Stephen J Mackwell

List of Publications by Year
in descending order

48	3,018	172457	243625
papers	citations	29 h-index	44 g-index

48	48	48	1948
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Diffusion of hydrogen in olivine: Implications for water in the mantle. Journal of Geophysical Research, 1990, 95, 5079-5088.	3.3	394
2	Diffusion of Hydrogen and Intrinsic Point Defects in Olivine. Zeitschrift Fur Physikalische Chemie, 1998, 207, 147-162.	2.8	254
3	Water contents in mantle xenoliths from the Colorado Plateau and vicinity: Implications for the mantle rheology and hydrationâ€induced thinning of continental lithosphere. Journal of Geophysical Research, 2008, 113, .	3.3	206
4	Mechanisms of hydrogen incorporation and diffusion in iron-bearing olivine. Physics and Chemistry of Minerals, 2006, 33, 347-355.	0.8	204
5	Structure and elasticity of single-crystal (Mg,Fe)O and a new method of generating shear waves for gigahertz ultrasonic interferometry. Journal of Geophysical Research, 2002, 107, ECV 4-1.	3.3	149
6	Shear deformation experiments of forsterite at 11 GPa - 1400C in the multianvil apparatus. European Journal of Mineralogy, 2004, 16, 877-889.	1.3	145
7	Intercalibration of FTIR and SIMS for hydrogen measurements in glasses and nominally anhydrous minerals. American Mineralogist, 2007, 92, 811-828.	1.9	133
8	Water diffusion in synthetic iron-free forsterite. Physics and Chemistry of Minerals, 2003, 30, 486-494.	0.8	129
9	Hydrogen in diopside: Diffusion profiles. American Mineralogist, 2000, 85, 480-487.	1.9	127
10	Creep of dry clinopyroxene aggregates. Journal of Geophysical Research, 2001, 106, 13443-13454.	3.3	118
11	Highâ€temperature rheology of enstatite: Implications for creep in the mantle. Geophysical Research Letters, 1991, 18, 2027-2030.	4.0	68
12	Dependence of dislocation creep of dunite on oxygen fugacity: Implications for viscosity variations in Earth's mantle. Journal of Geophysical Research, 2011, 116, .	3.3	65
13	Microstructures and lattice preferred orientations in experimentally deformed clinopyroxene aggregates. Journal of Structural Geology, 2000, 22, 1633-1648.	2.3	63
14	Dislocation creep of magnesiowÃ¼stite (Mg0.8Fe0.2O). Earth and Planetary Science Letters, 2001, 194, 229-240.	4.4	62
15	Rheology of olivine and the strength of the lithosphere. Geophysical Research Letters, 1990, 17, 9-12.	4.0	56
16	Transient creep of olivine: Point-defect relaxation times. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1988, 57, 779-789.	0.6	53
17	Toward a global space exploration program: A stepping stone approach. Advances in Space Research, 2012, 49, 2-48.	2.6	50
18	Experimental constraints on the electrical anisotropy of the lithosphereâ€“asthenosphere system. Nature, 2015, 522, 202-206.	27.8	50

