

Fabrice Gaillard

List of Publications by Year in descending order

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81
papers

4,577
citations

81900

39
h-index

102487

66
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83
all docs

83
docs citations

83
times ranked

3574
citing authors

#	ARTICLE	IF	CITATIONS
1	Redox controls during magma ocean degassing. <i>Earth and Planetary Science Letters</i> , 2022, 577, 117255.	4.4	43
2	A speciation model linking the fate of carbon and hydrogen during core " magma ocean equilibration. <i>Earth and Planetary Science Letters</i> , 2022, 577, 117266.	4.4	8
3	MAGLAB: A computing platform connecting geophysical signatures to melting processes in Earth's mantle. <i>Physics of the Earth and Planetary Interiors</i> , 2021, 314, 106638.	1.9	13
4	Nitrogen solubility in basaltic silicate melt - Implications for degassing processes. <i>Chemical Geology</i> , 2021, 573, 120192.	3.3	21
5	No direct effect of F, Cl and P on REE partitioning between carbonate and alkaline silicate melts. <i>Comptes Rendus - Geoscience</i> , 2021, 353, 233-272.	1.2	2
6	Crystallisation sequence of a REE-rich carbonate melt: an experimental approach. <i>Comptes Rendus - Geoscience</i> , 2021, 353, 217-231.	1.2	5
7	Possible Atmospheric Diversity of Low Mass Exoplanets " Some Central Aspects. <i>Space Science Reviews</i> , 2020, 216, 1.	8.1	11
8	Reply on the comment by X. Xue on "Towards the reconciliation of viscosity change and CO ₂ -induced polymerization in silicate melt" by Yann Morizet, Michael Paris, David Sifra, Ida Di Carlo, Sandra Ory, and Fabrice Gaillard [<i>chemical Geology</i> 458, 38-47]. <i>Chemical Geology</i> , 2020, 550, 119676.	3.3	0
9	High S and high CO ₂ contents in haplokimberlite: An experimental and Raman spectroscopic study. <i>Mineralogy and Petrology</i> , 2020, 114, 363-373.	1.1	1
10	Unravelling partial melt distribution in the oceanic low velocity zone. <i>Earth and Planetary Science Letters</i> , 2020, 540, 116242.	4.4	18
11	A window in the course of alkaline magma differentiation conducive to immiscible REE-rich carbonatites. <i>Geochimica Et Cosmochimica Acta</i> , 2020, 282, 297-323.	3.9	42
12	Geoscience for Understanding Habitability in the Solar System and Beyond. <i>Space Science Reviews</i> , 2019, 215, 1.	8.1	14
13	The Link between the Physical and Chemical Properties of Carbon-Bearing Melts and Their Application for Geophysical Imaging of Earth's Mantle. , 2019, , 163-187.		1
14	X-ray absorption spectroscopic investigation of the Ca and Mg environments in CO ₂ -bearing silicate glasses. <i>Chemical Geology</i> , 2019, 510, 91-102.	3.3	12
15	Sulfur on Mars from the Atmosphere to the Core. , 2019, , 119-183.		25
16	Experimental constraints on the fate of H and C during planetary core-mantle differentiation. Implications for the Earth. <i>Icarus</i> , 2019, 321, 473-485.	2.5	35
17	Melting conditions in the modern Tibetan crust since the Miocene. <i>Nature Communications</i> , 2018, 9, 3515.	12.8	31
18	Volcanic Gases. <i>Encyclopedia of Earth Sciences Series</i> , 2018, , 1476-1480.	0.1	0

