Sandip Ghosal

List of Publications by Year
in descending order

72 papers	3,838 citations	136950 32 h-index	123424 61 g-index
72 all docs	72 docs citations	72 times ranked	2543 citing authors

#	Article	IF	Citations
1	A dynamic localization model for large-eddy simulation of turbulent flows. Journal of Fluid Mechanics, 1995, 286, 229-255.	3.4	648
2	An Analysis of Numerical Errors in Large-Eddy Simulations of Turbulence. Journal of Computational Physics, 1996, 125, 187-206.	3.8	471
3	The Basic Equations for the Large Eddy Simulation of Turbulent Flows in Complex Geometry. Journal of Computational Physics, 1995, 118, 24-37.	3.8	380
4	Fluid mechanics of electroosmotic flow and its effect on band broadening in capillary electrophoresis. Electrophoresis, 2004, 25, 214-228.	2.4	183
5	Lubrication theory for electro-osmotic flow in a microfluidic channel of slowly varying cross-section and wall charge. Journal of Fluid Mechanics, 2002, 459, 103-128.	3.4	182
6	ELECTROKINETIC FLOW AND DISPERSION IN CAPILLARY ELECTROPHORESIS. Annual Review of Fluid Mechanics, 2006, 38, 309-338.	25.0	153
7	Effect of Salt Concentration on the Electrophoretic Speed of a Polyelectrolyte through a Nanopore. Physical Review Letters, 2007, 98, 238104.	7.8	129
8	On the representation of backscatter in dynamic localization models. Physics of Fluids, 1995, 7, 606-616.	4.0	127
9	Mathematical and Physical Constraints on Large-Eddy Simulation of Turbulence. AIAA Journal, 1999, 37, 425-433.	2.6	101
10	Theoretical and numerical study of a symmetrical triple flame using the parabolic flame path approximation. Journal of Fluid Mechanics, 2000, 415, 227-260.	3.4	80
11	Effects of heat release in laminar diffusion flames lifted on round jets. Combustion and Flame, 2003, 134, 355-368.	5.2	69
12	Electrophoresis of a polyelectrolyte through a nanopore. Physical Review E, 2006, 74, 041901.	2.1	62
13	Effect of Analyte Adsorption on the Electroosmotic Flow in Microfluidic Channels. Analytical Chemistry, 2002, 74, 771-775.	6.5	61
14	Asymmetric dynamics of DNA entering and exiting a strongly confining nanopore. Nature Communications, 2017, 8, 380.	12.8	59
15	Stability diagram for lift-off and blowout of a round jet laminar diffusion flame. Combustion and Flame, 2001, 124, 646-655.	5.2	58
16	The effect of wall interactions in capillary-zone electrophoresis. Journal of Fluid Mechanics, 2003, 491, 285-300.	3.4	57
17	Electrokinetic-flow-induced viscous drag on a tethered DNA inside a nanopore. Physical Review E, 2007, 76, 061916.	2.1	57
18	Ion transport through a graphene nanopore. Nanotechnology, 2012, 23, 395501.	2.6	53

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19	Characterizing dispersion in microfluidic channels. Lab on A Chip, 2009, 9, 2537.	6.0	51
20	A numerical study of self-similarity in a turbulent plane wake using large-eddy simulation. Physics of Fluids, 1997, 9, 1729-1739.	4.0	46
21	Band Broadening in a Microcapillary with a Stepwise Change in the î¶-potential. Analytical Chemistry, 2002, 74, 4198-4203.	6.5	45
22	Electroosmotic flow in a rectangular channel with variable wall zeta-potential: Comparison of numerical simulation with asymptotic theory. Electrophoresis, 2006, 27, 611-619.	2.4	43
23	Nonlinear theory of power transfer between multiple crossed laser beams in a flowing plasma. Physics of Plasmas, 1998, 5, 1461-1466.	1.9	42
24	Electro-osmotic flow through a nanopore. Journal of Fluid Mechanics, 2014, 749, 167-183.	3.4	42
25	Studying DNA translocation in nanocapillaries using single molecule fluorescence. Applied Physics Letters, 2012, 101, 223704.	3.3	41
26	A Landauâ€“Squire Nanojet. Nano Letters, 2013, 13, 5141-5146.	9.1	40
27	The Force Exerted by the Membrane Potential during Protein Import into the Mitochondrial Matrix. Biophysical Journal, 2004, 86, 3647-3652.	0.5	38
28	Dispersion due to wall interactions in microfluidic separation systems. Physics of Fluids, 2008, 20, .	4.0	36
29	DNA Interactions in Crowded Nanopores. Nano Letters, 2013, 13, 2798-2802.	9.1	36
30	Particulate flow simulations using lubrication theory solution enrichment. International Journal for Numerical Methods in Engineering, 2003, 56, 1261-1289.	2.8	35
31	Electroosmosis in a Finite Cylindrical Pore: Simple Models of End Effects. Langmuir, 2014, 30, 9261-9272.	3.5	35
32	Hydrodynamic flow in the vicinity of a nanopore induced by an applied voltage. Nanotechnology, 2013, 24, 245202.	2.6	34
33	Solid-state nanopore hydrodynamics and transport. Biomicrofluidics, 2019, 13, 011301.	2.4	32
34	Flame holes and flame disks on the surface of a diffusion flame. Journal of Fluid Mechanics, 2004, 513, 287-307.	3.4	21
35	Capstan Friction Model for DNA Ejection from Bacteriophages. Physical Review Letters, 2012, 109, 248105.	7.8	21
36	Electromigration dispersion in a capillary in the presence of electro-osmotic flow. Journal of Fluid Mechanics, 2012, 697, 436-454.	3.4	21

