Neelesh A Patankar

List of Publications by Year
in descending order

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72 papers	5,749 citations	201575 27 h-index	88593 70 g-index
73 all docs	73 docs citations	73 times ranked	5266 citing authors

#	Article	IF	Citations
1	On the Modeling of Hydrophobic Contact Angles on Rough Surfaces. Langmuir, 2003, 19, 1249-1253.	1.6	788
2	Mimicking the Lotus Effect:Â Influence of Double Roughness Structures and Slender Pillars. Langmuir, 2004, 20, 8209-8213.	1.6	742
3	Transition between Superhydrophobic States on Rough Surfaces. Langmuir, 2004, 20, 7097-7102.	1.6	661
4	Multiple Equilibrium Droplet Shapes and Design Criterion for Rough Hydrophobic Surfaces. Langmuir, 2003, 19, 4999-5003.	1.6	586
5	Stabilization of Leidenfrost vapour layer by textured superhydrophobic surfaces. Nature, 2012, 489, 274-277.	13.7	467
6	Immersed finite element method and its applications to biological systems. Computer Methods in Applied Mechanics and Engineering, 2006, 195, 1722-1749.	3.4	240
7	A fast computation technique for the direct numerical simulation of rigid particulate flows. Journal of Computational Physics, 2005, 205, 439-457.	1.9	183
8	Supernucleating surfaces for nucleate boiling and dropwise condensation heat transfer. Soft Matter, 2010, 6, 1613.	1.2	156
9	Immersed Methods for Fluidâ€“Structure Interaction. Annual Review of Fluid Mechanics, 2020, 52, 421-448.	10.8	151
10	Consolidation of Hydrophobic Transition Criteria by Using an Approximate Energy Minimization Approach. Langmuir, 2010, 26, 8941-8945.	1.6	145
11	A new mathematical formulation and fast algorithm for fully resolved simulation of self-propulsion. Journal of Computational Physics, 2009, 228, 2366-2390.	1.9	128
12	A unified mathematical framework and an adaptive numerical method for fluidâ€“structure interaction with rigid, deforming, and elastic bodies. Journal of Computational Physics, 2013, 250, 446-476.	1.9	119
13	Direct numerical simulation of the Brownian motion of particles by using fluctuating hydrodynamic equations. Journal of Computational Physics, 2004, 201, 466-486.	1.9	92
14	Aquatic manoeuvering with counter-propagating waves: a novel locomotive strategy. Journal of the Royal Society Interface, 2011, 8, 1041-1050.	1.5	82
15	Energy efficiency and allometry of movement of swimming and flying animals. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 7517-7521.	3.3	80
16	Immersed electrokinetic finite element method. International Journal for Numerical Methods in Engineering, 2007, 71, 379-405.	1.5	65
17	A robust incompressible Navier-Stokes solver for high density ratio multiphase flows. Journal of Computational Physics, 2019, 390, 548-594.	1.9	60
18	Hysteresis with Regard to Cassie and Wenzel States on Superhydrophobic Surfaces. Langmuir, 2010, 26, 7498-7503.	1.6	57

