Hirao Naohisa

List of Publications by Year
in descending order

70 papers	2,744 citations	159585 30 h-index	175258 52 g-index
70 all docs	70 docs citations	70 times ranked	1963 citing authors

#	Article	IF	Citations
1	Crystal structure of the superconducting phase of sulfur hydride. Nature Physics, 2016, 12, 835-838.	16.7	392
2	A perovskitic lower mantle inferred from high-pressure, high-temperature sound velocity data. Nature, 2012, 485, 90-94.	27.8	220
3	Highly intense monochromatic X-ray diffraction facility for high-pressure research at SPring-8. High Pressure Research, 2008, 28, 163-173.	1.2	140
4	Stability of a hydrous Î´-phase, AlOOHâ€“MgSiO2(OH)2, and a mechanism for water transport into the base of lower mantle. Earth and Planetary Science Letters, 2014, 401, 12-17.	4.4	130
5	Compression of FeSi, Fe₃C, Fe_{0.95}O, and FeS under the core pressures and implication for light element in the Earth's core. Journal of Geophysical Research, 2010, 115, .	3.3	117
6	Aluminous hydrous mineral Î´â€AlOOH as a carrier of hydrogen into the coreâ€mantle boundary. Geophysical Research Letters, 2008, 35, .	4.0	103
7	New developments in high-pressure X-ray diffraction beamline for diamond anvil cell at SPring-8. Matter and Radiation at Extremes, 2020, 5, .	3.9	84
8	Fe-Mg partitioning between (Mg, Fe)SiO3post-perovskite, perovskite, and magnesiowÃ¼stite in the Earth's lower mantle. Geophysical Research Letters, 2005, 32, n/a-n/a.	4.0	77
9	Development of an energy-domain⁵⁷Fe-MÃ¶ssbauer spectrometer using synchrotron radiation and its application to ultrahigh-pressure studies with a diamond anvil cell. Journal of Synchrotron Radiation, 2009, 16, 723-729.	2.4	76
10	Sound velocity measurements in dhcp-FeH up to 70 GPa with inelastic X-ray scattering: Implications for the composition of the Earth's core. Earth and Planetary Science Letters, 2012, 313-314, 79-85.	4.4	71
11	Phase transitions of (Mg,Fe)O at megabar pressures. Physics of the Earth and Planetary Interiors, 2004, 143-144, 201-213.	1.9	67
12	Evidence from x-ray diffraction of orientational ordering in phase III of solid hydrogen at pressures up to 183 GPa. Physical Review B, 2010, 82, .	3.2	67
13	Phase relationships of the Feâ€“FeS system in conditions up to the Earth's outer core. Earth and Planetary Science Letters, 2010, 294, 94-100.	4.4	60
14	Phase Transition of FeO and Stratification in Earthâ€™s Outer Core. Science, 2011, 334, 792-794.	12.6	60
15	Compression of iron hydride to 80 GPa and hydrogen in the Earth's inner core. Geophysical Research Letters, 2004, 31, n/a-n/a.	4.0	59
16	Iron-water reaction at high pressure and temperature, and hydrogen transport into the core. Physics and Chemistry of Minerals, 2005, 32, 77-82.	0.8	56
17	Melting relationships in the Feâ€“Fe3S system up to the outer core conditions. Earth and Planetary Science Letters, 2012, 359-360, 26-33.	4.4	56
18	Equation of State of Liquid Iron under Extreme Conditions. Physical Review Letters, 2020, 124, 165701.	7.8	55

