Dominic Vella

List of Publications by Year
in descending order

127 papers	4,847 citations	81900 39 h-index	110387 64 g-index
128 all docs	128 docs citations	128 times ranked	4821 citing authors

#	Article	IF	Citations
1	Liquid bridge splitting enhances normal capillary adhesion and resistance to shear on rough surfaces. Journal of Colloid and Interface Science, 2022, 607, 514-529.	9.4	19
2	Compression of a pressurized spherical shell by a spherical or flat probe. European Physical Journal E, 2022, 45, 13.	1.6	2
3	The nascent coffee ring with arbitrary droplet contact set: an asymptotic analysis. Journal of Fluid Mechanics, 2022, 940, .	3.4	3
4	Droplets on lubricated surfaces: The slow dynamics of skirt formation. Physical Review Fluids, 2022, 7, .	2.5	6
5	Mechanicalâ€“electrochemical coupling theory of bacterial cells. International Journal of Solids and Structures, 2022, 252, 111804.	2.7	0
6	Delayed bifurcation in elastic snap-through instabilities. Journal of the Mechanics and Physics of Solids, 2021, 151, 104386.	4.8	11
7	The nascent coffee ring: how solute diffusion counters advection. Journal of Fluid Mechanics, 2021, 920, .	3.4	16
8	Deformable and Robust Coreâ€“Shell Protein Microcapsules Templated by Liquidâ€“Liquid Phaseâ€Separated Microdroplets. Advanced Materials Interfaces, 2021, 8, 2101071.	3.7	8
9	Droplet trapping in bendotaxis caused by contact angle hysteresis. Physical Review Fluids, 2021, 6, .	2.5	4
10	Tapered elasticÃ¦ as a route for axisymmetric morphing structures. Soft Matter, 2020, 16, 7739-7750.	2.7	32
11	Indentation of suspended two-dimensional solids: The signatures of geometrical and material nonlinearity. Journal of the Mechanics and Physics of Solids, 2020, 144, 104109.	4.8	9
12	Detachment in capillary adhesion: the relative roles of tilting and separation. IMA Journal of Applied Mathematics, 2020, 85, 673-702.	1.6	0
13	Validity of Winklerâ€™s mattress model for thin elastomeric layers: beyond Poissonâ€™s ratio. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2020, 476, 20200551.	2.1	18
14	Dynamic Buckling of an Elastic Ring in a Soap Film. Physical Review Letters, 2020, 124, 198003.	7.8	27
15	Dynamic buckling of an inextensible elastic ring: Linear and nonlinear analyses. Physical Review E, 2020, 101, 053002.	2.1	15
16	Cloaking by coating: how effectively does a thin, stiff coating hide a soft substrate?. Soft Matter, 2020, 16, 4574-4583.	2.7	7
17	Impact on floating thin elastic sheets: A mathematical model. Physical Review Fluids, 2020, 5, .	2.5	5
18	Limitations of curvature-induced rigidity: How a curved strip buckles under gravity. Europhysics Letters, 2019, 127, 14001.	2.0	13

#	Article	IF	Citations
19	Dynamics of wrinkling in ultrathin elastic sheets. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 20875-20880.	7.1	29
20	Buffering by buckling as a route for elastic deformation. Nature Reviews Physics, 2019, 1, 425-436.	26.6	40
21	Wettability-Independent Droplet Transport by Bendotaxis. Physical Review Letters, 2019, 122, 074503.	7.8	35
22	Dynamics of droplets on cones: self-propulsion due to curvature gradients. Soft Matter, 2019, 15, 9997-10004.	2.7	23
23	Reproducing the pressureâ€“time signature of membrane filtration: The interplay between fouling, caking, and elasticity. Journal of Membrane Science, 2019, 577, 235-248.	8.2	9
24	Dynamics of viscoelastic snap-through. Journal of the Mechanics and Physics of Solids, 2019, 124, 781-813.	4.8	42
25	Elasto-capillary adhesion: Effect of deformability on adhesion strength and detachment. Physical Review Fluids, 2019, 4, .	2.5	11
26	Delayed pull-in transitions in overdamped MEMS devices. Journal of Micromechanics and Microengineering, 2018, 28, 015006.	2.6	7
27	Partial wetting of thin solid sheets under tension. Soft Matter, 2018, 14, 4913-4934.	2.7	24
28	Static bistability of spherical caps. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2018, 474, 20170910.	2.1	42
29	Regimes of wrinkling in an indented floating elastic sheet. Physical Review E, 2018, 98, 013003.	2.1	22
30	Pull-in dynamics of overdamped microbeams. Journal of Micromechanics and Microengineering, 2018, 28, 115002.	2.6	6
31	Title is missing!. , 2018, , .		1
32	Self-assembly of repulsive interfacial particles via collective sinking. Soft Matter, 2017, 13, 212-221.	2.7	18
33	Floating and Sinking of a Pair of Spheres at a Liquidâ€“Fluid Interface. Langmuir, 2017, 33, 1427-1436.	3.5	22
34	Kinetic effects regularize the mass-flux singularity at the contact line of a thin evaporating drop. Journal of Engineering Mathematics, 2017, 106, 47-73.	1.2	11
35	Indentation metrology of clamped, ultra-thin elastic sheets. Soft Matter, 2017, 13, 2264-2278.	2.7	43
36	Non-wetting drops at liquid interfaces: from liquid marbles to Leidenfrost drops. Soft Matter, 2017, 13, 5250-5260.	2.7	26

