

Eric R Dufresne

List of Publications by Year in descending order

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125
papers

12,683
citations

28274

55
h-index

24982

109
g-index

134
all docs

134
docs citations

134
times ranked

14730
citing authors

#	ARTICLE	IF	CITATIONS
1	Mechanotransduction and extracellular matrix homeostasis. <i>Nature Reviews Molecular Cell Biology</i> , 2014, 15, 802-812.	37.0	1,492
2	The Bacterial Cytoplasm Has Glass-like Properties and Is Fluidized by Metabolic Activity. <i>Cell</i> , 2014, 156, 183-194.	28.9	643
3	Optical tweezer arrays and optical substrates created with diffractive optics. <i>Review of Scientific Instruments</i> , 1998, 69, 1974-1977.	1.3	505
4	Membrane Tension Maintains Cell Polarity by Confining Signals to the Leading Edge during Neutrophil Migration. <i>Cell</i> , 2012, 148, 175-188.	28.9	490
5	Structure, function, and self-assembly of single network gyroid ($4 ₁32$) photonic crystals in butterfly wing scales. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 11676-11681.	7.1	428
6	Computer-generated holographic optical tweezer arrays. <i>Review of Scientific Instruments</i> , 2001, 72, 1810.	1.3	390
7	Observation of Plasmon Propagation, Redirection, and Fan-Out in Silver Nanowires. <i>Nano Letters</i> , 2006, 6, 1822-1826.	9.1	376
8	Biomimetic Isotropic Nanostructures for Structural Coloration. <i>Advanced Materials</i> , 2010, 22, 2939-2944.	21.0	345
9	Charge Stabilization in Nonpolar Solvents. <i>Langmuir</i> , 2005, 21, 4881-4887.	3.5	274
10	Flow and Fracture in Drying Nanoparticle Suspensions. <i>Physical Review Letters</i> , 2003, 91, 224501.	7.8	273
11	Universal Deformation of Soft Substrates Near a Contact Line and the Direct Measurement of Solid Surface Stresses. <i>Physical Review Letters</i> , 2013, 110, 066103.	7.8	269
12	Traction force microscopy in physics and biology. <i>Soft Matter</i> , 2014, 10, 4047.	2.7	249
13	Elastocapillarity: Surface Tension and the Mechanics of Soft Solids. <i>Annual Review of Condensed Matter Physics</i> , 2017, 8, 99-118.	14.5	247
14	Surface tension and contact with soft elastic solids. <i>Nature Communications</i> , 2013, 4, 2728.	12.8	242
15	How Noniridescent Colors Are Generated by Quasi-ordered Structures of Bird Feathers. <i>Advanced Materials</i> , 2010, 22, 2871-2880.	21.0	228
16	Deformation of an Elastic Substrate by a Three-Phase Contact Line. <i>Physical Review Letters</i> , 2011, 106, 186103.	7.8	223
17	Self-assembly of amorphous biophotonic nanostructures by phase separation. <i>Soft Matter</i> , 2009, 5, 1792.	2.7	222
18	Cadherin-based intercellular adhesions organize epithelial cell-matrix traction forces. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 842-847.	7.1	215

