Valery A Davydov

List of Publications by Year
in descending order

126	3,017	201674	182427
papers	citations	27 h-index	51 g-index

130	130	130	2326
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Magnetic carbon. Nature, 2001, 413, 716-718.	27.8	538
2	Spectroscopic study of pressure-polymerized phases ofC60. Physical Review B, 2000, 61, 11936-11945.	3.2	191
3	Is C60 fullerite harder than diamond?. Physics Letters, Section A: General, Atomic and Solid State Physics, 1994, 188, 281-286.	2.1	129
4	All-optical nanoscale thermometry with silicon-vacancy centers in diamond. Applied Physics Letters, 2018, 112, .	3.3	100
5	Conversion of polycyclic aromatic hydrocarbons to graphite and diamond at high pressures. Carbon, 2004, 42, 261-269.	10.3	93
6	On-chip excitation of single germanium vacancies in nanodiamonds embedded in plasmonic waveguides. Light: Science and Applications, 2018, 7, 61.	16.6	90
7	Nanodiamonds carrying silicon-vacancy quantum emitters with almost lifetime-limited linewidths. New Journal of Physics, 2016, 18, 073036.	2.9	82
8	Tetragonal polymerized phase ofC60. Physical Review B, 1998, 58, 14786-14790.	3.2	75
9	Production of nano- and microdiamonds with Si-V and N-V luminescent centers at high pressures in systems based on mixtures of hydrocarbon and fluorocarbon compounds. JETP Letters, 2014, 99, 585-589.	1.4	70
10	Ultrasensitive All-Optical Thermometry Using Nanodiamonds with a High Concentration of Silicon-Vacancy Centers and Multiparametric Data Analysis. ACS Photonics, 2019, 6, 1387-1392.	6.6	69
11	â€˜Low-pressureâ€™ orthorhombic phase formed from pressure-treated C60. Chemical Physics Letters, 1997, 267, 193-198.	2.6	63
12	Solid state synthesis of carbon-encapsulated iron carbide nanoparticles and their interaction with living cells. Journal of Materials Chemistry B, 2014, 2, 4250-4261.	5.8	61
13	Polymerization of Single-Wall Carbon Nanotubes under High Pressures and High Temperatures. Journal of Physical Chemistry B, 2002, 106, 11155-11162.	2.6	56
14	Ferromagnetic carbon with enhanced Curie temperature. Physica B: Condensed Matter, 2003, 329-333, 1217-1218.	2.7	46
15	How Confinement Affects the Dynamics of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi mathvariant="normal">C</mml:mi><mml:mn>60</mml:mn></mml:msub></mml:math>in Carbon Nanopeapods. Physical Review Letters, 2008, 101, 065507.	7.8	40
16	The crystal structure of the 2D polymerized tetragonal phase of C60. Chemical Physics Letters, 2003, 367, 157-162.	2.6	38
17	Pressure-induced dimerization of fullerene C60: a kinetic study. Chemical Physics Letters, 2001, 333, 224-229.	2.6	35
18	Single <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:mi>Si</mml:mi></mml:math> - <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:msup><mml:mi>V</mml:mi><mml:mo>â^’</mml:mo></mml:msup></mml:math> Centers in Low-Strain Nanodiamonds with Bulklike Spectral Properties and Nanomanipulation Capabilities. Physical Review Applied, 2019, 11, .	3.8	34

