Randall D Kamien

List of Publications by Year
in descending order

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140 papers	6,090 citations	81743 39 h-index	76769 74 g-index
146 all docs	146 docs citations	146 times ranked	5356 citing authors

#	Article	IF	Citations
1	The geometry of soft materials: a primer. Reviews of Modern Physics, 2002, 74, 953-971.	16.4	340
2	Molecular chirality and chiral parameters. Reviews of Modern Physics, 1999, 71, 1745-1757.	16.4	285
3	Topological colloids. Nature, 2013, 493, 200-205.	13.7	276
4	Maximizing Entropy by Minimizing Area:Â Towards a New Principle of Self-Organization. Journal of Physical Chemistry B, 2001, 105, 10147-10158.	1.2	244
5	Entropically Driven Helix Formation. Science, 2005, 307, 1067-1067.	6.0	243
6	Universal inverse design of surfaces with thin nematic elastomer sheets. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 7206-7211.	3.3	213
7	Programmable Kiriâ€Kirigami Metamaterials. Advanced Materials, 2017, 29, 1604262.	11.1	211
8	Colloquium: Disclination loops, point defects, and all that in nematic liquid crystals. Reviews of Modern Physics, 2012, 84, 497-514.	16.4	201
9	Geometric Theory of Diblock Copolymer Phases. Physical Review Letters, 2003, 91, 058304.	2.9	174
10	Why is Random Close Packing Reproducible?. Physical Review Letters, 2007, 99, 155501.	2.9	171
11	Soap Froths and Crystal Structures. Physical Review Letters, 2000, 85, 3528-3531.	2.9	139
12	Guided Folding of Nematic Liquid Crystal Elastomer Sheets into 3D via Patterned 1D Microchannels. Advanced Materials, 2016, 28, 9637-9643.	11.1	131
13	Interfaces in Diblocks:â€‰ A Study of Miktoarm Star Copolymers. Macromolecules, 2004, 37, 7371-7380.	2.2	129
14	Making the Cut: LatticeKirigamiRules. Physical Review Letters, 2014, 113, 245502.	2.9	123
15	One-Step Nanoscale Assembly of Complex Structures via Harnessing of an Elastic Instability. Nano Letters, 2008, 8, 1192-1196.	4.5	119
16	Algorithmic lattice kirigami: A route to pluripotent materials. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 7449-7453.	3.3	119
17	Structure and dynamics of electrorheological fluids. Physical Review E, 1998, 57, 756-775.	0.8	112
18	Microscopic Origin of Cholesteric Pitch. Physical Review Letters, 1997, 78, 1476-1479.	2.9	110

