John M Zachara

List of Publications by Year
in descending order

85 papers	8,567 citations	66343 42 h-index	54911 84 g-index
88 all docs	88 docs citations	88 times ranked	6053 citing authors

#	Article	IF	Citations
1	Biogenic iron mineralization accompanying the dissimilatory reduction of hydrous ferric oxide by a groundwater bacterium. Geochimica Et Cosmochimica Acta, 1998, 62, 3239-3257.	3.9	712
2	Microbial Reduction of Crystalline Iron(III) Oxides:Â Influence of Oxide Surface Area and Potential for Cell Growth. Environmental Science & Technology, 1996, 30, 1618-1628.	10.0	711
3	Respiration of metal (hydr)oxides byShewanellaandGeobacter: a key role for multihaemc-type cytochromes. Molecular Microbiology, 2007, 65, 12-20.	2.5	592
4	Characterization of an electron conduit between bacteria and the extracellular environment. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 22169-22174.	7.1	410
5	Bacterial reduction of crystalline Fe (super 3+) oxides in single phase suspensions and subsurface materials. American Mineralogist, 1998, 83, 1426-1443.	1.9	324
6	Reduction of U(VI) in goethite (Î±-FeOOH) suspensions by a dissimilatory metal-reducing bacterium. Geochimica Et Cosmochimica Acta, 2000, 64, 3085-3098.	3.9	309
7	Structure of a bacterial cell surface decaheme electron conduit. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 9384-9389.	7.1	301
8	The effect of calcium on aqueous uranium(VI) speciation and adsorption to ferrihydrite and quartz. Geochimica Et Cosmochimica Acta, 2006, 70, 1379-1387.	3.9	246
9	Solubilization of Fe(III) oxide-bound trace metals by a dissimilatory Fe(III) reducing bacterium. Geochimica Et Cosmochimica Acta, 2001, 65, 75-93.	3.9	223
10	The â€˜porinâ€“cytochromeâ€™ model for microbeâ€toâ€mineral electron transfer. Molecular Microbiology, 2012, 85, 201-212.	2.5	222
11	Expanding the role of reactive transport models in critical zone processes. Earth-Science Reviews, 2017, 165, 280-301.	9.1	207
12	Molecular Underpinnings of Fe(III) Oxide Reduction by Shewanella Oneidensis MR-1. Frontiers in Microbiology, 2012, 3, 50.	3.5	186
13	Reduction of TcO4âˆ’ by sediment-associated biogenic Fe(II). Geochimica Et Cosmochimica Acta, 2004, 68, 3171-3187.	3.9	184
14	Rapid electron exchange between surface-exposed bacterial cytochromes and Fe(III) minerals. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 6346-6351.	7.1	179
15	A transâ€outer membrane porinâ€cytochrome protein complex for extracellular electron transfer by <scp><i>G</i></scp><i>eobacter sulfurreducens</i>â€…<scp>PCA</scp>. Environmental Microbiology Reports, 2014, 6, 776-785.	2.4	178
16	Reduction of pertechnetate [Tc(VII)] by aqueous Fe(II) and the nature of solid phase redox products. Geochimica Et Cosmochimica Acta, 2007, 71, 2137-2157.	3.9	154
17	Mtr extracellular electron-transfer pathways in Fe(III)-reducing or Fe(II)-oxidizing bacteria: a genomic perspective. Biochemical Society Transactions, 2012, 40, 1261-1267.	3.4	150
18	Kinetic Desorption and Sorption of U(VI) during Reactive Transport in a Contaminated Hanford Sediment. Environmental Science & Technology, 2005, 39, 3157-3165.	10.0	137

