Alfred J Crosby

List of Publications by Year
in descending order

161	8,921	34076	46771
papers	citations	52	89
		h-index	g-index

164	164	164	8262
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Polymer Nanocomposites: The â€œNanoâ€•Effect on Mechanical Properties. Polymer Reviews, 2007, 47, 217-229.	5.3	507
2	Surface Wrinkles for Smart Adhesion. Advanced Materials, 2008, 20, 711-716.	11.1	451
3	Fabricating Microlens Arrays by Surface Wrinkling. Advanced Materials, 2006, 18, 3238-3242.	11.1	325
4	Periodic patterns and energy states of buckled films on compliant substrates. Journal of the Mechanics and Physics of Solids, 2011, 59, 1094-1114.	2.3	274
5	Looking Beyond Fibrillar Features to Scale Geckoâ€Like Adhesion. Advanced Materials, 2012, 24, 1078-1083.	11.1	243
6	Deformation and failure modes of adhesively bonded elastic layers. Journal of Applied Physics, 2000, 88, 2956-2966.	1.1	206
7	Snapping Surfaces. Advanced Materials, 2007, 19, 3589-3593.	11.1	195
8	The principles of cascading power limits in small, fast biological and engineered systems. Science, 2018, 360, .	6.0	187
9	Solventâ€Responsive Surface via Wrinkling Instability. Advanced Materials, 2011, 23, 4188-4192.	11.1	182
10	Axisymmetric adhesion tests of soft materials. Macromolecular Chemistry and Physics, 1998, 199, 489-511.	1.1	175
11	Spontaneous formation of stable aligned wrinkling patterns. Soft Matter, 2006, 2, 324.	1.2	160
12	Controlling Polymer Adhesion with â€œPancakesâ€• Langmuir, 2005, 21, 11738-11743.	1.6	158
13	Cavitation rheology for soft materials. Soft Matter, 2007, 3, 763.	1.2	151
14	Mechanics of intact bone marrow. Journal of the Mechanical Behavior of Biomedical Materials, 2015, 50, 299-307.	1.5	149
15	Cavitation and fracture behavior of polyacrylamide hydrogels. Soft Matter, 2009, 5, 3963.	1.2	144
16	Effect of stress state on wrinkle morphology. Soft Matter, 2011, 7, 4490.	1.2	141
17	Fingering Instabilities of Confined Elastic Layers in Tension. Physical Review Letters, 2000, 84, 3057-3060.	2.9	140
18	Synthetically Simple, Highly Resilient Hydrogels. Biomacromolecules, 2012, 13, 584-588.	2.6	128

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19	Selfâ€Wrinkling of UVâ€Cured Polymer Films. Advanced Materials, 2011, 23, 3441-3445.	11.1	126
20	Adhesive failure analysis of pressure-sensitive adhesives. Journal of Polymer Science, Part B: Polymer Physics, 1999, 37, 3455-3472.	2.4	122
21	Creating Geckoâ€Like Adhesives for â€œReal Worldâ€•Surfaces. Advanced Materials, 2014, 26, 4345-4351.	11.1	112
22	Draping Films: A Wrinkle to Fold Transition. Physical Review Letters, 2010, 105, 038303.	2.9	111
23	Nanoparticle Alignment and Repulsion during Failure of Glassy Polymer Nanocomposites. Macromolecules, 2006, 39, 7392-7396.	2.2	108
24	Extremely tough composites from fabric reinforced polyampholyte hydrogels. Materials Horizons, 2015, 2, 584-591.	6.4	108
25	Wrinkling and strain localizations in polymer thin films. Soft Matter, 2012, 8, 9086.	1.2	107
26	Rubrene crystal field-effect mobility modulation via conducting channel wrinkling. Nature Communications, 2015, 6, 6948.	5.8	107
27	Nanoparticle Stripes, Grids, and Ribbons Produced by Flow Coating. Advanced Materials, 2010, 22, 4600-4604.	11.1	105
28	Autonomous snapping and jumping polymer gels. Nature Materials, 2021, 20, 1695-1701.	13.3	103
29	Directly Measuring the Complete Stressâ€“Strain Response of Ultrathin Polymer Films. Macromolecules, 2015, 48, 6534-6540.	2.2	101
30	Stimuli-responsive buckling mechanics of polymer films. Journal of Polymer Science, Part B: Polymer Physics, 2014, 52, 1441-1461.	2.4	98
31	Surface wrinkling behavior of finite circular plates. Soft Matter, 2009, 5, 425-431.	1.2	95
32	Extreme positive allometry of animal adhesive pads and the size limits of adhesion-based climbing. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 1297-1302.	3.3	92
33	Cavitation in soft matter. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 9157-9165.	3.3	86
34	Cavitation rheology of the vitreous: mechanical properties of biological tissue. Soft Matter, 2010, 6, 3632.	1.2	85
35	Mechanical Properties of End-Linked PEG/PDMS Hydrogels. Macromolecules, 2012, 45, 6104-6110.	2.2	85
36	Cross-platform mechanical characterization of lung tissue. PLoS ONE, 2018, 13, e0204765.	1.1	85

