Stephen K Wilson

List of Publications by Year
in descending order

94 papers	2,573 citations	236925 25 h-index	214800 47 g-index
95 all docs	95 docs citations	95 times ranked	1599 citing authors

#	Article	IF	Citations
1	The strong influence of substrate conductivity on droplet evaporation. Journal of Fluid Mechanics, 2009, 623, 329-351.	3.4	272
2	Incompressible water-entry problems at small deadrise angles. Journal of Fluid Mechanics, 1991, 222, 215.	3.4	265
3	On the lifetimes of evaporating droplets. Journal of Fluid Mechanics, 2014, 744, .	3.4	160
4	On the effect of the atmosphere on the evaporation of sessile droplets of water. Physics of Fluids, 2009, 21, .	4.0	135
5	A mathematical model for the evaporation of a thin sessile liquid droplet: Comparison between experiment and theory. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2008, 323, 50-55.	4.7	119
6	On the lifetimes of evaporating droplets with related initial and receding contact angles. Physics of Fluids, 2015, 27, .	4.0	89
7	Evaporation of Droplets on Strongly Hydrophobic Substrates. Langmuir, 2015, 31, 3653-3660.	3.5	83
8	The linear stability of channel flow of fluid with temperature-dependent viscosity. Journal of Fluid Mechanics, 1996, 323, 107-132.	3.4	70
9	A mathematical model for drying paint layers. Journal of Engineering Mathematics, 1997, 32, 377-394.	1.2	61
10	The rate of spreading in spin coating. Journal of Fluid Mechanics, 2000, 413, 65-88.	3.4	55
11	Competitive evaporation of multiple sessileÂdroplets. Journal of Fluid Mechanics, 2020, 884, .	3.4	47
12	The ventilation of buildings and other mitigating measures for COVID-19: a focus on wintertime. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2021, 477, 20200855.	2.1	47
13	Blade coating of a power-law fluid. Physics of Fluids, 1999, 11, 958-970.	4.0	42
14	On the Critical Solutions in Coating and Rimming Flow on a Uniformly Rotating Horizontal Cylinder. Quarterly Journal of Mechanics and Applied Mathematics, 2002, 55, 357-383.	1.3	38
15	The levelling of paint films. IMA Journal of Applied Mathematics, 1993, 50, 149-166.	1.6	35
16	On the gravity-driven draining of a rivulet of viscous fluid downâ€‰aâ€‰slowly varying substrate with variation transverse to the direction of flow. Physics of Fluids, 1998, 10, 13-22.	4.0	35
17	Evaporation of a thin droplet on a thin substrate with a high thermal resistance. Physics of Fluids, 2009, 21, .	4.0	35
18	On a slender dry patch in a liquid film draining under gravity down an inclined plane. European Journal of Applied Mathematics, 2001, 12, 233-252.	2.9	34

