

# S-H Dan Shim

## List of Publications by Citations

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77  
papers

3,039  
citations

29  
h-index

54  
g-index

86  
ext. papers

3,364  
ext. citations

7.4  
avg, IF

5.23  
L-index

#	Paper	IF	Citations
77	Seismostratigraphy and thermal structure of Earth's core-mantle boundary region. <i>Science</i> , <b>2007</b> , 315, 1813-7	33.3	212
76	Continent-sized anomalous zones with low seismic velocity at the base of Earth's mantle. <i>Nature Geoscience</i> , <b>2016</b> , 9, 481-489	18.3	197
75	Raman spectroscopy of Fe <sub>2</sub> O <sub>3</sub> to 62 GPa. <i>American Mineralogist</i> , <b>2002</b> , 87, 318-326	2.9	174
74	Equation of state of gold and its application to the phase boundaries near 660 km depth in Earth's mantle. <i>Earth and Planetary Science Letters</i> , <b>2002</b> , 203, 729-739	5.3	170
73	The post-spinel transformation in Mg <sub>2</sub> SiO <sub>4</sub> and its relation to the 660-km seismic discontinuity. <i>Nature</i> , <b>2001</b> , 411, 571-4	50.4	140
72	Spin state of ferric iron in MgSiO <sub>3</sub> perovskite and its effect on elastic properties. <i>Earth and Planetary Science Letters</i> , <b>2010</b> , 289, 68-75	5.3	120
71	The stability and PVT equation of state of CaSiO <sub>3</sub> perovskite in the Earth's lower mantle. <i>Journal of Geophysical Research</i> , <b>2000</b> , 105, 25955-25968		96
70	Thickness and Clapeyron slope of the post-perovskite boundary. <i>Nature</i> , <b>2009</b> , 462, 782-5	50.4	94
69	Raman spectroscopy and x-ray diffraction of phase transitions in Cr <sub>2</sub> O <sub>3</sub> to 61 GPa. <i>Physical Review B</i> , <b>2004</b> , 69,	3.3	93
68	Stability and crystal structure of MgSiO <sub>3</sub> perovskite to the core-mantle boundary. <i>Geophysical Research Letters</i> , <b>2004</b> , 31, n/a-n/a	4.9	92
67	Stability and structure of MgSiO <sub>3</sub> perovskite to 2300-kilometer depth in Earth's mantle. <i>Science</i> , <b>2001</b> , 293, 2437-40	33.3	87
66	Mineralogical effects on the detectability of the postperovskite boundary. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2012</b> , 109, 2275-9	11.5	81
65	Effects of the Fe <sup>3+</sup> spin transition on the properties of aluminous perovskite: New insights for lower-mantle seismic heterogeneities. <i>Earth and Planetary Science Letters</i> , <b>2011</b> , 310, 293-302	5.3	79
64	The equation of state of CaSiO <sub>3</sub> perovskite to 108 GPa at 300 K. <i>Physics of the Earth and Planetary Interiors</i> , <b>2000</b> , 120, 327-338	2.3	78
63	Effect of Fe on the equation of state of mantle silicate perovskite over 1Mbar. <i>Physics of the Earth and Planetary Interiors</i> , <b>2008</b> , 168, 97-102	2.3	77
62	Tetragonal structure of CaSiO <sub>3</sub> perovskite above 20 GPa. <i>Geophysical Research Letters</i> , <b>2002</b> , 29, 19-1-19-4	4.9	75
61	Seismic imaging of transition zone discontinuities suggests hot mantle west of Hawaii. <i>Science</i> , <b>2011</b> , 332, 1068-71	33.3	67