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19	Assimilation of sulfate and carbonaceous rocks: Experimental study, thermodynamic modeling and application to the Norilsk-Talnakh region (Russia). <i>Ore Geology Reviews</i> , 2017, 90, 399-413.	2.7	49
20	Numerical modelling of erosion and assimilation of sulfur-rich substrate by martian lava flows: Implications for the genesis of massive sulfide mineralization on Mars. <i>Icarus</i> , 2017, 296, 257-274.	2.5	11
21	Towards the reconciliation of viscosity change and CO ₂ -induced polymerization in silicate melts. <i>Chemical Geology</i> , 2017, 458, 38-47.	3.3	22
22	¹⁷ O NMR evidence of free ionic clusters M _n CO ₃ ²⁺ in silicate glasses: Precursors for carbonate-silicate liquids immiscibility. <i>American Mineralogist</i> , 2017, 102, 1561-1564.	1.9	12
23	Origins of cratonic mantle discontinuities: A view from petrology, geochemistry and thermodynamic models. <i>Lithos</i> , 2017, 268-271, 364-382.	1.4	74
24	The effect of Mg concentration in silicate glasses on CO ₂ solubility and solution mechanism: Implication for natural magmatic systems. <i>Geochimica Et Cosmochimica Acta</i> , 2017, 198, 115-130.	3.9	13
25	Giant magmatic water reservoirs at mid-crustal depth inferred from electrical conductivity and the growth of the continental crust. <i>Earth and Planetary Science Letters</i> , 2017, 457, 173-180.	4.4	78
26	H ₂ O-CO ₂ solubility in low SiO ₂ -melts and the unique mode of kimberlite degassing and emplacement. <i>Earth and Planetary Science Letters</i> , 2016, 447, 151-160.	4.4	46
27	Volcanic Gases. <i>Encyclopedia of Earth Sciences Series</i> , 2016, , 1-4.	0.1	2
28	The molecular structure of melts along the carbonate-kimberlite-basalt compositional joint: CO ₂ and polymerisation. <i>Earth and Planetary Science Letters</i> , 2016, 434, 129-140.	4.4	29
29	Gold buried by oxygen. <i>Nature Geoscience</i> , 2015, 8, 170-171.	12.9	3
30	Transport of metals and sulphur in magmas by flotation of sulphide melt on vapour bubbles. <i>Nature Geoscience</i> , 2015, 8, 216-219.	12.9	139
31	A model for the activity of silica along the carbonate-kimberlite-mellilitite-basanite melt compositional joint. <i>Chemical Geology</i> , 2015, 418, 206-216.	3.3	44
32	The redox geodynamics linking basalts and their mantle sources through space and time. <i>Chemical Geology</i> , 2015, 418, 217-233.	3.3	95
33	Comment to "High and highly anisotropic electrical conductivity of the asthenosphere due to hydrogen diffusion in olivine" by Dai and Karato [Earth Planet. Sci. Lett. 408 (2014) 79-86]. <i>Earth and Planetary Science Letters</i> , 2015, 427, 296-299.	4.4	10
34	Effects of temperature, pressure and chemical compositions on the electrical conductivity of carbonated melts and its relationship with viscosity. <i>Chemical Geology</i> , 2015, 418, 189-197.	3.3	31
35	CO ₂ solubility in kimberlite melts. <i>Chemical Geology</i> , 2015, 418, 198-205.	3.3	46
36	The effect of pressure and water concentration on the electrical conductivity of dacitic melts: Implication for magnetotelluric imaging in subduction areas. <i>Chemical Geology</i> , 2015, 418, 66-76.	3.3	70

