Laura M Barge

List of Publications by Year
in descending order

44 papers	1,479 citations	430874 18 h-index	330143 37 g-index
46 all docs	46 docs citations	46 times ranked	1145 citing authors

#	Article	IF	Citations
1	Testing Abiotic Reduction of NAD⁺ Directly Mediated by Iron/Sulfur Minerals. Astrobiology, 2022, 22, 25-34.	3.0	7
2	Enceladus as a potential oasis for life: Science goals and investigations for future explorations. Experimental Astronomy, 2022, 54, 809-847.	3.7	5
3	Planetary Minerals Catalyze Conversion of a Polycyclic Aromatic Hydrocarbon to a Prebiotic Quinone: Implications for Origins of Life. Astrobiology, 2022, 22, 197-209.	3.0	1
4	Chirality in Organic and Mineral Systems: A Review of Reactivity and Alteration Processes Relevant to Prebiotic Chemistry and Life Detection Missions. Symmetry, 2022, 14, 460.	2.2	15
5	Incorporating Microbes into Laboratory-Grown Chimneys for Hydrothermal Microbiology Experiments. ACS Earth and Space Chemistry, 2022, 6, 953-961.	2.7	2
6	Determining the â€œBiosignature Thresholdâ€•for Life Detection on Biotic, Abiotic, or Prebiotic Worlds. Astrobiology, 2022, 22, 481-493.	3.0	16
7	Ironâ€Silicate Chemical Garden Morphology and Silicate Reactivity with Alphaâ€Keto Acids. ChemSystemsChem, 2021, 3, e2000058.	2.6	3
8	Effects of Amino Acids on Phosphate Adsorption Onto Iron (Oxy)hydroxide Minerals under Early Earth Conditions. ACS Earth and Space Chemistry, 2021, 5, 1048-1057.	2.7	9
9	Plausible Emergence and Self Assembly of a Primitive Phospholipid from Reduced Phosphorus on the Primordial Earth. Origins of Life and Evolution of Biospheres, 2021, 51, 185-213.	1.9	6
10	A Proposed Geobiology-Driven Nomenclature for Astrobiological<i>In Situ</i>Observations and Sample Analyses. Astrobiology, 2021, 21, 954-967.	3.0	6
11	Phosphine Generation Pathways on Rocky Planets. Astrobiology, 2021, 21, 1264-1276.	3.0	20
12	Synthesis and Characterization of Mixed-Valent Iron Layered Double Hydroxides (â€œGreen Rustâ€). ACS Earth and Space Chemistry, 2021, 5, 40-54.	2.7	7
13	Effects of Geochemical and Environmental Parameters on Abiotic Organic Chemistry Driven by Iron Hydroxide Minerals. Journal of Geophysical Research E: Planets, 2020, 125, e2020JE006423.	3.6	22
14	Chemical Gardens as Electrochemical Systems: In Situ Characterization of Simulated Prebiotic Hydrothermal Vents by Impedance Spectroscopy. ChemPlusChem, 2020, 85, 2619-2628.	2.8	2
15	Three-Dimensional Analysis of a Simulated Prebiotic Hydrothermal Chimney. ACS Earth and Space Chemistry, 2020, 4, 1663-1669.	2.7	14
16	3D Printed Minerals as Astrobiology Analogs of Hydrothermal Vent Chimneys. Astrobiology, 2020, 20, 1405-1412.	3.0	3
17	CO ₂ reduction driven by a pH gradient. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 22873-22879.	7.1	84
18	Effects of Amino Acids on Iron-Silicate Chemical Garden Precipitation. Langmuir, 2020, 36, 5793-5801.	3.5	20