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19	Generating the Hopf Fibration Experimentally in Nematic Liquid Crystals. Physical Review Letters, 2013, 110, 237801.	2.9	97
20	Order and frustration in chiral liquid crystals. Journal of Physics Condensed Matter, 2001, 13, R1-R22.	0.7	90
21	Gaussian Curvature Directs Stress Fiber Orientation and Cell Migration. Biophysical Journal, 2018, 114, 1467-1476.	0.2	75
22	Curvature and Rho activation differentially control the alignment of cells and stress fibers. Science Advances, 2017, 3, e1700150.	4.7	73
23	Topographically induced hierarchical assembly and geometrical transformation of focal conic domain arrays in smectic liquid crystals. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 34-39.	3.3	68
24	Theory of directed polymers. Physical Review A, 1992, 45, 8727-8750.	1.0	67
25	Deposition and drying dynamics of liquid crystal droplets. Nature Communications, 2017, 8, 15642.	5.8	66
26	Elongation and Fluctuations of Semiflexible Polymers in a Nematic Solvent. Physical Review Letters, 2004, 92, 125503.	2.9	65
27	Minimal Surfaces, Screw Dislocations, and Twist Grain Boundaries. Physical Review Letters, 1999, 82, 2892-2895.	2.9	60
28	Curvature-driven molecular demixing in the budding and breakup of mixed component worm-like micelles. Soft Matter, 2010, 6, 1419.	1.2	59
29	Curvatureâ€Driven, Oneâ€Step Assembly of Reconfigurable Smectic Liquid Crystal â€œCompound Eyeâ€•Lenses. Advanced Optical Materials, 2015, 3, 1287-1292.	3.6	56
30	Exploiting imperfections in the bulk to direct assembly of surface colloids. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 18804-18808.	3.3	55
31	Design of super-conformable, foldable materials via fractal cuts and lattice kirigami. MRS Bulletin, 2016, 41, 130-138.	1.7	54
32	Pillarâ€Assisted Epitaxial Assembly of Toric Focal Conic Domains of Smecticâ€A Liquid Crystals. Advanced Materials, 2011, 23, 5519-5523.	11.1	51
33	Fine Golden Rings: Tunable Surface Plasmon Resonance from Assembled Nanorods in Topological Defects of Liquid Crystals. Advanced Materials, 2016, 28, 2731-2736.	11.1	50
34	Additive lattice kirigami. Science Advances, 2016, 2, e1601258.	4.7	47
35	Defects in chiral columnar phases: Tilt-grain boundaries and iterated moirÃ© maps. Physical Review E, 1996, 53, 650-666.	0.8	46
36	Geometric Theory of Columnar Phases on Curved Substrates. Physical Review Letters, 2007, 99, 017801.	2.9	46

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37	Iterated MoirÃ© Maps and Braiding of Chiral Polymer Crystals. Physical Review Letters, 1995, 74, 2499-2502.	2.9	45
38	Self-consistent field theory of multiply branched block copolymer melts. Physical Review E, 2005, 71, 051801.	0.8	44
39	Smectic Phases with Cubic Symmetry: The Splay Analog of the Blue Phase. Physical Review Letters, 2002, 89, 215504.	2.9	41
40	Symmetry breaking in smectics and surface models of their singularities. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 15577-15582.	3.3	40
41	Extrinsic curvature, geometric optics, and lamellar order on curved substrates. Physical Review E, 2009, 80, 051703.	0.8	39
42	Saddle-splay screening and chiral symmetry breaking in toroidal nematics. Soft Matter, 2014, 10, 4192-4198.	1.2	39
43	First-order patterning transitions on a sphere as a route to cell morphology. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 5189-5194.	3.3	38
44	Microbullet assembly: interactions of oriented dipoles in confined nematic liquid crystal. Liquid Crystals, 2013, 40, 1619-1627.	0.9	37
45	Bogomolâ€™nyi, Prasad, and Sommerfield Configurations in Smectics. Physical Review Letters, 2003, 91, 045506.	2.9	36
46	PHYSICS: Topology from the Bottom Up. Science, 2003, 299, 1671-1673.	6.0	36
47	Universality of Random-Matrix Predictions for the Statistics of Energy Levels. Physical Review Letters, 1988, 60, 1995-1998.	2.9	35
48	Hard Disks on the Hyperbolic Plane. Physical Review Letters, 2007, 99, 235701.	2.9	33
49	The smectic order of wrinkles. Nature Communications, 2017, 8, 15809.	5.8	33
50	Helical Nanofilaments and the High Chirality Limit of Smectics<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>A</mml:mi></mml:math>. Physical Review Letters, 2009, 103, 257804.	2.9	30
51	Change in Stripes for Cholesteric Shells via Anchoring in Moderation. Physical Review X, 2017, 7, .	2.8	29
52	Self-avoiding walks with writhe. Nuclear Physics B, 1997, 506, 695-710.	0.9	27
53	Helical tubes in crowded environments. Physical Review E, 2007, 75, 051114.	0.8	27
54	Achiral symmetry breaking and positive Gaussian modulus lead to scalloped colloidal membranes. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E3376-E3384.	3.3	27