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19	Thin-film and curtain flows on the outside of a rotating horizontal cylinder. Journal of Fluid Mechanics, 1999, 394, 29-49.	3.4	33
20	Spin coating and air-jet blowing of thin viscous drops. Physics of Fluids, 1999, 11, 30-47.	4.0	33
21	The effect of a uniform magnetic field on the onset of steady Marangoni convection in a layer of conducting fluid with a prescribed heat flux at its lower boundary. Physics of Fluids, 1994, 6, 3591-3600.	4.0	30
22	Deformation of a nearly hemispherical conducting drop due to an electric field: Theory and experiment. Physics of Fluids, 2014, 26, 122106.	4.0	29
23	The unsteady expansion and contraction of a long two-dimensional vapour bubble between superheated or subcooled parallel plates. Journal of Fluid Mechanics, 1999, 391, 1-27.	3.4	28
24	Thermocapillary effects on a thin viscous rivulet draining steadily down a uniformly heated or cooled slowly varying substrate. Journal of Fluid Mechanics, 2001, 441, 195-221.	3.4	26
25	Thin-film flow of a viscoplastic material round a large horizontal stationary or rotating cylinder. Journal of Fluid Mechanics, 2001, 430, 309-333.	3.4	25
26	Strong temperature-dependent-viscosity effects on a rivulet draining down a uniformly heated or cooled slowly varying substrate. Physics of Fluids, 2003, 15, 827-840.	4.0	25
27	The lifetimes of evaporating sessile droplets are significantly extended by strong thermal effects. Journal of Fluid Mechanics, 2018, 851, 231-244.	3.4	24
28	The linear stability of flat-plate boundary-layer flow of fluid with temperature-dependent viscosity. Physics of Fluids, 1997, 9, 2885-2898.	4.0	23
29	On the gravity-driven draining of a rivulet of a viscoplastic material down a slowly varying substrate. Physics of Fluids, 2002, 14, 555-571.	4.0	23
30	A thin rivulet of perfectly wetting fluid subject to a longitudinal surface shear stress. Quarterly Journal of Mechanics and Applied Mathematics, 2007, 61, 25-61.	1.3	23
31	A Slender Rivulet of a Power-Law Fluid Driven by Either Gravity or a Constant Shear Stress at the Free Surface. Quarterly Journal of Mechanics and Applied Mathematics, 2002, 55, 385-408.	1.3	22
32	Unidirectional flow of a thin rivulet on a vertical substrate subject to a prescribed uniform shear stress at its free surface. Physics of Fluids, 2005, 17, 108105.	4.0	22
33	On the Effect of Substrate Viscoelasticity on the Evaporation Kinetics and Deposition Patterns of Nanosuspension Drops. Langmuir, 2020, 36, 204-213.	3.5	21
34	Shear-driven and pressure-driven flow of a nematic liquid crystal in a slowly varying channel. Physics of Fluids, 2006, 18, 027105.	4.0	20
35	The effect of a uniform vertical magnetic field on the onset of oscillatory marangoni convection in a horizontal layer of conducting fluid. Acta Mechanica, 1999, 132, 129-146.	2.1	19
36	The energetics of the breakup of a sheet and of a rivulet on a vertical substrate in the presence of a uniform surface shear stress. Journal of Fluid Mechanics, 2011, 674, 281-306.	3.4	19

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37	The effect of uniform internal heat generation on the onset of steady Marangoni convection in a horizontal layer of fluid. Acta Mechanica, 1997, 124, 63-78.	2.1	17
38	The linear stability of a drop of fluid during spin coating or subject to a jet of air. Physics of Fluids, 2002, 14, 133-142.	4.0	17
39	A rivulet of perfectly wetting fluid draining steadily down a slowly varying substrate. IMA Journal of Applied Mathematics, 2004, 70, 293-322.	1.6	17
40	Thermoviscous Coating and Rimming Flow. Quarterly Journal of Mechanics and Applied Mathematics, 2012, 65, 483-511.	1.3	17
41	The Stokes boundary layer for a thixotropic or antithixotropic fluid. Journal of Non-Newtonian Fluid Mechanics, 2012, 185-186, 18-38.	2.4	17
42	Flow of a thixotropic or antithixotropic fluid in a slowly varying channel: The weakly advective regime. Journal of Non-Newtonian Fluid Mechanics, 2016, 238, 140-157.	2.4	17
43	Contact-line deposits from multiple evaporating droplets. Physical Review Fluids, 2021, 6, .	2.5	17
44	On the linear growth rates of the long-wave modes in BÃ©nardâ€“Marangoni convection. Physics of Fluids, 1997, 9, 2455-2457.	4.0	16
45	The shielding effect extends the lifetimes of two-dimensional sessile droplets. Journal of Engineering Mathematics, 2020, 120, 89-110.	1.2	16
46	The steady thermocapillaryâ€driven motion of a large droplet in a closed tube. Physics of Fluids A, Fluid Dynamics, 1993, 5, 2064-2066.	1.6	15
47	A mathematical model for blade coating of a nematic liquid crystal. Liquid Crystals, 2007, 34, 621-631.	2.2	15
48	A mathematical model of fluid flow in a scraped-surface heat exchanger. Journal of Engineering Mathematics, 2007, 57, 381-405.	1.2	14
49	Three-dimensional coating and rimming flow: a ring of fluid on a rotating horizontal cylinder. Journal of Fluid Mechanics, 2013, 716, 51-82.	3.4	14
50	The effect of an axial temperature gradient on the steady motion of a large droplet in a tube. Journal of Engineering Mathematics, 1995, 29, 205-217.	1.2	13
51	The derivation and analysis of a model of the drying process of a paint film. Journal of Coatings Technology and Research, 1997, 80, 162-167.	0.2	12
52	The linear stability of a ridge of fluid subject to a jet of air. Physics of Fluids, 2001, 13, 872-883.	4.0	12
53	Quasi-Steady Spreading of A Thin Ridge of Fluid With Temperature-Dependent Surface Tension on A Heated or Cooled Substrate. Quarterly Journal of Mechanics and Applied Mathematics, 2009, 62, 365-402.	1.3	12
54	Heat and fluid flow in a scraped-surface heat exchanger containing a fluid with temperature-dependent viscosity. Journal of Engineering Mathematics, 2010, 68, 301-325.	1.2	12

