Robert A Pelcovits

List of Publications by Year
in descending order

79 papers	6,009 citations	172457 29 h-index	74163 75 g-index
80 all docs	80 docs citations	80 times ranked	3256 citing authors

#	Article	IF	Citations
1	Flux lattice melting in high-Tcsuperconductors. Physical Review B, 1989, 40, 6763-6770.	3.2	694
2	Liquid-crystal diffraction gratings using polarization holography alignment techniques. Journal of Applied Physics, 2005, 98, 123102.	2.5	282
3	Momentum-shell recursion relations, anisotropic spins, and liquid crystals in2+Îµdimensions. Physical Review B, 1977, 16, 2191-2199.	3.2	252
4	Spin-Glass and Ferromagnetic Behavior Induced by Random Uniaxial Anisotropy. Physical Review Letters, 1978, 40, 476-479.	7.8	195
5	Ising model in a time-dependent magnetic field. Physical Review A, 1990, 42, 7471-7474.	2.5	170
6	Smectic-C*to Smectic-ATransition in Variable-Thickness Liquid-Crystal Films: Order-Parameter Measurements and Theory. Physical Review Letters, 1984, 52, 1017-1020.	7.8	163
7	Anharmonic Effects in Bulk Smectic Liquid Crystals and Other "One-Dimensional Solids". Physical Review Letters, 1981, 47, 856-859.	7.8	154
8	Topological structure and dynamics of three-dimensional active nematics. Science, 2020, 367, 1120-1124.	12.6	135
9	Nonlinear elastic theory of smectic liquid crystals. Physical Review A, 1982, 26, 915-925.	2.5	99
10	Linear elasticity theory of pentagonal quasicrystals. Physical Review B, 1987, 35, 8609-8620.	3.2	94
11	Bicritical points in 2 + Ïµ dimensions. Physics Letters, Section A: General, Atomic and Solid State Physics, 1976, 57, 23-25.	2.1	82
12	Zero voltage Freedericksz transition in periodically aligned liquid crystals. Applied Physics Letters, 2004, 85, 1671-1673.	3.3	74
13	Low-temperature renormalization-group study of the random-axis model. Physical Review B, 1979, 19, 465-473.	3.2	68
14	Creating arbitrary arrays of two-dimensional topological defects. Physical Review E, 2014, 90, 052501.	2.1	67
15	Modulated phases in thin ferroelectric liquid-crystal films. Physical Review Letters, 1988, 60, 1864-1867.	7.8	63
16	Simulation and visualization of topological defects in nematic liquid crystals. Physical Review E, 2006, 74, 061701.	2.1	53
17	Defect configurations and dynamical behavior in a Gay-Berne nematic emulsion. Physical Review E, 2000, 62, 711-717.	2.1	51
18	Virtual surfaces, director domains, and the FrÃ©edericksz transition in polymer-stabilized nematic liquid crystals. Applied Physics Letters, 2002, 81, 2986-2988.	3.3	51