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19	Persistence of uranium groundwater plumes: Contrasting mechanisms at two DOE sites in the groundwaterâ€“river interaction zone. Journal of Contaminant Hydrology, 2013, 147, 45-72.	3.3	136
20	Changes in Uranium Speciation through a Depth Sequence of Contaminated Hanford Sediments. Environmental Science & Technology, 2006, 40, 2517-2524.	10.0	135
21	Scaleâ€dependent desorption of uranium from contaminated subsurface sediments. Water Resources Research, 2008, 44, .	4.2	123
22	Dissolution of uranyl microprecipitates in subsurface sediments at Hanford Site, USA. Geochimica Et Cosmochimica Acta, 2004, 68, 4519-4537.	3.9	110
23	Influences of organic carbon speciation on hyporheic corridor biogeochemistry and microbial ecology. Nature Communications, 2018, 9, 585.	12.8	110
24	Geochemical Processes Controlling Migration of Tank Wastes in Hanford's Vadose Zone. Vadose Zone Journal, 2007, 6, 985-1003.	2.2	109
25	Redox Reactions of Reduced Flavin Mononucleotide (FMN), Riboflavin (RBF), and Anthraquinone-2,6-disulfonate (AQDS) with Ferrihydrite and Lepidocrocite. Environmental Science & Technology, 2012, 46, 11644-11652.	10.0	98
26	Uranium Speciation As a Function of Depth in Contaminated Hanford Sediments - A Micro-XRF, Micro-XRD, and Micro- And Bulk-XAFS Study. Environmental Science & Technology, 2009, 43, 630-636.	10.0	90
27	Kinetics of Reduction of Fe(III) Complexes by Outer Membrane Cytochromes MtrC and OmcA of<i>Shewanella oneidensis</i>MR-1. Applied and Environmental Microbiology, 2008, 74, 6746-6755.	3.1	89
28	Kinetics of Uranium(VI) Desorption from Contaminated Sediments: Effect of Geochemical Conditions and Model Evaluation. Environmental Science & Technology, 2009, 43, 6560-6566.	10.0	89
29	Kinetics of Reductive Dissolution of Hematite by Bioreduced Anthraquinone-2,6-disulfonate. Environmental Science & Technology, 2007, 41, 7730-7735.	10.0	80
30	Newly recognized hosts for uranium in the Hanford Site vadose zone. Geochimica Et Cosmochimica Acta, 2009, 73, 1563-1576.	3.9	80
31	Poreâ€scale and multiscale numerical simulation of flow and transport in a laboratoryâ€scale column. Water Resources Research, 2015, 51, 1023-1035.	4.2	79
32	Effect of Water Chemistry and Hydrodynamics on Nitrogen Transformation Activity and Microbial Community Functional Potential in Hyporheic Zone Sediment Columns. Environmental Science & Technology, 2017, 51, 4877-4886.	10.0	79
33	Internal Domains of Natural Porous Media Revealed: Critical Locations for Transport, Storage, and Chemical Reaction. Environmental Science & Technology, 2016, 50, 2811-2829.	10.0	76
34	Hydrogenaseâ€•and outer membrane <i>c</i>â€type cytochromeâ€facilitated reduction of technetium(VII) by <i>Shewanella oneidensis</i> MRâ€1. Environmental Microbiology, 2008, 10, 125-136.	3.8	74
35	Cryogenic Laser Induced U(VI) Fluorescence Studies of a U(VI) Substituted Natural Calcite:Â Implications to U(VI) Speciation in Contaminated Hanford Sediments. Environmental Science & Technology, 2005, 39, 2651-2659.	10.0	73
36	Drought Conditions Maximize the Impact of Highâ€Frequency Flow Variations on Thermal Regimes and Biogeochemical Function in the Hyporheic Zone. Water Resources Research, 2018, 54, 7361-7382.	4.2	63

