

# Frank Smith

## List of Publications by Year in descending order

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141  
papers

3,436  
citations

136740

32  
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168136

53  
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141  
all docs

141  
docs citations

141  
times ranked

867  
citing authors

#	ARTICLE	IF	CITATIONS
1	On the High Reynolds Number Theory of Laminar Flows. IMA Journal of Applied Mathematics, 1982, 28, 207-281.	0.8	192
2	Vortex-induced boundary-layer separation. Part 1. The unsteady limit problem $Re \rightarrow \infty$ [infinity]. Journal of Fluid Mechanics, 1991, 232, 99.	1.4	134
3	Laminar flow of an incompressible fluid past a bluff body: the separation, reattachment, eddy properties and drag. Journal of Fluid Mechanics, 1979, 92, 171-205.	1.4	124
4	Pulsatile flow in curved pipes. Journal of Fluid Mechanics, 1975, 71, 15-42.	1.4	106
5	Breakdown of boundary layers: (i) on moving surfaces; (ii) in semi-similar unsteady flow; (iii) in fully unsteady flow. Geophysical and Astrophysical Fluid Dynamics, 1983, 25, 77-138.	0.4	106
6	Vortex-induced boundary-layer separation. Part 2. Unsteady interacting boundary-layer theory. Journal of Fluid Mechanics, 1991, 232, 133.	1.4	106
7	Finite-time break-up can occur in any unsteady interacting boundary layer. Mathematika, 1988, 35, 256-273.	0.3	96
8	Air cushioning with a lubrication-inviscid balance. Journal of Fluid Mechanics, 2003, 482, 291-318.	1.4	89
9	A structure for laminar flow past a bluff body at high Reynolds number. Journal of Fluid Mechanics, 1985, 155, 175.	1.4	88
10	A two-dimensional boundary layer encountering a three-dimensional hump. Journal of Fluid Mechanics, 1977, 83, 163-176.	1.4	86
11	On boundary-layer flow past two-dimensional obstacles. Journal of Fluid Mechanics, 1981, 113, 123.	1.4	83
12	The separating flow through a severely constricted symmetric tube. Journal of Fluid Mechanics, 1979, 90, 725.	1.4	80
13	Upstream interactions in channel flows. Journal of Fluid Mechanics, 1977, 79, 631.	1.4	72
14	Droplet impact on a thin fluid layer. Journal of Fluid Mechanics, 2005, 542, 1.	1.4	71
15	The resonant-triad nonlinear interaction in boundary-layer transition. Journal of Fluid Mechanics, 1987, 179, 227-252.	1.4	70
16	Nonlinear critical layers and their development in streaming-flow stability. Journal of Fluid Mechanics, 1982, 118, 165.	1.4	58
17	The inviscid instability of a Blasius boundary layer at large values of the Mach number. Journal of Fluid Mechanics, 1990, 219, 499.	1.4	58
18	Unsteady separation past moving surfaces. Journal of Fluid Mechanics, 1998, 375, 1-38.	1.4	58

