Charles H Langmuir

List of Publications by Citations

98 papers	15,978 citations	55 h-index	107 g-index
107 ext. papers	17,562 ext. citations	14.4 avg, IF	6.6 L-index

#	Paper	IF	Citations
98	The chemical composition of subducting sediment and its consequences for the crust and mantle. *Chemical Geology*, **1998**, 145, 325-394	4.2	2583
97	Global correlations of ocean ridge basalt chemistry with axial depth and crustal thickness. *Journal of Geophysical Research*, **1987**, 92, 8089		1199
96	The mean composition of ocean ridge basalts. *Geochemistry, Geophysics, Geosystems*, **2013**, 14, 489-518	3.6	798
95	A general mixing equation with applications to Icelandic basalts. *Earth and Planetary Science Letters* , **1978**, 37, 380-392	5.3	796
94	Vapour undersaturation in primitive mid-ocean-ridge basalt and the volatile content of Earth's upper mantle. *Nature*, **2002**, 419, 451-5	50.4	590
93	Tracing trace elements from sediment input to volcanic output at subduction zones. *Nature*, **1993**, 362, 739-743	50.4	585
92	Oxidation states of mid-ocean ridge basalt glasses. *Earth and Planetary Science Letters*, **1986**, 79, 397-411	5.3	390
91	Recycled dehydrated lithosphere observed in plume-influenced mid-ocean-ridge basalt. *Nature*, **2002**, 420, 385-9	50.4	385
90	An evaluation of the global variations in the major element chemistry of arc basalts. *Earth and Planetary Science Letters*, **1988**, 90, 349-370	5.3	369
89	Petrological and tectonic segmentation of the East Pacific Rise, 5°30?14°30? N. *Nature*, **1986**, 322, 422-429	50.4	365
88	Petrological Systematics of Mid-Ocean Ridge Basalts: Constraints on Melt Generation Beneath Ocean Ridges. *Geophysical Monograph Series*, **2013**, 183-280	1.1	342
87	Central role of detachment faults in accretion of slow-spreading oceanic lithosphere. *Nature*, **2008**, 455, 790-4	50.4	318
86	Magmatic and amagmatic seafloor generation at the ultraslow-spreading Gakkel ridge, Arctic Ocean. *Nature*, **2003**, 423, 956-61	50.4	313
85	Geochemical consequences of in situ crystallization. *Nature*, **1989**, 340, 199-205	50.4	312
84	Cerium/lead and lead isotope ratios in arc magmas and the enrichment of lead in the continents. *Nature*, **1994**, 368, 514-520	50.4	300
83	The importance of water to oceanic mantle melting regimes. *Nature*, **2003**, 421, 815-20	50.4	287
82	Origin of enriched ocean ridge basalts and implications for mantle dynamics. *Earth and Planetary Science Letters*, **2004**, 226, 347-366	5.3	277

81	A hydrous melting and fractionation model for mid-ocean ridge basalts: Application to the Mid-Atlantic Ridge near the Azores. *Geochemistry, Geophysics, Geosystems*, **2004**, 5, n/a-n/a	3.6	233
80	Modelling of major elements in mantle-melt systems using trace element approaches. *Geochimica Et Cosmochimica Acta*, **1978**, 42, 725-741	5.5	212
79	The systematics of lithium abundances in young volcanic rocks. *Geochimica Et Cosmochimica Acta*, **1987**, 51, 1727-1741	5.5	210
78	The systematics of boron abundances in young volcanic rocks. *Geochimica Et Cosmochimica Acta*, **1993**, 57, 1489-1498	5.5	207
77	Feedback between deglaciation, volcanism, and atmospheric CO2. *Earth and Planetary Science Letters*, **2009**, 286, 479-491	5.3	204
76	Small-scale spatial and temporal variations in mid-ocean ridge crest magmatic processes. *Geology*, **1994**, 22, 375-379	5	177
75	Discovery of abundant hydrothermal venting on the ultraslow-spreading Gakkel ridge in the Arctic Ocean. *Nature*, **2003**, 421, 252-6	50.4	171
74	Petrogenesis of Basalt Glasses from the Tamayo Region, East Pacific Rise. *Journal of Petrology*, **1984**, 25, 213-254	3.9	167
73	The origin of abyssal peridotites: a new perspective. *Earth and Planetary Science Letters*, **1997**, 152, 251-265	5.5	162
72	Isotope evidence of a mantle convection boundary at the Australian-Antarctic Discordance. *Nature*, **1988**, 333, 623-629	50.4	158
71	Lithium isotopes in global mid-ocean ridge basalts. *Geochimica Et Cosmochimica Acta*, **2008**, 72, 1626-1637	5.5	152
70	The age and distribution of mantle heterogeneity along the Mid-Atlantic Ridge (31–41°N). *Earth and Planetary Science Letters*, **1999**, 170, 269-286	5.3	148
69	Calculation of phase equilibrium in mineral-melt systems. *Computers and Geosciences*, **1990**, 16, 1-19	4.5	136
68	The geochemistry of oceanic basalts in the vicinity of transform faults: Observations and implications. *Earth and Planetary Science Letters*, **1984**, 69, 107-127	5.3	136
67	Geochemistry of basalts from the southeast Indian Ridge, 115°E–138°E. *Journal of Geophysical Research*, **1991**, 96, 2089		129
66	Adakitic Dacites Formed by Intracrustal Crystal Fractionation of Water-rich Parent Magmas at Nevado de Longavı Volcano (36 2°S; Andean Southern Volcanic Zone, Central Chile). *Journal of Petrology*, **2007**, 48, 2033-2061	3.9	128
65	Geophysical and geochemical evidence for deep temperature variations beneath mid-ocean ridges. *Science*, **2014**, 344, 80-3	33.3	125
64	Sr-Nd-Pb-Hf Isotope Results from ODP Leg 187: Evidence for Mantle Dynamics of the Australian-Antarctic Discordance and Origin of the Indian MORB Source. *Geochemistry, Geophysics, Geosystems*, **2002**, 3, 1-35	3.6	119

