Prashanta Dutta

List of Publications by Year
in descending order

108 papers	3,762 citations	126907 33 h-index	138484 58 g-index
108 all docs	108 docs citations	108 times ranked	3806 citing authors

#	Article	IF	Citations
1	Effect of Slp4-a on Membrane Bending during Prefusion of Vesicles in Blood-Brain Barrier. Journal of Biomechanical Engineering, 2022, , .	1.3	0
2	Bayesian Method for Parameter Estimation in Transient Heat Transfer Problem. International Journal of Heat and Mass Transfer, 2021, 166, 120746.	4.8	9
3	Electrokinetic actuation of an uncharged polarizable dielectric droplet in charged hydrogel medium. Electrophoresis, 2021, 42, 920-931.	2.4	4
4	Bayesian inference for parameter estimation in lactoferrin-mediated iron transport across blood-brain barrier. Biochimica Et Biophysica Acta - General Subjects, 2020, 1864, 129459.	2.4	14
5	Substrateâ€dependent transport mechanism in AcrB of multidrug resistant bacteria. Proteins: Structure, Function and Bioinformatics, 2020, 88, 853-864.	2.6	10
6	Adeno-associated virus characterization for cargo discrimination through nanopore responsiveness. Nanoscale, 2020, 12, 23721-23731.	5.6	18
7	Effect of Calcium ion on synaptotagmin-like protein during pre-fusion of vesicle for exocytosis in blood-brain barrier. Biochemistry and Biophysics Reports, 2020, 24, 100845.	1.3	5
8	Overcoming bloodâ€“brain barrier transport: Advances in nanoparticle-based drug delivery strategies. Materials Today, 2020, 37, 112-125.	14.2	196
9	Eyeball-Like Yolkâ€“Shell Bimetallic Nanoparticles for Synergistic Photodynamicâ€“Photothermal Therapy. ACS Applied Bio Materials, 2020, 3, 5922-5929.	4.6	18
10	Mechanical characterization of vesicles and cells: A review. Electrophoresis, 2020, 41, 449-470.	2.4	24
11	Analytical Solution of Time-Periodic Electroosmotic Flow through Cylindrical Microchannel with Non-Uniform Surface Potential. Micromachines, 2019, 10, 498.	2.9	8
12	Time-Periodic Electro-Osmotic Flow With Nonuniform Surface Charges. Journal of Fluids Engineering, Transactions of the ASME, 2019, 141, .	1.5	6
13	Comparison of Bloodâ€“Brain Barrier Models for in Vitro Biological Analysis: One-Cell Type vs Three-Cell Type. ACS Applied Bio Materials, 2019, 2, 1050-1055.	4.6	8
14	Stochastic modeling of nanoparticle internalization and expulsion through receptor-mediated transcytosis. Nanoscale, 2019, 11, 11227-11235.	5.6	27
15	Entry modes of ellipsoidal nanoparticles on a membrane during clathrin-mediated endocytosis. Soft Matter, 2019, 15, 5128-5137.	2.7	16
16	Electrophoretic transport and dynamic deformation of bioâ€vesicles. Electrophoresis, 2019, 40, 2584-2591.	2.4	10
17	Mechanical characterization of HIVâ€1 with a solidâ€state nanopore sensor. Electrophoresis, 2019, 40, 776-783.	2.4	38
18	On electrophoresis of a pHâ€regulated nanogel with ion partitioning effects. Electrophoresis, 2019, 40, 699-709.	2.4	8