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37	Effect of Grain Size on Uranium(VI) Surface Complexation Kinetics and Adsorption Additivity. Environmental Science & Technology, 2011, 45, 6025-6031.	10.0	60
38	Oxidative dissolution potential of biogenic and abiogenic TcO2 in subsurface sediments. Geochimica Et Cosmochimica Acta, 2009, 73, 2299-2313.	3.9	54
39	Scale-dependent rates of uranyl surface complexation reaction in sediments. Geochimica Et Cosmochimica Acta, 2013, 105, 326-341.	3.9	54
40	Utility of bromide and heat tracers for aquifer characterization affected by highly transient flow conditions. Water Resources Research, 2012, 48, .	4.2	51
41	Geochemical Controls on Contaminant Uranium in Vadose Hanford Formation Sediments at the 200 Area and 300 Area, Hanford Site, Washington. Vadose Zone Journal, 2007, 6, 1004-1017.	2.2	50
42	Competitive Reduction of Pertechnetate (⁹⁹TcO₄^{âˆ’}) by Dissimilatory Metal Reducing Bacteria and Biogenic Fe(II). Environmental Science & Technology, 2011, 45, 951-957.	10.0	48
43	Multispecies diffusion models: A study of uranyl species diffusion. Water Resources Research, 2011, 47, .	4.2	43
44	Quantifying Differences in the Impact of Variable Chemistry on Equilibrium Uranium(VI) Adsorption Properties of Aquifer Sediments. Environmental Science & Technology, 2011, 45, 8733-8740.	10.0	42
45	River stage influences on uranium transport in a hydrologically dynamic groundwaterâ€surface water transition zone. Water Resources Research, 2016, 52, 1568-1590.	4.2	42
46	Reductive dissolution of goethite and hematite by reduced flavins. Geochimica Et Cosmochimica Acta, 2013, 121, 139-154.	3.9	41
47	Effects of soluble flavin on heterogeneous electron transfer between surface-exposed bacterial cytochromes and iron oxides. Geochimica Et Cosmochimica Acta, 2015, 163, 299-310.	3.9	41
48	Threeâ€dimensional Bayesian geostatistical aquifer characterization at the Hanford 300 Area using tracer test data. Water Resources Research, 2012, 48, .	4.2	40
49	Regulation-Structured Dynamic Metabolic Model Provides a Potential Mechanism for Delayed Enzyme Response in Denitrification Process. Frontiers in Microbiology, 2017, 8, 1866.	3.5	40
50	Fe(II)- and sulfide-facilitated reduction of 99Tc(VII)O4âˆ’ in microbially reduced hyporheic zone sediments. Geochimica Et Cosmochimica Acta, 2014, 136, 247-264.	3.9	39
51	Dam Operations and Subsurface Hydrogeology Control Dynamics of Hydrologic Exchange Flows in a Regulated River Reach. Water Resources Research, 2019, 55, 2593-2612.	4.2	39
52	Application of ensemble-based data assimilation techniques for aquifer characterization using tracer data at Hanford 300 area. Water Resources Research, 2013, 49, 7064-7076.	4.2	37
53	Characterization of a contaminated wellfield using 3D electrical resistivity tomography implemented with geostatistical, discontinuous boundary, and known conductivity constraints. Geophysics, 2012, 77, EN85-EN96.	2.6	36
54	Determining individual mineral contributions to U(VI) adsorption in a contaminated aquifer sediment: A fluorescence spectroscopy study. Geochimica Et Cosmochimica Acta, 2011, 75, 2965-2979.	3.9	35