63	Climate change and the integrity of science. *Science*, **2010**, 328, 689-90	33.3	116
62	Three-component isotopic heterogeneity near the Oceanographer transform, Mid-Atlantic Ridge. *Nature*, **1987**, 325, 217-223	50.4	113
61	Trace element mineral/melt partitioning for basaltic and basaltic andesitic melts: An experimental and laser ICP-MS study with application to the oxidation state of mantle source regions. *Earth and Planetary Science Letters*, **2014**, 392, 265-278	5.3	110
60	Spatial and temporal variability in the geochemistry of basalts from the East Pacific Rise. *Nature*, **1992**, 359, 493-499	50.4	109
59	Hydrothermal exploration with the Autonomous Benthic Explorer. *Deep-Sea Research Part I: Oceanographic Research Papers*, **2008**, 55, 203-219	2.5	107
58	Cadmium, indium, tin, tellurium, and sulfur in oceanic basalts: Implications for chalcophile element fractionation in the Earth. *Journal of Geophysical Research*, **2000**, 105, 18927-18948		107
57	Petrology and geochemistry of lavas from the Sumisu and Torishima backarc rifts. *Earth and Planetary Science Letters*, **1990**, 100, 161-178	5.3	103
56	Constraints on mantle melting at mid-ocean ridges from global 238U230Th disequilibrium data. *Nature*, **1996**, 384, 231-235	50.4	102
55	The boron systematics of intraplate lavas: Implications for crust and mantle evolution. *Geochimica Et Cosmochimica Acta*, **1996**, 60, 415-422	5.5	93
54	The global chemical systematics of arc front stratovolcanoes: Evaluating the role of crustal processes. *Earth and Planetary Science Letters*, **2015**, 422, 182-193	5.3	88
53	Glacial cycles drive variations in the production of oceanic crust. *Science*, **2015**, 347, 1237-40	33.3	84
52	Origin of a Southern HemisphereSgeochemical signature in the Arctic upper mantle. *Nature*, **2008**, 453, 89-93	50.4	83
51	Beryllium systematics in young volcanic rocks: Implications for 10Be. *Geochimica Et Cosmochimica Acta*, **1988**, 52, 237-244	5.5	83
50	The Global Systematics of Ocean Ridge Basalts and their Origin. *Journal of Petrology*, **2014**, 55, 1051-1082	3.9	77
49	Mantle source variations beneath the Eastern Lau Spreading Center and the nature of subduction components in the Lau basinTonga arc system. *Geochemistry, Geophysics, Geosystems*, **2009**, 10, n/a-n/a	3.6	74
48	What processes control the chemical compositions of arc front stratovolcanoes?. *Geochemistry, Geophysics, Geosystems*, **2015**, 16, 1865-1893	3.6	65
47	Oxygen isotope evidence for the origin of enriched mantle beneath the mid-Atlantic ridge. *Earth and Planetary Science Letters*, **2004**, 220, 297-316	5.3	59
46	Origins of chemical diversity of back-arc basin basalts: A segment-scale study of the Eastern Lau Spreading Center. *Journal of Geophysical Research*, **2009**, 114,		58

