

Kai-Uwe Hess

List of Publications by Year in descending order

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94
papers

4,196
citations

87843

38
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123376

61
g-index

95
all docs

95
docs citations

95
times ranked

2659
citing authors

#	ARTICLE	IF	CITATIONS
1	The glass transition and the non-Arrhenian viscosity of carbonate melts. <i>American Mineralogist</i> , 2022, 107, 1053-1064.	0.9	5
2	The roles of microlites and phenocrysts during degassing of silicic magma. <i>Earth and Planetary Science Letters</i> , 2022, 577, 117264.	1.8	10
3	Using obsidian in glass art practice. <i>Volcanica</i> , 2022, 5, 183-207.	0.6	1
4	A model for the kinetics of high-temperature reactions between polydisperse volcanic ash and SO ₂ gas. <i>American Mineralogist</i> , 2021, 106, 1319-1332.	0.9	4
5	Determination of water speciation in hydrous haplogranitic glasses with partial Raman spectra. <i>Chemical Geology</i> , 2020, 553, 119793.	1.4	4
6	<i>In situ</i> granulation by thermal stress during subaqueous volcanic eruptions. <i>Geology</i> , 2019, 47, 179-182.	2.0	12
7	Mineralogical and thermal characterization of a volcanic ash: Implications for turbine interaction. <i>Journal of Volcanology and Geothermal Research</i> , 2019, 377, 43-52.	0.8	12
8	Estimation of CMAS infiltration depth in EB-PVD TBCs: A new constraint model supported with experimental approach. <i>Journal of the European Ceramic Society</i> , 2019, 39, 2936-2945.	2.8	35
9	Aggregation in particle rich environments: a textural study of examples from volcanic eruptions, meteorite impacts, and fluidized bed processing. <i>Bulletin of Volcanology</i> , 2018, 80, 32.	1.1	11
10	The effect of oxygen fugacity on the rheological evolution of crystallizing basaltic melts. <i>Earth and Planetary Science Letters</i> , 2018, 487, 21-32.	1.8	57
11	Determination of the hydrogen-bond network and the ferrimagnetic structure of a rockbridgeite-type compound, $\text{Fe}^{2+}\text{Fe}^{3+}_{3.2}(\text{Mn}^{2+}, \text{Zn})_{0.8}(\text{PO}_4)_3(\text{OH})_{4.2}(\text{H}_2\text{O})_{0.8}$. <i>Journal of Physics Condensed Matter</i> , 2018, 30, 235401.	0.7	8
12	Combined effusive-explosive silicic volcanism straddles the multiphase viscous-to-brittle transition. <i>Nature Communications</i> , 2018, 9, 4696.	5.8	39
13	Cooling rates of lunar orange glass beads. <i>Earth and Planetary Science Letters</i> , 2018, 503, 88-94.	1.8	19
14	Vesiculation and Quenching During Surtseyan Eruptions at Hunga Tonga–Hunga Ha'apai Volcano, Tonga. <i>Journal of Geophysical Research: Solid Earth</i> , 2018, 123, 3762-3779.	1.4	34
15	Shear Rate-Dependent Disequilibrium Rheology and Dynamics of Basalt Solidification. <i>Geophysical Research Letters</i> , 2018, 45, 6466-6475.	1.5	39
16	Intrinsic proton dynamics in hydrous silicate melts as seen by quasielastic neutron scattering at elevated temperature and pressure. <i>Chemical Geology</i> , 2017, 461, 152-159.	1.4	5
17	Local geology controlled the feasibility of vitrifying Iron Age buildings. <i>Scientific Reports</i> , 2017, 7, 40028.	1.6	7
18	Wetting and Spreading of Molten Volcanic Ash in Jet Engines. <i>Journal of Physical Chemistry Letters</i> , 2017, 8, 1878-1884.	2.1	45