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37	High Aspect Ratio Wrinkles via Substrate Prestretch. Advanced Materials, 2014, 26, 5626-5631.	11.1	79
38	Enhanced Adhesion of Elastic Materials to Small-Scale Wrinkles. Langmuir, 2012, 28, 14899-14908.	1.6	78
39	Structural Development and Adhesion of Acrylic ABA Triblock Copolymer Gels. Macromolecules, 1999, 32, 7251-7262.	2.2	74
40	Photo-Cross-Linked PLA-PEO-PLA Hydrogels from Self-Assembled Physical Networks: Mechanical Properties and Influence of Assumed Constitutive Relationships. Biomacromolecules, 2008, 9, 2784-2791.	2.6	73
41	Designing Model Systems for Enhanced Adhesion. MRS Bulletin, 2007, 32, 496-503.	1.7	72
42	Friction of soft elastomeric wrinkled surfaces. Journal of Applied Physics, 2009, 106, .	1.1	68
43	Curvature-controlled wrinkle morphologies. Soft Matter, 2013, 9, 3624.	1.2	67
44	Designing Bioâ€Inspired Adhesives for Shear Loading: From Simple Structures to Complex Patterns. Advanced Functional Materials, 2012, 22, 4985-4992.	7.8	60
45	Study of the Surface Adhesion of Pressure-Sensitive Adhesives by Atomic Force Microscopy and Spherical Indenter Tests. Macromolecules, 2000, 33, 1878-1881.	2.2	59
46	Macroscopic Nanoparticle Ribbons and Fabrics. Advanced Materials, 2013, 25, 1248-1253.	11.1	59
47	Elastic cavitation and fracture via injection. Soft Matter, 2016, 12, 2557-2566.	1.2	59
48	Mechanics of wrinkled surface adhesion. Soft Matter, 2011, 7, 5373.	1.2	58
49	Insight into the periodicity of Schallamach waves in soft material friction. Applied Physics Letters, 2006, 89, 261907.	1.5	57
50	Mechanical properties of temperature sensitive microgel/polyacrylamide composite hydrogelsâ€”from soft to hard fillers. Soft Matter, 2012, 8, 4254.	1.2	57
51	Characterization of Heterogeneous Polyacrylamide Hydrogels by Tracking of Single Quantum Dots. Macromolecules, 2014, 47, 741-749.	2.2	57
52	Probing and repairing damaged surfaces with nanoparticle-containing microcapsules. Nature Nanotechnology, 2012, 7, 87-90.	15.6	56
53	Scaling Normal Adhesion Force Capacity with a Generalized Parameter. Langmuir, 2013, 29, 11022-11027.	1.6	55
54	Puncture mechanics of soft solids. Soft Matter, 2015, 11, 4723-4730.	1.2	54