#	Article	IF	Citations
19	Silicon-Vacancy Nanodiamonds as High Performance Near-Infrared Emitters for Live-Cell Dual-Color Imaging and Thermometry. Nano Letters, 2022, 22, 2881-2888.	9.1	32
20	A Theoretical Study of the Pressure-Induced Dimerization of C60 Fullerene. Journal of Physical Chemistry A, 1999, 103, 2812-2820.	2.5	31
21	Single-crystal structural study of the pressure-temperature-induced dimerization of C $mathsf{_{60}}$. European Physical Journal B, 2003, 37, 25-37.	1.5	31
22	Testing the magnetism of polymerized fullerene. Physical Review B, 2004, 69, .	3.2	31
23	Spectroscopic properties of individual pressure-polymerized phases of C60. Chemical Physics Letters, 1999, 313, 421-425.	2.6	30
24	Phase transformations in pressure polymerized C60. Chemical Physics Letters, 2003, 381, 410-415.	2.6	30
25	Electrical properties of two-dimensional fullerene matrices. Carbon, 2001, 39, 2203-2209.	10.3	29
26	Structural studies of C60 transformed by temperature and pressure treatments. Carbon, 1997, 35, 735-743.	10.3	27
27	Particularities of C60Transformations at 1.5 GPa. Journal of Physical Chemistry B, 1999, 103, 1800-1804.	2.6	26
28	Single Silicon Vacancy Centers in 10 nm Diamonds for Quantum Information Applications. ACS Applied Nano Materials, 2019, 2, 4765-4772.	5.0	26
29	Pressure-induced polycondensation of C60 fullerene. JETP Letters, 1996, 63, 818-824.	1.4	25
30	Relative stability of polymerized phases of C60: Depolymerization of a tetragonal phase. Carbon, 2005, 43, 954-961.	10.3	25
31	Irreversible amorphization of tetragonal two-dimensional polymeric C60 under high pressure. Solid State Communications, 2002, 121, 241-244.	1.9	24
32	Identification of the polymerized orthorhombic phase of C60 fullerene. JETP Letters, 1997, 66, 120-125.	1.4	23
33	On the nature of simultaneous formation of nano- and micron-size diamond fractions under pressureâ€“temperature-induced transformations of binary mixtures of hydrocarbon and fluorocarbon compounds. Carbon, 2015, 90, 231-233.	10.3	23
34	Electronic structure and properties of rhombohedrally polymerized C60. Journal of Chemical Physics, 2001, 115, 5637-5641.	3.0	22
35	Packing Models for High-Pressure Polymeric Phases of C60. Journal of Solid State Chemistry, 1998, 141, 164-167.	2.9	21
36	Ultrabright single-photon emission from germanium-vacancy zero-phonon lines: deterministic emitter-waveguide interfacing at plasmonic hot spots. Nanophotonics, 2020, 9, 953-962.	6.0	21

#	Article	IF	Citations
37	Purcell-enhanced emission from individual SiV^{â^'} center in nanodiamonds coupled to a Si₃N₄-based, photonic crystal cavity. Nanophotonics, 2020, 9, 3655-3662.	6.0	21
38	Mechanism of Transformation of Ferrocene into Carbon-Encapsulated Iron Carbide Nanoparticles at High Pressures and Temperatures. Inorganic Chemistry, 2018, 57, 14895-14903.	4.0	19
39	Nanosized carbon forms in the processes of pressureâ€"temperature-induced transformations of hydrocarbons. Carbon, 2006, 44, 2015-2020.	10.3	18
40	Size-Dependent Phase Transition of Diamond to Graphite at High Pressures. Journal of Physical Chemistry C, 2007, 111, 12918-12925.	3.1	18
41	High pressure synthesis of new heterodiamond phase. Diamond and Related Materials, 2010, 19, 541-544.	3.9	18
42	Hybrid Quantum Photonics Based on Artificial Atoms Placed Inside One Hole of a Photonic Crystal Cavity. ACS Photonics, 2021, 8, 2635-2641.	6.6	18
43	Pressure-induced dimerization of C60 fullerene. JETP Letters, 1998, 68, 928-934.	1.4	17
44	High pressure photoinduced polymerization of the orthorhombic polymeric phase of C60. Chemical Physics Letters, 2005, 416, 220-224.	2.6	17
45	Fluorescence enhancement of a single germanium vacancy center in a nanodiamond by a plasmonic Bragg cavity. Journal of Chemical Physics, 2021, 154, 044303.	3.0	17
46	Synthesis of a new cubic phase in the B-C-N system. Inorganic Materials, 2008, 44, 395-400.	0.8	16
47	Synergistic Effect of Fluorine and Hydrogen on Processes of Graphite and Diamond Formation from Fluorographite-Naphthalene Mixtures at High Pressures. Journal of Physical Chemistry C, 2011, 115, 21000-21008.	3.1	16
48	Comparative Study of Condensation Routes for Formation of Nano- and Microsized Carbon Forms in Hydrocarbon, Fluorocarbon, and Fluoro-Hydrocarbon Systems at High Pressures and Temperatures. Journal of Physical Chemistry C, 2016, 120, 29498-29509.	3.1	16
49	Excitation of nanowire surface plasmons by silicon vacancy centers in nanodiamonds. Optical Materials Express, 2017, 7, 2586.	3.0	16
50	Preparing single SiV^{â^'} center in nanodiamonds for external, optical coupling with access to all degrees of freedom. New Journal of Physics, 2019, 21, 103047.	2.9	16
51	Calorimetric study of crystalline dimer and polymerized phases of fullerene C60. Thermochimica Acta, 2004, 421, 73-80.	2.7	15
52	Varying temperature and silicon content in nanodiamond growth: effects on silicon-vacancy centres. Scientific Reports, 2018, 8, 3792.	3.3	15
53	Synthesis and coherent properties of 13C-enriched sub-micron diamond particles with nitrogen vacancy color centers. Carbon, 2020, 165, 395-403.	10.3	15
54	Thermal studies of C60 transformed by temperature and pressure treatments. Carbon, 1997, 35, 745-747.	10.3	14