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55	Ring around the colloid. Soft Matter, 2013, 9, 9099.	1.2	26
56	Lassoing saddle splay and the geometrical control of topological defects. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 7106-7111.	3.3	26
57	Twisted line liquids. Journal De Physique, I, 1993, 3, 2131-2138.	1.2	26
58	Liquids with Chiral Bond Order. Journal De Physique II, 1996, 6, 461-475.	0.9	26
59	Curvature and topology in smectic-A liquid crystals. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2005, 461, 2911-2921.	1.0	25
60	Towards precision micelles. Nature, 2004, 430, 519-520.	13.7	24
61	Nice planet, shame about the human race. Nature, 2005, 434, 1067-1067.	13.7	24
62	Polymer shape anisotropy and the depletion interaction. Physical Review E, 1999, 59, 5621-5624.	0.8	23
63	Smectic blue phases: Layered systems with high intrinsic curvature. Physical Review E, 2003, 68, 041703.	0.8	23
64	Elastic-instability triggered pattern formation. Physical Review E, 2009, 80, 021604.	0.8	23
65	Shaping nanoparticle fingerprints at the interface of cholesteric droplets. Science Advances, 2018, 4, eaat8597.	4.7	23
66	Power of the PoincarÃ© Group: Elucidating the Hidden Symmetries in Focal Conic Domains. Physical Review Letters, 2010, 104, 257802.	2.9	22
67	Geometrical frustration in two dimensions: Idealizations and realizations of a hard-disk fluid in negative curvature. Physical Review E, 2008, 77, 041125.	0.8	21
68	Elastocapillary interactions on nematic films. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 6336-6340.	3.3	21
69	Better Actuation Through Chemistry: Using Surface Coatings to Create Uniform Director Fields in Nematic Liquid Crystal Elastomers. ACS Applied Materials & Interfaces, 2016, 8, 12466-12472.	4.0	21
70	Self-Assembly in Vivo. Biophysical Journal, 2000, 78, 2189-2190.	0.2	19
71	Synergistic assembly of nanoparticles in smectic liquid crystals. Soft Matter, 2015, 11, 7367-7375.	1.2	19
72	The topology of dislocations in smectic liquid crystals. New Journal of Physics, 2016, 18, 053012.	1.2	19

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73	Around the corner: Colloidal assembly and wiring in groovy nematic cells. Physical Review E, 2016, 93, 032705.	0.8	19
74	Geometry of the Cholesteric Phase. Physical Review X, 2014, 4, .	2.8	18
75	Mechanisms to splay-bend nematic phases. Physical Review E, 2019, 100, 022704.	0.8	18
76	Elasticity-dependent self-assembly of micro-templated chromonic liquid crystal films. Soft Matter, 2014, 10, 3477-3484.	1.2	17
77	Direct mapping of local director field of nematic liquid crystals at the nanoscale. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 15291-15296.	3.3	17
78	Smectic Gardening on Curved Landscapes. Langmuir, 2015, 31, 11135-11142.	1.6	17
79	Composite Dislocations in Smectic Liquid Crystals. Physical Review Letters, 2017, 118, 257801.	2.9	17
80	Microscopic Origin of Cholesteric Pitch [Phys. Rev. Lett. 78, 1476 (1997)]. Physical Review Letters, 1997, 78, 2867-2867.	2.9	16
81	Directed polymer melts and quantum critical phenomena. Journal of Statistical Physics, 1993, 71, 23-50.	0.5	15
82	Structure function of polymer nematic liquid crystals:mA Monte Carlo simulation. Physical Review E, 1997, 55, 1197-1200.	0.8	15
83	Elliptic Phases: A Study of the Nonlinear Elasticity of Twist-Grain Boundaries. Physical Review Letters, 2006, 96, 137801.	2.9	14
84	Geometry of proteins: Hydrogen bonding, sterics, and marginally compact tubes. Physical Review E, 2006, 73, 031921.	0.8	14
85	Smectic pores and defect cores. Interface Focus, 2012, 2, 617-622.	1.5	14
86	Focal Conic Flower Textures at Curved Interfaces. Physical Review X, 2013, 3, .	2.8	14
87	Topography-guided buckling of swollen polymer bilayer films into three-dimensional structures. Soft Matter, 2017, 13, 956-962.	1.2	14
88	Aspects of Defect Topology in Smectic Liquid Crystals. Communications in Mathematical Physics, 2019, 372, 525-542.	1.0	14
89	Threading the Spindle: A Geometric Study of Chiral Liquid Crystal Polymer Microparticles. Physical Review Letters, 2019, 123, 157801.	2.9	14
90	Knot Your Simple Defect Lines?. Science, 2011, 333, 46-47.	6.0	13

