Dominic Vella

List of Publications by Year
in descending order

127 papers	4,847 citations	81839 39 h-index	110317 64 g-index
128 all docs	128 docs citations	128 times ranked	4821 citing authors

#	Article	IF	Citations
1	The â€œCheerios effectâ€• American Journal of Physics, 2005, 73, 817-825.	0.3	379
2	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.	3.3	225
3	Elasticity of an interfacial particle raft. Europhysics Letters, 2004, 68, 212-218.	0.7	214
4	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.	3.3	189
5	The Load Supported by Small Floating Objects. Langmuir, 2006, 22, 5979-5981.	1.6	121
6	The indentation of pressurized elastic shells: from polymeric capsules to yeast cells. Journal of the Royal Society Interface, 2012, 9, 448-455.	1.5	121
7	Are Room-Temperature Ionic Liquids Dilute Electrolytes?. Journal of Physical Chemistry Letters, 2015, 6, 159-163.	2.1	118
8	Optimal Fractal-Like Hierarchical Honeycombs. Physical Review Letters, 2014, 113, 104301.	2.9	113
9	Critical slowing down in purely elastic â€˜snap-throughâ€™ instabilities. Nature Physics, 2017, 13, 142-145.	6.5	113
10	Floating Versus Sinking. Annual Review of Fluid Mechanics, 2015, 47, 115-135.	10.8	105
11	Dynamics of snapping beams and jumping poppers. Europhysics Letters, 2014, 105, 24001.	0.7	103
12	Elastometry of Deflated Capsules: Elastic Moduli from Shape and Wrinkle Analysis. Langmuir, 2013, 29, 12463-12471.	1.6	93
13	Gravity currents in a porous medium at an inclined plane. Journal of Fluid Mechanics, 2006, 555, 353.	1.4	90
14	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.	3.3	88
15	Indentation of Ellipsoidal and Cylindrical Elastic Shells. Physical Review Letters, 2012, 109, 144302.	2.9	82
16	Capillary wrinkling of elastic membranes. Soft Matter, 2010, 6, 5778.	1.2	72
17	Capillary Deformations of Bendable Films. Physical Review Letters, 2013, 111, 014301.	2.9	69
18	A refined sampling strategy for intra-tooth stable isotope analysis of mammalian enamel. Geochimica Et Cosmochimica Acta, 2012, 84, 1-13.	1.6	68

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19	Granular Character of Particle Rafts. Physical Review Letters, 2009, 102, 138302.	2.9	67
20	Lattice-Boltzmann simulations of droplet evaporation. Soft Matter, 2014, 10, 8267-8275.	1.2	67
21	Wrinkling of Pressurized Elastic Shells. Physical Review Letters, 2011, 107, 174301.	2.9	66
22	Passive Control of Viscous Flow via Elastic Snap-Through. Physical Review Letters, 2017, 119, 144502.	2.9	65
23	Equilibrium conditions for the floating of multiple interfacial objects. Journal of Fluid Mechanics, 2006, 549, 215.	1.4	55
24	Dynamics of Ion Transport in Ionic Liquids. Physical Review Letters, 2015, 115, 106101.	2.9	54
25	Indentation of Ultrathin Elastic Films and the Emergence of Asymptotic Isometry. Physical Review Letters, 2015, 114, 014301.	2.9	52
26	The liquid blister test. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2008, 464, 2887-2906.	1.0	51
27	Capillary Imbibition into Converging Tubes: Beating Washburnâ€™s Law and the Optimal Imbibition of Liquids. Langmuir, 2016, 32, 1560-1567.	1.6	51
28	Floating Objects with Finite Resistance to Bending. Langmuir, 2008, 24, 8701-8706.	1.6	50
29	The â€œfootlooseâ€•mechanism: Iceberg decay from hydrostatic stresses. Geophysical Research Letters, 2014, 41, 5522-5529.	1.5	49
30	Inverse Leidenfrost Effect: Levitating Drops on Liquid Nitrogen. Langmuir, 2016, 32, 4179-4188.	1.6	48
31	On the role of buoyant flexure in glacier calving. Geophysical Research Letters, 2016, 43, 232.	1.5	45
32	The effect of a fissure on storage in a porous medium. Journal of Fluid Mechanics, 2009, 639, 239-259.	1.4	44
33	The â€˜Sticky Elasticaâ€™: delamination blisters beyond small deformations. Soft Matter, 2013, 9, 1025-1030.	1.2	44
34	The magneto-elastica : from self-buckling to self-assembly. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2014, 470, 20130609.	1.0	44
35	Surface tension dominated impact. Physics of Fluids, 2007, 19, 072108.	1.6	43
36	Indentation metrology of clamped, ultra-thin elastic sheets. Soft Matter, 2017, 13, 2264-2278.	1.2	43

