Philip M Trevelyan

List of Publications by Year
in descending order

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40	papers
1,356	citations
20	h-index
35	g-index
40	all docs
40	docs citations
40	times ranked
553	citing authors

361413

361022

#	Article	IF	Citations
1	Chemically Driven Hydrodynamic Instabilities. Physical Review Letters, 2010, 104, 044501.	7.8	129
2	Buoyancy-driven instabilities of miscible two-layer stratifications in porous media and Hele-Shaw cells. Journal of Fluid Mechanics, 2011, 670, 38-65.	3.4	119
3	Modelling film flows down a fibre. Journal of Fluid Mechanics, 2008, 603, 431-462.	3.4	108
4	Viscous fingering of a miscible reactive <i>A</i> + <i>B</i> â†’ <i>C</i> interface: a linear stability analysis. Journal of Fluid Mechanics, 2010, 652, 501-528.	3.4	88
5	Heated falling films. Journal of Fluid Mechanics, 2007, 592, 295-334.	3.4	78
6	Influence of Double Diffusive Effects on Miscible Viscous Fingering. Physical Review Letters, 2010, 105, 204501.	7.8	74
7	Experimental evidence of reaction-driven miscible viscous fingering. Physical Review E, 2012, 85, 015304.	2.1	64
8	Dynamics of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>A</mml:mi><mml:mo>+</mml:mo><mml:mi>B</mml:mi><mml:mo>â†’</mml:mo><mml:mi>C</mml:mi></m Fronts in the Presence of Buoyancy-Driven Convection. Physical Review Letters, 2008, 101, 084503.	7.8	60
9	Active Role of a Color Indicator in Buoyancy-Driven Instabilities of Chemical Fronts. Journal of Physical Chemistry Letters, 2010, 1, 752-757.	4.6	56
10	Free-surface thin-film flows over uniformly heated topography. Physical Review E, 2007, 75, 026306.	2.1	55
11	Convective Mixing Induced by Acidâ€"Base Reactions. Journal of Physical Chemistry B, 2011, 115, 9739-9744.	2.6	53
12	Buoyancy-driven instabilities around miscible<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>A</mml:mi><mml:mo>+</mml:mo><mml:mi>B</mml:mi><mml:mo>â† fronts: A general classification. Physical Review E, 2015, 91, 023001.	2.1	53
13	Wave dynamics on a thin-liquid film falling down a heated wall. Journal of Engineering Mathematics, 2004, 50, 177-208.	1.2	49
14	Mixed-mode instability of a miscible interface due to coupling between Rayleigh-Taylor and double-diffusive convective modes. Physics of Fluids, 2013, 25, .	4.0	48
15	Dynamics of a horizontal thin liquid film in the presence of reactive surfactants. Physics of Fluids, 2007, 19, 112102.	4.0	44
16	Differential diffusion effects on buoyancy-driven instabilities of acidâ€"base fronts: the case of a color indicator. Physical Chemistry Chemical Physics, 2011, 13, 17295.	2.8	36
17	Dynamics of a reactive falling film at large PÃ©clet numbers. I. Long-wave approximation. Physics of Fluids, 2004, 16, 3191-3208.	4.0	33
18	Influence of buoyancy-driven convection on the dynamics of A+Bâ†'C reaction fronts in horizontal solution layers. Chemical Engineering Science, 2010, 65, 2382-2391.	3.8	29

#	ARTICLE	IF	CITATIONS
19	Thermal effects on the diffusive layer convection instability of an exothermic acid-base reaction front. Physical Review E, 2013, 88, 033009.	2.1	23
20	Density profiles around <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>A</mml:mi><mml:mo>+</mml:mo><mml:mi>B</mml:mi reaction-diffusion fronts in partially miscible systems: A general classification. Physical Review E, 2016, 94, 043115.	2.1	22
21	Dynamics of a reactive falling film at large PÃ©clet numbers. II. Nonlinear waves far from criticality: Integral-boundary-layer approximation. Physics of Fluids, 2004, 16, 3209-3226.	4.0	21
22	Dynamics of a vertically falling film in the presence of a first-order chemical reaction. Physics of Fluids, 2002, 14, 2402.	4.0	20
23	An analytical, numerical, and experimental comparison of the fluid velocity in the vicinity of an open tank with one and two lateral exhaust slot hoods and a uniform crossdraft. Annals of Occupational Hygiene, 2000, 44, 407-419.	1.9	12
24	Analytical asymptotic solutions of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>n</mml:mi><mml:mi>A</mml:mi><mml:mo>+</mml:mo><mml:mi>m</mml:mi><mml:mi>B</m equations in two-layer systems: A general study. Physical Review E, 2008, 78, 026122.	2.1	12
25	Interfacial hydrodynamic waves driven by chemical reactions. Journal of Engineering Mathematics, 2007, 59, 207-220.	1.2	10
26	Onset conditions for a Rayleighâ€"Taylor instability with step function density profiles. Journal of Engineering Mathematics, 2014, 86, 31-48.	1.2	10
27	Asymptotic properties of radial <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>A</mml:mi><mml:mo>+</mml:mo><mml:mi>B</mml:mi reaction fronts. Physical Review E, 2018, 98, .	2.1	9
28	Mass-transport enhancement in regions bounded by rigid walls. Journal of Engineering Mathematics, 2002, 42, 45-64.	1.2	8
29	Analytical small-time asymptotic properties of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>A</mml:mi><mml:mo>+</mml:mo><mml:mi>B</mml:mi><mml:mo>â†'</mml:mo><mml:mi>C< Physical Review E, 2009, 80, 046118.	2.1	8
30	Dynamics of a Reactive Thin Film. Mathematical Modelling of Natural Phenomena, 2012, 7, 99-145.	2.4	6
31	Circulation and reaction enhancement of mass transport in a cavity. Chemical Engineering Science, 2001, 56, 5177-5188.	3.8	5
32	Higher-order large-time asymptotics for a reaction of the formnA+mBâ†'C. Physical Review E, 2009, 79, 016105.	2.1	5
33	Potential flow in a semi-infinite channel with multiple sub-channels using the Schwarzâ€"Christoffel transformation. Computer Methods in Applied Mechanics and Engineering, 2000, 189, 341-359.	6.6	3
34	Interfacial instabilities driven by chemical reactions. European Physical Journal: Special Topics, 2009, 166, 121-125.	2.6	3
35	Rayleighâ€"Taylor instabilities in miscible fluids with initially piecewise linear density profiles. Journal of Engineering Mathematics, 2020, 121, 57-83.	1.2	3
36	Publisher's Note: Higher-order large-time asymptotics for a reaction of the formnA+mBâ†'C[Phys. Rev. E79, 016105 (2009)]. Physical Review E, 2009, 79, .	2.1	0

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37	Chemically-Driven Miscible Viscous Fingering: How Can a Reaction Destabilize Typically Stable Fluid Displacements?. Springer Proceedings in Complexity, 2013, , 9-13.	0.3	0
38	Modelling film flows down a fibre â€“ ERRATUM. Journal of Fluid Mechanics, 2020, 890, .	3.4	0
39	Approximating the large time asymptotic reaction zone solution for fractional order kinetics $A^n B^m$. Discrete and Continuous Dynamical Systems - Series S, 2012, 5, 219-234.	1.1	0
40	Rayleighâ€“Taylor instability of classical diffusive density profiles for miscible fluids in porous media: a linear stability analysis. Journal of Engineering Mathematics, 2022, 132, 1.	1.2	0