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19	The onset of instability in unsteady boundary-layer separation. <i>Journal of Fluid Mechanics</i> , 1996, 315, 223-256.	1.4	53
20	Linear instability of the wake behind a flat plate placed parallel to a uniform stream. <i>Journal of Fluid Mechanics</i> , 1989, 208, 67-89.	1.4	49
21	Removal of Goldstein's singularity at separation, in flow past obstacles in wall layers. <i>Journal of Fluid Mechanics</i> , 1981, 110, 1-37.	1.4	47
22	Pipeflows distorted by non-symmetric indentation or branching. <i>Mathematika</i> , 1976, 23, 62-83.	0.3	46
23	Trapping of air in impact between a body and shallow water. <i>Journal of Fluid Mechanics</i> , 2008, 611, 365-394.	1.4	44
24	On hypersonic self-induced separation, hydraulic jumps and boundary layers with algebraic growth. <i>Mathematika</i> , 1983, 30, 77-93.	0.3	43
25	Concerning Dynamic Stall. <i>Aeronautical Quarterly</i> , 1982, 33, 331-352.	0.2	41
26	Short-scale break-up in unsteady interactive layers: local development of normal pressure gradients and vortex wind-up. <i>Journal of Fluid Mechanics</i> , 1998, 374, 335-378.	1.4	39
27	The interactive breakdown in supersonic ramp flow. <i>Journal of Fluid Mechanics</i> , 1991, 224, 197-215.	1.4	38
28	Dynamic stall due to unsteady marginal separation. <i>Journal of Fluid Mechanics</i> , 1987, 179, 489-512.	1.4	35
29	On entry-flow effects in bifurcating, blocked or constricted tubes. <i>Journal of Fluid Mechanics</i> , 1976, 78, 709.	1.4	33
30	An alternative approach to linear and nonlinear stability calculations at finite Reynolds numbers. <i>Journal of Fluid Mechanics</i> , 1984, 146, 313-330.	1.4	33
31	Nonlinear interaction of near-planar TS waves and longitudinal vortices in boundary-layer transition. <i>Mathematika</i> , 1989, 36, 262-289.	0.3	33
32	The structure of a three-dimensional turbulent boundary layer. <i>Journal of Fluid Mechanics</i> , 1993, 250, 43-68.	1.4	33
33	What happens to pressure when a flow enters a side branch?. <i>Journal of Fluid Mechanics</i> , 2003, 479, 231-258.	1.4	33
34	Interacting flow theory and trailing edge separation – no stall. <i>Journal of Fluid Mechanics</i> , 1983, 131, 219.	1.4	32
35	Two-dimensional disturbance travel, growth and spreading in boundary layers. <i>Journal of Fluid Mechanics</i> , 1986, 169, 353.	1.4	32
36	On turbulent separation in the flow past a bluff body. <i>Journal of Fluid Mechanics</i> , 1992, 241, 443-467.	1.4	32

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37	Theoretical prediction and design for vortex generators in turbulent boundary layers. Journal of Fluid Mechanics, 1994, 270, 91-132.	1.4	31
38	Air-water interactions near droplet impact. European Journal of Applied Mathematics, 2004, 15, 853-871.	1.4	30
39	Steady streaming induced between oscillating cylinders. Journal of Fluid Mechanics, 1979, 91, 93.	1.4	29
40	Short-length instabilities, breakdown and initial value problems in dynamic stall. Mathematika, 1984, 31, 163-177.	0.3	27
41	Droplet impact on water layers: post-impact analysis and computations. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2005, 363, 1209-1221.	1.6	27
42	ON INTERACTION BETWEEN FALLING BODIES AND THE SURROUNDING FLUID. Mathematika, 2010, 56, 140-168.	0.3	27
43	Fluid motion for car undertrays in ground effect. Journal of Engineering Mathematics, 2003, 45, 309-334.	0.6	26
44	A three-dimensional boundary-layer separation. Journal of Fluid Mechanics, 1980, 99, 185-224.	1.4	25
45	Stability of Long's vortex at large flow force. Journal of Fluid Mechanics, 1989, 206, 405-432.	1.4	25
46	Three-dimensional nonlinear blow-up from a nearly planar initial disturbance, in boundary-layer transition: theory and experimental comparisons. Journal of Fluid Mechanics, 1992, 244, 79.	1.4	25
47	On the spiking stages in deep transition and unsteady separation. Journal of Engineering Mathematics, 2003, 45, 227-245.	0.6	25
48	Direct simulations and modelling of basic three-dimensional bifurcating tube flows. Journal of Fluid Mechanics, 2004, 519, 1-32.	1.4	25
49	Droplet Impact on to a Rough Surface. Quarterly Journal of Mechanics and Applied Mathematics, 2011, 64, 107-139.	0.5	25
50	Skimming impacts and rebounds on shallow liquid layers. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2011, 467, 653-674.	1.0	25
51	On the severe non-symmetric constriction, curving or cornering of channel flows. Journal of Fluid Mechanics, 1980, 98, 727-753.	1.4	23
52	On the global instability of free disturbances with a time-dependent nonlinear viscous critical layer. Journal of Fluid Mechanics, 1985, 157, 53-77.	1.4	22
53	Complete breakdown of an unsteady interactive boundary layer (over a surface distortion or in a Tj ETQq1 1 0.784314 rgBT /Overlock 1	0.3	22
54	One-to-few and one-to-many branching tube flows. Journal of Fluid Mechanics, 2000, 423, 1-31.	1.4	22

