 5302-5310.	4.6	162
25	Correlation Analysis of Rate Constants for Dechlorination by Zero-Valent Iron. Environmental Science & Technology, 1998, 32, 3026-3033.	4.6	161
26	Effects of Carbonate Species on the Kinetics of Dechlorination of 1,1,1-Trichloroethane by Zero-Valent Iron. Environmental Science & Technology, 2002, 36, 4326-4333.	4.6	150
27	Effects of Nano Zero-Valent Iron on Oxidationâˆ’Reduction Potential. Environmental Science & Technology, 2011, 45, 1586-1592.	4.6	139
28	Coupled Effects of Aging and Weak Magnetic Fields on Sequestration of Selenite by Zero-Valent Iron. Environmental Science & Technology, 2014, 48, 6326-6334.	4.6	139
29	Remediation of Trichloroethylene by FeS-Coated Iron Nanoparticles in Simulated and Real Groundwater: Effects of Water Chemistry. Industrial & Engineering Chemistry Research, 2013, 52, 9343-9350.	1.8	134
30	Rapid Dechlorination of Polychlorinated Dibenzo-<i>p</i>-dioxins by Bimetallic and Nanosized Zerovalent Iron. Environmental Science & Technology, 2008, 42, 4106-4112.	4.6	131
31	Kinetics of Carbon Tetrachloride Reduction at an Oxide-Free Iron Electrode. Environmental Science & Technology, 1997, 31, 2385-2391.	4.6	117
32	Photoeffects on the Reduction of Carbon Tetrachloride by Zero-Valent Iron. Journal of Physical Chemistry B, 1998, 102, 1459-1465.	1.2	115
33	Abiotic reduction reactions of anthropogenic organic chemicals in anaerobic systems: A critical review. Journal of Contaminant Hydrology, 1986, 1, 1-28.	1.6	111
34	Mass Transport Effects on the Kinetics of Nitrobenzene Reduction by Iron Metal. Environmental Science & Technology, 2001, 35, 2804-2811.	4.6	110
35	Dynamic interactions between sulfidated zerovalent iron and dissolved oxygen: Mechanistic insights for enhanced chromate removal. Water Research, 2018, 135, 322-330.	5.3	109
36	Effects of Sulfidation, Magnetization, and Oxygenation on Azo Dye Reduction by Zerovalent Iron. Environmental Science & Technology, 2016, 50, 11879-11887.	4.6	106

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37	Disinfection of Ballast Water with Iron Activated Persulfate. Environmental Science & Technology, 2013, 47, 11717-11725.	4.6	102
38	QUANTITATIVE STRUCTUREâ€"ACTIVITY RELATIONSHIPS FOR OXIDATION REACTIONS OF ORGANIC CHEMICALS IN WATER. Environmental Toxicology and Chemistry, 2003, 22, 1743.	2.2	101
39	Abiotic reduction of nitro aromatic pesticides in anaerobic laboratory systems. Journal of Agricultural and Food Chemistry, 1989, 37, 248-254.	2.4	99
40	Substituent effects on azo dye oxidation by the FeIIIâ€"EDTAâ€"H2O2 system. Chemosphere, 2001, 45, 59-65.	4.2	99
41	Remediating Ground Water with Zero-Valent Metals: Chemical Considerations in Barrier Design. Ground Water Monitoring and Remediation, 1997, 17, 108-114.	0.6	98
42	Kinetics of reactions of chlorine dioxide (OClO) in waterâ€"II. Quantitative structure-activity relationships for phenolic compounds. Water Research, 1994, 28, 57-66.	5.3	88
43	Methods for characterizing the fate and effects of nano zerovalent iron during groundwater remediation. Journal of Contaminant Hydrology, 2015, 181, 17-35.	1.6	87
44	Effects of Metal Ions on the Reactivity and Corrosion Electrochemistry of Fe/FeS Nanoparticles. Environmental Science & Technology, 2014, 48, 4002-4011.	4.6	86
45	The Role of Oxides in Reduction Reactions at the Metal-Water Interface. ACS Symposium Series, 1999, , 301-322.	0.5	83
46	Fate of MTBE Relative to Benzene in a Gasoline-Contaminated Aquifer (1993-98). Ground Water Monitoring and Remediation, 1998, 18, 93-102.	0.6	81
