## Mark Warner

List of Publications by Year in descending order

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36303 60623 7,559 165 51 81 h-index citations g-index papers 170 170 170 2908 docs citations times ranked citing authors all docs

#	Article	IF	CITATIONS
1	A New Opto-Mechanical Effect in Solids. Physical Review Letters, 2001, 87, 015501.	7.8	922
2	Elasticity of entangled networks. Polymer, 1981, 22, 1010-1018.	3.8	365
3	Nematic elastomers—A new state of matter?. Progress in Polymer Science, 1996, 21, 853-891.	24.7	257
4	Theory of nematic networks. Journal of Chemical Physics, 1988, 88, 4008-4013.	3.0	204
5	Bending Dynamics and Directionality Reversal in Liquid Crystal Network Photoactuators. Macromolecules, 2008, 41, 8592-8596.	4.8	180
6	Photoinduced Deformations of Beams, Plates, and Films. Physical Review Letters, 2004, 92, 134302.	7.8	153
7	Transitions and instabilities in liquid crystal elastomers. Physical Review E, 1993, 47, R3838-R3840.	2.1	147
8	Gaussian curvature from flat elastica sheets. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2011, 467, 1121-1140.	2.1	137
9	Localized soft elasticity in liquid crystal elastomers. Nature Communications, 2016, 7, 10781.	12.8	132
10	The elastic anisotropy of nematic elastomers. European Physical Journal E, 2001, 5, 281-293.	1.6	123
11	"Soft elasticity―— deformation without resistance in liquid crystal elastomers. Journal De Physique II, 1994, 4, 93-102.	0.9	120
12	Rod to coil transitions in nematic polymers. Journal of Physics A, 1985, 18, 3007-3026.	1.6	116
13	The phase equilibria in thermotropic liquid crystalline systems. Journal of Chemical Physics, 1980, 73, 6327-6332.	3.0	109
14	Elastic Instability and Stripe Domains in Liquid Crystalline Elastomers. Journal De Physique II, 1996, 6, 1273-1290.	0.9	109
15	Linear and Nonlinear Photoinduced Deformations of Cantilevers. Physical Review Letters, 2007, 99, 174302.	7.8	106
16	Disclination-mediated thermo-optical response in nematic glass sheets. Physical Review E, 2010, 81, 060701.	2.1	100
17	Curvature in nematic elastica responding to light and heat. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2010, 466, 2975-2989.	2.1	88
18	Critical Stripe-Domain Instability of Nematic Elastomers. Journal De Physique II, 1997, 7, 1059-1069.	0.9	87

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19	Blueprinting nematic glass: Systematically constructing and combining active points of curvature for emergent morphology. Physical Review E, 2011, 84, 021711.	2.1	87
20	A dislocation theory of crystal melting and of glasses. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1979, 40, 257-278.	0.6	84
21	Theory of nematic backbone polymer phases and conformations. Journal of Physics A, 1986, 19, 2215-2227.	1.6	81
22	Mathematical modelling of the elastic properties of retina: A determination of Young's modulus. Eye, 1992, 6, 556-559.	2.1	80
23	Changing liquid crystal elastomer ordering with light – a route to opto-mechanically responsive materials. Liquid Crystals, 2009, 36, 1263-1280.	2.2	77
24	Untwisting of a Cholesteric Elastomer by a Mechanical Field. Physical Review Letters, 2000, 85, 2320-2323.	7.8	76
25	Frequency dependence of NMR spin lattice relaxation in bilayer membranes. Journal of Chemical Physics, 1984, 81, 6404-6405.	3.0	75
26	Nonlinear Photoresponse of Disordered Elastomers. Physical Review Letters, 2006, 96, 237802.	7.8	74
27	Elasticity and phase behavior of nematic elastomers. Macromolecules, 1991, 24, 4932-4941.	4.8	73
28	Anomalous Viscoelastic Response of Nematic Elastomers. Physical Review Letters, 2001, 86, 4044-4047.	7.8	72
29	Elasticity of polydomain liquid crystal elastomers. Journal of the Mechanics and Physics of Solids, 2012, 60, 573-590.	4.8	72
30	Linear hydrodynamics and viscoelasticity of nematic elastomers. European Physical Journal E, 2001, 4, 343-353.	1.6	67
31	Neutron scattering from strained polymer networks. Journal of Physics A, 1978, 11, 1649-1655.	1.6	66
32	Supersoft Elasticity in Polydomain Nematic Elastomers. Physical Review Letters, 2009, 103, 037802.	7.8	65
33	Encoding Gaussian curvature in glassy and elastomeric liquid crystal solids. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2016, 472, 20160112.	2.1	64
34	Theory of nematic comb-like polymers. Journal of Physics A, 1987, 20, 713-731.	1.6	63
35	New elastic behaviour arising from the unusual constitutive relation of nematic solids. Journal of the Mechanics and Physics of Solids, 1999, 47, 1355-1377.	4.8	63
36	Elasticity of smectic-Aelastomers. Physical Review E, 2005, 71, 021708.	2.1	63