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55	Lifting multi-blade flows with interaction. <i>Journal of Fluid Mechanics</i> , 2000, 415, 203-226.	1.4	22
56	On the starting process of strongly nonlinear vortex/Rayleigh wave interactions. <i>Mathematika</i> , 1993, 40, 7-29.	0.3	21
57	AVM modelling by multi-branching tube flow: large flow rates and dual solutions. <i>Mathematical Medicine and Biology</i> , 2003, 20, 183-204.	0.8	21
58	Break-away separation for high turbulence intensity and large Reynolds number. <i>Journal of Fluid Mechanics</i> , 2011, 670, 260-300.	1.4	21
59	Fluid flow through various branching tubes. <i>Journal of Engineering Mathematics</i> , 2003, 47, 277-298.	0.6	20
60	Properties of strongly nonlinear vortex/Tollmien-Schlichting-wave interactions. <i>Journal of Fluid Mechanics</i> , 1992, 244, 649.	1.4	18
61	Flow past a two- or three-dimensional steep-edged roughness. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 1998, 454, 31-69.	1.0	17
62	Ice formation on a smooth or rough cold surface due to the impact of a supercooled water droplet. <i>Journal of Engineering Mathematics</i> , 2017, 102, 35-64.	0.6	17
63	Free motion of a body in a boundary layer or channel flow. <i>Journal of Fluid Mechanics</i> , 2017, 813, 279-300.	1.4	16
64	Body-rock or lift-off in flow. <i>Journal of Fluid Mechanics</i> , 2013, 735, 91-119.	1.4	15
65	Free convection boundary layers near corners and sharp trailing edges. <i>Zeitschrift Fur Angewandte Mathematik Und Physik</i> , 1982, 33, 36-52.	0.7	14
66	Multi-branching flows from one mother tube to many daughters or to a network. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2005, 363, 1045-1055.	1.6	14
67	Fluid-body interactions: clashing, skimming, bouncing. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2011, 369, 3007-3024.	1.6	14
68	Movement of a finite body in channel flow. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2016, 472, 20160164.	1.0	13
69	Comparisons and comments concerning recent calculations for flow past a circular cylinder. <i>Journal of Fluid Mechanics</i> , 1981, 113, 407.	1.4	12
70	Wind-Up of a Spanwise Vortex in Deepening Transition and Stall. <i>Theoretical and Computational Fluid Dynamics</i> , 2000, 14, 135-165.	0.9	12
71	Computational modelling of the embolization process for the treatment of arteriovenous malformations (AVMs). <i>Mathematical and Computer Modelling</i> , 2013, 57, 1312-1324.	2.0	12
72	Improving Aircraft Safety in Icing Conditions. , 2016, , 145-151.		12

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73	Multi-branching three-dimensional flow with substantial changes in vessel shapes. <i>Journal of Fluid Mechanics</i> , 2008, 614, 329-354.	1.4	11
74	Short-scale effects on model boundary-layer spots. <i>Journal of Fluid Mechanics</i> , 1995, 295, 395.	1.4	10
75	Separating shear flow past a surface-mounted blunt obstacle. <i>Journal of Engineering Mathematics</i> , 2001, 39, 47-62.	0.6	10
76	On turbulent separation. <i>Journal of Engineering Mathematics</i> , 2010, 68, 373-400.	0.6	10
77	Enhanced effects from tiny flexible in-wall blips and shear flow. <i>Journal of Fluid Mechanics</i> , 2015, 772, 16-41.	1.4	10
78	Hypersonic aerodynamics on thin bodies with interaction and upstream influence. <i>Journal of Fluid Mechanics</i> , 1994, 277, 85-108.	1.4	9
79	On physical mechanisms in two- and three-dimensional separations. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2000, 358, 3091-3111.	1.6	9
80	The effects of nonsymmetry in a branching flow network. <i>Journal of Engineering Mathematics</i> , 2009, 63, 213-239.	0.6	9
81	Collisions, rebounds and skimming. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2014, 372, 20130351.	1.6	9
82	Flooding and sinking of an originally skimming body. <i>Journal of Engineering Mathematics</i> , 2017, 107, 37-60.	0.6	9
83	A freely moving body in a boundary layer: Nonlinear separated-flow effects. <i>Applied Ocean Research</i> , 2019, 85, 107-118.	1.8	9
84	A body in nonlinear near-wall shear flow: impacts, analysis and comparisons. <i>Journal of Fluid Mechanics</i> , 2020, 904, .	1.4	9
85	A smoothly curved body skimming on shallow water. <i>Journal of Engineering Mathematics</i> , 2021, 128, 1.	0.6	9
86	The impact of static and dynamic roughness elements on flow separation. <i>Journal of Fluid Mechanics</i> , 2017, 830, 35-62.	1.4	8
87	Channel Flow Past A Near-Wall Body. <i>Quarterly Journal of Mechanics and Applied Mathematics</i> , 2019, 72, 359-385.	0.5	8
88	When a small thin two-dimensional body enters a viscous wall layer. <i>European Journal of Applied Mathematics</i> , 2020, 31, 1002-1028.	1.4	8
89	Pre-impact dynamics of a droplet impinging on a deformable surface. <i>Physics of Fluids</i> , 2021, 33, .	1.6	8
90	Interactive flow past multiple blades and wakes. <i>Quarterly Journal of Mechanics and Applied Mathematics</i> , 2000, 53, 207-251.	0.5	7

