Amneet Pal Singh Bhalla

List of Publications by Year
in descending order

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29 papers	849 citations	430874 18 h-index	477307 29 g-index
29 all docs	29 docs citations	29 times ranked	734 citing authors

#	Article	IF	Citations
1	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.	3.8	119
2	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.	7.1	80
3	An immersed boundary method for rigid bodies. Communications in Applied Mathematics and Computational Science, 2016, 11, 79-141.	1.8	70
4	A robust incompressible Navier-Stokes solver for high density ratio multiphase flows. Journal of Computational Physics, 2019, 390, 548-594.	3.8	60
5	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.	3.2	47
6	Undulating fins produce off-axis thrust and flow structures. Journal of Experimental Biology, 2014, 217, 201-13.	1.7	43
7	Convergent Evolution of Mechanically Optimal Locomotion in Aquatic Invertebrates and Vertebrates. PLoS Biology, 2015, 13, e1002123.	5.6	41
8	A DLM immersed boundary method based wave-structure interaction solver for high density ratio multiphase flows. Journal of Computational Physics, 2019, 398, 108804.	3.8	37
9	Simulating water-entry/exit problems using Eulerianâ€“Lagrangian and fully-Eulerian fictitious domain methods within the open-source IBAMR library. Applied Ocean Research, 2020, 94, 101932.	4.1	33
10	A fully resolved active musculo-mechanical model for esophageal transport. Journal of Computational Physics, 2015, 298, 446-465.	3.8	31
11	An immersed interface method for discrete surfaces. Journal of Computational Physics, 2020, 400, 108854.	3.8	30
12	Comparison of waveâ€“structure interaction dynamics of a submerged cylindrical point absorber with three degrees of freedom using potential flow and computational fluid dynamics models. Physics of Fluids, 2020, 32, .	4.0	30
13	Separability of drag and thrust in undulatory animals and machines. Scientific Reports, 2014, 4, 7329.	3.3	27
14	Fully resolved immersed electrohydrodynamics for particle motion, electrolocation, and self-propulsion. Journal of Computational Physics, 2014, 256, 88-108.	3.8	25
15	A moving control volume approach to computing hydrodynamic forces and torques on immersed bodies. Journal of Computational Physics, 2017, 347, 437-462.	3.8	23
16	Transition in swimming direction in a model self-propelled inertial swimmer. Physical Review Fluids, 2019, 4, .	2.5	23
17	The inertial sea wave energy converter (ISWEC) technology: Device-physics, multiphase modeling and simulations. Ocean Engineering, 2021, 229, 108879.	4.3	21
18	Gray's paradox: A fluid mechanical perspective. Scientific Reports, 2014, 4, 5904.	3.3	19

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19	An adaptive and energy-maximizing control optimization of wave energy converters using an extremum-seeking approach. Physics of Fluids, 2020, 32, .	4.0	19
20	Hydrodynamic optimality of balistiform and gymnotiform locomotion. European Journal of Computational Mechanics, 2017, 26, 31-43.	0.6	13
21	A new constraint-based formulation for hydrodynamically resolved computational neuromechanics of swimming animals. Journal of Computational Physics, 2018, 375, 684-716.	3.8	13
22	A minimally-resolved immersed boundary model for reaction-diffusion problems. Journal of Chemical Physics, 2013, 139, 214112.	3.0	10
23	Brownian dynamics of fully confined suspensions of rigid particles without Greenâ€™s functions. Journal of Chemical Physics, 2019, 150, 164116.	3.0	8
24	Critique on â€œVolume penalization for inhomogeneous Neumann boundary conditions modeling scalar flux in complicated geometryâ€• Journal of Computational Physics, 2021, 433, 110163.	3.8	7
25	Controlling microchannel gas flow rates through time-modulated pressure pulsation. Journal of Applied Physics, 2007, 102, 114910.	2.5	6
26	A subcycling/non-subcycling time advancement scheme-based DLM immersed boundary method framework for solving single and multiphase fluidâ€“structure interaction problems on dynamically adaptive grids. Computers and Fluids, 2022, 238, 105358.	2.5	6
27	Handling Neumann and Robin boundary conditions in a fictitious domain volume penalization framework. Journal of Computational Physics, 2022, 448, 110726.	3.8	4
28	A one-sided direct forcing immersed boundary method using moving least squares. Journal of Computational Physics, 2021, 440, 110359.	3.8	2
29	A coupled distributed Lagrange multiplier (DLM) and discrete element method (DEM) approach to simulate particulate flow with collisions. Powder Technology, 2022, 398, 117091.	4.2	2