Paul G Tratnyek

List of Publications by Year in Descending Order

122 papers	11,288 citations	52 h-index	106 g-index
126 ext. papers	12,377 ext. citations	7.5 avg, IF	6.45 L-index

#	Paper	IF	Citations
122	Generation of Reactive Oxygen Species and Degradation of Pollutants in the Fe/O/Tripolyphosphate System: Regulated by the Concentration Ratio of Fe and Tripolyphosphate.. *Environmental Science & Technology*, **2022**,	10.3	2
121	Building toward the future in chemical and materials simulation with accessible and intelligently designed web applications. *Annual Reports in Computational Chemistry*, **2021**, 163-208	1.8	2
120	FeN(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	10.3	9
119	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	12.5	8
118	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	10.3	4
117	Fe(II) Redox Chemistry in the Environment. *Chemical Reviews*, **2021**, 121, 8161-8233	68.1	37
116	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	10.3	17
115	Advances in metal(loid) oxyanion removal by zerovalent iron: Kinetics, pathways, and mechanisms. *Chemosphere*, **2021**, 280, 130766	8.4	10
114	Quantifying the efficiency and selectivity of organohalide dechlorination by zerovalent iron. *Environmental Sciences: Processes and Impacts*, **2020**, 22, 528-542	4.3	32
113	Role of complexation in the photochemical reduction of chromate by acetylacetone. *Journal of Hazardous Materials*, **2020**, 400, 123306	12.8	9
112	Reduction of 1,2,3-trichloropropane (TCP): pathways and mechanisms from computational chemistry calculations. *Environmental Sciences: Processes and Impacts*, **2020**, 22, 606-616	4.3	4
111	Predicting Abiotic Reduction Rates Using Cryogenically Collected Soil Cores and Mediated Reduction Potential Measurements. *Environmental Science and Technology Letters*, **2020**, 7, 20-26	11	7
110	Enhanced Photooxidation of Hydroquinone by Acetylacetone, a Novel Photosensitizer and Electron Shuttle. *Environmental Science & Technology*, **2019**, 53, 11232-11239	10.3	10
109	Overlooked Role of Peroxides as Free Radical Precursors in Advanced Oxidation Processes. *Environmental Science & Technology*, **2019**, 53, 2054-2062	10.3	27
108	Unique Structural Characteristics of Catalytic Palladium/Gold Nanoparticles on Graphene. *Microscopy and Microanalysis*, **2019**, 25, 80-91	0.5	1
107	Effects of Sulfidation and Nitrate on the Reduction of -Nitrosodimethylamine by Zerovalent Iron. *Environmental Science & Technology*, **2019**, 53, 9744-9754	10.3	18
106	A Comparative Study of Carbon Supports for Pd/Au Nanoparticle-Based Catalysts. *Materials Performance and Characterization*, **2019**, 8, 20180147	0.5	