45	Petrological systematics of the Mid-Atlantic Ridge south of Kane: Implications for ocean crust formation. *Journal of Geophysical Research*, **1997**, 102, 14915-14946		58
44	Parental arc magma compositions dominantly controlled by mantle-wedge thermal structure. *Nature Geoscience*, **2016**, 9, 772-776	18.3	56
43	Lithium isotopes in Guatemalan and Franciscan HP□LT rocks: Insights into the role of sediment-derived fluids during subduction. *Geochimica Et Cosmochimica Acta*, **2010**, 74, 3621-3641	5.5	54
42	Hf isotopic characteristics of the Tarim Permian large igneous province rocks of NW China: Implication for the magmatic source and evolution. *Journal of Asian Earth Sciences*, **2012**, 49, 191-202	2.8	52
41	Zircon U□Pb geochronology and geochemistry of two episodes of granitoids from the northwestern Zhejiang Province, SE China: Implication for magmatic evolution and tectonic transition. *Lithos*, **2013**, 179, 334-352	2.9	49
40	Light Stable Isotopic Compositions of Enriched Mantle Sources: Resolving the Dehydration Paradox. *Geochemistry, Geophysics, Geosystems*, **2017**, 18, 3801-3839	3.6	49
39	Platinum-group elements and geochemical characteristics of the Permian continental flood basalts in the Tarim Basin, northwest China: Implications for the evolution of the Tarim Large Igneous Province. *Chemical Geology*, **2012**, 328, 278-289	4.2	45
38	Biology of the Lucky Strike hydrothermal field. *Deep-Sea Research Part I: Oceanographic Research Papers*, **1996**, 43, 1509-1529	2.5	44
37	Constraints on melting processes and plume-ridge interaction from comprehensive study of the FAMOUS and North Famous segments, Mid-Atlantic Ridge. *Earth and Planetary Science Letters*, **2013**, 365, 209-220	5.3	43
36	Melting and Crustal Processes at the FAMOUS Segment (Mid-Atlantic Ridge): New Insights from Olivine-hosted Melt Inclusions from Multiple Samples. *Journal of Petrology*, **2012**, 53, 665-698	3.9	43
35	The magma plumbing system of Bezymianny Volcano: Insights from a 54year time series of trace element whole-rock geochemistry and amphibole compositions. *Journal of Volcanology and Geothermal Research*, **2013**, 263, 108-121	2.8	42
34	The importance of mantle wedge heterogeneity to subduction zone magmatism and the origin of EM1. *Earth and Planetary Science Letters*, **2017**, 472, 216-228	5.3	41
33	The Processes of Melt Differentiation in Arc Volcanic Rocks: Insights from OIB-type Arc Magmas in the Central Mexican Volcanic Belt. *Journal of Petrology*, **2013**, 54, 665-701	3.9	38
32	Enriched basalts at segment centers: The Lucky Strike (37°17?N) and Menez Gwen (37°50?N) segments of the Mid-Atlantic Ridge. *Geochemistry, Geophysics, Geosystems*, **2011**, 12, n/a-n/a	3.6	38
31	Carbon Fluxes and Primary Magma CO2 Contents Along the Global Mid-Ocean Ridge System. *Geochemistry, Geophysics, Geosystems*, **2019**, 20, 1387-1424	3.6	36
30	Hafnium isotope evidence for slab melt contributions in the Central Mexican Volcanic Belt and implications for slab melting in hot and cold slab arcs. *Chemical Geology*, **2014**, 377, 45-55	4.2	32
29	Delayed CO2 emissions from mid-ocean ridge volcanism as a possible cause of late-Pleistocene glacial cycles. *Earth and Planetary Science Letters*, **2017**, 457, 238-249	5.3	31
28	The significance of unusual zoning in olivines from FAMOUS area basalt 527-1-1. *Contributions To Mineralogy and Petrology*, **1986**, 93, 1-8	3.5	31