47	Sequestration of Antimonite by Zerovalent Iron: Using Weak Magnetic Field Effects to Enhance Performance and Characterize Reaction Mechanisms. Environmental Science & Technology, 2016, 50, 1483-1491.	4.6	81
48	Reactivity of Fe/FeS Nanoparticles: Electrolyte Composition Effects on Corrosion Electrochemistry. Environmental Science & Technology, 2012, 46, 12484-12492.	4.6	77
49	Method for Determination of Methyltert-Butyl Ether and Its Degradation Products in Water. Environmental Science & Technology, 1997, 31, 3723-3726.	4.6	74
50	Degradation of 1,2,3-Trichloropropane (TCP): Hydrolysis, Elimination, and Reduction by Iron and Zinc. Environmental Science & Technology, 2010, 44, 787-793.	4.6	74
51	Oxidative Remobilization of Technetium Sequestered by Sulfide-Transformed Nano Zerovalent Iron. Environmental Science & Technology, 2014, 48, 7409-7417.	4.6	73
52	Sulfidation of Zero-Valent Iron by Direct Reaction with Elemental Sulfur in Water: Efficiencies, Mechanism, and Dechlorination of Trichloroethylene. Environmental Science & Technology, 2021, 55, 645-654.	4.6	69
53	Visualizing Redox Chemistry: Probing Environmental Oxidationâ€"Reduction Reactions with Indicator Dyes. The Chemical Educator, 2001, 6, 172-179.	0.0	68
54	Oxidation potentials of phenols and anilines: correlation analysis of electrochemical and theoretical values. Environmental Sciences: Processes and Impacts, 2017, 19, 339-349.	1.7	65

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55	Sulfide-modified zerovalent iron for enhanced antimonite sequestration: Characterization, performance, and reaction mechanisms. Chemical Engineering Journal, 2018, 338, 539-547.	6.6	63
56	Reduction of 2,4,6-Trinitrotoluene by Iron Metal:Â Kinetic Controls on Product Distributions in Batch Experiments. Environmental Science & Technology, 2005, 39, 230-238.	4.6	60
57	Selectivity of Nano Zerovalent Iron in <i>In Situ</i> Chemical Reduction: Challenges and Improvements. Remediation, 2016, 26, 27-40.	1.1	60
58	Modeling the Kinetics of Hydrogen Formation by Zerovalent Iron: Effects of Sulfidation on Micro- and Nano-Scale Particles. Environmental Science & Technology, 2018, 52, 13887-13896.	4.6	58
59	QUANTITATIVE STRUCTUREâ€"ACTIVITY RELATIONSHIPS FOR CHEMICAL REDUCTIONS OF ORGANIC CONTAMINANTS. Environmental Toxicology and Chemistry, 2003, 22, 1733.	2.2	57
60	Structureâ€"Activity Relationships for Rates of Aromatic Amine Oxidation by Manganese Dioxide. Environmental Science & Technology, 2016, 50, 5094-5102.	4.6	57
61	Photo-oxidation of 2,4,6-trimethylphenol in aqueous laboratory solutions and natural waters: kinetics of reaction with singlet oxygen. Journal of Photochemistry and Photobiology A: Chemistry, 1994, 84, 153-160.	2.0	56
62	Quantifying the efficiency and selectivity of organohalide dechlorination by zerovalent iron. Environmental Sciences: Processes and Impacts, 2020, 22, 528-542.	1.7	51
63	Chemical Reactivity Probes for Assessing Abiotic Natural Attenuation by Reducing Iron Minerals. Environmental Science & Technology, 2016, 50, 1868-1876.	4.6	49
64	FeN<i>_X</i>(C)-Coated Microscale Zero-Valent Iron for Fast and Stable Trichloroethylene Dechlorination in both Acidic and Basic pH Conditions. Environmental Science & Technology, 2021, 55, 5393-5402.	4.6	49
65	Overlooked Role of Peroxides as Free Radical Precursors in Advanced Oxidation Processes. Environmental Science & Technology, 2019, 53, 2054-2062.	4.6	48