105	Electrochemical Characterization of Magnetite with Agarose-Stabilized Powder Disk Electrodes and Potentiometric Methods. *ACS Earth and Space Chemistry*, **2019**, 3, 688-699	3.2	3
104	Electrochemical characterization of natural organic matter by direct voltammetry in an aprotic solvent. *Environmental Sciences: Processes and Impacts*, **2019**, 21, 1664-1683	4.3	3
103	Dynamic interactions between sulfidated zerovalent iron and dissolved oxygen: Mechanistic insights for enhanced chromate removal. *Water Research*, **2018**, 135, 322-330	12.5	71
102	Sulfide-modified zerovalent iron for enhanced antimonite sequestration: Characterization, performance, and reaction mechanisms. *Chemical Engineering Journal*, **2018**, 338, 539-547	14.7	38
101	Nanoarchitecture of advanced core-shell zero-valent iron particles with controlled reactivity for contaminant removal. *Chemical Engineering Journal*, **2018**, 354, 335-345	14.7	24
100	Technetium Stabilization in Low-Solubility Sulfide Phases: A Review. *ACS Earth and Space Chemistry*, **2018**, 2, 532-547	3.2	27
99	Effect of Synthesis Time of Carbon Supported Pd/Au NPs on TCE degradation. *Microscopy and Microanalysis*, **2018**, 24, 1802-1803	0.5	
98	Electron Microscopy Characterization of the Synergistic Effects between Pd, Au NPs, and Their Graphene Support. *Microscopy and Microanalysis*, **2018**, 24, 1888-1889	0.5	1
97	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	10.3	39
96	In silico environmental chemical science: properties and processes from statistical and computational modelling. *Environmental Sciences: Processes and Impacts*, **2017**, 19, 188-202	4.3	16
95	Oxidation potentials of phenols and anilines: correlation analysis of electrochemical and theoretical values. *Environmental Sciences: Processes and Impacts*, **2017**, 19, 339-349	4.3	45
94	Mechanochemically Sulfidated Microscale Zero Valent Iron: Pathways, Kinetics, Mechanism, and Efficiency of Trichloroethylene Dechlorination. *Environmental Science & Technology*, **2017**, 51, 12653-12662	10.3	154
93	Sulfidation of Iron-Based Materials: A Review of Processes and Implications for Water Treatment and Remediation. *Environmental Science & Technology*, **2017**, 51, 13070-13085	10.3	198
92	Effect of Synthesis Temperature on the Formation of GAC supported Pd and Au NPs. *Microscopy and Microanalysis*, **2017**, 23, 1916-1917	0.5	2
91	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	0.5	4
90	Chemical Reactivity Probes for Assessing Abiotic Natural Attenuation by Reducing Iron Minerals. *Environmental Science & Technology*, **2016**, 50, 1868-76	10.3	34
89	Sequestration of Antimonite by Zerovalent Iron: Using Weak Magnetic Field Effects to Enhance Performance and Characterize Reaction Mechanisms. *Environmental Science & Technology*, **2016**, 50, 1483-91	10.3	63
88	Structure-Activity Relationships for Rates of Aromatic Amine Oxidation by Manganese Dioxide. *Environmental Science & Technology*, **2016**, 50, 5094-102	10.3	45

87	Selectivity of Nano Zerovalent Iron in In Situ Chemical Reduction: Challenges and Improvements. *Remediation*, **2016**, 26, 27-40	1.8	52
86	Effects of Sulfidation, Magnetization, and Oxygenation on Azo Dye Reduction by Zerovalent Iron. *Environmental Science & Technology*, **2016**, 50, 11879-11887	10.3	73
85	Sulfidation of Nano Zerovalent Iron (nZVI) for Improved Selectivity During In-Situ Chemical Reduction (ISCR). *Environmental Science & Technology*, **2016**, 50, 9558-65	10.3	163
84	Methods for characterizing the fate and effects of nano zerovalent iron during groundwater remediation. *Journal of Contaminant Hydrology*, **2015**, 181, 17-35	3.9	71
83	Activation of Manganese Oxidants with Bisulfite for Enhanced Oxidation of Organic Contaminants: The Involvement of Mn(III). *Environmental Science & Technology*, **2015**, 49, 12414-21	10.3	169
82	Field Deployable Chemical Redox Probe for Quantitative Characterization of Carboxymethylcellulose Modified Nano Zerovalent Iron. *Environmental Science & Technology*, **2015**, 49, 10589-97	10.3	31
81	Comment on "evaluation of the kinetic oxidation of aqueous volatile organic compounds by permanganate" by M. G. Mahmoodlu, S. M. Hassanizadeh, and N. Hartog, in Science of the Total Environment (2014) 485-486: 755-763. *Science of the Total Environment*, **2015**, 502, 722-3	10.2	3
80	Predicting reduction rates of energetic nitroaromatic compounds using calculated one-electron reduction potentials. *Environmental Science & Technology*, **2015**, 49, 3778-86	10.3	34
79	Effects of metal ions on the reactivity and corrosion electrochemistry of Fe/FeS nanoparticles. *Environmental Science & Technology*, **2014**, 48, 4002-11	10.3	62
78	Oxidative remobilization of technetium sequestered by sulfide-transformed nano zerovalent iron. *Environmental Science & Technology*, **2014**, 48, 7409-17	10.3	58
77	Novel Contaminant Transformation Pathways by Abiotic Reductants. *Environmental Science and Technology Letters*, **2014**, 1, 432-436	11	6
76	Coupled effects of aging and weak magnetic fields on sequestration of selenite by zero-valent iron. *Environmental Science & Technology*, **2014**, 48, 6326-34	10.3	113
75	IN SITU Chemical Reduction For Source Remediation **2014**, 307-351		3
74	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	3.9	109
73	Reductive sequestration of pertechnetate (TcO4) by nano zerovalent iron (nZVI) transformed by abiotic sulfide. *Environmental Science & Technology*, **2013**, 47, 5302-10	10.3	120
72	Disinfection of ballast water with iron activated persulfate. *Environmental Science & Technology*, **2013**, 47, 11717-25	10.3	86
71	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, 6790-8	10.3	31
70	Field-scale transport and transformation of carboxymethylcellulose-stabilized nano zero-valent iron. *Environmental Science & Technology*, **2013**, 47, 1573-80	10.3	164

