Alex L Sessions

List of Publications by Year
in descending order

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111 papers	9,475 citations	31902 53 h-index	38300 95 g-index
116 all docs	116 docs citations	116 times ranked	7540 citing authors

#	Article	IF	Citations
1	Molecular Paleohydrology: Interpreting the Hydrogen-Isotopic Composition of Lipid Biomarkers from Photosynthesizing Organisms. Annual Review of Earth and Planetary Sciences, 2012, 40, 221-249.	4.6	748
2	A Stratified Redox Model for the Ediacaran Ocean. Science, 2010, 328, 80-83.	6.0	520
3	Fractionation of hydrogen isotopes in lipid biosynthesis. Organic Geochemistry, 1999, 30, 1193-1200.	0.9	512
4	Compound-specific D/H ratios of lipid biomarkers from sediments as a proxy for environmental and climatic conditions. Geochimica Et Cosmochimica Acta, 2001, 65, 213-222.	1.6	336
5	Controls on the D/H ratios of plant leaf waxes in an arid ecosystem. Geochimica Et Cosmochimica Acta, 2010, 74, 2128-2141.	1.6	258
6	Biosynthesis of 2-methylbacteriohopanepolyols by an anoxygenic phototroph. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 15099-15104.	3.3	251
7	HYDROGEN ISOTOPIC (D/H) COMPOSITION OF ORGANIC MATTER DURING DIAGENESIS AND THERMAL MATURATION. Annual Review of Earth and Planetary Sciences, 2006, 34, 501-533.	4.6	246
8	Sulfate was a trace constituent of Archean seawater. Science, 2014, 346, 735-739.	6.0	246
9	Formation temperatures of thermogenic and biogenic methane. Science, 2014, 344, 1500-1503.	6.0	229
10	Isotope-ratio detection for gas chromatography. Journal of Separation Science, 2006, 29, 1946-1961.	1.3	222
11	Isotopic exchange of carbon-bound hydrogen over geologic timescales 1 1Associate editor: J. Horita. Geochimica Et Cosmochimica Acta, 2004, 68, 1545-1559.	1.6	213
12	Identification of a methylase required for 2-methylhopanoid production and implications for the interpretation of sedimentary hopanes. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 8537-8542.	3.3	191
13	Hopanoids Play a Role in Membrane Integrity and pH Homeostasis in Rhodopseudomonas palustris TIE-1. Journal of Bacteriology, 2009, 191, 6145-6156.	1.0	189
14	The Continuing Puzzle of the Great Oxidation Event. Current Biology, 2009, 19, R567-R574.	1.8	182
15	Large D/H variations in bacterial lipids reflect central metabolic pathways. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 12580-12586.	3.3	176
16	Seasonal changes in D/H fractionation accompanying lipid biosynthesis in Spartina alterniflora. Geochimica Et Cosmochimica Acta, 2006, 70, 2153-2162.	1.6	143
17	Distinguishing and understanding thermogenic and biogenic sources of methane using multiply substituted isotopologues. Geochimica Et Cosmochimica Acta, 2015, 161, 219-247.	1.6	141
18	Geochemistry and geobiology of a present-day serpentinization site in California: The Cedars. Geochimica Et Cosmochimica Acta, 2013, 109, 222-240.	1.6	136