27	Hydrothermal iron flux variability following rapid sea level changes. *Geophysical Research Letters*, **2016**, 43, 3848-3856	4.9	30
26	Mantle Melting Beneath Mid-Ocean Ridges. *Oceanography*, **2007**, 20, 78-89	2.3	27
25	Identification and implications of off-axis lava flows around the East Pacific Rise. *Geochemistry, Geophysics, Geosystems*, **2000**, 1, n/a-n/a	3.6	26
24	An isotopically distinct Zealandia–Antarctic mantle domain in the Southern Ocean. *Nature Geoscience*, **2019**, 12, 206-214	18.3	24
23	Trace element (Mn, Zn, Ni, V) and authigenic uranium (aU) geochemistry reveal sedimentary redox history on the Juan de Fuca Ridge, North Pacific Ocean. *Geochimica Et Cosmochimica Acta*, **2018**, 236, 79-98	5.5	24
22	Links from Mantle to Microbe at the Lau Integrated Study Site: Insights from a Back-Arc Spreading Center. *Oceanography*, **2012**, 25, 62-77	2.3	23
21	Evidence from 10Be and U series disequilibria on the possible contamination of mid-ocean ridge basalt glasses by sedimentary material. *Geochemistry, Geophysics, Geosystems*, **2000**, 1, n/a-n/a	3.6	23
20	Origin of the Early Permian zircons in Keping basalts and magma evolution of the Tarim Large Igneous Province (northwestern China). *Lithos*, **2014**, 204, 47-58	2.9	21
19	Geochemical Earth Reference Model (GERM): description of the initiative. *Chemical Geology*, **1998**, 145, 153-159	4.2	20
18	Hydrothermal deposition on the Juan de Fuca Ridge over multiple glacial–interglacial cycles. *Earth and Planetary Science Letters*, **2017**, 479, 120-132	5.3	18
17	A genetic link between silicic slab components and calc-alkaline arc volcanism in central Mexico. *Geological Society Special Publication*, **2014**, 385, 31-64	1.7	18
16	Vanadium isotope compositions of mid-ocean ridge lavas and altered oceanic crust. *Earth and Planetary Science Letters*, **2018**, 493, 128-139	5.3	17
15	Millennial-scale variations in dustiness recorded in Mid-Atlantic sediments from 0 to 70 ka. *Earth and Planetary Science Letters*, **2018**, 482, 12-22	5.3	14
14	Do sea level variations influence mid-ocean ridge magma supply? A test using crustal thickness and bathymetry data from the East Pacific Rise. *Earth and Planetary Science Letters*, **2020**, 535, 116121	5.3	12
13	Geochemical Variability Along the Northern East Pacific Rise: Coincident Source Composition and Ridge Segmentation. *Geochemistry, Geophysics, Geosystems*, **2019**, 20, 1889-1911	3.6	11
12	A 65 k.y. time series from sediment-hosted glasses reveals rapid transitions in ocean ridge magmas. *Geology*, **2017**, 45, 491-494	5	9
11	A subduction influence on ocean ridge basalts outside the Pacific subduction shield. *Nature Communications*, **2021**, 12, 4757	17.4	6
10	Automated XY plots from Microsoft Excel. *Computers and Geosciences*, **1994**, 20, 47-52	4.5	5

9	Estimating the parental magma composition and temperature of the Xiaohaizi cumulate-bearing ultramafic rock: Implication for magma evolution of the Tarim large igneous province, northwestern China. *Journal of Earth Science (Wuhan, China)*, **2016**, 27, 519-528	2.2	4
8	Petrogenesis of the Late Mesozoic Magnesian and Ferroan Granites in Northwest Zhejiang, Southeast China, and Their Implications. *Journal of Geology*, **2018**, 126, 407-425	2	3
7	The spatial footprint of hydrothermal scavenging on 230ThXS-derived mass accumulation rates. *Geochimica Et Cosmochimica Acta*, **2020**, 272, 218-234	5.5	2
6	Sediment and ocean crust both melt at subduction zones. *Earth and Planetary Science Letters*, **2022**, 584, 117424	5.3	2
5	The Processes of Melt Differentiation in Arc Volcanic Rock: Insights from OIB-type Arc Magmas in the Central Mexican Volcanic Belt: Reply to a Critical Comment by Claus Siebe (2013). *Journal of Petrology*, **2013**, 54, 1551-1554	3.9	1
4	Multi-stage melting of enriched mantle components along the eastern Gakkel Ridge. *Chemical Geology*, **2021**, 586, 120594	4.2	1
3	Oxidized primary arc magmas: Constraints from Cu/Zr systematics in global arc volcanics.. *Science Advances*, **2022**, 8, eabk0718	14.3	1
2	A quantitative framework for global variations in arc geochemistry. *Earth and Planetary Science Letters*, **2022**, 584, 117411	5.3	1
1	A view from the Sunda arc. *Nature*, **1994**, 367, 224-225	50.4	