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37	Nonlinear Waves in Capillary Electrophoresis. Bulletin of Mathematical Biology, 2010, 72, 2047-2066.	1.9	19
38	Two-dimensional plasma flow past a laser beam. Physics of Plasmas, 1997, 4, 2376-2396.	1.9	18
39	A method for characterizing adsorption of flowing solutes to microfluidic device surfaces. Lab on A Chip, 2007, 7, 281-285.	6.0	16
40	Electromigration Dispersion in Capillary Electrophoresis. Bulletin of Mathematical Biology, 2012, 74, 346-355.	1.9	16
41	Mathematical Model Describing Gradient Focusing Methods for Trace Analytes. Analytical Chemistry, 2005, 77, 5380-5384.	6.5	15
42	Peak tailing in electrophoresis due to alteration of the wall charge by adsorbed analytes a. Analytica Chimica Acta, 2004, 507, 87-93.	5.4	14
43	On thermonuclear convection: I shellular instability. Geophysical and Astrophysical Fluid Dynamics, 1991, 61, 161-178.	1.2	13
44	Effect of smoothing by spectral dispersion on flow induced laser beam deflection: The random phase modulation scheme. Physics of Plasmas, 1998, 5, 775-781.	1.9	12
45	A simple model illustrating the role of turbulence on phytoplankton blooms. Journal of Mathematical Biology, 2003, 46, 333-346.	1.9	12
46	Screened Coulomb interactions with non-uniform surface charge. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2017, 473, 20160906.	2.1	10
47	Electrically generated eddies at an eightfold stagnation point within a nanopore. Physics of Fluids, 2014, 26, 112004.	4.0	9
48	AC Electric Field-Induced Trapping of Microparticles in Pinched Microconfinements. Langmuir, 2015, 31, 5952-5961.	3.5	9
49	Nonlinear electrophoresis of a tightly fitting sphere in a cylindrical tube. Journal of Fluid Mechanics, 2018, 843, 847-871.	3.4	9
50	A hyperbolic equation for turbulent diffusion. Nonlinearity, 2000, 13, 1855-1866.	1.4	8
51	A similarity solution describing the collision of two planar premixed flames. Combustion Theory and Modelling, 2003, 7, 645-652.	1.9	8
52	Repulsion Between Finite Charged Plates with Strongly Overlapped Electric Double Layers. Langmuir, 2016, 32, 9445-9450.	3.5	8
53	A dynamic localization model for large-eddy simulation of turbulent flows. Journal of Fluid Mechanics, 1995, 297, 402-402.	3.4	7
54	Strongly nonlinear waves in capillary electrophoresis. Physical Review E, 2012, 85, 051918.	2.1	7

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55	The effect of the finite size of ions and Debye layer overspill on the screened Coulomb interactions between charged flat plates. Electrophoresis, 2020, 41, 607-614.	2.4	5
56	Effect of induced spatial incoherence on flow induced laser beam deflection: Analytic theory. Physics of Plasmas, 1997, 4, 4189-4191.	1.9	4
57	A mechanical model of bacteriophage DNA ejection. Physics Letters, Section A: General, Atomic and Solid State Physics, 2017, 381, 2386-2390.	2.1	4
58	Electrophoresis of tightly fitting spheres along a circular cylinder of finite length. Journal of Fluid Mechanics, 2021, 929, .	3.4	4
59	A nonlinear equation for ionic diffusion in aÂstrong binary electrolyte. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2010, 466, 2145-2154.	2.1	3
60	The nonlinear electromigration of analytes into confined spaces. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2012, 468, 3139-3152.	2.1	3
61	A numerical study of the selectivity of an isolated cylindrical or conical nanopore to a charged macro-ion. Biomicrofluidics, 2019, 13, 054108.	2.4	3
62	Band Broadening Theories in Capillary Electrophoresis. Methods in Molecular Biology, 2019, 1906, 143-166.	0.9	3
63	Mathematical Modeling of Electrokinetic Effects in Micro and Nano Fluidics. , 2010, , 87-112.		2
64	Exclusion-Enrichment Effect in Ionic Transistors. Langmuir, 2020, 36, 3308-3314.	3.5	2
65	Analysis and Control of Errors in the Numerical Simulation of Turbulence. , 2002, , 101-140.		2
66	Does buckling instability of the pseudopodium limit how well an amoeba can climb?. Journal of Theoretical Biology, 2011, 271, 202-204.	1.7	1
67	Effect of Nonzero Solid Permittivity on the Electrical Repulsion between Charged Surfaces. Langmuir, 2020, 36, 2592-2600.	3.5	1
68	Charge Selectivity of an Ionic Transistor. Langmuir, 2021, 37, 4571-4577.	3.5	1
69	Packing a flexible fiber into a cavity. Physical Review E, 2022, 105, 035002.	2.1	1
70	Electrophoretic Forces on Multiple DNA Molecules in a Nanopore. Biophysical Journal, 2013, 104, 517a.	0.5	0
71	Electrokinetic Flow and Ion Transport in Nanochannels. , 2013, , 1-15.		0
72	Anomalous diffusion in an electrolyte saturated paper matrix. Electrophoresis, 2020, 41, 678-683.	2.4	0