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37	Static bistability of spherical caps. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2018, 474, 20170910.	1.0	42
38	Dynamics of viscoelastic snap-through. Journal of the Mechanics and Physics of Solids, 2019, 124, 781-813.	2.3	42
39	Is the Donnan effect sufficient to explain swelling in brain tissue slices?. Journal of the Royal Society Interface, 2014, 11, 20140123.	1.5	41
40	Exponentially decreasing tooth growth rate in horse teeth: implications for isotopic analyses. Archaeometry, 2015, 57, 1104-1124.	0.6	41
41	Sinking of a Horizontal Cylinder. Langmuir, 2006, 22, 2972-2974.	1.6	40
42	On the measurement of the surface pressure in Langmuir films with finite shear elasticity. Soft Matter, 2011, 7, 2530.	1.2	40
43	Buffering by buckling as a route for elastic deformation. Nature Reviews Physics, 2019, 1, 425-436.	11.9	40
44	Statics and Inertial Dynamics of a Ruck in a Rug. Physical Review Letters, 2009, 103, 174301.	2.9	36
45	Floating Carpets and the Delamination of Elastic Sheets. Physical Review Letters, 2011, 107, 044301.	2.9	36
46	Multiple equilibria in a simple elastocapillary system. Journal of Fluid Mechanics, 2012, 712, 273-294.	1.4	35
47	Wettability-Independent Droplet Transport by Bendotaxis. Physical Review Letters, 2019, 122, 074503.	2.9	35
48	Solution of the Percusâ€“Yevick equation for hard hyperspheres in even dimensions. Journal of Chemical Physics, 2008, 129, 144506.	1.2	34
49	Dynamics of Surfactant-Driven Fracture of Particle Rafts. Physical Review Letters, 2006, 96, 178301.	2.9	32
50	Tapered elasticÃ¦ as a route for axisymmetric morphing structures. Soft Matter, 2020, 16, 7739-7750.	1.2	32
51	Leakage from gravity currents in a porous medium. Part 1. A localized sink. Journal of Fluid Mechanics, 2011, 666, 391-413.	1.4	29
52	Dynamics of wrinkling in ultrathin elastic sheets. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 20875-20880.	3.3	29
53	Regimes of wrinkling in pressurized elastic shells. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20160330.	1.6	27
54	Dynamic Buckling of an Elastic Ring in a Soap Film. Physical Review Letters, 2020, 124, 198003.	2.9	27

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55	Solution of the Percus-Yevick equation for hard disks. Journal of Chemical Physics, 2008, 128, 184508.	1.2	26
56	Non-wetting drops at liquid interfaces: from liquid marbles to Leidenfrost drops. Soft Matter, 2017, 13, 5250-5260.	1.2	26
57	The collective motion of nematodes in a thin liquid layer. Soft Matter, 2011, 7, 2444.	1.2	24
58	A fluid-mechanical model of elastocapillary coalescence. Journal of Fluid Mechanics, 2014, 745, 621-646.	1.4	24
59	Partial wetting of thin solid sheets under tension. Soft Matter, 2018, 14, 4913-4934.	1.2	24
60	Dynamics of droplets on cones: self-propulsion due to curvature gradients. Soft Matter, 2019, 15, 9997-10004.	1.2	23
61	Leakage from gravity currents in a porous medium. Part 2. A line sink. Journal of Fluid Mechanics, 2011, 666, 414-427.	1.4	22
62	On thin evaporating drops: When is the -lawÂvalid?. Journal of Fluid Mechanics, 2016, 792, 134-167.	1.4	22
63	Floating and Sinking of a Pair of Spheres at a Liquidâ€“Fluid Interface. Langmuir, 2017, 33, 1427-1436.	1.6	22
64	Regimes of wrinkling in an indented floating elastic sheet. Physical Review E, 2018, 98, 013003.	0.8	22
65	Capacitance-Power-Hysteresis Trilemma in Nanoporous Supercapacitors. Physical Review X, 2016, 6, .	2.8	21
66	The impulsive motion of a small cylinder at an interface. Physics of Fluids, 2010, 22, .	1.6	20
67	The capillary interaction between two vertical cylinders. Journal of Physics Condensed Matter, 2012, 24, 284104.	0.7	20
68	The sensitivity of graphene â€œsnap-throughâ€•to substrate geometry. Applied Physics Letters, 2012, 100, 233111.	1.5	19
69	Liquid bridge splitting enhances normal capillary adhesion and resistance to shear on rough surfaces. Journal of Colloid and Interface Science, 2022, 607, 514-529.	5.0	19
70	A viscoelastic regime in dilute hydrophobin monolayers. Soft Matter, 2012, 8, 1175-1183.	1.2	18
71	The Mechanics of a Chain or Ring of Spherical Magnets. SIAM Journal on Applied Mathematics, 2013, 73, 2029-2054.	0.8	18
72	Wrinkling reveals a new isometry of pressurized elastic shells. Europhysics Letters, 2015, 112, 24007.	0.7	18