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19	Sulfur isotopes of organic matter preserved in 3.45-billion-year-old stromatolites reveal microbial metabolism. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 15146-15151.	3.3	131
20	MC-ICP-MS measurement of Î´34S and âˆ†33S in small amounts of dissolved sulfate. Chemical Geology, 2013, 345, 50-61.	1.4	129
21	Combined 13Câ€“D and Dâ€“D clumping in methane: Methods and preliminary results. Geochimica Et Cosmochimica Acta, 2014, 126, 169-191.	1.6	129
22	Organic Reference Materials for Hydrogen, Carbon, and Nitrogen Stable Isotope-Ratio Measurements: Caffeines, n-Alkanes, Fatty Acid Methyl Esters, Glycines, <scp>L</scp>-Valines, Polyethylenes, and Oils. Analytical Chemistry, 2016, 88, 4294-4302.	3.2	126
23	Identification of Novel Methane-, Ethane-, and Propane-Oxidizing Bacteria at Marine Hydrocarbon Seeps by Stable Isotope Probing. Applied and Environmental Microbiology, 2010, 76, 6412-6422.	1.4	124
24	Biomarker Evidence for Photosynthesis During Neoproterozoic Glaciation. Science, 2005, 310, 471-474.	6.0	119
25	Determination of the H3Factor in Hydrogen Isotope Ratio Monitoring Mass Spectrometry. Analytical Chemistry, 2001, 73, 200-207.	3.2	107
26	Compound-Specific Î´³⁴S Analysis of Volatile Organics by Coupled GC/Multicollector-ICPMS. Analytical Chemistry, 2009, 81, 9027-9034.	3.2	105
27	Trace incorporation of heavy water reveals slow and heterogeneous pathogen growth rates in cystic fibrosis sputum. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E110-6.	3.3	104
28	Orbital- and millennial-scale changes in the hydrologic cycle and vegetation in the western African Sahel: insights from individual plant wax Î´D and Î´13C. Quaternary Science Reviews, 2010, 29, 2996-3005.	1.4	103
29	Methane clumped isotopes: Progress and potential for a new isotopic tracer. Organic Geochemistry, 2017, 113, 262-282.	0.9	100
30	Correction of H3+Contributions in Hydrogen Isotope Ratio Monitoring Mass Spectrometry. Analytical Chemistry, 2001, 73, 192-199.	3.2	99
31	Factors controlling the deuterium contents of sedimentary hydrocarbons. Organic Geochemistry, 2016, 96, 43-64.	0.9	99
32	Route to Renewable PET: Reaction Pathways and Energetics of Dielsâ€“Alder and Dehydrative Aromatization Reactions Between Ethylene and Biomass-Derived Furans Catalyzed by Lewis Acid Molecular Sieves. ACS Catalysis, 2015, 5, 5904-5913.	5.5	92
33	The sulfur-isotopic compositions of benzothiophenes and dibenzothiophenes as a proxy for thermochemical sulfate reduction. Geochimica Et Cosmochimica Acta, 2012, 84, 152-164.	1.6	87
34	Calculation of hydrogen isotopic fractionations in biogeochemical systems. Geochimica Et Cosmochimica Acta, 2005, 69, 593-597.	1.6	85
35	Diverse capacity for 2-methylhopanoid production correlates with a specific ecological niche. ISME Journal, 2014, 8, 675-684.	4.4	85
36	Hydrogen isotope fractionation in lipids of the methane-oxidizing bacterium Methylococcus capsulatus. Geochimica Et Cosmochimica Acta, 2002, 66, 3955-3969.	1.6	83