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19	Stiffening solids with liquid inclusions. <i>Nature Physics</i> , 2015, 11, 82-87.	16.7	212
20	Hydrodynamic Coupling of Two Brownian Spheres to a Planar Surface. <i>Physical Review Letters</i> , 2000, 85, 3317-3320.	7.8	211
21	Static wetting on deformable substrates, from liquids to soft solids. <i>Soft Matter</i> , 2012, 8, 7177.	2.7	210
22	Automated trapping, assembly, and sorting with holographic optical tweezers. <i>Optics Express</i> , 2006, 14, 13095.	3.4	207
23	High-Yield Synthesis of Monodisperse Dumbbell-Shaped Polymer Nanoparticles. <i>Journal of the American Chemical Society</i> , 2010, 132, 5960-5961.	13.7	193
24	Assembly of Optical-Scale Dumbbells into Dense Photonic Crystals. <i>ACS Nano</i> , 2011, 5, 6695-6700.	14.6	182
25	Patterning droplets with durotaxis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 12541-12544.	7.1	172
26	Scaling of Traction Forces with the Size of Cohesive Cell Colonies. <i>Physical Review Letters</i> , 2012, 108, 198101.	7.8	158
27	E-cadherin integrates mechanotransduction and EGFR signaling to control junctional tissue polarization and tight junction positioning. <i>Nature Communications</i> , 2017, 8, 1250.	12.8	147
28	Mechanical properties of individual microgel particles through the deswelling transition. <i>Soft Matter</i> , 2009, 5, 3682.	2.7	137
29	Structure and optical function of amorphous photonic nanostructures from avian feather barbs: a comparative small angle X-ray scattering (SAXS) analysis of 230 bird species. <i>Journal of the Royal Society Interface</i> , 2012, 9, 2563-2580.	3.4	127
30	Dynamics of Fracture in Drying Suspensions. <i>Langmuir</i> , 2006, 22, 7144-7147.	3.5	126
31	Electrostatic Interactions of Colloidal Particles in Nonpolar Solvents: Role of Surface Chemistry and Charge Control Agents. <i>Langmuir</i> , 2008, 24, 1160-1164.	3.5	118
32	Brownian dynamics of a sphere between parallel walls. <i>Europhysics Letters</i> , 2001, 53, 264-270.	2.0	115
33	Adsorption of soft particles at fluid interfaces. <i>Soft Matter</i> , 2015, 11, 7412-7419.	2.7	115
34	Large Deformations of a Soft Porous Material. <i>Physical Review Applied</i> , 2016, 5, .	3.8	111
35	Electrostatic Interactions of Colloidal Particles at Vanishing Ionic Strength. <i>Langmuir</i> , 2008, 24, 13334-13337.	3.5	105
36	Stimuli-Responsive Smart Gels Realized via Modular Protein Design. <i>Journal of the American Chemical Society</i> , 2010, 132, 14024-14026.	13.7	105

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37	Development of colour-producing β -keratin nanostructures in avian feather barbcs. <i>Journal of the Royal Society Interface</i> , 2009, 6, S253-65.	3.4	103
38	Elastic ripening and inhibition of liquid-liquid phase separation. <i>Nature Physics</i> , 2020, 16, 422-425.	16.7	92
39	Surface tension and the mechanics of liquid inclusions in compliant solids. <i>Soft Matter</i> , 2015, 11, 672-679.	2.7	91
40	Magnetically Addressable Shape-Memory and Stiffening in a Composite Elastomer. <i>Advanced Materials</i> , 2019, 31, e1900561.	21.0	91
41	Cell stimulation with optically manipulated microspheres. <i>Nature Methods</i> , 2009, 6, 905-909.	19.0	89
42	Edges of human embryonic stem cell colonies display distinct mechanical properties and differentiation potential. <i>Scientific Reports</i> , 2015, 5, 14218.	3.3	80
43	Structural Diversity of Arthropod Biophotonic Nanostructures Spans Amphiphilic Phase-Space. <i>Nano Letters</i> , 2015, 15, 3735-3742.	9.1	80
44	Direct measurement of strain-dependent solid surface stress. <i>Nature Communications</i> , 2017, 8, 555.	12.8	79
45	Solid capillarity: when and how does surface tension deform soft solids?. <i>Soft Matter</i> , 2016, 12, 2993-2996.	2.7	77
46	Wetting and phase separation in soft adhesion. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 14490-14494.	7.1	73
47	Statistics of Particle Trajectories at Short Time Intervals Reveal fN-Scale Colloidal Forces. <i>Physical Review Letters</i> , 2007, 99, 018303.	7.8	69
48	Many-Body Electrostatic Forces between Colloidal Particles at Vanishing Ionic Strength. <i>Physical Review Letters</i> , 2009, 103, 138301.	7.8	68
49	Short-range order and near-field effects on optical scattering and structural coloration. <i>Optics Express</i> , 2011, 19, 8208.	3.4	65
50	Single-step microfluidic fabrication of soft monodisperse polyelectrolyte microcapsules by interfacial complexation. <i>Lab on A Chip</i> , 2014, 14, 3494-3497.	6.0	65
51	Grasshoppers alter jumping biomechanics to enhance escape performance under chronic risk of spider predation. <i>Functional Ecology</i> , 2011, 25, 279-288.	3.6	63
52	Nanofabrication with holographic optical tweezers. <i>Review of Scientific Instruments</i> , 2002, 73, 1956-1957.	1.3	61
53	Imaging in-plane and normal stresses near an interface crack using traction force microscopy. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 14964-14967.	7.1	59
54	Photonic band gaps in three-dimensional network structures with short-range order. <i>Physical Review A</i> , 2011, 84, .	2.5	57

