

# Edward W Llewelin

## List of Publications by Year in descending order

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Version: 2024-02-01

54  
papers

3,125  
citations

186209

28  
h-index

168321

53  
g-index

58  
all docs

58  
docs citations

58  
times ranked

2934  
citing authors

#	ARTICLE	IF	CITATIONS
1	The rheology of suspensions of solid particles. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2010, 466, 1201-1228.	1.0	569
2	The rheology of two-phase magmas: A review and analysis. Journal of Volcanology and Geothermal Research, 2013, 257, 135-158.	0.8	310
3	A general model for the permeability of fibrous porous media based on fluid flow simulations using the lattice Boltzmann method. Composites Part A: Applied Science and Manufacturing, 2009, 40, 860-869.	3.8	220
4	Bubble suspension rheology and implications for conduit flow. Journal of Volcanology and Geothermal Research, 2005, 143, 205-217.	0.8	214
5	The rheology of a bubbly liquid. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2002, 458, 987-1016.	1.0	170
6	The effect of particle shape on suspension viscosity and implications for magmatic flows. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	96
7	Magma fragmentation in highly explosive basaltic eruptions induced by rapid crystallization. Nature Geoscience, 2019, 12, 1023-1028.	5.4	91
8	Characterization of respirable volcanic ash from the Soufrière Hills volcano, Montserrat, with implications for human health hazards. Bulletin of Volcanology, 2003, 65, 346-362.	1.1	84
9	The nature and formation of cristobalite at the Soufrière Hills volcano, Montserrat: implications for the petrology and stability of silicic lava domes. Bulletin of Volcanology, 2013, 75, 1.	1.1	84
10	Distribution of dissolved water in magmatic glass records growth and resorption of bubbles. Earth and Planetary Science Letters, 2014, 401, 1-11.	1.8	79
11	An analytical model for gas overpressure in slug-driven explosions: Insights into Strombolian volcanic eruptions. Journal of Geophysical Research, 2012, 117, .	3.3	77
12	The $\lambda_2$ phase transition in volcanic cristobalite. Journal of Applied Crystallography, 2014, 47, 1205-1215.	1.9	73
13	The thickness of the falling film of liquid around a Taylor bubble. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2012, 468, 1041-1064.	1.0	70
14	The constitutive equation and flow dynamics of bubbly magmas. Geophysical Research Letters, 2002, 29, 23-1-23-4.	1.5	69
15	Accounting for the species-dependence of the $3500\text{ cm}^{-1}$ infrared molar absorptivity coefficient: Implications for hydrated volcanic glasses. American Mineralogist, 2017, 102, 1677-1689.	0.9	54
16	Crystallisation in basaltic magmas revealed via in situ 4D synchrotron X-ray microtomography. Scientific Reports, 2018, 8, 8377.	1.6	53
17	Formation of obsidian pyroclasts by sintering of ash particles in the volcanic conduit. Earth and Planetary Science Letters, 2017, 459, 252-263.	1.8	51
18	The rheology of three-phase suspensions at low bubble capillary number. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2015, 471, 20140557.	1.0	49

#	ARTICLE	IF	CITATIONS
19	Stability of lava lakes. <i>Journal of Volcanology and Geothermal Research</i> , 2006, 158, 321-332.	0.8	47
20	Viscous plugging can enhance and modulate explosivity of strombolian eruptions. <i>Earth and Planetary Science Letters</i> , 2015, 423, 210-218.	1.8	47
21	Sintering of viscous droplets under surface tension. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2016, 472, 20150780.	1.0	47
22	Through-thickness permeability prediction of three-dimensional multifilament woven fabrics. <i>Composites Part A: Applied Science and Manufacturing</i> , 2010, 41, 453-463.	3.8	43
23	Topological inversions in coalescing granular media control fluid-flow regimes. <i>Physical Review E</i> , 2017, 96, 033113.	0.8	39
24	Explosive-effusive volcanic eruption transitions caused by sintering. <i>Science Advances</i> , 2020, 6, .	4.7	39
25	LBflow: An extensible lattice Boltzmann framework for the simulation of geophysical flows. Part I: theory and implementation. <i>Computers and Geosciences</i> , 2010, 36, 115-122.	2.0	35
26	Evidence for explosive silicic volcanism on the Moon from the extended distribution of thorium near the Compton-Belkovich Volcanic Complex. <i>Journal of Geophysical Research E: Planets</i> , 2015, 120, 92-108.	1.5	30
27	Size limits for rounding of volcanic ash particles heated by lightning. <i>Journal of Geophysical Research: Solid Earth</i> , 2017, 122, 1977-1989.	1.4	30
28	A general model for welding of ash particles in volcanic systems validated using in situ X-ray tomography. <i>Earth and Planetary Science Letters</i> , 2019, 525, 115726.	1.8	30
29	Experimental sintering of ash at conduit conditions and implications for the longevity of tuffisites. <i>Bulletin of Volcanology</i> , 2018, 80, 1.	1.1	28
30	Injection of vesicular magma into an andesitic dome at the effusive–explosive transition. <i>Earth and Planetary Science Letters</i> , 2010, 295, 83-90.	1.8	25
31	LBflow: An extensible lattice Boltzmann framework for the simulation of geophysical flows. Part II: usage and validation. <i>Computers and Geosciences</i> , 2010, 36, 123-132.	2.0	23
32	Sintering of polydisperse viscous droplets. <i>Physical Review E</i> , 2017, 95, 033114.	0.8	22
33	The architecture and shallow conduits of Laki-type pyroclastic cones: insights into a basaltic fissure eruption. <i>Bulletin of Volcanology</i> , 2016, 78, 1.	1.1	18
34	Experimental constraints on the textures and origin of obsidian pyroclasts. <i>Bulletin of Volcanology</i> , 2019, 81, 1.	1.1	18
35	A model for permeability evolution during volcanic welding. <i>Journal of Volcanology and Geothermal Research</i> , 2021, 409, 107118.	0.8	18
36	Proximal lava drainage controls on basaltic fissure eruption dynamics. <i>Bulletin of Volcanology</i> , 2017, 79, 1.	1.1	17

