

# Sergey Panyukov

## List of Publications by Year in descending order

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91  
papers

3,902  
citations

147726

31  
h-index

123376

61  
g-index

92  
all docs

92  
docs citations

92  
times ranked

3265  
citing authors

#	ARTICLE	IF	CITATIONS
1	Elasticity of Polymer Networks. <i>Macromolecules</i> , 2002, 35, 6670-6686.	2.2	402
2	Mobility of Nonsticky Nanoparticles in Polymer Liquids. <i>Macromolecules</i> , 2011, 44, 7853-7863.	2.2	307
3	Coexistence of superconductivity and magnetism theoretical predictions and experimental results. <i>Advances in Physics</i> , 1985, 34, 175-261.	35.9	298
4	Statistical physics of polymer gels. <i>Physics Reports</i> , 1996, 269, 1-131.	10.3	214
5	Hopping Diffusion of Nanoparticles in Polymer Matrices. <i>Macromolecules</i> , 2015, 48, 847-862.	2.2	211
6	Nonaffine Deformation and Elasticity of Polymer Networks. <i>Macromolecules</i> , 1997, 30, 8036-8044.	2.2	207
7	Molecular structure of bottlebrush polymers in melts. <i>Science Advances</i> , 2016, 2, e1601478.	4.7	198
8	Self-Similar Conformations and Dynamics in Entangled Melts and Solutions of Nonconcatenated Ring Polymers. <i>Macromolecules</i> , 2016, 49, 708-722.	2.2	136
9	Polymer Gels: Frozen Inhomogeneities and Density Fluctuations. <i>Macromolecules</i> , 1996, 29, 7960-7975.	2.2	134
10	Coulomb blockade and nonperturbative ground-state properties of ultrasmall tunnel junctions. <i>Physical Review Letters</i> , 1991, 67, 3168-3171.	2.9	102
11	Tension Amplification in Molecular Brushes in Solutions and on Substrates. <i>Journal of Physical Chemistry B</i> , 2009, 113, 3750-3768.	1.2	96
12	Scattering Profiles of Charged Gels: Frozen Inhomogeneities, Thermal Fluctuations, and Microphase Separation. <i>Macromolecules</i> , 1997, 30, 301-312.	2.2	93
13	Small angle neutron scattering studies on structural inhomogeneities in polymer gels: irradiation cross-linked gels vs chemically cross-linked gels. <i>Polymer</i> , 2002, 43, 5289-5297.	1.8	84
14	Unexpected Stretching of Entangled Ring Macromolecules. <i>Physical Review Letters</i> , 2019, 122, 208001.	2.9	70
15	Structure of Liquid Coacervates Formed by Oppositely Charged Polyelectrolytes. <i>Macromolecules</i> , 2018, 51, 9572-9588.	2.2	65
16	Long-Range Correlations in a Polymer Chain Due to Its Connectivity. <i>Macromolecules</i> , 2008, 41, 1475-1485.	2.2	61
17	Quantitative Adjustment to the Molecular Energy Parameter in the Lake-Thomas Theory of Polymer Fracture Energy. <i>Macromolecules</i> , 2019, 52, 2772-2777.	2.2	60
18	Quantum fluctuations and quantum dynamics of small Josephson junctions. <i>Journal of Low Temperature Physics</i> , 1988, 73, 1-32.	0.6	54

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19	Fluctuating filaments: Statistical mechanics of helices. <i>Physical Review E</i> , 2000, 62, 7135-7146.	0.8	51
20	Thermal Fluctuations of Elastic Filaments with Spontaneous Curvature and Torsion. <i>Physical Review Letters</i> , 2000, 85, 2404-2407.	2.9	49
21	Enhanced nanochannel translocation and localization of genomic DNA molecules using three-dimensional nanofunnels. <i>Nature Communications</i> , 2017, 8, 807.	5.8	49
22	Amplification of Tension in Branched Macromolecules. <i>Physical Review Letters</i> , 2009, 102, 148301.	2.9	47
23	Microphase separation in correlated random copolymers: Mean-field theory and fluctuation corrections. <i>Physical Review E</i> , 1998, 57, 6902-6912.	0.8	46
24	Bond Tension in Tethered Macromolecules. <i>Macromolecules</i> , 2011, 44, 4520-4529.	2.2	46
25	Loops in Polymer Networks. <i>Macromolecules</i> , 2019, 52, 4145-4153.	2.2	45
26	Volume Transitions, Phase Separation, and Anisotropic Surface Phases in Charged Gels. <i>Macromolecules</i> , 1996, 29, 8530-8537.	2.2	40
27	Universal behavior of hydrogels confined to narrow capillaries. <i>Scientific Reports</i> , 2015, 5, 17017.	1.6	36
28	Theory of magnetic structure in reentrant magnetic superconductors HoMo6S8 and ErRh4B4. <i>Physical Review B</i> , 1983, 28, 1370-1388.	1.1	35
29	The oscillation dependence of the critical current on the exchange field of ferromagnetic metals (F) in Josephson junction S-F-S. <i>Solid State Communications</i> , 1982, 44, 539-542.	0.9	33
30	Fluctuating elastic rings: Statics and dynamics. <i>Physical Review E</i> , 2001, 64, 011909.	0.8	33
31	Graphs in Chemical Physics of Polymers. <i>Advances in Chemical Physics</i> , 2007, , 115-326.	0.3	32
32	Magnetic superconductors. <i>Uspekhi Fizicheskikh Nauk</i> , 1984, 27, 927-953.	0.3	31
33	Ion Pairing and the Structure of Gel Coacervates. <i>Macromolecules</i> , 2020, 53, 9420-9442.	2.2	29
34	New statistical approach to the description of spatial inhomogeneous states in heteropolymer solutions. <i>Journal De Physique II</i> , 1992, 2, 1973-1993.	0.9	28
35	Theory of Flexible Polymer Networks: Elasticity and Heterogeneities. <i>Polymers</i> , 2020, 12, 767.	2.0	26
36	Dynamics of a quantum dissipative system: Duality between coordinate and quasimomentum spaces. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1987, 120, 306-311.	0.9	23