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19	Pressure-induced reentrant metallic phase in lithium. Physical Review B, 2014, 89, .	3.2	52
20	Equation of state of pure iron and Fe0.9Ni0.1 alloy up to 3 Mbar. Physics of the Earth and Planetary Interiors, 2014, 228, 114-126.	1.9	52
21	Stability of Feâ€“Ni hydride after the reaction between Feâ€“Ni alloy and hydrous phase (Î´-AlOOH) up to 1.2Mbar: Possibility of H contribution to the core density deficit. Physics of the Earth and Planetary Interiors, 2012, 194-195, 18-24.	1.9	50
22	Discovery of seifertite in a shocked lunar meteorite. Nature Communications, 2013, 4, 1737.	12.8	48
23	Equation of state of iron?silicon alloys to megabar pressure. Physics and Chemistry of Minerals, 2004, 31, 329.	0.8	47
24	High-pressure generation using double stage micro-paired diamond anvils shaped by focused ion beam. Review of Scientific Instruments, 2015, 86, 033905.	1.3	42
25	Chemical Reactions Between Fe and H₂O up to Megabar Pressures and Implications for Water Storage in the Earth's Mantle and Core. Geophysical Research Letters, 2018, 45, 1330-1338.	4.0	42
26	High pressure generation using double-stage diamond anvil technique: problems and equations of state of rhenium. High Pressure Research, 2018, 38, 107-119.	1.2	39
27	Development of in situ Brillouin spectroscopy at high pressure and high temperature with synchrotron radiation and infrared laser heating system: Application to the Earth's deep interior. Physics of the Earth and Planetary Interiors, 2009, 174, 282-291.	1.9	35
28	Structural and Valence Changes of Europium Hydride Induced by Application of High-Pressure<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi mathvariant="normal">H</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math>. Physical Review Letters, 2011, 107, 025501.	7.8	34
29	Electrical conductivity model of Al-bearing bridgmanite with implications for the electrical structure of the Earth's lower mantle. Earth and Planetary Science Letters, 2016, 434, 208-219.	4.4	32
30	Experimental and theoretical thermal equations of state of MgSiO3 post-perovskite at multi-megabar pressures. Scientific Reports, 2016, 6, 22652.	3.3	30
31	Decomposition of Fe₃S above 250â€‰GPa. Geophysical Research Letters, 2013, 40, 4845-4849.	4.0	29
32	Sound velocity measurements of CaSiO3 perovskite to 133GPa and implications for lowermost mantle seismic anomalies. Earth and Planetary Science Letters, 2012, 349-350, 1-7.	4.4	24
33	New high-pressure B2 phase of FeS above 180 GPa. American Mineralogist, 2008, 93, 492-494.	1.9	23
34	Melting experiments on Feâ€“Siâ€“S alloys to core pressures: Silicon in the core?. American Mineralogist, 2018, 103, 742-748.	1.9	22
35	Discovery of moganite in a lunar meteorite as a trace of H ₂ O ice in the Moonâ€™s regolith. Science Advances, 2018, 4, eaar4378.	10.3	21
36	Static compression of B2 KCl to 230 GPa and its P-V-T equation of state. American Mineralogist, 2019, 104, 718-723.	1.9	20

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37	Fe₂S: The Most Feâ€Rich Iron Sulfide at the Earth's Inner Core Pressures. Geophysical Research Letters, 2019, 46, 11944-11949.	4.0	17
38	Equation of state of bcc-Mo by static volume compression to 410â€‰GPa. Journal of Applied Physics, 2014, 116, .	2.5	16
39	Melting Phase Relations and Element Partitioning in MORB to Lowermost Mantle Conditions. Journal of Geophysical Research: Solid Earth, 2018, 123, 5515-5531.	3.4	15
40	Acoustic velocity measurements for stishovite across the post-stishovite phase transition under deviatoric stress: Implications for the seismic features of subducting slabs in the mid-mantle. American Mineralogist, 2013, 98, 2053-2062.	1.9	14
41	Equation of state of Fe3S at room temperature up to 2 megabars. Physics of the Earth and Planetary Interiors, 2014, 228, 106-113.	1.9	14
42	Diamond formation from methane hydrate under the internal conditions of giant icy planets. Scientific Reports, 2021, 11, 8165.	3.3	10
43	Two-phase mixture of ironâ€“nickelâ€“silicon alloys in the Earthâ€™s inner core. Communications Earth & Environment, 2021, 2, .	6.8	10
44	Suppression of X-ray-induced dissociation of H2O molecules in dense ice under pressure. Scientific Reports, 2016, 6, 26641.	3.3	9
45	Equations of state of iron and nickel to the pressure at the center of the Earth. Matter and Radiation at Extremes, 2022, 7, .	3.9	9
46	Observation of the negative pressure derivative of the bulk modulus in monoclinic ZrO2. AIP Advances, 2018, 8, .	1.3	7
47	Pressure-induced reentrant structural transition and equation of state of indium. Journal of Applied Physics, 2019, 125, .	2.5	7
48	High-pressure stability of bcc-vanadium and phase transition to a rhombohedral structure at 200â€‰GPa. Journal of Applied Physics, 2021, 129, .	2.5	7
49	Synchrotron MÃ¶ssbauer spectroscopic and x-ray diffraction study of ferropericlase in the high-pressure range of the lower mantle region. Physical Review B, 2021, 103, .	3.2	7
50	Spin state and electronic environment of iron in basaltic glass in the lower mantle. American Mineralogist, 2017, 102, 2106-2112.	1.9	7
51	Elastic softening of bulk modulus of monoclinic HfO2 under high pressure. Applied Physics Letters, 2020, 117, .	3.3	7
52	High-pressure phase diagram of O₂and N₂binary system: formation of kagome-lattice of O₂. Journal of Physics: Conference Series, 2014, 500, 182001.	0.4	6
53	Observation of high-pressure bcc phase of titanium at 243â€‰GPa. Journal of Applied Physics, 2020, 128, 035901.	2.5	6
54	New pressure-induced phase transition to Co2Si-type Fe2P. American Mineralogist, 2020, 105, 1752-1755.	1.9	5