#	Article	IF	Citations
37	Regimes of wrinkling in pressurized elastic shells. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20160330.	3.4	27
38	Patterning through instabilities in complex media: theory and applications. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20160442.	3.4	2
39	Passive Control of Viscous Flow via Elastic Snap-Through. Physical Review Letters, 2017, 119, 144502.	7.8	65
40	Axonal Buckling Following Stretch Injury. Journal of Elasticity, 2017, 129, 239-256.	1.9	7
41	Fluctuation spectra and force generation in nonequilibrium systems. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 9255-9260.	7.1	12
42	Using evaporation to control capillary instabilities in micro-systems. Soft Matter, 2017, 13, 8947-8956.	2.7	6
43	Optimizing the operation of a direct-flow filtration device. Journal of Engineering Mathematics, 2017, 104, 195-211.	1.2	6
44	Critical slowing down in purely elastic â€˜snap-throughâ€™ instabilities. Nature Physics, 2017, 13, 142-145.	16.7	113
45	Indentation of a floating elastic sheet: geometry versus applied tension. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2017, 473, 20170335.	2.1	13
46	Lubricated wrinkles: Imposed constraints affect the dynamics of wrinkle coarsening. Physical Review Fluids, 2017, 2, .	2.5	18
47	On the role of buoyant flexure in glacier calving. Geophysical Research Letters, 2016, 43, 232.	4.0	45
48	The shallow shell approach to Pogorelov's problem and the breakdown of â€˜mirror bucklingâ€™. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2016, 472, 20150732.	2.1	18
49	On thin evaporating drops: When is the -lawÂvalid?. Journal of Fluid Mechanics, 2016, 792, 134-167.	3.4	22
50	Evaporation effects in elastocapillary aggregation. Journal of Fluid Mechanics, 2016, 792, 168-185.	3.4	16
51	Inverse Leidenfrost Effect: Levitating Drops on Liquid Nitrogen. Langmuir, 2016, 32, 4179-4188.	3.5	48
52	The compression of a heavy floating elastic film. Soft Matter, 2016, 12, 9289-9296.	2.7	10
53	Capacitance-Power-Hysteresis Trilemma in Nanoporous Supercapacitors. Physical Review X, 2016, 6, .	8.9	21
54	Mathematical modelling of bloodâ€“brain barrier failure and oedema. Mathematical Medicine and Biology, 2016, 34, dqw009.	1.2	7

