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	Using Ensemble Data Assimilation to Estimate Transient Hydrologic Exchange Flow Under Highly Dynamic Flow Conditions. Water Resources Research, 2022, 58, .	4.2	10
2	River Dynamics Control Transit Time Distributions and Biogeochemical Reactions in a Damâ€Regulated River Corridor. Water Resources Research, 2020, 56, e2019WR026470.	4.2	12
3	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
4	Understanding Contaminant Migration Within a Dynamic River Corridor Through Field Experiments and Reactive Transport Modeling. Frontiers in Water, 2020, 2, .	2.3	2
5	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
6	Using Bayesian Networks for Sensitivity Analysis of Complex Biogeochemical Models. Water Resources Research, 2019, 55, 3541-3555.	4.2	23
7	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
8	Riverbed Hydrologic Exchange Dynamics in a Large Regulated River Reach. Water Resources Research, 2018, 54, 2715-2730.	4.2	17
9	Influences of organic carbon speciation on hyporheic corridor biogeochemistry and microbial ecology. Nature Communications, 2018, 9, 585.	12.8	110
10	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
11	Characterizing Technetium in Subsurface Sediments for Contaminant Remediation. ACS Earth and Space Chemistry, 2018, 2, 1145-1160.	2.7	8
12	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
13	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
14	A geostatisticsâ€informed hierarchical sensitivity analysis method for complex groundwater flow and transport modeling. Water Resources Research, 2017, 53, 4327-4343.	4.2	30
15	Targeted quantification of functional enzyme dynamics in environmental samples for microbially mediated biogeochemical processes. Environmental Microbiology Reports, 2017, 9, 512-521.	2.4	16
16	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
17	Expanding the role of reactive transport models in critical zone processes. Earth-Science Reviews, 2017, 165, 280-301.	9.1	207
18	A New Approach to Quantify Shallow Water Hydrologic Exchanges in a Large Regulated River Reach. Water (Switzerland), 2017, 9, 703.	2.7	12

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19	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
20	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
21	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
22	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
23	Nitrate bioreduction in redox-variable low permeability sediments. Science of the Total Environment, 2016, 539, 185-195.	8.0	32
24	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
25	Microbial Redox Proteins and Protein Complexes for Extracellular Respiration. , 2015, , 187-216.		2
26	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
27	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
28	⁹⁹Tc(VII) Retardation, Reduction, and Redox Rate Scaling in Naturally Reduced Sediments. Environmental Science & Technology, 2015, 49, 13403-13412.	10.0	15
29	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
30	Long-term kinetics of uranyl desorption from sediments under advective conditions. Water Resources Research, 2014, 50, 855-870.	4.2	14
31	Investigation of U(VI) Adsorption in Quartzâ€“Chlorite Mineral Mixtures. Environmental Science & Technology, 2014, 48, 7766-7773.	10.0	16
32	Fe(II)- and sulfide-facilitated reduction of 99Tc(VII)O4â^’ in microbially reduced hyporheic zone sediments. Geochimica Et Cosmochimica Acta, 2014, 136, 247-264.	3.9	39
33	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
34	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
35	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
36	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

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37	Establishing a geochemical heterogeneity model for a contaminated vadose zone â€" Aquifer system. Journal of Contaminant Hydrology, 2013, 153, 122-140.	3.3	15
38	Reductive dissolution of goethite and hematite by reduced flavins. Geochimica Et Cosmochimica Acta, 2013, 121, 139-154.	3.9	41
39	Scale-dependent rates of uranyl surface complexation reaction in sediments. Geochimica Et Cosmochimica Acta, 2013, 105, 326-341.	3.9	54
40	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
41	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
42	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
43	Pore-Scale Characterization of Biogeochemical Controls on Iron and Uranium Speciation under Flow Conditions. Environmental Science & Technology, 2012, 46, 7992-8000.	10.0	12
44	Development of a proteoliposome model to probe transmembrane electron-transfer reactions. Biochemical Society Transactions, 2012, 40, 1257-1260.	3.4	20
45	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
46	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
47	Threeâ€dimensional Bayesian geostatistical aquifer characterization at the Hanford 300 Area using tracer test data. Water Resources Research, 2012, 48, .	4.2	40
48	Utility of bromide and heat tracers for aquifer characterization affected by highly transient flow conditions. Water Resources Research, 2012, 48, .	4.2	51
49	Molecular Underpinnings of Fe(III) Oxide Reduction by Shewanella Oneidensis MR-1. Frontiers in Microbiology, 2012, 3, 50.	3.5	186
50	The â€˜porinâ€"cytochromeâ€™ model for microbeâ€toâ€mineral electron transfer. Molecular Microbiology, 2012, 85, 201-212.	2.5	222
51	Competitive Reduction of Pertechnetate (⁹⁹TcO₄^{â€’}) by Dissimilatory Metal Reducing Bacteria and Biogenic Fe(II). Environmental Science & Technology, 2011, 45, 951-957.	10.0	48
52	Effect of Grain Size on Uranium(VI) Surface Complexation Kinetics and Adsorption Additivity. Environmental Science & Technology, 2011, 45, 6025-6031.	10.0	60
53	Transient groundwater chemistry near a river: Effects on U(VI) transport in laboratory column experiments. Water Resources Research, 2011, 47, .	4.2	26
54	Multispecies diffusion models: A study of uranyl species diffusion. Water Resources Research, 2011, 47, .	4.2	43

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55	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
56	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
57	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
58	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
59	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
60	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
61	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
62	Newly recognized hosts for uranium in the Hanford Site vadose zone. Geochimica Et Cosmochimica Acta, 2009, 73, 1563-1576.	3.9	80
63	Oxidative dissolution potential of biogenic and abiogenic TcO2 in subsurface sediments. Geochimica Et Cosmochimica Acta, 2009, 73, 2299-2313.	3.9	54
64	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
65	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
66	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
67	Scaleâ€•dependent desorption of uranium from contaminated subsurface sediments. Water Resources Research, 2008, 44, .	4.2	123
68	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
69	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
70	Kinetics of Reductive Dissolution of Hematite by Bioreduced Anthraquinone-2,6-disulfonate. Environmental Science & Technology, 2007, 41, 7730-7735.	10.0	80
71	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
72	Geochemical Processes Controlling Migration of Tank Wastes in Hanford's Vadose Zone. Vadose Zone Journal, 2007, 6, 985-1003.	2.2	109

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73	Respiration of metal (hydr)oxides byShewanellaandGeobacter: a key role for multihaemc-type cytochromes. Molecular Microbiology, 2007, 65, 12-20.	2.5	592
74	Changes in Uranium Speciation through a Depth Sequence of Contaminated Hanford Sediments. Environmental Science & Technology, 2006, 40, 2517-2524.	10.0	135
75	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
76	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
77	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
78	Reduction of TcO4â^' by sediment-associated biogenic Fe(II). Geochimica Et Cosmochimica Acta, 2004, 68, 3171-3187.	3.9	184
79	Dissolution of uranyl microprecipitates in subsurface sediments at Hanford Site, USA. Geochimica Et Cosmochimica Acta, 2004, 68, 4519-4537.	3.9	110
80	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
81	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
82	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
83	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
84	Bacterial reduction of crystalline Fe (super 3+) oxides in single phase suspensions and subsurface materials. American Mineralogist, 1998, 83, 1426-1443.	1.9	324
85	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