S-H Dan Shim

List of Publications by Year
in descending order

79 papers	3,713 citations	136740 32 h-index	128067 60 g-index
86 all docs	86 docs citations	86 times ranked	2889 citing authors

#	Article	IF	Citations
1	Continent-sized anomalous zones with low seismic velocity at the base of Earth's mantle. Nature Geoscience, 2016, 9, 481-489.	5.4	279
2	Seismostratigraphy and Thermal Structure of Earth's Core-Mantle Boundary Region. Science, 2007, 315, 1813-1817.	6.0	238
3	Raman spectroscopy of Fe₂O₃to 62 GPa. American Mineralogist, 2002, 87, 318-326.	0.9	210
4	Equation of state of gold and its application to the phase boundaries near 660 km depth in Earthâ€™s mantle. Earth and Planetary Science Letters, 2002, 203, 729-739.	1.8	182
5	The post-spinel transformation in Mg2SiO4 and its relation to the 660-km seismic discontinuity. Nature, 2001, 411, 571-574.	13.7	151
6	Spin state of ferric iron in MgSiO3 perovskite and its effect on elastic properties. Earth and Planetary Science Letters, 2010, 289, 68-75.	1.8	129
7	The stability and P-V-T equation of state of CaSiO3perovskite in the Earth's lower mantle. Journal of Geophysical Research, 2000, 105, 25955-25968.	3.3	113
8	Raman spectroscopy and x-ray diffraction of phase transitions inCr2O3to 61 GPa. Physical Review B, 2004, 69, .	1.1	111
9	Thickness and Clapeyron slope of the post-perovskite boundary. Nature, 2009, 462, 782-785.	13.7	105
10	Stability and crystal structure of MgSiO3perovskite to the core-mantle boundary. Geophysical Research Letters, 2004, 31, n/a-n/a.	1.5	104
11	Stability and Structure of MgSiO3 Perovskite to 2300-Kilometer Depth in Earth's Mantle. Science, 2001, 293, 2437-2440.	6.0	96
12	Tetragonal structure of CaSiO3perovskite above 20 GPa. Geophysical Research Letters, 2002, 29, 19-1-19-4.	1.5	95
13	The equation of state of CaSiO3 perovskite to 108 GPa at 300 K. Physics of the Earth and Planetary Interiors, 2000, 120, 327-338.	0.7	90
14	Mineralogical effects on the detectability of the postperovskite boundary. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 2275-2279.	3.3	88
15	Effect of Fe on the equation of state of mantle silicate perovskite over 1Mbar. Physics of the Earth and Planetary Interiors, 2008, 168, 97-102.	0.7	86
16	Effects of the Fe3+ spin transition on the properties of aluminous perovskiteâ€"New insights for lower-mantle seismic heterogeneities. Earth and Planetary Science Letters, 2011, 310, 293-302.	1.8	84
17	Seismic Imaging of Transition Zone Discontinuities Suggests Hot Mantle West of Hawaii. Science, 2011, 332, 1068-1071.	6.0	75
18	Equations of state of the high-pressure phases of a natural peridotite and implications for the Earth's lower mantle. Earth and Planetary Science Letters, 2004, 223, 381-393.	1.8	70