60	Equations of state of the high-pressure phases of a natural peridotite and implications for the Earth's lower mantle. <i>Earth and Planetary Science Letters</i> , <b>2004</b> , 223, 381-393	5.3	63
59	The Postperovskite Transition. <i>Annual Review of Earth and Planetary Sciences</i> , <b>2008</b> , 36, 569-599	15.3	54
58	Electronic and magnetic structures of the postperovskite-type Fe <sub>2</sub> O <sub>3</sub> and implications for planetary magnetic records and deep interiors. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2009</b> , 106, 5508-12	11.5	52
57	High-pressure phase transition in Mn <sub>2</sub> O <sub>3</sub> : Application for the crystal structure and preferred orientation of the CaIrO <sub>3</sub> type. <i>Geophysical Research Letters</i> , <b>2006</b> , 33,	4.9	49
56	Stability, metastability, and elastic properties of a dense silica polymorph, seifertite. <i>Journal of Geophysical Research: Solid Earth</i> , <b>2013</b> , 118, 4745-4757	3.6	44
55	Crystal structure and thermoelastic properties of (Mg <sub>0.91</sub> Fe <sub>0.09</sub> )SiO <sub>3</sub> postperovskite up to 135 GPa and 2,700 K. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2008</b> , 105, 7382-6	11.5	43
54	In situ Raman spectroscopy measurements of MgAl <sub>2</sub> O <sub>4</sub> spinel up to 1400 °C. <i>American Mineralogist</i> , <b>2008</b> , 93, 470-476	2.9	40
53	Constraints on the P-V-T equation of state of MgSiO <sub>3</sub> perovskite. <i>American Mineralogist</i> , <b>2000</b> , 85, 354-363	3.9	39
52	Stability of ferrous-iron-rich bridgmanite under reducing midmantle conditions. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2017</b> , 114, 6468-6473	11.5	37
51	Spin and valence dependence of iron partitioning in Earth's deep mantle. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2016</b> , 113, 11127-11130	11.5	35
50	THE CHEMICAL COMPOSITION OF TITANIUM AND POSSIBLE EFFECTS ON TERRESTRIAL PLANETS. <i>Astrophysical Journal</i> , <b>2015</b> , 803, 90	4.7	34
49	Rhenium, an in situ pressure calibrant for internally heated diamond anvil cells. <i>Review of Scientific Instruments</i> , <b>2004</b> , 75, 2409-2418	1.7	33
48	Rietveld structure refinement of MgGeO <sub>3</sub> post-perovskite phase to 1 Mbar. <i>American Mineralogist</i> , <b>2008</b> , 93, 965-976	2.9	29
47	Compositional dependence of structural transition pressures in amorphous phases with mantle-related compositions. <i>Earth and Planetary Science Letters</i> , <b>2009</b> , 283, 174-180	5.3	28
46	Intercomparison of the gold, platinum, and MgO pressure scales up to 140 GPa and 2500 K. <i>Journal of Geophysical Research: Solid Earth</i> , <b>2017</b> , 122, 3450-3464	3.6	27
45	Raman spectra of bixbyite, Mn <sub>2</sub> O <sub>3</sub> , up to 40 GPa. <i>Physics and Chemistry of Minerals</i> , <b>2011</b> , 38, 685-691	1.6	27
44	X-ray diffraction and Mössbauer spectroscopy of Fe <sup>3+</sup> -bearing Mg-silicate post-perovskite at 128–138 GPa. <i>American Mineralogist</i> , <b>2010</b> , 95, 418-421	2.9	26
43	Thermal expansion of SiC at high pressure-temperature and implications for thermal convection in the deep interiors of carbide exoplanets. <i>Journal of Geophysical Research E: Planets</i> , <b>2017</b> , 122, 124-133	4.1	24

42	Equation of state of NaMgF3 postperovskite: Implication for the seismic velocity changes in the D? region. <i>Geophysical Research Letters</i> , <b>2008</b> , 35,	4.9	23
41	The postspinel boundary in pyrolytic compositions determined in the laser-heated diamond anvil cell. <i>Geophysical Research Letters</i> , <b>2014</b> , 41, 3833-3841	4.9	22
40	Stability of the MgSiO3 analog NaMgF3 and its implication for mantle structure in super-Earths. <i>Geophysical Research Letters</i> , <b>2010</b> , 37, n/a-n/a	4.9	22
39	Spin and valence states of iron in (Mg0.8Fe0.2)SiO3 perovskite. <i>Geophysical Research Letters</i> , <b>2009</b> , 36,	4.9	22
38	Multidisciplinary impact of the deep mantle phase transition in perovskite structure. <i>Eos</i> , <b>2005</b> , 86, 1	1.5	22
37	Imaging the upper mantle transition zone with a generalized Radon transform of SS precursors. <i>Physics of the Earth and Planetary Interiors</i> , <b>2010</b> , 180, 80-91	2.3	21
36	Raman spectroscopy of perovskite and post-perovskite phases of MgGeO3 to 123 GPa. <i>Earth and Planetary Science Letters</i> , <b>2007</b> , 260, 166-178	5.3	21
35	Astrobiological stoichiometry. <i>Astrobiology</i> , <b>2014</b> , 14, 603-26	3.7	20
34	In situ Raman spectroscopy of MgSiO3 enstatite up to 1550 K. <i>American Mineralogist</i> , <b>2009</b> , 94, 1638-1646	4.9	18
33	Subnanosecond phase transition dynamics in laser-shocked iron. <i>Science Advances</i> , <b>2020</b> , 6, eaaz5132	14.3	16
32	Raman spectroscopy of CaIrO3 postperovskite up to 30 GPa. <i>American Mineralogist</i> , <b>2008</b> , 93, 1654-1658	2.9	16
31	Evidence for the charge disproportionation of iron in extraterrestrial bridgmanite. <i>Science Advances</i> , <b>2020</b> , 6, eaay7893	14.3	15
30	Spin state transition and partitioning of iron: Effects on mantle dynamics. <i>Earth and Planetary Science Letters</i> , <b>2015</b> , 417, 57-66	5.3	14
29	Origin of Fe3+ in Fe-containing, Al-free mantle silicate perovskite. <i>Earth and Planetary Science Letters</i> , <b>2015</b> , 409, 319-328	5.3	14
28	A crystalline-to-crystalline phase transition in Ca(OH)2 at 8 GPa and room temperature. <i>Geophysical Research Letters</i> , <b>2008</b> , 35,	4.9	14
27	Vibrational spectroscopy and x-ray diffraction of Cd(OH)2 to 28GPa at 300K. <i>Physical Review B</i> , <b>2006</b> , 74,	3.3	14
26	Large H2O solubility in dense silica and its implications for the interiors of water-rich planets. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2020</b> , 117, 9747-9754	11.5	13
25	Crystal structure and compressibility of lead dioxide up to 140 GPa. <i>American Mineralogist</i> , <b>2014</b> , 99, 170-177	2.9	12

