Pavel Gavryushkin

List of Publications by Year
in descending order

59
papers

928
citations

516710

16
h-index

501196

28
g-index

59
all docs

59
docs citations

59
times ranked

649
citing authors

#	Article	IF	Citations
1	The system K2CO3-MgCO3 at 6 GPa and 900-1450 ÂC. American Mineralogist, 2013, 98, 1593-1603.	1.9	79
2	Aragonite-II and CaCO₃-VII: New High-Pressure, High-Temperature Polymorphs of CaCO₃. Crystal Growth and Design, 2017, 17, 6291-6296.	3.0	61
3	Raman spectroscopy and x-ray diffraction of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msup><mml:mrow><mml:mi mathvariant="italic">sp</mml:mi></mml:mrow><mml:mn>3</mml:mn></mml:msup><mml:mspace width="4pt" /><mml:mi>CaC</mml:mi><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:mrow></mml:math> at lower mantle pressures. Physical Review B, 2017, 96, .	3.2	54
4	P-V-T equation of state of CaCO3 aragonite to 29 GPa and 1673 K: In situ X-ray diffraction study. Physics of the Earth and Planetary Interiors, 2017, 265, 82-91.	1.9	48
5	Melting and subsolidus phase relations in the system Na2CO3-MgCO3ÂH2O at 6 GPa and the stability of Na2Mg(CO3)2 in the upper mantle. American Mineralogist, 2013, 98, 2172-2182.	1.9	47
6	Thermal equation of state and thermodynamic properties of iron carbide Fe₃C to 31 GPa and 1473 K. Journal of Geophysical Research: Solid Earth, 2013, 118, 5274-5284.	3.4	44
7	Thermal equation of state and thermodynamic properties of molybdenum at high pressures. Journal of Applied Physics, 2013, 113, .	2.5	42
8	Hydrothermal Synthesis and Structure Solution of Na₂Ca(CO₃)₂: â€œSynthetic Analogueâ€•of Mineral Nyerereite. Crystal Growth and Design, 2016, 16, 1893-1902.	3.0	36
9	Equations of state of iron nitrides Îµâ€Fe₃N_{<i>x</i>} and Î³â€Fe₄N_{<i>y</i>} to 30ÂGPa and 1200ÂK and implication for nitrogen in the Earth's core. Journal of Geophysical Research: Solid Earth, 2017, 122, 3574-3584.	3.4	28
10	Na-Ca carbonates synthesized under upper-mantle conditions: Raman spectroscopic and X-ray diffraction studies. European Journal of Mineralogy, 2015, 27, 175-184.	1.3	27
11	Thermal equation of state to 33.5â€‰GPa and 1673â€‰K and thermodynamic properties of tungsten. Journal of Applied Physics, 2013, 113, .	2.5	24
12	Synthesis and Crystal Structure of New Carbonate Ca3Na2(CO3)4Homeotypic with Orthoborates M3Ln2(BO3)4(M = Ca, Sr, and Ba). Crystal Growth and Design, 2014, 14, 4610-4616.	3.0	24
13	Calcium orthocarbonate, Ca2CO4-Pnma: A potential host for subducting carbon in the transition zone and lower mantle. Lithos, 2020, 370-371, 105637.	1.4	23
14	Raman spectra of nyerereite, gregoryite, and synthetic pure <scp>N</scp>a₂<scp>C</scp>a(<scp>CO</scp>₃)₂: diversity and application for the study micro inclusions. Journal of Raman Spectroscopy, 2017, 48, 1559-1565.	2.5	20
15	Noncentrosymmetric Na2Ca4(CO3)5Carbonate of â€œM13M23XY3Zâ€•Structural Type and Affinity between Borate and Carbonate Structures for Design of New Optical Materials. Crystal Growth and Design, 2017, 17, 6079-6084.	3.0	19
16	Formation of Mg-Orthocarbonate through the Reaction MgCO₃ + MgO = Mg₂CO₄ at Earthâ€™s Lower Mantle <i>P</i>â€“<i>T</i> Conditions. Crystal Growth and Design, 2021, 21, 2986-2992.	3.0	19
17	Orthocarbonates of Ca, Sr, and Baâ€"The Appearance of sp³-Hybridized Carbon at a Low Pressure of 5 GPa and Dynamic Stability at Ambient Pressure. ACS Earth and Space Chemistry, 2021, 5, 1948-1957.	2.7	18
18	Sr₃[CO₄]O Antiperovskite with Tetrahedrally Coordinated sp³-Hybridized Carbon and OSr₆ Octahedra. Inorganic Chemistry, 2021, 60, 14504-14508.	4.0	17