#	Article	IF	Citations
55	The surprising dynamics of a chain on a pulley: lift off and snapping. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2016, 472, 20160187.	2.1	7
56	Capillary Imbibition into Converging Tubes: Beating Washburnâ€™s Law and the Optimal Imbibition of Liquids. Langmuir, 2016, 32, 1560-1567.	3.5	51
57	Curvature-induced stiffness and the spatial variation of wavelength in wrinkled sheets. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 1144-1149.	7.1	88
58	Quantum capacitance modifies interionic interactions in semiconducting nanopores. Europhysics Letters, 2016, 113, 38005.	2.0	4
59	Wrinkling, creasing, and folding in fiber-reinforced soft tissues. Extreme Mechanics Letters, 2016, 8, 22-29.	4.1	18
60	On contact-line dynamics with mass transfer. European Journal of Applied Mathematics, 2015, 26, 671-719.	2.9	10
61	Wrinkling reveals a new isometry of pressurized elastic shells. Europhysics Letters, 2015, 112, 24007.	2.0	18
62	The role of extensibility in the birth of a ruck in a rug. Extreme Mechanics Letters, 2015, 5, 81-87.	4.1	8
63	Dynamics of Ion Transport in Ionic Liquids. Physical Review Letters, 2015, 115, 106101.	7.8	54
64	Two leaps forward for robot locomotion. Science, 2015, 349, 472-473.	12.6	6
65	Tailoring wall permeabilities for enhanced filtration. Physics of Fluids, 2015, 27, .	4.0	6
66	Inertial rise of a meniscus on a vertical cylinder. Journal of Fluid Mechanics, 2015, 768, .	3.4	5
67	Indentation of Ultrathin Elastic Films and the Emergence of Asymptotic Isometry. Physical Review Letters, 2015, 114, 014301.	7.8	52
68	Propagation of damage in brain tissue: coupling the mechanics of oedema and oxygen delivery. Biomechanics and Modeling in Mechanobiology, 2015, 14, 1197-1216.	2.8	16
69	Exponentially decreasing tooth growth rate in horse teeth: implications for isotopic analyses. Archaeometry, 2015, 57, 1104-1124.	1.3	41
70	Are Room-Temperature Ionic Liquids Dilute Electrolytes?. Journal of Physical Chemistry Letters, 2015, 6, 159-163.	4.6	118
71	Floating Versus Sinking. Annual Review of Fluid Mechanics, 2015, 47, 115-135.	25.0	105
72	Anisotropic Blistering Instability of Highly Ellipsoidal Shells. Physical Review Letters, 2014, 112, 094302.	7.8	8

#	Article	IF	Citations
73	The magneto-elastica : from self-buckling to self-assembly. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2014, 470, 20130609.	2.1	44
74	A fluid-mechanical model of elastocapillary coalescence. Journal of Fluid Mechanics, 2014, 745, 621-646.	3.4	24
75	The effect of a concentrationâ€dependent viscosity on particle transport in a channel flow with porous walls. AICHE Journal, 2014, 60, 1891-1904.	3.6	13
76	Is the Donnan effect sufficient to explain swelling in brain tissue slices?. Journal of the Royal Society Interface, 2014, 11, 20140123.	3.4	41
77	Unravelling nanoconfined films of ionic liquids. Journal of Chemical Physics, 2014, 141, 094904.	3.0	11
78	Particle capture efficiency in a multi-wire model for high gradient magnetic separation. Applied Physics Letters, 2014, 105, 033508.	3.3	16
79	Lattice-Boltzmann simulations of droplet evaporation. Soft Matter, 2014, 10, 8267-8275.	2.7	67
80	Dynamics of snapping beams and jumping poppers. Europhysics Letters, 2014, 105, 24001.	2.0	103
81	Optimal Fractal-Like Hierarchical Honeycombs. Physical Review Letters, 2014, 113, 104301.	7.8	113
82	The â€œfootlooseâ€•mechanism: Iceberg decay from hydrostatic stresses. Geophysical Research Letters, 2014, 41, 5522-5529.	4.0	49
83	Elastometry of Deflated Capsules: Elastic Moduli from Shape and Wrinkle Analysis. Langmuir, 2013, 29, 12463-12471.	3.5	93
84	Wrinkling in the deflation of elastic bubbles. European Physical Journal E, 2013, 36, 22.	1.6	14
85	The â€˜Sticky Elasticaâ€™: delamination blisters beyond small deformations. Soft Matter, 2013, 9, 1025-1030.	2.7	44
86	Capillary Deformations of Bendable Films. Physical Review Letters, 2013, 111, 014301.	7.8	69
87	The Mechanics of a Chain or Ring of Spherical Magnets. SIAM Journal on Applied Mathematics, 2013, 73, 2029-2054.	1.8	18
88	Switch on, switch off: stiction in nanoelectromechanical switches. Nanotechnology, 2013, 24, 275501.	2.6	15
89	The sensitivity of graphene â€œsnap-throughâ€•to substrate geometry. Applied Physics Letters, 2012, 100, 233111.	3.3	19
90	Indentation of Ellipsoidal and Cylindrical Elastic Shells. Physical Review Letters, 2012, 109, 144302.	7.8	82