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55	Using Nanoparticle-Filled Microcapsules for Site-Specific Healing of Damaged Substrates: Creating a â€œRepair-and-Goâ€•System. ACS Nano, 2010, 4, 1115-1123.	7.3	52
56	Lowâ€Voltage Reversible Electroadhesion of Ionoelastomer Junctions. Advanced Materials, 2020, 32, e2000600.	11.1	52
57	High Capacity, Easy Release Adhesives From Renewable Materials. Advanced Materials, 2014, 26, 3405-3409.	11.1	51
58	Control of Astrocyte Quiescence and Activation in a Synthetic Brain Hydrogel. Advanced Healthcare Materials, 2020, 9, e1901419.	3.9	51
59	The Intrinsic Mechanical Properties of Rubrene Single Crystals. Advanced Materials, 2012, 24, 5548-5552.	11.1	50
60	Adhesion of Thermally Reversible Gels to Solid Surfaces. Langmuir, 1997, 13, 6101-6107.	1.6	49
61	Impact of Surface-Modified Nanoparticles on Glass Transition Temperature and Elastic Modulus of Polymer Thin Films. Macromolecules, 2007, 40, 7755-7757.	2.2	48
62	Adaptive polymer particles. Applied Physics Letters, 2008, 93, .	1.5	46
63	Confinement Effect on Strain Localizations in Glassy Polymer Films. Macromolecules, 2018, 51, 3647-3653.	2.2	45
64	Cavitation rheology of the eye lens. Soft Matter, 2011, 7, 7827.	1.2	42
65	Contact-line mechanics for pattern control. Soft Matter, 2010, 6, 5789.	1.2	41
66	Water cavitation of hydrogels. Journal of Polymer Science, Part B: Polymer Physics, 2010, 48, 1423-1427.	2.4	37
67	Microindentation and Nanoindentation Studies of Aging in Pressure-Sensitive Adhesives. Macromolecules, 2001, 34, 2269-2276.	2.2	36
68	Confinement Effects on Chain Entanglement in Free-Standing Polystyrene Ultrathin Films. Macromolecules, 2011, 44, 5436-5442.	2.2	36
69	Highly Stretchable Nanoparticle Helices Through Geometric Asymmetry and Surface Forces. Advanced Materials, 2013, 25, 6703-6708.	11.1	36
70	Highly Conductive Ribbons Prepared by Stickâ€“Slip Assembly of Organosoluble Gold Nanoparticles. ACS Nano, 2014, 8, 1173-1179.	7.3	35
71	Flower Inspiration: Broadâ€Angle Structural Color through Tunable Hierarchical Wrinkles in Thin Film Multilayers. Advanced Functional Materials, 2021, 31, 2006256.	7.8	34
72	Controlling Adhesion with Surface Hole Patterns. Journal of Adhesion, 2006, 82, 311-329.	1.8	32

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73	Direct Patterning of Engineered Ionic Gold Nanoparticles via Nanoimprint Lithography. Advanced Materials, 2012, 24, 6330-6334.	11.1	32
74	Wrinkling of inhomogeneously strained thin polymer films. Soft Matter, 2013, 9, 43-47.	1.2	30
75	Geckos as Springs: Mechanics Explain Across-Species Scaling of Adhesion. PLoS ONE, 2015, 10, e0134604.	1.1	30
76	Micromechanical characterization of soft, biopolymeric hydrogels: stiffness, resilience, and failure. Soft Matter, 2018, 14, 3478-3489.	1.2	30
77	Synthesis of Phosphonic Acid Ligands for Nanocrystal Surface Functionalization and Solution Processed Memristors. Chemistry of Materials, 2018, 30, 8034-8039.	3.2	30
78	Uniaxial Extension of Ultrathin Freestanding Polymer Films. ACS Macro Letters, 2019, 8, 1080-1085.	2.3	30
79	Crumpled surface structures. Soft Matter, 2008, 4, 82-85.	1.2	28
80	Soft-solid deformation mechanics at the tip of an embedded needle. Soft Matter, 2014, 10, 3679.	1.2	28
81	Adhesion of nonplanar wrinkled surfaces. Journal of Polymer Science, Part B: Polymer Physics, 2011, 49, 179-185.	2.4	26
82	Load-bearing entanglements in polymer glasses. Science Advances, 2021, 7, eabg9763.	4.7	26
83	Fracture of model end-linked networks. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	26
84	Adhesion of Patterned Reactive Interfaces. Journal of Adhesion, 2007, 83, 473-489.	1.8	25
85	Buckling of an Adhesive Polymeric Micropillar. Journal of Adhesion, 2013, 89, 140-158.	1.8	25
86	Optimizing Adhesive Design by Understanding Compliance. ACS Applied Materials & Interfaces, 2015, 7, 27771-27781.	4.0	24
87	Crazing in Glassy Block Copolymer Thin Films. Macromolecules, 2005, 38, 9711-9717.	2.2	23
88	Cavity growth in a triblock copolymer polymer gel. Soft Matter, 2012, 8, 8204.	1.2	23
89	Pattern Driven Stress Localization in Thin Diblock Copolymer Films. Macromolecules, 2012, 45, 4001-4006.	2.2	23
90	How Ligands Affect Resistive Switching in Solution-Processed HfO₂ Nanoparticle Assemblies. ACS Applied Materials & Interfaces, 2018, 10, 4824-4830.	4.0	23