#	Article	IF	Citations
19	Sustaining dry surfaces under water. Scientific Reports, 2015, 5, 12311.	1.6	56
20	Hydrophobicity of Surfaces with Cavities: Making Hydrophobic Substrates from Hydrophilic Materials?. Journal of Adhesion Science and Technology, 2009, 23, 413-433.	1.4	51
21	Frost-free zone on macrotextured surfaces. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 6323-6329.	3.3	51
22	A Forced Damped Oscillation Framework for Undulatory Swimming Provides New Insights into How Propulsion Arises in Active and Passive Swimming. PLoS Computational Biology, 2013, 9, e1003097.	1.5	47
23	Undulating fins produce off-axis thrust and flow structures. Journal of Experimental Biology, 2014, 217, 201-13.	0.8	43
24	Convergent Evolution of Mechanically Optimal Locomotion in Aquatic Invertebrates and Vertebrates. PLoS Biology, 2015, 13, e1002123.	2.6	41
25	A DLM immersed boundary method based wave-structure interaction solver for high density ratio multiphase flows. Journal of Computational Physics, 2019, 398, 108804.	1.9	37
26	A fully resolved active musculo-mechanical model for esophageal transport. Journal of Computational Physics, 2015, 298, 446-465.	1.9	31
27	Large scale Brownian dynamics of confined suspensions of rigid particles. Journal of Chemical Physics, 2017, 147, 244103.	1.2	31
28	Onset time of fog collection. Soft Matter, 2019, 15, 6779-6783.	1.2	31
29	A versatile implicit iterative approach for fully resolved simulation of self-propulsion. Computer Methods in Applied Mechanics and Engineering, 2010, 199, 2417-2424.	3.4	28
30	Vapor Stabilizing Substrates for Superhydrophobicity and Superslip. Langmuir, 2010, 26, 8783-8786.	1.6	27
31	Separability of drag and thrust in undulatory animals and machines. Scientific Reports, 2014, 4, 7329.	1.6	27
32	Thermodynamics of Trapping Gases for Underwater Superhydrophobicity. Langmuir, 2016, 32, 7023-7028.	1.6	27
33	Fully resolved immersed electrohydrodynamics for particle motion, electrolocation, and self-propulsion. Journal of Computational Physics, 2014, 256, 88-108.	1.9	25
34	A moving control volume approach to computing hydrodynamic forces and torques on immersed bodies. Journal of Computational Physics, 2017, 347, 437-462.	1.9	23
35	A continuum mechanics-based musculo-mechanical model for esophageal transport. Journal of Computational Physics, 2017, 348, 433-459.	1.9	21
36	Optimal specific wavelength for maximum thrust production in undulatory propulsion. PLoS ONE, 2017, 12, e0179727.	1.1	20

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37	A fast projection scheme for the direct numerical simulation of rigid particulate flows. Communications in Numerical Methods in Engineering, 2005, 21, 419-432.	1.3	19
38	Simulation studies of circular muscle contraction, longitudinal muscle shortening, and their coordination in esophageal transport. American Journal of Physiology - Renal Physiology, 2015, 309, G238-G247.	1.6	19
39	Gray's paradox: A fluid mechanical perspective. Scientific Reports, 2014, 4, 5904.	1.6	19
40	Stabilization approaches for the hyperelastic immersed boundary method for problems of large-deformation incompressible elasticity. Computer Methods in Applied Mechanics and Engineering, 2020, 365, 112978.	3.4	18
41	The thermo-wetting instability driving Leidenfrost film collapse. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 13321-13328.	3.3	17
42	Thermodynamics of sustaining liquid water within rough icephobic surfaces to achieve ultra-low ice adhesion. Scientific Reports, 2019, 9, 258.	1.6	15
43	Microbubble dynamics and heat transfer in boiling droplets. International Journal of Heat and Mass Transfer, 2021, 176, 121413.	2.5	14
44	Hydrodynamic optimality of balistiform and gymnotiform locomotion. European Journal of Computational Mechanics, 2017, 26, 31-43.	0.6	13
45	A new constraint-based formulation for hydrodynamically resolved computational neuromechanics of swimming animals. Journal of Computational Physics, 2018, 375, 684-716.	1.9	13
46	Aerosol transport in a breathing alveolus. Physics of Fluids, 2019, 31, 121901.	1.6	12
47	The Thermodynamics of Restoring Underwater Superhydrophobicity. Langmuir, 2017, 33, 2911-2919.	1.6	11
48	A numerical investigation of the effect of surface wettability on the boiling curve. PLoS ONE, 2017, 12, e0187175.	1.1	11
49	Mechanics informed fluoroscopy of esophageal transport. Biomechanics and Modeling in Mechanobiology, 2021, 20, 925-940.	1.4	11
50	Sustaining Superheated Liquid within Hydrophilic Surface Texture. Langmuir, 2016, 32, 12947-12953.	1.6	10
51	Simulation studies of the role of esophageal mucosa in bolus transport. Biomechanics and Modeling in Mechanobiology, 2017, 16, 1001-1009.	1.4	10
52	High-speed X-ray imaging of the Leidenfrost collapse. Scientific Reports, 2019, 9, 1598.	1.6	10
53	Assessment of esophageal body peristaltic work using functional lumen imaging probe panometry. American Journal of Physiology - Renal Physiology, 2021, 320, G217-G226.	1.6	9
54	Tetracycline as an inhibitor to the SARSâ€CoVâ€2. Journal of Cellular Biochemistry, 2021, 122, 752-759.	1.2	9