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37	Stress-Induced Ordering in Microphase-Separated Multicomponent Networks. <i>Macromolecules</i> , 1996, 29, 8220-8230.	2.2	23
38	On the deformation of fluctuating chiral ribbons. <i>Europhysics Letters</i> , 2002, 57, 512-518.	0.7	22
39	Quantum coherence and phase transitions in granular superconductors with dissipation. I. Ordered arrays. <i>Journal of Low Temperature Physics</i> , 1989, 75, 361-388.	0.6	18
40	A correct account of the non-local terms in the Landau theory of phase transitions in polydisperse heteropolymers. <i>Journal of Physics Condensed Matter</i> , 2006, 18, L43-L48.	0.7	18
41	Solution Properties of a Fluorinated Alkyl Methacrylate Polymer in Carbon Dioxide. <i>Macromolecules</i> , 2006, 39, 3427-3434.	2.2	18
42	Interaction between randomly charged rods and plates: Energy landscapes, stick slip, and recognition at a distance. <i>Physical Review E</i> , 1997, 56, 7053-7066.	0.8	17
43	Microphase separation in multiblock copolymers. <i>Journal of Experimental and Theoretical Physics</i> , 1997, 85, 183-188.	0.2	17
44	Phase diagram of microphase-separated multiblock copolymers. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1998, 249, 321-326.	1.2	16
45	Domain-like magnetic structure in superconductors of ErRh <sub>4</sub> B <sub>4</sub> and HoMo <sub>6</sub> S <sub>8</sub> type. <i>Solid State Communications</i> , 1982, 44, 1247-1251.	0.9	15
46	Quantum fluctuations and dissipative phase transition in granular superconductors. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1987, 124, 325-329.	0.9	15
47	Inhomogeneous magnetic structure in clean magnetic superconductors. <i>Journal of Low Temperature Physics</i> , 1983, 52, 137-162.	0.6	12
48	Quantum fluctuations and the current-phase relation in Josephson junctions and SQUIDs. <i>Physica B: Condensed Matter</i> , 1988, 152, 162-164.	1.3	11
49	Transport properties of mesoscopic tunnel junctions: nonperturbative analysis. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1993, 183, 115-122.	0.9	11
50	Scaling Theory of Swelling and Deswelling of Polymer Networks. <i>Macromolecules</i> , 2022, 55, 3588-3601.	2.2	11
51	Induced ferromagnetism in ErRh <sub>4</sub> B <sub>4</sub> . <i>Solid State Communications</i> , 1983, 46, 133-137.	0.9	10
52	Coexistence of ferromagnetism and superconductivity in ErRh <sub>4</sub> B <sub>4</sub> and HoMo <sub>6</sub> S <sub>8</sub> : Exchange or electromagnetic mechanism?. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1982, 89, 93-95.	0.9	9
53	Statics and Dynamics of the "Liquid" and "Solidlike" Degrees of Freedom in Lightly Cross-Linked Polymer Networks. <i>Journal De Physique, I</i> , 1997, 7, 273-289.	1.2	9
54	The effect of thermodynamic fluctuations on the formation of superstructures in random heteropolymers. <i>JETP Letters</i> , 1996, 64, 197-201.	0.4	8