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73	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.	1.0	18
74	Wrinkling, creasing, and folding in fiber-reinforced soft tissues. Extreme Mechanics Letters, 2016, 8, 22-29.	2.0	18
75	Self-assembly of repulsive interfacial particles via collective sinking. Soft Matter, 2017, 13, 212-221.	1.2	18
76	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.	1.0	18
77	Lubricated wrinkles: Imposed constraints affect the dynamics of wrinkle coarsening. Physical Review Fluids, 2017, 2, .	1.0	18
78	Finger Rafting: A Generic Instability of Floating Elastic Sheets. Physical Review Letters, 2007, 98, 088303.	2.9	17
79	Particle capture efficiency in a multi-wire model for high gradient magnetic separation. Applied Physics Letters, 2014, 105, 033508.	1.5	16
80	Propagation of damage in brain tissue: coupling the mechanics of oedema and oxygen delivery. Biomechanics and Modeling in Mechanobiology, 2015, 14, 1197-1216.	1.4	16
81	Evaporation effects in elastocapillary aggregation. Journal of Fluid Mechanics, 2016, 792, 168-185.	1.4	16
82	The nascent coffee ring: how solute diffusion counters advection. Journal of Fluid Mechanics, 2021, 920, .	1.4	16
83	The waterlogging of floating objects. Journal of Fluid Mechanics, 2007, 585, 245-254.	1.4	15
84	Explaining the patterns formed by ice floe interactions. Journal of Geophysical Research, 2008, 113, .	3.3	15
85	Switch on, switch off: stiction in nanoelectromechanical switches. Nanotechnology, 2013, 24, 275501.	1.3	15
86	Dynamic buckling of an inextensible elastic ring: Linear and nonlinear analyses. Physical Review E, 2020, 101, 053002.	0.8	15
87	Wrinkling in the deflation of elastic bubbles. European Physical Journal E, 2013, 36, 22.	0.7	14
88	The effect of a concentrationâ€dependent viscosity on particle transport in a channel flow with porous walls. AICHE Journal, 2014, 60, 1891-1904.	1.8	13
89	Indentation of a floating elastic sheet: geometry versus applied tension. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2017, 473, 20170335.	1.0	13
90	Limitations of curvature-induced rigidity: How a curved strip buckles under gravity. Europhysics Letters, 2019, 127, 14001.	0.7	13