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37	D/H ratios in terrestrially sourced petroleum systems. Organic Geochemistry, 2004, 35, 1169-1195.	0.9	83
38	Lipid biomarkers in ooids from different locations and ages: evidence for a common bacterial flora. Geobiology, 2013, 11, 420-436.	1.1	83
39	A high-resolution gas-source isotope ratio mass spectrometer. International Journal of Mass Spectrometry, 2013, 335, 45-56.	0.7	83
40	Simplified batch equilibration for D/H determination of nonâ€exchangeable hydrogen in solid organic material. Rapid Communications in Mass Spectrometry, 2009, 23, 949-956.	0.7	81
41	Hydrogen-isotopic variability in lipids from Santa Barbara Basin sediments. Geochimica Et Cosmochimica Acta, 2009, 73, 4803-4823.	1.6	73
42	Moving-Wire Device for Carbon Isotopic Analyses of Nanogram Quantities of Nonvolatile Organic Carbon. Analytical Chemistry, 2005, 77, 6519-6527.	3.2	71
43	Sedimentary pyrite Î´34S differs from porewater sulfide in Santa Barbara Basin: Proposed role of organic sulfur. Geochimica Et Cosmochimica Acta, 2016, 186, 120-134.	1.6	71
44	Neoarchean carbonateâ€“associated sulfate records positive Î” ³³ S anomalies. Science, 2014, 346, 739-741.	6.0	70
45	Rapid organic matter sulfurization in sinking particles from the Cariaco Basin water column. Geochimica Et Cosmochimica Acta, 2016, 190, 175-190.	1.6	70
46	Hydrogen-isotopic variability in fatty acids from Yellowstone National Park hot spring microbial communities. Geochimica Et Cosmochimica Acta, 2011, 75, 4830-4845.	1.6	66
47	Study of thermochemical sulfate reduction mechanism using compound specific sulfur isotope analysis. Geochimica Et Cosmochimica Acta, 2016, 188, 73-92.	1.6	64
48	The RND-family transporter, HpnN, is required for hopanoid localization to the outer membrane of Rhodopseudomonas palustris TIE-1. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, E1045-51.	3.3	58
49	Identification and quantification of polyfunctionalized hopanoids by high temperature gas chromatographyâ€“mass spectrometry. Organic Geochemistry, 2013, 56, 120-130.	0.9	57
50	Diverse origins of Arctic and Subarctic methane point source emissions identified with multiply-substituted isotopologues. Geochimica Et Cosmochimica Acta, 2016, 188, 163-188.	1.6	57
51	Analysis of the site-specific carbon isotope composition of propane by gas source isotope ratio mass spectrometer. Geochimica Et Cosmochimica Acta, 2016, 188, 58-72.	1.6	57
52	Equilibrium 2H/1H fractionations in organic molecules. II: Linear alkanes, alkenes, ketones, carboxylic acids, esters, alcohols and ethers. Geochimica Et Cosmochimica Acta, 2009, 73, 7076-7086.	1.6	56
53	Experimental determination of carbonate-associated sulfate Î´³⁴S in planktonic foraminifera shells. Geochemistry, Geophysics, Geosystems, 2014, 15, 1452-1461.	1.0	56
54	Hydroclimate of the western Indo-Pacific Warm Pool during the past 24,000 years. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 9402-9406.	3.3	55

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55	Sulfur isotopic composition of individual organic compounds from Cariaco Basin sediments. Organic Geochemistry, 2015, 80, 53-59.	0.9	54
56	Hydrogen isotope fractionation during H2/CO2 acetogenesis: hydrogen utilization efficiency and the origin of lipid-bound hydrogen. Geobiology, 2004, 2, 179-188.	1.1	51
57	Cenozoic record of Î´34S in foraminiferal calcite implies an early Eocene shift to deep-ocean sulfide burial. Nature Geoscience, 2018, 11, 761-765.	5.4	50
58	Memory Effects in Compound-Specific D/H Analysis by Gas Chromatography/Pyrolysis/Isotope-Ratio Mass Spectrometry. Analytical Chemistry, 2008, 80, 9162-9170.	3.2	49
59	The stable hydrogen isotopic composition of sedimentary plant waxes as quantitative proxy for rainfall in the West African Sahel. Geochimica Et Cosmochimica Acta, 2016, 184, 55-70.	1.6	46
60	Hydrogen isotopic fractionation in lipid biosynthesis by H2-consuming Desulfobacterium autotrophicum. Geochimica Et Cosmochimica Acta, 2009, 73, 2744-2757.	1.6	45
61	Position-specific 13C distributions within propane from experiments and natural gas samples. Geochimica Et Cosmochimica Acta, 2018, 220, 110-124.	1.6	44
62	Quantifying Microbial Utilization of Petroleum Hydrocarbons in Salt Marsh Sediments by Using the 13 C Content of Bacterial rRNA. Applied and Environmental Microbiology, 2008, 74, 1157-1166.	1.4	42
63	Prediction of equilibrium distributions of isotopologues for methane, ethane and propane using density functional theory. Geochimica Et Cosmochimica Acta, 2016, 190, 1-12.	1.6	42
64	Crassulacean acid metabolism influences D/H ratio of leaf wax in succulent plants. Organic Geochemistry, 2010, 41, 1269-1276.	0.9	41
65	Probing the Subcellular Localization of Hopanoid Lipids in Bacteria Using NanoSIMS. PLoS ONE, 2014, 9, e84455.	1.1	41
66	Equilibrium 2H/1H fractionations in organic molecules: I. Experimental calibration of ab initio calculations. Geochimica Et Cosmochimica Acta, 2009, 73, 7060-7075.	1.6	38
67	Carbon isotopes and lipid biomarkers from organicâ€rich facies of the Shuram Formation, Sultanate of Oman. Geobiology, 2013, 11, 406-419.	1.1	38
68	Carbon-isotopic analysis of microbial cells sorted by flow cytometry. Geobiology, 2007, 5, 85-95.	1.1	36
69	Tracing iron-fueled microbial carbon production within the hydrothermal plume at the Loihi seamount. Geochimica Et Cosmochimica Acta, 2011, 75, 5526-5539.	1.6	36
70	D/H ratios of fatty acids from marine particulate organic matter in the California Borderland Basins. Organic Geochemistry, 2008, 39, 485-500.	0.9	33
71	Role of APS reductase in biogeochemical sulfur isotope fractionation. Nature Communications, 2019, 10, 44.	5.8	33
72	Planning Considerations Related to the Organic Contamination of Martian Samples and Implications for the Mars 2020 Rover. Astrobiology, 2014, 14, 969-1027.	1.5	31

