Malcolm R Davidson

List of Publications by Year
in descending order

94 papers	2,435 citations	172207 29 h-index	223531 46 g-index
96 all docs	96 docs citations	96 times ranked	2361 citing authors

#	Article	IF	Citations
1	Simulating the ultrafiltration of whey proteins isolate using a mixture model. Journal of Membrane Science, 2020, 613, 118388.	4.1	7
2	Viscoelectric Effects in Nanochannel Electrokinetics. Journal of Physical Chemistry C, 2017, 121, 20517-20523.	1.5	28
3	Electrophoretically mediated partial coalescence of a charged microdrop. Chemical Engineering Science, 2017, 169, 273-283.	1.9	17
4	Electrokinetics of the silica and aqueous electrolyte solution interface: Viscoelectric effects. Advances in Colloid and Interface Science, 2016, 234, 108-131.	7.0	38
5	Electrokinetics of isolated electrified drops. Soft Matter, 2016, 12, 3310-3325.	1.2	37
6	Numerical simulation of two-fluid flow of electrolyte solution with charged deforming interfaces. Applied Mathematical Modelling, 2016, 40, 1989-2001.	2.2	4
7	Electrohydrodynamic deformation and interaction of microscale drop pairs. International Journal of Computational Methods and Experimental Measurements, 2016, 4, 33-41.	0.1	3
8	Electroviscous resistance of nanofluidic bends. Physical Review E, 2014, 90, 043008.	0.8	0
9	Electroviscous flow through nanofluidic junctions. Applied Mathematical Modelling, 2014, 38, 4215-4225.	2.2	2
10	Electrokinetic flow in parallel channels: Circuit modelling for microfluidics and membranes. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2014, 440, 63-73.	2.3	8
11	Concentration gradient focusing and separation in a silica nanofluidic channel with a non-uniform electroosmotic flow. Lab on A Chip, 2014, 14, 3539-3549.	3.1	30
12	Isoelectric Focusing in a Silica Nanofluidic Channel: Effects of Electromigration and Electroosmosis. Analytical Chemistry, 2014, 86, 8711-8718.	3.2	15
13	Stationary Chemical Gradients for Concentration Gradient-Based Separation and Focusing in Nanofluidic Channels. Langmuir, 2014, 30, 5337-5348.	1.6	22
14	Numerical simulation of the deformation of charged drops of electrolyte. WIT Transactions on Engineering Sciences, 2014, , .	0.0	2
15	A multiphase electrokinetic flow model for electrolytes with liquid/liquid interfaces. Journal of Computational Physics, 2013, 251, 209-222.	1.9	24
16	The reservoir-wave paradigm. Journal of Hypertension, 2012, 30, 1881-1883.	0.3	3
17	The reservoir-wave paradigm introduces error into arterial wave analysis. Journal of Hypertension, 2012, 30, 734-743.	0.3	49
18	Electrokinetic flow in connected channels: a comparison of two circuit models. Microfluidics and Nanofluidics, 2012, 13, 481-490.	1.0	7