69	Synthesis, Characterization, and Properties of Zero-Valent Iron Nanoparticles **2012**, 49-86		2
68	Evaluation of Zerovalent Zinc for Treatment of 1,2,3-Trichloropropane-Contaminated Groundwater: Laboratory and Field Assessment. *Ground Water Monitoring and Remediation*, **2012**, 32, 42-52	1.4	5
67	Reactivity of Fe/FeS nanoparticles: electrolyte composition effects on corrosion electrochemistry. *Environmental Science & Technology*, **2012**, 46, 12484-92	10.3	57
66	Effects of nano zero-valent iron on oxidation-reduction potential. *Environmental Science & Technology*, **2011**, 45, 1586-92	10.3	117
65	Introduction to Aquatic Redox Chemistry. *ACS Symposium Series*, **2011**, 1-14	0.4	7
64	Reactivity of Zerovalent Metals in Aquatic Media: Effects of Organic Surface Coatings. *ACS Symposium Series*, **2011**, 381-406	0.4	25
63	Effects of solution chemistry on the dechlorination of 1,2,3-trichloropropane by zero-valent zinc. *Environmental Science & Technology*, **2011**, 45, 4073-9	10.3	36
62	Recovery of iron/iron oxide nanoparticles from solution: comparison of methods and their effects. *Journal of Nanoparticle Research*, **2011**, 13, 1937-1952	2.3	32
61	Electrochemistry of Natural Organic Matter. *ACS Symposium Series*, **2011**, 129-151	0.4	5
60	One-Electron Reduction Potentials from Chemical Structure Theory Calculations. *ACS Symposium Series*, **2011**, 37-64	0.4	14
59	Degradation of 1,2,3-trichloropropane (TCP): hydrolysis, elimination, and reduction by iron and zinc. *Environmental Science & Technology*, **2010**, 44, 787-93	10.3	61
58	Environmental Applications of Zerovalent Metals: Iron vs. Zinc. *ACS Symposium Series*, **2010**, 165-178	0.4	22
57	Response to Comment on Degradation of 1,2,3-Trichloropropane (TCP): Hydrolysis, Elimination, and Reduction by Iron and Zinc *Environmental Science & Technology*, **2010**, 44, 3198-3199	10.3	14
56	Redox behavior of magnetite: implications for contaminant reduction. *Environmental Science & Technology*, **2010**, 44, 55-60	10.3	155
55	Free energies for degradation reactions of 1,2,3-trichloropropane from ab initio electronic structure theory. *Journal of Physical Chemistry A*, **2010**, 114, 12269-82	2.8	9
54	Natural organic matter enhanced mobility of nano zerovalent iron. *Environmental Science & Technology*, **2009**, 43, 5455-60	10.3	204
53	Modeling the reductive dechlorination of polychlorinated dibenzo-p-dioxins: kinetics, pathway, and equivalent toxicity. *Environmental Science & Technology*, **2009**, 43, 5327-32	10.3	15
52	Persulfate persistence under thermal activation conditions. *Environmental Science & Technology*, **2008**, 42, 9350-6	10.3	323

