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	The Drive to Life on Wet and Icy Worlds. Astrobiology, 2014, 14, 308-343.	3.0	232
2	From Chemical Gardens to Chemobrionics. Chemical Reviews, 2015, 115, 8652-8703.	47.7	216
3	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
4	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
5	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
6	Characterization of Ironâ€"Phosphateâ€"Silicate Chemical Garden Structures. Langmuir, 2012, 28, 3714-3721.	3.5	70
7	Experimentally Testing Hydrothermal Vent Origin of Life on Enceladus and Other Icy/Ocean Worlds. Astrobiology, 2017, 17, 820-833.	3.0	62
8	RNA Oligomerization in Laboratory Analogues of Alkaline Hydrothermal Vent Systems. Astrobiology, 2015, 15, 509-522.	3.0	55
9	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
10	Pyrophosphate synthesis in iron mineral films and membranes simulating prebiotic submarine hydrothermal precipitates. Geochimica Et Cosmochimica Acta, 2014, 128, 1-12.	3.9	46
11	Microfluidic Production of Pyrophosphate Catalyzed by Mineral Membranes with Steep pH Gradients. Chemistry - A European Journal, 2019, 25, 4732-4739.	3.3	36
12	The Fuel Cell Model of Abiogenesis: A New Approach to Origin-of-Life Simulations. Astrobiology, 2014, 14, 254-270.	3.0	33
13	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
14	The fertile physics of chemical gardens. Physics Today, 2016, 69, 44-51.	0.3	22
15	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
16	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
17	Effects of Amino Acids on Iron-Silicate Chemical Garden Precipitation. Langmuir, 2020, 36, 5793-5801.	3.5	20
18	Phosphine Generation Pathways on Rocky Planets. Astrobiology, 2021, 21, 1264-1276.	3.0	20

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19	Considering planetary environments in origin of life studies. Nature Communications, 2018, 9, 5170.	12.8	18
20	Chemical Gardens as Flow-through Reactors Simulating Natural Hydrothermal Systems. Journal of Visualized Experiments, 2015, , .	0.3	17
21	Determining the â€œBiosignature Thresholdâ€•for Life Detection on Biotic, Abiotic, or Prebiotic Worlds. Astrobiology, 2022, 22, 481-493.	3.0	16
22	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
23	Three-Dimensional Analysis of a Simulated Prebiotic Hydrothermal Chimney. ACS Earth and Space Chemistry, 2020, 4, 1663-1669.	2.7	14
24	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
25	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
26	Organic influences on inorganic patterns of diffusion-controlled precipitation in gels. Chemical Physics Letters, 2010, 493, 340-345.	2.6	8
27	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
28	Testing Abiotic Reduction of NAD⁺ Directly Mediated by Iron/Sulfur Minerals. Astrobiology, 2022, 22, 25-34.	3.0	7
29	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
30	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
31	A Proposed Geobiology-Driven Nomenclature for Astrobiological<i>In Situ</i>Observations and Sample Analyses. Astrobiology, 2021, 21, 954-967.	3.0	6
32	An introductory study using impedance spectroscopy technique with polarizable microelectrode for amino acids characterization. Review of Scientific Instruments, 2018, 89, 045108.	1.3	5
33	Geoelectrodes and Fuel Cells for Simulating Hydrothermal Vent Environments. Astrobiology, 2018, 18, 1147-1158.	3.0	5
34	Enceladus as a potential oasis for life: Science goals and investigations for future explorations. Experimental Astronomy, 2022, 54, 809-847.	3.7	5
35	Life, the Universe, and Everything: An Education Outreach Proposal to Build a Traveling Astrobiology Exhibit. Astrobiology, 2013, 13, 303-308.	3.0	4
36	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

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37	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
38	3D Printed Minerals as Astrobiology Analogs of Hydrothermal Vent Chimneys. Astrobiology, 2020, 20, 1405-1412.	3.0	3
39	Ironâ€Silicate Chemical Garden Morphology and Silicate Reactivity with Alphaâ€Keto Acids. ChemSystemsChem, 2021, 3, e2000058.	2.6	3
40	Bilaterally symmetric facial morphology simulated by diffusion-controlled chemical precipitation in gel. Chemical Physics Letters, 2013, 556, 315-319.	2.6	2
41	Chemical Gardens as Electrochemical Systems: In Situ Characterization of Simulated Prebiotic Hydrothermal Vents by Impedance Spectroscopy. ChemPlusChem, 2020, 85, 2619-2628.	2.8	2
42	Incorporating Microbes into Laboratory-Grown Chimneys for Hydrothermal Microbiology Experiments. ACS Earth and Space Chemistry, 2022, 6, 953-961.	2.7	2
43	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
44	Database on mineral mediated carbon reduction: implications for future research. International Journal of Astrobiology, 0, , 1-18.	1.6	1