24	Multiple seismic reflectors in Earth's lowermost mantle. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2014</b> , 111, 2442-6	11.5	11
23	Raman spectroscopy of water-rich stishovite and dense high-pressure silica up to 55 GPa. <i>American Mineralogist</i> , <b>2017</b> , 102, 2180-2189	2.9	10
22	Phase transition and equation of state of dense hydrous silica up to 63 GPa. <i>Journal of Geophysical Research: Solid Earth</i> , <b>2017</b> , 122, 6972-6983	3.6	9
21	In situ X-ray diffraction of silicate liquids and glasses under dynamic and static compression to megabar pressures. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2020</b> , 117, 11981-11986	11.5	8
20	Equation of state of solid Ne inter-calibrated with the MgO, Au, Pt, NaCl-B2, and ruby pressure scales up to 130 GPa. <i>High Pressure Research</i> , <b>2018</b> , 38, 377-395	1.6	7
19	Electronic structure of iron in magnesium silicate glasses at high pressure. <i>Geophysical Research Letters</i> , <b>2012</b> , 39,	4.9	7
18	Crystal structure of CaSiO <sub>3</sub> perovskite at 288 GPa and 300 K under quasi-hydrostatic stress conditions. <i>American Mineralogist</i> , <b>2018</b> , 103, 462-468	2.9	7
17	Possible H <sub>2</sub> O storage in the crystal structure of CaSiO <sub>3</sub> perovskite. <i>Physics of the Earth and Planetary Interiors</i> , <b>2020</b> , 299, 106412	2.3	6
16	Dehydration of AlOOH in Earth's Deep Lower Mantle. <i>Minerals (Basel, Switzerland)</i> , <b>2020</b> , 10, 384	2.4	5
15	Low Melting Temperature of Anhydrous Mantle Materials at the Core-Mantle Boundary. <i>Geophysical Research Letters</i> , <b>2020</b> , 47, e2020GL089345	4.9	5
14	The O-O Bonding and Hydrogen Storage in the Pyrite-type PtO. <i>Inorganic Chemistry</i> , <b>2019</b> , 58, 8300-8307	5.1	4
13	Direct Observation of Shock-Induced Disorder of Enstatite Below the Melting Temperature. <i>Geophysical Research Letters</i> , <b>2020</b> , 47, e2020GL088887	4.9	4
12	Stability of MgSiO <sub>3</sub> Perovskite in the Lower Mantle. <i>Geophysical Monograph Series</i> , <b>2005</b> , 261-282	1.1	3
11	A Geologically Robust Procedure for Observing Rocky Exoplanets to Ensure that Detection of Atmospheric Oxygen Is a Modern Earth-like Biosignature. <i>Astrophysical Journal Letters</i> , <b>2020</b> , 898, L17	7.9	3
10	The Bridgmanite-Akimotoite-Majorite Triple Point Determined in Large Volume Press and Laser-Heated Diamond Anvil Cell. <i>Minerals (Basel, Switzerland)</i> , <b>2020</b> , 10, 67	2.4	2
9	Oxidation of the Interiors of Carbide Exoplanets. <i>Planetary Science Journal</i> , <b>2020</b> , 1, 39	2.9	2
8	Atomic-scale mixing between MgO and H <sub>2</sub> O in the deep interiors of water-rich planets. <i>Nature Astronomy</i> , <b>2021</b> , 5, 815-821	12.1	2
7	Effect of nickel on the high-pressure phases in FeH. <i>Physical Review B</i> , <b>2021</b> , 104,	3.3	2

6	Mineralogy and density of Archean volcanic crust in the mantle transition zone. <i>Physics of the Earth and Planetary Interiors</i> , <b>2020</b> , 305, 106490	2.3	1
5	Effects of Hydrogen on the Phase Relations in Fe-FeS at Pressures of Mars-Sized Bodies. <i>Journal of Geophysical Research E: Planets</i> , <b>2021</b> , 126, e2021JE006942	4.1	1
4	A new hydrous iron oxide phase stable at mid-mantle pressures. <i>Earth and Planetary Science Letters</i> , <b>2020</b> , 550, 116551	5.3	1
3	Phase transformation of hydrous ringwoodite to the lower-mantle phases and the formation of dense hydrous silica. <i>American Mineralogist</i> , <b>2020</b> , 105, 1342-1348	2.9	0
2	Phase transitions across the 660-km discontinuity determined in the laser-heated diamond anvil cell. <i>Acta Geologica Sinica</i> , <b>2019</b> , 93, 175-175	0.7	
1	Corrigendum to Origin of Fe <sup>3+</sup> in Fe-containing, Al-free mantle silicate perovskite [Earth Planet. Sci. Lett. 409 (2014) 319-328]. <i>Earth and Planetary Science Letters</i> , <b>2016</b> , 442, 231-232	5.3	