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19	Effect of oxygen fugacity on the glass transition, viscosity and structure of silica- and iron-rich magmatic melts. <i>Journal of Non-Crystalline Solids</i> , 2017, 470, 78-85.	1.5	42
20	Topological inversions in coalescing granular media control fluid-flow regimes. <i>Physical Review E</i> , 2017, 96, 033113.	0.8	39
21	A compositional tipping point governing the mobilization and eruption style of rhyolitic magma. <i>Nature</i> , 2017, 552, 235-238.	13.7	77
22	Enhancement of eruption explosivity by heterogeneous bubble nucleation triggered by magma mingling. <i>Scientific Reports</i> , 2017, 7, 16897.	1.6	18
23	Eruptive shearing of tube pumice: pure and simple. <i>Solid Earth</i> , 2016, 7, 1383-1393.	1.2	22
24	The propagation and seismicity of dyke injection, new experimental evidence. <i>Geophysical Research Letters</i> , 2016, 43, 1876-1883.	1.5	14
25	An advanced rotational rheometer system for extremely fluid liquids up to 1273 K and applications to alkali carbonate melts. <i>American Mineralogist</i> , 2016, 101, 953-959.	0.9	17
26	Models for the estimation of Fe^{3+}/Fe^{tot} ratio in terrestrial and extraterrestrial alkali- and iron-rich silicate glasses using Raman spectroscopy. <i>American Mineralogist</i> , 2016, 101, 943-952.	0.9	48
27	Raman spectra of Martian glass analogues: A tool to approximate their chemical composition. <i>Journal of Geophysical Research E: Planets</i> , 2016, 121, 740-752.	1.5	27
28	Magma mixing induced by particle settling. <i>Contributions To Mineralogy and Petrology</i> , 2016, 171, 96.	1.2	15
29	Volcanic ash melting under conditions relevant to ash turbine interactions. <i>Nature Communications</i> , 2016, 7, 10795.	5.8	113
30	Surface tension driven processes densify and retain permeability in magma and lava. <i>Earth and Planetary Science Letters</i> , 2016, 433, 116-124.	1.8	63
31	The feasibility of vitrifying a sandstone enclosure in the British Iron Age. <i>Journal of Archaeological Science: Reports</i> , 2015, 4, 605-612.	0.2	2
32	Spine growth and seismogenic faulting at Mt. Unzen, Japan. <i>Journal of Geophysical Research: Solid Earth</i> , 2015, 120, 4034-4054.	1.4	36
33	Permeability of compacting porous lavas. <i>Journal of Geophysical Research: Solid Earth</i> , 2015, 120, 1605-1622.	1.4	46
34	Vesiculation in rhyolite at low H_2O contents: A thermodynamic model. <i>Geochemistry, Geophysics, Geosystems</i> , 2015, 16, 4292-4310.	1.0	9
35	Variability in composition and physical properties of the sedimentary basement of Mt Etna, Italy. <i>Journal of Volcanology and Geothermal Research</i> , 2015, 302, 102-116.	0.8	11
36	Magma mixing enhanced by bubble segregation. <i>Solid Earth</i> , 2015, 6, 1007-1023.	1.2	17

