Yury N Palyanov

List of Publications by Year
in descending order

125 papers	3,004 citations	172457 29 h-index	189892 50 g-index
125 all docs	125 docs citations	125 times ranked	1559 citing authors

#	Article	IF	Citations
1	Effect of Nitrogen Impurity on Diamond Crystal Growth Processes. Crystal Growth and Design, 2010, 10, 3169-3175.	3.0	197
2	Mantleâ€“slab interaction and redox mechanism of diamond formation. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 20408-20413.	7.1	163
3	Germanium: a new catalyst for diamond synthesis and a new optically active impurity in diamond. Scientific Reports, 2015, 5, 14789.	3.3	145
4	Optical and microwave control of germanium-vacancy center spins in diamond. Physical Review B, 2017, 96, .	3.2	125
5	Germanium-Vacancy Color Center in Diamond as a Temperature Sensor. ACS Photonics, 2018, 5, 765-770.	6.6	105
6	The role of mantle ultrapotassic fluids in diamond formation. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 9122-9127.	7.1	97
7	The effect of composition of mantle fluids/melts on diamond formation processes. Lithos, 2009, 112, 690-700.	1.4	79
8	Fluid regime and diamond formation in the reduced mantle: Experimental constraints. Geochimica Et Cosmochimica Acta, 2009, 73, 5820-5834.	3.9	79
9	The system K2CO3-MgCO3 at 6 GPa and 900-1450 ÂC. American Mineralogist, 2013, 98, 1593-1603.	1.9	79
10	High-temperature calibration of a multi-anvil high pressure apparatus. High Pressure Research, 2015, 35, 139-147.	1.2	71
11	High-Pressure Synthesis and Characterization of Ge-Doped Single Crystal Diamond. Crystal Growth and Design, 2016, 16, 3510-3518.	3.0	68
12	Diamond Growth and Morphology under the Influence of Impurity Adsorption. Crystal Growth and Design, 2013, 13, 5411-5419.	3.0	58
13	Conditions of diamond formation through carbonate-silicate interaction. European Journal of Mineralogy, 2005, 17, 207-214.	1.3	57
14	Partitioning of H2O between olivine and carbonateâ€“silicate melts at 6.3 GPa and 1400â€‰Â°C: Implications for kimberlite formation. Earth and Planetary Science Letters, 2013, 383, 58-67.	4.4	57
15	Effect of H₂O on Diamond Crystal Growth in Metalâ€“Carbon Systems. Crystal Growth and Design, 2012, 12, 5571-5578.	3.0	55
16	High-pressure crystallization and properties of diamond from magnesium-based catalysts. CrystEngComm, 2017, 19, 4459-4475.	2.6	54
17	Carbonatite meltâ€“peridotite interaction at 5.5â€“7.0 GPa: Implications for metasomatism in lithospheric mantle. Lithos, 2016, 248-251, 66-79.	1.4	49
18	Revealing of dislocations in diamond crystals by the selective etching method. Journal of Crystal Growth, 2006, 293, 469-474.	1.5	48