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19	A simple, versatile valve model for use in lumped parameter and oneâ€dimensional cardiovascular models. International Journal for Numerical Methods in Biomedical Engineering, 2012, 28, 626-641.	1.0	136
20	Non-linear separation of pressure, velocity and wave intensity into forward and backward components. Medical and Biological Engineering and Computing, 2012, 50, 641-648.	1.6	13
21	Microfluidic circuit analysis I: Ion current relationships for thin slits and pipes. Journal of Colloid and Interface Science, 2012, 365, 1-15.	5.0	16
22	Microfluidic circuit analysis II: Implications of ion conservation for microchannels connected in series. Journal of Colloid and Interface Science, 2012, 365, 16-27.	5.0	10
23	Modelling Pressure Losses at Arterial Junctions With Application to Junctions of the Fetal Ductus Arteriosus. , 2012, , .		0
24	Mathematical modeling and numerical simulation of wave-front flow on a vertical wall with surfactant effects. Journal of Engineering Mathematics, 2011, 70, 307-320.	0.6	0
25	Effect of wall permittivity on electroviscous flow through a contraction. Biomicrofluidics, 2011, 5, 044102.	1.2	8
26	Robustness of the P-U and lnD-U loop wave speed estimation methods: Effects of the diastolic pressure decay and vessel wall non-linearities. , 2011, 2011, 6446-9.		5
27	Electroviscous effects in a Carreau liquid flowing through a cylindrical microfluidic contraction. Chemical Engineering Science, 2010, 65, 6259-6269.	1.9	24
28	A model investigation of the impact of ventilationâ€"perfusion mismatch on oxygenation during apnea in preterm infants. Journal of Theoretical Biology, 2010, 264, 657-662.	0.8	13
29	A dynamic model for assessing the impact of diffusing capacity on arterial oxygenation during apnea. Respiratory Physiology and Neurobiology, 2010, 171, 193-200.	0.7	3
30	A numerical model of neonatal pulmonary atresia with intact ventricular septum and RVâ€dependent coronary flow. International Journal for Numerical Methods in Biomedical Engineering, 2010, 26, 843-861.	1.0	11
31	Mechanism Underlying Accelerated Arterial Oxygen Desaturation during Recurrent Apnea. American Journal of Respiratory and Critical Care Medicine, 2010, 182, 961-969.	2.5	26
32	An Eulerian-Eulerian Model for the Dispersion of a Suspension of Microscopic Particles Injected Into a Quiescent Liquid. Engineering Applications of Computational Fluid Mechanics, 2009, 3, 84-97.	1.5	7
33	A Model Analysis of Arterial Oxygen Desaturation during Apnea in Preterm Infants. PLoS Computational Biology, 2009, 5, e1000588.	1.5	59
34	Simulating particle agglomeration in the flash smelting reaction shaft. Minerals Engineering, 2009, 22, 1251-1265.	1.8	17
35	Electroviscous effects in steady fully developed flow of a power-law liquid through a cylindrical microchannel. International Journal of Heat and Fluid Flow, 2009, 30, 804-811.	1.1	54
36	Evolution of Colloidal Nanocrystals: Theory and Modeling of their Nucleation and Growth. Journal of Physical Chemistry C, 2009, 113, 16342-16355.	1.5	92

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37	Steady flow of ionic liquid through a cylindrical microfluidic contractionâ€“expansion pipe: Electroviscous effects and pressure drop. Chemical Engineering Science, 2008, 63, 3593-3604.	1.9	26
38	Deformation of a viscoelastic droplet passing through a microfluidic contraction. Journal of Non-Newtonian Fluid Mechanics, 2008, 155, 67-79.	1.0	43
39	Fully Developed Flow of Power-Law Fluid Through a Cylindrical Microfluidic Pipe: Pressure Drop and Electroviscous Effects. , 2008, , .		0
40	Electroviscous effects in low Reynolds number liquid flow through a slit-like microfluidic contraction. Chemical Engineering Science, 2007, 62, 4229-4240.	1.9	36
41	A model for heap bioleaching of chalcocite with heat balance: Mesophiles and moderate thermophiles. Hydrometallurgy, 2007, 85, 24-41.	1.8	53
42	A parametric study of droplet deformation through a microfluidic contraction: Shear thinning liquids. International Journal of Multiphase Flow, 2007, 33, 545-556.	1.6	25
43	Restart model for a multi-plug gelled waxy oil pipeline. Journal of Petroleum Science and Engineering, 2007, 59, 1-16.	2.1	26
44	Control of an Oscillatory Rectangular Cavity Jet Flow by Secondary Injection. JSME International Journal Series B, 2006, 49, 1105-1110.	0.3	1
45	An analysis of parasitic current generation in Volume of Fluid simulations. Applied Mathematical Modelling, 2006, 30, 1056-1066.	2.2	146
46	An air sparging CFD model for heap bioleaching of chalcocite. Applied Mathematical Modelling, 2006, 30, 1428-1444.	2.2	23
47	The dissolution of a stationary spherical bubble beneath a flat plate. Chemical Engineering Science, 2006, 61, 7697-7705.	1.9	19
48	A parametric study of droplet deformation through a microfluidic contraction: Low viscosity Newtonian droplets. Chemical Engineering Science, 2006, 61, 5149-5158.	1.9	41
49	Pendant drop formation of shear-thinning and yield stress fluids. Applied Mathematical Modelling, 2006, 30, 1392-1405.	2.2	35
50	Simulations of viscoelastic droplet deformation through a microfluidic contraction. WIT Transactions on Engineering Sciences, 2006, , .	0.0	1
51	Control of a submerged jet in a thin rectangular cavity. Journal of Fluids and Structures, 2005, 20, 1025-1042.	1.5	8
52	Milk skin formation during drying. Chemical Engineering Science, 2005, 60, 635-646.	1.9	29
53	Modelling oxygen diffusion and cell growth in a porous, vascularising scaffold for soft tissue engineering applications. Chemical Engineering Science, 2005, 60, 4924-4934.	1.9	74
54	A model for heap bioleaching of chalcocite with heat balance: Bacterial temperature dependence. Minerals Engineering, 2005, 18, 1239-1252.	1.8	36