#	Article	IF	Citations
55	Anisotropic metallic properties of highly â€“ oriented rhombohedral C60 polymer. Synthetic Metals, 2001, 121, 1099-1100.	3.9	14
56	Thermodynamics of crystalline dimer of fullerene C60 in the range from T â†’ 0 to 340 K at standard pressure. Thermochimica Acta, 2003, 399, 99-108.	2.7	14
57	Carbon-Encapsulated Iron Carbide Nanoparticles in the Thermal Conversions of Ferrocene at High Pressures. Fullerenes Nanotubes and Carbon Nanostructures, 2012, 20, 451-454.	2.1	13
58	Raman study of the temperature-induced decomposition of the fullerene dimers C120. Chemical Physics Letters, 2016, 654, 81-85.	2.6	13
59	Chemical modifications of C60 under the influence of pressure and temperature: from cubic C60 to diamond. Synthetic Metals, 1996, 77, 265-272.	3.9	12
60	Tetragonal polymerized phase of C60: experimental artifact or reality?. Synthetic Metals, 1999, 103, 2415-2416.	3.9	12
61	Far-infrared vibrational properties of tetragonalC60polymer. Physical Review B, 2002, 65, .	3.2	12
62	In situ X-ray powder diffraction study of one-dimensional polymeric C60 phase transformation under high-pressure. Chemical Physics Letters, 2007, 438, 63-66.	2.6	12
63	Transformations of polyhedral carbon nanoparticles under high pressures and temperatures. Carbon, 2011, 49, 2389-2401.	10.3	12
64	Magnetocontrollability of Fe7C3@C superparamagnetic nanoparticles in living cells. Journal of Nanobiotechnology, 2016, 14, 67.	9.1	12
65	High-purity single photons obtained with moderate-NA optics from SiV center in nanodiamonds on a bullseye antenna. New Journal of Physics, 2021, 23, 113022.	2.9	12
66	Lattice dynamics of pressure-polymerized phases ofC60: A neutron scattering investigation. Physical Review B, 2004, 70, .	3.2	11
67	Nitrogen and group-IV (Si, Ge) vacancy color centres in nano-diamonds: photoluminescence study at high temperature (25 Â°Câ€“600 Â°C). Materials Research Express, 2020, 7, 015043.	1.6	11
68	Study of optical properties of the NV and SiV centres in diamond at high pressures. Nanosystems: Physics, Chemistry, Mathematics, 2018, , 55-57.	0.4	11
69	Unravelling low lying phonons and vibrations of carbon nanostructures: The contribution of inelastic and quasi-elastic neutron scattering. European Physical Journal: Special Topics, 2012, 213, 77-102.	2.6	10
70	Formation of interstitial silicon defects in Si- and Si,P-doped nanodiamonds and thermal susceptibilities of SiV^{â^'} photoluminescence band. Nanotechnology, 2020, 31, 205709.	2.6	10
71	Fluorination of pressure-polymerized C60 phases. Carbon, 2005, 43, 2989-3001.	10.3	9
72	Size-dependent nanodiamond-graphite phase transition at 8 GPa. JETP Letters, 2007, 86, 462-464.	1.4	9