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19	Iron transport kinetics through blood-brain barrier endothelial cells. Biochimica Et Biophysica Acta - General Subjects, 2018, 1862, 1168-1179.	2.4	41
20	Mathematical Model for Tissue-Level Hypoxic Response in Microfluidic Environment. Journal of Biomechanical Engineering, 2018, 140, .	1.3	4
21	Mathematical modeling and numerical simulation of the TGF-Î²/Smad signaling pathway in tumor microenvironments. Applied Numerical Mathematics, 2018, 133, 41-51.	2.1	4
22	Review: Electric field driven pumping in microfluidic device. Electrophoresis, 2018, 39, 702-731.	2.4	84
23	Modeling and simulation of electric field guided cell deformation. AIP Conference Proceedings, 2018, , .	0.4	0
24	Synthetic Polymer Nanoparticles Functionalized with Different Ligands for Receptor-Mediated Transcytosis across the Bloodâ€“Brain Barrier. ACS Applied Bio Materials, 2018, 1, 1687-1694.	4.6	26
25	Quantification of kinetic rate constants for transcytosis of polymeric nanoparticle through blood-brain barrier. Biochimica Et Biophysica Acta - General Subjects, 2018, 1862, 2779-2787.	2.4	24
26	Stochastic simulations of nanoparticle internalization through transferrin receptor dependent clathrin-mediated endocytosis. Biochimica Et Biophysica Acta - General Subjects, 2018, 1862, 2104-2111.	2.4	18
27	Electrodeformation of vesicles suspended in a liquid medium. Physical Review Fluids, 2018, 3, .	2.5	15
28	Hypoxic behavior in cells under controlled microfluidic environment. Biochimica Et Biophysica Acta - General Subjects, 2017, 1861, 759-771.	2.4	10
29	In Vitro Study of Receptor-Mediated Silica Nanoparticles Delivery across Bloodâ€“Brain Barrier. ACS Applied Materials & Interfaces, 2017, 9, 20410-20416.	8.0	86
30	Steadyâ€state protein focusing in carrier ampholyteâ€based isoelectric focusing: Part IIâ€”validation and case studies. Electrophoresis, 2017, 38, 667-676.	2.4	4
31	Exploration of conformational changes in lactose permease upon sugar binding and proton transfer through coarseâ€grained simulations. Proteins: Structure, Function and Bioinformatics, 2017, 85, 1856-1865.	2.6	2
32	Coarse-grained simulations of conformational changes in the multidrug efflux transporter AcrB. Molecular BioSystems, 2017, 13, 2006-2014.	2.9	12
33	A non-sampling mixing index for multicomponent mixtures. Powder Technology, 2017, 319, 434-444.	4.2	43
34	Steadyâ€state protein focusing in carrier ampholyte based isoelectric focusing: Part Iâ€”Analytical solution. Electrophoresis, 2017, 38, 659-666.	2.4	5
35	A Review of Lithium-Air Battery Modeling Studies. Energies, 2017, 10, 1748.	3.1	17
36	Coarse-grained simulations of proton-dependent conformational changes in lactose permease. Proteins: Structure, Function and Bioinformatics, 2016, 84, 1067-1074.	2.6	6

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37	A comprehensive numerical investigation of DC dielectrophoretic particleâ¿¿particle interactions and assembly. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2016, 506, 127-137.	4.7	9
38	Numerical and Experimental Investigation of Performance Characteristics of Lithium/Sulfur Cells. Electrochimica Acta, 2016, 213, 174-185.	5.2	25
39	Cover Image, Volume 84, Issue 8. Proteins: Structure, Function and Bioinformatics, 2016, 84, C1-C1.	2.6	1
40	Combined AC electroosmosis and dielectrophoresis for controlled rotation of microparticles. Biomicrofluidics, 2016, 10, 024101.	2.4	21
41	Self-assembled peptides for coating of active sulfur nanoparticles in lithiumâ€“sulfur battery. Journal of Nanoparticle Research, 2016, 18, 1.	1.9	10
42	Effects of Operating Temperature on the Electrical Performance of a Li-air Battery operated with Ionic Liquid Electrolyte. Electrochimica Acta, 2016, 194, 317-329.	5.2	28
43	Electrochemical Model for Ionic Liquid Electrolytes in Lithium Batteries. Electrochimica Acta, 2015, 176, 301-310.	5.2	21
44	A density functional theory based study of the electron transfer reaction at the cathodeâ€“electrolyte interface in lithiumâ€“air batteries. Physical Chemistry Chemical Physics, 2015, 17, 11740-11751.	2.8	23
45	Effect of Joule heating on isoelectric focusing of proteins in a microchannel. Biomicrofluidics, 2014, 8, 064125.	2.4	10
46	Mathematical and numerical model to study two-dimensional free flow isoelectric focusing. Biomicrofluidics, 2014, 8, 034111.	2.4	8
47	Modeling of volume change phenomena in a Liâ€“air battery. Journal of Power Sources, 2014, 258, 340-350.	7.8	44
48	Efficient algorithm for simulation of isoelectric focusing. Electrophoresis, 2014, 35, 638-645.	2.4	14
49	Density Functional Theory Based Study of the Electron Transfer Reaction at the Lithium Metal Anode in a Lithiumâ€“Air Battery with Ionic Liquid Electrolytes. Journal of Physical Chemistry C, 2014, 118, 27183-27192.	3.1	17
50	Dielectrophoretic separation of bioparticles in microdevices: A review. Electrophoresis, 2014, 35, 691-713.	2.4	208
51	Hybrid immersed interface-immersed boundary methods for AC dielectrophoresis. Journal of Computational Physics, 2014, 270, 640-659.	3.8	28
52	A new design for efficient dielectrophoretic separation of cells in a microdevice. Electrophoresis, 2013, 34, 643-650.	2.4	17
53	Thermal analysis of microwave assisted bonding of poly(methyl methacrylate) substrates in microfluidic devices. International Journal of Heat and Mass Transfer, 2013, 58, 229-239.	4.8	9
54	A Fast Algorithm to Predict Cell Trajectories in Microdevices Using Dielectrophoresis. Numerical Heat Transfer; Part A: Applications, 2013, 64, 107-131.	2.1	10