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37	Deformation–induced orientational transitions in liquid crystals elastomer. Journal De Physique II, 1994, 4, 75-91.	0.9	62
38	Chain dimensions and interaction parameters in neutron scattering from polymer blends with a labeled component. Macromolecules, 1983, 16, 1931-1935.	4.8	61
39	Photonic band structure of cholesteric elastomers. Physical Review E, 2002, 65, 056614.	2.1	61
40	Layer Hopping by Chains in Polymeric Smectics?. Physical Review Letters, 1986, 56, 1268-1271.	7.8	60
41	Bleaching and stimulated recovery of dyes and of photocantilevers. Physical Review E, 2008, 77, 051710.	2.1	59
42	Topographic Mechanics and Applications of Liquid Crystalline Solids. Annual Review of Condensed Matter Physics, 2020, 11, 125-145.	14.5	58
43	Compositional Fluctuations and Semisoftness in Nematic Elastomers. Macromolecules, 1997, 30, 4189-4195.	4.8	57
44	Semisoft elastic response of nematic elastomers to complex deformations. Physical Review E, 2008, 78, 041704.	2.1	56
45	Orientational Order in Strained Nematic Networks. Macromolecules, 1994, 27, 7067-7075.	4.8	55
46	Soft Rubber Elasticity. Macromolecules, 1995, 28, 4303-4306.	4.8	55
47	Cholesteric elastomers: Deformable photonic solids. Physical Review E, 2001, 64, 041803.	2.1	54
48	Nonlinear dynamics of optical absorption of intense beams. Physical Review A, 2008, 78, .	2.5	54
49	Curvature by design and on demand in liquid crystal elastomers. Physical Review E, 2018, 97, 012504.	2.1	53
50	Giant dielectric response and hairpins in polymeric nematics. Physical Review Letters, 1987, 58, 393-396.	7.8	52
51	Higher-order director fluctuations. Journal of the Chemical Society, Faraday Transactions 2, 1988, 84, 997.	1.1	52
52	The theory of neutron scattering from mixed harmonic solids. European Physical Journal B, 1983, 51, 109-126.	1.5	47
53	Thermal and photo-actuation in nematic elastomers. Macromolecular Symposia, 2003, 200, 81-92.	0.7	46
54	Fluctuations, mean fields and the order parameters in nematics. Molecular Physics, 1984, 52, 677-690.	1.7	44

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55	Statics and dynamics of hairpins in worm-like main chain nematic polymer liquid crystals. Journal De Physique, 1990, 51, 317-339.	1.8	44
56	Polarization dependence of optically driven polydomain elastomer mechanics. Physical Review E, 2008, 78, 061701.	2.1	42
57	Suppression of curvature in nematic elastica. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2010, 466, 3561-3578.	2.1	42
58	Phase equilibria of swollen nematic elastomers. Macromolecules, 1992, 25, 445-449.	4.8	41
59	Powder averages for neutron spectroscopy of anisotropic molecular oscillators. Molecular Physics, 1984, 51, 381-392.	1.7	40
60	Deformation and rotations of free nematic elastomers in response to electric fields. Soft Matter, 2009, 5, 1433.	2.7	40
61	The elasticity and failure of fluid-filled cellular solids: Theory and experiment. Proceedings of the National Academy of Sciences of the United States of America, 2000, 97, 1370-1375.	7.1	39
62	Shape-programmable materials. Physics Today, 2016, 69, 32-38.	0.3	39
63	Soft elasticity in smectic elastomers. Physical Review E, 2005, 72, 011703.	2.1	38
64	Electromechanical Fredericks effects in nematic gels. Physical Review E, 1999, 60, 1872-1879.	2.1	37
65	Orientation of nematic elastomers and gels by electric fields. Journal De Physique II, 1994, 4, 667-676.	0.9	36
66	Nematic Elastomers Cross-Linked by Rigid Rod Linkers. Macromolecules, 1997, 30, 4196-4204.	4.8	36
67	Liquid crystalline elastomers: dynamics and relaxation of microstructure. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2003, 361, 653-664.	3.4	36
68	Anisotropic response of glassy splay-bend and twist nematic cantilevers to light and heat. Physical Review E, 2010, 82, 041111.	2.1	34
69	The swelling of nematic elastomers by nematogenic solvents. Macromolecular Theory and Simulations, 1997, 6, 37-52.	1.4	33
70	Responsive nematic solid shells: Topology, compatibility, and shape. Europhysics Letters, 2012, 97, 36007.	2.0	31
71	Computational analysis of liquid crystalline elastomer membranes: Changing Gaussian curvature without stretch energy. International Journal of Solids and Structures, 2014, 51, 144-153.	2.7	31
72	The effect of high momentum transfer on scattering from oscillators and crystals. European Physical Journal B, 1984, 56, 13-20.	1.5	30