#	Article	IF	Citations
73	Comb Peculiarities of Dispersion-Managed Solitons in a Hybrid Mode-Locked All-Fiber Ring Laser. IEEE Photonics Technology Letters, 2017, 29, 1588-1591.	2.5	9
74	Long-term live cells observation of internalized fluorescent Fe@C nanoparticles in constant magnetic field. Journal of Nanobiotechnology, 2019, 17, 27.	9.1	9
75	Photonic-Crystal-Fiber Quantum Probes for High-Resolution Thermal Imaging. Physical Review Applied, 2020, 13, .	3.8	9
76	Far-infrared vibrational properties of linearC60polymers:â€,â€,A comparison between neutral and charged materials. Physical Review B, 2003, 67, .	3.2	8
77	Influence of pressure on the photopolymerization rate of the linear orthorhombic polymer of C60. Chemical Physics Letters, 2006, 428, 298-302.	2.6	8
78	Highâ€Resolution Xâ€Ray Powder Diffraction Structure Determination of C60F48. Fullerenes Nanotubes and Carbon Nanostructures, 2006, 14, 279-285.	2.1	7
79	Anomalous fluorescence of the spherical carbon nitride nanostructures. Chemical Physics Letters, 2015, 633, 95-98.	2.6	7
80	High-resolution 13C NMR studies of the tetragonal two-dimensional polymerized C60 phase. Physica E: Low-Dimensional Systems and Nanostructures, 2000, 8, 1-4.	2.7	6
81	Study of C₆₀Peapods After a High-Pressureâ€“High-Temperature Treatment. Fullerenes Nanotubes and Carbon Nanostructures, 2010, 18, 412-416.	2.1	6
82	Generation of ultrashort pulses with minimum duration of 90 fs in a hybrid mode-locked erbium-doped all-fibre ring laser. Quantum Electronics, 2016, 46, 979-981.	1.0	6
83	Isothermal and polythermal kinetics of depolymerization of C60 polymers. Thermochimica Acta, 2006, 444, 91-96.	2.7	5
84	Photo-and pressure-induced transformations in the linear orthorhombic polymer of C60. Journal of Experimental and Theoretical Physics, 2008, 107, 620-631.	0.9	5
85	From a one-dimensional crystal to a one-dimensional liquid: A comprehensive dynamical study of C<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>60</mml:mn></mml:msub></mml:math>peapods. Physical Review B, 2013, 87, .	3.2	5
86	Nanodiamonds with SiV colour centres for quantum technologies. Quantum Electronics, 2020, 50, 299-304.	1.0	5
87	Pressure-induced dimerization kinetics of fullerene C60. JETP Letters, 2000, 72, 557-560.	1.4	4
88	Single-crystal and synchrotron X-ray powder diffraction study of the one-dimensional orthorhombic polymer phase of C60. Chemical Physics Letters, 2008, 460, 93-99.	2.6	4
89	Distribution of Iron Atoms in Nonequivalent Crystallographic Sites of Fe7C3 Carbide in Coreâ€“Shell Nanostructures. Crystallography Reports, 2019, 64, 331-336.	0.6	4
90	â€œCoreâ€“Shellâ€•Diamond Nanoparticles with NV^{â€“} Centers and a Highly Isotopically Enriched ¹³C Shell as a Promising Hyperpolarization Agent. Journal of Physical Chemistry C, 2021, 125, 27647-27653.	3.1	4

#	Article	IF	Citations
91	13C MAS NMR investigation of two-dimensional polymerised C60 using paramagnetic O2 as a chemical shift agent. Solid State Communications, 2000, 115, 661-664.	1.9	3
92	Title is missing!. Russian Chemical Bulletin, 2003, 52, 862-868.	1.5	3
93	Fluorination of Crystalline Polymerized Phases of C60Fullerene. Fullerenes Nanotubes and Carbon Nanostructures, 2006, 14, 303-306.	2.1	3
94	Equilibrium Phase Diagram of Polymerized C60and Kinetics of Decomposition of the Polymerized Phases. Fullerenes Nanotubes and Carbon Nanostructures, 2006, 14, 401-407.	2.1	3
95	Heterographene BCN phase prepared at high pressures and temperatures: Formation kinetics, structure, and properties. Inorganic Materials, 2014, 50, 349-357.	0.8	3
96	A magnetically ordered state of carbon based on polymerized fullerene C60. Physics-Uspekhi, 2002, 45, 1175-1178.	2.2	2
97	Single Crystals Synthesis and Refinement of the Crystal Structure of the Polymerized Tetragonal Phase of C60. Fullerenes Nanotubes and Carbon Nanostructures, 2005, 12, 275-279.	2.1	2
98	Lowâ€Frequency Phonons in Highâ€Pressure Highâ€Temperature C60 Polymers. Fullerenes Nanotubes and Carbon Nanostructures, 2005, 12, 263-268.	2.1	2
99	Study of the Orthorhombic Polymeric Phase of C60Under High Pressure Using Synchrotron X-Ray Powder Diffraction. Fullerenes Nanotubes and Carbon Nanostructures, 2010, 18, 392-395.	2.1	2
100	First Observation of the FCC to Trigonal/Rhombohedral Transition of Pure Dimerized C60Under High Pressure. Fullerenes Nanotubes and Carbon Nanostructures, 2010, 18, 386-391.	2.1	2
101	Determination of the reaction rate constant and activation energy for pressure-induced 2+2 cycloaddition of the C60 fullerene. Physics of the Solid State, 2002, 44, 557-559.	0.6	1
102	Polymerization of Single-Wall Carbon Nanotubes under High Pressures and High Temperatures.. ChemInform, 2003, 34, no.	0.0	1
103	Nanoâ€Sized Carbon Structures in the Thermal Conversions of Hydrocarbons at High Pressures. Fullerenes Nanotubes and Carbon Nanostructures, 2006, 14, 425-428.	2.1	1
104	The Stability of the Linear Orthorhombic Polymer of C60: A Highâ€Pressure Study. Fullerenes Nanotubes and Carbon Nanostructures, 2006, 14, 421-424.	2.1	1
105	The phase diagram of fullerene C60 at high temperatures and pressures. Russian Journal of Physical Chemistry A, 2006, 80, 693-696.	0.6	1
106	The Gibbs energies of monomeric and polymeric C60 phases at a 0.1 MPa pressure and temperatures from 0 to 800 K. Russian Journal of Physical Chemistry A, 2006, 80, 1370-1377.	0.6	1
107	The Gibbs energies of monomeric and polymeric fullerene C60 phases at pressures up to 2.0 GPa and temperatures up to 800 K. Russian Journal of Physical Chemistry A, 2006, 80, 1643-1649.	0.6	1
108	Probing the Dynamics of C₆₀Encaged Inside Singleâ€Walled Carbon Nanotubes by Inelastic Neutron Scattering. Fullerenes Nanotubes and Carbon Nanostructures, 2008, 16, 463-470.	2.1	1