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55	Scaling behavior for gravity induced flow of a yield stress material. Journal of Rheology, 2005, 49, 105-112.	1.3	4
56	CONTROL OF AN OSCILLATORY RECTANGULAR CAVITY JET FLOW BY SECONDARY INJECTION(Cavity Flow and) Tj ETQq0 0 0 rgBT /Overl (ICJWSF), 2005, 2005, 561-565.	0.1	0
57	Architecture control of three-dimensional polymeric scaffolds for soft tissue engineering. I. Establishment and validation of numerical models. Journal of Biomedical Materials Research Part B, 2004, 71A, 81-89.	3.0	21
58	A model for restart of a pipeline with compressible gelled waxy crude oil. Journal of Non-Newtonian Fluid Mechanics, 2004, 123, 269-280.	1.0	97
59	Modelling the dispersion of dissolving spherical particles. Progress in Computational Fluid Dynamics, 2004, 4, 78.	0.1	2
60	Oscillatory Flow in a Physical Model of a Thin Slab Casting Mould With a Bifurcated Submerged Entry Nozzle. Journal of Fluids Engineering, Transactions of the ASME, 2002, 124, 535-543.	0.8	20
61	VOLUME-OF-FLUID CALCULATION OF HEAT OR MASS TRANSFER ACROSS DEFORMING INTERFACES IN TWO-FLUID FLOW. Numerical Heat Transfer, Part B: Fundamentals, 2002, 41, 291-308.	0.6	94
62	Spreading of an inviscid drop impacting on a liquid film. Chemical Engineering Science, 2002, 57, 3639-3647.	1.9	57
63	Deformation of a Droplet Passing Through a Contraction. , 2002, , .		0
64	Numerical Modelling of Droplet Deformation in a High-Pressure Homogeniser. , 2002, , .		0
65	SELF-SUSTAINED OSCILLATION OF A SUBMERGED JET IN A THIN RECTANGULAR CAVITY. Journal of Fluids and Structures, 2001, 15, 59-81.	1.5	48
66	Boundary integral prediction of the spreading of an inviscid drop impacting on a solid surface. Chemical Engineering Science, 2000, 55, 1159-1170.	1.9	22
67	Dispersion of neutrally buoyant solids falling vertically into stationary liquid and horizontal channel flow. Computers and Fluids, 2000, 29, 369-384.	1.3	4
68	Crossflow Characteristics of an Oscillating Jet in a Thin Slab Casting Mould. Journal of Fluids Engineering, Transactions of the ASME, 1999, 121, 588-595.	0.8	18
69	Comparison of two-way coupling models for confined turbulent gasâ€“particle jets in flash smelting. Applied Mathematical Modelling, 1998, 22, 39-55.	2.2	4
70	Computed oscillations of a confined submerged liquid jet. Applied Mathematical Modelling, 1998, 22, 843-850.	2.2	31
71	An adaptive method of predicting the air core diameter for numerical models of hydrocyclone flow. International Journal of Mineral Processing, 1995, 43, 167-177.	2.6	28
72	Flow in the stagnation zone during submerged injection of a swirling gas jet. Chemical Engineering Science, 1990, 45, 687-694.	1.9	6