66	Predicting Reduction Rates of Energetic Nitroaromatic Compounds Using Calculated One-Electron Reduction Potentials. Environmental Science & Technology, 2015, 49, 3778-3786.	4.6	46
67	Effects of Solution Chemistry on the Dechlorination of 1,2,3-Trichloropropane by Zero-Valent Zinc. Environmental Science & Technology, 2011, 45, 4073-4079.	4.6	45
68	Electrochemical studies of packed iron powder electrodes: Effects of common constituents of natural waters on corrosion potential. Corrosion Science, 2008, 50, 144-154.	3.0	42
69	Field Deployable Chemical Redox Probe for Quantitative Characterization of Carboxymethylcellulose Modified Nano Zerovalent Iron. Environmental Science & Technology, 2015, 49, 10589-10597.	4.6	40
70	Evidence for Localization of Reaction upon Reduction of Carbon Tetrachloride by Granular Iron. Langmuir, 2002, 18, 7688-7693.	1.6	39
71	Effects of Sulfidation and Nitrate on the Reduction of <i>N</i>-Nitrosodimethylamine by Zerovalent Iron. Environmental Science & Technology, 2019, 53, 9744-9754.	4.6	38
72	Mechanisms and Kinetics of Alkaline Hydrolysis of the Energetic Nitroaromatic Compounds 2,4,6-Trinitrotoluene (TNT) and 2,4-Dinitroanisole (DNAN). Environmental Science & Technology, 2013, 47, 6790-6798.	4.6	37

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73	Advances in metal(loid) oxyanion removal by zerovalent iron: Kinetics, pathways, and mechanisms. Chemosphere, 2021, 280, 130766.	4.2	37
74	Combined Quantum Mechanical and Molecular Mechanics Studies of the Electron-Transfer Reactions Involving Carbon Tetrachloride in Solution. Journal of Physical Chemistry A, 2008, 112, 2713-2720.	1.1	36
75	Technetium Stabilization in Low-Solubility Sulfide Phases: A Review. ACS Earth and Space Chemistry, 2018, 2, 532-547.	1.2	36
76	Hydrolysis of <i>tert</i>â€butyl formate: Kinetics, products, and implications for the environmental impact of methyl <i>tert</i>â€butyl ether. Environmental Toxicology and Chemistry, 1999, 18, 2789-2796.	2.2	35
77	Recovery of iron/iron oxide nanoparticles from solution: comparison of methods and their effects. Journal of Nanoparticle Research, 2011, 13, 1937-1952.	0.8	33
78	Generation of Reactive Oxygen Species and Degradation of Pollutants in the Fe²⁺/O₂/Tripolyphosphate System: Regulated by the Concentration Ratio of Fe²⁺ and Tripolyphosphate. Environmental Science & Technology, 2022, 56, 4367-4376.	4.6	33
79	Nanoarchitecture of advanced core-shell zero-valent iron particles with controlled reactivity for contaminant removal. Chemical Engineering Journal, 2018, 354, 335-345.	6.6	30
80	Photoeffects of textile dye wastewaters: Sensitization of singlet oxygen formation, oxidation of phenols and toxicity to bacteria. Environmental Toxicology and Chemistry, 1994, 13, 27-33.	2.2	29
81	Reactivity of Zerovalent Metals in Aquatic Media: Effects of Organic Surface Coatings. ACS Symposium Series, 2011, , 381-406.	0.5	28
82	Packed Powder Electrodes for Characterizing the Reactivity of Granular Iron in Borate Solutions. Journal of the Electrochemical Society, 2004, 151, B347.	1.3	26
83	Characterization of the reducing properties of anaerobic sediment slurries using redox indicators. Environmental Toxicology and Chemistry, 1990, 9, 289-295.	2.2	25
84	One-Electron-Transfer Reactions of Polychlorinated Ethylenes:â€‰ Concerted and Stepwise Cleavages. Journal of Physical Chemistry A, 2008, 112, 3712-3721.	1.1	24