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55	Liquid-Liquid Phase Separation in an Elastic Network. <i>Physical Review X</i> , 2018, 8, .	8.9	57
56	Multiplexed force measurements on live cells with holographic optical tweezers. <i>Optics Express</i> , 2009, 17, 6209.	3.4	56
57	Synthesis of Colloidal Particles with the Symmetry of Water Molecules. <i>Langmuir</i> , 2009, 25, 8903-8906.	3.5	55
58	Low-loss high-speed speckle reduction using a colloidal dispersion. <i>Applied Optics</i> , 2013, 52, 1168.	1.8	55
59	Extreme cavity expansion in soft solids: Damage without fracture. <i>Science Advances</i> , 2020, 6, eaaz0418.	10.3	45
60	Surface elastic constants of a soft solid. <i>Soft Matter</i> , 2018, 14, 916-920.	2.7	44
61	Imaging stress and strain in the fracture of drying colloidal films. <i>Soft Matter</i> , 2013, 9, 3735.	2.7	42
62	Sustained enzymatic activity and flow in crowded protein droplets. <i>Nature Communications</i> , 2021, 12, 6293.	12.8	41
63	Non-specific adhesive forces between filaments and membraneless organelles. <i>Nature Physics</i> , 2022, 18, 571-578.	16.7	41
64	A modular approach to the design of protein-based smart gels. <i>Biopolymers</i> , 2012, 97, 508-517.	2.4	40
65	Double scattering of light from Biophotonic Nanostructures with short-range order. <i>Optics Express</i> , 2010, 18, 11942.	3.4	39
66	Intrinsic Fluctuations and Driven Response of Insect Swarms. <i>Physical Review Letters</i> , 2015, 115, 118104.	7.8	39
67	Small-scale demixing in confluent biological tissues. <i>Soft Matter</i> , 2020, 16, 3325-3337.	2.7	34
68	Adsorption of Sub-Micron Amphiphilic Dumbbells to Fluid Interfaces. <i>Langmuir</i> , 2014, 30, 5057-5063.	3.5	32
69	Elastic stresses reverse Ostwald ripening. <i>Soft Matter</i> , 2020, 16, 5892-5897.	2.7	32
70	Surface tensiometry of phase separated protein and polymer droplets by the sessile drop method. <i>Soft Matter</i> , 2021, 17, 1655-1662.	2.7	32
71	Putting the Squeeze on Phase Separation. <i>Jacs Au</i> , 2022, 2, 66-73.	7.9	31
72	Fluid-Driven Deformation of a Soft Granular Material. <i>Physical Review X</i> , 2015, 5, .	8.9	30