#	Article	IF	Citations
19	Reactivity of Metabolic Intermediates and Cofactor Stability under Model Early Earth Conditions. Origins of Life and Evolution of Biospheres, 2020, 50, 35-55.	1.9	8
20	Machine Learning Analysis of the Thermodynamic Responses of In Situ Dielectric Spectroscopy Data in Amino Acids and Inorganic Electrolytes. Journal of Physical Chemistry B, 2020, 124, 11491-11500.	2.6	4
21	Self-Assembling Ice Membranes on Europa: Brinicle Properties, Field Examples, and Possible Energetic Systems in Icy Ocean Worlds. Astrobiology, 2019, 19, 685-695.	3.0	21
22	Redox and pH gradients drive amino acid synthesis in iron oxyhydroxide mineral systems. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 4828-4833.	7.1	136
23	Microfluidic Production of Pyrophosphate Catalyzed by Mineral Membranes with Steep pH Gradients. Chemistry - A European Journal, 2019, 25, 4732-4739.	3.3	36
24	An introductory study using impedance spectroscopy technique with polarizable microelectrode for amino acids characterization. Review of Scientific Instruments, 2018, 89, 045108.	1.3	5
25	Considering planetary environments in origin of life studies. Nature Communications, 2018, 9, 5170.	12.8	18
26	Investigating the Kinetics of Montmorillonite Clay-Catalyzed Conversion of Anthracene to 9,10-Anthraquinone in the Context of Prebiotic Chemistry. Origins of Life and Evolution of Biospheres, 2018, 48, 321-330.	1.9	4
27	Geoelectrodes and Fuel Cells for Simulating Hydrothermal Vent Environments. Astrobiology, 2018, 18, 1147-1158.	3.0	5
28	Thermodynamics, Disequilibrium, Evolution: Far-From-Equilibrium Geological and Chemical Considerations for Origin-Of-Life Research. Origins of Life and Evolution of Biospheres, 2017, 47, 39-56.	1.9	54
29	Experimentally Testing Hydrothermal Vent Origin of Life on Enceladus and Other Icy/Ocean Worlds. Astrobiology, 2017, 17, 820-833.	3.0	62
30	The fertile physics of chemical gardens. Physics Today, 2016, 69, 44-51.	0.3	22
31	Self-assembling iron oxyhydroxide/oxide tubular structures: laboratory-grown and field examples from Rio Tinto. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2016, 472, 20160466.	2.1	13
32	Chemical Gardens as Flow-through Reactors Simulating Natural Hydrothermal Systems. Journal of Visualized Experiments, 2015, , .	0.3	17
33	From Chemical Gardens to Fuel Cells: Generation of Electrical Potential and Current Across Selfâ€Assembling Iron Mineral Membranes. Angewandte Chemie - International Edition, 2015, 54, 8184-8187.	13.8	92
34	RNA Oligomerization in Laboratory Analogues of Alkaline Hydrothermal Vent Systems. Astrobiology, 2015, 15, 509-522.	3.0	55
35	From Chemical Gardens to Chemobrionics. Chemical Reviews, 2015, 115, 8652-8703.	47.7	216
36	From Chemical Gardens to Fuel Cells: Generation of Electrical Potential and Current Across Selfâ€Assembling Iron Mineral Membranes. Angewandte Chemie, 2015, 127, 8302-8305.	2.0	22

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37	Pyrophosphate synthesis in iron mineral films and membranes simulating prebiotic submarine hydrothermal precipitates. Geochimica Et Cosmochimica Acta, 2014, 128, 1-12.	3.9	46
38	The Drive to Life on Wet and Icy Worlds. Astrobiology, 2014, 14, 308-343.	3.0	232
39	The Fuel Cell Model of Abiogenesis: A New Approach to Origin-of-Life Simulations. Astrobiology, 2014, 14, 254-270.	3.0	33
40	Bilaterally symmetric facial morphology simulated by diffusion-controlled chemical precipitation in gel. Chemical Physics Letters, 2013, 556, 315-319.	2.6	2
41	Life, the Universe, and Everything: An Education Outreach Proposal to Build a Traveling Astrobiology Exhibit. Astrobiology, 2013, 13, 303-308.	3.0	4
42	Characterization of Ironâ€"Phosphateâ€"Silicate Chemical Garden Structures. Langmuir, 2012, 28, 3714-3721.	3.5	70
43	Organic influences on inorganic patterns of diffusion-controlled precipitation in gels. Chemical Physics Letters, 2010, 493, 340-345.	2.6	8
44	Database on mineral mediated carbon reduction: implications for future research. International Journal of Astrobiology, 0, , 1-18.	1.6	1