Thomas M Mccollom

List of Publications by Year
in descending order

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57	6,499	117625 34	168389 53
papers	citations	h-index	g-index

60	60	60	4529
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Abiotic Synthesis of Organic Compounds in Deep-Sea Hydrothermal Environments. Chemical Reviews, 2007, 107, 382-401.	47.7	460
2	Geochemical constraints on chemolithoautotrophic metabolism by microorganisms in seafloor hydrothermal systems. Geochimica Et Cosmochimica Acta, 1997, 61, 4375-4391.	3.9	426
3	Thermodynamic constraints on hydrogen generation during serpentinization of ultramafic rocks. Geochimica Et Cosmochimica Acta, 2009, 73, 856-875.	3.9	415
4	Lipid synthesis under hydrothermal conditions by Fischer-Tropsch-type reactions. Origins of Life and Evolution of Biospheres, 1999, 29, 153-166.	1.9	397
5	A reassessment of the potential for reduction of dissolved CO 2 to hydrocarbons during serpentinization of olivine. Geochimica Et Cosmochimica Acta, 2001, 65, 3769-3778.	3.9	371
6	From The Cover: Hydrogen and bioenergetics in the Yellowstone geothermal ecosystem. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 2555-2560.	7.1	358
7	Carbon isotope composition of organic compounds produced by abiotic synthesis under hydrothermal conditions. Earth and Planetary Science Letters, 2006, 243, 74-84.	4.4	358
8	Serpentinization and Its Implications for Life on the Early Earth and Mars. Astrobiology, 2006, 6, 364-376.	3.0	264
9	Experimental investigation of single carbon compounds under hydrothermal conditions. Geochimica Et Cosmochimica Acta, 2006, 70, 446-460.	3.9	228
10	Experimental constraints on the hydrothermal reactivity of organic acids and acid anions: I. Formic acid and formate. Geochimica Et Cosmochimica Acta, 2003, 67, 3625-3644.	3.9	203
11	Compositional controls on hydrogen generation during serpentinization of ultramafic rocks. Lithos, 2013, 178, 55-69.	1.4	202
12	Catabolic and anabolic energy for chemolithoautotrophs in deep-sea hydrothermal systems hosted in different rock types. Geochimica Et Cosmochimica Acta, 2011, 75, 5736-5748.	3.9	199
13	Methanogenesis as a potential source of chemical energy for primary biomass production by autotrophic organisms in hydrothermal systems on Europa. Journal of Geophysical Research, 1999, 104, 30729-30742.	3.3	166
14	Abiotic methane formation during experimental serpentinization of olivine. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 13965-13970.	7.1	161
15	Neutrophilic Iron-Oxidizing Bacteria in the Ocean: Their Habitats, Diversity, and Roles in Mineral Deposition, Rock Alteration, and Biomass Production in the Deep-Sea. Geomicrobiology Journal, 2004, 21, 393-404.	2.0	159
16	Geochemical Constraints on Sources of Metabolic Energy for Chemolithoautotrophy in Ultramafic-Hosted Deep-Sea Hydrothermal Systems. Astrobiology, 2007, 7, 933-950.	3.0	150
17	The influence of carbon source on abiotic organic synthesis and carbon isotope fractionation under hydrothermal conditions. Geochimica Et Cosmochimica Acta, 2010, 74, 2717-2740.	3.9	150
18	Geochemical constraints on primary productivity in submarine hydrothermal vent plumes. Deep-Sea Research Part I: Oceanographic Research Papers, 2000, 47, 85-101.	1.4	143

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19	Temperature trends for reaction rates, hydrogen generation, and partitioning of iron during experimental serpentinization of olivine. Geochimica Et Cosmochimica Acta, 2016, 181, 175-200.	3.9	143
20	A volcanic environment for bedrock diagenesis at Meridiani Planum on Mars. Nature, 2005, 438, 1129-1131.	27.8	142
21	Formation of meteorite hydrocarbons from thermal decomposition of siderite (FeCO3). Geochimica Et Cosmochimica Acta, 2003, 67, 311-317.	3.9	141
22	Fluid-rock interactions in the lower oceanic crust: Thermodynamic models of hydrothermal alteration. Journal of Geophysical Research, 1998, 103, 547-575.	3.3	104
23	Miller-Urey and Beyond: What Have We Learned About Prebiotic Organic Synthesis Reactions in the Past 60 Years?. Annual Review of Earth and Planetary Sciences, 2013, 41, 207-229.	11.0	98
24	Experimental study of the hydrothermal reactivity of organic acids and acid anions: II. Acetic acid, acetate, and valeric acid. Geochimica Et Cosmochimica Acta, 2003, 67, 3645-3664.	3.9	96
25	The energetics of organic synthesis inside and outside the cell. Philosophical Transactions of the Royal Society B: Biological Sciences, 2013, 368, 20120255.	4.0	94
26	From serpentinization to carbonation: New insights from a CO2 injection experiment. Earth and Planetary Science Letters, 2013, 379, 137-145.	4.4	78
27	Experimental constraints on fluid-rock reactions during incipient serpentinization of harzburgite. American Mineralogist, 2015, 100, 991-1002.	1.9	66
28	Methane Dynamics in a Tropical Serpentinizing Environment: The Santa Elena Ophiolite, Costa Rica. Frontiers in Microbiology, 2017, 8, 916.	3.5	64
29	Abiogenic methanogenesis during experimental komatiite serpentinization: Implications for the evolution of the early Precambrian atmosphere. Chemical Geology, 2012, 326-327, 102-112.	3.3	54
30	Investigation of extractable organic compounds in deep-sea hydrothermal vent fluids along the Mid-Atlantic Ridge. Geochimica Et Cosmochimica Acta, 2015, 156, 122-144.	3.9	51
31	Abiotic formation of hydrocarbons and oxygenated compounds during thermal decomposition of iron oxalate. , 1999, 29, 167-186.		48
32	The influence of minerals on decomposition of the n-alkyl-Î±-amino acid norvaline under hydrothermal conditions. Geochimica Et Cosmochimica Acta, 2013, 104, 330-357.	3.9	47
33	Hydrous Pyrolysis of Polycyclic Aromatic Hydrocarbons and Implications for the Origin of PAH in Hydrothermal Petroleum. Energy & Fuels, 1999, 13, 401-410.	5.1	44
34	Generation of Hydrogen and Methane during Experimental Low-Temperature Reaction of Ultramafic Rocks with Water. Astrobiology, 2016, 16, 389-406.	3.0	39
35	Assessment of environmental controls on acidâ€sulfate alteration at active volcanoes in Nicaragua: Applications to relic hydrothermal systems on Mars. Journal of Geophysical Research E: Planets, 2013, 118, 2083-2104.	3.6	35
36	Hydrogen and Abiotic Hydrocarbons: Molecules that Change the World. Elements, 2020, 16, 13-18.	0.5	34