#	Article	IF	Citations
19	Pâ€“Vâ€“T equation of state of siderite to 33 GPa and 1673 K. Physics of the Earth and Planetary Interiors, 2013, 224, 83-87.	1.9	16
20	Disordered Aragonite: The New High-Pressure, High-Temperature Phase of CaCO3. Journal of Physical Chemistry C, 2020, 124, 26467-26473.	3.1	16
21	Metastable structures of CaCO₃ and their role in transformation of calcite to aragonite and postaragonite. Crystal Growth and Design, 2021, 21, 65-74.	3.0	16
22	Toward Analysis of Structural Changes Common for Alkaline Carbonates and Binary Compounds: Prediction of High-Pressure Structures of Li₂CO₃, Na₂CO₃, and K₂CO₃. Crystal Growth and Design, 2016, 16, 5612-5617.	3.0	15
23	New high-pressure phases of Fe7N3 and Fe7C3 stable at Earth's core conditions: evidences for carbonâ€“nitrogen isomorphism in Fe-compounds. RSC Advances, 2019, 9, 3577-3581.	3.6	15
24	Stability of Ca₂CO₄-<i>Pnma</i> against the Main Mantle Minerals from Ab Initio Computations. ACS Earth and Space Chemistry, 2021, 5, 1709-1715.	2.7	14
25	Highâ€pressure phases of sulfur: Topological analysis and crystal structure prediction. Physica Status Solidi (B): Basic Research, 2017, 254, 1600857.	1.5	13
26	Novel Calcium sp³ Carbonate CaC₂O₅-<i>I</i>4Ì…2<i>d</i> May Be a Carbon Host in Earthâ€™s Lower Mantle. ACS Earth and Space Chemistry, 2022, 6, 73-80.	2.7	13
27	First-principles calculations of the equations of state and relative stability of iron carbides at the Earthâ€™s core pressures. Russian Geology and Geophysics, 2015, 56, 164-171.	0.7	12
28	Theoretical study of Î³â€²-Fe4N and É›-Fe x N iron nitrides at pressures up to 500 GPa. JETP Letters, 2015, 101, 371-375.	1.4	11
29	Incommensurately modulated twin structure of nyerereite Na_{1.64}K_{0.36}Ca(CO₃)₂. Acta Crystallographica Section B: Structural Science, Crystal Engineering and Materials, 2017, 73, 276-284.	1.1	11
30	High-Pressure Phase Diagrams of Na2CO3 and K2CO3. Minerals (Basel, Switzerland), 2019, 9, 599.	2.0	11
31	Stability of B2â€type FeS at Earth's inner core pressures. Geophysical Research Letters, 2016, 43, 8435-8440.	4.0	10
32	(Fe,Ni)2P allabogdanite can be an ambient pressure phase in iron meteorites. Scientific Reports, 2020, 10, 8956.	3.3	10
33	Phase Diagrams of Iron Hydrides at Pressures of 100â€“400 GPa and Temperatures of 0â€“5000 K. JETP Letters, 2020, 111, 145-150.	1.4	10
34	Growth, Morphology and Optical Properties of Î³-BiB3O6Single Crystals. Crystal Growth and Design, 2012, 12, 75-78.	3.0	9
35	P-V-T equations of state for iron carbides Fe3C and Fe7C3 and their relationships under the conditions of the Earthâ€™s mantle and core. Doklady Earth Sciences, 2013, 453, 1269-1273.	0.7	9
36	Phase relations in the Fe-P system at high pressures and temperatures from <i>ab initio</i> computations. High Pressure Research, 2020, 40, 235-244.	1.2	9