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37	Dendritic crystallization in hydrous basaltic magmas controls magma mobility within the Earth's crust. <i>Nature Communications</i> , 2022, 13, .	5.8	17
38	Convective tipping point initiates localization of basaltic fissure eruptions. <i>Earth and Planetary Science Letters</i> , 2021, 553, 116637.	1.8	15
39	Comment on "It takes three to tango: 2. Bubble dynamics in basaltic volcanoes and ramifications for modeling normal Strombolian activity" by J. Suckale, B. H. Hager, L. T. Elkins-Tanton, and J.-C. Nave. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	13
40	Rootless cone eruption processes informed by dissected tephra deposits and conduits. <i>Bulletin of Volcanology</i> , 2015, 77, 1.	1.1	13
41	Spatter matters " distinguishing primary (eruptive) and secondary (non-eruptive) spatter deposits. <i>Scientific Reports</i> , 2018, 8, 9179.	1.6	13
42	Chapter 21 Controls on variations in cristobalite abundance in ash generated by the Soufrière Hills Volcano, Montserrat in the period 1997 to 2010. <i>Geological Society Memoir</i> , 2014, 39, 399-406.	0.9	11
43	Experimental observations of bubbling regimes at in-line multi-orifice bubblers. <i>International Journal of Multiphase Flow</i> , 2019, 114, 66-81.	1.6	11
44	Quantifying Microstructural Evolution in Moving Magma. <i>Frontiers in Earth Science</i> , 2020, 8, .	0.8	11
45	In situ quantification of crystallisation kinetics of plagioclase and clinopyroxene in basaltic magma: Implications for lava flow. <i>Earth and Planetary Science Letters</i> , 2021, 568, 117016.	1.8	10
46	Rheology of three-phase suspensions determined via dam-break experiments. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2021, 477, .	1.0	10
47	The Birth of a Hawaiian Fissure Eruption. <i>Journal of Geophysical Research: Solid Earth</i> , 2021, 126, .	1.4	6
48	From magma ascent to ash generation: investigating volcanic conduit processes by integrating experiments, numerical modeling, and observations. <i>Annals of Geophysics</i> , 2017, 60, .	0.5	5
49	Crowd-sourcing observations of volcanic eruptions during the 2021 Fagradalsfjall and Cumbre Vieja events. <i>Nature Communications</i> , 2022, 13, 2611.	5.8	5
50	In Vulcan's forge. <i>Nature Geoscience</i> , 2019, 12, 2-3.	5.4	4
51	Hot Sintering of Melts, Glasses and Magmas. <i>Reviews in Mineralogy and Geochemistry</i> , 2022, 87, 801-840.	2.2	4
52	Correction to "The constitutive equation and flow dynamics of bubbly magmas". <i>Geophysical Research Letters</i> , 2003, 30, .	1.5	2
53	A novel experimental apparatus for investigating bubbly flows in a slot geometry. <i>Review of Scientific Instruments</i> , 2020, 91, 045110.	0.6	2
54	Using obsidian in glass art practice. <i>Volcanica</i> , 2022, 5, 183-207.	0.6	1