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73	Metabolic associations with archaea drive shifts in hydrogen isotope fractionation in sulfateâ€reducing bacterial lipids in cocultures and methane seeps. Geobiology, 2015, 13, 462-477.	1.1	31
74	Methoxyl stable isotopic constraints on the origins and limits of coal-bed methane. Science, 2021, 374, 894-897.	6.0	31
75	Fractionation of Hydrogen Isotopes by Sulfate- and Nitrate-Reducing Bacteria. Frontiers in Microbiology, 2016, 7, 1166.	1.5	30
76	Stable Isotope Analysis of Intact Oxyanions Using Electrospray Quadrupole-Orbitrap Mass Spectrometry. Analytical Chemistry, 2020, 92, 3077-3085.	3.2	30
77	Clumped isotope effects of thermogenic methane formation: Insights from pyrolysis of hydrocarbons. Geochimica Et Cosmochimica Acta, 2021, 303, 159-183.	1.6	29
78	Measuring the in situ carbon isotopic composition of distinct marine plankton populations sorted by flow cytometry. Limnology and Oceanography: Methods, 2016, 14, 87-99.	1.0	27
79	Quantification and isotopic analysis of intracellular sulfur metabolites in the dissimilatory sulfate reduction pathway. Geochimica Et Cosmochimica Acta, 2017, 206, 57-72.	1.6	27
80	Position-specific hydrogen isotope equilibrium in propane. Geochimica Et Cosmochimica Acta, 2018, 238, 193-207.	1.6	27
81	² H/ ¹ H variation in microbial lipids is controlled by NADPH metabolism. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 12173-12182.	3.3	27
82	Clumped Isotopes Link Older Carbon Substrates With Slower Rates of Methanogenesis in Northern Lakes. Geophysical Research Letters, 2020, 47, e2019GL086756.	1.5	27
83	Room-level ventilation in schools and universities. Atmospheric Environment: X, 2022, 13, 100152.	0.8	21
84	Lipid remodeling in Rhodopseudomonas palustris <scp>TIE</scp>â€1 upon loss of hopanoids and hopanoid methylation. Geobiology, 2015, 13, 443-453.	1.1	20
85	Plant-wax D/H ratios in the southern European Alps record multiple aspects of climate variability. Quaternary Science Reviews, 2016, 148, 176-191.	1.4	20
86	Paleoecology and paleoceanography of the Athel silicilyte, Ediacaranâ€“Cambrian boundary, Sultanate of Oman. Geobiology, 2017, 15, 401-426.	1.1	20
87	A gas ion source for continuous-flow AMS. Nuclear Instruments & Methods in Physics Research B, 2004, 223-224, 149-154.	0.6	19
88	D/H variation in terrestrial lipids from Santa Barbara Basin over the past 1400years: A preliminary assessment of paleoclimatic relevance. Organic Geochemistry, 2011, 42, 15-24.	0.9	19
89	Phylogenetically specific separation of rRNA from prokaryotes for isotopic analysis. Marine Chemistry, 2004, 92, 295-306.	0.9	18
90	Rapid analysis of13C in plant-waxn-alkanes for reconstruction of terrestrial vegetation signals from aquatic sediments. Geochemistry, Geophysics, Geosystems, 2004, 5, n/a-n/a.	1.0	18

