John Billingham

List of Publications by Year
in descending order

74 papers	1,168 citations	394421 19 h-index	454955 30 g-index
76 all docs	76 docs citations	76 times ranked	873 citing authors

#	Article	IF	Citations
1	Mathematical modelling of abrasive waterjet footprints for arbitrarily moving jets: Part Iâ€"single straight paths. International Journal of Machine Tools and Manufacture, 2012, 53, 58-68.	13.4	61
2	Dynamics of a strongly nonlocal reactionâ€"diffusion population model. Nonlinearity, 2004, 17, 313-346.	1.4	59
3	A note on the properties of a family of travelling-wave solutions arising in cubic autocatalysis. Dynamical Systems, 1991, 6, 33-49.	0.7	55
4	Mathematical modelling of abrasive waterjet footprints for arbitrarily moving jets: Part IIâ€"Overlapped single and multiple straight paths. International Journal of Machine Tools and Manufacture, 2013, 68, 30-39.	13.4	55
5	Laminar, unidirectional flow of a thixotropic fluid in a circular pipe. Journal of Non-Newtonian Fluid Mechanics, 1993, 47, 21-55.	2.4	48
6	Geometrical modelling of abrasive waterjet footprints: A study for 90Â° jet impact angle. CIRP Annals - Manufacturing Technology, 2010, 59, 341-346.	3.6	48
7	Continuous trench, pulsed laser ablation for micro-machining applications. International Journal of Machine Tools and Manufacture, 2016, 107, 8-20.	13.4	42
8	Three-dimensional flow due to a microcantilever oscillating near a wall: an unsteady slender-body analysis. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2006, 462, 913-933.	2.1	40
9	Stochastic Elastohydrodynamics of a Microcantilever Oscillating Near a Wall. Physical Review Letters, 2006, 96, 050801.	7.8	39
10	Simple chemical clock reactions: application to cement hydration. Journal of the Chemical Society, Faraday Transactions, 1993, 89, 3021.	1.7	33
11	The linear inverse problem in energy beam processing with an application to abrasive waterjet machining. International Journal of Machine Tools and Manufacture, 2015, 99, 34-42.	13.4	32
12	Stochastic modelling of abrasive waterjet footprints using finite element analysis. International Journal of Machine Tools and Manufacture, 2015, 95, 39-51.	13.4	30
13	Geometrical modelling of pulsed laser ablation of high performance metallic alloys. International Journal of Machine Tools and Manufacture, 2019, 141, 78-88.	13.4	29
14	Drops climbing uphill on an oscillating substrate. Journal of Fluid Mechanics, 2011, 674, 93-119.	3.4	27
15	New models for energy beam machining enable accurate generation of free forms. Science Advances, 2017, 3, e1701201.	10.3	23
16	Investigation of the microstructure change due to phase transition in nanosecond pulsed laser processing of diamond. Carbon, 2018, 127, 349-365.	10.3	23
17	Uniform asymptotic expansions for the Barnes double gamma function. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 1997, 453, 1817-1829.	2.1	21
18	Phase plane analysis of one-dimensional reaction diffusion waves with degenerate reaction terms. Dynamical Systems, 2000, 15, 23-33.	0.7	20