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37	Experimental study of acidâ€sulfate alteration of basalt and implications for sulfate deposits on Mars. Journal of Geophysical Research E: Planets, 2013, 118, 577-614.	3.6	32
38	Detection of iron substitution in natroalunite-natrojarosite solid solutions and potential implications for Mars. American Mineralogist, 2014, 99, 948-964.	1.9	32
39	Hydrogen generation and iron partitioning during experimental serpentinization of an olivineâ€"pyroxene mixture. Geochimica Et Cosmochimica Acta, 2020, 282, 55-75.	3.9	30
40	Thermodynamic constraints on the formation of condensed carbon from serpentinization fluids. Geochimica Et Cosmochimica Acta, 2016, 189, 391-403.	3.9	28
41	Biosignatures and abiotic constraints on early life. Nature, 2006, 444, E18-E18.	27.8	26
42	Observational, Experimental, and Theoretical Constraints on Carbon Cycling in Mid-Ocean Ridge Hydrothermal Systems. Geophysical Monograph Series, 0, , 193-213.	0.1	20
43	Chemical and mineralogical trends during acidâ€sulfate alteration of pyroclastic basalt at Cerro Negro volcano and implications for early Mars. Journal of Geophysical Research E: Planets, 2013, 118, 1719-1751.	3.6	20
44	The effect of pH on rates of reaction and hydrogen generation during serpentinization. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20180428.	3.4	20
45	Geochemical Trends in the Burns Formation Layered Sulfate Deposits at Meridiani Planum, Mars, and Implications for Their Origin. Journal of Geophysical Research E: Planets, 2018, 123, 2393-2429.	3.6	14
46	Microbial Communities in a Serpentinizing Aquifer Are Assembled through Strong Concurrent Dispersal Limitation and Selection. MSystems, 2021, 6, e0030021.	3.8	12
47	Bedrock formation at Meridiani Planum (Reply). Nature, 2006, 443, E2-E2.	27.8	10
48	Geochemical data indicate highly similar sediment compositions for the Grasberg and Burns formations on Meridiani Planum, Mars. Earth and Planetary Science Letters, 2021, 557, 116729.	4.4	10
49	15. Laboratory Simulations of Abiotic Hydrocarbon Formation in Earth's Deep Subsurface. , 2013, , 467-494.		9
50	Jarosite and Alunite in Ancient Terrestrial Sedimentary Rocks: Reinterpreting Martian Depositional and Diagenetic Environmental Conditions. Life, 2018, 8, 32.	2.4	9
51	Hydrogen generation from serpentinization of iron-rich olivine on Mars, icy moons, and other planetary bodies. Icarus, 2022, 372, 114754.	2.5	9
52	Sulfur Cycling and Mass Balance at Meridiani, Mars. Geophysical Research Letters, 2019, 46, 11728-11737.	4.0	7
53	Experimental Constraints on Abiotic Formation of Tubules and Other Proposed Biological Structures in Subsurface Volcanic Glass. Astrobiology, 2019, 19, 53-63.	3.0	6
54	Phosphorous Immobility During Formation of the Layered Sulfate Deposits of the Burns Formation at Meridiani Planum. Journal of Geophysical Research E: Planets, 2018, 123, 1230-1254.	3.6	5

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55	Methane generation during experimental serpentinization of olivine. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, E3334-E3334.	7.1	4
56	What Can Carbon Isotopes Tell Us About Sources of Reduced Carbon in Rocks from the Early Earth?. , 2011, , 291-311.		3
57	The Habitability of Mars: Past and Present. , 2006, , 159-175.		2