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73	Theory of Chiral Imprinting. Physical Review Letters, 2000, 84, 5335-5338.	7.8	30
74	Interaction energies in nematogens. Journal of Chemical Physics, 1980, 73, 5874-5883.	3.0	29
75	Understanding the chain fountain. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2014, 470, 20130689.	2.1	28
76	Nematic director fields and topographies of solid shells of revolution. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2018, 474, 20170566.	2.1	28
77	Piezoelectricity of chiral nematic elastomers. European Physical Journal B, 1999, 8, 595-601.	1.5	27
78	Photodynamics of stress in clamped nematic elastomers. Physical Review E, 2013, 87, 062503.	2.1	27
79	The dynamics of particular points on a polymer chain. Journal of Physics C: Solid State Physics, 1981, 14, 4985-4994.	1.5	26
80	A Scaling Approach to Elasticity and Flow in Solid Foams. Europhysics Letters, 1988, 5, 623-628.	2.0	26
81	Nematic Main Chain Polymers with Head-to-Tail Structure:Â Synthesis and Enhanced NLO Response. Macromolecules, 1998, 31, 3519-3531.	4.8	26
82	Solar to electrical conversion via liquid crystal elastomers. Journal of Applied Physics, 2011, 109, 104506.	2.5	26
83	A New Theory of the Equilibrium Properties of Nematic Liquid Crystals. Molecular Crystals and Liquid Crystals, 1982, 80, 79-104.	0.8	25
84	Hairpin rubber elasticity. European Physical Journal E, 2005, 16, 97-107.	1.6	24
85	Electromechanical elongation of nematic elastomers for actuation. Sensors and Actuators A: Physical, 2009, 149, 120-129.	4.1	24
86	Mechanical frustration and spontaneous polygonal folding in active nematic sheets. Physical Review E, 2012, 86, 060701.	2.1	24
87	Fluctuations and Long-Range Order in Smectic Elastomers. Europhysics Letters, 1995, 30, 343-348.	2.0	23
88	Continuum theory of elasticity and piezoelectric effects in smectic A elastomers. Journal De Physique II, 1994, 4, 111-126.	0.9	22
89	Elasticity of nematic networks and nematic effects in conventional rubbers. Macromolecules, 1993, 26, 1078-1085.	4.8	21
90	Imprinted Networks as Chiral Pumps. Physical Review Letters, 2001, 86, 5309-5312.	7.8	21

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91	Spontaneous shears in smectic elastomers. Physical Review E, 2006, 73, 031706.	2.1	21
92	Deep optical penetration dynamics in photobending. Physical Review E, 2015, 92, 013206.	2.1	21
93	Neutron refractive index: A Fermi-Huygens theory. Physical Review B, 1985, 32, 6347-6357.	3.2	19
94	Theory of main chain nematic polymers with spacers of varying degree of flexibility. Liquid Crystals, 1992, 12, 385-401.	2.2	19
95	Nuclear Magnetic Resonance Line Shape from Strained Gaussian Networks. Macromolecules, 1997, 30, 4733-4736.	4.8	19
96	Angular deficits in flat space: remotely controllable apertures in nematic solid sheets. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2013, 469, 20120631.	2.1	19
97	Negative Gaussian curvature from induced metric changes. Physical Review E, 2015, 92, 010401.	2.1	19
98	The stability of quasi 2D lattices of magnetic holes. Journal of Physics A, 1985, 18, 2325-2341.	1.6	18
99	Layer-network coupling in smectic elastomers. Journal De Physique II, 1994, 4, 1457-1459.	0.9	18
100	Commentary on "Mechanical properties of monodomain side-chain nematic elastomers―by P. Martinoty, P. Stein, H. Finkelmann, H. Pleiner and H.R. Brand. European Physical Journal E, 2004, 14, 323-327.	1.6	18
101	Smectic- <mml:math display="inline" xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>A</mml:mi></mml:math> elastomers with weak director anchoring. Physical Review E, 2008, 78, 011703.	2.1	18
102	Excluded volume effect on quasielastic neutron scattering from concentrated polymer solutions. Journal of Chemical Physics, 1976, 64, 5132-5141.	3.0	17
103	The effect of disorder on the spectrum of a Hermitian matrix. Journal of Physics A, 1980, 13, 381-396.	1.6	17
104	Dynamics of soft and semisoft nematic elastomers. Physical Review E, 1999, 60, 603-609.	2.1	17
105	Mechanical and order rigidity of nematic elastomers. European Physical Journal E, 2001, 5, 295-307.	1.6	17
106	A new main-chain thermotropic liquid-crystalline polymer based on a substituted cyanostilbene: synthesis, thermo-optic observations and linear electro-optic effect measurements. Synthetic Metals, 1993, 61, 159-162.	3.9	16
107	Photonic band structure of highly deformable self-assembling systems. Physical Review E, 2001, 65, 010702.	2.1	15
108	Mechanical response of smectic-Celastomers. Physical Review E, 2008, 77, 021702.	2.1	15

