Randall D Kamien

List of Publications by Year
in descending order

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 topological origin of the Peierlsâ€“Nabarro barrier. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2022, 478, .	1.0	4
2	TrussBot: Modeling, Design, and Control of a Compliant, Helical Truss of Tetrahedral Modules. , 2022, , .		0
3	Twisted loxodromes in spindle-shaped polymer nematics. Soft Matter, 2021, 17, 7076-7085.	1.2	2
4	Liquid Crystal Films as Active Substrates for Nanoparticle Control. ACS Applied Nano Materials, 2021, 4, 6700-6708.	2.4	6
5	Geometric modeling of complex knitting stitches using a bicontinuous surface and its offsets. Computer Aided Geometric Design, 2021, 89, 102024.	0.5	7
6	Geometric modeling of knitted fabrics using helicoid scaffolds. Journal of Engineered Fibers and Fabrics, 2020, 15, 155892502091387.	0.5	8
7	Modelling textile structures using bicontinuous surfaces. Journal of Mathematics and the Arts, 2020, 14, 331-344.	0.1	7
8	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
9	Keeping It Together: Interleaved Kirigami Extension Assembly. Physical Review X, 2020, 10, .	2.8	6
10	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
11	Aspects of Defect Topology in Smectic Liquid Crystals. Communications in Mathematical Physics, 2019, 372, 525-542.	1.0	14
12	Threading the Spindle: A Geometric Study of Chiral Liquid Crystal Polymer Microparticles. Physical Review Letters, 2019, 123, 157801.	2.9	14
13	Mechanisms to splay-bend nematic phases. Physical Review E, 2019, 100, 022704.	0.8	18
14	Elastocapillary Driven Assembly of Particles at Free-Standing Smectic-A Films. Langmuir, 2018, 34, 2006-2013.	1.6	12
15	Gaussian Curvature Directs Stress Fiber Orientation and Cell Migration. Biophysical Journal, 2018, 114, 1467-1476.	0.2	75
16	Colloidal transport within nematic liquid crystals with arrays of obstacles. Soft Matter, 2018, 14, 83-91.	1.2	12
17	Shaping nanoparticle fingerprints at the interface of cholesteric droplets. Science Advances, 2018, 4, eaat8597.	4.7	23
18	Aspects of nucleation on curved and flat surfaces. Journal of Chemical Physics, 2018, 148, 234701.	1.2	4

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19	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
20	Edges impose planar alignment in nematic monolayers by directing cell elongation and enhancing migration. Soft Matter, 2018, 14, 6867-6874.	1.2	9
21	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
22	Straight round the twist: frustration and chirality in smectics-A. Interface Focus, 2017, 7, 20160118.	1.5	5
23	Deposition and drying dynamics of liquid crystal droplets. Nature Communications, 2017, 8, 15642.	5.8	66
24	Programmable Kiriâ€Kirigami Metamaterials. Advanced Materials, 2017, 29, 1604262.	11.1	211
25	Topography-guided buckling of swollen polymer bilayer films into three-dimensional structures. Soft Matter, 2017, 13, 956-962.	1.2	14
26	Change in Stripes for Cholesteric Shells via Anchoring in Moderation. Physical Review X, 2017, 7, .	2.8	29
27	Curvature and Rho activation differentially control the alignment of cells and stress fibers. Science Advances, 2017, 3, e1700150.	4.7	73
28	The smectic order of wrinkles. Nature Communications, 2017, 8, 15809.	5.8	33
29	Composite Dislocations in Smectic Liquid Crystals. Physical Review Letters, 2017, 118, 257801.	2.9	17
30	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
31	The topology of dislocations in smectic liquid crystals. New Journal of Physics, 2016, 18, 053012.	1.2	19
32	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
33	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
34	Design of super-conformable, foldable materials via fractal cuts and lattice kirigami. MRS Bulletin, 2016, 41, 130-138.	1.7	54
35	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
36	Guided Folding of Nematic Liquid Crystal Elastomer Sheets into 3D via Patterned 1D Microchannels. Advanced Materials, 2016, 28, 9637-9643.	11.1	131