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37	Carbon dioxide in silica-undersaturated melt Part II: Effect of CO ₂ on quenched glass structure. <i>Geochimica Et Cosmochimica Acta</i> , 2014, 144, 202-216.	3.9	12
38	Local redox buffering by carbon at low pressures and the formation of moissanite "natural SiC. <i>European Journal of Mineralogy</i> , 2014, 26, 53-59.	1.3	27
39	A relatively reduced Hadean continental crust and implications for the early atmosphere and crustal rheology. <i>Earth and Planetary Science Letters</i> , 2014, 393, 210-219.	4.4	71
40	Electrical conductivity during incipient melting in the oceanic low-velocity zone. <i>Nature</i> , 2014, 509, 81-85.	27.8	164
41	Carbon dioxide in silica-undersaturated melt. Part I: The effect of mixed alkalis (K and Na) on CO ₂ solubility and speciation. <i>Geochimica Et Cosmochimica Acta</i> , 2014, 141, 45-61.	3.9	26
42	A theoretical framework for volcanic degassing chemistry in a comparative planetology perspective and implications for planetary atmospheres. <i>Earth and Planetary Science Letters</i> , 2014, 403, 307-316.	4.4	148
43	Tracking the changing oxidation state of Erebus magmas, from mantle to surface, driven by magma ascent and degassing. <i>Earth and Planetary Science Letters</i> , 2014, 393, 200-209.	4.4	111
44	Toward a unified hydrous olivine electrical conductivity law. <i>Geochemistry, Geophysics, Geosystems</i> , 2014, 15, 4984-5000.	2.5	114
45	Geochemical Reservoirs and Timing of Sulfur Cycling on Mars. <i>Space Science Reviews</i> , 2013, 174, 251-300.	8.1	103
46	Experimental assessment of the relationships between electrical resistivity, crustal melting and strain localization beneath the Himalayan-Tibetan Belt. <i>Earth and Planetary Science Letters</i> , 2013, 373, 20-30.	4.4	50
47	Gaillard et al. reply. <i>Nature</i> , 2012, 487, E2-E2.	27.8	2
48	Gas emissions due to magma-sediment interactions during flood magmatism at the Siberian Traps: Gas dispersion and environmental consequences. <i>Earth and Planetary Science Letters</i> , 2012, 357-358, 308-318.	4.4	30
49	Extremely reducing conditions reached during basaltic intrusion in organic matter-bearing sediments. <i>Earth and Planetary Science Letters</i> , 2012, 357-358, 319-326.	4.4	44
50	New experimental data and semi-empirical parameterization of H ₂ O-CO ₂ solubility in mafic melts. <i>Geochimica Et Cosmochimica Acta</i> , 2012, 97, 1-23.	3.9	167
51	Synthesis of a spinifex-textured basalt as an analog to Gusev crater basalts, Mars. <i>Meteoritics and Planetary Science</i> , 2012, 47, 820-831.	1.6	6
52	Geochemical Reservoirs and Timing of Sulfur Cycling on Mars. <i>Space Sciences Series of ISSI</i> , 2012, , 251-300.	0.0	2
53	Redox state of early magmas. <i>Nature</i> , 2011, 480, 48-49.	27.8	28
54	Experimental determination of electrical conductivity during deformation of melt-bearing olivine aggregates: Implications for electrical anisotropy in the oceanic low velocity zone. <i>Earth and Planetary Science Letters</i> , 2011, 302, 81-94.	4.4	53