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55	Pumping Patterns and Work Done During Peristalsis in Finite-Length Elastic Tubes. Journal of Biomechanical Engineering, 2021, 143, .	0.6	9
56	Myotomy technique and esophageal contractility impact blown-out myotomy formation in achalasia: an in silico investigation. American Journal of Physiology - Renal Physiology, 2022, 322, G500-G512.	1.6	9
57	Studies of abnormalities of the lower esophageal sphincter during esophageal emptying based on a fully coupled bolusâ€“esophagealâ€“gastric model. Biomechanics and Modeling in Mechanobiology, 2018, 17, 1069-1082.	1.4	8
58	Brownian dynamics of fully confined suspensions of rigid particles without Greenâ€™s functions. Journal of Chemical Physics, 2019, 150, 164116.	1.2	8
59	Stencil Penalty approach based constraint immersed boundary method. Computers and Fluids, 2020, 200, 104457.	1.3	7
60	A fully resolved multiphysics model of gastric peristalsis and bolus emptying in the upper gastrointestinal tract. Computers in Biology and Medicine, 2022, 143, 104948.	3.9	7
61	Boiling Transitions During Droplet Contact on Superheated Nano/Micro-Structured Surfaces. ACS Applied Materials & Interfaces, 2022, 14, 15774-15783.	4.0	7
62	Physical Interpretation and Mathematical Properties of the Stress-DLM Formulation for Rigid Particulate Flows. International Journal for Computational Methods in Engineering Science and Mechanics, 2005, 6, 137-143.	1.4	6
63	Estimation of mechanical work done to open the esophagogastric junction using functional lumen imaging probe panometry. American Journal of Physiology - Renal Physiology, 2021, 320, G780-G790.	1.6	6
64	Pulmonary drug delivery and retention: A computational study to identify plausible parameters based on a coupled airway-mucus flow model. PLoS Computational Biology, 2022, 18, e1010143.	1.5	6
65	Four-dimensional impedance manometry derived from esophageal high-resolution impedance-manometry studies: a novel analysis paradigm. Therapeutic Advances in Gastroenterology, 2020, 13, 175628482096905.	1.4	5
66	Handling Neumann and Robin boundary conditions in a fictitious domain volume penalization framework. Journal of Computational Physics, 2022, 448, 110726.	1.9	4
67	An algorithm for the simulation of electrohydrodynamic rigid particulate flows. International Journal for Numerical Methods in Biomedical Engineering, 2011, 27, 29-42.	1.0	3
68	Mileage efficiency of cars. Cleaner Engineering and Technology, 2021, 4, 100240.	2.1	2
69	Fluid-structure interaction of a flexible cantilever cylinder at low Reynolds numbers. Physical Review Fluids, 2022, 7, .	1.0	2
70	Normative values of intraâ€bolus pressure and esophageal compliance based on <scp>4D</scp> highâ€resolution impedance manometry. Neurogastroenterology and Motility, 2022, 34, .	1.6	1
71	Electrokinetic instability: The sharp interface limit. Physics of Fluids, 2011, 23, 014101.	1.6	0
72	10.1063/1.5090114.1. , 2019, , .		0