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55	Volume compression of period 4 elements: Zn, Ge, As, and Se above 200â€‰GPa: Ordering of atomic volume by atomic number. Journal of Applied Physics, 2021, 129, .	2.5	5
56	Pressure Destabilizes Oxygen Vacancies in Bridgmanite. Journal of Geophysical Research: Solid Earth, 2021, 126, .	3.4	5
57	Electronic properties and compressional behavior of Feâ€“Si alloys at high pressure. American Mineralogist, 2018, 103, 1959-1965.	1.9	4
58	Pressureâ€“Composition Phase Diagram of Feâ€“Ni Alloy. Materials Transactions, 2020, 61, 1058-1062.	1.2	4
59	Phase stability and magnetic behavior of hexagonal phase of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi mathvariant="normal">N</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mtext>â€”</mml:mtext><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math>system with kagome lattice under high pressure and low temperature. Physical Review B, 2016, 94, .	3.2	3
60	Thermal Equation of State of Fe3C to 327 GPa and Carbon in the Core. Minerals (Basel, Switzerland), 2019, 9, 744.	2.0	3
61	Chemical Reaction Between Metallic Iron and a Limited Water Supply Under Pressure: Implications for Water Behavior at the Coreâ€Mantle Boundary. Geophysical Research Letters, 2020, 47, e2020GL089616.	4.0	3
62	High-pressure Raman scattering and x-ray diffraction studies of the supercritical fluid of hydrogen. Journal of Applied Physics, 2020, 128, .	2.5	2
63	Dynamic observation of MoSiBTiC alloy phase transitions using in situ ultrahigh-temperature X-ray diffraction measurement. Materialia, 2020, 13, 100867.	2.7	2
64	Mixed-valence state and structure changes of EuH (xâ€¯=â€¯2 and 2â€¯<â€¯xâ€¯<â€¯3) under high-pressure H2 atmosphere. Journal of Alloys and Compounds, 2021, 865, 158637.	5.5	2
65	Density determination of liquid iron-nickel-sulfur at high pressure. American Mineralogist, 2022, 107, 1254-1261.	1.9	2
66	Incorporation mechanism of Fe and Al into bridgmanite in a subducting mid-ocean ridge basalt and its crystal chemistry. Scientific Reports, 2021, 11, 22839.	3.3	2
67	Density and elastic properties of liquid gallium up to 10 GPa using X-ray absorption method combined with externally heated diamond anvil cell. High Pressure Research, 2021, 41, 379-391.	1.2	1
68	Pressure-Induced Spin Transition in LuCu₃Fe₄O₁₂. Journal of the Physical Society of Japan, 2022, 91, .	1.6	1
69	Low-spin ferric iron in primordial bridgmanite crystallized from a deep magma ocean. Scientific Reports, 2021, 11, 19471.	3.3	0
70	Equation of states for dense ice up to 80ÂGPa at low-temperature conditions. Journal of Chemical Physics, 2022, 156, 064504.	3.0	0