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37	Around the corner: Colloidal assembly and wiring in groovy nematic cells. Physical Review E, 2016, 93, 032705.	0.8	19
38	Weirdest Martensite: Smectic Liquid Crystal Microstructure and Weyl-PoincarÃ© Invariance. Physical Review Letters, 2016, 116, 147802.	2.9	11
39	Additive lattice kirigami. Science Advances, 2016, 2, e1601258.	4.7	47
40	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
41	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
42	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
43	Curvatureâ€Driven, Oneâ€Step Assembly of Reconfigurable Smectic Liquid Crystal â€œCompound Eyeâ€•Lenses. Advanced Optical Materials, 2015, 3, 1287-1292.	3.6	56
44	Smectic Gardening on Curved Landscapes. Langmuir, 2015, 31, 11135-11142.	1.6	17
45	Synergistic assembly of nanoparticles in smectic liquid crystals. Soft Matter, 2015, 11, 7367-7375.	1.2	19
46	Geometry of the Cholesteric Phase. Physical Review X, 2014, 4, .	2.8	18
47	Making the Cut: LatticeKirigamiRules. Physical Review Letters, 2014, 113, 245502.	2.9	123
48	Saddle-splay screening and chiral symmetry breaking in toroidal nematics. Soft Matter, 2014, 10, 4192-4198.	1.2	39
49	Elasticity-dependent self-assembly of micro-templated chromonic liquid crystal films. Soft Matter, 2014, 10, 3477-3484.	1.2	17
50	Ring around the colloid. Soft Matter, 2013, 9, 9099.	1.2	26
51	Focal Conic Flower Textures at Curved Interfaces. Physical Review X, 2013, 3, .	2.8	14
52	Singular values, nematic disclinations, and emergent biaxiality. Physical Review E, 2013, 87, 050504.	0.8	8
53	Spherical foams in flat space. Soft Matter, 2013, 9, 11078.	1.2	3
54	Topological colloids. Nature, 2013, 493, 200-205.	13.7	276

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55	Generating the Hopf Fibration Experimentally in Nematic Liquid Crystals. Physical Review Letters, 2013, 110, 237801.	2.9	97
56	Microbullet assembly: interactions of oriented dipoles in confined nematic liquid crystal. Liquid Crystals, 2013, 40, 1619-1627.	0.9	37
57	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
58	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
59	Smectic pores and defect cores. Interface Focus, 2012, 2, 617-622.	1.5	14
60	Breaking the rules for topological defects: Smectic order on conical substrates. Physical Review E, 2012, 86, 011707.	0.8	11
61	Conformal smectics and their many metrics. Physical Review E, 2012, 85, 050701.	0.8	6
62	Colloquium: Disclination loops, point defects, and all that in nematic liquid crystals. Reviews of Modern Physics, 2012, 84, 497-514.	16.4	201
63	Developed Smectics: When Exact Solutions Agree. Physical Review Letters, 2012, 108, 047802.	2.9	9
64	Patterns on a roll: a method of continuous feed nanoprinting. Soft Matter, 2012, 8, 11038.	1.2	8
65	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
66	Knot Your Simple Defect Lines?. Science, 2011, 333, 46-47.	6.0	13
67	Pillarâ€Assisted Epitaxial Assembly of Toric Focal Conic Domains of Smecticâ€A Liquid Crystals. Advanced Materials, 2011, 23, 5519-5523.	11.1	51
68	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
69	Power of the PoincarÃ© Group: Elucidating the Hidden Symmetries in Focal Conic Domains. Physical Review Letters, 2010, 104, 257802.	2.9	22
70	Curvature-driven molecular demixing in the budding and breakup of mixed component worm-like micelles. Soft Matter, 2010, 6, 1419.	1.2	59
71	Elastic-instability triggered pattern formation. Physical Review E, 2009, 80, 021604.	0.8	23
72	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