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19	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
20	Melting experiments on the Udachnaya kimberlite at 6.3â€“7.5GPa: Implications for the role of H2O in magma generation and formation of hydrous olivine. Geochimica Et Cosmochimica Acta, 2013, 101, 133-155.	3.9	47
21	Carbon and nitrogen speciation in nitrogen-rich Câ€“Oâ€“Hâ€“N fluids at 5.5â€“7.8 GPa. Earth and Planetary Science Letters, 2017, 460, 234-243.	4.4	45
22	New experimental data on phase relations for the system Na2CO3-CaCO3 at 6 GPa and 900-1400 ÂC. American Mineralogist, 2013, 98, 2164-2171.	1.9	42
23	Incorporation of Large Impurity Atoms into the Diamond Crystal Lattice: EPR of Split-Vacancy Defects in Diamond. Crystals, 2017, 7, 237.	2.2	41
24	Monitoring diamond crystal growth, a combined experimental and SIMS study. European Journal of Mineralogy, 2008, 20, 365-374.	1.3	40
25	Diamond Growth from a Phosphorusâ€“Carbon System at High Pressure High Temperature Conditions. Crystal Growth and Design, 2011, 11, 2599-2605.	3.0	38
26	Phase relations in the system FeCO3-CaCO3 at 6 GPa and 900-1700 ÂC and its relation to the system CaCO3-FeCO3-MgCO3. American Mineralogist, 2014, 99, 773-785.	1.9	38
27	EPR study of Siâ€•and Geâ€•related defects in HPHT diamonds synthesized from Mgâ€•based solventâ€•catalysts. Physica Status Solidi (A) Applications and Materials Science, 2016, 213, 2623-2628.	1.8	35
28	High-pressure synthesis and characterization of Sn-doped single crystal diamond. Carbon, 2019, 143, 769-775.	10.3	31
29	Effect of oxygen fugacity on the H2O storage capacity of forsterite in the carbon-saturated systems. Geochimica Et Cosmochimica Acta, 2010, 74, 4793-4806.	3.9	30
30	Phase relations on the K₂CO₃-CaCO₃-MgCO₃join at 6 GPa and 900â€“1400 Â°C: Implications for incipient melting in carbonated mantle domains. American Mineralogist, 2016, 101, 437-447.	1.9	28
31	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
32	Crystal Growth of Diamond. , 2015, , 671-713.		27
33	Phase relationships in the system K2CO3-CaCO3 at 6 GPa and 900-1450 ÂC. American Mineralogist, 2015, 100, 223-232.	1.9	26
34	Revealing of planar defects and partial dislocations in large synthetic diamond crystals by the selective etching. Journal of Crystal Growth, 2007, 306, 458-464.	1.5	25
35	Graphitization of 13C enriched fine-grained graphitic material under high-pressure annealing. Carbon, 2019, 141, 323-330.	10.3	24
36	Crystal growth and perfection of large octahedral synthetic diamonds. Journal of Crystal Growth, 2011, 317, 32-38.	1.5	23

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37	The system Na₂CO₃â€“CaCO₃â€“MgCO₃at 6â€…GPa and 900â€“1250Â°C and its relation to the partial melting of carbonated mantle. High Pressure Research, 2016, 36, 23-41.	1.2	23
38	Carbon and Nitrogen Speciation in N-poor C-O-H-N Fluids at 6.3â€‰GPa and 1100â€“1400â€‰Â°C. Scientific Reports, 2017, 7, 706.	3.3	23
39	Morphology of diamond crystals grown in magnesium-based systems at high temperatures and high pressures. Journal of Crystal Growth, 2015, 426, 276-282.	1.5	22
40	A DFT calculation of EPR parameters of a germanium-vacancy defect in diamond. Diamond and Related Materials, 2017, 76, 86-89.	3.9	22
41	Thermal expansion of iron carbides, Fe7C3 and Fe3C, at 297â€“911 K determined by in situ X-ray diffraction. Journal of Alloys and Compounds, 2015, 628, 102-106.	5.5	21
42	Effect of CO 2 on crystallization and properties of diamond from ultra-alkaline carbonate melt. Lithos, 2016, 265, 339-350.	1.4	21
43	Effect of crystal defects on diamond morphology during dissolution in the mantle. American Mineralogist, 2015, 100, 1528-1532.	1.9	19
44	Stability of phlogopite in ultrapotassic kimberlite-like systems at 5.5â€“7.5 GPa. Contributions To Mineralogy and Petrology, 2017, 172, 1.	3.1	19
45	Formation of various types of graphite inclusions in diamond: Experimental data. Lithos, 2009, 112, 683-689.	1.4	18
46	Distribution of OK1, N3 and NU1 defects in diamond crystals of different habits. European Journal of Mineralogy, 2012, 24, 645-650.	1.3	17
47	The system Na2CO3-FeCO3 at 6 GPa and its relation to the system Na2CO3-FeCO3-MgCO3. American Mineralogist, 2015, 100, 130-137.	1.9	17
48	Sulfidation of silicate mantle by reduced S-bearing metasomatic fluids and melts. Geology, 2016, 44, 271-274.	4.4	17
49	Iron carbide as a source of carbon for graphite and diamond formation under lithospheric mantle P-T parameters. Lithos, 2017, 286-287, 151-161.	1.4	17
50	Aluminum Nitride Crystal Growth from an Alâˆ’N System at 6.0 GPa and 1800 Â°C. Crystal Growth and Design, 2010, 10, 2563-2570.	3.0	16
51	Effect of nitrogen impurity on the dislocation structure of large HPHT synthetic diamond crystals. Journal of Crystal Growth, 2014, 386, 162-167.	1.5	16
52	Diamond Crystallization from an Antimonyâ€“Carbon System under High Pressure and Temperature. Crystal Growth and Design, 2015, 15, 2539-2544.	3.0	16
53	HPHT growth and characterization of diamond from a copper-carbon system. Diamond and Related Materials, 2016, 69, 198-206.	3.9	16
54	Synthesis of diamonds with mineral, fluid and melt inclusions. Lithos, 2016, 265, 292-303.	1.4	16