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109	Non-Uniform Deformations in Liquid Crystalline Elastomers. Journal De Physique II, 1996, 6, 1049-1060.	0.9	14
110	Field effects and the critical end point in polymeric nematics. Physics Letters, Section A: General, Atomic and Solid State Physics, 1986, 119, 181-184.	2.1	13
111	Multistage Crosslinking of Nematic Networks. Macromolecules, 1995, 28, 4299-4302.	4.8	13
112	Reflectivity of cholesteric liquid crystals with spatially varying pitch. European Physical Journal E, 2003, 12, 515-521.	1.6	13
113	Frame, metric and geodesic evolution in shape-changing nematic shells. Soft Matter, 2017, 13, 8858-8863.	2.7	13
114	The Specification of Steric Effects in The Flory Approach to Nematic Fluids. Molecular Crystals and Liquid Crystals, 1982, 80, 67-78.	0.8	12
115	A New Theory of Nematic Liquid Crystal Mixtures. Molecular Crystals and Liquid Crystals, 1983, 100, 307-326.	0.8	12
116	Theory of light scattering from vesicles. Colloid and Polymer Science, 1983, 261, 508-519.	2.1	12
117	Smectic-Ctilt under shear in smectic-Aelastomers. Physical Review E, 2008, 78, 021705.	2.1	12
118	Evolving, complex topography from combining centers of Gaussian curvature. Physical Review E, 2020, 102, 013003.	2.1	12
119	Shape programming lines of concentrated Gaussian curvature. Journal of Applied Physics, 2021, 129, .	2.5	12
120	Uniaxial and biaxial soft deformations of nematic elastomers. Physical Review E, 2002, 65, 051707.	2.1	11
121	Mathematical modelling of retinal tear formation: Implications for the use of heavy liquids. Eye, 1992, 6, 69-74.	2.1	10
122	Anisotropic electrostatic actuation. Journal Physics D: Applied Physics, 2009, 42, 115505.	2.8	10
123	Inflationary routes to Gaussian curved topography. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2020, 476, 20200047.	2.1	10
124	Finite extensibility effects in nematic elastomers. Journal of Chemical Physics, 1998, 108, 8743-8748.	3.0	9
125	Optomechanical elastomeric engine. Physical Review E, 2013, 88, 040501.	2.1	9
126	Phases and Conformations Of Comb Polymer Liquid Crystals. Molecular Crystals and Liquid Crystals Incorporating Nonlinear Optics, 1988, 155, 433-442.	0.3	8