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91	Tunable Elastic Modulus of Nanoparticle Monolayer Films by Hostâ€“Guest Chemistry. Advanced Materials, 2014, 26, 5056-5061.	11.1	22
92	Residual strain effects in needle-induced cavitation. Soft Matter, 2019, 15, 7390-7397.	1.2	22
93	Mechanical Properties of Ultrathin Polymer Nanocomposites. ACS Applied Polymer Materials, 2020, 2, 2220-2227.	2.0	22
94	Phase-transforming metamaterial with magnetic interactions. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	22
95	Wrinkle morphologies with two distinct wavelengths. Journal of Polymer Science, Part B: Polymer Physics, 2012, 50, 1225-1232.	2.4	20
96	Effect of Polymer Volume Fraction on Fracture Initiation in Soft Gels at Small Length Scales. ACS Macro Letters, 2019, 8, 492-498.	2.3	20
97	Why should we care about buckling?. Soft Matter, 2010, 6, 5660.	1.2	19
98	High-Throughput Craze Studies in Gradient Thin Films Using Ductile Copper Grids. Macromolecules, 2004, 37, 9968-9974.	2.2	18
99	Fracture-induced alignment of surface wrinkles. Soft Matter, 2008, 4, 1805.	1.2	18
100	Large Deformation and Adhesive Contact Studies of Axisymmetric Membranes. Langmuir, 2013, 29, 1407-1419.	1.6	18
101	Tensile Properties of Ultrathin Bisphenol-A Polycarbonate Films. Macromolecules, 2019, 52, 7489-7494.	2.2	18
102	Macroscopic Geometry-Dominated Orientation of Symmetric Microwrinkle Patterns. ACS Applied Materials & Interfaces, 2019, 11, 23741-23749.	4.0	18
103	Material transfer controlled by elastomeric layer thickness. Materials Horizons, 2014, 1, 507.	6.4	17
104	Deformation and shape of flexible, microscale helices in viscous flow. Physical Review E, 2015, 92, 011004.	0.8	17
105	Indentation of a stretched elastomer. Journal of the Mechanics and Physics of Solids, 2017, 107, 145-159.	2.3	17
106	Quantifying release in step-and-flash imprint lithography. Journal of Vacuum Science & Technology B, 2006, 24, 2716.	1.3	16
107	Opportunities with Fabric Composites as Unique Flexible Substrates. ACS Applied Materials & Interfaces, 2012, 4, 6640-6645.	4.0	16
108	The effect of size-scale on the kinematics of elastic energy release. Soft Matter, 2019, 15, 9579-9586.	1.2	16