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73	Soft microcapsules with highly plastic shells formed by interfacial polyelectrolyteâ€“nanoparticle complexation. <i>Soft Matter</i> , 2015, 11, 7478-7482.	2.7	30
74	Domain morphology, boundaries, and topological defects in biophotonic gyroid nanostructures of butterfly wing scales. <i>Science Advances</i> , 2016, 2, e1600149.	10.3	29
75	Wrapping of Microparticles by Floppy Lipid Vesicles. <i>Physical Review Letters</i> , 2020, 125, 198102.	7.8	29
76	Evolution of single gyroid photonic crystals in bird feathers. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.1	26
77	Switchable adhesion of soft composites induced by a magnetic field. <i>Soft Matter</i> , 2020, 16, 5806-5811.	2.7	24
78	Contribution of double scattering to structural coloration in quasiordered nanostructures of bird feathers. <i>Physical Review E</i> , 2010, 81, 051923.	2.1	23
79	Segregated Ice Growth in a Suspension of Colloidal Particles. <i>Journal of Physical Chemistry B</i> , 2016, 120, 3941-3949.	2.6	23
80	Transient supramolecular assembly of a functional perylene diimide controlled by a programmable pH cycle. <i>Soft Matter</i> , 2020, 16, 591-594.	2.7	23
81	Heterogeneous Drying Stresses in Stratum Corneum. <i>Biophysical Journal</i> , 2012, 102, 2424-2432.	0.5	22
82	Controlled formation of chitosan particles by a clock reaction. <i>Soft Matter</i> , 2018, 14, 6415-6418.	2.7	22
83	Non-invasive in vivo quantification of human skin tension lines. <i>Acta Biomaterialia</i> , 2019, 88, 141-148.	8.3	22
84	Long-range attraction of particles adhered to lipid vesicles. <i>Physical Review E</i> , 2016, 94, 012604.	2.1	21
85	Supramolecular assembly by time-programmed acid autocatalysis. <i>Molecular Systems Design and Engineering</i> , 2020, 5, 445-448.	3.4	21
86	Viscoelastic and Poroelastic Relaxations of Soft Solid Surfaces. <i>Physical Review Letters</i> , 2020, 125, 238002.	7.8	21
87	Many-body force and mobility measurements in colloidal systems. <i>Soft Matter</i> , 2010, 6, 2187.	2.7	20
88	Singular dynamics in the failure of soft adhesive contacts. <i>Soft Matter</i> , 2019, 15, 1327-1334.	2.7	19
89	Designing refractive index fluids using the Kramersâ€“Kronig relations. <i>Faraday Discussions</i> , 2020, 223, 136-144.	3.2	19
90	Forming Anisotropic Crystal Composites: Assessing the Mechanical Translation of Gel Network Anisotropy to Calcite Crystal Form. <i>Journal of the American Chemical Society</i> , 2021, 143, 3439-3447.	13.7	19

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91	Surfactant treatments influence drying mechanics in human stratum corneum. <i>Journal of Biomechanics</i> , 2013, 46, 2145-2151.	2.1	18
92	Fluctuations and correlations of emission from random lasers. <i>Physical Review A</i> , 2016, 93, .	2.5	17
93	Droplets Sit and Slide Anisotropically on Soft, Stretched Substrates. <i>Physical Review Letters</i> , 2021, 126, 158004.	7.8	17
94	Shape-Controlled Nanoparticles from a Low-Energy Nanoemulsion. <i>Jacs Au</i> , 2021, 1, 1975-1986.	7.9	16
95	Elastic Coupling of Nascent apCAM Adhesions to Flowing Actin Networks. <i>PLoS ONE</i> , 2013, 8, e73389.	2.5	15
96	Vinculin and the mechanical response of adherent fibroblasts to matrix deformation. <i>Scientific Reports</i> , 2018, 8, 17967.	3.3	14
97	Tracking particles with large displacements using energy minimization. <i>Soft Matter</i> , 2017, 13, 2201-2206.	2.7	13
98	Enhancing the Refractive Index of Polymers with a Plant-Based Pigment. <i>Small</i> , 2021, 17, e2103061.	10.0	13
99	Surface Tension and the Strain-Dependent Topography of Soft Solids. <i>Physical Review Letters</i> , 2021, 127, 208001.	7.8	13
100	Supramolecular gelation controlled by an iodine clock. <i>Soft Matter</i> , 2021, 17, 1189-1193.	2.7	12
101	Structural color from solid-state polymerization-induced phase separation. <i>Soft Matter</i> , 2021, 17, 5772-5779.	2.7	12
102	Effects of strain-dependent surface stress on the adhesive contact of a rigid sphere to a compliant substrate. <i>Soft Matter</i> , 2019, 15, 2223-2231.	2.7	10
103	Mechanical stability of particle-stabilized droplets under micropipette aspiration. <i>Physical Review E</i> , 2017, 95, 012805.	2.1	9
104	Impact of in situ acid generation and iodine sequestration on the chlorite-iodide clock reaction. <i>Chaos</i> , 2019, 29, 071102.	2.5	9
105	Micromirror Total Internal Reflection Microscopy for High-Performance Single Particle Tracking at Interfaces. <i>ACS Photonics</i> , 2021, 8, 3111-3118.	6.6	9
106	Regeneration of Aplysia Bag Cell Neurons is Synergistically Enhanced by Substrate-Bound Hemolymph Proteins and Laminin. <i>Scientific Reports</i> , 2014, 4, 4617.	3.3	8
107	Vancomycin Reduces Cell Wall Stiffness and Slows Swim Speed of the Lyme Disease Bacterium. <i>Biophysical Journal</i> , 2017, 112, 746-754.	0.5	8
108	Local Arp2/3-dependent actin assembly modulates applied traction force during apCAM adhesion site maturation. <i>Molecular Biology of the Cell</i> , 2017, 28, 98-110.	2.1	8