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55	Porous squeeze-film flow. IMA Journal of Applied Mathematics, 2015, 80, 376-409.	1.6	12
56	Shallow flows of generalised Newtonian fluids on an inclined plane. Journal of Engineering Mathematics, 2015, 94, 115-133.	1.2	12
57	Unsteady flow of a thixotropic fluid in a slowly varying pipe. Physics of Fluids, 2017, 29, .	4.0	12
58	Asymptotic and numerical analysis of a simple model for blade coating. Journal of Engineering Mathematics, 2009, 63, 155-176.	1.2	11
59	Travelling-wave similarity solutions for a steadily translating slender dry patch in a thin fluid film. Physics of Fluids, 2013, 25, 052103.	4.0	11
60	Fluid-dynamical model for antisurfactants. Physical Review E, 2016, 93, 043121.	2.1	11
61	Advection and Taylorâ€"Aris dispersion in rivulet flow. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2017, 473, 20170524.	2.1	11
62	Squeeze-film flow between a curved impermeable bearing and a flat porous bed. Physics of Fluids, 2017, 29, 023101.	4.0	10
63	A rivulet of perfectly wetting fluid with temperature-dependent viscosity draining down a uniformly heated or cooledâ€‰slowlyâ€‰varyingâ€‰substrate. Physics of Fluids, 2003, 15, 3236.	4.0	9
64	Similarity solutions for unsteady shear-stress-driven flow of Newtonian and power-law fluids: slender rivulets and dry patches. Journal of Engineering Mathematics, 2012, 73, 53-69.	1.2	9
65	Rivulet flow round a horizontal cylinder subject to a uniform surface shear stress. Quarterly Journal of Mechanics and Applied Mathematics, 2014, 67, 567-597.	1.3	9
66	The onset of oscillatory Marangoni convection in a semi-infinitely deep layer of fluid. Zeitschrift Fur Angewandte Mathematik Und Physik, 1999, 50, 546.	1.4	8
67	Large-Biot-number non-isothermal flow of a thin film on a stationary or rotating cylinder. European Physical Journal: Special Topics, 2009, 166, 147-150.	2.6	8
68	Unsteady motion of a long bubble or droplet in a self-rewetting system. Physical Review Fluids, 2018, 3, .	2.5	8
69	The Lifetimes of Evaporating Sessile Droplets of Water Can Be Strongly Influenced by Thermal Effects. Fluids, 2021, 6, 141.	1.7	7
70	Evaporation of a thin droplet in a shallow well: theory and experiment. Journal of Fluid Mechanics, 2021, 927, .	3.4	7
71	An asymptotic analysis of small holes in thin fluid layers. Journal of Engineering Mathematics, 1996, 30, 445-457.	1.2	6
72	Steady Flow of a Nematic Liquid Crystal in a Slowly Varying Channel. Molecular Crystals and Liquid Crystals, 2005, 438, 237/[1801]-249/[1813].	0.9	6