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73	Topological defects in gravitational lensing shear fields. Journal of Cosmology and Astroparticle Physics, 2009, 2009, 034-034.	1.9	10
74	Extrinsic curvature, geometric optics, and lamellar order on curved substrates. Physical Review E, 2009, 80, 051703.	0.8	39
75	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
76	One-Step Nanoscale Assembly of Complex Structures via Harnessing of an Elastic Instability. Nano Letters, 2008, 8, 1192-1196.	4.5	119
77	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
78	MATERIALS SCIENCE: Better Geometry Through Chemistry. Science, 2007, 315, 1083-1084.	6.0	12
79	Hard Disks on the Hyperbolic Plane. Physical Review Letters, 2007, 99, 235701.	2.9	33
80	Triply periodic smectic liquid crystals. Physical Review E, 2007, 75, 011702.	0.8	6
81	Helical tubes in crowded environments. Physical Review E, 2007, 75, 051114.	0.8	27
82	Publisher's Note: Triply periodic smectic liquid crystals [Phys. Rev. E75, 011702 (2007)]. Physical Review E, 2007, 75, .	0.8	0
83	Why is Random Close Packing Reproducible?. Physical Review Letters, 2007, 99, 155501.	2.9	171
84	Geometric Theory of Columnar Phases on Curved Substrates. Physical Review Letters, 2007, 99, 017801.	2.9	46
85	Smectic Liquid Crystals: Materials with One-dimensional, Periodic Order. Geometriae Dedicata, 2006, 120, 229-240.	0.1	10
86	Elliptic Phases: A Study of the Nonlinear Elasticity of Twist-Grain Boundaries. Physical Review Letters, 2006, 96, 137801.	2.9	14
87	Geometry of proteins: Hydrogen bonding, sterics, and marginally compact tubes. Physical Review E, 2006, 73, 031921.	0.8	14
88	Nice planet, shame about the human race. Nature, 2005, 434, 1067-1067.	13.7	24
89	Self-consistent field theory of multiply branched block copolymer melts. Physical Review E, 2005, 71, 051801.	0.8	44
90	Entropically Driven Helix Formation. Science, 2005, 307, 1067-1067.	6.0	243

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91	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
92	Elongation and Fluctuations of Semiflexible Polymers in a Nematic Solvent. Physical Review Letters, 2004, 92, 125503.	2.9	65
93	Towards precision micelles. Nature, 2004, 430, 519-520.	13.7	24
94	The foam analogy: from phases to elasticity. Journal of Colloid and Interface Science, 2004, 275, 539-547.	5.0	8
95	Interfaces in Diblocks:â€‰ A Study of Miktoarm Star Copolymers. Macromolecules, 2004, 37, 7371-7380.	2.2	129
96	Soap Froths and Crystal Structures. Annales Henri Poincare, 2003, 4, 679-681.	0.8	0
97	Bogomolâ€™nyi, Prasad, and Sommerfield Configurations in Smectics. Physical Review Letters, 2003, 91, 045506.	2.9	36
98	PHYSICS: Topology from the Bottom Up. Science, 2003, 299, 1671-1673.	6.0	36
99	Smectic blue phases: Layered systems with high intrinsic curvature. Physical Review E, 2003, 68, 041703.	0.8	23
100	Geometric Theory of Diblock Copolymer Phases. Physical Review Letters, 2003, 91, 058304.	2.9	174
101	Soap Froths and Crystal Structures. , 2003, , 679-681.		0
102	Foam analogy in charged colloidal crystals. Physical Review E, 2002, 65, 050401.	0.8	8
103	Smectic Phases with Cubic Symmetry: The Splay Analog of the Blue Phase. Physical Review Letters, 2002, 89, 215504.	2.9	41
104	The geometry of soft materials: a primer. Reviews of Modern Physics, 2002, 74, 953-971.	16.4	340
105	Order and frustration in chiral liquid crystals. Journal of Physics Condensed Matter, 2001, 13, R1-R22.	0.7	90
106	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
107	Chiral Interactions and Structures. Molecular Crystals and Liquid Crystals, 2001, 358, 97-101.	0.3	2
108	Dislocation geometry in theTGBAphase:â€,â€Linear theory. Physical Review E, 2001, 63, 061702.	0.8	11