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109	Measuring Surface Tensions of Soft Solids with Huge Contact-Angle Hysteresis. <i>Physical Review X</i> , 2021, 11, .	8.9	8
110	Spatially extended FCS for visualizing and quantifying high-speed multiphase flows in microchannels. <i>Optics Express</i> , 2007, 15, 6528.	3.4	7
111	How surface stress transforms surface profiles and adhesion of rough elastic bodies. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2020, 476, 20200477.	2.1	7
112	Dynamics of spontaneous wrapping of microparticles by floppy lipid membranes. <i>Physical Review Research</i> , 2022, 4, .	3.6	7
113	Maximum likelihood estimations of force and mobility from single short Brownian trajectories. <i>Soft Matter</i> , 2017, 13, 2174-2180.	2.7	6
114	Strain-Dependent Solid Surface Stress and the Stiffness of Soft Contacts. <i>Physical Review X</i> , 2017, 7, .	8.9	6
115	Contact lines on stretched soft solids: modelling anisotropic surface stresses. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2021, 477, .	2.1	6
116	A robust method for quantification of surface elasticity in soft solids. <i>Journal of the Mechanics and Physics of Solids</i> , 2022, 161, 104786.	4.8	6
117	Gradients in solid surface tension drive Marangoni-like motions in cell aggregates. <i>Physical Review Fluids</i> , 2022, 7, .	2.5	5
118	When Black and White make Green: the Surprising Interplay of Structure and Pigments. <i>Chimia</i> , 2019, 73, 47.	0.6	4
119	Temporal Control of Soft Materials with Chemical Clocks. <i>Chimia</i> , 2020, 74, 612-612.	0.6	4
120	Structural Color: How Noniridescent Colors Are Generated by Quasi-ordered Structures of Bird Feathers (<i>Adv. Mater.</i> 26-27/2010). <i>Advanced Materials</i> , 2010, 22, n/a-n/a.	21.0	3
121	Towards the void. <i>Nature Materials</i> , 2013, 12, 783-784.	27.5	1
122	Optical Tweezers Shed Light on Cell Motility. , 2009, , .		0
123	Study of Angle Dependent Reflection From a 3D Quasi-Ordered Photonic Crystal. , 2008, , .		0
124	Double Scattering of Light from Biophotonic Nanostructures with Short-Range Order. , 2010, , .		0
125	Reply to the "Comment on "Surface elastic constants of a soft solid" by E. Gutman, <i>Soft Matter</i> , 2022, 18, DOI: 10.1039/D1SM01412A. <i>Soft Matter</i> , 2022, 18, 4641-4642.	2.7	0