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37	Eruption and emplacement timescales of ignimbrite super-eruptions from thermo-kinetics of glass shards. <i>Frontiers in Earth Science</i> , 2015, 3, .	0.8	10
38	Fault rheology beyond frictional melting. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 9276-9280.	3.3	25
39	Experiments and models on H ₂ O retrograde solubility in volcanic systems. <i>American Mineralogist</i> , 2015, 100, 774-786.	0.9	33
40	Approximate chemical analysis of volcanic glasses using Raman spectroscopy. <i>Journal of Raman Spectroscopy</i> , 2015, 46, 1235-1244.	1.2	53
41	Volcanic glass and its suitability to recover the ancient geomagnetic field strength. <i>Geological Society Special Publication</i> , 2015, 396, 265-276.	0.8	1
42	Seismogenic frictional melting in the magmatic column. <i>Solid Earth</i> , 2014, 5, 199-208.	1.2	23
43	Fusion characteristics of volcanic ash relevant to aviation hazards. <i>Geophysical Research Letters</i> , 2014, 41, 2326-2333.	1.5	57
44	Influence of cooling rate on thermoremanence of magnetite grains: Identifying the role of different magnetic domain states. <i>Journal of Geophysical Research: Solid Earth</i> , 2014, 119, 1599-1606.	1.4	25
45	Viscous flow behavior of tholeiitic and alkaline Fe-rich martian basalts. <i>Geochimica Et Cosmochimica Acta</i> , 2014, 124, 348-365.	1.6	48
46	Nonisothermal viscous sintering of volcanic ash. <i>Journal of Geophysical Research: Solid Earth</i> , 2014, 119, 8792-8804.	1.4	71
47	Thermal weakening of the carbonate basement under Mt. Etna volcano (Italy): Implications for volcano instability. <i>Journal of Volcanology and Geothermal Research</i> , 2013, 250, 42-60.	0.8	81
48	Tracking the permeable porous network during strain-dependent magmatic flow. <i>Journal of Volcanology and Geothermal Research</i> , 2013, 260, 117-126.	0.8	74
49	The rheology of peralkaline rhyolites from Pantelleria Island. <i>Journal of Volcanology and Geothermal Research</i> , 2013, 249, 201-216.	0.8	59
50	The influence of thermal-stressing (up to 1000Å°C) on the physical, mechanical, and chemical properties of siliceous-aggregate, high-strength concrete. <i>Construction and Building Materials</i> , 2013, 42, 248-265.	3.2	114
51	Decarbonation and thermal microcracking under magmatic P-T-fâ€™CO ₂ conditions: the role of skarn substrata in promoting volcanic instability. <i>Geophysical Journal International</i> , 2013, 195, 369-380.	1.0	21
52	Reconstructing magma failure and the degassing network of dome-building eruptions. <i>Geology</i> , 2013, 41, 515-518.	2.0	106
53	Volcanic sintering: Timescales of viscous densification and strength recovery. <i>Geophysical Research Letters</i> , 2013, 40, 5658-5664.	1.5	91
54	Shallow magmaâ€™minglingâ€™driven Strombolian eruptions at Mt. Yasur volcano, Vanuatu. <i>Geophysical Research Letters</i> , 2012, 39, .	1.5	27

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55	Viscous heating in silicate melts: An experimental and numerical comparison. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	35
56	Laboratory simulations of tensile fracture development in a volcanic conduit via cyclic magma pressurisation. <i>Earth and Planetary Science Letters</i> , 2012, 349-350, 231-239.	1.8	26
57	Volcanic edifice weakening via decarbonation: A self-limiting process?. <i>Geophysical Research Letters</i> , 2012, 39, .	1.5	24
58	Paleointensity on volcanic glass of varying hydration states. <i>Physics of the Earth and Planetary Interiors</i> , 2012, 208-209, 25-37.	0.7	9
59	The viscous-brittle transition of crystal-bearing silicic melt: Direct observation of magma rupture and healing. <i>Geology</i> , 2012, 40, 611-614.	2.0	113
60	How tough is tuff in the event of fire?. <i>Geology</i> , 2012, 40, 311-314.	2.0	58
61	Experimental generation of volcanic pseudotachylytes: Constraining rheology. <i>Journal of Structural Geology</i> , 2012, 38, 222-233.	1.0	46
62	Magmatic architecture of dome-building eruptions at Volc�n de Colima, Mexico. <i>Bulletin of Volcanology</i> , 2012, 74, 249-260.	1.1	85
63	Volcanic conduit failure as a trigger to magma fragmentation. <i>Bulletin of Volcanology</i> , 2012, 74, 11-13.	1.1	17
64	Paleointensities of phonolitic obsidian: Influence of emplacement rotations and devitrification. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	13
65	XAS determination of the Fe local environment and oxidation state in phonolite glasses. <i>American Mineralogist</i> , 2011, 96, 631-636.	0.9	56
66	Advances in high-resolution neutron computed tomography: Adapted to the earth sciences. , 2011, 7, 1294-1302.		16
67	Paleointensities on 8 ka obsidian from Mayor Island, New Zealand. <i>Solid Earth</i> , 2011, 2, 259-270.	1.2	9
68	A cooling rate bias in paleointensity determination from volcanic glass: An experimental demonstration. <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	24
69	Rheological properties of dome lavas: Case study of Unzen volcano. <i>Earth and Planetary Science Letters</i> , 2009, 279, 263-272.	1.8	101
70	The rheological evolution of alkaline Vesuvius magmas and comparison with alkaline series from the Phlegrean Fields, Etna, Stromboli and Teide. <i>Geochimica Et Cosmochimica Acta</i> , 2009, 73, 6613-6630.	1.6	44
71	Seismogenic lavas and explosive eruption forecasting. <i>Nature</i> , 2008, 453, 507-510.	13.7	161
72	Viscous heating in rhyolite: An in situ experimental determination. <i>Earth and Planetary Science Letters</i> , 2008, 275, 121-126.	1.8	46