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91	Raman spectroscopy and biomarker analysis reveal multiple carbon inputs to a Precambrian glacial sediment. Organic Geochemistry, 2009, 40, 1115-1123.	0.9	18
92	Equilibrium 2H/1H fractionation in organic molecules: III. Cyclic ketones and hydrocarbons. Geochimica Et Cosmochimica Acta, 2013, 107, 82-95.	1.6	17
93	Comparison of three methods for the methylation of aliphatic and aromatic compounds. Rapid Communications in Mass Spectrometry, 2017, 31, 1633-1640.	0.7	17
94	Carbon isotope evidence for the substrates and mechanisms of prebiotic synthesis in the early solar system. Geochimica Et Cosmochimica Acta, 2021, 292, 188-202.	1.6	16
95	Microbial succession and dynamics in meromictic Mono Lake, California. Geobiology, 2021, 19, 376-393.	1.1	15
96	Precise determination of equilibrium sulfur isotope effects during volatilization and deprotonation of dissolved H2S. Geochimica Et Cosmochimica Acta, 2019, 248, 242-251.	1.6	14
97	Position-specific distribution of hydrogen isotopes in natural propane: Effects of thermal cracking, equilibration and biodegradation. Geochimica Et Cosmochimica Acta, 2020, 290, 235-256.	1.6	14
98	Practical considerations for amino acid isotope analysis. Organic Geochemistry, 2022, 164, 104345.	0.9	14
99	Refining the Application of Microbial Lipids as Tracers of Staphylococcus aureus Growth Rates in Cystic Fibrosis Sputum. Journal of Bacteriology, 2018, 200, .	1.0	13
100	Towards measuring growth rates of pathogens during infections by D₂Oâ€labeling lipidomics. Rapid Communications in Mass Spectrometry, 2018, 32, 2129-2140.	0.7	13
101	Methods and limitations of stable isotope measurements via direct elution of chromatographic peaks using gas chromotography-Orbitrap mass spectrometry. International Journal of Mass Spectrometry, 2022, 477, 116848.	0.7	12
102	Rapid quantification and isotopic analysis of dissolved sulfur species. Rapid Communications in Mass Spectrometry, 2017, 31, 791-803.	0.7	11
103	Sulfur isotope analysis of cysteine and methionine via preparatory liquid chromatography and elemental analyzer isotope ratio mass spectrometry. Rapid Communications in Mass Spectrometry, 2021, 35, e9007.	0.7	10
104	Simultaneous, High-Precision Measurements of Î´²H and Î´¹³C in Nanomole Quantities of Acetate Using Electrospray Ionization-Quadrupole-Orbitrap Mass Spectrometry. Analytical Chemistry, 2022, 94, 1092-1100.	3.2	9
105	Minimal Influence of [NiFe] Hydrogenase on Hydrogen Isotope Fractionation in H2-Oxidizing Cupriavidus necator. Frontiers in Microbiology, 2017, 8, 1886.	1.5	6
106	Hydrologic Change in New Zealand During the Last Deglaciation Linked to Reorganization of the Southern Hemisphere Westerly Winds. Paleoceanography and Paleoclimatology, 2019, 34, 2158-2170.	1.3	6
107	Santa Barbara Basin Flood Layers: Impact on Sediment Diagenesis. , 2019, , 233-240.		4
108	Deposition of sulfate aerosols with positive Î”33S in the Neoarchean. Geochimica Et Cosmochimica Acta, 2020, 285, 1-20.	1.6	4

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109	2H/1H ratio of hopanes, tricyclic and tetracyclic terpanes in oils and source rocks from the Potiguar Basin, Brazil. Organic Geochemistry, 2012, 51, 13-16.	0.9	3
110	Duelling narratives of chironomids and pollen explain climate enigmas during The Last Glacial-Interglacial transition in North Island New Zealand. Quaternary Science Reviews, 2021, 263, 106997.	1.4	2
111	John M. Hayes 1940â€“2017. Father of isotopes in modern and ancient biogeochemical processes, biosynthetic carbon and hydrogen isotope fractionation and compound specific isotope analytical techniques. Organic Geochemistry, 2017, 108, 113-116.	0.9	1