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91	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.	3.3	12
92	Unravelling nanoconfined films of ionic liquids. Journal of Chemical Physics, 2014, 141, 094904.	1.2	11
93	Kinetic effects regularize the mass-flux singularity at the contact line of a thin evaporating drop. Journal of Engineering Mathematics, 2017, 106, 47-73.	0.6	11
94	Delayed bifurcation in elastic snap-through instabilities. Journal of the Mechanics and Physics of Solids, 2021, 151, 104386.	2.3	11
95	Elasto-capillary adhesion: Effect of deformability on adhesion strength and detachment. Physical Review Fluids, 2019, 4, .	1.0	11
96	On contact-line dynamics with mass transfer. European Journal of Applied Mathematics, 2015, 26, 671-719.	1.4	10
97	The compression of a heavy floating elastic film. Soft Matter, 2016, 12, 9289-9296.	1.2	10
98	Reproducing the pressureâ€“time signature of membrane filtration: The interplay between fouling, caking, and elasticity. Journal of Membrane Science, 2019, 577, 235-248.	4.1	9
99	Indentation of suspended two-dimensional solids: The signatures of geometrical and material nonlinearity. Journal of the Mechanics and Physics of Solids, 2020, 144, 104109.	2.3	9
100	Anisotropic Blistering Instability of Highly Ellipsoidal Shells. Physical Review Letters, 2014, 112, 094302.	2.9	8
101	The role of extensibility in the birth of a ruck in a rug. Extreme Mechanics Letters, 2015, 5, 81-87.	2.0	8
102	Deformable and Robust Coreâ€“Shell Protein Microcapsules Templated by Liquidâ€“Liquid Phaseâ€Separated Microdroplets. Advanced Materials Interfaces, 2021, 8, 2101071.	1.9	8
103	Mathematical modelling of bloodâ€“brain barrier failure and oedema. Mathematical Medicine and Biology, 2016, 34, dqw009.	0.8	7
104	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.	1.0	7
105	Axonal Buckling Following Stretch Injury. Journal of Elasticity, 2017, 129, 239-256.	0.9	7
106	Delayed pull-in transitions in overdamped MEMS devices. Journal of Micromechanics and Microengineering, 2018, 28, 015006.	1.5	7
107	Cloaking by coating: how effectively does a thin, stiff coating hide a soft substrate?. Soft Matter, 2020, 16, 4574-4583.	1.2	7
108	Two leaps forward for robot locomotion. Science, 2015, 349, 472-473.	6.0	6

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109	Tailoring wall permeabilities for enhanced filtration. Physics of Fluids, 2015, 27, .	1.6	6
110	Using evaporation to control capillary instabilities in micro-systems. Soft Matter, 2017, 13, 8947-8956.	1.2	6
111	Optimizing the operation of a direct-flow filtration device. Journal of Engineering Mathematics, 2017, 104, 195-211.	0.6	6
112	Pull-in dynamics of overdamped microbeams. Journal of Micromechanics and Microengineering, 2018, 28, 115002.	1.5	6
113	Droplets on lubricated surfaces: The slow dynamics of skirt formation. Physical Review Fluids, 2022, 7, .	1.0	6
114	The wall-induced motion of a floating flexible train. Journal of Fluid Mechanics, 2004, 502, 89-98.	1.4	5
115	Leakage from inclined porous reservoirs. Journal of Fluid Mechanics, 2011, 673, 395-405.	1.4	5
116	Inertial rise of a meniscus on a vertical cylinder. Journal of Fluid Mechanics, 2015, 768, .	1.4	5
117	Impact on floating thin elastic sheets: A mathematical model. Physical Review Fluids, 2020, 5, .	1.0	5
118	A Simple Microscopic Model for the Dynamics of Adhesive Failure. Langmuir, 2006, 22, 163-168.	1.6	4
119	Quantum capacitance modifies interionic interactions in semiconducting nanopores. Europhysics Letters, 2016, 113, 38005.	0.7	4
120	Droplet trapping in bendotaxis caused by contact angle hysteresis. Physical Review Fluids, 2021, 6, .	1.0	4
121	The nascent coffee ring with arbitrary droplet contact set: an asymptotic analysis. Journal of Fluid Mechanics, 2022, 940, .	1.4	3
122	Patterning through instabilities in complex media: theory and applications. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20160442.	1.6	2
123	Compression of a pressurized spherical shell by a spherical or flat probe. European Physical Journal E, 2022, 45, 13.	0.7	2
124	Reply to the Comment by A. Yeung and K. Moran. Europhysics Letters, 2007, 77, 16003.	0.7	1
125	Title is missing!. , 2018, , .		1
126	Detachment in capillary adhesion: the relative roles of tilting and separation. IMA Journal of Applied Mathematics, 2020, 85, 673-702.	0.8	0

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127	Mechanicalâ€“electrochemical coupling theory of bacterial cells. International Journal of Solids and Structures, 2022, 252, 111804.	1.3	0