James B Grotberg

List of Publications by Year
in descending order

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64 papers	3,781 citations	172386 29 h-index	128225 60 g-index
64 all docs	64 docs citations	64 times ranked	3091 citing authors

#	Article	IF	Citations
1	Acoustically detectable cellular-level lung injury induced by fluid mechanical stresses in microfluidic airway systems. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 18886-18891.	3.3	439
2	BIOFLUID MECHANICS IN FLEXIBLE TUBES. Annual Review of Fluid Mechanics, 2004, 36, 121-147.	10.8	379
3	Microfluidics for flow cytometric analysis of cells and particles. Physiological Measurement, 2005, 26, R73-R98.	1.2	362
4	Combination of fluid and solid mechanical stresses contribute to cell death and detachment in a microfluidic alveolar model. Lab on A Chip, 2011, 11, 609-619.	3.1	197
5	The dynamics of a localized surfactant on a thin film. Journal of Fluid Mechanics, 1990, 213, 127.	1.4	195
6	Respiratory Fluid Mechanics and Transport Processes. Annual Review of Biomedical Engineering, 2001, 3, 421-457.	5.7	164
7	Monolayer flow on a thin film. Journal of Fluid Mechanics, 1988, 193, 151.	1.4	138
8	The steady motion of a semi-infinite bubble through a flexible-walled channel. Journal of Fluid Mechanics, 1996, 319, 25.	1.4	120
9	Droplet spreading on a thin viscous film. Journal of Fluid Mechanics, 1992, 235, 399.	1.4	117
10	Experiments on transition to turbulence in oscillatory pipe flow. Journal of Fluid Mechanics, 1991, 222, 329.	1.4	111
11	Title is missing!. Biomedical Microdevices, 2002, 4, 141-149.	1.4	102
12	Epithelium damage and protection during reopening of occluded airways in a physiologic microfluidic pulmonary airway model. Biomedical Microdevices, 2011, 13, 731-742.	1.4	98
13	Respiratory fluid mechanics. Physics of Fluids, 2011, 23, 21301.	1.6	93
14	Reversible Switching of High-Speed Airâ˜Liquid Two-Phase Flows Using Electrowetting-Assisted Flow-Pattern Change. Journal of the American Chemical Society, 2003, 125, 14678-14679.	6.6	88
15	Steady Propagation of a Liquid Plug in a Two-Dimensional Channel. Journal of Biomechanical Engineering, 2004, 126, 567-577.	0.6	80
16	Three-dimensional model of surfactant replacement therapy. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 9287-9292.	3.3	66
17	The steady propagation of a surfactant-laden liquid plug in a two-dimensional channel. Physics of Fluids, 2005, 17, 082102.	1.6	65
18	Oscillatory flow and mass transport in a curved tube. Journal of Fluid Mechanics, 1988, 188, 509-527.	1.4	51

#	Article	IF	Citations
19	Unsteady propagation of a liquid plug in a liquid-lined straight tube. Physics of Fluids, 2008, 20, 62104.	1.6	51
20	Liquid and surfactant delivery into pulmonary airways. Respiratory Physiology and Neurobiology, 2008, 163, 222-231.	0.7	48
21	Volume-cycled oscillatory flow in a tapered channel. Journal of Fluid Mechanics, 1984, 141, 249-264.	1.4	47
22	An experimental investigation of oscillating flow in a tapered channel. Journal of Fluid Mechanics, 1986, 172, 47.	1.4	44
23	Nonlinear saturation of the Rayleigh instability due to oscillatory flow in a liquid-lined tube. Journal of Fluid Mechanics, 2003, 492, 251-270.	1.4	44
24	Dynamics of Liquid Plugs of Buffer and Surfactant Solutions in a Micro-Engineered Pulmonary Airway Model. Langmuir, 2010, 26, 3744-3752.	1.6	39
25	Pulmonary Fluid Flow Challenges for Experimental and Mathematical Modeling. Integrative and Comparative Biology, 2014, 54, 985-1000.	0.9	39
26	Bolus Contaminant Dispersion in Oscillatory Tube Flow With Conductive Walls. Journal of Biomechanical Engineering, 1993, 115, 424-431.	0.6	36
27	The effect of viscoelasticity on the stability of a pulmonary airway liquid layer. Physics of Fluids, 2010, 22, 11901.	1.6	33
28	Did Reduced Alveolar Delivery of Surfactant Contribute to Negative Results in Adults with Acute Respiratory Distress Syndrome?. American Journal of Respiratory and Critical Care Medicine, 2017, 195, 538-540.	2.5	33
29	Oscillatory flow and mass transport in a flexible tube. Journal of Fluid Mechanics, 1991, 231, 135-155.	1.4	29
30	Steady motion of Bingham liquid plugs in two-dimensional channels. Journal of Fluid Mechanics, 2012, 705, 258-279.	1.4	29
31	The effect of age and demographics on rib shape. Journal of Anatomy, 2017, 231, 229-247.	0.9	29
32	Effect of ventilation rate on instilled surfactant distribution in the pulmonary airways of rats. Journal of Applied Physiology, 2004, 97, 45-56.	1.2	27
33	A microfluidic model to study fluid dynamics of mucus plug rupture in small lung airways. Biomicrofluidics, 2015, 9, 044119.	1.2	27
34	Design of an Artificial Lung Compliance Chamber for Pulmonary Replacement. ASAIO Journal, 2003, 49, 35-40.	0.9	26
35	Adaptive Lagrangianâ€“Eulerian computation of propagation and rupture of a liquid plug in a tube. International Journal for Numerical Methods in Fluids, 2011, 67, 1373-1392.	0.9	22
36	Modeling female and male rib geometry with logarithmic spirals. Journal of Biomechanics, 2016, 49, 2995-3003.	0.9	22