85	In silico environmental chemical science: properties and processes from statistical and computational modelling. Environmental Sciences: Processes and Impacts, 2017, 19, 188-202.	1.7	24
86	Quantitative structure activity relationships (QSARs) and machine learning models for abiotic reduction of organic compounds by an aqueous Fe(II) complex. Water Research, 2021, 192, 116843.	5.3	24
87	Environmental Applications of Zerovalent Metals: Iron vs. Zinc. ACS Symposium Series, 2010, , 165-178.	0.5	23
88	One-Electron Reduction of Substituted Chlorinated Methanes As Determined from ab Initio Electronic Structure Theory. Journal of Physical Chemistry A, 2002, 106, 11581-11593.	1.1	21
89	Molecular Probe Techniques for the Identification of Reductants in Sediments:Â Evidence for Reduction of 2-Chloroacetophenone by Hydride Transfer. Environmental Science & Technology, 1999, 33, 440-445.	4.6	18
90	Modeling the Reductive Dechlorination of Polychlorinated Dibenzo-<i>p</i>-Dioxins: Kinetics, Pathway, and Equivalent Toxicity. Environmental Science & Technology, 2009, 43, 5327-5332.	4.6	18

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91	Abiotic Transformation of Nitrobenzene by Zero Valent Iron under Aerobic Conditions: Relative Contributions of Reduction and Oxidation in the Presence of Ethylene Diamine Tetraacetic Acid. Environmental Science & Technology, 2021, 55, 6828-6837.	4.6	17
92	Applicability of Single-Site Rate Equations for Reactions on Inhomogeneous Surfaces. Industrial & Engineering Chemistry Research, 2004, 43, 1615-1622.	1.8	16
93	Response to Comment on â€œDegradation of 1,2,3-Trichloropropane (TCP): Hydrolysis, Elimination, and Reduction by Iron and Zincâ€• Environmental Science & Technology, 2010, 44, 3198-3199.	4.6	16
94	Introduction to Aquatic Redox Chemistry. ACS Symposium Series, 2011, , 1-14.	0.5	16
95	Enhanced Photooxidation of Hydroquinone by Acetylacetone, a Novel Photosensitizer and Electron Shuttle. Environmental Science & Technology, 2019, 53, 11232-11239.	4.6	16
96	Role of complexation in the photochemical reduction of chromate by acetylacetone. Journal of Hazardous Materials, 2020, 400, 123306.	6.5	15
97	One-Electron Reduction Potentials from Chemical Structure Theory Calculations. ACS Symposium Series, 2011, , 37-64.	0.5	14
98	The Energetics of the Hydrogenolysis, Dehydrohalogenation, and Hydrolysis of 4,4â€˜-Dichloro-diphenyl-trichloroethane from ab Initio Electronic Structure Theory. Journal of Physical Chemistry A, 2004, 108, 5883-5893.	1.1	12
99	Ab Initio Electronic Structure Study of One-Electron Reduction of Polychlorinated Ethylenes. Journal of Physical Chemistry A, 2005, 109, 5905-5916.	1.1	12
100	Oxidation and Acidification of Anaerobic Sediment-Water Systems by Autoclaving. Journal of Environmental Quality, 1993, 22, 375-378.	1.0	11
101	Electrochemical Characterization of Magnetite with Agarose-Stabilized Powder Disk Electrodes and Potentiometric Methods. ACS Earth and Space Chemistry, 2019, 3, 688-699.	1.2	11
102	Environmental occurrence, fate, effects, and remediation of halogenated (semi)volatile organic compounds. Environmental Sciences: Processes and Impacts, 2020, 22, 465-471.	1.7	11
103	Keeping Up with All That Literature: The IronRefs Database Turns 500. Ground Water Monitoring and Remediation, 2002, 22, 92-94.	0.6	10
104	Central limit theorem for chemical kinetics in complex systems. Journal of Mathematical Chemistry, 2005, 37, 409-422.	0.7	10
105	Free Energies for Degradation Reactions of 1,2,3-Trichloropropane from ab Initio Electronic Structure Theory. Journal of Physical Chemistry A, 2010, 114, 12269-12282.	1.1	10