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55	Phase relations in the Fe-Fe 3 C-Fe 3 N system at 7.8 GPa and 1350 Â°C: Implications for carbon and nitrogen hosts in Fe 0 -saturated upper mantle. Physics of the Earth and Planetary Interiors, 2017, 265, 43-53.	1.9	16
56	HPHT Diamond Crystallization in the Mg-Si-C System: Effect of Mg/Si Composition. Crystals, 2017, 7, 119.	2.2	16
57	Phase relations in the K2CO3â€"FeCO3 and MgCO3â€"FeCO3 systems at 6 GPa and 900â€"1700Â° C. European Journal of Mineralogy, 2015, 27, 487-499.	1.3	15
58	Experimental Petrology Applied to Natural Diamond Growth. Reviews in Mineralogy and Geochemistry, 2022, 88, 755-808.	4.8	15
59	Diamond crystallization from a tinâ€"carbon system at HPHT conditions. Diamond and Related Materials, 2015, 58, 40-45.	3.9	13
60	The dislocation structure of diamond crystals grown on seeds in the Mg-C system. Diamond and Related Materials, 2016, 70, 1-6.	3.9	13
61	Multiscale characterization of 13C-enriched fine-grained graphitic materials for chemical and electrochemical applications. Carbon, 2017, 124, 161-169.	10.3	13
62	Carbon isotope fractionation during experimental crystallisation of diamond from carbonate fluid at mantle conditions. Contributions To Mineralogy and Petrology, 2015, 170, 1.	3.1	11
63	Sulfide Formation as a Result of Sulfate Subduction into Silicate Mantle (Experimental Modeling) Tj ETQq1 1 0.784314 rgBT /Overlock	2.0	11
64	The Feâ€"Câ€"Oâ€"Hâ€"N system at 6.3â€"7.8 GPa and 1200â€"1400ÂÂ°C: implications for deep carbon and nitrogen cycles. Contributions To Mineralogy and Petrology, 2018, 173, 1.	3.1	11
65	Effect of Oxygen on Diamond Crystallization in Metalâ€"Carbon Systems. ACS Omega, 2020, 5, 18376-18383.	3.5	11
66	Effect of sulfur on diamond growth and morphology in metalâ€"carbon systems. CrystEngComm, 2020, 22, 5497-5508.	2.6	11
67	The role of water in generation of group II kimberlite magmas: Constraints from multiple saturation experiments. American Mineralogist, 2014, 99, 2292-2302.	1.9	10
68	Siliconâ€containing defects in HPHT diamond synthetized in Mgâ€"Siâ€"C system. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 2460-2462.	1.8	10
69	WÃ¼stite stability in the presence of a CO 2 -fluid and a carbonate-silicate melt: Implications for the graphite/diamond formation and generation of Fe-rich mantle metasomatic agents. Lithos, 2016, 244, 20-29.	1.4	10
70	Experimental and Theoretical Evidence for Surface-Induced Carbon and Nitrogen Fractionation during Diamond Crystallization at High Temperatures and High Pressures. Crystals, 2017, 7, 190.	2.2	10
71	Effect of the solvent-catalyst composition on diamond crystallization in the Mg-Ge-C system. Diamond and Related Materials, 2018, 89, 1-9.	3.9	10
72	Decarbonation Reactions Involving Ankerite and Dolomite under upper Mantle P,T-Parameters: Experimental Modeling. Minerals (Basel, Switzerland), 2020, 10, 715.	2.0	10