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19	Optomechanical properties of stretched polymer dispersed liquid crystal films for scattering polarizer applications. Journal of Applied Physics, 2003, 93, 3248-3252.	2.5	47
20	Viscosities of the Gay-Berne Nematic Liquid Crystal. Physical Review Letters, 1995, 75, 2340-2343.	7.8	46
21	Two-dimensional ferroelectric liquid crystals. Physical Review B, 1979, 19, 4614-4620.	3.2	44
22	Phase-ordering dynamics of the Gay-Berne nematic liquid crystal. Physical Review E, 1999, 60, 6831-6840.	2.1	44
23	Stable polarization gratings recorded in azo-dye-doped liquid crystals. Applied Physics Letters, 2006, 88, 251113.	3.3	43
24	Two-dimensionalXYmodel in a random uniaxial field. Physical Review B, 1985, 32, 3081-3087.	3.2	40
25	Role of electrostatics in the texture of islands in free-standing ferroelectric liquid crystal films. Physical Review E, 2007, 75, 051701.	2.1	39
26	Direct Measurement of the Twist Penetration Length in a Single Smectic A Layer of Colloidal Virus Particles. Journal of Physical Chemistry B, 2009, 113, 3910-3913.	2.6	37
27	Electroclinic effect and modulated phases in smectic liquid crystals. Physical Review E, 2002, 65, 061704.	2.1	36
28	Structure factor for dilute magnetic systems. Physical Review B, 1985, 31, 350-357.	3.2	31
29	Vesicle shape, molecular tilt, and the suppression of necks. Physical Review E, 2007, 76, 031908.	2.1	31
30	Cluster Monte Carlo simulations of the nematic-isotropic transition. Physical Review E, 2001, 63, 062702.	2.1	28
31	Theory of depletion-induced phase transition from chiral smectic-Atwisted ribbons to semi-infinite flat membranes. Physical Review E, 2010, 82, 021701.	2.1	26
32	Elastic modes, phase fluctuations, and long-range order in type-II superconductors. Physical Review B, 1990, 42, 906-908.	3.2	25
33	Surface extrapolation length and director structures in confined nematics. Physical Review E, 2000, 62, 6734-6738.	2.1	25
34	Liquid crystals in random porous media: Disorder is stronger in low-density aerosils. Physical Review E, 2004, 70, 040702.	2.1	25
35	Cholesteric pitch of rigid and semi-flexible chiral liquid crystals. Liquid Crystals, 1996, 21, 361-364.	2.2	23
36	Molecular shape and flexoelectricity. Liquid Crystals, 2000, 27, 1151-1160.	2.2	23

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37	Glauber Dynamics for One-dimensional Spin Models with Random Fields. Physical Review B, 1984, 30, 205-208.	3.2	22
38	Spin-Glass and Ferromagnetic Behavior Induced by Random Uniaxial Anisotropy.. Physical Review Letters, 1982, 48, 1297-1297.	7.8	21
39	Disclination loop behavior near the nematic-isotropic transition. Physical Review E, 2001, 64, 031710.	2.1	19
40	Coarsening dynamics of biaxial nematic liquid crystals. Physical Review E, 2002, 66, 051705.	2.1	19
41	Piezoelectricity of Cholesteric Elastomers. Journal De Physique II, 1995, 5, 877-882.	0.9	18
42	Spin-correlation function in the two-dimensionalXYmodel. Physical Review B, 1985, 32, 4528-4538.	3.2	17
43	Twist penetration in single-layer smectic A discs of colloidal virus particles. Liquid Crystals, 2009, 36, 1157-1160.	2.2	17
44	Disclinations in pentagonal quasicrystals. Physical Review B, 1987, 36, 9304-9307.	3.2	16
45	Techniques for the Visualization of Topological Defect Behavior in Nematic Liquid Crystals. IEEE Transactions on Visualization and Computer Graphics, 2006, 12, 1323-1328.	4.4	15
46	Wrinkling of a thin film on a nematic liquid-crystal elastomer. Physical Review E, 2016, 94, 012701.	2.1	14
47	Chiral edge fluctuations of colloidal membranes. Physical Review E, 2017, 95, 060701.	2.1	13
48	Nematic cells with defect-patterned alignment layers. Physical Review E, 2008, 77, 021701.	2.1	12
49	Theory of self-assembled smectic-Acrenellated disks: Membranes with cusped edges. Physical Review E, 2013, 87, .	2.1	10
50	Interaction energy of disclinations in pentagonal quasicrystals. Physical Review B, 1988, 38, 5042-5044.	3.2	9
51	Dynamics and thermal fluctuations in high-Tcsuperconductors. Physical Review B, 1991, 44, 2767-2777.	3.2	9
52	Nonlocal elasticity theory of polymeric liquid crystals. Physical Review A, 1990, 42, 4756-4763.	2.5	8
53	Simulations of Liquid Crystals. Computers in Physics, 1998, 12, 440.	0.5	8
54	Unwinding of a strained cholesteric elastomer by disclination loop nucleation. Physical Review E, 2007, 75, 011701.	2.1	8