106	Predicting Abiotic Reduction Rates Using Cryogenically Collected Soil Cores and Mediated Reduction Potential Measurements. Environmental Science and Technology Letters, 2020, 7, 20-26.	3.9	10
107	Reduction of 1,2,3-trichloropropane (TCP): pathways and mechanisms from computational chemistry calculations. Environmental Sciences: Processes and Impacts, 2020, 22, 606-616.	1.7	10
108	Electrochemical characterization of natural organic matter by direct voltammetry in an aprotic solvent. Environmental Sciences: Processes and Impacts, 2019, 21, 1664-1683.	1.7	9

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109	Discussion on â€œElectrochemical and Raman spectroscopic studies of the influence of chlorinated solvents on the corrosion behaviour of iron in borate buffer and in simulated groundwaterâ€• [Corrosion Science 42 (2000) 1921â€“1939]. Corrosion Science, 2002, 44, 1151-1157.	3.0	8
110	Electrochemistry of Natural Organic Matter. ACS Symposium Series, 2011, , 129-151.	0.5	7
111	Evaluation of Zerovalent Zinc for Treatment of 1,2,3â€•Trichloropropaneâ€•Contaminated Groundwater: Laboratory and Field Assessment. Ground Water Monitoring and Remediation, 2012, 32, 42-52.	0.6	7
112	Novel Contaminant Transformation Pathways by Abiotic Reductants. Environmental Science and Technology Letters, 2014, 1, 432-436.	3.9	7
113	QSARs and computational chemistry methods in environmental chemical sciences. Environmental Sciences: Processes and Impacts, 2017, 19, 185-187.	1.7	6
114	IN SITU Chemical Reduction For Source Remediation. , 2014, , 307-351.		6
115	A Discovery-Based Experiment Illustrating How Iron Metal Is Used to Remediate Contaminated Groundwater. Journal of Chemical Education, 2001, 78, 1661.	1.1	5
116	Comment on â€œEvaluation of the kinetic oxidation of aqueous volatile organic compounds by permanganateâ€•by M. G. Mahmoodlu, S. M. Hassanizadeh, and N. Hartog, in Science of the Total Environment (2014) 485â€“486: 755â€“763. Science of the Total Environment, 2015, 502, 722-723.	3.9	5
117	Building toward the future in chemical and materials simulation with accessible and intelligently designed web applications. Annual Reports in Computational Chemistry, 2021, , 163-208.	0.9	5
118	Synthesis, Characterization, and Properties of Zero-Valent Iron Nanoparticles. , 2012, , 49-86.		4
119	Characterization of Palladium and Gold Nanoparticles on Granular Activated Carbon as an Efficient Catalyst for Hydrodechlorination of Trichloroethylene. Microscopy and Microanalysis, 2016, 22, 332-333.	0.2	4
120	Unique Structural Characteristics of Catalytic Palladium/Gold Nanoparticles on Graphene. Microscopy and Microanalysis, 2019, 25, 80-91.	0.2	3
121	Effect of Synthesis Temperature on the Formation of GAC supported Pd and Au NPs. Microscopy and Microanalysis, 2017, 23, 1916-1917.	0.2	2
122	Electron Microscopy Characterization of the Synergistic Effects between Pd, Au NPs, and Their Graphene Support. Microscopy and Microanalysis, 2018, 24, 1888-1889.	0.2	1
123	Planetary Health thematic web collection. Environmental Sciences: Processes and Impacts, 2018, 20, 744-745.	1.7	0
124	Effect of Synthesis Time of Carbon Supported Pd/Au NPs on TCE degradation. Microscopy and Microanalysis, 2018, 24, 1802-1803.	0.2	0
125	A Comparative Study of Carbon Supports for Pd/Au Nanoparticle-Based Catalysts. Materials Performance and Characterization, 2019, 8, 20180147.	0.2	0