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109	Combinatorial investigations of interfacial failure. Journal of Polymer Science, Part B: Polymer Physics, 2003, 41, 883-891.	2.4	15
110	Combinatorial approach to the edge delamination test for thin film reliabilityâ€"adaptability and variability. Thin Solid Films, 2005, 476, 379-385.	0.8	15
111	A multilens measurement platform for high-throughput adhesion measurements. Measurement Science and Technology, 2005, 16, 81-89.	1.4	15
112	Tailored Nanoparticles for Enhancing Polymer Adhesion. Macromolecules, 2011, 44, 5256-5261.	2.2	15
113	Blowing bubbles to study living material. Physics Today, 2011, 64, 62-63.	0.3	15
114	Mechanical Restoration of Damaged Polymer Films by â€œRepairâ€andâ€Goâ€• Advanced Functional Materials, 2016, 26, 857-863.	7.8	15
115	Uniaxial stretching mechanics of cellular flexible metamaterials. Extreme Mechanics Letters, 2020, 35, 100637.	2.0	15
116	Cavitation Rheology as a Potential Method for In Vivo Assessment of Skin Biomechanics. Plastic and Reconstructive Surgery, 2013, 131, 303e-305e.	0.7	14
117	Stretching of assembled nanoparticle helical springs. Physical Chemistry Chemical Physics, 2014, 16, 10261.	1.3	13
118	Wrinkling membranes with compliant boundaries. Soft Matter, 2014, 10, 1963-1968.	1.2	13
119	Seeded laser-induced cavitation for studying high-strain-rate irreversible deformation of soft materials. Soft Matter, 2020, 16, 9006-9013.	1.2	13
120	The functional significance of morphological changes in the dentitions of early mammals. Journal of the Royal Society Interface, 2016, 13, 20160713.	1.5	12
121	Effect of far-field compliance on local failure dynamics of soft solids. Extreme Mechanics Letters, 2018, 24, 14-20.	2.0	12
122	Programming Impulsive Deformation with Mechanical Metamaterials. Physical Review Letters, 2020, 125, 108002.	2.9	12
123	Localized characterization of brain tissue mechanical properties by needle induced cavitation rheology and volume controlled cavity expansion. Journal of the Mechanical Behavior of Biomedical Materials, 2021, 114, 104168.	1.5	12
124	Hole Nucleation and Growth in Free-Standing Polystyrene Ultrathin Films. Macromolecules, 2011, 44, 134-139.	2.2	11
125	Enhancing Adhesion of Elastomeric Composites through Facile Patterning of Surface Discontinuities. ACS Applied Materials & Interfaces, 2014, 6, 6845-6850.	4.0	11
126	Functional droplets that recognize, collect, and transport debris on surfaces. Science Advances, 2016, 2, e1601462.	4.7	11

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127	Mesoscale Block Copolymers. Advanced Materials, 2018, 30, e1706118.	11.1	11
128	Hyperbranched polymer structures via flexible blade flow coating. Journal of Polymer Science, Part B: Polymer Physics, 2016, 54, 32-37.	2.4	10
129	Transferable Memristive Nanoribbons Comprising Solution-Processed Strontium Titanate Nanocubes. ACS Applied Materials & Interfaces, 2017, 9, 10847-10854.	4.0	10
130	Micromechanical Properties of Microstructured Elastomeric Hydrogels. Macromolecular Bioscience, 2020, 20, 1900360.	2.1	10
131	Soft double-network polydimethylsiloxane: fast healing of fracture toughness. Journal of Materials Chemistry A, 2022, 10, 11667-11675.	5.2	10
132	Facile Colloidal Lithography on Rough and Nonâ€planar Surfaces for Asymmetric Patterning. Small, 2013, 9, 3037-3042.	5.2	9
133	Smooth Muscle Stiffness Sensitivity is Driven by Soluble and Insoluble ECM Chemistry. Cellular and Molecular Bioengineering, 2015, 8, 333-348.	1.0	9
134	Deep indentation and puncture of a rigid cylinder inserted into a soft solid. Soft Matter, 2021, 17, 5574-5580.	1.2	9
135	Friction of soft elastomeric surfaces with a defect. Applied Physics Letters, 2007, 91, .	1.5	8
136	Formation of Oriented, Suspended Fibers by Melting Free Standing Polystyrene Thin Films. Macromolecules, 2009, 42, 6716-6722.	2.2	8
137	Achieving high aspect ratio wrinkles by modifying material network stress. Soft Matter, 2017, 13, 4142-4147.	1.2	8
138	Living microlens arrays. Cytoskeleton, 2008, 65, 762-767.	4.4	7
139	Rolling wrinkles on elastic substrates. Extreme Mechanics Letters, 2016, 6, 23-30.	2.0	7
140	Controlled evaporative selfâ€assembly of polymer nanoribbons using oscillating capillary bridges. Journal of Polymer Science, Part B: Polymer Physics, 2018, 56, 1545-1551.	2.4	7
141	Programmed Wrapping and Assembly of Droplets with Mesoscale Polymers. Advanced Functional Materials, 2020, 30, 2002704.	7.8	7
142	Failure Mechanism of Glassy Polymerâ^'Nanoparticle Composites. Macromolecules, 2007, 40, 6406-6412.	2.2	6
143	Memristive Behavior of Mixed Oxide Nanocrystal Assemblies. ACS Applied Materials & Interfaces, 2021, 13, 21635-21644.	4.0	6
144	Axisymmetric adhesion tests of soft materials. Macromolecular Chemistry and Physics, 1998, 199, 489-511.	1.1	6