51	One-electron-transfer reactions of polychlorinated ethylenes: concerted and stepwise cleavages. *Journal of Physical Chemistry A*, **2008**, 112, 3712-21	2.8	20
50	Rapid dechlorination of polychlorinated dibenzo-p-dioxins by bimetallic and nanosized zerovalent iron. *Environmental Science & Technology*, **2008**, 42, 4106-12	10.3	119
49	Aging of Iron Nanoparticles in Aqueous Solution: Effects on Structure and Reactivity. *Journal of Physical Chemistry C*, **2008**, 112, 2286-2293	3.8	183
48	Electrochemical studies of packed iron powder electrodes: Effects of common constituents of natural waters on corrosion potential. *Corrosion Science*, **2008**, 50, 144-154	6.8	35
47	Combined quantum mechanical and molecular mechanics studies of the electron-transfer reactions involving carbon tetrachloride in solution. *Journal of Physical Chemistry A*, **2008**, 112, 2713-20	2.8	36
46	Oxidation of chlorinated ethenes by heat-activated persulfate: kinetics and products. *Environmental Science & Technology*, **2007**, 41, 1010-5	10.3	525
45	Nanotechnologies for environmental cleanup. *Nano Today*, **2006**, 1, 44-48	17.9	573
44	Kinetics of contaminant degradation by permanganate. *Environmental Science & Technology*, **2006**, 40, 1055-61	10.3	244
43	Reduction of 2,4,6-trinitrotoluene by iron metal: kinetic controls on product distributions in batch experiments. *Environmental Science & Technology*, **2005**, 39, 230-8	10.3	51
42	Ab initio electronic structure study of one-electron reduction of polychlorinated ethylenes. *Journal of Physical Chemistry A*, **2005**, 109, 5905-16	2.8	10
41	Characterization and properties of metallic iron nanoparticles: spectroscopy, electrochemistry, and kinetics. *Environmental Science & Technology*, **2005**, 39, 1221-30	10.3	797
40	Central limit theorem for chemical kinetics in complex systems. *Journal of Mathematical Chemistry*, **2005**, 37, 409-422	2.1	10
39	The Energetics of the Hydrogenolysis, Dehydrohalogenation, and Hydrolysis of 4,4□Dichloro-diphenyl-trichloroethane from ab Initio Electronic Structure Theory. *Journal of Physical Chemistry A*, **2004**, 108, 5883-5893	2.8	12
38	Applicability of Single-Site Rate Equations for Reactions on Inhomogeneous Surfaces. *Industrial & Engineering Chemistry Research*, **2004**, 43, 1615-1622	3.9	14
37	Packed Powder Electrodes for Characterizing the Reactivity of Granular Iron in Borate Solutions. *Journal of the Electrochemical Society*, **2004**, 151, B347	3.9	22
36	Diversity of contaminant reduction reactions by zerovalent iron: role of the reductate. *Environmental Science & Technology*, **2004**, 38, 139-47	10.3	160
35	Quantitative structure-activity relationships for chemical reductions of organic contaminants. *Environmental Toxicology and Chemistry*, **2003**, 22, 1733-42	3.8	49
34	Quantitative structure-activity relationships for oxidation reactions of organic chemicals in water. *Environmental Toxicology and Chemistry*, **2003**, 22, 1743-54	3.8	89