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55	Dynamics of the molecular orientation field coupled to ions in two-dimensional ferroelectric liquid crystals. Physical Review E, 2007, 76, 021704.	2.1	8
56	Interaction of chiral rafts in self-assembled colloidal membranes. Physical Review E, 2016, 93, 032706.	2.1	8
57	Gauge transformations and anharmonic effects in smectic liquid crystals. Physical Review B, 1982, 25, 6022-6025.	3.2	7
58	Dynamical behavior of thin ferroelectric liquid-crystal films in ac electric fields. Physical Review A, 1990, 42, 3630-3633.	2.5	7
59	Dynamics of the smecticCtoAtransition in freely suspended thin films. Physical Review A, 1985, 32, 2506-2509.	2.5	6
60	Enhancement of Microorganism Swimming Speed in Active Matter. Physical Review Letters, 2018, 121, 178002.	7.8	6
61	Instability of flat disks with respect to the formation of twisted ribbons in smectic-A*monolayers. Physical Review E, 2013, 87, 042505.	2.1	5
62	Stability of the interface of an isotropic active fluid. Soft Matter, 2019, 15, 6318-6330.	2.7	5
63	Force-Induced Formation of Twisted Chiral Ribbons. Physical Review Letters, 2020, 125, 018002.	7.8	5
64	Glass formation in the Gay-Berne nematic liquid crystal. Liquid Crystals, 1997, 23, 205-212.	2.2	4
65	Isotropic-cholesteric transition in liquid-crystalline gels. Physical Review E, 2002, 66, 031706.	2.1	4
66	Axisymmetric membranes with edges under external force: buckling, minimal surfaces, and tethers. Soft Matter, 2021, 17, 7268-7286.	2.7	4
67	Lower bounds for the width of domain walls in the random-field Ising model. Physical Review B, 1984, 29, 5069-5073.	3.2	3
68	Dynamics of charge-density waves pinned by impurities. Physical Review B, 1984, 29, 5972-5975.	3.2	3
69	Supercooling of a nematic liquid crystal. Physical Review E, 1993, 47, 1824-1835.	2.1	3
70	P-79: Model of Freedericksz Transition and Hysteresis Effect in Polymer Stabilized Nematic Liquid Crystal Configurations for Display Applications. Digest of Technical Papers SID International Symposium, 2002, 33, 506.	0.3	3
71	24.3: Optical and Mechanical Properties of Stretched PDLC Films for Scattering Polarizers. Digest of Technical Papers SID International Symposium, 2002, 33, 834.	0.3	3
72	Probing a self-assembledfdvirus membrane with a microtubule. Physical Review E, 2016, 93, 062608.	2.1	3

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73	LP-9: Late News Poster: Patterned Alignment Layers Using Holographic Exposure Technique. Digest of Technical Papers SID International Symposium, 2004, 35, 578.	0.3	2
74	Polarization Holographic Patterned Alignment of Nematic Liquid Crystals. Molecular Crystals and Liquid Crystals, 2005, 438, 185/[1749]-193/[1757].	0.9	2
75	Nematic cells with quasicrystalline-patterned alignment layers. Physical Review E, 2009, 79, 022701.	2.1	2
76	Tensor Visualization and Defect Detection for Nematic Liquid Crystals using Shape Characteristics. Mathematics and Visualization, 2009, , 213-238.	0.6	2
77	Shapes of fluid membranes with chiral edges. Physical Review E, 2020, 102, 032608.	2.1	2
78	Twoâ€dimensional ferroelectric liquid crystals. Journal of Applied Physics, 1979, 50, 1796-1798.	2.5	1
79	Deformation and orientational order of chiral membranes with free edges. Soft Matter, 2021, 17, 6580-6588.	2.7	1