#	Article	IF	Citations
91	The indentation of pressurized elastic shells: from polymeric capsules to yeast cells. Journal of the Royal Society Interface, 2012, 9, 448-455.	3.4	121
92	Multiple equilibria in a simple elastocapillary system. Journal of Fluid Mechanics, 2012, 712, 273-294.	3.4	35
93	A refined sampling strategy for intra-tooth stable isotope analysis of mammalian enamel. Geochimica Et Cosmochimica Acta, 2012, 84, 1-13.	3.9	68
94	The capillary interaction between two vertical cylinders. Journal of Physics Condensed Matter, 2012, 24, 284104.	1.8	20
95	A viscoelastic regime in dilute hydrophobin monolayers. Soft Matter, 2012, 8, 1175-1183.	2.7	18
96	Prototypical model for tensional wrinkling in thin sheets. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 18227-18232.	7.1	189
97	On the measurement of the surface pressure in Langmuir films with finite shear elasticity. Soft Matter, 2011, 7, 2530.	2.7	40
98	The collective motion of nematodes in a thin liquid layer. Soft Matter, 2011, 7, 2444.	2.7	24
99	Leakage from gravity currents in a porous medium. Part 1. A localized sink. Journal of Fluid Mechanics, 2011, 666, 391-413.	3.4	29
100	Leakage from gravity currents in a porous medium. Part 2. A line sink. Journal of Fluid Mechanics, 2011, 666, 414-427.	3.4	22
101	Leakage from inclined porous reservoirs. Journal of Fluid Mechanics, 2011, 673, 395-405.	3.4	5
102	Floating Carpets and the Delamination of Elastic Sheets. Physical Review Letters, 2011, 107, 044301.	7.8	36
103	Wrinkling of Pressurized Elastic Shells. Physical Review Letters, 2011, 107, 174301.	7.8	66
104	The impulsive motion of a small cylinder at an interface. Physics of Fluids, 2010, 22, .	4.0	20
105	Capillary wrinkling of elastic membranes. Soft Matter, 2010, 6, 5778.	2.7	72
106	Granular Character of Particle Rafts. Physical Review Letters, 2009, 102, 138302.	7.8	67
107	Statics and Inertial Dynamics of a Ruck in a Rug. Physical Review Letters, 2009, 103, 174301.	7.8	36
108	The macroscopic delamination of thin films from elastic substrates. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 10901-10906.	7.1	225

#	Article	IF	Citations
109	The effect of a fissure on storage in a porous medium. Journal of Fluid Mechanics, 2009, 639, 239-259.	3.4	44
110	Solution of the Percusâ€“Yevick equation for hard hyperspheres in even dimensions. Journal of Chemical Physics, 2008, 129, 144506.	3.0	34
111	Explaining the patterns formed by ice floe interactions. Journal of Geophysical Research, 2008, 113, .	3.3	15
112	Floating Objects with Finite Resistance to Bending. Langmuir, 2008, 24, 8701-8706.	3.5	50
113	The liquid blister test. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2008, 464, 2887-2906.	2.1	51
114	Solution of the Percus-Yevick equation for hard disks. Journal of Chemical Physics, 2008, 128, 184508.	3.0	26
115	Surface tension dominated impact. Physics of Fluids, 2007, 19, 072108.	4.0	43
116	Reply to the Comment by A. Yeung and K. Moran. Europhysics Letters, 2007, 77, 16003.	2.0	1
117	Finger Rafting: A Generic Instability of Floating Elastic Sheets. Physical Review Letters, 2007, 98, 088303.	7.8	17
118	The waterlogging of floating objects. Journal of Fluid Mechanics, 2007, 585, 245-254.	3.4	15
119	The Load Supported by Small Floating Objects. Langmuir, 2006, 22, 5979-5981.	3.5	121
120	Gravity currents in a porous medium at an inclined plane. Journal of Fluid Mechanics, 2006, 555, 353.	3.4	90
121	Equilibrium conditions for the floating of multiple interfacial objects. Journal of Fluid Mechanics, 2006, 549, 215.	3.4	55
122	Sinking of a Horizontal Cylinder. Langmuir, 2006, 22, 2972-2974.	3.5	40
123	A Simple Microscopic Model for the Dynamics of Adhesive Failure. Langmuir, 2006, 22, 163-168.	3.5	4
124	Dynamics of Surfactant-Driven Fracture of Particle Rafts. Physical Review Letters, 2006, 96, 178301.	7.8	32
125	The â€œCheerios effectâ€• American Journal of Physics, 2005, 73, 817-825.	0.7	379
126	Elasticity of an interfacial particle raft. Europhysics Letters, 2004, 68, 212-218.	2.0	214

#	Article	IF	Citations
127	The wall-induced motion of a floating flexible train. Journal of Fluid Mechanics, 2004, 502, 89-98.	3.4	5