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19	Electronic and magnetic structures of the postperovskite-type Fe ₂ O ₃ and implications for planetary magnetic records and deep interiors. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 5508-5512.	3.3	66
20	The Postperovskite Transition. Annual Review of Earth and Planetary Sciences, 2008, 36, 569-599.	4.6	62
21	High-pressure phase transition in Mn2O3: Application for the crystal structure and preferred orientation of the CaIrO3type. Geophysical Research Letters, 2006, 33, .	1.5	55
22	In situ Raman spectroscopy measurements of MgAl2O4 spinel up to 1400 ÂC. American Mineralogist, 2008, 93, 470-476.	0.9	55
23	Stability, metastability, and elastic properties of a dense silica polymorph, seifertite. Journal of Geophysical Research: Solid Earth, 2013, 118, 4745-4757.	1.4	52
24	Stability of ferrous-iron-rich bridgmanite under reducing midmantle conditions. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 6468-6473.	3.3	51
25	Constraints on the<i>P-V-T</i>equation of state of MgSiO₃perovskite. American Mineralogist, 2000, 85, 354-363.	0.9	47
26	Crystal structure and thermoelastic properties of (Mg _{0.91} Fe _{0.09})SiO ₃ postperovskite up to 135 GPa and 2,700 K. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 7382-7386.	3.3	46
27	Spin and valence dependence of iron partitioning in Earthâ€™s deep mantle. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 11127-11130.	3.3	45
28	Rhenium, anin situpressure calibrant for internally heated diamond anvil cells. Review of Scientific Instruments, 2004, 75, 2409-2418.	0.6	40
29	THE CHEMICAL COMPOSITION OF<i>Ï„</i>CETI AND POSSIBLE EFFECTS ON TERRESTRIAL PLANETS. Astrophysical Journal, 2015, 803, 90.	1.6	40
30	Intercomparison of the gold, platinum, and MgO pressure scales up to 140ÂGPa and 2500ÂK. Journal of Geophysical Research: Solid Earth, 2017, 122, 3450-3464.	1.4	36
31	Large H ₂ O solubility in dense silica and its implications for the interiors of water-rich planets. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 9747-9754.	3.3	34
32	Spin and valence states of iron in (Mg_{0.8}Fe_{0.2})SiO₃ perovskite. Geophysical Research Letters, 2009, 36, .	1.5	33
33	Rietveld structure refinement of MgGeO3 post-perovskite phase to 1 Mbar. American Mineralogist, 2008, 93, 965-976.	0.9	32
34	Compositional dependence of structural transition pressures in amorphous phases with mantle-related compositions. Earth and Planetary Science Letters, 2009, 283, 174-180.	1.8	32
35	Evidence for the charge disproportionation of iron in extraterrestrial bridgmanite. Science Advances, 2020, 6, eaay7893.	4.7	32
36	Raman spectra of bixbyite, Mn2O3, up to 40 GPa. Physics and Chemistry of Minerals, 2011, 38, 685-691.	0.3	31

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37	X-ray diffraction and Mossbauer spectroscopy of Fe3+-bearing Mg-silicate post-perovskite at 128-138 GPa. American Mineralogist, 2010, 95, 418-421.	0.9	29
38	Thermal expansion of SiC at high pressureâ€temperature and implications for thermal convection in the deep interiors of carbide exoplanets. Journal of Geophysical Research E: Planets, 2017, 122, 124-133.	1.5	29
39	Subnanosecond phase transition dynamics in laser-shocked iron. Science Advances, 2020, 6, eaaz5132.	4.7	29
40	Equation of state of NaMgF₃ postperovskite: Implication for the seismic velocity changes in the Dâ€³ region. Geophysical Research Letters, 2008, 35, .	1.5	28
41	Stability of the MgSiO₃ analog NaMgF₃ and its implication for mantle structure in superâ€Earths. Geophysical Research Letters, 2010, 37, .	1.5	27
42	The postspinel boundary in pyrolitic compositions determined in the laserâ€heated diamond anvil cell. Geophysical Research Letters, 2014, 41, 3833-3841.	1.5	27
43	In situ Raman spectroscopy of MgSiO3 enstatite up to 1550 K. American Mineralogist, 2009, 94, 1638-1646.	0.9	25
44	Multidisciplinary impact of the deep mantle phase transition in perovskite structure. Eos, 2005, 86, 1.	0.1	23
45	Raman spectroscopy of perovskite and post-perovskite phases of MgGeO3 to 123ÂGPa. Earth and Planetary Science Letters, 2007, 260, 166-178.	1.8	22
46	Imaging the upper mantle transition zone with a generalized Radon transform of SS precursors. Physics of the Earth and Planetary Interiors, 2010, 180, 80-91.	0.7	22
47	Astrobiological Stoichiometry. Astrobiology, 2014, 14, 603-626.	1.5	22
48	Phase transition and equation of state of dense hydrous silica up to 63ÂGPa. Journal of Geophysical Research: Solid Earth, 2017, 122, 6972-6983.	1.4	22
49	Raman spectroscopy of water-rich stishovite and dense high-pressure silica up to 55 GPa. American Mineralogist, 2017, 102, 2180-2189.	0.9	20
50	In situ X-ray diffraction of silicate liquids and glasses under dynamic and static compression to megabar pressures. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 11981-11986.	3.3	20
51	Vibrational spectroscopy and x-ray diffraction ofCd(OH)2to28GPaat300K. Physical Review B, 2006, 74, .	1.1	19
52	A crystallineâ€toâ€crystalline phase transition in Ca(OH)₂ at 8 GPa and room temperature. Geophysical Research Letters, 2008, 35, .	1.5	19
53	Raman spectroscopy of CaIrO3 postperovskite up to 30 GPa. American Mineralogist, 2008, 93, 1654-1658.	0.9	19
54	Crystal structure and compressibility of lead dioxide up to 140 GPa. American Mineralogist, 2014, 99, 170-177.	0.9	16