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127	Isotropic-to-cholesteric transition in liquid crystal elastomers. Physical Review E, 2003, 67, 011701.	2.1	8
128	Two-color nonlinear absorption of light in dye layers. Physical Review A, 2009, 80, .	2.5	8
129	Biaxial effects in nematic comblike polymers. Macromolecules, 1992, 25, 4329-4338.	4.8	7
130	Transesterification in nematic polymers. Macromolecules, 1993, 26, 4499-4505.	4.8	7
131	Pulsed gradient spinâ€echo nuclear magnetic resonance of confined Brownian particles. Journal of Chemical Physics, 1995, 102, 4619-4624.	3.0	7
132	Mechanical strains and electric fields applied to topologically imprinted elastomers. Physical Review E, 2006, 74, 021708.	2.1	7
133	Mechanical switching of ferroelectric rubber. Physical Review E, 2009, 79, 061704.	2.1	7
134	The activated morphology of grain boundaries in nematic solid sheets. Proceedings of SPIE, 2012, , .	0.8	7
135	The long-time fluctuations of a Brownian sphere. Journal of Physics A, 1979, 12, 1511-1519.	1.6	6
136	Hyperbranched Architectures for NLO Polymers. Molecular Crystals and Liquid Crystals, 2001, 356, 175-183.	0.3	6
137	Mechanical and optical bending of nematic elastomer cantilevers. Physical Review E, 2012, 86, 022701.	2.1	6
138	Metric mechanics with nontrivial topology: Actuating irises, cylinders, and evertors. Physical Review E, 2021, 104, 065004.	2.1	6
139	Anomalous Dielectric and Non-Linear Optical Response in Main and Side Chain Polymer Nematics and Smectics. Materials Research Society Symposia Proceedings, 1988, 134, 61.	0.1	5
140	Analysis of Experiments on Nematic Elastomers. Macromolecules, 1995, 28, 4296-4298.	4.8	5
141	Director rotation via photoinduced differential depletion in nematic dyes. Physical Review E, 2000, 62, 4431-4434.	2.1	5
142	Photoferroelectric solar to electrical conversion. Applied Physics Letters, 2013, 102, .	3.3	5
143	Optomechanical Conversion by Mechanical Turbines. Physical Review Applied, 2014, 2, .	3.8	5
144	LEDs driven by AC without transformers or rectifiers. Scientific Reports, 2021, 11, 963.	3.3	5

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145	Nonlocal dielectric response in dipolar polymers. Journal De Physique II, 1993, 3, 503-513.	0.9	5
146	Comment on "Director reorientation in nematic liquid-single-crystal elastomers by external mechanical stress". Europhysics Letters, 1997, 37, 495-498.	2.0	4
147	Chiral-mechanical transitions in topologically imprinted elastomers. Physical Review E, 2005, 72, 051718.	2.1	4
148	Interfacial metric mechanics: stitching patterns of shape change in active sheets. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2022, 478, .	2.1	4
149	Spin correlations close to the critical concentration in -Fe alloys. Journal of Magnetism and Magnetic Materials, 1980, 15-18, 259-261.	2.3	3
150	Transitions in Nematic Networks. Molecular Crystals and Liquid Crystals Incorporating Nonlinear Optics, 1988, 155, 539-547.	0.3	3
151	Torsional defects, dielectric response and dynamics of comb polymer liquid crystals. Liquid Crystals, 1989, 4, 325-340.	2.2	3
152	Nematic elastomers. Physica Scripta, 1991, T35, 53-56.	2.5	3
153	Sir Sam Edwards. 1 February 1928 — 7 July 2015. Biographical Memoirs of Fellows of the Royal Society, 2017, 63, 243-271.	0.1	3
154	Aggregation in dense solutions of rods. Journal of the Chemical Society, Faraday Transactions, 1991, 87, 861.	1.7	2
155	Second order nonlinear optical response of nematic liquid crystalline main chain polymers. Synthetic Metals, 1999, 101, 244-245.	3.9	2
156	Electric field dependence of poling response for nematic liquid crystalline main chain polymers with large second order optical nonlinearities. Synthetic Metals, 2000, 115, 151-155.	3.9	2
157	Theory of photoferroelectric response in SmC* liquids. Journal of Chemical Physics, 2012, 137, 144902.	3.0	2
158	A van der waals theory with quartic density gradients. Chemical Physics Letters, 1980, 70, 155-158.	2.6	1
159	Discrete and continuum models of nematic polymers. Journal of Physics A, 1992, 25, 2831-2841.	1.6	1
160	Instabilities and melting in a two-dimensional magnetic dipolar system. Physica A: Statistical Mechanics and Its Applications, 1993, 194, 199-208.	2.6	1
161	The coupling of chiral chains to mechanical distortions in elastomers. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 1999, 455, 3629-3644.	2.1	1
162	Geometry for evolving topographies of light-responsive plastic sheets. Journal of Physics Communications, 2019, 3, 065005.	1.2	1

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163	The elasticity of nematic networks. Makromolekulare Chemie Macromolecular Symposia, 1993, 76, 257-267.	0.6	O
164	Smectic Elastomers. Liquid Crystals Book Series, 2011, , 487-527.	0.0	0
165	Inelastic Neutron Scattering from Lattices, Molecular Crystals and Powders. NATO ASI Series Series B: Physics, 1984, , 289-326.	0.2	0