#	Article	IF	Citations
37	Growth kinematics of the regeneration surfaces of crystals. Crystallography Reports, 2009, 54, 334-341.	0.6	7
38	2D modeling of the regeneration surface growth on crystals. Crystallography Reports, 2012, 57, 848-859.	0.6	7
39	Alkali Metal (Li, Na, and K) Orthocarbonates: Stabilization of sp³-Bonded Carbon at Pressures above 20 GPa. Crystal Growth and Design, 2021, 21, 6744-6751.	3.0	7
40	Compressibility, phase transitions and amorphization of coronene at pressures up to 6 GPa. Journal of Structural Chemistry, 2016, 57, 1489-1492.	1.0	6
41	Phase Relations of Iron Carbides Fe2C, Fe3C, and Fe7C3 at the Earthâ€™s Core Pressures and Temperatures. Russian Geology and Geophysics, 2020, 61, 1345-1353.	0.7	6
42	Thermal expansion of coronene C24H12 at 185â€“416ÂK. Journal of Thermal Analysis and Calorimetry, 2015, 119, 1183-1189.	3.6	5
43	Compressibility and phase transitions of potassium carbonate at pressures below 30 kbar. Journal of Structural Chemistry, 2016, 57, 1485-1488.	1.0	5
44	Structure and Properties of New High-Pressure Phases of Fe7N3. JETP Letters, 2018, 107, 379-383.	1.4	5
45	2D modeling of regeneration surface growth on a single-crystal sphere. Crystallography Reports, 2015, 60, 583-593.	0.6	4
46	Micro-sectoriality in hydrothermally grown ruby crystals: the internal structure of the boundaries of the growth sectors. CrystEngComm, 2017, 19, 6594-6601.	2.6	4
47	Temperature induced twinning in aragonite: transmission electron microscopy experiments and <i>ab initio</i> calculations. Zeitschrift Fur Kristallographie - Crystalline Materials, 2019, 234, 79-84.	0.8	4
48	Phase Stability in Nickel Phosphides at High Pressures. ACS Earth and Space Chemistry, 2020, 4, 1978-1984.	2.7	4
49	Unbiased crystal structure prediction of NiSi under high pressure. Journal of Applied Crystallography, 2015, 48, 906-908.	4.5	3
50	High-Pressure Synthesis and Ambient-Pressure Tem Investigation of Mg-Orthocarbonate. SSRN Electronic Journal, 0, , .	0.4	3
51	In situ observation of the pyroxene-majorite transition in Na2MgSi5O12 using synchrotron radiation and Raman spectroscopy of Na-majorite. American Mineralogist, 2015, 100, 378-384.	1.9	2
52	Phase Relations in the Niâ€“S System at High Pressures from ab Initio Computations. ACS Earth and Space Chemistry, 2021, 5, 596-603.	2.7	2
53	Feâ€“N System at High Pressures and Its Relevance to the Earthâ€™s Core Composition. Crystal Growth and Design, 0, , .	3.0	2
54	Crystallographic Assembly of Macroscopic Crystals by Subparallel Splicing of Multiple Seeds. Crystal Growth and Design, 2017, 17, 763-773.	3.0	1

#	Article	IF	Citations
55	The search for the new superconductors in the Ni-N system. Journal of Physics: Conference Series, 2020, 1590, 012010.	0.4	1
56	Phase relations, and mechanical and electronic properties of nickel borides, carbides, and nitrides from <i>ab initio</i> calculations. RSC Advances, 2021, 11, 33781-33787.	3.6	0
57	Structural trend of alkaline carbonates under high pressure. Acta Crystallographica Section A: Foundations and Advances, 2016, 72, s72-s72.	0.1	0
58	Theoretical polytypism and practical twinning of aragonite crystals. Acta Crystallographica Section A: Foundations and Advances, 2018, 74, e239-e239.	0.1	0
59	Ba₃(BO₃)₂: the first example of the dynamic disordering in borate crystal. Physical Chemistry Chemical Physics, 0, , .	2.8	0