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37	Microphysiological systems modeling acute respiratory distress syndrome that capture mechanical force-induced injury-inflammation-repair. APL Bioengineering, 2019, 3, 041503.	3.3	21
38	Pulsatile Flow and Mass Transport Over an Array of Cylinders: Gas Transfer in a Cardiac-Driven Artificial Lung. Journal of Biomechanical Engineering, 2006, 128, 85-96.	0.6	20
39	Particle capture into the lung made simple?. Journal of Applied Physiology, 2011, 110, 1664-1673.	1.2	19
40	A new index for characterizing micro-bead motion in a flow induced by ciliary beating: Part I, experimental analysis. PLoS Computational Biology, 2017, 13, e1005605.	1.5	19
41	Pulsatile Flow and Oxygen Transport Past Cylindrical Fiber Arrays for an Artificial Lung: Computational and Experimental Studies. Journal of Biomechanical Engineering, 2008, 130, 031019.	0.6	18
42	Microfluidics, Lung Surfactant, and Respiratory Disorders. Laboratory Medicine, 2009, 40, 203-209.	0.8	18
43	Surfactant delivery in rat lungs: Comparing 3D geometrical simulation model with experimental instillation. PLoS Computational Biology, 2019, 15, e1007408.	1.5	18
44	Age-related changes in thoracic skeletal geometry of elderly females. Traffic Injury Prevention, 2017, 18, S122-S128.	0.6	17
45	Effects of Surface Tension and Yield Stress on Mucus Plug Rupture: A Numerical Study. Journal of Biomechanical Engineering, 2020, 142, .	0.6	17
46	A new index for characterizing micro-bead motion in a flow induced by ciliary beating: Part II, modeling. PLoS Computational Biology, 2017, 13, e1005552.	1.5	15
47	Flow Limitation in Liquid-Filled Lungs: Effects of Liquid Properties. Journal of Biomechanical Engineering, 2005, 127, 630-636.	0.6	13
48	Crackles and Wheezes: Agents of Injury?. Annals of the American Thoracic Society, 2019, 16, 967-969.	1.5	13
49	Propagation and rupture of elastoviscoplastic liquid plugs in airway reopening model. Journal of Non-Newtonian Fluid Mechanics, 2022, 300, 104718.	1.0	12
50	Total Liquid Ventilation: Dynamic Airway Pressure and the Development of Expiratory Flow Limitation. ASAIO Journal, 2004, 50, 485-490.	0.9	11
51	Splitting of a two-dimensional liquid plug at an airway bifurcation. Journal of Fluid Mechanics, 2016, 793, 1-20.	1.4	10
52	Steady displacement of long gas bubbles in channels and tubes filled by a Bingham fluid. Physical Review Fluids, 2018, 3, .	1.0	10
53	Perfluorocarbon Induced Alterations in Pulmonary Mechanics. Artificial Cells, Blood Substitutes, and Biotechnology, 1998, 26, 259-271.	0.9	8
54	Cycle-induced flow and transport in a model of alveolar liquid lining. Journal of Fluid Mechanics, 2003, 483, 1-36.	1.4	8

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55	Bolus Contaminant Dispersion for Oscillatory Flow in a Curved Tube. Journal of Biomechanical Engineering, 1996, 118, 333-340.	0.6	6
56	Influence of Intravenous Perfluorocarbon Administration on the Dynamic Behavior of Lung Surfactant. Artificial Cells, Blood Substitutes, and Biotechnology, 1998, 26, 359-366.	0.9	4
57	A Macroscopic Model for Simulating the Mucociliary Clearance in a Bronchial Bifurcation: The Role of Surface Tension. Journal of Biomechanical Engineering, 2016, 138, .	0.6	4
58	Oscillatory Shear Stress Induced Stabilization of Thin Film Instabilities. Fluid Mechanics and Its Applications, 2000, , 33-43.	0.1	4
59	An asymptotic model of particle deposition at an airway bifurcation. Mathematical Medicine and Biology, 2013, 30, 131-156.	0.8	3
60	Flow and Sound Generation in Human Lungs: Models of Wheezes and Crackles. Lecture Notes in Mechanical Engineering, 2014, , 301-317.	0.3	2
61	Microfluidic Approaches Toward Pulmonary Tissue Constructs. , 2013, , 247-278.		1
62	Preface: Biofluid mechanics. Physics of Fluids, 2005, 17, 031401.	1.6	0
63	Rheology Effects on Mucus Plug Rupture. , 2013, , .		0
64	Effects of Curvature, Taper and Flexibility on Dispersion in Oscillatory Pipe Flow. , 1990, , 76-82.		0