33	Keeping Up with All That Literature: The IronRefs Database Turns 500. *Ground Water Monitoring and Remediation*, **2002**, 22, 92-94	1.4	10
32	One-Electron Reduction of Substituted Chlorinated Methanes As Determined from ab Initio Electronic Structure Theory. *Journal of Physical Chemistry A*, **2002**, 106, 11581-11593	2.8	21
31	Evidence for Localization of Reaction upon Reduction of Carbon Tetrachloride by Granular Iron. *Langmuir*, **2002**, 18, 7688-7693	4	37
30	Effects of carbonate species on the kinetics of dechlorination of 1,1,1-trichloroethane by zero-valent iron. *Environmental Science & Technology*, **2002**, 36, 4326-33	10.3	140
29	Electrochemical properties of natural organic matter (NOM), fractions of NOM, and model biogeochemical electron shuttles. *Environmental Science & Technology*, **2002**, 36, 617-24	10.3	171
28	Discussion on Electrochemical and Raman spectroscopic studies of the influence of chlorinated solvents on the corrosion behaviour of iron in borate buffer and in simulated groundwater [Corrosion Science 42 (2000) 1921–1939]. *Corrosion Science*, **2002**, 44, 1151-1157	6.8	7
27	Visualizing Redox Chemistry: Probing Environmental Oxidation-Reduction Reactions with Indicator Dyes. *The Chemical Educator*, **2001**, 6, 172-179		58
26	A Discovery-Based Experiment Illustrating How Iron Metal Is Used to Remediate Contaminated Groundwater. *Journal of Chemical Education*, **2001**, 78, 1661	2.4	5
25	Effects of natural organic matter, anthropogenic surfactants, and model quinones on the reduction of contaminants by zero-valent iron. *Water Research*, **2001**, 35, 4435-43	12.5	179
24	Substituent effects on azo dye oxidation by the FeIII-EDTA-H2O2 system. *Chemosphere*, **2001**, 45, 59-65	8.4	85
23	Mass transport effects on the kinetics of nitrobenzene reduction by iron metal. *Environmental Science & Technology*, **2001**, 35, 2804-11	10.3	99
22	Reduction of azo dyes with zero-valent iron. *Water Research*, **2000**, 34, 1837-1845	12.5	336
21	Hydrolysis of tert-butyl formate: Kinetics, products, and implications for the environmental impact of methyl tert-butyl ether. *Environmental Toxicology and Chemistry*, **1999**, 18, 2789-2796	3.8	32
20	Molecular Probe Techniques for the Identification of Reductants in Sediments: Evidence for Reduction of 2-Chloroacetophenone by Hydride Transfer. *Environmental Science & Technology*, **1999**, 33, 440-445	10.3	17
19	The Role of Oxides in Reduction Reactions at the Metal-Water Interface. *ACS Symposium Series*, **1999**, 301-322	0.4	65
18	Fate of MTBE Relative to Benzene in a Gasoline-Contaminated Aquifer (1993–98). *Ground Water Monitoring and Remediation*, **1998**, 18, 93-102	1.4	60
17	Degradation of carbon tetrachloride by iron metal: Complexation effects on the oxide surface. *Journal of Contaminant Hydrology*, **1998**, 29, 379-398	3.9	152
16	Photoeffects on the Reduction of Carbon Tetrachloride by Zero-Valent Iron. *Journal of Physical Chemistry B*, **1998**, 102, 1459-1465	3.4	98

15	Correlation Analysis of Rate Constants for Dechlorination by Zero-Valent Iron. *Environmental Science & Technology*, **1998**, 32, 3026-3033	10.3	143
14	Kinetics of Carbon Tetrachloride Reduction at an Oxide-Free Iron Electrode. *Environmental Science & Technology*, **1997**, 31, 2385-2391	10.3	110
13	Method for Determination of Methyl tert-Butyl Ether and Its Degradation Products in Water. *Environmental Science & Technology*, **1997**, 31, 3723-3726	10.3	65
12	Remediating Ground Water with Zero-Valent Metals: Chemical Considerations in Barrier Design. *Ground Water Monitoring and Remediation*, **1997**, 17, 108-114	1.4	90
11	Kinetics of Halogenated Organic Compound Degradation by Iron Metal. *Environmental Science & Technology*, **1996**, 30, 2634-2640	10.3	592
10	Reduction of Nitro Aromatic Compounds by Zero-Valent Iron Metal. *Environmental Science & Technology*, **1996**, 30, 153-160	10.3	588
9	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	4.7	51
8	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	3.8	23
7	Reductive dehalogenation of chlorinated methanes by iron metal. *Environmental Science & Technology*, **1994**, 28, 2045-53	10.3	1134
6	Kinetics of reactions of chlorine dioxide (OCIO) in water[]. Quantitative structure-activity relationships for phenolic compounds. *Water Research*, **1994**, 28, 57-66	12.5	75
5	Oxidation and Acidification of Anaerobic Sediment-Water Systems by Autoclaving. *Journal of Environmental Quality*, **1993**, 22, 375-378	3.4	11
4	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	10.3	244
3	Characterization of the reducing properties of anaerobic sediment slurries using redox indicators. *Environmental Toxicology and Chemistry*, **1990**, 9, 289-295	3.8	23
2	Abiotic reduction of nitro aromatic pesticides in anaerobic laboratory systems. *Journal of Agricultural and Food Chemistry*, **1989**, 37, 248-254	5.7	93
1	Abiotic reduction reactions of anthropogenic organic chemicals in anaerobic systems: A critical review. *Journal of Contaminant Hydrology*, **1986**, 1, 1-28	3.9	100