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73	EPR study of the hydrogen center in HPHT diamonds grown in carbonate medium. Physica Status Solidi (A) Applications and Materials Science, 2014, 211, 2274-2278.	1.8	9
74	The influence of HTHP treatment on the OK1 and N3 centers in natural diamond crystals. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 2474-2479.	1.8	9
75	Effect of nitrogen impurity on etching of synthetic diamond crystals. Journal of Crystal Growth, 2015, 430, 71-74.	1.5	9
76	Effect of Rare-Earth Element Oxides on Diamond Crystallization in Mg-Based Systems. Crystals, 2019, 9, 300.	2.2	9
77	X-ray topography of diamond using forbidden reflections: which defects do we really see?. Journal of Applied Crystallography, 2011, 44, 65-72.	4.5	8
78	Photoluminescence of HPHT diamonds synthesized in the Mg-Ge-C system. Diamond and Related Materials, 2017, 79, 145-149.	3.9	8
79	Specific Internal Structure of Diamonds from Zarnitsa Kimberlite Pipe. Crystals, 2017, 7, 133.	2.2	8
80	Step Patterns on {100} Faces of Diamond Crystals As-Grown in Mg-Based Systems. Crystal Growth and Design, 2018, 18, 152-158.	3.0	8
81	Dislocation etching of diamond crystals grown in Mg-C system with the addition of silicon. Diamond and Related Materials, 2018, 88, 67-73.	3.9	8
82	Hydrogenation of carbon at 5.5â€“7.8â€¯GPa and 1100â€“1400â€¯Â°C: Implications to formation of hydrocarbons in reduced mantles of terrestrial planets. Physics of the Earth and Planetary Interiors, 2019, 291, 12-23.	1.9	8
83	Solubility of carbon and nitrogen in a sulfur-bearing iron melt: Constraints for siderophile behavior at upper mantle conditions. American Mineralogist, 2019, 104, 1857-1865.	1.9	8
84	Diamonds from the Mir Pipe (Yakutia): Spectroscopic Features and Annealing Studies. Crystals, 2021, 11, 366.	2.2	8
85	Fate of fluids at the base of subcratonic lithosphere: Experimental constraints at 5.5â€“7.8â€¯GPa and 1150â€“1350 deg C. Lithos, 2018, 318-319, 419-433.	1.4	7
86	Diamond formation in an electric field under deep Earth conditions. Science Advances, 2021, 7, .	10.3	7
87	Unusual growth macrolayers on {100} faces of diamond crystals from magnesium-based systems. Journal of Crystal Growth, 2016, 455, 76-82.	1.5	6
88	Diamond crystallization in a CO 2 -rich alkaline carbonate melt with a nitrogen additive. Journal of Crystal Growth, 2016, 449, 119-128.	1.5	6
89	An effect of reduced S-rich fluids on diamond formation under mantle-slab interaction. Lithos, 2019, 336-337, 27-39.	1.4	6
90	Cymrite as mineral clathrate: An overlooked redox insensitive transporter of nitrogen in the mantle. Gondwana Research, 2020, 79, 70-86.	6.0	6

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91	Effect of HPHT Treatment on Spectroscopic Features of Natural Type Ib-IaA Diamonds Containing Y Centers. Crystals, 2020, 10, 378.	2.2	6
92	Rare-earth metal catalysts for high-pressure synthesis of rare diamonds. Scientific Reports, 2021, 11, 8421.	3.3	6
93	<scp>EPR</scp> study of impurity defects in diamonds grown in carbonate medium. Physica Status Solidi (A) Applications and Materials Science, 2013, 210, 2074-2077.	1.8	5
94	Graphite and diamond formation via the interaction of iron carbide and Fe,Ni-sulfide under mantle Pâ€"T parameters. Doklady Earth Sciences, 2016, 471, 1144-1148.	0.7	5
95	Phase Relations in the Harzburgiteâ€"Hydrous Carbonate Melt at 5.5â€"7.5 GPa and 1200â€"1350Â°Ð¡. Petrology, 2018, 26, 575-587.	0.9	5
96	Spin Relaxation of the Neutral Germaniumâ€Vacancy Center in Diamond. Physica Status Solidi (A) Applications and Materials Science, 2018, 215, 1800193.	1.8	5
97	Experimental Modeling of Silicate and Carbonate Sulfidation under Lithospheric Mantle P,T-Parameters. Minerals (Basel, Switzerland), 2019, 9, 425.	2.0	5
98	Crystallization of Diamond from Melts of Europium Salts. Crystals, 2020, 10, 376.	2.2	5
99	EPR of synthetic diamond heavily doped with phosphorus. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 2568-2571.	1.8	4
100	Stability of methane in reduced Câ€"Oâ€"H fluid at 6.3 GPa and 1300â€"1400Â°C. Doklady Earth Sciences, 2017, 474, 680-683.	0.7	4
101	Optical and electrical properties of synthetic single-crystal diamond under high-fluence ion irradiation. Journal of Surface Investigation, 2017, 11, 619-624.	0.5	4
102	Formation of Water-Bearing Defects in Olivine in the Presence of Waterâ€"Hydrocarbon Fluid at 6.3 GPa and 1200Â°C. Doklady Earth Sciences, 2018, 483, 1451-1453.	0.7	4
103	Correction to Germanium-Vacancy Color Center in Diamond as a Temperature Sensor. ACS Photonics, 2018, 5, 4710-4710.	6.6	4
104	High-pressure synthesis and characterization of diamond from europium containing systems. Carbon, 2021, 182, 815-824.	10.3	4
105	Crystallomorphological and Crystallochemical Indicators of Diamond Formation Conditions. Crystallography Reports, 2021, 66, 142-155.	0.6	4
106	Nitrogen and hydrogen aggregation in natural octahedral and cuboid diamonds. Geochemical Journal, 2017, 51, 181-192.	1.0	4
107	Distribution of light alkanes in the reaction of graphite hydrogenation at pressure of 0.1â€"7.8â€…GPa and temperatures of 1000â€"1350Â°C. High Pressure Research, 2018, 38, 468-481.	1.2	3
108	Graphite and Diamond Formation in the Carbideâ€"Oxideâ€"Carbonate Interactions (Experimental) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	2.0	3

