Rainer U Meckenstock

List of Publications by Year
in descending order

76 papers	5,014 citations	87888 38 h-index	91884 69 g-index
79 all docs	79 docs citations	79 times ranked	4507 citing authors

#	Article	IF	Citations
1	Compound-specific stable isotope analysis of organic contaminants in natural environments: a critical review of the state of the art, prospects, and future challenges. Analytical and Bioanalytical Chemistry, 2004, 378, 283-300.	3.7	319
2	Anaerobic Naphthalene Degradation by a Sulfate-Reducing Enrichment Culture. Applied and Environmental Microbiology, 2000, 66, 2743-2747.	3.1	223
3	Anaerobic Degradation of Benzene and Polycyclic Aromatic Hydrocarbons. Journal of Molecular Microbiology and Biotechnology, 2016, 26, 92-118.	1.0	218
4	Biodegradation: Updating the Concepts of Control for Microbial Cleanup in Contaminated Aquifers. Environmental Science & Technology, 2015, 49, 7073-7081.	10.0	211
5	The use of stable isotope probing to identify key iron-reducing microorganisms involved in anaerobic benzene degradation. ISME Journal, 2007, 1, 643-653.	9.8	184
6	Depth-Resolved Quantification of Anaerobic Toluene Degraders and Aquifer Microbial Community Patterns in Distinct Redox Zones of a Tar Oil Contaminant Plume. Applied and Environmental Microbiology, 2008, 74, 792-801.	3.1	183
7	Effects of Humic Substances and Quinones at Low Concentrations on Ferrihydrite Reduction by <i>Geobacter metallireducens</i>. Environmental Science & Technology, 2009, 43, 5679-5685.	10.0	180
8	Anaerobic degradation of non-substituted aromatic hydrocarbons. Current Opinion in Biotechnology, 2011, 22, 406-414.	6.6	175
9	Anaerobic degradation of polycyclic aromatic hydrocarbons. FEMS Microbiology Ecology, 2004, 49, 27-36.	2.7	170
10	Identification of enzymes involved in anaerobic benzene degradation by a strictly anaerobic ironâ€reducing enrichment culture. Environmental Microbiology, 2010, 12, 2783-2796.	3.8	152
11	Anaerobic Degradation of 2-Methylnaphthalene by a Sulfate-Reducing Enrichment Culture. Applied and Environmental Microbiology, 2000, 66, 5329-5333.	3.1	140
12	Identical Ring Cleavage Products during Anaerobic Degradation of Naphthalene, 2-Methylnaphthalene, and Tetralin Indicate a New Metabolic Pathway. Applied and Environmental Microbiology, 2002, 68, 852-858.	3.1	134
13	Oil reservoirs, an exceptional habitat for microorganisms. New Biotechnology, 2019, 49, 1-9.	4.4	134
14	Degradation of o -xylene and m -xylene by a novel sulfate-reducer belonging to the genus Desulfotomaculum. Archives of Microbiology, 2004, 181, 407-417.	2.2	119
15	Water droplets in oil are microhabitats for microbial life. Science, 2014, 345, 673-676.	12.6	118
16	Transport of Ferrihydrite Nanoparticles in Saturated Porous Media: Role of Ionic Strength and Flow Rate. Environmental Science & Technology, 2012, 46, 4008-4015.	10.0	114
17	Desulfitobacterium aromaticivorans sp. nov. and Geobacter toluenoxydans sp. nov., iron-reducing bacteria capable of anaerobic degradation of monoaromatic hydrocarbons. International Journal of Systematic and Evolutionary Microbiology, 2010, 60, 686-695.	1.7	113
18	Long-distance electron transfer by cable bacteria in aquifer sediments. ISME Journal, 2016, 10, 2010-2019.	9.8	107