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73	Thin-film flow in helically wound rectangular channels with small torsion. Physics of Fluids, 2013, 25, 083103.	4.0	6
74	Dynamic response of a thin sessile drop of conductive liquid to an abruptly applied or removed electric field. Physical Review E, 2016, 94, 043112.	2.1	6
75	Rivulet flow of generalized Newtonian fluids. Physical Review Fluids, 2018, 3, .	2.5	6
76	Thixotropic pumping in a cylindrical pipe. Physical Review Fluids, 2020, 5, .	2.5	6
77	Simple waves and shocks in a thin film of a perfectly soluble anti-surfactant solution. Journal of Engineering Mathematics, 2017, 107, 167-178.	1.2	5
78	Squeezing a drop of nematic liquid crystal with strong elasticity effects. Physics of Fluids, 2019, 31, 083107.	4.0	5
79	Transient flow-driven distortion of a nematic liquid crystal in channel flow with dissipative weak planar anchoring. Physical Review E, 2020, 102, 062703.	2.1	5
80	A pinned or free-floating rigid plate on a thin viscous film. Journal of Fluid Mechanics, 2014, 760, 407-430.	3.4	4
81	Rivulet flow down a slippery substrate. Physics of Fluids, 2020, 32, 072011.	4.0	4
82	Comment on â€œIncreased Evaporation Kinetics of Sessile Droplets by Using Nanoparticlesâ€• Langmuir, 2013, 29, 12328-12329.	3.5	3
83	Rivulet flow over and through a permeable membrane. Physical Review Fluids, 2021, 6, .	2.5	3
84	Young and Youngâ€"Laplace equations for a static ridge of nematic liquid crystal, and transitions between equilibrium states. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2022, 478, 20210849.	2.1	3
85	Unsteady coating flow on a rotating cylinder in the presence of an irrotational airflow with circulation. Physics of Fluids, 2022, 34, 043105.	4.0	3
86	Closed-form solution of a thermocapillary free-film problem due to Pukhnachev. European Journal of Applied Mathematics, 2015, 26, 721-741.	2.9	2
87	The dynamics of thin fluid films. European Journal of Applied Mathematics, 2001, 12, 193-194.	2.9	1
88	Modeling the Kinetics of Enzymic Reactions in Mainly Solid Reaction Mixtures. Biotechnology Progress, 2008, 19, 1228-1237.	2.6	1
89	Preface to the special issue on â€œRecent Developments and New Directions in Thin-Film Flowâ€• Journal of Engineering Mathematics, 2012, 73, 1-2.	1.2	1
90	Coating flow on a rotating cylinder in the presence of an irrotational airflow with circulation. Journal of Fluid Mechanics, 2022, 932, .	3.4	1

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91	Preface to the inaugural â€œPerspectivesâ€•article entitled â€œThe importance of being thinâ€•by Stephen H. Davis. Journal of Engineering Mathematics, 2017, 105, 1-2.	1.2	0
92	Preface to the special issue celebrating 50 years of the Journal of Engineering Mathematics. Journal of Engineering Mathematics, 2017, 107, 1-4.	1.2	0
93	Patterns formed in a thin film with spatially homogeneous and non-homogeneous Derjaguin disjoining pressure. European Journal of Applied Mathematics, 0, , 1-25.	2.9	0
94	The Strong Influence of Thermal Effects on the Lifetime of an Evaporating Droplet. , 2021, , 105-109.		0