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91	Smectic Order in Double-Twist Cylinders. Journal De Physique II, 1997, 7, 743-750.	0.9	13
92	MATERIALS SCIENCE: Better Geometry Through Chemistry. Science, 2007, 315, 1083-1084.	6.0	12
93	Elastocapillary Driven Assembly of Particles at Free-Standing Smectic-A Films. Langmuir, 2018, 34, 2006-2013.	1.6	12
94	Colloidal transport within nematic liquid crystals with arrays of obstacles. Soft Matter, 2018, 14, 83-91.	1.2	12
95	Force-free configurations of vortices in high-temperature superconductors near the melting transition. Physical Review B, 1998, 58, 8218-8221.	1.1	11
96	Dislocation geometry in theTGBAphase:â€,â€,Linear theory. Physical Review E, 2001, 63, 061702.	0.8	11
97	Breaking the rules for topological defects: Smectic order on conical substrates. Physical Review E, 2012, 86, 011707.	0.8	11
98	Weirdest Martensite: Smectic Liquid Crystal Microstructure and Weyl-PoincarÃ© Invariance. Physical Review Letters, 2016, 116, 147802.	2.9	11
99	Chiral Lyotropic Liquid Crystals: TGB Phases and Helicoidal Structures. Journal De Physique II, 1997, 7, 157-163.	0.9	10
100	Smectic Liquid Crystals: Materials with One-dimensional, Periodic Order. Geometriae Dedicata, 2006, 120, 229-240.	0.1	10
101	Topological defects in gravitational lensing shear fields. Journal of Cosmology and Astroparticle Physics, 2009, 2009, 034-034.	1.9	10
102	Anomalous Elasticity of Polymer Cholesterics. Physical Review Letters, 1995, 74, 3181-3184.	2.9	9
103	Developed Smectics: When Exact Solutions Agree. Physical Review Letters, 2012, 108, 047802.	2.9	9
104	Edges impose planar alignment in nematic monolayers by directing cell elongation and enhancing migration. Soft Matter, 2018, 14, 6867-6874.	1.2	9
105	Boundary Effects in Chiral Polymer Hexatics. Physical Review Letters, 2000, 84, 3109-3112.	2.9	8
106	Foam analogy in charged colloidal crystals. Physical Review E, 2002, 65, 050401.	0.8	8
107	The foam analogy: from phases to elasticity. Journal of Colloid and Interface Science, 2004, 275, 539-547.	5.0	8
108	Patterns on a roll: a method of continuous feed nanoprinting. Soft Matter, 2012, 8, 11038.	1.2	8