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19	Iron oxide nanoparticles in geomicrobiology: from biogeochemistry to bioremediation. New Biotechnology, 2013, 30, 793-802.	4.4	104
20	DNA-SIP identifies sulfate-reducing <i>Clostridia</i> as important toluene degraders in tar-oil-contaminated aquifer sediment. ISME Journal, 2010, 4, 1314-1325.	9.8	101
21	Combined Genomic and Proteomic Approaches Identify Gene Clusters Involved in Anaerobic 2-Methylnaphthalene Degradation in the Sulfate-Reducing Enrichment Culture N47. Journal of Bacteriology, 2010, 192, 295-306.	2.2	101
22	Nanosized Iron Oxide Colloids Strongly Enhance Microbial Iron Reduction. Applied and Environmental Microbiology, 2010, 76, 184-189.	3.1	96
23	Anaerobic benzene degradation by Gram-positive sulfate-reducing bacteria. FEMS Microbiology Ecology, 2009, 68, 300-311.	2.7	94
24	Identification of naphthalene carboxylase as a prototype for the anaerobic activation of nonâ€substituted aromatic hydrocarbons. Environmental Microbiology, 2012, 14, 2770-2774.	3.8	79
25	Fermentative Spirochaetes mediate necromass recycling in anoxic hydrocarbon-contaminated habitats. ISME Journal, 2018, 12, 2039-2050.	9.8	74
26	Identification of new enzymes potentially involved in anaerobic naphthalene degradation by the sulfate-reducing enrichment culture N47. Archives of Microbiology, 2011, 193, 241-250.	2.2	71
27	Reevaluation of colorimetric iron determination methods commonly used in geomicrobiology. Journal of Microbiological Methods, 2012, 89, 41-48.	1.6	70
28	Genomic insights into the metabolic potential of the polycyclic aromatic hydrocarbon degrading sulfateâ€reducing <i>Deltaproteobacterium</i> N47. Environmental Microbiology, 2011, 13, 1125-1137.	3.8	66
29	Groundwater cable bacteria conserve energy by sulfur disproportionation. ISME Journal, 2020, 14, 623-634.	9.8	64
30	Exploring the Potential of Stable Isotope (Resonance) Raman Microspectroscopy and Surface-Enhanced Raman Scattering for the Analysis of Microorganisms at Single Cell Level. Analytical Chemistry, 2015, 87, 6622-6630.	6.5	59
31	Anaerobic naphthalene degradation by Gram-positive, iron-reducing bacteria. FEMS Microbiology Ecology, 2011, 78, 488-496.	2.7	55
32	Identification and characterization of 2â€naphthoylâ€coenzyme A reductase, the prototype of a novel class of dearomatizing reductases. Molecular Microbiology, 2013, 88, 1032-1039.	2.5	52
33	Dual (C, H) Isotope Fractionation in Anaerobic Low Molecular Weight (Poly)aromatic Hydrocarbon (PAH) Degradation: Potential for Field Studies and Mechanistic Implications. Environmental Science & Technology, 2011, 45, 6947-6953.	10.0	46
34	The use of a solid adsorber resin for enrichment of bacteria with toxic substrates and to identify metabolites: degradation of naphthalene, o-, and m-xylene by sulfate-reducing bacteria. Journal of Microbiological Methods, 2001, 44, 183-191.	1.6	45
35	Anaerobic degradation of phenanthrene by a sulfateâ€reducing enrichment culture. Environmental Microbiology, 2018, 20, 3589-3600.	3.8	45
36	Cable bacteria reduce methane emissions from rice-vegetated soils. Nature Communications, 2020, 11, 1878.	12.8	44

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37	Anaerobic degradation of the aromatic hydrocarbon biphenyl by a sulfate-reducing enrichment culture. FEMS Microbiology Ecology, 2009, 68, 86-93.	2.7	40
38	Enzymatic reactions in anaerobic 2-methylnaphthalene degradation by the sulphate-reducing enrichment culture N 47. FEMS Microbiology Letters, 2004, 240, 99-104.	1.8	38
39	Size- and Composition-Dependent Toxicity of Synthetic and Soil-Derived Fe Oxide Colloids for the Nematode<i>Caenorhabditis elegans</i>. Environmental Science & Technology, 2015, 49, 544-552.	10.0	36
40	<scp>ATP</scp>â€dependent/â€independent enzymatic ring reductions involved in the anaerobic catabolism of naphthalene. Environmental Microbiology, 2013, 15, 1832-1841.	3.8	35
41	Anaerobic degradation of 1-methylnaphthalene by a member of the Thermoanaerobacteraceae contained in an iron-reducing enrichment culture. Biodegradation, 2018, 29, 23-39.	3.0	35
42	Rectinema cohabitans gen. nov., sp. nov., a rod-shaped spirochaete isolated from an anaerobic naphthalene-degrading enrichment culture. International Journal of Systematic and Evolutionary Microbiology, 2017, 67, 1288-1295.	1.7	35
43	The rhizosphere of aquatic plants is a habitat for cable bacteria. FEMS Microbiology Ecology, 2019, 95, .	2.7	33
44	Efficient removal of arsenate from oxic contaminated water by colloidal humic acid-coated goethite: Batch and column experiments. Journal of Cleaner Production, 2018, 189, 510-518.	9.3	32
45	Metabolic reconstruction of the genome of candidate <i>Desulfatiglans</i> TRIP_1 and identification of key candidate enzymes for anaerobic phenanthrene degradation. Environmental Microbiology, 2019, 21, 1267-1286.	3.8	31
46	Fast microbial reduction of ferrihydrite colloids from a soil effluent. Geochimica Et Cosmochimica Acta, 2012, 77, 444-456.	3.9	27
47	Physiology of Geobacter metallireducens under excess and limitation of electron donors. Part II. Mimicking environmental conditions during cultivation in retentostats. Systematic and Applied Microbiology, 2014, 37, 287-295.	2.8	24
48	Selective elimination of bacterial faecal indicators in the Schmutzdecke of slow sand filtration columns. Applied Microbiology and Biotechnology, 2015, 99, 10323-10332.	3.6	24
49	Nanosized Ferrihydrite Colloids Facilitate Microbial Iron Reduction under Flow Conditions. Geomicrobiology Journal, 2010, 27, 123-129.	2.0	23
50	Biological effects of four iron-containing nanoremediation materials on the green alga Chlamydomonas sp.. Ecotoxicology and Environmental Safety, 2018, 154, 36-44.	6.0	23
51	Field-scale demonstration of in situ immobilization of heavy metals by injecting iron oxide nanoparticle adsorption barriers in groundwater. Journal of Contaminant Hydrology, 2021, 237, 103741.	3.3	22
52	Organic Matter from Redoximorphic Soils Accelerates and Sustains Microbial Fe(III) Reduction. Environmental Science & Technology, 2021, 55, 10821-10831.	10.0	22
53	A Large-Scale 3D Study on Transport of Humic Acid-Coated Goethite Nanoparticles for Aquifer Remediation. Water (Switzerland), 2020, 12, 1207.	2.7	20
54	Physiology of Geobacter metallireducens under excess and limitation of electron donors. Part I. Batch cultivation with excess of carbon sources. Systematic and Applied Microbiology, 2014, 37, 277-286.	2.8	19