#	Article	IF	Citations
19	Kinetics of diffusion-controlled growth of fayalite. Physics and Chemistry of Minerals, 1994, 21, 156-165.	0.8	48
20	Feâ€“Mg Interdiffusion in (Mg,Fe)O. Physics and Chemistry of Minerals, 2005, 32, 418-425.	0.8	47
21	Fabric evolution during high shear strain deformation of magnesiowÃ¼stite (Mg0.8Fe0.2O). Journal of Geophysical Research, 2003, 108, .	3.3	45
22	Single-crystal elasticity and sound velocities of (Mg0.94Fe0.06)O ferropericlase to 20 GPa. Journal of Geophysical Research, 2006, 111, .	3.3	43
23	Effect of pressure on Feâ€“Mg interdiffusion in (FexMg1â^'x)O, ferropericlase. Physics of the Earth and Planetary Interiors, 2003, 139, 21-34.	1.9	42
24	Experimental deformation of olivine single crystals at lithospheric temperatures. Geophysical Research Letters, 2009, 36, .	4.0	42
25	Stress-driven Melt Segregation in Partially Molten Feldspathic Rocks. Journal of Petrology, 2010, 51, 9-19.	2.8	41
26	Influence of hydrogen on Feâ€“Mg interdiffusion in (Mg,Fe)O and implications for Earthâ€™s lower mantle. Contributions To Mineralogy and Petrology, 2007, 154, 279-289.	3.1	37
27	Large-strain deformation and strain partitioning in polyphase rocks: Dislocation creep of olivineâ€“magnesiowÃ¼stite aggregates. Tectonophysics, 2006, 427, 115-132.	2.2	35
28	Fe3+/H+ and D/H in kaersutitesâ€”Misleading indicators of mantle source fugacities. Geology, 1992, 20, 565.	4.4	33
29	Transport properties of olivine grain boundaries from electrical conductivity experiments. Contributions To Mineralogy and Petrology, 2018, 173, 1.	3.1	32
30	Oxidation kinetics of fayalite (Fe2SiO4). Physics and Chemistry of Minerals, 1992, 19, 220.	0.8	30
31	Highâ€temperature deformation of enstatite aggregates. Journal of Geophysical Research: Solid Earth, 2016, 121, 6384-6400.	3.4	26
32	Gigahertz ultrasonic interferometry at highPandT: new tools for obtaining a thermodynamic equation of state. Journal of Physics Condensed Matter, 2002, 14, 11525-11530.	1.8	22
33	Chemical transfer during redox exchanges between H₂and Fe-bearing silicate melts. American Mineralogist, 2003, 88, 308-315.	1.9	21
34	Sound wave velocities and elastic constants for MagnesiowÃ¼stite using gigahertz interferometry. Geophysical Research Letters, 2000, 27, 799-802.	4.0	19
35	High-temperature stability of San Carlos olivine. Contributions To Mineralogy and Petrology, 1987, 95, 226-230.	3.1	18
36	Solubility and Diffusion of â€˜Waterâ€™ in Silicate Minerals. , 1999, , 539-559.		17

#	Article	IF	Citations
37	High-temperature deformation of forsterite single crystals doped with vanadium. Physics and Chemistry of Minerals, 1986, 13, 351-356.	0.8	13
38	Strength and deformation of planetary lithospheres. , 2009, , 397-456.		13
39	Water in Transition Zone and Lower Mantle Minerals. Geophysical Monograph Series, 0, , 57-68.	0.1	13
40	Prediction of silicate melt viscosity from electrical conductivity: A model and its geophysical implications. Geochemistry, Geophysics, Geosystems, 2013, 14, 1685-1692.	2.5	13
41	Deformation of olivine-spinel aggregates in the system (Mg,Ni)2GeO4deformed to high strain in torsion: Implications for upper mantle anisotropy. Journal of Geophysical Research, 2006, 111, n/a-n/a.	3.3	8
42	Rheological Consequences of Redox State. Reviews in Mineralogy and Geochemistry, 2008, 68, 555-569.	4.8	7
43	1. New Developments in Deformation Studies: High-Strain Deformation. , 2002, , 1-20.		5
44	Rheology and microstructure of (Ca_{0.9},Sr_{0.1})TiO₃ perovskite deformed in compression and torsion. Journal of Geophysical Research, 2010, 115, .	3.3	5
45	Melt inclusions in olivine: Reliable witnesses to Earthâ€™s interior?. Geology, 2012, 40, 959-960.	4.4	5
46	Diffusion rates of hydrogen defect species associated with site-specific infrared spectral bands in natural olivine. Earth and Planetary Science Letters, 2022, 581, 117406.	4.4	5
47	The role of protons in ionic diffusion in (Mg,ÂFe)O and (Mg,ÂFe)2SiO4. Journal of Materials Science, 2008, 43, 4693-4700.	3.7	4
48	Mineral and Melt Physics. Reviews of Geophysics, 1991, 29, 844-863.	23.0	3