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73	Numerical calculations of two-phase flow in a liquid bath with bottom gas injection: The central plume. Applied Mathematical Modelling, 1990, 14, 67-76.	2.2	42
74	Similarity solutions for flow in hydrocyclones. Chemical Engineering Science, 1988, 43, 1499-1505.	1.9	19
75	Numerical calculations of flow in a hydrocyclone operating without an air core. Applied Mathematical Modelling, 1988, 12, 119-128.	2.2	43
76	Definition of a capture zone for shallow water table lakes. Journal of Hydrology, 1988, 104, 53-76.	2.3	23
77	Asymptotic infiltration into a soil which contains cracks or holes but whose surface is otherwise impermeable. Transport in Porous Media, 1987, 2, 165-176.	1.2	4
78	A Porous Flow Model for Steady State Transport of Radium in Groundwater. Water Resources Research, 1986, 22, 34-44.	1.7	63
79	Natural convection of gas/vapour mixtures in a porous medium. International Journal of Heat and Mass Transfer, 1986, 29, 1371-1381.	2.5	10
80	Interpretation of activity ratios in groundwaters. Chemical Geology: Isotope Geoscience Section, 1985, 58, 83-88.	0.7	15
81	Numerical calculation of saturatedâ€unsaturated infiltration in a cracked soil. Water Resources Research, 1985, 21, 709-714.	1.7	29
82	Asymptotic Behavior of Infiltration in Soils Containing Cracks or Holes. Water Resources Research, 1985, 21, 1345-1353.	1.7	15
83	A Greenâ€Ampt Model of infiltration in a cracked soil. Water Resources Research, 1984, 20, 1685-1690.	1.7	28
84	A theoretical model of absorption of gases by the bronchial wall. Journal of Fluid Mechanics, 1983, 129, 313.	1.4	48
85	The effect of dispersion on the establishment of a paleoclimatic record from groundwater. Journal of Hydrology, 1982, 58, 131-147.	2.3	20
86	Further considerations in a theoretical description of gas transport in lung airways. Bulletin of Mathematical Biology, 1981, 43, 517-548.	0.9	8
87	The hydrolysis of metal ions. Part 1. Copper(II). Journal of the Chemical Society Dalton Transactions, 1979, , 232.	1.1	49
88	The hydrolysis of metal ions. Part 2. Dioxouranium(VI). Journal of the Chemical Society Dalton Transactions, 1979, , 465.	1.1	71
89	The influence of gas exchange on lung gas concentrations during air breathing. The Bulletin of Mathematical Biophysics, 1977, 39, 73-86.	0.5	3
90	Lung gas mixing during expiration following an inspiration of air. Bulletin of Mathematical Biology, 1975, 37, 113-126.	0.9	7

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91	Transport of O2 along a model pathway through the respiratory region of the lung. The Bulletin of Mathematical Biophysics, 1974, 36, 275-303.	0.5	21
92	Flow patterns in models of small airway units of the lung. Journal of Fluid Mechanics, 1972, 52, 161-177.	1.4	39
93	Collapse of a cylinder of Bingham fluid. ANZIAM Journal, 0, 42, 499.	0.0	7
94	Parasitic current generation in Combined Level Set and Volume of Fluid immiscible fluid simulations. ANZIAM Journal, 0, 48, 868.	0.0	3