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55	Citrate influences microbial Fe hydroxide reduction via a dissolutionâ€“disaggregation mechanism. Geochimica Et Cosmochimica Acta, 2014, 139, 434-446.	3.9	19
56	Microbial Hotspots in Lithic Microhabitats Inferred from DNA Fractionation and Metagenomics in the Atacama Desert. Microorganisms, 2021, 9, 1038.	3.6	19
57	Mass Transfer Limitation during Slow Anaerobic Biodegradation of 2-Methylnaphthalene. Environmental Science & Technology, 2019, 53, 9481-9490.	10.0	18
58	Remediation of zinc-contaminated groundwater by iron oxide in situ adsorption barriers â€“ From lab to the field. Science of the Total Environment, 2022, 807, 151066.	8.0	18
59	Identification of naphthalene carboxylase subunits of the sulfate-reducing culture N47. Biodegradation, 2019, 30, 147-160.	3.0	17
60	Monitoring Microbial Mineralization Using Reverse Stable Isotope Labeling Analysis by Mid-Infrared Laser Spectroscopy. Environmental Science & Technology, 2017, 51, 11876-11883.	10.0	16
61	Conversion of <i>cis</i>â€2â€carboxycyclohexylacetylâ€CoA in the downstream pathway of anaerobic naphthalene degradation. Environmental Microbiology, 2017, 19, 2819-2830.	3.8	16
62	Reconstructing metabolic pathways of a member of the genus <i>Pelotomaculum</i> suggesting its potential to oxidize benzene to carbon dioxide with direct reduction of sulfate. FEMS Microbiology Ecology, 2017, 93, fiw254.	2.7	13
63	Marine sediments harbor diverse archaea and bacteria with the potential for anaerobic hydrocarbon degradation via fumarate addition. FEMS Microbiology Ecology, 2021, 97, .	2.7	13
64	Densely Populated Water Droplets in Heavy-Oil Seeps. Applied and Environmental Microbiology, 2020, 86, .	3.1	12
65	Ammonium Removal in Aquaponics Indicates Participation of Comammox Nitrospira. Current Microbiology, 2021, 78, 894-903.	2.2	12
66	Determinants for Substrate Recognition in the Glycyl Radical Enzyme Benzylsuccinate Synthase Revealed by Targeted Mutagenesis. ACS Catalysis, 2021, 11, 3361-3370.	11.2	10
67	Quantification of microbial degradation activities in biological activated carbon filters by reverse stable isotope labelling. AMB Express, 2019, 9, 109.	3.0	9
68	The 5,6,7,8-Tetrahydro-2-Naphthoyl-Coenzyme A Reductase Reaction in the Anaerobic Degradation of Naphthalene and Identification of Downstream Metabolites. Applied and Environmental Microbiology, 2020, 86, .	3.1	8
69	Applying reverse stable isotope labeling analysis by mid-infrared laser spectroscopy to monitor BDOC in recycled wastewater. Science of the Total Environment, 2019, 665, 1064-1072.	8.0	7
70	OUP accepted manuscript. FEMS Microbiology Ecology, 2021, , .	2.7	7
71	Aryl Coenzyme A Ligases, a Subfamily of the Adenylate-Forming Enzyme Superfamily. Applied and Environmental Microbiology, 2021, 87, e0069021.	3.1	5
72	Inhibition of sulfate-reducing bacteria with formate. FEMS Microbiology Ecology, 2022, 98, .	2.7	4

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73	Adaptation of Carbon Source Utilization Patterns of Geobacter metallireducens During Sessile Growth. Frontiers in Microbiology, 2020, 11, 1271.	3.5	3
74	Microbial Degradation Rates of Natural Bitumen. Environmental Science & Technology, 2021, 55, 8700-8708.	10.0	3
75	In Situ Remediation of Arsenic-Contaminated Groundwater by Injecting an Iron Oxide Nanoparticle-Based Adsorption Barrier. Water (Switzerland), 2022, 14, 1998.	2.7	3
76	Model selection for microbial nutrient uptake using a cost-benefit approach. Mathematical Biosciences, 2014, 255, 52-70.	1.9	2