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109	Chiral mesophases of DNA. International Journal of Engineering Science, 2000, 38, 1025-1032.	2.7	2
110	Soap Froths and Crystal Structures. Physical Review Letters, 2000, 85, 3528-3531.	2.9	139
111	Boundary Effects in Chiral Polymer Hexatics. Physical Review Letters, 2000, 84, 3109-3112.	2.9	8
112	Poisson bracket formulation of nematic polymer dynamics. Physical Review E, 2000, 61, 2888-2894.	0.8	3
113	Self-Assembly in Vivo. Biophysical Journal, 2000, 78, 2189-2190.	0.2	19
114	Polymer shape anisotropy and the depletion interaction. Physical Review E, 1999, 59, 5621-5624.	0.8	23
115	Minimal Surfaces, Screw Dislocations, and Twist Grain Boundaries. Physical Review Letters, 1999, 82, 2892-2895.	2.9	60
116	Molecular chirality and chiral parameters. Reviews of Modern Physics, 1999, 71, 1745-1757.	16.4	285
117	Structure and dynamics of electrorheological fluids. Physical Review E, 1998, 57, 756-775.	0.8	112
118	Force-free configurations of vortices in high-temperature superconductors near the melting transition. Physical Review B, 1998, 58, 8218-8221.	1.1	11
119	Microscopic Origin of Cholesteric Pitch. Physical Review Letters, 1997, 78, 1476-1479.	2.9	110
120	Structure function of polymer nematic liquid crystals:mA Monte Carlo simulation. Physical Review E, 1997, 55, 1197-1200.	0.8	15
121	Microscopic Origin of Cholesteric Pitch [Phys. Rev. Lett. 78, 1476 (1997)]. Physical Review Letters, 1997, 78, 2867-2867.	2.9	16
122	Determining the anchoring strength in a capillary using topological defects. Liquid Crystals, 1997, 23, 213-216.	0.9	4
123	Self-avoiding walks with writhe. Nuclear Physics B, 1997, 506, 695-710.	0.9	27
124	Chiral Lyotropic Liquid Crystals: TGB Phases and Helicoidal Structures. Journal De Physique II, 1997, 7, 157-163.	0.9	10
125	Smectic Order in Double-Twist Cylinders. Journal De Physique II, 1997, 7, 743-750.	0.9	13
126	Chiral Fluctuations and Structures. Molecular Crystals and Liquid Crystals, 1996, 288, 15-23.	0.3	4

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127	Twist-Stretch Elasticity of DNA. Materials Research Society Symposia Proceedings, 1996, 463, 43.	0.1	4
128	Defects in chiral columnar phases: Tilt-grain boundaries and iterated moirÃ© maps. Physical Review E, 1996, 53, 650-666.	0.8	46
129	Liquids with Chiral Bond Order. Journal De Physique II, 1996, 6, 461-475.	0.9	26
130	Iterated MoirÃ© Maps and Braiding of Chiral Polymer Crystals. Physical Review Letters, 1995, 74, 2499-2502.	2.9	45
131	Anomalous Elasticity of Polymer Cholesterics. Physical Review Letters, 1995, 74, 3181-3184.	2.9	9
132	Directed polymer melts and quantum critical phenomena. Journal of Statistical Physics, 1993, 71, 23-50.	0.5	15
133	Rotational invariance and the theory of directed nematic polymers. Physical Review E, 1993, 48, 4116-4117.	0.8	4
134	Twisted line liquids. Journal De Physique, I, 1993, 3, 2131-2138.	1.2	26
135	Flory exponents from a self-consistent renormalization group. Journal De Physique, I, 1993, 3, 1663-1670.	1.2	3
136	Theory of directed polymers. Physical Review A, 1992, 45, 8727-8750.	1.0	67
137	On the isotropic-nematic transition for polymers in liquid crystals. Journal De Physique, I, 1992, 2, 263-272.	1.2	2
138	Universality of Random-Matrix Predictions for the Statistics of Energy Levels. Physical Review Letters, 1988, 60, 1995-1998.	2.9	35
139	Controlling liquid crystal defects. SPIE Newsroom, 0, , .	0.1	0
140	Entanglements and Whitehead Products: Generalizing Kleman's Construction to Higher-Dimensional Defects. Liquid Crystals Reviews, 0, , 1-0.	1.1	1