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55	The effect of biogenic Fe(II) on the stability and sorption of Co(II)EDTA2â˘ to goethite and a subsurface sediment. Geochimica Et Cosmochimica Acta, 2000, 64, 1345-1362.	3.9	34
56	The mineralogic transformation of ferrihydrite induced by heterogeneous reaction with bioreduced anthraquinone disulfonate (AQDS) and the role of phosphate. Geochimica Et Cosmochimica Acta, 2011, 75, 6330-6349.	3.9	33
57	Fourâ€dimensional electrical conductivity monitoring of stageâ€driven river water intrusion: Accounting for water table effects using a transient mesh boundary and conditional inversion constraints. Water Resources Research, 2015, 51, 6177-6196.	4.2	33
58	Nitrate bioreduction in redox-variable low permeability sediments. Science of the Total Environment, 2016, 539, 185-195.	8.0	32
59	A geostatisticsâ€informed hierarchical sensitivity analysis method for complex groundwater flow and transport modeling. Water Resources Research, 2017, 53, 4327-4343.	4.2	30
60	Influence of calcite on uranium(VI) reactive transport in the groundwaterâ€“river mixing zone. Journal of Contaminant Hydrology, 2014, 156, 27-37.	3.3	29
61	Characterizing particleâ€scale equilibrium adsorption and kinetics of uranium(VI) desorption from Uâ€contaminated sediments. Water Resources Research, 2013, 49, 1163-1177.	4.2	27
62	Transient groundwater chemistry near a river: Effects on U(VI) transport in laboratory column experiments. Water Resources Research, 2011, 47, .	4.2	26
63	Coupling a three-dimensional subsurface flow and transport model with a land surface model to simulate streamâ€“aquiferâ€“land interactions (CPÂv1.0). Geoscientific Model Development, 2017, 10, 4539-4562.	3.6	25
64	Resupply mechanism to a contaminated aquifer: A laboratory study of U(VI) desorption from capillary fringe sediments. Geochimica Et Cosmochimica Acta, 2010, 74, 5155-5170.	3.9	24
65	Importance of considering intraborehole flow in solute transport modeling under highly dynamic flow conditions. Journal of Contaminant Hydrology, 2011, 123, 11-19.	3.3	23
66	Using Bayesian Networks for Sensitivity Analysis of Complex Biogeochemical Models. Water Resources Research, 2019, 55, 3541-3555.	4.2	23
67	Assessment of controlling processes for field-scale uranium reactive transport under highly transient flow conditions. Water Resources Research, 2014, 50, 1006-1024.	4.2	22
68	Delineating Facies Spatial Distribution by Integrating Ensemble Data Assimilationand Indicator Geostatistics With Levelâ€Set Transformation. Water Resources Research, 2019, 55, 2652-2671.	4.2	22
69	Development of a proteoliposome model to probe transmembrane electron-transfer reactions. Biochemical Society Transactions, 2012, 40, 1257-1260.	3.4	20
70	Kilometerâ€Scale Hydrologic Exchange Flows in a Gravel Bed River Corridor and Their Implications to Solute Migration. Water Resources Research, 2020, 56, e2019WR025258.	4.2	19
71	Redox transformation and reductive immobilization of Cr(VI) in the Columbia River hyporheic zone sediments. Journal of Hydrology, 2017, 555, 278-287.	5.4	18
72	Riverbed Hydrologic Exchange Dynamics in a Large Regulated River Reach. Water Resources Research, 2018, 54, 2715-2730.	4.2	17

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73	Investigation of U(VI) Adsorption in Quartzâ€“Chlorite Mineral Mixtures. Environmental Science & Technology, 2014, 48, 7766-7773.	10.0	16
74	Targeted quantification of functional enzyme dynamics in environmental samples for microbially mediated biogeochemical processes. Environmental Microbiology Reports, 2017, 9, 512-521.	2.4	16
75	Establishing a geochemical heterogeneity model for a contaminated vadose zone â€" Aquifer system. Journal of Contaminant Hydrology, 2013, 153, 122-140.	3.3	15
76	⁹⁹Tc(VII) Retardation, Reduction, and Redox Rate Scaling in Naturally Reduced Sediments. Environmental Science & Technology, 2015, 49, 13403-13412.	10.0	15
77	Long-term kinetics of uranyl desorption from sediments under advective conditions. Water Resources Research, 2014, 50, 855-870.	4.2	14
78	Pore-Scale Characterization of Biogeochemical Controls on Iron and Uranium Speciation under Flow Conditions. Environmental Science & Technology, 2012, 46, 7992-8000.	10.0	12
79	A New Approach to Quantify Shallow Water Hydrologic Exchanges in a Large Regulated River Reach. Water (Switzerland), 2017, 9, 703.	2.7	12
80	River Dynamics Control Transit Time Distributions and Biogeochemical Reactions in a Damâ€Regulated River Corridor. Water Resources Research, 2020, 56, e2019WR026470.	4.2	12
81	Modulating factors of hydrologic exchanges in a largeâ€scale river reach: Insights from threeâ€dimensional computational fluid dynamics simulations. Hydrological Processes, 2018, 32, 3446-3463.	2.6	11
82	Using Ensemble Data Assimilation to Estimate Transient Hydrologic Exchange Flow Under Highly Dynamic Flow Conditions. Water Resources Research, 2022, 58, .	4.2	10
83	Characterizing Technetium in Subsurface Sediments for Contaminant Remediation. ACS Earth and Space Chemistry, 2018, 2, 1145-1160.	2.7	8
84	Microbial Redox Proteins and Protein Complexes for Extracellular Respiration. , 2015, , 187-216.		2
85	Understanding Contaminant Migration Within a Dynamic River Corridor Through Field Experiments and Reactive Transport Modeling. Frontiers in Water, 2020, 2, .	2.3	2