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55	Atmospheric oxygenation caused by a change in volcanic degassing pressure. <i>Nature</i> , 2011, 478, 229-232.	27.8	261
56	Phase transition induced by solid solution: The BCa-BMg substitution in richteritic amphiboles. <i>American Mineralogist</i> , 2010, 95, 369-381.	1.9	16
57	Methodological re-evaluation of the electrical conductivity of silicate melts. <i>American Mineralogist</i> , 2010, 95, 284-291.	1.9	52
58	A new petrological and geophysical investigation of the present-day plumbing system of Mount Vesuvius. <i>Geochemistry, Geophysics, Geosystems</i> , 2010, 11, .	2.5	13
59	Time-dependent changes of the electrical conductivity of basaltic melts with redox state. <i>Geochimica Et Cosmochimica Acta</i> , 2010, 74, 1653-1671.	3.9	37
60	C ^o -H fluid solubility in haplobasalt under reducing conditions: An experimental study. <i>Chemical Geology</i> , 2010, 279, 1-16.	3.3	66
61	Noble gas solubilities in silicate melts: New experimental results and a comprehensive model of the effects of liquid composition, temperature and pressure. <i>Chemical Geology</i> , 2010, 279, 145-157.	3.3	52
62	Role of non-mantle CO ₂ in the dynamics of volcano degassing: The Mount Vesuvius example. <i>Geology</i> , 2009, 37, 319-322.	4.4	85
63	The sulfur content of volcanic gases on Mars. <i>Earth and Planetary Science Letters</i> , 2009, 279, 34-43.	4.4	141
64	Raman quantification factor calibration for CO ₂ gas mixture in synthetic fluid inclusions: Application to oxygen fugacity calculation in magmatic systems. <i>Chemical Geology</i> , 2009, 264, 58-70.	3.3	28
65	Interaction of magma with sedimentary wall rock and magnetite ore genesis in the Panzihua mafic intrusion, SW China. <i>Mineralium Deposita</i> , 2008, 43, 677-694.	4.1	123
66	Limestone assimilation by basaltic magmas: an experimental re-assessment and application to Italian volcanoes. <i>Contributions To Mineralogy and Petrology</i> , 2008, 155, 719-738.	3.1	129
67	Carbonatite Melts and Electrical Conductivity in the Asthenosphere. <i>Science</i> , 2008, 322, 1363-1365.	12.6	271
68	Laboratory measurements of electrical conductivities of hydrous and dry Mount Vesuvius melts under pressure. <i>Journal of Geophysical Research</i> , 2008, 113, .	3.3	83
69	Limestone assimilation and the origin of CO ₂ emissions at the Alban Hills (Central Italy): Constraints from experimental petrology. <i>Journal of Volcanology and Geothermal Research</i> , 2007, 166, 91-105.	2.1	88
70	Geochemical Aspects of Melts: Volatiles and Redox Behavior. <i>Elements</i> , 2006, 2, 275-280.	0.5	97
71	Rapid magma ascent recorded by water diffusion profiles in mantle olivine. <i>Geology</i> , 2006, 34, 429.	4.4	255
72	Low-T neutron powder-diffraction and synchrotron-radiation IR study of synthetic amphibole Na(NaMg)Mg ₅ Si ₈ O ₂₂ (OH) ₂ . <i>American Mineralogist</i> , 2005, 90, 695-700.	1.9	17

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73	Electrical conductivity of magma in the course of crystallization controlled by their residual liquid composition. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	65
74	Evidence for present-day leucogranite pluton growth in Tibet. <i>Geology</i> , 2004, 32, 801.	4.4	56
75	Characterisation of ¹⁷ O-enriched alumina from a new hydrothermal preparation. <i>Solid State Nuclear Magnetic Resonance</i> , 2004, 26, 197-202.	2.3	5
76	Laboratory measurements of electrical conductivity of hydrous and dry silicic melts under pressure. <i>Earth and Planetary Science Letters</i> , 2004, 218, 215-228.	4.4	131
77	Rate of hydrogen-iron redox exchange in silicate melts and glasses. <i>Geochimica Et Cosmochimica Acta</i> , 2003, 67, 2427-2441.	3.9	73
78	Experimental determination of activities of FeO and Fe ₂ O ₃ components in hydrous silicic melts under oxidizing conditions. <i>Geochimica Et Cosmochimica Acta</i> , 2003, 67, 4389-4409.	3.9	58
79	Chemical transfer during redox exchanges between H ₂ and Fe-bearing silicate melts. <i>American Mineralogist</i> , 2003, 88, 308-315.	1.9	21
80	Kinetics of iron oxidation-reduction in hydrous silicic melts. <i>American Mineralogist</i> , 2002, 87, 829-837.	1.9	36
81	The effect of water and fO ₂ on the ferric-ferrous ratio of silicic melts. <i>Chemical Geology</i> , 2001, 174, 255-273.	3.3	101