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91	Flow in a multi-branching vessel with compliant walls. <i>Journal of Engineering Mathematics</i> , 2009, 64, 353-365.	0.6	7
92	Wall shape effects on multiphase flow in channels. <i>Theoretical and Computational Fluid Dynamics</i> , 2012, 26, 339-360.	0.9	7
93	Modelling of sea-ice phenomena. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2018, 376, 20180157.	1.6	7
94	CONCERNING UPSTREAM INFLUENCE IN SEPARATING BOUNDARY LAYERS AND DOWNSTREAM INFLUENCE IN CHANNEL FLOW. <i>Quarterly Journal of Mechanics and Applied Mathematics</i> , 1984, 37, 389-399.	0.5	6
95	Theory and computations for breakup of unsteady subsonic or supersonic separating flows. <i>Journal of Fluid Mechanics</i> , 1994, 268, 147-173.	1.4	6
96	Surface tension effects on interaction between two fluids near a wall. <i>Quarterly Journal of Mechanics and Applied Mathematics</i> , 2008, 61, 117-128.	0.5	6
97	On internal fluid dynamics. <i>Bulletin of Mathematical Sciences</i> , 2012, 2, 125-180.	0.5	6
98	Fluid flow lifting a body from a solid surface. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2018, 474, 20180286.	1.0	6
99	Particle movement in a boundary layer. <i>Journal of Engineering Mathematics</i> , 2021, 128, 1.	0.6	6
100	On Dynamic Interactions Between Body Motion and Fluid Motion. <i>Studies in Systems, Decision and Control</i> , 2019, , 45-89.	0.8	6
101	Skimming impacts and rebounds of smoothly shaped bodies on shallow liquid layers. <i>Journal of Engineering Mathematics</i> , 2020, 124, 41-73.	0.6	5
102	A body in nonlinear near-wall shear flow: numerical results for a flat plate. <i>Journal of Fluid Mechanics</i> , 2021, 915, .	1.4	5
103	On the Calculation of the Incompressible Flow Past an Aerofoil with a Jet Flap. <i>Aeronautical Quarterly</i> , 1978, 29, 44-59.	0.2	4
104	Nonlinear evolution of Rayleigh waves in an initial value context: non-symmetric input and cross-flow. <i>Mathematika</i> , 1998, 45, 217-243.	0.3	4
105	On "spot" evolution under an adverse pressure gradient. <i>Journal of Fluid Mechanics</i> , 2001, 430, 169-207.	1.4	4
106	Influence of Surface Roughness on Shear Flow. <i>Journal of Applied Mechanics, Transactions ASME</i> , 2004, 71, 459-464.	1.1	4
107	Inviscid and low-viscosity flows in multi-branching and reconnecting networks. <i>Journal of Engineering Mathematics</i> , 2017, 104, 1-18.	0.6	4
108	The effect of inertia and vertical confinement on the flow past a circular cylinder in a Hele-Shaw configuration. <i>Journal of Fluid Mechanics</i> , 2022, 934, .	1.4	4