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145	Patterning Nanoparticles into Rings by â€œ2-D Pickering Emulsionsâ€• ACS Applied Materials & Interfaces, 2014, 6, 4850-4855.	4.0	5
146	Linking cavitation and fracture to molecular scale structural damage of model networks. Soft Matter, 2022, 18, 4220-4226.	1.2	5
147	Bond strength regime dictates stress relaxation behavior. Soft Matter, 2022, 18, 4937-4943.	1.2	5
148	Biomimetics: Looking Beyond Fibrillar Features to Scale Gecko-Like Adhesion (Adv. Mater. 8/2012). Advanced Materials, 2012, 24, 994-994.	11.1	4
149	High strength reversible adhesive closures. Journal of Polymer Science, Part B: Polymer Physics, 2017, 55, 1783-1790.	2.4	4
150	Controlled processing of polymer nanoribbons: Enabling microhelix transformations. Journal of Polymer Science, Part B: Polymer Physics, 2019, 57, 1270-1278.	2.4	4
151	Pressurized interfacial failure of soft adhesives. Soft Matter, 2022, 18, 755-761.	1.2	4
152	Dynamic recoil in metamaterials with nonlinear interactions. Journal of the Mechanics and Physics of Solids, 2022, 162, 104834.	2.3	4
153	Simultaneous â€œCleanâ€andâ€Repairâ€•of Surfaces Using Smart Droplets. Advanced Functional Materials, 2019, 29, 1805219.	7.8	3
154	Mechanics of adhesives under annular confinement: internal pressure, force, and interfacial area. Soft Matter, 2021, 17, 5540-5547.	1.2	2
155	Adhesive failure analysis of pressureâ€sensitive adhesives. Journal of Polymer Science, Part B: Polymer Physics, 1999, 37, 3455-3472.	2.4	2
156	Image Analysis for High-Throughput Materials Science. , 2003, , 33-56.		2
157	Smart Droplets: Simultaneous â€œCleanâ€andâ€Repairâ€•of Surfaces Using Smart Droplets (Adv. Funct. Mater.) Tj ETQq1 1 0.78431	7.8	1
158	Adhesive failure analysis of pressure-sensitive adhesives. , 1999, 37, 3455.		1
159	Adhesion of Triblock Copolymer-Based Thermoreversible Gels and Pressure Sensitive Adhesives. Materials Research Society Symposia Proceedings, 2000, 629, 1.	0.1	1
160	Cavitation induced fracture of intact brain tissue. Biophysical Journal, 2022, 121, 2721-2729.	0.2	1
161	WRINKLING POLYMERS FOR SURFACE STRUCTURE CONTROL AND FUNCTIONALITY. Series in Sof Condensed Matter, 2008, , 141-161.	0.1	0