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55	Improved kinetics from ion advection through overlapping electric double layers in nano-porous electrodes. Electrochimica Acta, 2013, 91, 20-29.	5.2	9
56	Modeling and simulation of dielectrophoretic particleâ€“particle interactions and assembly. Journal of Colloid and Interface Science, 2013, 394, 619-629.	9.4	73
57	Enhancement of Lithium Ion Mobility in Ionic Liquid Electrolytes in Presence of Additives. Journal of Physical Chemistry C, 2013, 117, 25343-25351.	3.1	61
58	Joule Heating Effect in Constant Voltage Mode Isotachophoresis in a Microchannel. International Journal of Nonlinear Sciences and Numerical Simulation, 2012, 13, 333-344.	1.0	7
59	Effects of temperature dependent properties in electromagnetic heating. International Journal of Heat and Mass Transfer, 2012, 55, 3412-3422.	4.8	60
60	Modeling and simulation of nanoparticle separation through a solidâ€state nanopore. Electrophoresis, 2012, 33, 325-333.	2.4	38
61	10â€‰000-fold concentration increase of the biomarker cardiac troponin I in a reducing union microfluidic chip using cationic isotachophoresis. Lab on A Chip, 2011, 11, 890.	6.0	67
62	Preconcentration and detection of the phosphorylated forms of cardiac troponin I in a cascade microchip by cationic isotachophoresis. Lab on A Chip, 2011, 11, 3793.	6.0	30
63	Modeling of Diffuse Charge Effects in a Microfluidic Based Laminar Flow Fuel Cell. Numerical Heat Transfer; Part A: Applications, 2011, 59, 1-27.	2.1	28
64	Enhanced Fluorescence Anisotropy Assay for Human Cardiac Troponin I and T Detection. Journal of Fluorescence, 2011, 21, 2101-2110.	2.5	16
65	10â€‰000â€fold concentration increase in proteins in a cascade microchip using anionic ITP by a 3â€D numerical simulation with experimental results. Electrophoresis, 2011, 32, 550-562.	2.4	34
66	Rapid detection of dysfunctional highâ€density lipoproteins using isoelectric focusingâ€based microfluidic device to diagnose senescenceâ€related disease. Electrophoresis, 2011, 32, 3415-3423.	2.4	13
67	Role of the diffuse layer in acidic and alkaline fuel cells. Electrochimica Acta, 2011, 56, 4518-4525.	5.2	20
68	Analysis of microwave heating for cylindrical shaped objects. International Journal of Heat and Mass Transfer, 2010, 53, 5129-5138.	4.8	86
69	Effects of reactant crossover and electrode dimensions on the performance of a microfluidic based laminar flow fuel cell. Electrochimica Acta, 2010, 55, 8579-8589.	5.2	42
70	Chemically modified solid state nanopores for high throughput nanoparticle separation. Journal of Physics Condensed Matter, 2010, 22, 454107.	1.8	41
71	A turbulence dissipation model for particle laden flow. AICHE Journal, 2009, 55, 1416-1425.	3.6	8
72	Dispersion of protein bands in a horseshoe microchannel during IEF. Electrophoresis, 2009, 30, 723-731.	2.4	14