#	Article	IF	Citations
109	Raman Study of Hydrogenated and Fluorinated Singleâ€walled Carbon Nanotubes. Fullerenes Nanotubes and Carbon Nanostructures, 2008, 16, 322-329.	2.1	1
110	Polyhedral carbon nanoparticles at high pressures. JETP Letters, 2009, 90, 763-767.	1.4	1
111	EPR study of the crystalline polymerized phases of C₆₀. Physica Status Solidi (A) Applications and Materials Science, 2010, 207, 2364-2372.	1.8	1
112	Hybrid mode-locked erbium-doped all-fiber ring laser with high-density well-aligned single-walled carbon nanotubes. , 2017, , .		1
113	Coupling Quantum Emitters in Nanodiamonds to Microring Resonators for Integrated Quantum Photonics. , 2019, , .		1
114	Pressure-Temperature-Induced Transformations of Hydrocarbon- Fluorocarbon Mixtures into Nano- and Micron-Size Diamonds. Eurasian Chemico-Technological Journal, 2017, 19, 115.	0.6	1
115	Low-saturation-energy Ultrafast Saturable Absorption of High-density Well-aligned Single-walled Carbon Nanotubes. , 2019, , .		1
116	Study of Defects in Polymerized C60: A Room-Temperature Ferromagnet. AIP Conference Proceedings, 2005, , .	0.4	0
117	Ab Initio and DFTâ€Based Assignment of the Vibrational Spectra of Polymerized Fullerenes. Fullerenes Nanotubes and Carbon Nanostructures, 2005, 12, 253-258.	2.1	0
118	Stability of polymer structures based on fullerene C60 under their oxidation with oxygen. Solid Fuel Chemistry, 2007, 41, 170-173.	0.7	0
119	Formation of a New Phase of C₆₀under the Combined Action of Highâ€Pressure and Xâ€Ray Radiation. Fullerenes Nanotubes and Carbon Nanostructures, 2008, 16, 486-493.	2.1	0
120	Comparative EPR Study of Monomer and Polymerized Phases of C60. Fullerenes Nanotubes and Carbon Nanostructures, 2010, 18, 401-405.	2.1	0
121	EPR Study of the Thermal Depolymerization Process of C60Polymerized Phases. Fullerenes Nanotubes and Carbon Nanostructures, 2012, 20, 357-360.	2.1	0
122	High-density Well-aligned Single-walled Carbon Nanotubes Saturable Absorber: Novel Approach of Robust Mode-locking Launching. , 2018, , .		0
123	Stability at high temperature and decomposition kinetics of the fullerene dimers and photopolymers. Nanosystems: Physics, Chemistry, Mathematics, 2018, , 29-32.	0.4	0
124	New superparamagnetic fluorescent Fe@C-C5ON2H10-Alexa Fluor 647 nanoparticles for biological applications. Nanosystems: Physics, Chemistry, Mathematics, 2018, , 120-122.	0.4	0
125	Atom-like quantum emitters embedded in photonic hot spots. , 2019, , .		0
126	Plasmonic Bragg Cavity-Enhanced Emission from Single Germanium Vacancy Centers in Nanodiamonds. , 2020, , .		0