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109	Carbon Isotope Composition of Diamond Crystals Grown Via Redox Mechanism. Geochemistry International, 2018, 56, 1398-1404.	0.7	3
110	Manifestation of diamond sectoriality during dissolution and graphitization. Journal of Crystal Growth, 2018, 502, 1-6.	1.5	3
111	Processes and Conditions of the Origin for Fe3+-Bearing MagnesiowÃ¼stite under Lithospheric Mantle Pressures and Temperatures. Minerals (Basel, Switzerland), 2019, 9, 474.	2.0	3
112	Magnetic Properties of 1D Ironâ€“Sulfur Compounds Formed Inside Singleâ€Walled Carbon Nanotubes. Physica Status Solidi - Rapid Research Letters, 2020, 14, 2000291.	2.4	3
113	Formation of Spessartine and CO2 via Rhodochrosite Decarbonation along a Hot Subduction P-T Path. Minerals (Basel, Switzerland), 2020, 10, 703.	2.0	3
114	Ranges of 10â€“350 keV H and H 2 ions in (1 1 1) diamond. Nuclear Instruments & Methods in Physics Research B, 2017, 406, 634-637.	1.4	2
115	Phases of the Feâ€“Câ€“N system as hosts of mantle carbon and nitrogen: Experimental studies at 7.8 GPa and 1350Â°C. Doklady Earth Sciences, 2017, 475, 780-783.	0.7	2
116	Influence of a silicon impurity on growth of diamond crystals in the Mg-C system. Diamond and Related Materials, 2018, 87, 27-34.	3.9	2
117	Phase Relations in the FeO-Fe3C-Fe3N System at 7.8 GPa and 1350 Â°C: Implications for Oxidation of Native Iron at 250 km. Minerals (Basel, Switzerland), 2020, 10, 984.	2.0	2
118	Diamond formation during sulfidation of metalâ€“carbon melts. Diamond and Related Materials, 2021, 120, 108660.	3.9	2
119	Phase relations in the Fe-Fe₃C-Fe₃N system at 7.8â€…GPa and 1150Â°C: implications for C and N hosts in metal-saturated mantle. High Pressure Research, 2021, 41, 392-404.	1.2	2
120	Experimental Modeling of Ankeriteâ€“Pyrite Interaction under Lithospheric Mantle Pâ€“T Parameters: Implications for Graphite Formation as a Result of Ankerite Sulfidation. Minerals (Basel, Switzerland), 2021, 11, 1267.	2.0	2
121	Raman scattering in the submicrometer diamond membrane formed by the lift-off technique. Bulletin of the Lebedev Physics Institute, 2017, 44, 210-214.	0.6	1
122	Formation of the Fe,Mg-Silicates, Fe0, and Graphite (Diamond) Assemblage as a Result of Cohenite Oxidation under Lithospheric Mantle Conditions. Doklady Earth Sciences, 2018, 479, 335-338.	0.7	1
123	Experimental Modeling of CO-Forming Processes Involving Cohenite and CO2-Fluid in a Silicate Mantle. Doklady Earth Sciences, 2018, 483, 1427-1430.	0.7	1
124	Conditions of Formation of Ironâ€“Carbon Melt Inclusions in Garnet and Orthopyroxene under P-T Conditions of Lithospheric Mantle. Petrology, 2018, 26, 565-574.	0.9	1
125	The Many Facets of Diamond Crystals. Crystals, 2018, 8, 72.	2.2	1