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19	The initial development of a jet caused by fluid, body and free-surface interaction. Part 2. An impulsively moved plate. Journal of Fluid Mechanics, 2007, 578, 67-84.	3.4	20
20	Kinetics of self-replicating micelles. Journal of the Chemical Society, Faraday Transactions, 1994, 90, 1953.	1.7	18
21	The interaction of a moving fluid/fluid interface with a flat plate. Journal of Fluid Mechanics, 1995, 296, 325-351.	3.4	18
22	On a model for the motion of a contact line on a smooth solid surface. European Journal of Applied Mathematics, 2006, 17, 347-382.	2.9	18
23	Waterjet and laser etching: the nonlinear inverse problem. Royal Society Open Science, 2017, 4, 161031.	2.4	18
24	On the initial stages of cement hydration. Journal of Engineering Mathematics, 2001, 40, 43-58.	1.2	17
25	Divergence-driven oscillations in a flexible-channel flow with fixed upstream flux. Journal of Fluid Mechanics, 2013, 723, 706-733.	3.4	17
26	Mathematical modelling of chemical clock reactions. Journal of Engineering Mathematics, 1993, 27, 113-145.	1.2	16
27	Flow and reaction in solid oxide fuel cells. Journal of Fluid Mechanics, 2000, 411, 233-262.	3.4	16
28	Surface-tension-driven flow outside a slender wedge with an application to the inviscid coalescence of drops. Journal of Fluid Mechanics, 2005, 533, .	3.4	16
29	Time-dependent manufacturing processes lead to a new class of inverse problems. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 5341-5343.	7.1	16
30	Nonlinear sloshing in zero gravity. Journal of Fluid Mechanics, 2002, 464, 365-391.	3.4	15
31	Surface-tension-driven flow in fat fluid wedges and cones. Journal of Fluid Mechanics, 1999, 397, 45-71.	3.4	14
32	The initial development of a jet caused by fluid, body and free surface interaction. part 3. an inclined accelerating plate. Quarterly Journal of Mechanics and Applied Mathematics, 2008, 61, 581-614.	1.3	14
33	Resonance-driven oscillations in a flexible-channel flow with fixed upstream flux and a long downstream rigid segment. Journal of Fluid Mechanics, 2014, 746, 368-404.	3.4	14
34	Thick drops climbing uphill on an oscillatingÂsubstrate. Journal of Fluid Mechanics, 2018, 840, 131-153.	3.4	14
35	Three-dimensional elastohydrodynamics of a thin plate oscillating above a wall. Physical Review E, 2008, 78, 056310.	2.1	13
36	Chemical clock reactions: The effect of precursor consumption. Journal of Mathematical Chemistry, 1999, 26, 47-73.	1.5	11

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37	The effect of a retarder on the early stages of the hydration of tricalcium silicate. Journal of Engineering Mathematics, 2003, 45, 367-377.	1.2	11
38	A study of surface swelling caused by graphitisation during pulsed laser ablation of carbon allotrope with high content of sp³bounds. Journal Physics D: Applied Physics, 2017, 50, 245301.	2.8	11
39	Stochastic simplified modelling of abrasive waterjet footprints. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2016, 472, 20150836.	2.1	10
40	Exploring complexity in some simple nonlinear chemical kinetic schemes. Journal of Chemical Physics, 1994, 100, 1921-1935.	3.0	9
41	The effect of heat loss on the propagation of strongly exothermic combustion waves. Combustion Theory and Modelling, 2001, 5, 319-342.	1.9	9
42	Gravity-driven thin-film flow using a new contact line model. IMA Journal of Applied Mathematics, 2007, 73, 4-36.	1.6	9
43	A multi-scale model for solute transport in a wavy-walled channel. Journal of Engineering Mathematics, 2009, 64, 25-48.	1.2	9
44	Novel approach based on continuous trench modelling to predict focused ion beam prepared freeform surfaces. Journal of Materials Processing Technology, 2018, 252, 636-642.	6.3	9
45	A Multiphase Model for the Early Stages of the Hydration of Retarded Oilwell Cement. Journal of Engineering Mathematics, 2005, 53, 99-112.	1.2	8
46	Slow travelling wave solutions of the nonlocal Fisher-KPP equation. Nonlinearity, 2020, 33, 2106-2142.	1.4	8
47	Steady-state solutions for strongly exothermic ignition in symmetric geometries. IMA Journal of Applied Mathematics, 2000, 65, 283-313.	1.6	7
48	On some eigenvalue problems in fuelâ€“cell dynamics. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2003, 459, 241-261.	2.1	7
49	Surface Tensionâ€Driven Flow in a Slender Wedge. SIAM Journal on Applied Mathematics, 2006, 66, 1949-1977.	1.8	7
50	The Initial Surface Tension--Driven Flow of a Wedge of Viscous Fluid. SIAM Journal on Applied Mathematics, 2005, 66, 510-532.	1.8	4
51	Numerical solutions of a model for the propagation of a surface-catalysed flame in a tube. IMA Journal of Applied Mathematics, 2007, 73, 107-122.	1.6	4
52	Inviscid coalescence in the presence of a surrounding fluid. IMA Journal of Applied Mathematics, 2012, 77, 678-696.	1.6	4
53	Thin three-dimensional droplets on an oscillating substrate with contact angle hysteresis. Physical Review E, 2016, 93, 013123.	2.1	4
54	Performance modelling of solid oxide fuel cells. Combustion Theory and Modelling, 2001, 5, 639-667.	1.9	3