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109	On the nonlinear growth of single three-dimensional disturbances in boundary layers. <i>Mathematika</i> , 1994, 41, 1-39.	0.3	3
110	Singular modes in Rayleigh instability of three-dimensional streamwise-vortex flows. <i>Journal of Fluid Mechanics</i> , 1997, 333, 139-160.	1.4	3
111	Vortex/inflectional-wave interactions with weakly three-dimensional input. <i>Journal of Fluid Mechanics</i> , 1997, 348, 247-294.	1.4	3
112	Rapid plunging of a body partly submerged in water. <i>Journal of Engineering Mathematics</i> , 2002, 42, 303-319.	0.6	3
113	Swirl-flow effects in a duct bending through a substantial angle. <i>Journal of Engineering Mathematics</i> , 2002, 43, 315-346.	0.6	3
114	Non-Local Interactions and Feedback Instability in a High Reynolds Number Flow. <i>Theoretical and Computational Fluid Dynamics</i> , 2003, 17, 1-18.	0.9	3
115	Turbulent flow on a planar moving belt and a rotating disk: modelling and comparisons. <i>Journal of Fluid Mechanics</i> , 2007, 587, 255-270.	1.4	3
116	The impact of dynamic roughness elements on marginally separated boundary layers. <i>Journal of Fluid Mechanics</i> , 2018, 855, 351-370.	1.4	3
117	A heavy body translating in a boundary layer: "crash", "fly away" and "bouncing" responses. <i>Journal of Fluid Mechanics</i> , 2022, 936, .	1.4	3
118	Skimming impact of a thin heavy body on a shallow liquid layer. <i>Journal of Fluid Mechanics</i> , 2022, 940, .	1.4	3
119	Computations on flow past an inclined flat plate of finite length. <i>Journal of Engineering Mathematics</i> , 1990, 24, 311-321.	0.6	2
120	On generation of horseshoe vortices by corrugated surfaces, surface roughnesses or pipe bends. <i>Journal of Engineering Mathematics</i> , 2003, 45, 5-20.	0.6	2
121	A three-dimensional pipe flow adjusts smoothly to the sudden onset of a bend. <i>Physics of Fluids</i> , 2005, 17, 048102.	1.6	2
122	The development of the turbulent flow in a bent pipe. <i>Journal of Fluid Mechanics</i> , 2007, 578, 467-494.	1.4	2
123	SUPERCritical TWO-FLUID INTERACTIONS WITH SURFACE TENSION AND GRAVITY. <i>Mathematika</i> , 2010, 56, 93-106.	0.3	2
124	Turbulent interactions for rotating blades and wakes. <i>Journal of Engineering Mathematics</i> , 2011, 69, 185-198.	0.6	2
125	A Uniformly Valid Theory of Turbulent Separation. <i>Springer Proceedings in Physics</i> , 2012, , 85-89.	0.1	2
126	On effects of increasing amplitude in a boundary-layer spot. <i>Mathematika</i> , 1998, 45, 1-24.	0.3	1



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127	Spreading of Nonuniform Jets in Wind. Journal of Fluids Engineering, Transactions of the ASME, 2002, 124, 694-699.	0.8	1
128	On the evolving flow of grains down a chute. Journal of Engineering Mathematics, 2010, 68, 233-247.	0.6	1
129	Numerical and Analytical Study of Bladder-Collapse Flow. International Journal of Differential Equations, 2012, 2012, 1-14.	0.3	1
130	Rate effects on the growth of centres. European Journal of Applied Mathematics, 2017, 28, 221-242.	1.4	1
131	Shear flow over flexible three-dimensional patches in a surface. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2018, 376, 20170348.	1.6	1
132	Stability of two competing populations in chemostat where one of the population changes its average mass of division in response to changes of its population. PLoS ONE, 2019, 14, e0213518.	1.1	1
133	On flow through bends and branchings. Biorheology, 2002, 39, 373-8.	1.2	1
134	Composite, Navier-Stokes and Euler unsteady-flow computations in boundary layers. Journal of Engineering Mathematics, 1996, 30, 307-320.	0.6	0
135	Collisions, rebounds and skimming. , 2013, , .		0
136	Interference in a three-dimensional array of jets. European Journal of Applied Mathematics, 2015, 26, 795-819.	1.4	0
137	Internal Fluid Dynamics. , 2016, , 135-168.		0
138	A simplified model of glycoprotein production within cell culture. European Journal of Applied Mathematics, 2017, 28, 535-561.	1.4	0
139	Stretching hollow jets in potential flow. AIP Conference Proceedings, 2018, , .	0.3	0
140	NONSYMMETRIC BRANCHING OF FLUID FLOWS IN 3D VESSELS. ANZIAM Journal, 2018, 59, 533-561.	0.3	0
141	Modelling, computation and analysis on combustion of explosives. European Journal of Applied Mathematics, 2022, 33, 27-57.	1.4	0