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109	Singular values, nematic disclinations, and emergent biaxiality. Physical Review E, 2013, 87, 050504.	0.8	8
110	Geometric modeling of knitted fabrics using helicoid scaffolds. Journal of Engineered Fibers and Fabrics, 2020, 15, 155892502091387.	0.5	8
111	Modelling textile structures using bicontinuous surfaces. Journal of Mathematics and the Arts, 2020, 14, 331-344.	0.1	7
112	Geometric modeling of complex knitting stitches using a bicontinuous surface and its offsets. Computer Aided Geometric Design, 2021, 89, 102024.	0.5	7
113	Triply periodic smectic liquid crystals. Physical Review E, 2007, 75, 011702.	0.8	6
114	Conformal smectics and their many metrics. Physical Review E, 2012, 85, 050701.	0.8	6
115	Keeping It Together: Interleaved Kirigami Extension Assembly. Physical Review X, 2020, 10, .	2.8	6
116	Liquid Crystal Films as Active Substrates for Nanoparticle Control. ACS Applied Nano Materials, 2021, 4, 6700-6708.	2.4	6
117	Straight round the twist: frustration and chirality in smectics-A. Interface Focus, 2017, 7, 20160118.	1.5	5
118	Gnomonious projections for bend-free textures: thoughts on the splay-twist phase. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2020, 476, 20190824.	1.0	5
119	Rotational invariance and the theory of directed nematic polymers. Physical Review E, 1993, 48, 4116-4117.	0.8	4
120	Chiral Fluctuations and Structures. Molecular Crystals and Liquid Crystals, 1996, 288, 15-23.	0.3	4
121	Twist-Stretch Elasticity of DNA. Materials Research Society Symposia Proceedings, 1996, 463, 43.	0.1	4
122	Determining the anchoring strength in a capillary using topological defects. Liquid Crystals, 1997, 23, 213-216.	0.9	4
123	Aspects of nucleation on curved and flat surfaces. Journal of Chemical Physics, 2018, 148, 234701.	1.2	4
124	The topological origin of the Peierlsâ€“Nabarro barrier. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2022, 478, .	1.0	4
125	Poisson bracket formulation of nematic polymer dynamics. Physical Review E, 2000, 61, 2888-2894.	0.8	3
126	Spherical foams in flat space. Soft Matter, 2013, 9, 11078.	1.2	3

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127	Flory exponents from a self-consistent renormalization group. Journal De Physique, I, 1993, 3, 1663-1670.	1.2	3
128	Chiral mesophases of DNA. International Journal of Engineering Science, 2000, 38, 1025-1032.	2.7	2
129	Chiral Interactions and Structures. Molecular Crystals and Liquid Crystals, 2001, 358, 97-101.	0.3	2
130	Publisherâ€™s Note:Colloquium: Disclination loops, point defects, and all that in nematic liquid crystals [Rev. Mod. Phys.RMPHAT0034-686184, 497 (2012)]. Reviews of Modern Physics, 2012, 84, 1229-1229.	16.4	2
131	Geodesic fibrations for packing diabolic domains. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 24102-24109.	3.3	2
132	Twisted loxodromes in spindle-shaped polymer nematics. Soft Matter, 2021, 17, 7076-7085.	1.2	2
133	On the isotropic-nematic transition for polymers in liquid crystals. Journal De Physique, I, 1992, 2, 263-272.	1.2	2
134	Entanglements and Whitehead Products: Generalizing Kleman's Construction to Higher-Dimensional Defects. Liquid Crystals Reviews, 0, , 1-0.	1.1	1
135	Soap Froths and Crystal Structures. Annales Henri Poincare, 2003, 4, 679-681.	0.8	0
136	Publisher's Note: Triply periodic smectic liquid crystals [Phys. Rev. E75, 011702 (2007)]. Physical Review E, 2007, 75, .	0.8	0
137	Epitaxial Assembly: Pillarâ€Assisted Epitaxial Assembly of Toric Focal Conic Domains of Smecticâ€A Liquid Crystals (Adv. Mater. 46/2011). Advanced Materials, 2011, 23, 5460-5460.	11.1	0
138	Soap Froths and Crystal Structures. , 2003, , 679-681.		0
139	Controlling liquid crystal defects. SPIE Newsroom, 0, , .	0.1	0
140	TrussBot: Modeling, Design, and Control of a Compliant, Helical Truss of Tetrahedral Modules. , 2022, , .		0