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55	The evolution of travelling waves from chemical-clock reactions. Journal of Engineering Mathematics, 2001, 39, 367-385.	1.2	3
56	Dynamics of the oil-air interface in hard disk drive bearings. IEEE Transactions on Magnetics, 2005, 41, 2884-2886.	2.1	3
57	Flows of granular material in two-dimensional channels. Journal of Engineering Mathematics, 2016, 98, 49-70.	1.2	3
58	On modelling the formation of micelles in the presence of a slow influx of monomer. Quarterly Journal of Mechanics and Applied Mathematics, 2000, 53, 285-297.	1.3	2
59	An asymptotic theory for the propagation of a surface-catalysed flame in a tube. Journal of Fluid Mechanics, 2006, 546, 363.	3.4	2
60	The development of slugging in two-layer hydraulic flows. IMA Journal of Applied Mathematics, 2007, 73, 274-322.	1.6	2
61	The initial development of a jet caused by fluid, body and free surface interaction with a uniformly accelerated advancing or retreating plate. PartÂ1. The principal flow. Journal of Fluid Mechanics, 2018, 841, 109-145.	3.4	2
62	The initial development of a jet caused by fluid, body and free surface interaction with a uniformly accelerated advancing or retreating plate. Part 2. Well-posedness and stability of the principal flow. Journal of Fluid Mechanics, 2018, 841, 146-166.	3.4	2
63	Zero Gravity Sloshing. Fluid Mechanics and Its Applications, 2001, , 47-54.	0.2	2
64	Modelling the response of a vibrating-element density meter in a two-phase mixture. Journal of Fluid Mechanics, 1997, 340, 343-360.	3.4	1
65	Foreword: Andy King. IMA Journal of Applied Mathematics, 2007, 73, 1-3.	1.6	1
66	A note on the unsteady motion under gravity of a corner point on a free surface: a generalization of Stokes' theory. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2009, 465, 165-173.	2.1	1
67	Surface-tension-driven flow in a half-plane. IMA Journal of Applied Mathematics, 2010, 75, 857-880.	1.6	1
68	A spectral boundary integral method for inviscid water waves in a finite domain. International Journal for Numerical Methods in Fluids, 2016, 82, 437-448.	1.6	1
69	The initial development of a jet caused by fluid, body and free surface interaction. Part 5. Parasitic capillary waves on an initially horizontal surface. Journal of Fluid Mechanics, 2018, 836, 850-872.	3.4	1
70	The effect of inclination on the development of slugging in channel flow. IMA Journal of Applied Mathematics, 2019, 84, 366-384.	1.6	1
71	The evolution of travelling waves from chemical-clock reactions. , 2001, , 367-385.		1
72	The Unsteady Motion of Three Phase Contact Lines. , 1999, , 99-110.		1

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73	A Reaction Diffusion Model for Inter-Species Competition and Intra-Species Cooperation. Mathematical Modelling of Natural Phenomena, 2013, 8, 154-181.	2.4	0
74	A dam break driven by a moving source: a simple model for a powder snow avalanche. Journal of Fluid Mechanics, 2019, 870, 353-388.	3.4	0