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55	Origin of Fe 3+ in Fe-containing, Al-free mantle silicate perovskite. Earth and Planetary Science Letters, 2015, 409, 319-328.	1.8	16
56	Spin state transition and partitioning of iron: Effects on mantle dynamics. Earth and Planetary Science Letters, 2015, 417, 57-66.	1.8	16
57	Equation of state of solid Ne inter-calibrated with the MgO, Au, Pt, NaCl-B2, and ruby pressure scales up to 130â€…GPa. High Pressure Research, 2018, 38, 377-395.	0.4	16
58	Low Melting Temperature of Anhydrous Mantle Materials at the Coreâ€Mantle Boundary. Geophysical Research Letters, 2020, 47, e2020GL089345.	1.5	15
59	Electronic structure of iron in magnesium silicate glasses at high pressure. Geophysical Research Letters, 2012, 39, .	1.5	14
60	Crystal structure of CaSiO3 perovskite at 28â€“62 GPa and 300 K under quasi-hydrostatic stress conditions. American Mineralogist, 2018, 103, 462-468.	0.9	13
61	Possible H2O storage in the crystal structure of CaSiO3 perovskite. Physics of the Earth and Planetary Interiors, 2020, 299, 106412.	0.7	13
62	Multiple seismic reflectors in Earth's lowermost mantle. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 2442-2446.	3.3	11
63	Dehydration of Î´-AlOOH in Earthâ€™s Deep Lower Mantle. Minerals (Basel, Switzerland), 2020, 10, 384.	0.8	11
64	Atomic-scale mixing between MgO and H2O in the deep interiors of water-rich planets. Nature Astronomy, 2021, 5, 815-821.	4.2	10
65	Direct Observation of Shockâ€Induced Disordering of Enstatite Below the Melting Temperature. Geophysical Research Letters, 2020, 47, e2020GL088887.	1.5	9
66	The Oâ€“O Bonding and Hydrogen Storage in the Pyrite-type PtO₂. Inorganic Chemistry, 2019, 58, 8300-8307.	1.9	6
67	Stable hexagonal ternary alloy phase in Fe-Si-H at 28.6â€“42.2 GPa and 3000 K. Physical Review B, 2022, 105, .	1.1	6
68	A new hydrous iron oxide phase stable at mid-mantle pressures. Earth and Planetary Science Letters, 2020, 550, 116551.	1.8	5
69	Water in the crystal structure of CaSiO3 perovskite. American Mineralogist, 2022, 107, 631-641.	0.9	5
70	A Geologically Robust Procedure for Observing Rocky Exoplanets to Ensure that Detection of Atmospheric Oxygen Is a Modern Earth-like Biosignature. Astrophysical Journal Letters, 2020, 898, L17.	3.0	5
71	Effect of nickel on the high-pressure phases in FeH. Physical Review B, 2021, 104, .	1.1	5
72	Stability of MgSiO3 perovskite in the lower mantle. Geophysical Monograph Series, 2005, , 261-282.	0.1	4

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73	The Bridgmaniteâ€"Akimotoiteâ€"Majorite Triple Point Determined in Large Volume Press and Laser-Heated Diamond Anvil Cell. Minerals (Basel, Switzerland), 2020, 10, 67.	0.8	4
74	Oxidation of the Interiors of Carbide Exoplanets. Planetary Science Journal, 2020, 1, 39.	1.5	4
75	Phase transformation of hydrous ringwoodite to the lower-mantle phases and the formation of dense hydrous silica. American Mineralogist, 2020, 105, 1342-1348.	0.9	3
76	Mineralogy and density of Archean volcanic crust in the mantle transition zone. Physics of the Earth and Planetary Interiors, 2020, 305, 106490.	0.7	3
77	Effects of Hydrogen on the Phase Relations in Feâ€FeS at Pressures of Marsâ€Sized Bodies. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006942.	1.5	3
78	Post-perovskite at ten. Nature Geoscience, 2014, 7, 621-623.	5.4	2
79	Phase transitions across the 660â€km discontinuity determined in the laserâ€heated diamond anvil cell. Acta Geologica Sinica, 2019, 93, 175-175.	0.8	0