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55	Correlation functions and transport properties of granular arrays with ohmic dissipation. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1991, 156, 119-126.	0.9	7
56	Solid Elasticity and Liquid-Like Behaviour in Randomly Crosslinked Polymer Networks. <i>Europhysics Letters</i> , 1994, 28, 149-154.	0.7	7
57	Single electron tunneling near the Coulomb blockade threshold. <i>Physica B: Condensed Matter</i> , 1994, 203, 417-422.	1.3	7
58	Glassy states with frozen-in currents and paramagnetism of granular high temperature superconductors. <i>Physica B: Condensed Matter</i> , 1994, 203, 527-531.	1.3	7
59	Molecular theory of solutions and blends of heteropolymers. I. Thermodynamics of amorphous multicomponent polymer systems. <i>Journal of Polymer Science, Part B: Polymer Physics</i> , 1998, 36, 937-958.	2.4	7
60	Theory of radiation-induced shape-change of graphite. <i>Atomic Energy</i> , 2008, 105, 32-41.	0.1	7
61	Macroscopic Quantum Shift of the Flux and Quantum Tunneling. <i>Japanese Journal of Applied Physics</i> , 1987, 26, 1401.	0.8	7
62	The role of the exchange and magnetic dipole interactions in the superconductors with helical magnetic ordering. <i>Solid State Communications</i> , 1981, 40, 683-686.	0.9	6
63	Magnetic superconductors of HoMo6S8 type: The effect of magnetic field and supercurrent. <i>Solid State Communications</i> , 1982, 43, 135-139.	0.9	6
64	Quantum coherence and phase transitions in granular superconductors with dissipation. II. Effect of disorder. <i>Journal of Low Temperature Physics</i> , 1989, 75, 389-398.	0.6	6
65	Statistical physics of interacting dislocation loops and their effect on the elastic moduli of isotropic solids. <i>Physical Review B</i> , 1999, 59, 13657-13671.	1.1	6
66	Quantum Dynamics of Small Josephson Junctions. <i>Japanese Journal of Applied Physics</i> , 1987, 26, 1403.	0.8	6
67	Fibrous hydrogels under biaxial confinement. <i>Nature Communications</i> , 2022, 13, .	5.8	6
68	Theory of heterogeneities in polymer networks. <i>Polymer Science - Series A</i> , 2016, 58, 886-898.	0.4	5
69	“Dissipative” Phase Transition in Granular Superconductors. <i>Japanese Journal of Applied Physics</i> , 1987, 26, 1327.	0.8	5
70	Effect of impurities on the properties of superconductor with helical order of localized spins. <i>Solid State Communications</i> , 1981, 37, 671-675.	0.9	4
71	Ferromagnetic superconductors: Effect of disorder on the coexistence phase in ErRh4B4 and pseudoternary systems. <i>Journal of Low Temperature Physics</i> , 1985, 59, 487-508.	0.6	4
72	Domain wall structure and the properties of the coexistence phase in ferromagnetic superconductors HoMo6S8 and HoMo6Se8. <i>Solid State Communications</i> , 1985, 53, 243-247.	0.9	4

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73	Charge disorder in granular arrays. European Physical Journal D, 1996, 46, 629-630.	0.4	3
74	Explanation of Anomalous Scaling of Swollen Entangled Chains. Macromolecules, 2005, 38, 3511-3514.	2.2	3
75	Irradiation induced dimensional changes in graphite: The influence of sample size. Journal of Nuclear Materials, 2012, 420, 241-251.	1.3	3
76	Irradiation induced dimensional changes in bulk graphite: The theory. Journal of Nuclear Materials, 2013, 439, 72-83.	1.3	3
77	Cross-Linking Patterns and Their Images in Swollen and Deformed Gels. Macromolecules, 2015, 48, 7378-7381.	2.2	3
78	Recent developments in the theory of polymer gels. Journal of Computer-Aided Materials Design, 1996, 3, 281-288.	0.7	2
79	Microstructure and phase diagrams of polymer gels. Physica A: Statistical Mechanics and Its Applications, 1998, 249, 239-244.	1.2	2
80	Relation between micro- and macrodeformations and the elasticity constants in application to radiation induced effects in a graphite reactor. Atomic Energy, 2009, 107, 326-332.	0.1	2
81	Spin-glass state in a disordered sine-Gordon model. Physica B: Condensed Matter, 1988, 152, 70-71.	1.3	1
82	The ferromagnetic analogy applied to polymers with a fixed chain length distribution. Polymer Science USSR, 1990, 32, 1247-1254.	0.2	1
83	Scaling pattern of swelling of polymer networks. Polymer Science USSR, 1990, 32, 682-689.	0.2	1
84	New approaches to statistical thermodynamics of blends containing copolymers. Macromolecular Symposia, 2000, 149, 37-42.	0.4	1
85	Metastable lattice of droplets in phase separating polymer blends. Physical Review E, 2002, 65, 061803.	0.8	1
86	The mechanism of solute-enriched clusters formation in neutron-irradiated pressure vessel steels: The case of Fe-Cu model alloys. Journal of Nuclear Materials, 2016, 477, 193-204.	1.3	1
87	Feasibility of studying the uniformity of a sample from phase transition parameters using voltage measurements transverse to the current. Radiophysics and Quantum Electronics, 1987, 30, 236-240.	0.1	0
88	Statistical physics of polymer networks. AIP Conference Proceedings, 2000, , .	0.3	0
89	Buckling of spontaneously twisted ribbons. Physica A: Statistical Mechanics and Its Applications, 2002, 314, 125-129.	1.2	0
90	Mechanism of surface landscape formation in liquid photopolymerized compositions. Mendeleev Communications, 2009, 19, 206-207.	0.6	0

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91	On the kinetic theory of energy losses in a randomly heterogeneous medium. JETP Letters, 2011, 94, 255-257.	0.4	0