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73	Effect of charged membrane on the particle motion through a nanopore. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2009, 341, 1-12.	4.7	16
74	A rapid magnetic particle driven micromixer. Microfluidics and Nanofluidics, 2008, 4, 375-389.	2.2	134
75	Effects of ampholyte concentration on protein behavior in onâ€chip isoelectric focusing. Electrophoresis, 2008, 29, 1026-1035.	2.4	36
76	A pK determination method for proteins from titration curves using principle component analysis. AICHE Journal, 2008, 54, 2238-2249.	3.6	7
77	A Review of Nanofluidic Patents. Recent Patents on Nanotechnology, 2008, 2, 150-159.	1.3	5
78	Effects of ampholyte dissociation constants on protein separation in on-chip isoelectric focusing. Journal of Nanoscience and Nanotechnology, 2008, 8, 3719-28.	0.9	3
79	Finite-Volume Methods for Isotachophoretic Separation in Microchannels. Numerical Heat Transfer; Part A: Applications, 2007, 52, 441-461.	2.1	26
80	A Microfluidic Mixer Utilizing Electrokinetic Relay Switching and Asymmetric Flow Geometries. Journal of Fluids Engineering, Transactions of the ASME, 2007, 129, 395-403.	1.5	19
81	Automated Electric Valve for Electrokinetic Separation in a Networked Microfluidic Chip. Analytical Chemistry, 2007, 79, 1456-1465.	6.5	12
82	A High Throughput Microfluidic Bioparticle Sensor. , 2007, , .		0
83	Electroosmosis with step changes in zeta potential in microchannels. AICHE Journal, 2007, 53, 2521-2533.	3.6	19
84	Modeling and simulation of IEF in 2-D microgeometries. Electrophoresis, 2007, 28, 572-586.	2.4	51
85	Isotachophoresis of proteins in a networked microfluidic chip: Experiment and 2-D simulation. Electrophoresis, 2007, 28, 1138-1145.	2.4	41
86	A micromachined high throughput Coulter counter for bioparticle detection and counting. Journal of Micromechanics and Microengineering, 2007, 17, 304-313.	2.6	175
87	Experiment and simulation of mixed flows in a trapezoidal microchannel. Microfluidics and Nanofluidics, 2007, 3, 347-358.	2.2	24
88	Electrokinetic flow control in microfluidic chips using a field-effect transistor. Lab on A Chip, 2006, 6, 714.	6.0	51
89	Heat Transfer Characteristics of Mixed Electroosmotic and Pressure Driven Micro-Flows. JSME International Journal Series B, 2006, 49, 812-819.	0.3	18
90	Joule-heating effects in mixed electroosmotic and pressure-driven microflows under constant wall heat flux. Journal of Engineering Mathematics, 2006, 54, 159-180.	1.2	51

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91	A conductivity-based interface tracking method for microfluidic application. Journal of Micromechanics and Microengineering, 2006, 16, 920-928.	2.6	9
92	Internal cooling augmentation in rectangular channel using two inclined baffles. International Journal of Heat and Fluid Flow, 2005, 26, 223-232.	2.4	93
93	Efficiency and Flow Regime of a Highway Stormwater Detention Pond in Washington, USA. Water, Air, and Soil Pollution, 2005, 164, 79-89.	2.4	45
94	Multistage Isoelectric Focusing in a Polymeric Microfluidic Chip. Analytical Chemistry, 2005, 77, 7878-7886.	6.5	75
95	Isoelectric Focusing in a Poly(dimethylsiloxane) Microfluidic Chip. Analytical Chemistry, 2005, 77, 1303-1309.	6.5	122
96	Joule heating effects in electroosmotically driven microchannel flows. International Journal of Heat and Mass Transfer, 2004, 47, 3085-3095.	4.8	155
97	NUMERICAL SIMULATION OF MIXED ELECTROOSMOTIC/PRESSURE DRIVEN MICROFLOWS. Numerical Heat Transfer; Part A: Applications, 2002, 41, 131-148.	2.1	97
98	Analytical Solution of Time Periodic Electroosmotic Flows:Â Analogies to Stokes' Second Problem. Analytical Chemistry, 2001, 73, 5097-5102.	6.5	174
99	Analytical Solution of Combined Electroosmotic/Pressure Driven Flows in Two-Dimensional Straight Channels:â€‰ Finite Debye Layer Effects. Analytical Chemistry, 2001, 73, 1979-1986.	6.5	257
100	Effect of baffle size, perforation, and orientation on internal heat transfer enhancement. International Journal of Heat and Mass Transfer, 1998, 41, 3005-3013.	4.8	73
101	Work in Progress: Assessing Engineering Students' Motivation and Learning Strategies - A Psychometric Analysis of the Motivated Strategies for Learning Questionnaire. , 0, , .		1
102	Fine-tuning-based Transfer Learning for Characterization of Adeno-Associated Virus. Journal of Signal Processing Systems, 0, , 1.	2.1	0
103	Board 131: Nationwide Dissemination and Critical Assessment of Low-cost Desktop Learning Modules for Engineering: A Systematic, Supported Approach. , 0, , .		0
104	Development of Bloomâ€™s-level Graduated Instrument for Assessing Transport Concepts in Hands-on Learning. , 0, , .		1
105	A First-year Progress Report on "Collaborative Research Using Low-cost Desktop Learning Modules to Educate Diverse Undergraduate Communities in Engineering". , 0, , .		1
106	Design Philosophy and System Integrity for Propagation of Hands-on Desktop Learning Modules for Fluid Mechanics and Heat Transfer. , 0, , .		0
107	Faculty Feedback on Hub-based Approach to National Dissemination of Low-cost Desktop Learning Modules. , 0, , .		0
108	Multi-Disciplinary Project-Based Paradigm that Uses Hands-on Desktop Learning Modules and Modern Learning Pedagogies. , 0, , .		1