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73	High-load, high-temperature deformation apparatus for synthetic and natural silicate melts. Review of Scientific Instruments, 2007, 78, 075102.	0.6	28
74	Non-Newtonian rheological law for highly crystalline dome lavas. Geology, 2007, 35, 843.	2.0	164
75	Synthesis, Crystal Structure, and Properties of Two Modifications of MgB ₁₂ C ₂ . Chemistry - A European Journal, 2007, 13, 3450-3458.	1.7	37
76	Synthesis, crystal growth and structure of Mg containing $\hat{\rho}^2$ -rhombohedral boron: MgB ₁₇ .4. Journal of Solid State Chemistry, 2006, 179, 2900-2907.	1.4	25
77	Synthesis and crystal structure of Mg ₂ B ₂₄ C, a new boron-rich boride related to $\hat{\rho}$ tetragonal boron $\hat{\rho}$. Journal of Solid State Chemistry, 2006, 179, 2150-2157.	1.4	19
78	Synthesis and crystal structure of MgB ₁₂ . Journal of Solid State Chemistry, 2006, 179, 2916-2926.	1.4	24
79	Reducing tool wear in abrasive cutting. International Journal of Machine Tools and Manufacture, 2005, 45, 1120-1123.	6.2	15
80	Modelling the non-Arrhenian rheology of silicate melts: Numerical considerations. European Journal of Mineralogy, 2002, 14, 417-428.	0.4	26
81	The viscosities of dry and hydrous XAlSi ₃ O ₈ (X=Li, Na, K, Ca _{0.5} , Mg _{0.5}) melts. Chemical Geology, 2001, 174, 115-132.	1.4	77
82	Viscosity-temperature behaviour of dry melts in the Qz-Ab-Or system. Chemical Geology, 2001, 174, 133-142.	1.4	26
83	Viscosities of granitic (sensu lato) melts: Influence of the anorthite component. American Mineralogist, 2000, 85, 1342-1348.	0.9	13
84	Universal representation of viscosity in glass forming liquids. Journal of Non-Crystalline Solids, 1998, 223, 207-222.	1.5	125
85	Extremely fluid behavior of hydrous peralkaline rhyolites. Earth and Planetary Science Letters, 1998, 158, 31-38.	1.8	85
86	Viscosity data for hydrous peraluminous granitic melts; comparison with a metaluminous model. American Mineralogist, 1998, 83, 236-239.	0.9	45
87	Melt viscosities in the system Na-Fe-Si-O-F-Cl; contrasting effects of F and Cl in alkaline melts. American Mineralogist, 1998, 83, 1016-1021.	0.9	57
88	Viscosity, fragility, and configurational entropy of melts along the join SiO ₂ -NaAlSi ₃ O ₈ . American Mineralogist, 1997, 82, 979-990.	0.9	159
89	Physical properties of the 1980 Mount St. Helens cryptodome magma. Bulletin of Volcanology, 1997, 59, 103-111.	1.1	34
90	Granite and granitic pegmatite melts: volumes and viscosities. Earth and Environmental Science Transactions of the Royal Society of Edinburgh, 1996, 87, 65-72.	0.3	41

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91	Parametrization of viscosity-temperature relations of aluminosilicate melts. <i>Chemical Geology</i> , 1996, 128, 155-163.	1.4	60
92	The effect of water on the viscosity of a haplogranitic melt under P-T-X conditions relevant to silicic volcanism. <i>Contributions To Mineralogy and Petrology</i> , 1996, 124, 19-28.	1.2	211
93	Centrifuge-assisted falling-sphere viscometry. <i>European Journal of Mineralogy</i> , 1996, 8, 507-514.	0.4	36
94	The influence of excess alkalis on the viscosity of a haplogranitic melt. <i>American Mineralogist</i> , 1995, 80, 297-304.	0.9	124